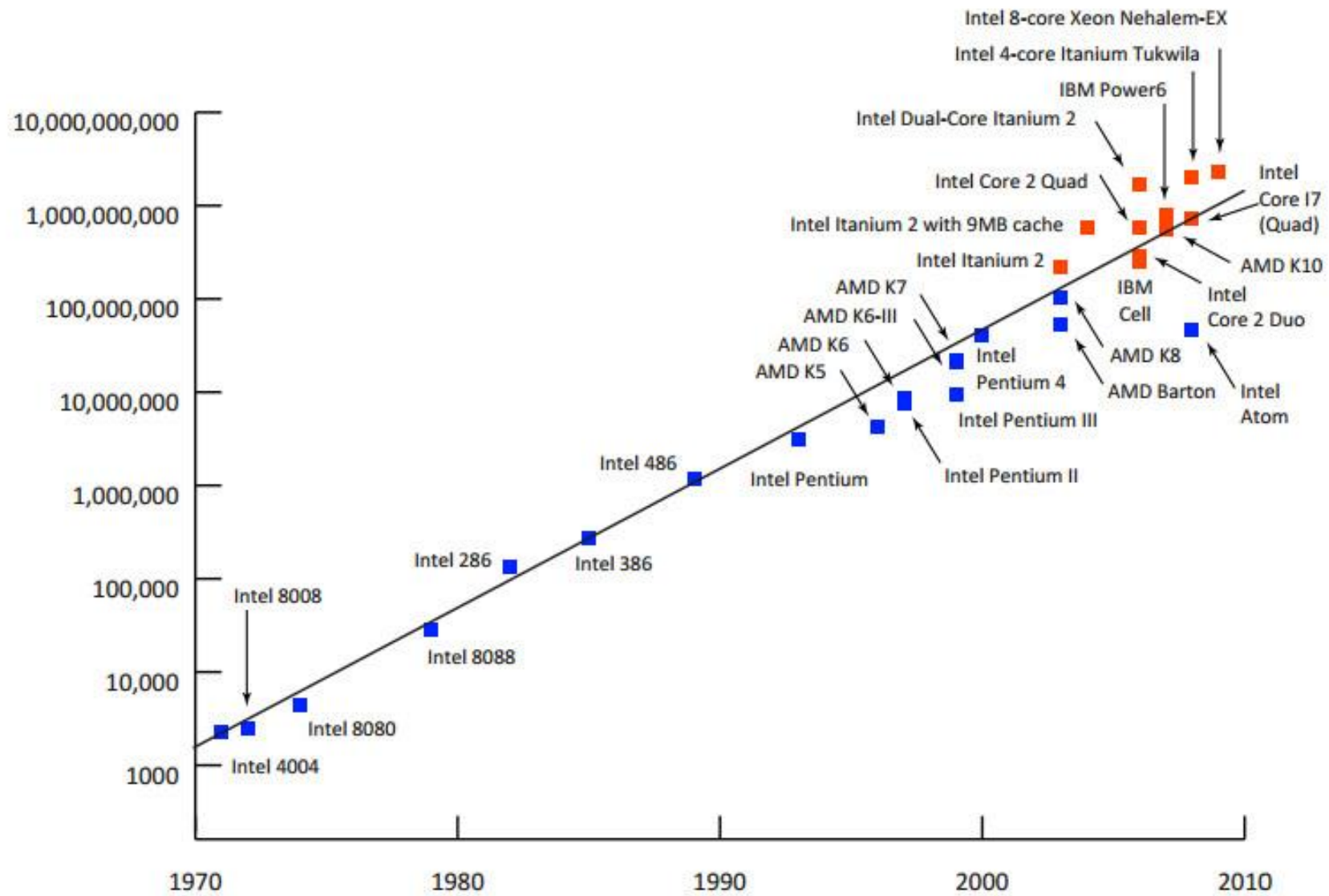


# 7 reasons why video conferencing world will never be the same again

Dmitry Odintsov, TrueConf

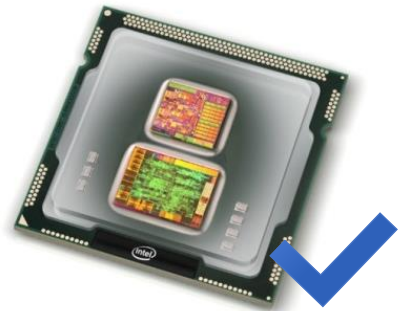


# 1. Moore Law

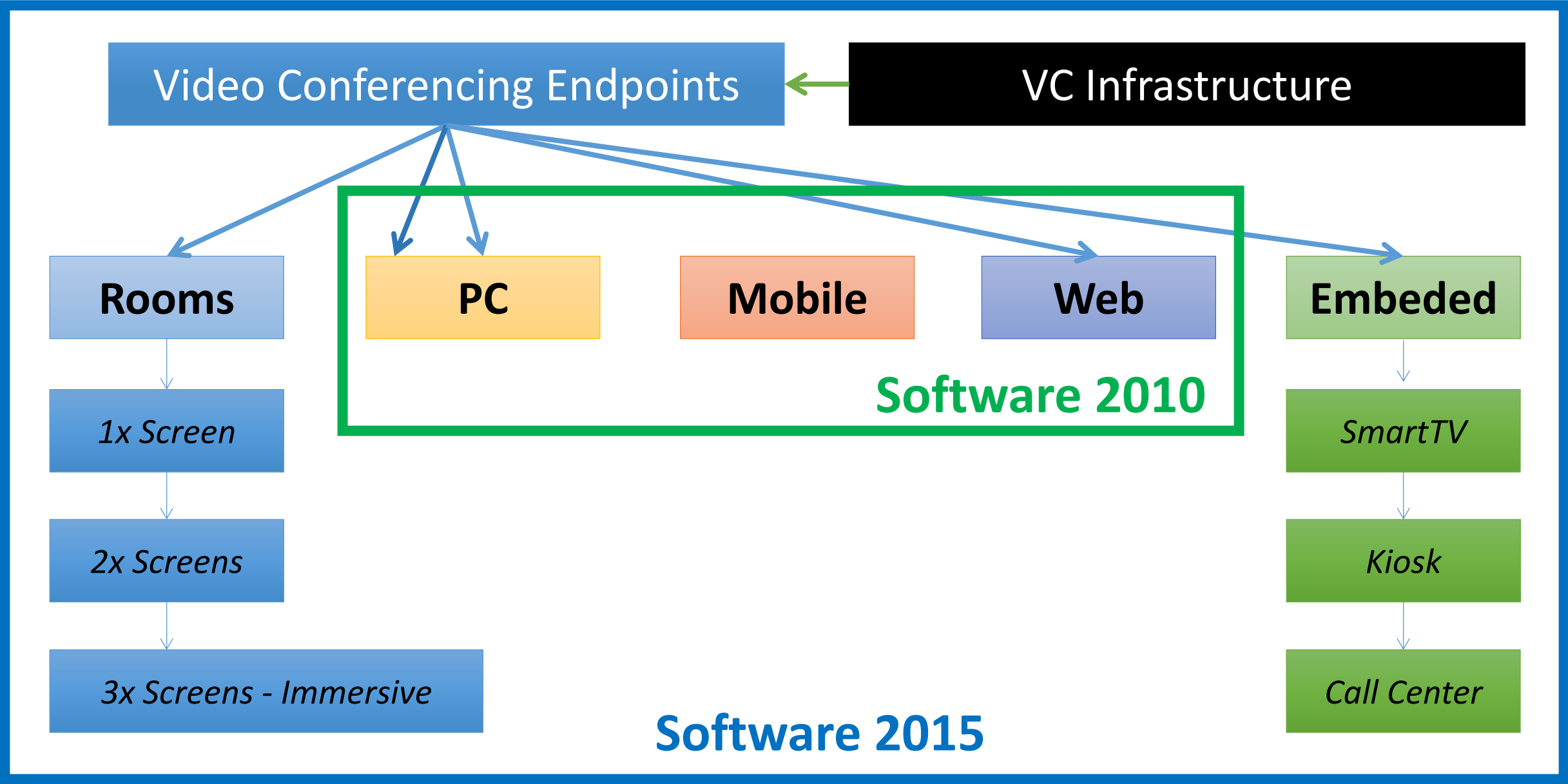




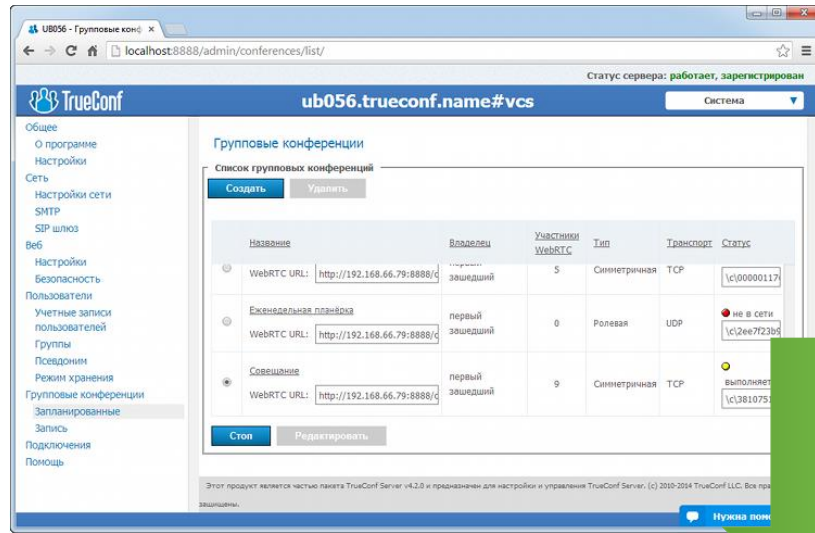
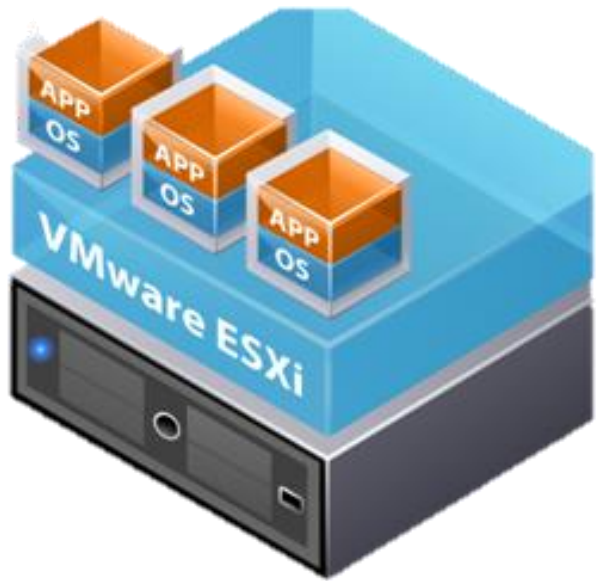
```
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01001000100101010110010
00100100101010111011011
01000101101010101001011
010010110100101101101
```



- Regular CPU can encode 1080p
- Regular CPU can decode many 1080p
- CPU based solutions become **cheaper** than DSP



# Infrastructure: Downloadable, Virtual or Cloud



No Capital Costs

Easy Evaluation

Free!

Upgradable

Scalable



# Clouds and Security

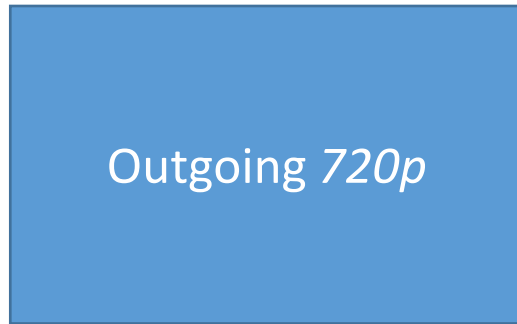


- Fast. Convenient. No headache. Accessible.
- No guarantees. Unstable channels. Privacy Issues.
- Balancing between comfort and security.
- Perfect Cloud costs more than On Premise.

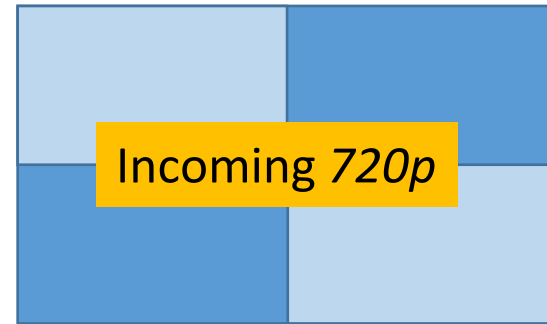
## 2. Scalable Architecture



# Old Mixing Approach



**MCU**

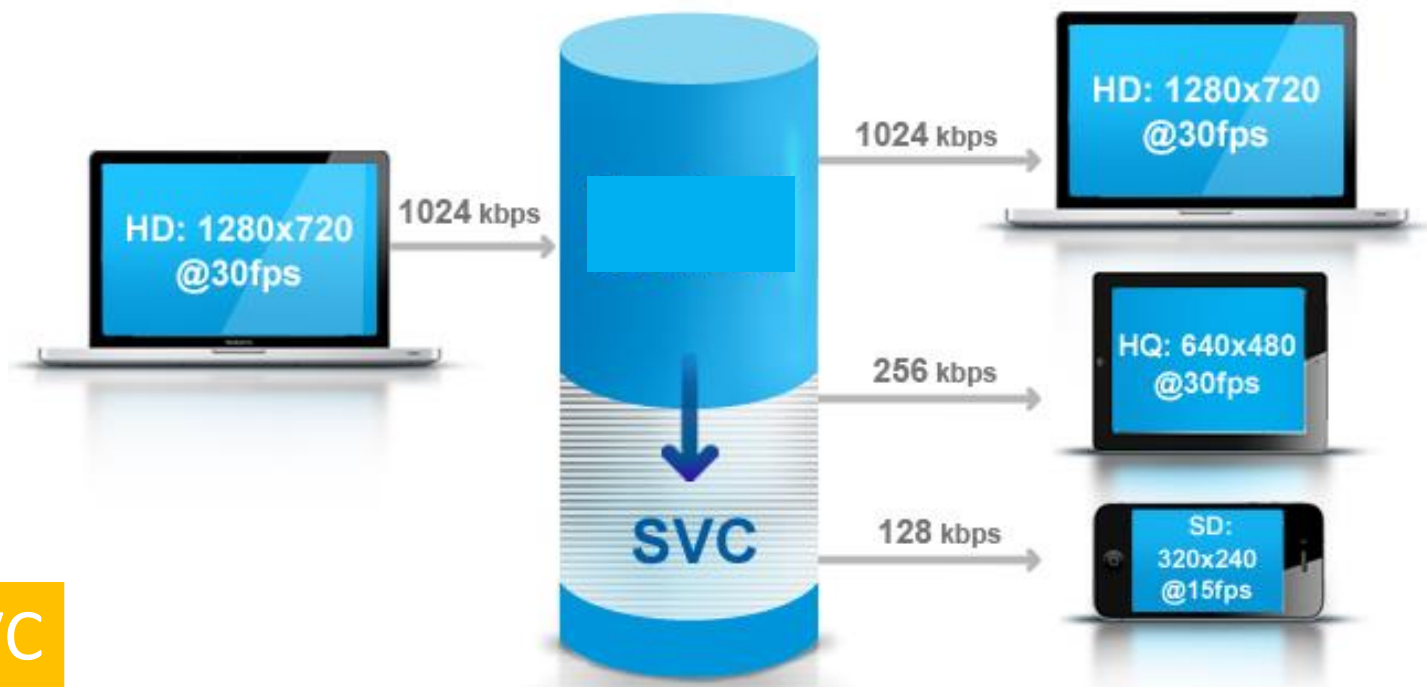


1. Decode every incoming stream
2. Mix stream
3. Encode output stream
4. Re-encode output for every user

**Delays!**

**Quality!**

H.264 SVC



VP8 SVC

But transcoding is not required with SVC  
Scalable Video Coding

Single PC can replace 100x MCUs!

# New Scalable Architecture

Outgoing 720p



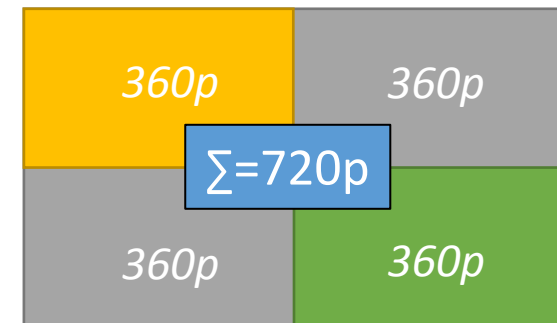
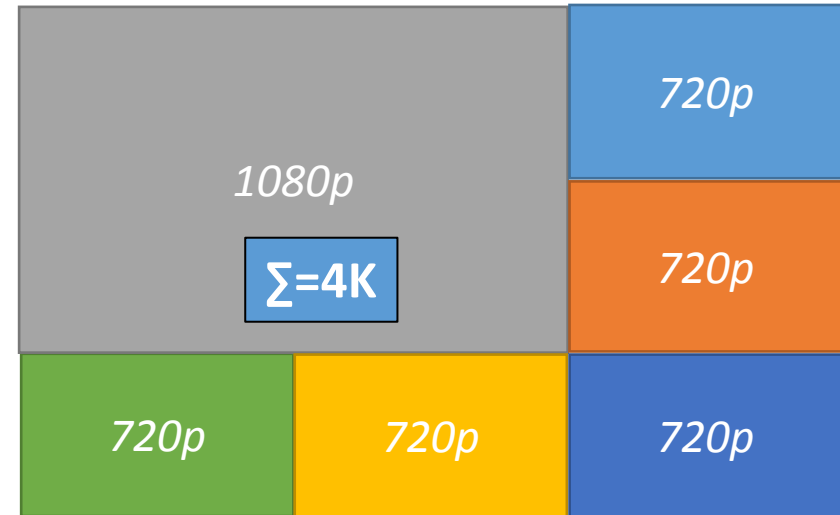
**SVC**

- Optimal set for every peer: SD → 4K
- Every try to send out maximum
- **No transcoding :)**
- **Same bandwidth!**

Fast

Lossless

Flexible

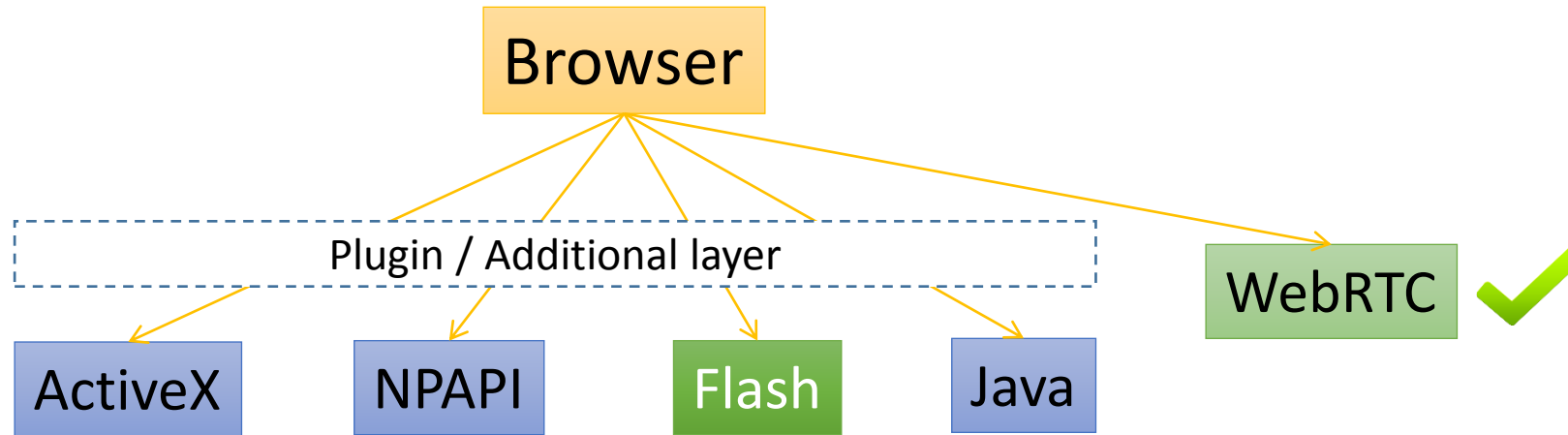




## 3. WebRTC

# Web Real Time Communications

# Real Time Communications in Browsers?



**ActiveX.** Only for windows & only for Internet Explorer.

**NPAPI.** Separate code for separate platforms. No IE support. Deprecated.

**Flash.** Proprietary. Slow development. Poor video & audio.

**Java.** Java Virtual Machine required. Exotic.

Adobe Flash Player Settings

Privacy

Allow [www.a-to-s.co.uk](http://www.a-to-s.co.uk) to access your camera and microphone?

Allow  Deny

Remember

Close

File Download - Security Warning

Do you want to run or save this file?

Name: wbxNewGPC.msi  
Type: Windows Installer Package, 779 KB  
From: webprojects.webex.com

Run Save Cancel

While potentially useful, this file could harm your computer.

WebEx Recording Editor - InstallShield Wizard

Ready to Install the Program

The wizard is ready to begin installation.

Click Install to begin the installation.

If you want to return to the previous screen for installation settings, click Back. Click Cancel to

InstallShield

< Back Install Cancel

SAS Institute Inc. WebEx Enterprise Site - Windows Internet Explorer

https://sas-support.webex.com/sc07001c/supportcenter/meeting

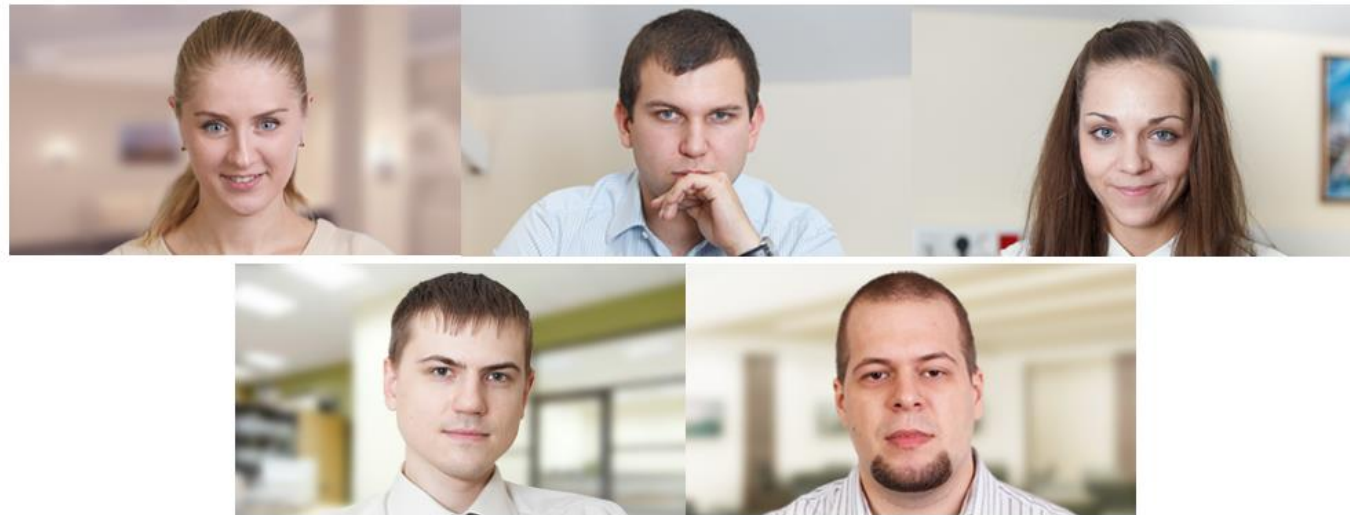
SAS Institute Inc. WebEx Enterprise Site

This website wants to install the following add-on: 'WebEx' from 'WebEx Communications Inc.'. If you trust the website and the add-on and want to install it, click here...

Welcome to Live Support

To Join the Session

# WebRTC. Instant On & Without Plugins



(c) 2010-2014 TrueConf LLC.





# WebRTC Pros & Cons

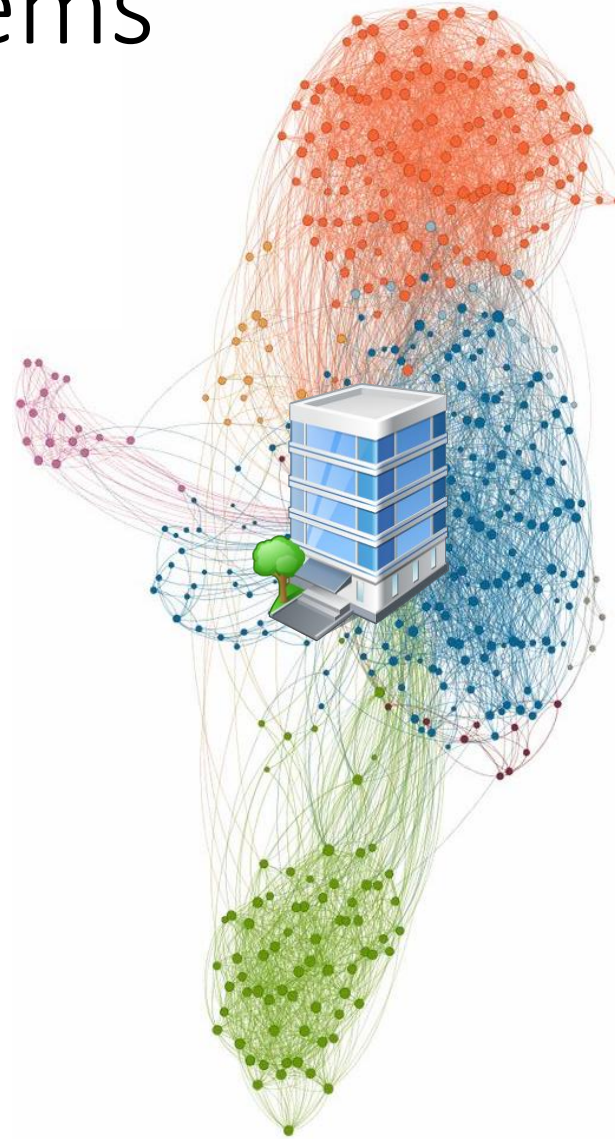
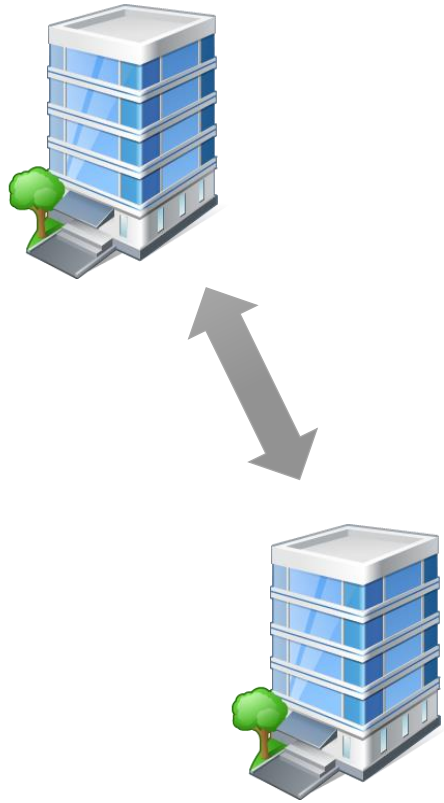
- 1 500 000 000 of desktops & mobiles on Earth are ready.
- Compatible with Chrome-based browsers, Opera, Firefox.
- Coded in JavaScript. Powered by HTML5.
- Built-in encryption & Firewall / NAT traversal.
- Great video and audio codecs: VP8 + Opus.

- Describes only one-on-one communications
- Server / MCU required for multi-point conferences
- Not really suitable for service providers
- Users prefer to use native mobile apps.

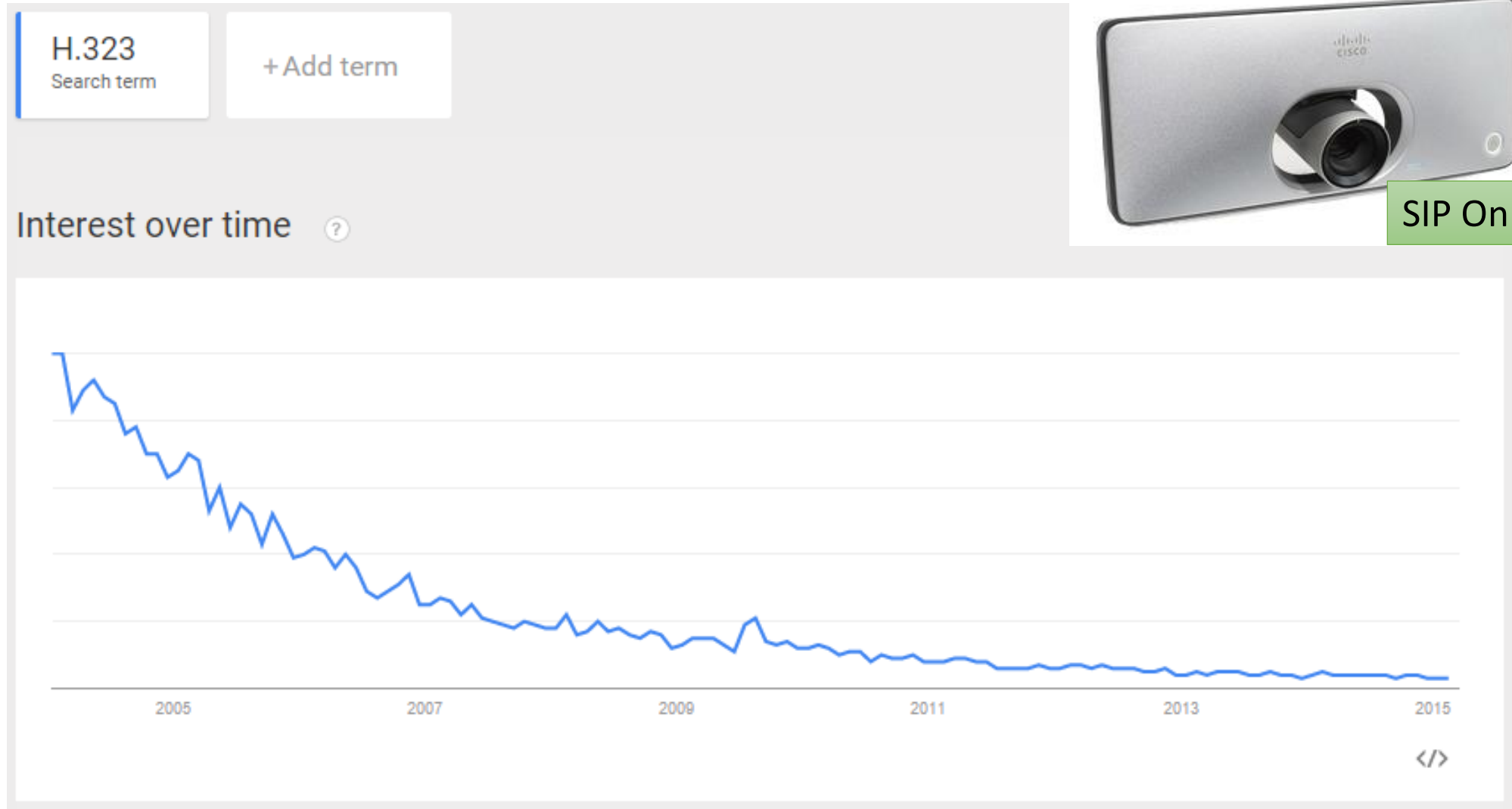
- No Internet Explorer support
- No iOS support

## 4. Interoperability = SIP

# Complicated systems



# H.323 vs SIP



# 5. Consumerization

Access onscreen help; see system status in a call

Store camera presets (when followed by a number); delete all camera presets

Cycle through display layouts

Select a far-site camera or video source

Navigate through menus

Increase or decrease the sound you hear from the far sites

Press to power the system on; hold to power off

View button presses and various menus

Select a camera or other video source

Start and stop sending content to far sites

Confirm your current selection; perform functions on highlighted items

Zoom the camera in or out

Mute the microphone audio you're sending to the far sites

Return to the Home screen

View or manage directory entries

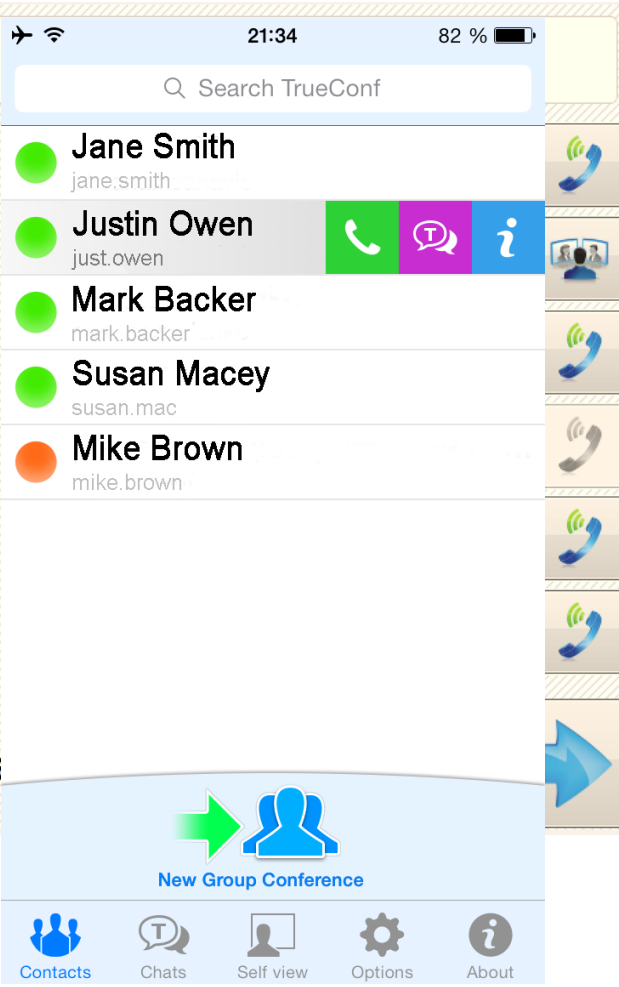
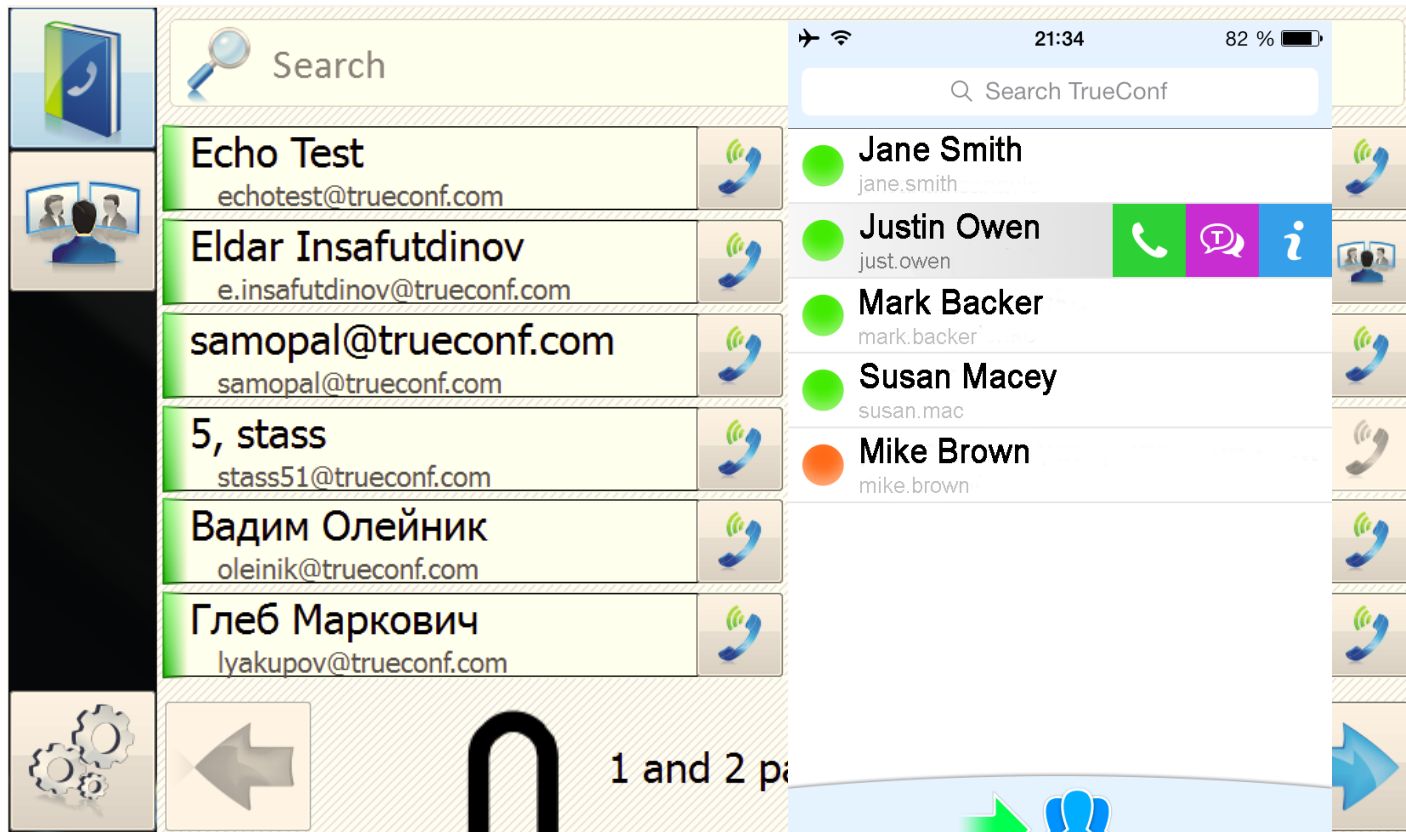
End a call

Delete letters or numbers

Enter letters or numbers; move the camera to a stored preset position

Control a programmed recording device or Polycom RSS™ server





# 5. Hi-End Peripherals & Wireless Interfaces





USB

POE



Miracast

WiDi

AirPlay



## 6. Mobility / BYOD

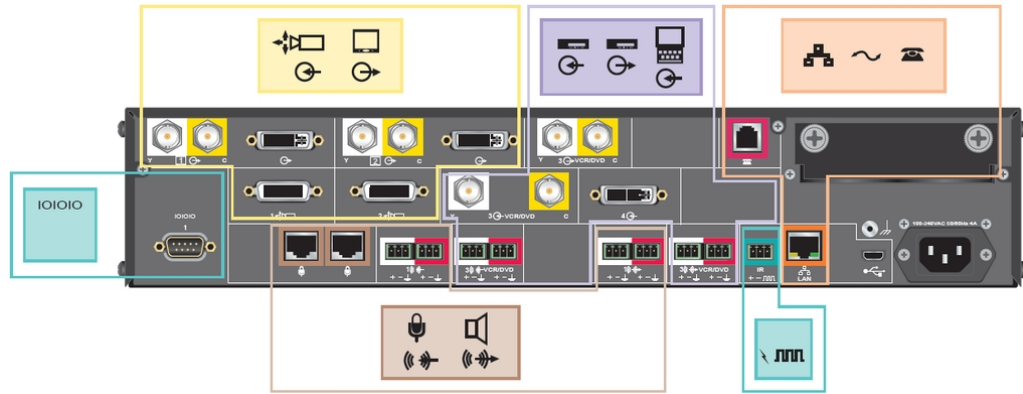
- Powerful mobile CPU
- Additional hardware encoders
- Nice UI & cameras

- Point of view (Bottom to Top)
- 3G/4G Coverage
- Battery usage



7. VC is not *AV* anymore. It's IT.

# Software combines all hardware features



- Multipoint conferences
- Scheduling
- Presence Statuses & UC
- Telephone & VoIP
- Recording & Streaming
- NAT Traversal
- SIP / H.323 Registrar

# Software Brings New Challenges to Sales

- IT Team focus
- Network and IT experience
- How to Sell Cloud?
- How to add more value (services, integrations)
- Better customer care

# What we should count on?

- Video conferencing should be available at all times, not just in conference rooms.
- It should be cross-platform.
- It should be cheap and easy scalable.
- It should be user-friendly, not engineer-friendly.
- It should be able to connect guests.
- It should be able to connect with other systems.
- It should work via the Internet/satellite/3G, everything else.
  
- **And all that should not decrease quality!**



