

UC Trends @ SWINOG

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Goal

- I had a look in my crystal ball to find out where are the future trends in communication & collaboration
- As with every look in a crystal ball these are just assumptions and personal opinions

Timeline

- ~1840 Telegraph
- 1860 – 1876 Telephone
- 1946 Mobile Telephony
- 1955 First international automatic telephone exchange (Lörrach-Basel)
- 1969 ARPANET
- 1973 Transmission of digital Voice over ARPANET (Network Voice Protocol is actually older than IP)
- 1980 ISDN
- 1989 WWW
- ~ 1995 Internet Telephony
- 1996 RTP , 1998 H.323 , 1999 SIP , 1999 Jabber / XMPP
- 2017 Phase out of Analog Telephony / ISDN in CH
- ???

Is this all there is?

I don't think so

Cloud-Based UC

- ... or hosted UC ... or UC-as-a-Service
- Has been around for years already but market acceptance was low
- Studies say that the market share of cloud solutions is growing and is interesting for smaller companies (<2500 users)

Security

- Encryption will be more important with UC going to the cloud
- Standards have been around for a long time already but most PBX still do not use Encryption
- The danger of attacks or fraud is also growing when UC is in the cloud
- **Security will be a hot topic for UC in the next years**

UC as a Web-App

- Problem
 - Communication between a customer and a company is always running through one channel
- Solution
 - Multi-Channel Kommunikation => Chat, Video, Voice, WWW, Mail
 - Integration with Customer Self-Service applications ... the customer is getting very targeted help when he is stuck
 - ... and: it happens in the browser

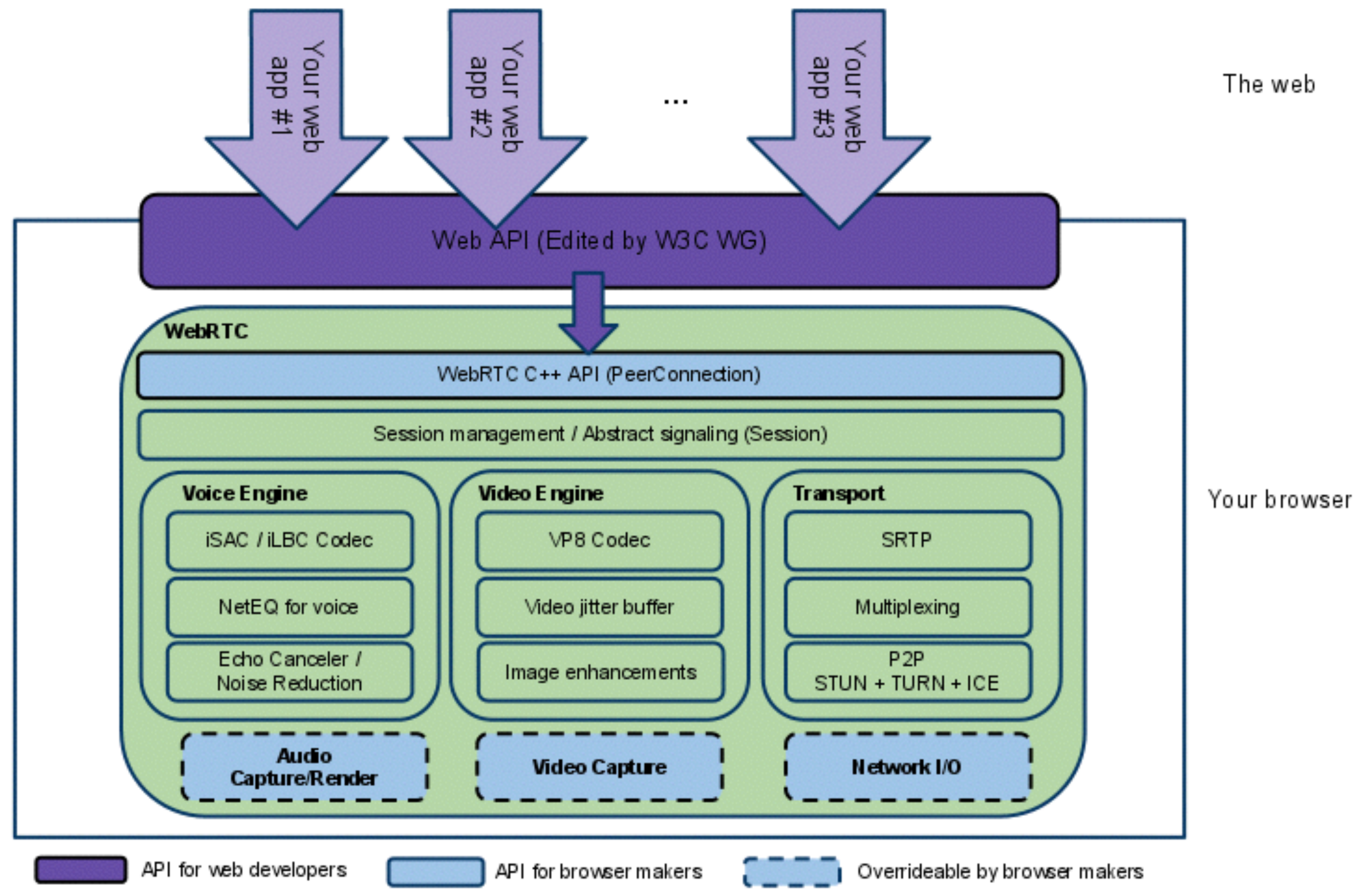
UC as a Web-App II

The screenshot displays the VideoDesk website. At the top is a navigation bar with the VideoDesk logo and links for HOW IT WORKS, SERVICE & SUPPORT, PRIVACY & SECURITY, ABOUT, CONTACT, and LOGIN. Below the navigation bar is a blue banner featuring a background image of people working. The main content area includes a large diagram illustrating the customer journey: 'dialogue' (represented by a laptop and speech bubbles) leads to 'true!' (represented by a play button icon), which leads to 'purchase' (represented by a shopping cart icon). To the right of the diagram is a video player window titled 'LOGO' showing a customer support agent, Kate Crawford, with the text 'Product support'. Below the video player is a chat interface with a message from the agent: 'The agent can see and hear you.' and a response from the user: 'Can I activate your website? We will be able to see and hear each other.' The chat interface also includes a 'Video access allowed' button and a 'Send' button. At the bottom of the page, there are two columns of text: 'Website Integration and' and 'Agent Onboarding, Training,'.

WebRTC

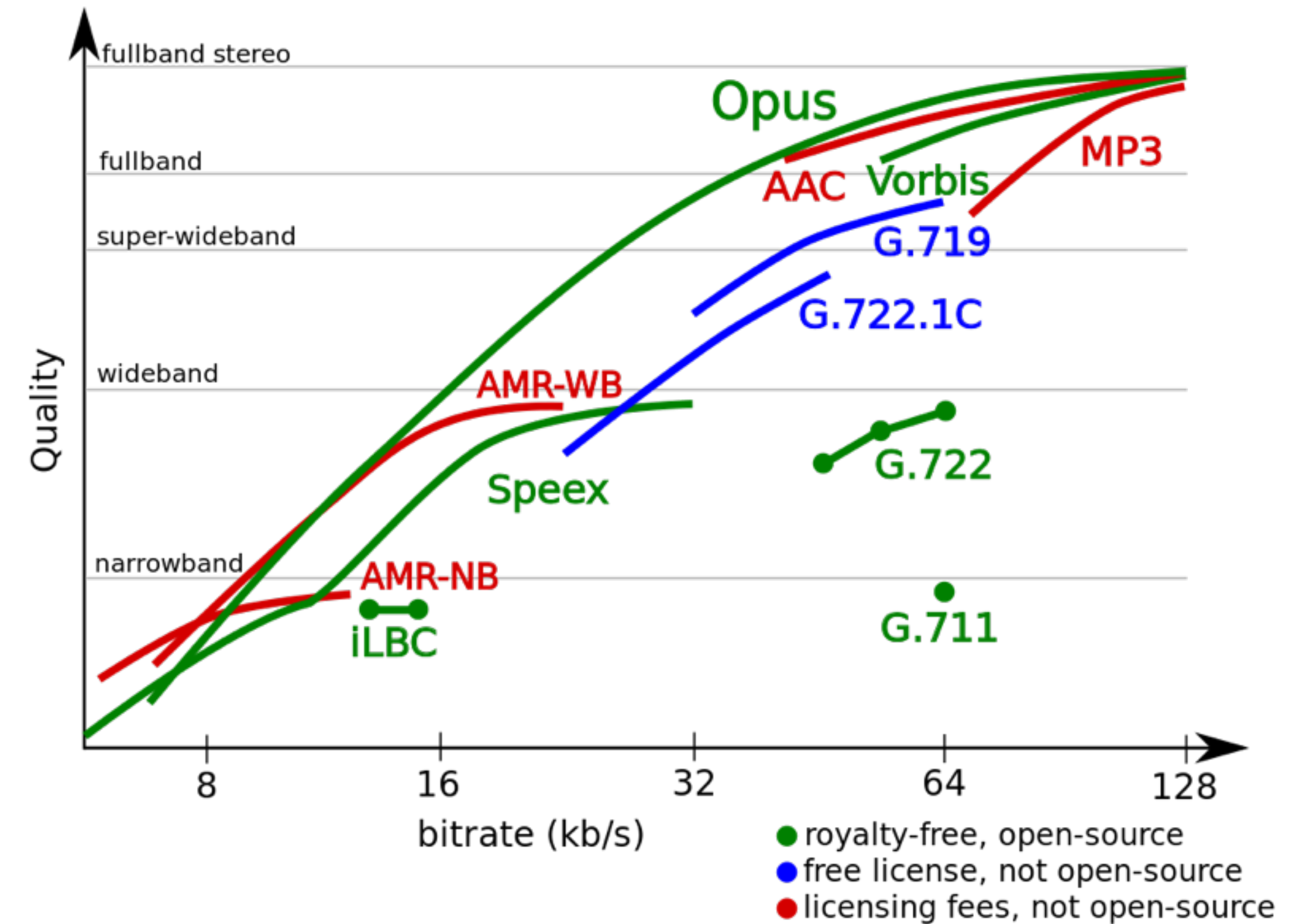
- UC as a Web-App leads directly to WebRTC ...
- WebRTC is a W3C Standard to bring Video / Voice, File-Transfer, Chat and Desktop-Sharing into the browser

everything in the browser



WebRTC II

- Technique
 - Framework: HTML5 / Javascript
 - Transmission: SRTP / Jingle-XMPP
 - Streams are encrypted and Peer-to-Peer
 - Codecs: Opus / VP8



WebRTC III

- WebRTC is already widely deployed (Chrome, Firefox, Opera; Android, iOS)
- UC is not going to happen in specific clients anymore but in the Browser and it's going to be with WebRTC

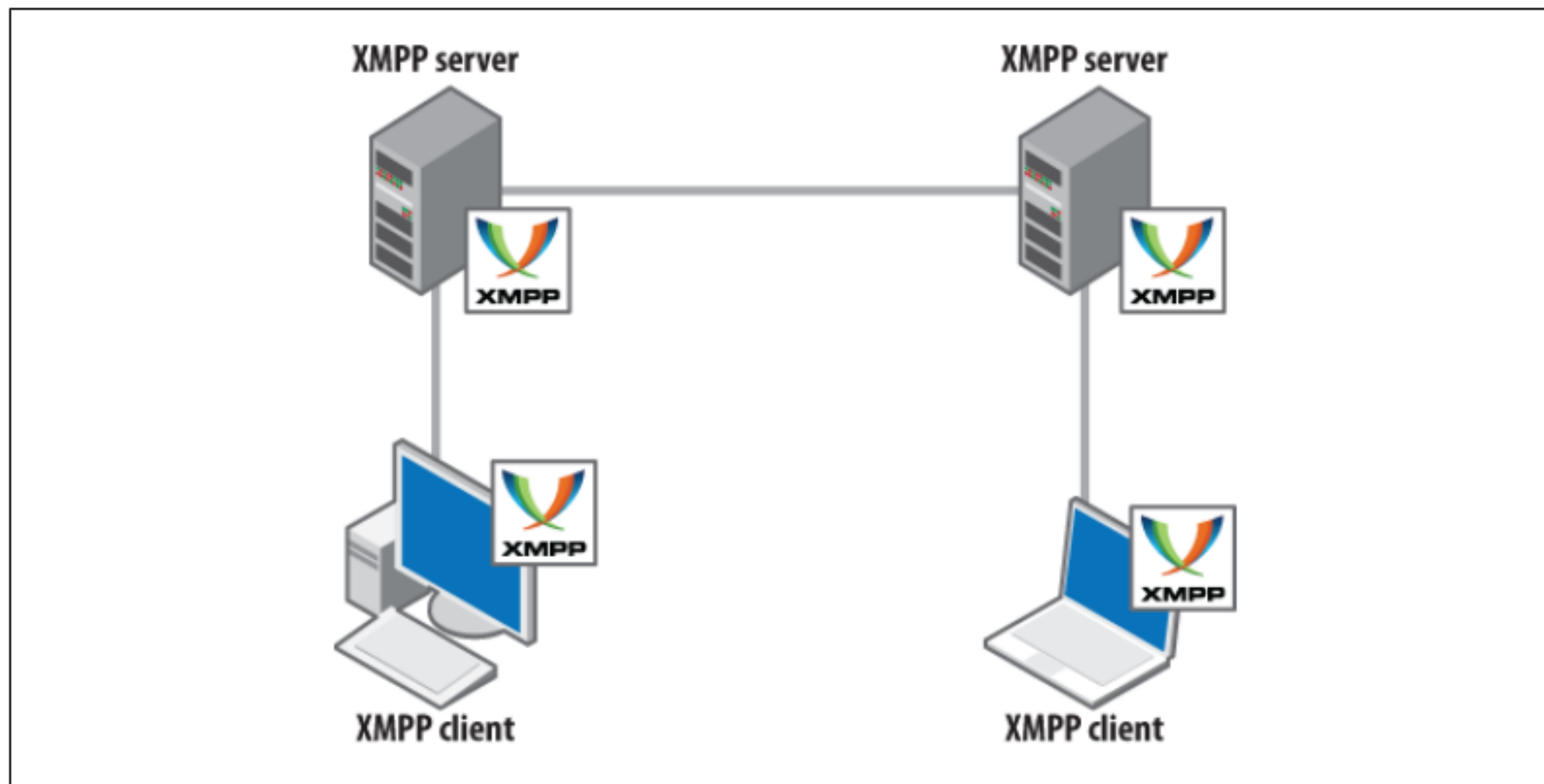
Social Integration

- Problem
 - Collaboration within companies is widely established, but collaboration in virtual project-teams is still kind of difficult
- Solution
 - There are already solutions facing the problem like Cisco Spark, Circuit, etc.

What's happening to the PSTN?

- Analog / ISDN will be replaced by VoIP soon
- All-IP, Cloud-based, Browser-based, etc ...
- The Mail-Address will replace the phone number as identity.
- **The PSTN will be obsolete in the future**

how does it work without PSTN?



What's happening to Mobile networks?

- Same is true for mobile communications
- **Mobile networks will be Data-only**

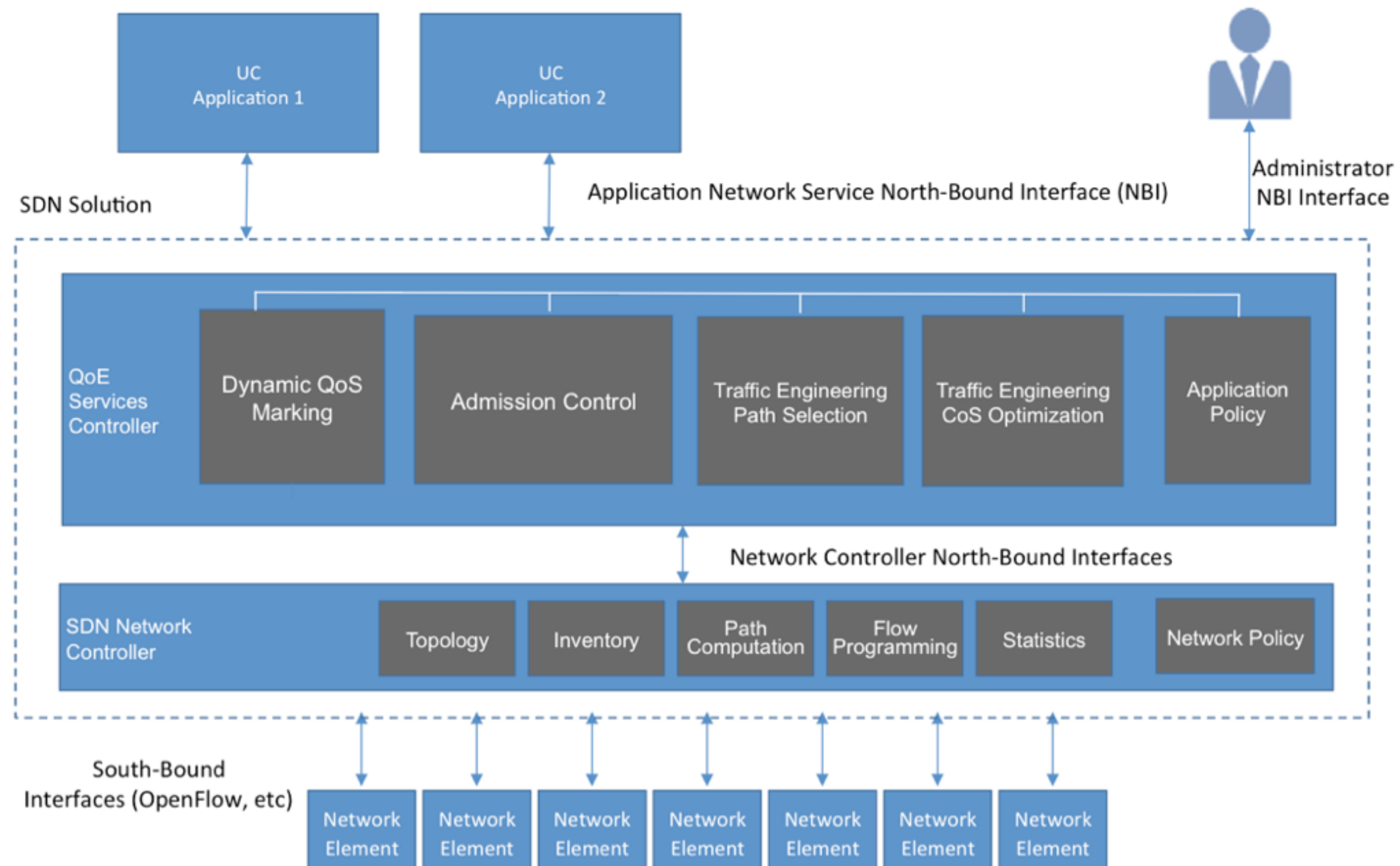
Quality Assurance

- Quality problems is as old as VoIP (and UC)
- Company services are mostly OK regarding quality. Cloud based services are still considered nice to have.
- Two examples for Quality Assurance trends are explained : UC & SDN, UC Monitoring

UC SDN I

- Problems of UC in a network
 - QoS is a pain in the as
 - Different kinds of UC Application (Voice, Video, Chat) have different Requirements
 - Network cannot give Feedback to the UC Application regarding its current state (e.g. Congestion, Interruptions, etc.)

UC SDN II



UC SDN III

- Solution
 - UC Application accesses the SDN controller to allocate resources for UC sessions (calls) dynamically
 - SDN controller reports outages, congestion, etc. to the UC application which can modify its behavior accordingly (Call Admission Control, Change codecs, etc.)

UC state of the art

- UC is still considered “nice-to-have”
- however its adaption is steadily growing
- it's getting more business critical

showcase day



quality too often is **it

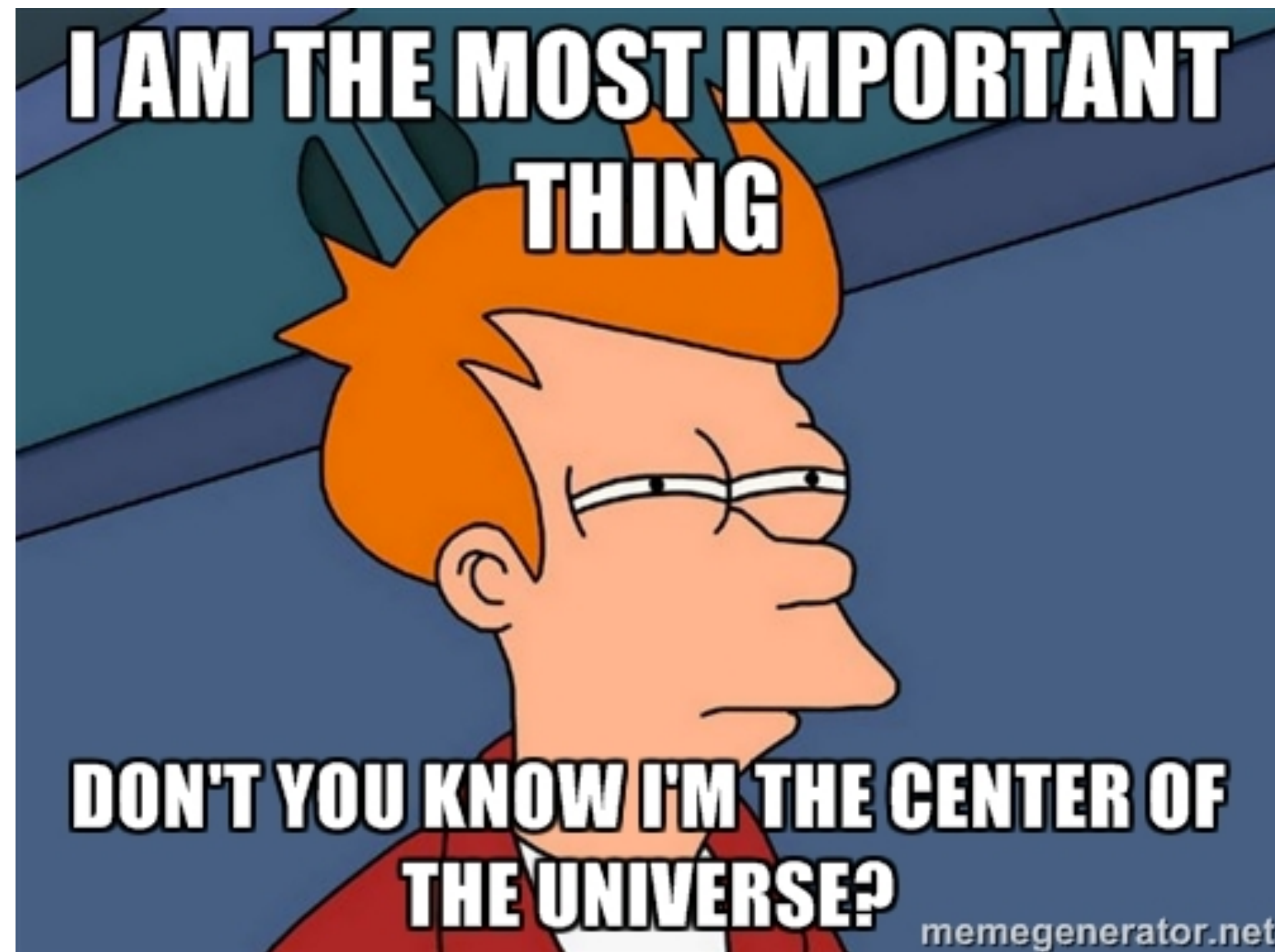
- you as a network professional don't want to be responsible for this
- so the only choice you got...
- you need to know in-depth and “real-time” what's going on!



how to monitor UC?

- traditional monitoring tools lack UC capabilities
- there's very little to no support in open-source monitoring tools
- some tools I heard of with UC capabilities
 - Prognosis
 - EMC SMARTS
 - CA NetQoS Unified Communications Monitor
 - Cisco Prime Collaboration (Assurance)
 - SolarWinds
 - Unify
 - Nectar

they all have one major problem



- what we really want?
- small well suited components to collect, transport, store, analyse, alert & visualise data
- ability to integrate with other tools/systems over API's

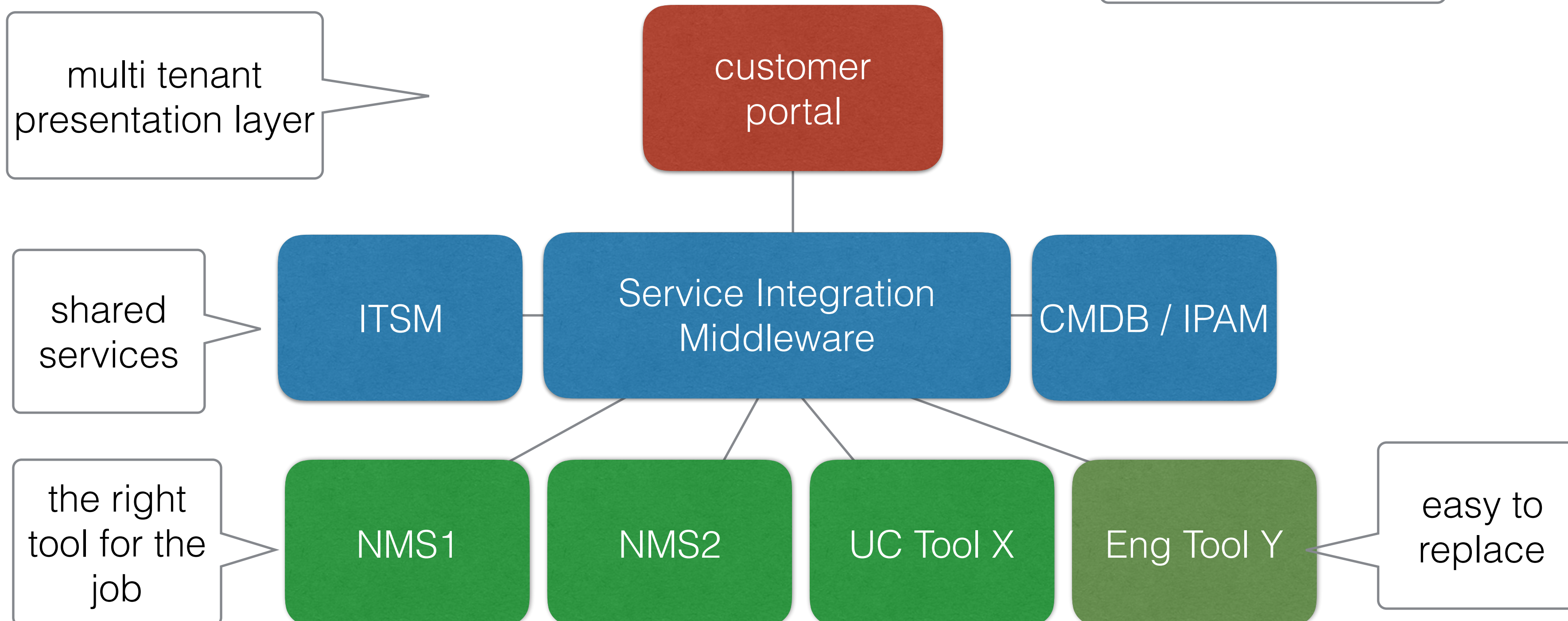
ok, two problems

- most commercial tools don't scale for service providers
 - performance wise
 - money wise
- therefore lots of SP's build their own tooling based on open source software

you need a flexible monitoring architecture

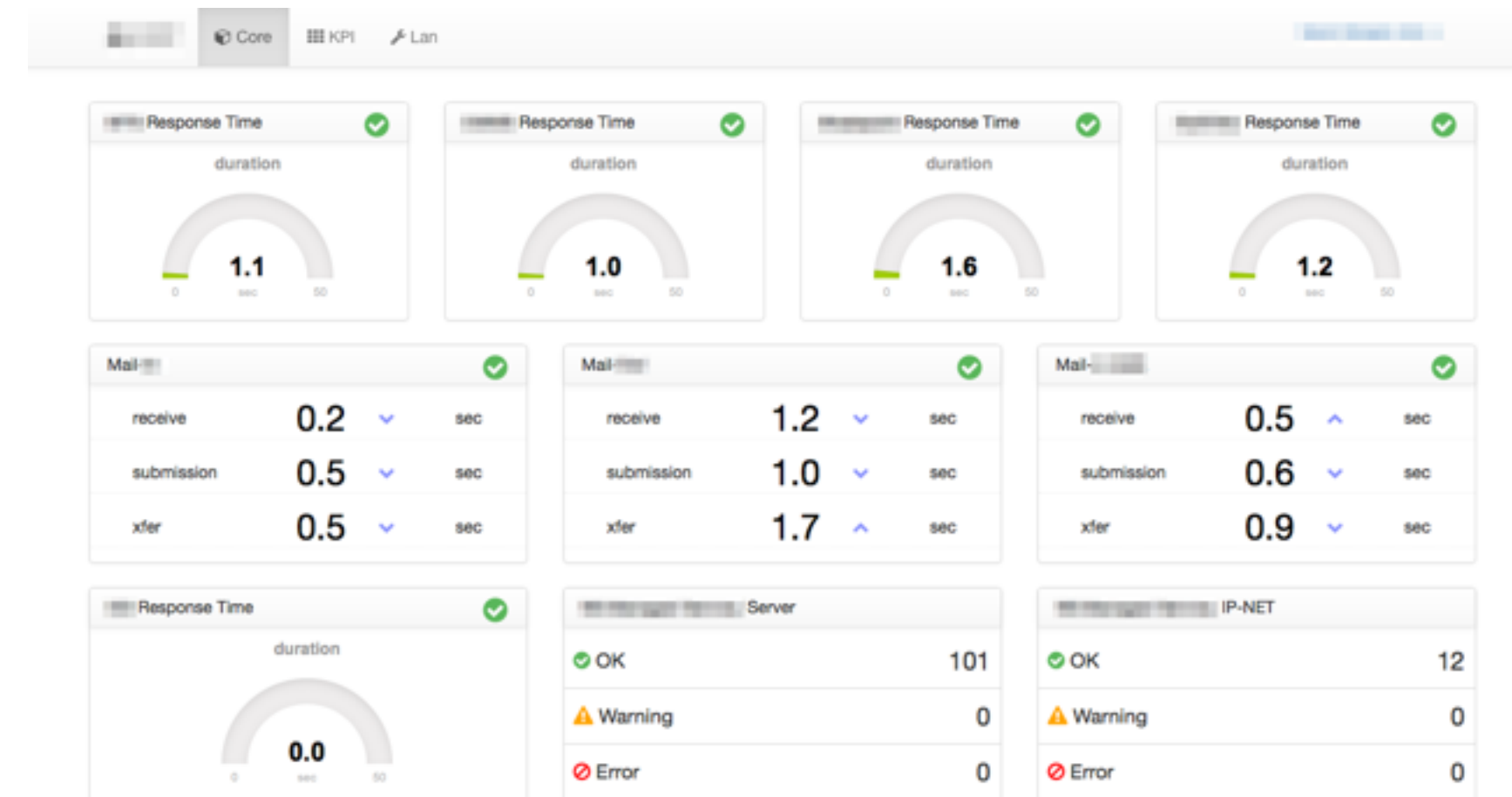
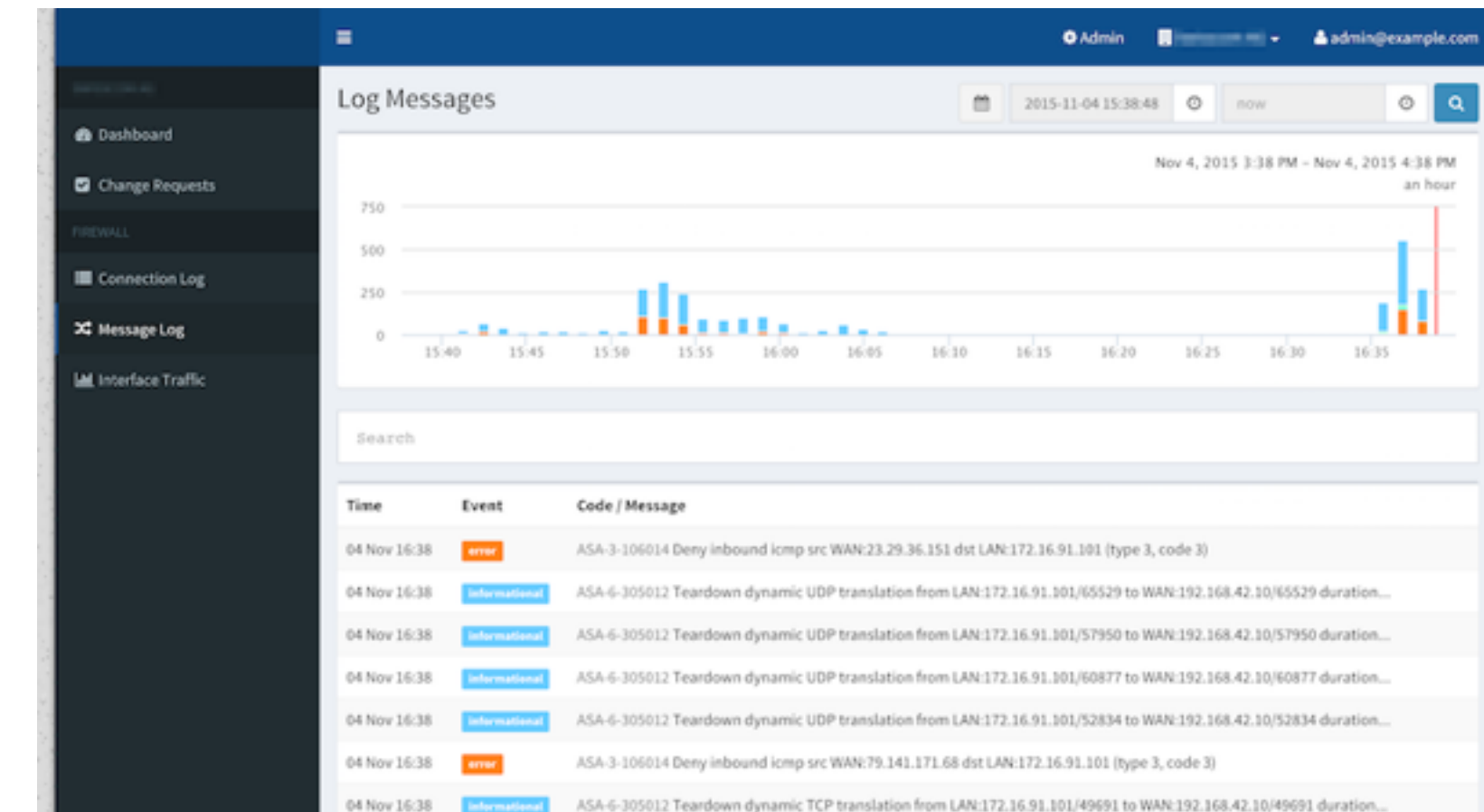
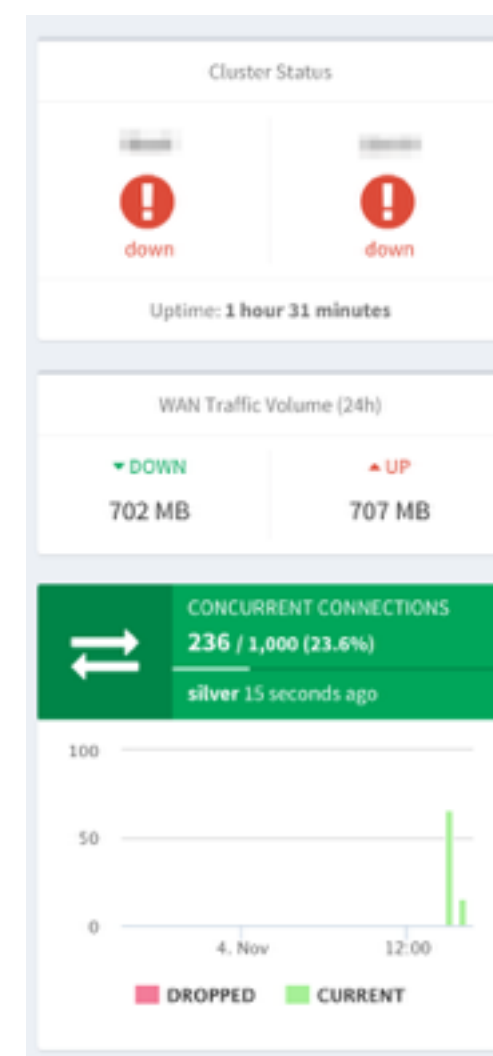
(example high level schema)

especially in the
age of managed
services



Managed Service Portals

- the portal is where you make the difference
- an open architecture is key



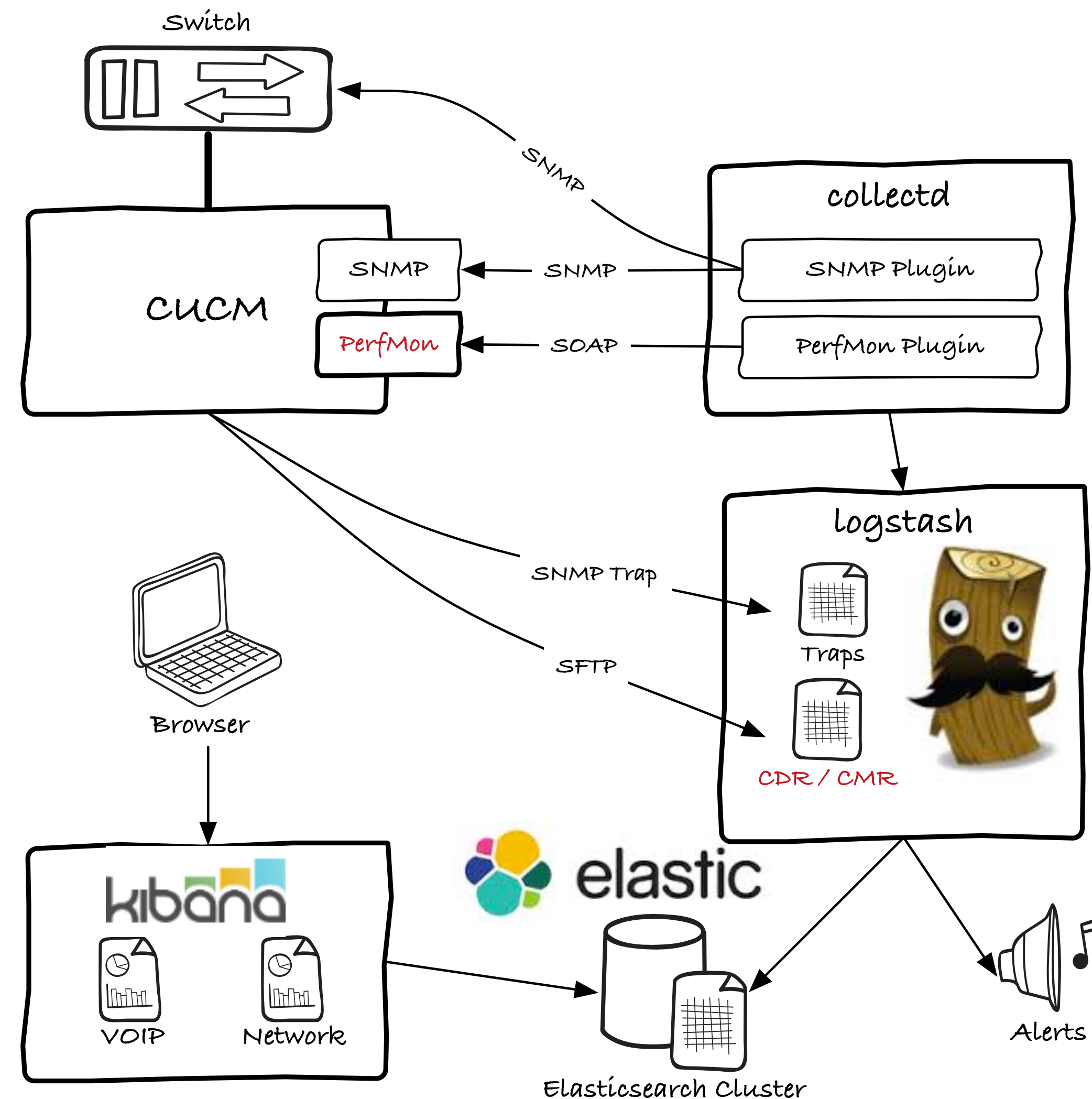
concrete use case projectX

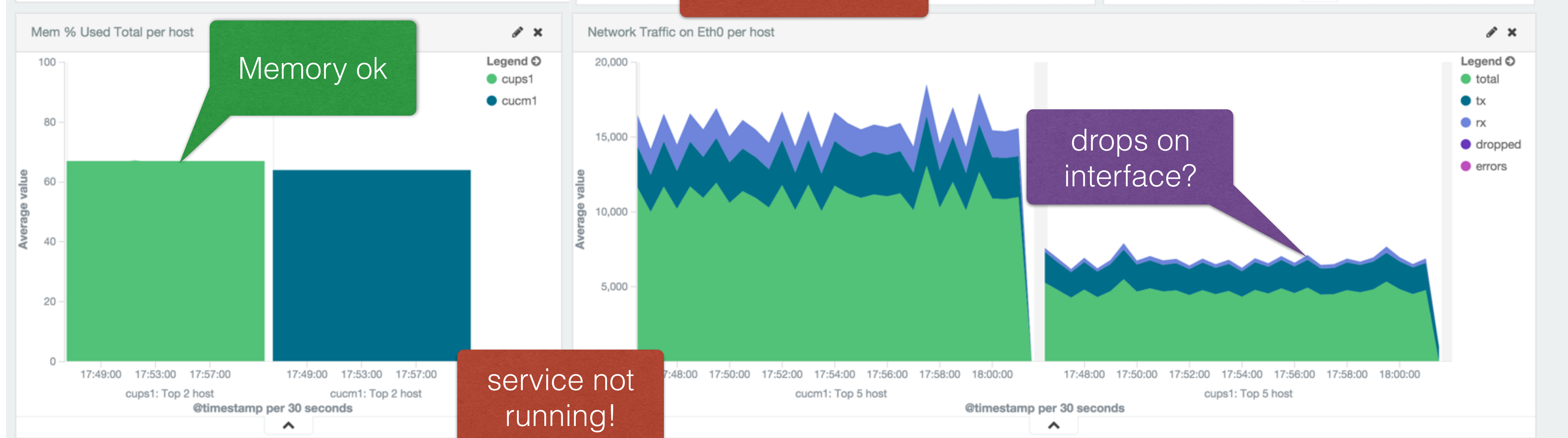
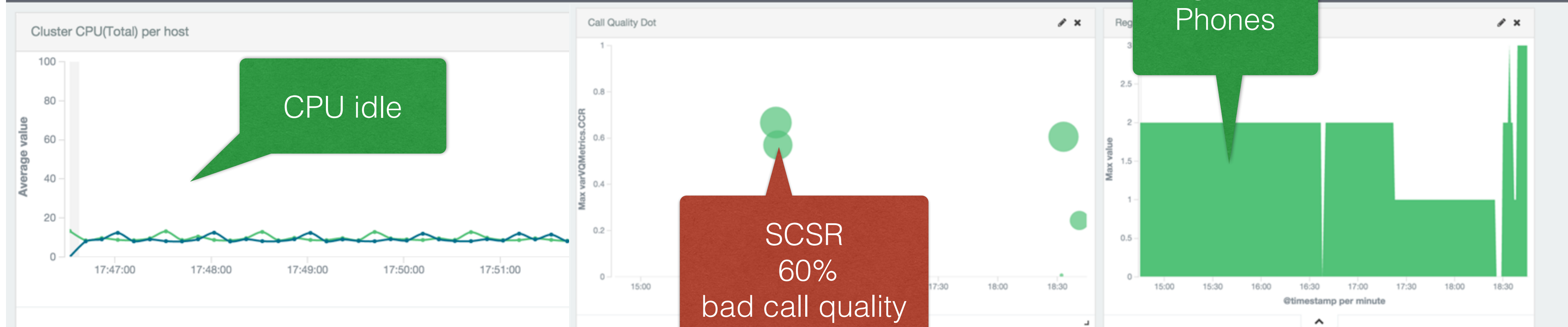
- medium sized company, uses cisco UC, needs to know what's going on
- base requirements
 - performance of CUCM
 - alarms when CUCM services are down
 - call volumes (sip-trunk, internal calls, ...)
 - call quality based on SCSR (severely concealed seconds ratio)

how to obtain this data?

metric	method
performance of CUCM	snmp & SOAP
monitor CUCM services	traps
call volumes (sip-trunk, internal calls, ...)	SOAP
call quality based on SCSR	call management record

detail architecture with ELK stack





Cluster system Services

Time	host	csco-syslog::clogHistMsgText.0
November 4th 2015, 18:01:04.041	10.10.1.30	: 35719: cucm1.zebbra.ch: Nov 04 2015 05:01:07 PM.9 UTC : %UC_RTMT-2-RTMT_ALERT: %[AlertName=CriticalServiceDown][AlertDetail= Service operational status is DOWN.#012Cisco Sync Agent,Cisco XCP Directory Service,Cisco XCP Message Archiver,Cisco XCP XMPP *

conclusion

- UC is evolving and moving towards the web
- UC and the network need to talk together
 - across provider boundaries
- UC needs to be controlled

then we can finally talk to each other
in a quality like 20 years ago...



questions, thoughts, totally
confused?

