UNIVERSITY OF CAMBRIDGE

WebRTC

Unifying all Communication directly in the Browser?

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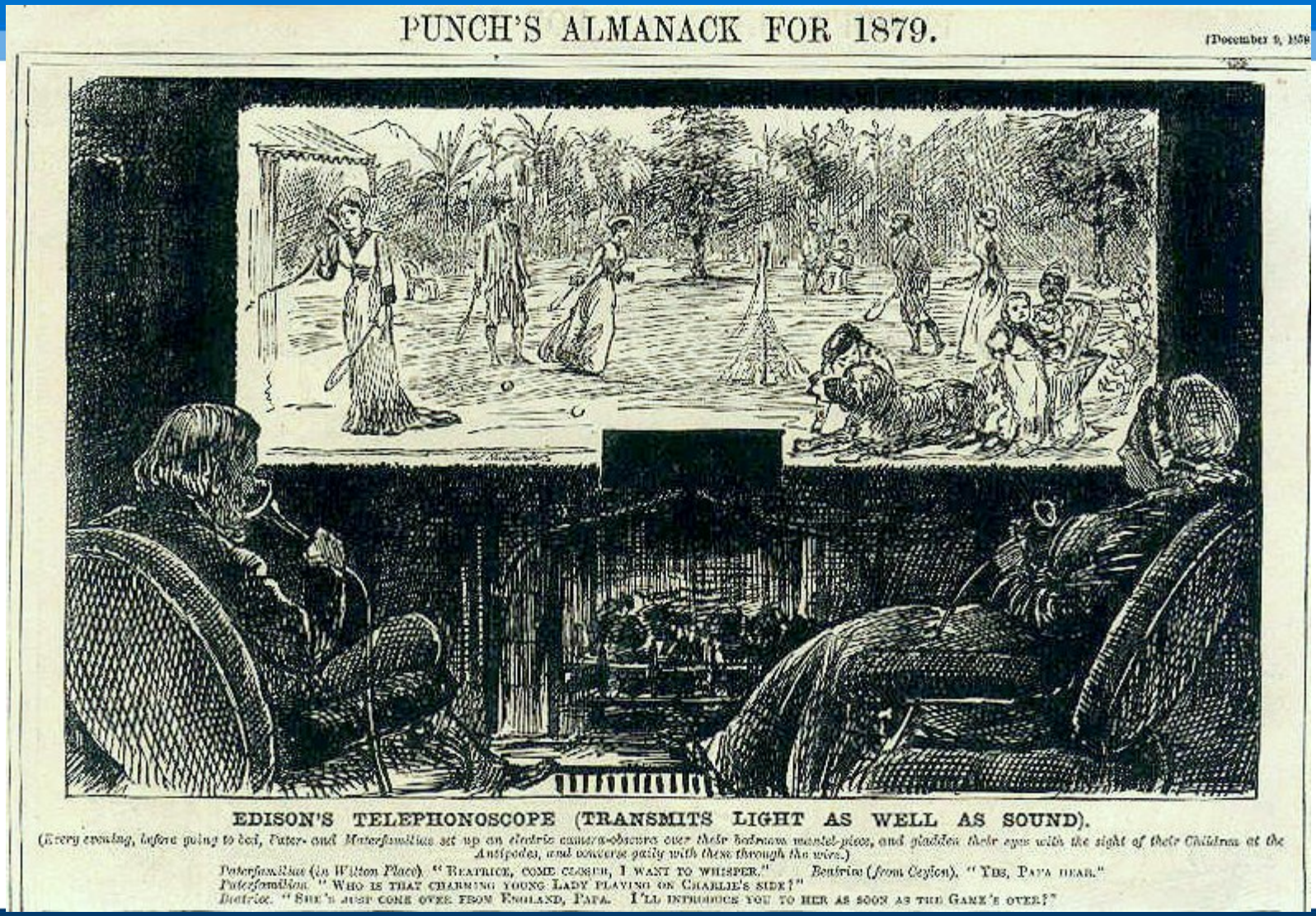
Ronald Haynes, Cambridge University Computing Service – rsh27@cam.ac.uk

Video-telephony … the early years? - (1)

"The Machine," they exclaimed, "feeds us and clothes us and houses us; through it we speak to one another, through it we see one another, in it we have our being. The Machine is the friend of ideas and the enemy of superstition: the Machine is omnipotent, eternal; blessed is the Machine." ... in theory the Machine was still the creation and the implement of man, but in practice all, save a few retrogrades, worshipped it as divine. ... One believer would be chiefly impressed by the blue optic plates, through which he saw other believers; another by the mending apparatus ... another by the lifts, another by the Book. And each would pray to this or to that, and ask it to intercede for him with the Machine as a whole. ... all who did not accept the minimum known as "undenominational Mechanism" lived in danger of Homelessness, which means death, as we know.

from The Machine Stops, E.M. Forster, Oxford & Cambridge Review, 1909

Video-telephony … the beginning?



PUNCH'S ALMANACK FOR 1879.

[December 9, 1878

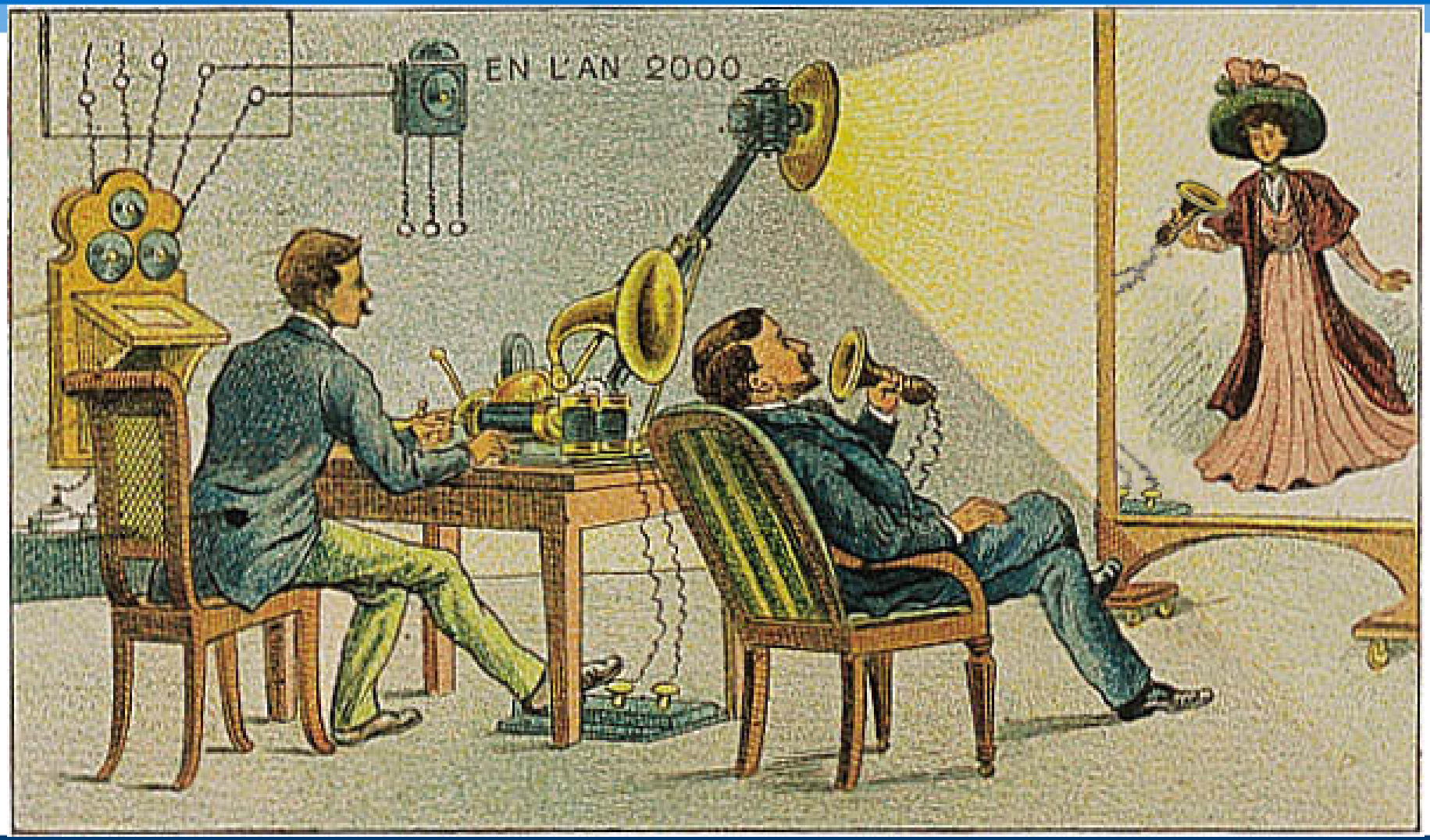
EDISON'S TELEPHONOSCOPE (TRANSMITS LIGHT AS WELL AS SOUND).

(Every evening, before going to bed, Pater- and Materfamilias set up an electric camera-obscura over their bedroom mantel-piece, and gladden their eyes with the sight of their Children at the Antipodes, and converse gaily with them through the wire.)

Paterfamilias (in Witton Place). "BEATRICE, COME CLOSER, I WANT TO WHISPER." *Beatrice (from Ceylon).* "YES, PAPA DEAR."
Paterfamilias. "WHO IS THAT CHARMING YOUNG LADY PLAYING ON CHARLIE'S SIDE?"
Beatrice. "SHE'S JUST COME OVER FROM ENGLAND, PAPA. I'LL INTRODUCE YOU TO HER AS SOON AS THE GAME'S OVER!"

Adapted from Punch, 9th Dec. 1878 – found on wikimedia.org

Video-telephony … the early years? - (2)

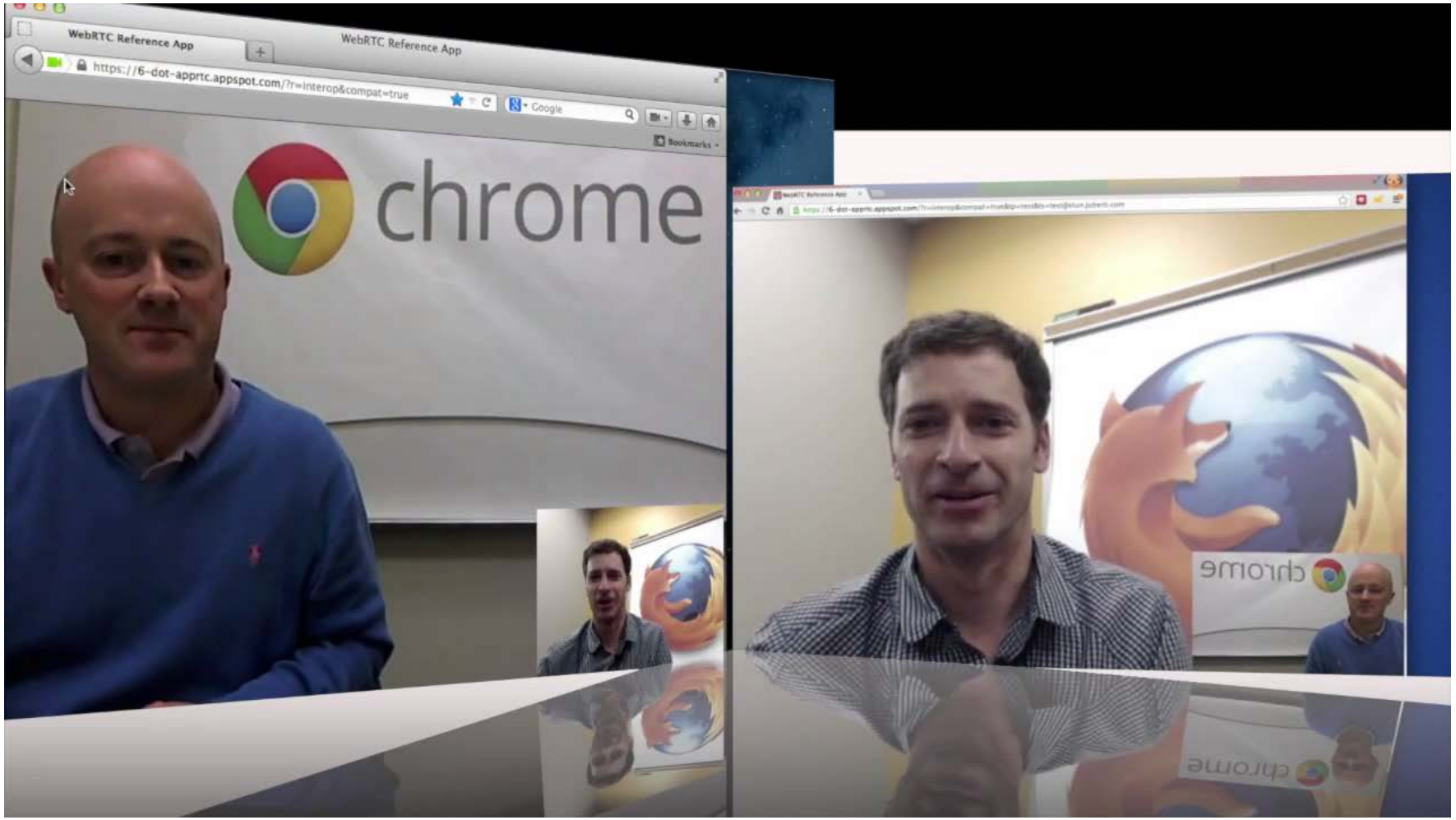


Adapted from 1910 postcard – found on wikimedia.org

Video-telephony … the early years? - (3)

videophone from 1927 film Metropolis

WebRTC – *in action* *(… prepared earlier!)*



Video from Youtube via webrtc.org

WebRTC – Web *Real Time Communications*!

- New standard emerging from the W3C (along with HTML5) & IETF
- Support from Google & Mozilla, + Opera, Cisco, AT&T, Plantronics, …
  - possible in Internet Explorer (*currently with Google Chrome Frame plug-in*)
  - Microsoft part of discussions, but wanted an alternative approach
- Enables live, direct audio & video communications between browsers
  - potential to either unseat or complement Skype and similar
  - or possibly the natural evolution of synchronous communications

WebRTC – How it Works

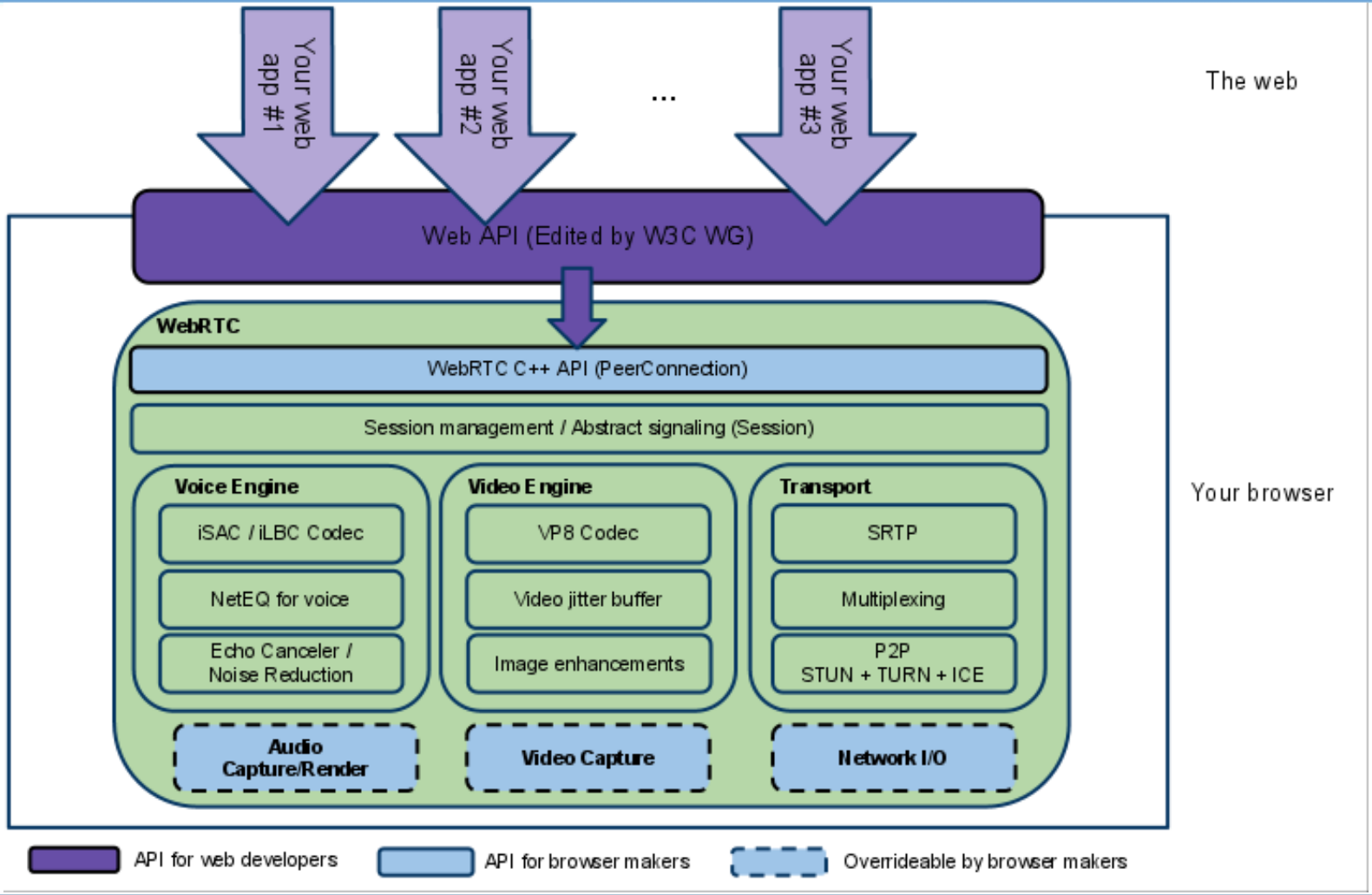
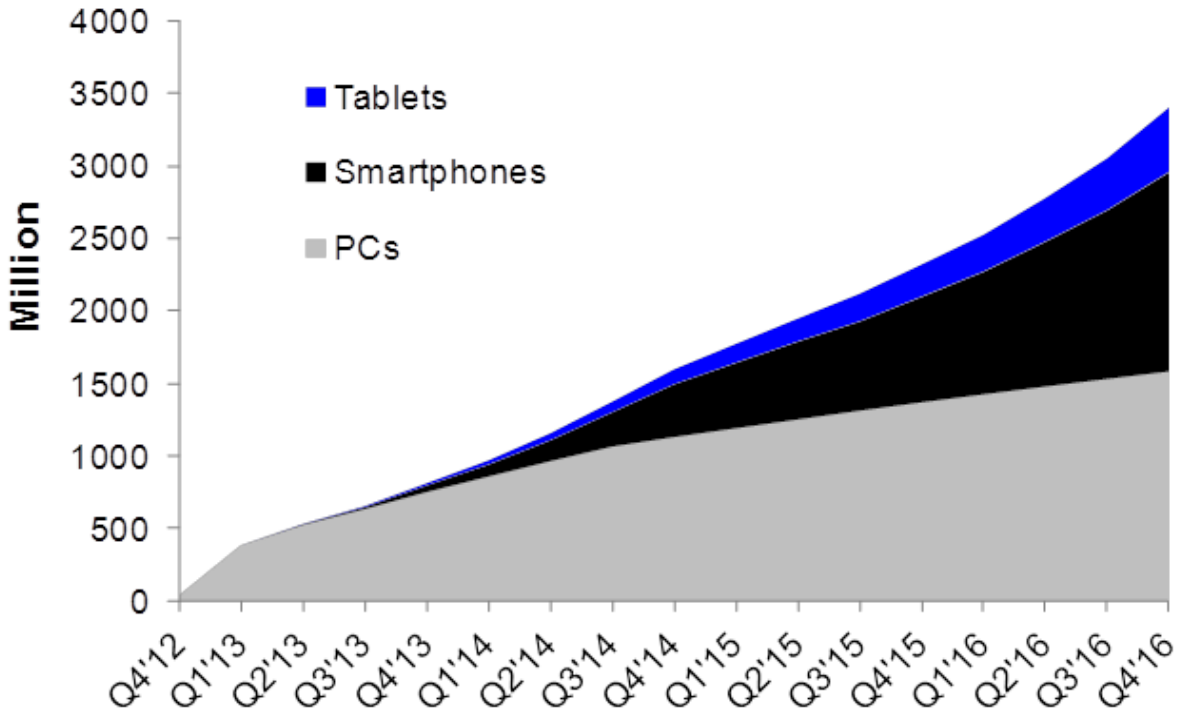


Diagram from webrtc.org

WebRTC … *rapid growth projection!*

Figure 1: WebRTC support will grow quickly, led by PCs initially

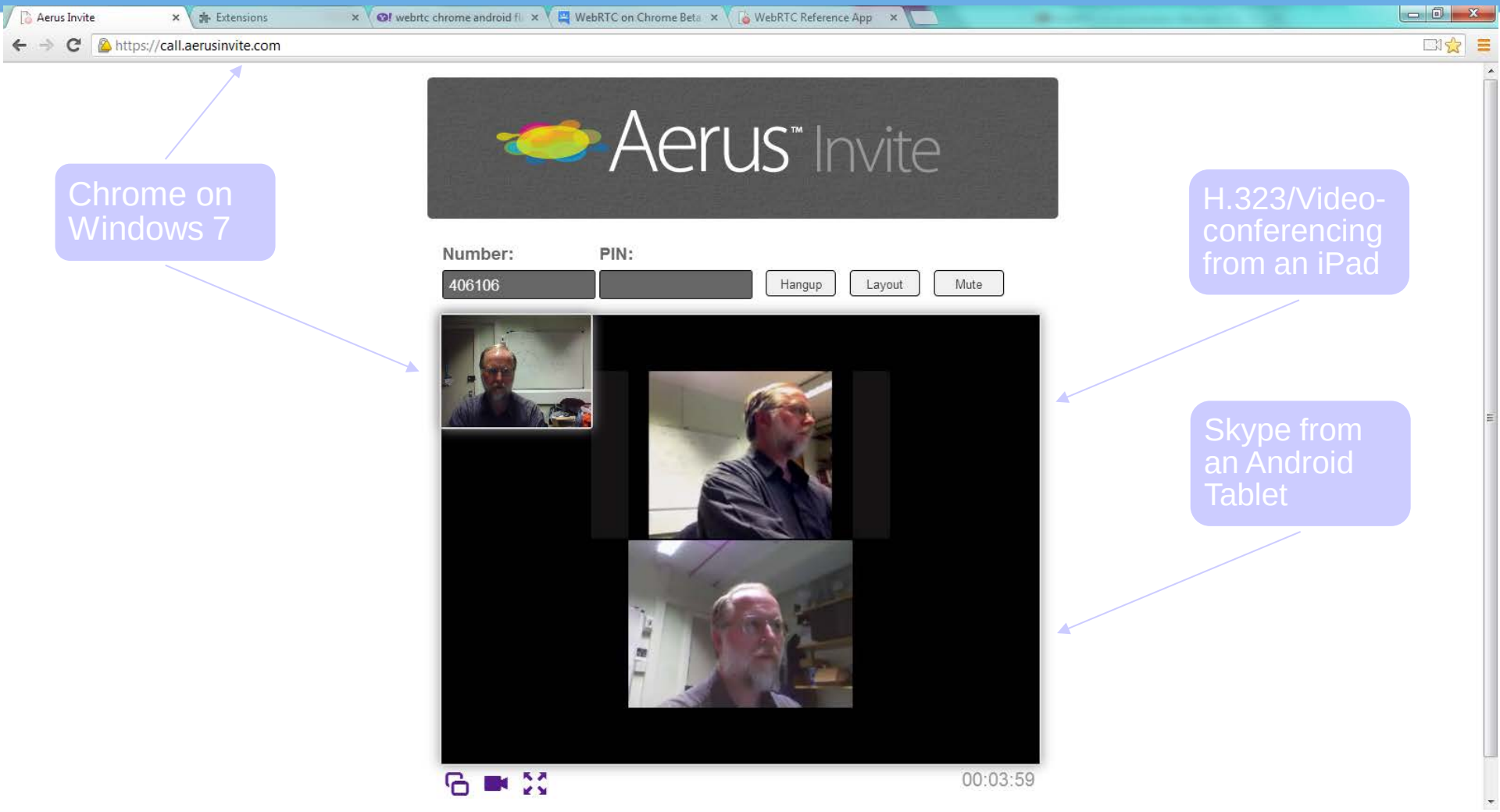


Source: Disruptive Analysis WebRTC Strategy Report, Feb 2013
Definitions & methodology in report

Source: Disruptive Analysis

Graph from Distruptive Wireless

WebRTC – *in action* *(… prepared earlier!)*



Screenshot from magorcorp.com

WebRTC – overview & operations

- there has been no free, high quality, complete solution enabling communication (audio/video/data) in the browser … until now
- parts developed by On2 Technologies (VP8 -> WebM), Global IP Solutions (iSAC, iSAC), both acquired by Google (2010, 2011); W3C started work on standard
- support for WebRTC growing everywhere – e.g. www.webrtcworld.com
- framework: HTML5, JavaScript Session Establishment Protocol (JSEP)
- direct connections can be made without hardware in the middle
- P2P, firewall traversal: STUN, ICE, TURN, RTP-over-TCP, proxies
- … more details at the FAQs – http://www.webrtc.org/faq

Creative approaches to Unified Communications?

Major vendors like Cisco and Shoretel offer turnkey solutions to provide VoIP telephony plus advanced UC features like videoconferencing, shared whiteboarding, desktop-sharing. But has anybody tried less costly, more modular approaches, bolting together multiple products to provide an integrated experience for users?

For instance, maybe some of you already have a VoIP solution and you've found a way to integrate it with something like Lync, and your users can dial, launch a videoconference or share desktops in a single interface, blissfully unaware of the various software pieces that are providing those capabilities.

Just thinking that with technologies like WebRTC (and who knows what else) on the way, that building UC capabilities in an incremental, modular way may provide more flexibility and cost less than buying an all-in-one solution.

Jeff

Jeff Overholtzer, Strategic Planning and Communication
Information Technology Services, Washington and Lee University, http://its.wlu.edu

Selected WebRTC-related Resources

WebRTC (project home) – http://www.webrtc.org

WebRTC World – http://www.webrtcworld.com

Bistri – http://bistri.com

Magor Communications Corporation – http://www.magorcorp.com

Questions … Comments … Ideas?

Thank you!

Thank You
Gracias!
Merci!
Danke Schoen
THANKS
ありがとう
謝謝
спасибо
Tak!
اركش
GRAZIE
todah!
Merci!
salamat
Thanks
gracias
감사합니다
謝謝