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Topic: Collaboration

Issue: What are the trends impacting collaboration in the enterprise?

Video Codec Wars Heat Up: Google And Vidyo Dance Together on WebRTC

Summary: Vidyo's partnership with Google to develop a scalable video extension for the VP9 codec will fuel the fire in the WebRTC video codec wars between H.265 and VP9.

Event: On August 28, 2013, Vidyo announced that it would continue its partnership with Google to bring video quality enhancements within WebRTC. Specifically, this will allow Google to use Vidyo's Scalable Video Coding (SVC) extensions as part of WebRTC. A part of the agreement will include Vidyo developing a scalable video extension for the VP9 codec as part of the WebRTC client open source project.

Analysis

This announcement shows an alignment of roadmaps for both Vidyo and Google. Previously Vidyo had provided the video technology in Google+ Hangouts. It was clear that Google's plans were to leverage investments in WebRTC and the VP8/VP9 video codec for the future of Hangouts. We believe that the continued partnership with Vidyo had to include its innovative contributions not only to Hangouts, but also to WebRTC.

WebRTC enables real-time communication via web browser and also browser-to-server without the need to download any separate plug-ins. The one drawback thus far is that the WebRTC protocol is limited to Firefox, Opera and Chrome browsers. Those browsers do account for more than half of the browsers in use. However, Microsoft Internet Explorer and Apple's Safari do not yet support WebRTC. Vidyo's server

technology will add adaptive bandwidth management capabilities that can adjust users' video quality on the fly, depending on bandwidth and endpoint device requirements.

The Video Codec Wars

Underlying the Vidyo and Google announcement is a codec war going on around WebRTC. Currently it is between the VP8 and H.264 video codecs. However, we believe the real war that is heating up will be between the VP9 and H.265 codecs. The key part of the Google and Vidyo partnership is Google's switch over to the VP9 video codec, which is the next generation after VP8. Google+ Hangouts has quietly switched to the VP8 video codec from H.264. Eventually moving to VP9 will allow Google to support better video streams and increase video quality at lower bit rates on mobile devices. Vidyo will contribute its client-side SVC technology to VP9, the successor to VP8. We believe this will be evident in a future enterprise-level offering of Hangouts, making Google a contender in the enterprise Video market against established players such as Cisco and Polycom. This will also impact Microsoft, as Hangouts already offers multiple user video streams for free.

Google announced at its 2013 IO developer conference that YouTube will move to VP9 later in 2013, which will bring it technically closer to Hangouts. This will provide integration possibilities between YouTube and the Google+ social network. With the multiple millions of users that visit YouTube and access it on mobile devices, this is significant. Google plans to be a major player not just in consumer video, but in the enterprise. WebRTC will be the vehicle and VP9 will be the video codec. This

may push video hardware vendors to evaluate VP9 vs. H.265 as the codec to invest in.

WebRTC can use the VP8 or H.264 codecs. It boils down to Google supporting a newer and free codec while the rest of the industry stands behind H.264, which is more broadly supported but royalty-based from a license perspective. Most current video hardware supports H.264 but not VP8, making VP8 a non-starter for many video vendors. H.264 therefore wins this round. However, the battle will really heat up with H.265 and VP9, which will both improve video quality at lower bit rates and use less bandwidth. Both codecs will be fresh starting points, as all legacy devices will need some degree of transcoding if H.264 is replaced with either. We will do a fuller report on this topic later this year.

Aragon Advisory

- Developers should evaluate this move by Vidyo and Google and consider being a part of this ecosystem.
- Enterprise IT and business leaders should ensure they have proper knowledge of WebRTC and video codecs, since these developments will impact future video, UCC and overall real-time communication and collaboration investments.
- When writing RFIs and RFPs, enterprises should include questions about support for video codecs and standards such as VP9, H.265 and WebRTC.

Bottom Line

The video battleground is moving from traditional hardware and room systems to the web. Emerging protocols such as WebRTC and the need to support diverse endpoints makes this a codec and standards war on the web and mobile devices. This will impact future enterprise video and real-time communication and collaboration decisions. The Vidyo and Google announcement is just another sign of the future of video and real-time communication becoming more browser-based and accessible on all devices.

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- [The Consumerization of Voice and Video](#)
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