

WebRTC Conference & Expo 2013

The Big Picture & Keynotes Highlights

The Big Picture

- webRTC is getting mature and is ready for wide application development and deployment
 - Technical standard is completed in major aspects
 - ❖ Mandatory video codec is still under debate
 - ✓ Google strongly insists on VP8/VP9, no interest on H.264/H2.65
 - ✓ Mozilla is very flexible, supports both VP8 and H.264
 - ✓ Opera leans to VP8 side, position on H.264 not known
 - ✓ Microsoft and Apple: positions not clear
 - ✓ Major equipment and chipsets vendors mostly take neutral positions
 - Equipment vendors addressed existing H.264 market share and concerns over video transcoding costs
 - Qualcomm already released VP8 chipset
 - ✓ Service provider's voice is not heard
 - ❖ some security issues still need to be work on
 - ✓ Mainly data channel contents security
 - ❖ these are all low layer technical specifics and have limited impact to the overall webRTC architecture
 - ✓ API implementation
 - ✓ high (browser) level applications
 - Browser supportability
 - ❖ Fully comply with available standards
 - ✓ Google Chrome: supports only VP8 video codec
 - ✓ Mozilla Firefox: supports VP8 and additional H.264 video codec
 - ✓ Opera:
 - ❖ Limited / no activities
 - ✓ Microsoft: very active in standard activity, very limited activity in Explorer support
 - ✓ Apple: intention is still unknown
 - Data channel availability is a major breakthrough. APIs are supported by Chrome and Firefox, a lot of useful applications were already demonstrated using data channel.

The Big Picture

- ❑ webRTC industry is formed and emerging
 - Over 20 webRTC vendors demonstrated mature webRTC products
 - ❖ video conferencing
 - ❖ Medicare applications
 - ❖ contact center (customer support center)
 - ❖ group collaboration platform
 - ❖ online interactive gaming
 - Free and Paid webRTC based services are available
 - ❖ Provided by startup or small internet companies
 - ❖ Services are mainly in
 - ✓ Video conferencing
 - ✓ Group collaboration platforms
 - Traditional industry started adopting webRTC
 - ❖ Online interactive gaming using webRTC demonstrated
 - Telecomm vendors paid increasing attention to webRTC
 - ❖ Traditional telecom equipment vendors are putting in more and more efforts on webRTC
 - ❖ Asterisk integrated webRTC into their open-source VoIP/PBX platform
 - Enterprises/businesses started to deploy webRTC based contact center (customer support center)
 - ❖ Banks
 - ❖ Insurance Companies
 - ❖ Travel agents
 - ❖ Large retail stores

The Big Picture

□ webRTC standardization aspects

- Audio codec: not much debate
 - ❖ Opus and G.711 are mandatory audio codec
 - ❖ other codecs are optional
- Video codec: heavily debated
 - ❖ VP8/VP9 v.s. H.264/H265
 - ❖ Google insists on VP8/VP9 only, Mozilla is flexible
 - ❖ Small vendors and service providers prefer VP8/VP9
 - ❖ Equipment / chipset vendors: position neutral
 - ❖ Large service providers and carriers need H.264, but not much voice heard
- Data channel: not much debate, ready for use but still a lot to do
 - ❖ Chrome and Firefox data channel APIs are already released
 - ❖ Data channel contents security has a lot work to be done
 - ❖ A lot of applications using data channel were addressed or demonstrated
 - ✓ file transfer etc. types of non-real-time applications
 - ✓ screen sharing (image) in collaboration platform applications
 - ✓ real-time information exchange in online video games
 - ✓ Data channel usage is still tightly bound with vendor's application

Keynotes Highlights

□ Internet of Things (IoT): An Existing and Developing Reality

- Today there are approximately 50 billion devices intermittently connected to the Internet
 - ❖ Single individual owns multiple devices
- The number to skyrocket to 200 billion by 2020
 - ❖ internet connectivity are still mainly people-to-people (P2P)
 - ❖ people-to-machine (P2M) and machine-to-machine (M2M) will have explosive demands
- Standard, Unified, Multi-capability, Simple and Convenient Access is key
 - ❖ All come to one → web
 - ✓ Different devices, different vendors, different service providers, different content providers etc.
 - ❖ All in one → web
 - ✓ Different capabilities, functionalities, services and so on (phone, SMS, chat, IM, blog, social networks, web pages etc.)
- IoT, web, webRTC pave the way of future network life
 - ❖ Creates opportunities for developers to quickly and economically build communications applications
 - ❖ Enables service providers to quickly and efficiently deploy new services on demands
 - ❖ Creates convenient and unified all-in-one accessibility to users
 - ❖ Creates new and better service operation models
 - ❖ Imposes significant challenges to traditional telecom service providers
 - ✓ Web based revolutionary user experience improvements will make a lot of traditional access terminal obsolete
 - ✓ Disruptive to traditional core services: calls, SMS etc.

Keynotes Highlights

□ **Webfication: The future way of communications**

- Web is content-rich
 - ❖ Becoming a major information and knowledge acquiring platform
 - ❖ currently still mainly a one-way viewing platform with limited non-real-time feedback capabilities
- Web is capability-rich
 - ❖ Text, audio, video capabilities
 - ❖ webRTC is adding real-time communication capabilities
- Web has global accessibility
 - ❖ Different devices
 - ❖ Different locations
- Web allows unified access interface
 - ❖ Any devices, any OSs
- Web makes all-in-one possible
 - ❖ Integrate all communication need under a unique platform and presented in a single context
 - ✓ Phone, SMS, chat, file sharing, blog. Social network, twitter, and so on
 - ❖ webRTC drives webfication on to the fast track

Keynotes Highlights

□ **webRTC is not a new addition, but an industry movement**

➤ webRTC is not a product but an enabler

❖ Current network industry trends

- ✓ All goes to Cloud: not a technology but a business model
- ✓ Ubiquitous Connectivity: 99.96% anytime anywhere connected
- ✓ Diverse Devices: smartphone, tablet, PC

❖ webRTC will be the core that enables all under a unified access

➤ webRTC is not about technology but about user experience

❖ Dedicated UI and context switching already become an inconvenience

- ✓ Different Uis on different devices (smartphone, tablet. PC etc.)
- ✓ Different Uis in different applications (SMS. phone, chat, IM etc.)
- ✓ Different Uis in different vendor products (different browsers etc.)

❖ webRTC will unify all and put them in the same context

- ✓ A web centric integrated platform

➤ webRTC is not only a way of access but will be the way of access

❖ Device specifics, application specifics and vendor specifics already become access barriers

- ✓ Device specific applications may be required
- ✓ Application specific user interfaces require specific access procedures
- ✓ Vendor specific products require dedicated supports/plugins etc.

❖ webRTC: access all via web will be the way of access

➤ webRTC is not only a service but a service creator

❖ webRTC infrastructures enables users/developers create various value-added products/services in a very quick and flexible manner

Keynotes Highlights

□ Why webRTC is game changer?

- WebRTC will play a vital role in the democratization of technology in the years to come
 - ❖ Enable users as developers to implement their ways of communications
 - ❖ Enables quick and efficient communication development cycle
 - ❖ Enables fast communication product evaluation
 - ❖ Generates huge potential to a vast variety of user/3rd-party applications
 - ❖ Opens up a door to 3rd-party value-added service creation
- webRTC is disruptive to traditional core services
 - ❖ Webfication demands web centric services
 - ✓ VoIP / IMS are still more like telephony
 - ✓ webRTC is more like web and actually is the web
 - ❖ webRTC appears to be accelerating the plethora of "free" services
 - ❖ webRTC helps non-wireless carriers to enter the wireless service territory via web
 - ❖ what services are still billable to the subscribers ?
- webRTC reshapes the user experiences
 - ❖ Call/Contact Center application
 - ✓ Web context is far richer than phone context
 - ✓ Context-awareness and multi-media capabilities brings much better user experience than IVR
 - ❖ Video conferencing
 - ✓ Available to everyone via web
 - ❖ Group collaboration
 - ✓ Convenient and easy access

Keynotes Highlights

□ A Market Analyst's View

- Use adult thinking
- The enterprise view of webRTC:
 - ❖ integration with all other existing (a lot of) infrastructure need to be considered
 - ❖ webRTC point capabilities: fully mashed connectivity to all devices
 - ❖ enterprise will pay for voice, audio / video /web conferencing, but not for IM, desktop video etc. free available stuff.
 - ❖ webRTC is still not a convincing technology for general enterprise to adopt as a communication tool
 - ❖ Big balance point for webRTC in enterprise applications are data channel and voice applications
 - ❖ Communications enabled business processes (CEBP) is an area worth diving in
 - ❖ Advice to enterprise on webRTC adoption:
 - ✓ Avoid focusing on webRTC features but on long term needs
 - ✓ Tie the technology to people and process
 - ❖ Do not count on video too much in regular support websites, the trend is towards self-service

Keynotes Highlights

□ webRTC ecosystem

- webRTC as the core
 - ❖ Browser
 - ❖ Audio
 - ❖ Video
 - ❖ Data channel
- Infrastructure, enablers, APIs as the wrapping tools
 - ❖ For developer to implement functional components (SDK) using Java script
- Service creation vendors
 - ❖ Build value-added service using webRTC functional components (SDK)
- 2nd Market and end users
 - ❖ Users of services created by service creation vendors
- An Example
 - ❖ TNW Academy: an online education platform built on other's service
 - ✓ Browser → tokbox → Live Ninja → TNW Academy
 - ❖ Reusing webRTC components as as a pure media engine
 - ✓ Vonage is entering into mobile space with a webRTC based OTT app.
- 260 vendors doing webRTC related products
- Microsoft and Apple are missing

Keynotes Highlights

□ Deep into webRTC use cases

- Integrated customer service experience (call/contact center)
 - ❖ Current IVR based system is not doing the obvious
 - ✓ Customers demand low effort experience, 94% of low effort customers are happy compare to only 4% of high effort customers
 - ✓ web context is much more rich in information than telephony/IVR context
 - ❖ Call/contact center shall design the customer experience for targeted specific customers
 - ✓ Keep focus on screen
 - ✓ Screen annotation: show more and ask less, screen control only necessary
 - ✓ confidence v.s. privacy
 - ❖ 97% of buys visit web first
 - ❖ webRTC based call/contact center benefits, 89% enterprises view webRTC as a game change tool
 - ✓ Customer effort goes down
 - ✓ IVR goes away
 - ✓ Micro targeting goes up
 - ✓ Call duration down
 - ✓ CC labor down
 - ✓ PSTN cost down
 - ✓ Customer loyalty up
 - ✓ Marketing spend down
- Sales empowerment
 - ❖ Wrap context around all incoming and outgoing phone calls
- Collaboration platform
- Communication enabled business process (CEBP)
 - Accelerated business process by embedding communications directly within applications

Keynotes Highlights

□ Moving towards information driven carrier and enterprise

- Internet, webfication, webRTC – the dominating source of Big Data
 - ❖ Volume, variety, velocity
- Turning the Big Data into Big Money – information driven carrier and enterprise
 - ❖ visibility, value, voracity
- webRTC and Big Data
 - ❖ Multi-dimensional source of Big Data: audio, video, text, file, etc.
 - ❖ Source/context correlation add values to Big Data
 - ❖ Personalized/targeted Big Data applications add values
 - ❖ Peer-to-peer targeted Big Data applications add even more values
- webRTC security aspects
 - ❖ How safe the webRTC is
 - ✓ as security as the browser
 - ✓ as security as general enterprise in-house applications
 - ❖ What to watch
 - ✓ spam control
 - ✓ DDoS
 - ✓ Peer-to-peer control
- webRTC compliance requirement
 - ❖ CALEA
 - ❖ Discovery
 - ❖ 911

Keynotes Highlights

□ **webRTC oriented enterprise: is it ready?**

- What to look for – can webRTC do better in
 - ❖ meeting the business objectives
 - ❖ fitting into organization alignment
 - ❖ the targeted use cases
 - ❖ improving customer experiences
- What should be aware of
 - ❖ Security
 - ❖ Confidentiality control
 - ❖ Lawful compliance