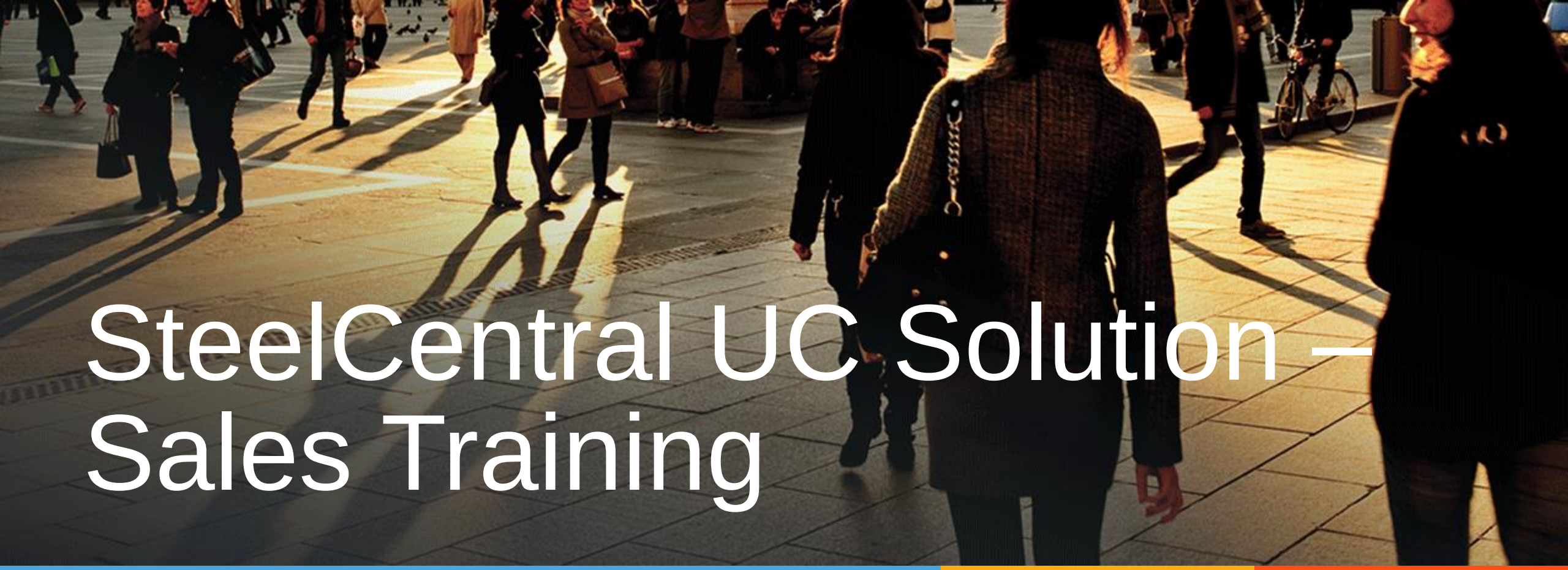


SteelCentral UC Solution – Sales Training

UC360: Global UC Visibility and Analytics

riverbed®

Agenda

1. Что такое UC и VoIP?
2. Что происходит в индустрии?
3. Какие проблемы?
4. Что у нас есть в «бардачке»?
5. Кто круче?
6. Кому это надо

UC больше чем модная игрушка

- Бизнес - коммуникативная игра
  - **Голосовые звонки**: очевидная потребность
  - **Video conferencing**: встречи сидя в офисе (экономия на поездках) (!)
  - **Application sharing**: новая «фича»

- UC в отличие от большинства приложений peer-to-peer
  - Традиционный подход (stand alone packet capture) очень дорого - $$$! (e.g. Netscout, traditional ARX/Shark)
  - К счастью есть более масштабируемое решение.

кто лидирующие игроки в UC – их 3

- CallManager

- Telepresence

- Cisco webex
- Jabber

Microsoft Office 365

skype Microsoft Lync 2013

- Aura CM

- Scopia Video

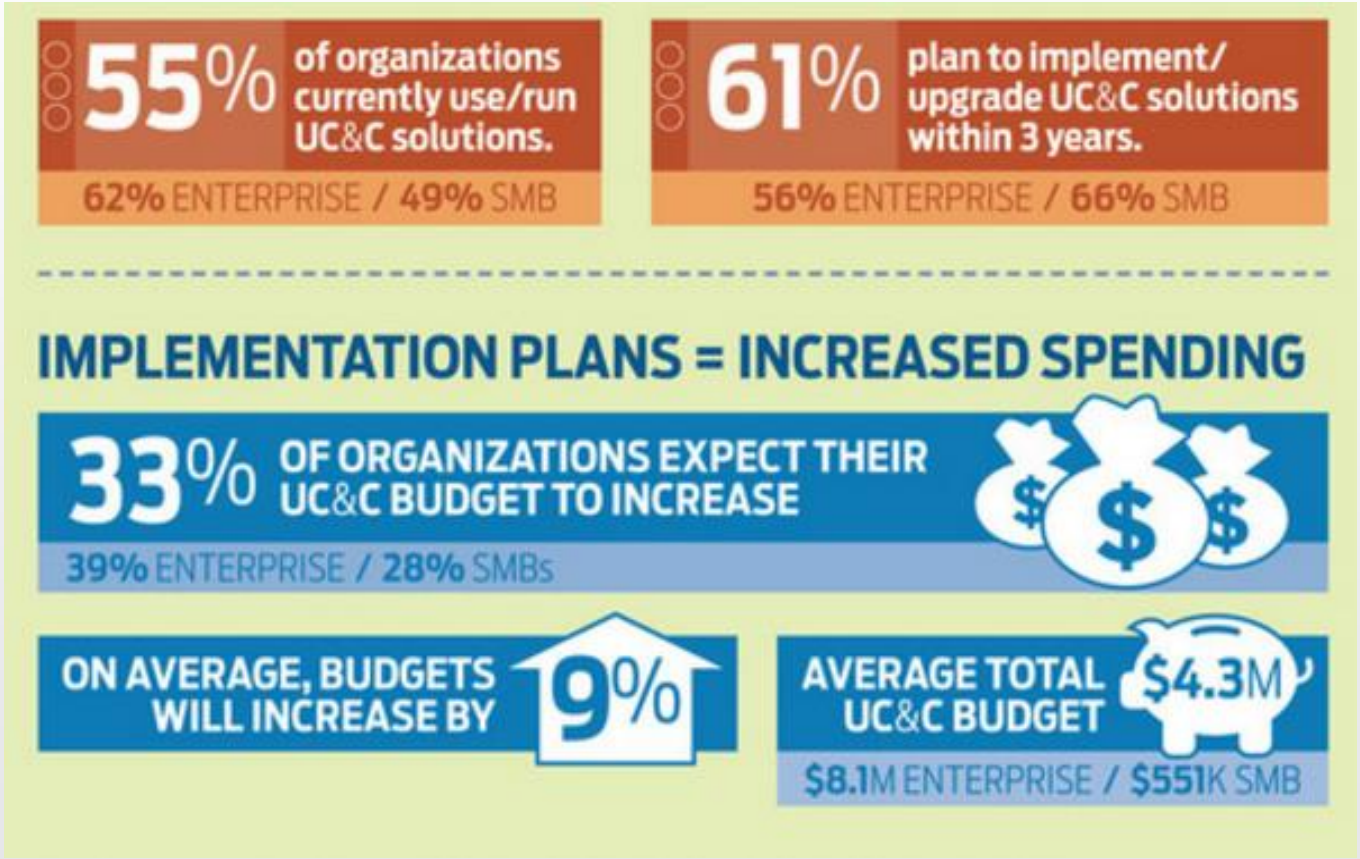
UC Market Share Leaders (без комментариев)

- Cisco UC: dominates enterprise communications, especially Fortune 500.
  - типичный desk phone внутри компании
- Avaya UC: big player in contact center applications and federal space.
  - типичный call-центр компании
- Microsoft Lync/Skype for Business: fastest growing collaboration, part of O365 now.
  - типичный desktop компании

Инвестиции в UC растут!

где рыба там и рыбаки!

- Microsoft агрессивно продвигает O365 E5 Облачный PBX
- Cisco продвигает WebEx, Jabber и Spark
- Avaya в роли догоняющего удерживает плацдарм call-центров



Чего от нас хотят заказчики?

- консолидация инструментов
- консолидация команд
- быстрого разрешения проблем
- отслеживание прогресса при миграции/внедрении

CIO & IT Operations

Line of Business

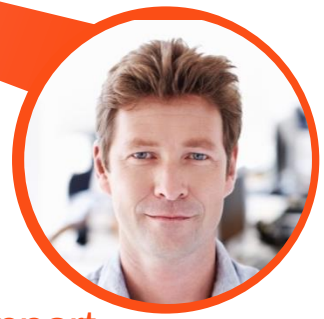
- отчёты об использовании
- билинг

сетевики

- доказательства невиновности
- простого и быстрого поиска
- интеграции с Flow/Packet

Voice/Telecom

- Видимость транков и провайдеров
- инвентаризация и изменения
- подглядывать за сетевиками

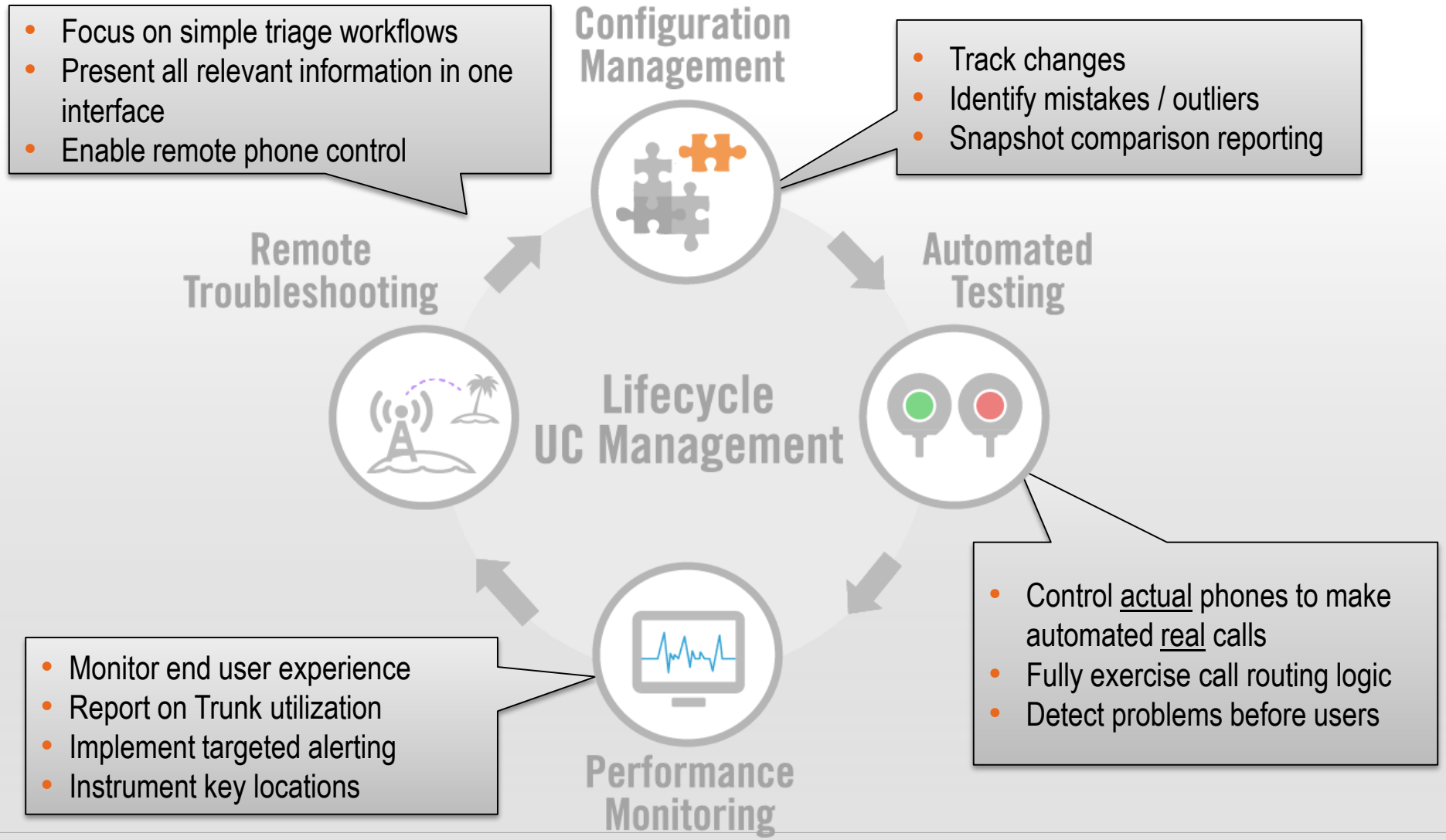


Support

- простой процесс поиска и передачи проблем
- возможности удалённой поддержки

UCExpert (под покровом)

Что вы знаете о 4x основах VoIP?



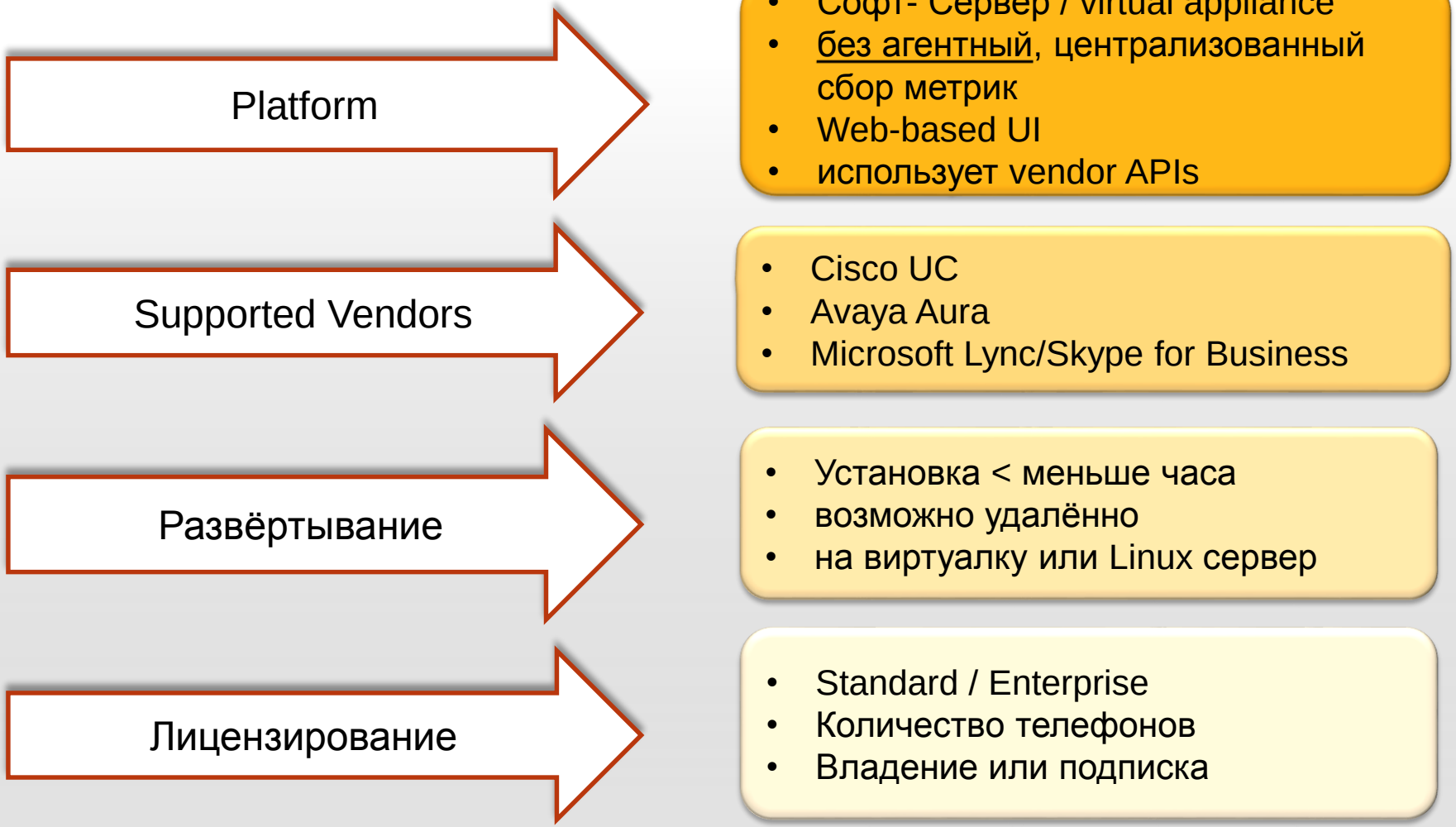
Как это устроено?

Это софт

- в отличие от других NPM решений, UCExpert не захватывает сетевой трафик.
- вместо этого он взаимодействует с сервером предоставляющим UC сервис для:
  - Сбора CDR и Media-Info (качество так как его видят пользователи)
  - Сбора конфигурационных данных (план звонков, настроек и т.п)
- и при этом **БЕЗ** необходимости установки доп.агентов

- к тому же, UCExpert предлагает уникальную особенность удалённо управлять телефонами для эмуляции звонков.
  - чтобы не бегать от стола к столу и не проверять работоспособность изменений и апгрейда

маленько резюме…



кому мы продавали до сего дня?

Financial Services

JPMorganChase
Bank of America
citi
AB Bernstein Global Wealth Management
Wells Fargo
Goldman Sachs
NOMURA
M&T Bank

Healthcare

Cigna
Florida Blue
Centura Health
Memorial Sloan-Kettering Cancer Center
Pfizer
ASSURANT
BayCare Health System

High Tech & Retail

NetApp
REVLON
EXPRESS
VanHeusen

Production & Manufacturing

Phillips 66
United Water
NRG
Perdue
P&G Procter & Gamble
Lockheed Martin

Partners

hp
Cisco
at&t
PRESIDIO
Practical thinking for a connected world.
verizon business

Преимущества

Видимость и удалённое управление

Save Time	Cut Cost	Better Quality
Быстрее и проще поиск информации	Консолидация сервисов, удалённая диагностика	непосредственная оценка пользовательского опыта
Не нужно «дёргать конечников» для проверки работы	персонал поддержки больше успевает	проверка качества без привлечения

UCExpert 6.0 Review

Тема для выхода UCExpert 6.0

Глобальная аналитика и видимость UC

- Фокус на Hosted Skype for Business (aka Lync)
- Adoption and Performance dashboards
- 1й уровень поддержки (упрощённый разбор проблем)
- Унификация поддержки для Cisco, Avaya и Microsoft UC

Основные Драйверы (Use Cases)

UC Adoption

- Переход от одной технологии к другой (где мы)
- Тренды использования

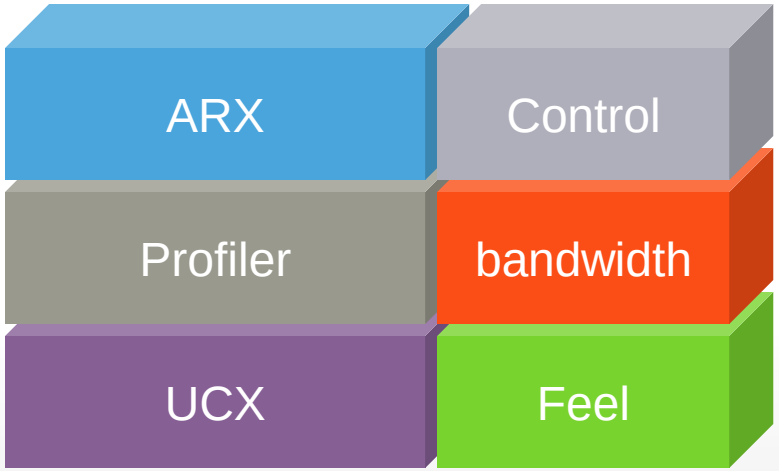
Troubleshooting

- Characterize and Triage
- Device, Network, or User Mistake
- Isolate network path and location

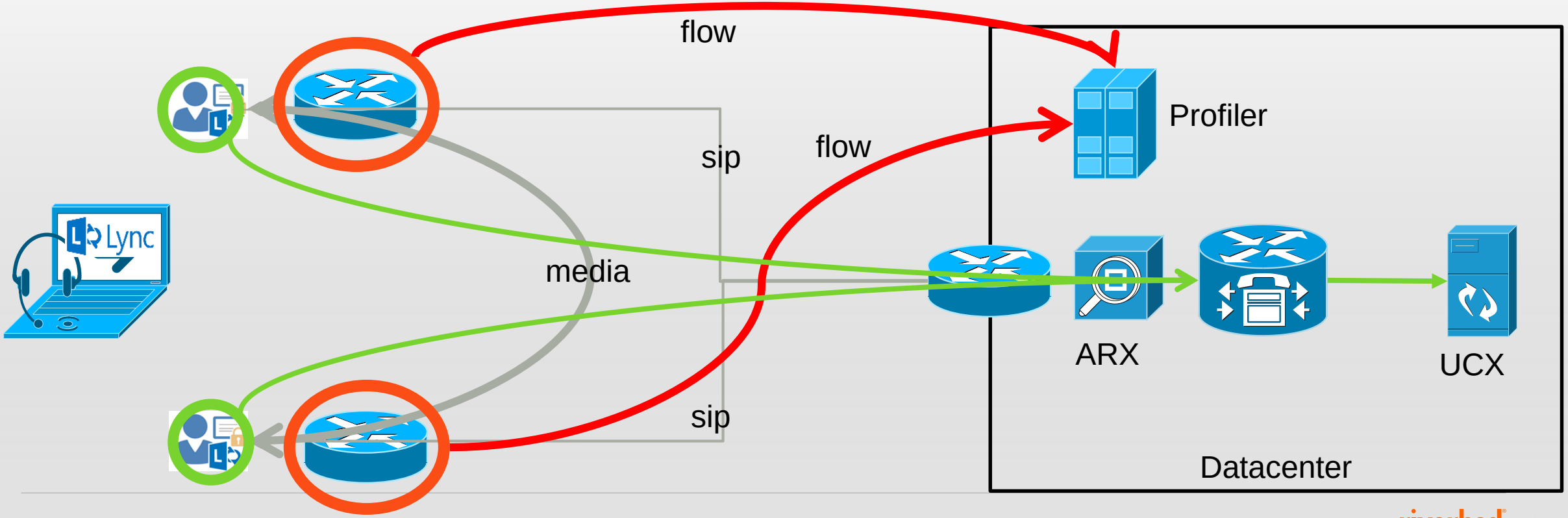
Global Performance Visibility

- Пользовательский опыт для всего предприятия, для каждого пользователя, постоянно и дешево

Чем смотреть UC Deployment?



- Контрольный трафик – в UC Сервер
- Проблема видимости «P2P»



Media path

С чего начинать поиск

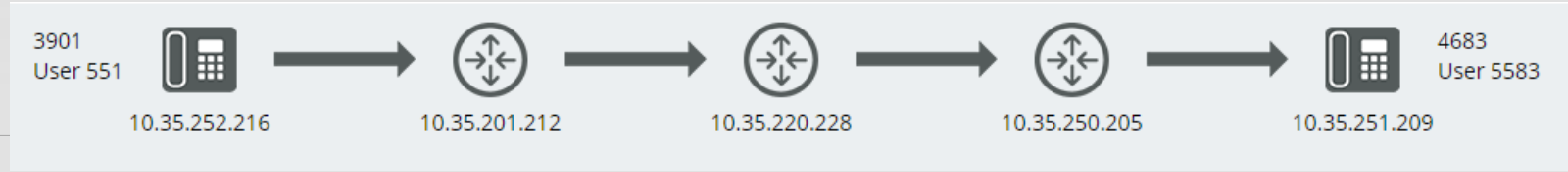
- Информация о пользователе
  - Периферия (microphone, camera)
  - Местонахождение (Inside, Outside)
  - Подключение (Wireless/Wired)
  - Версия ПО и операционки
  - Версия железа и конфигурация

Property	SanFranciscoUser173 > SanFranciscoUser132
User	SanFranciscoUser132
Extension	+14157439132
Model	RTCC/5.0.0.0
Version	Windows 6.2.9200
User Agent	RTCC/5.0.0.0
Role	callee
MAC Address	00-15-5D-C8-F4-03
IP Address	10.35.200.119
Port	16416
Connection	Ethernet
Registered Inside	true
VPN	false
Link Speed (Mbps)	4295
Operating System	Windows 6.2.9200
Operating System Arch	x64
Service Pack	0.0
Platform Type	3 (Server)
WoW64	false
CPU Name	Intel(R) Xeon(R) CPU E5-2640 0 @ 2.50GHz
CPU Cores	4
CPU Speed (MHz)	2500

- Информация о вызове

Call						Calling				Called		
Start Time ↓	Duration	Outcome	Media	Codec	Type	User	Number	Model	Location	User	Number	Model
1-7-16 11:48:14 AM	7m 7s	Normal		SILKWIDE/16000	Hairpin	MSFT User 1621	4691	Lync Android	Sunnyvale	MSFT User 5826	4610	Lync Android
1-7-16 11:48:13 AM	2m 8s	Short		SILKWIDE/16000	Internal	MSFT User 5983	4630	Lync iPhone	San Francisco	MSFT User 8134	2160	Lync iPhone
1-7-16 11:48:12 AM	1m 13s	Abandon		SILKWIDE/16000	Inbound Offnet	MSFT User 7427	3265	Lync iPhone	Sunnyvale	MSFT User 631	4868	Lync iPhone

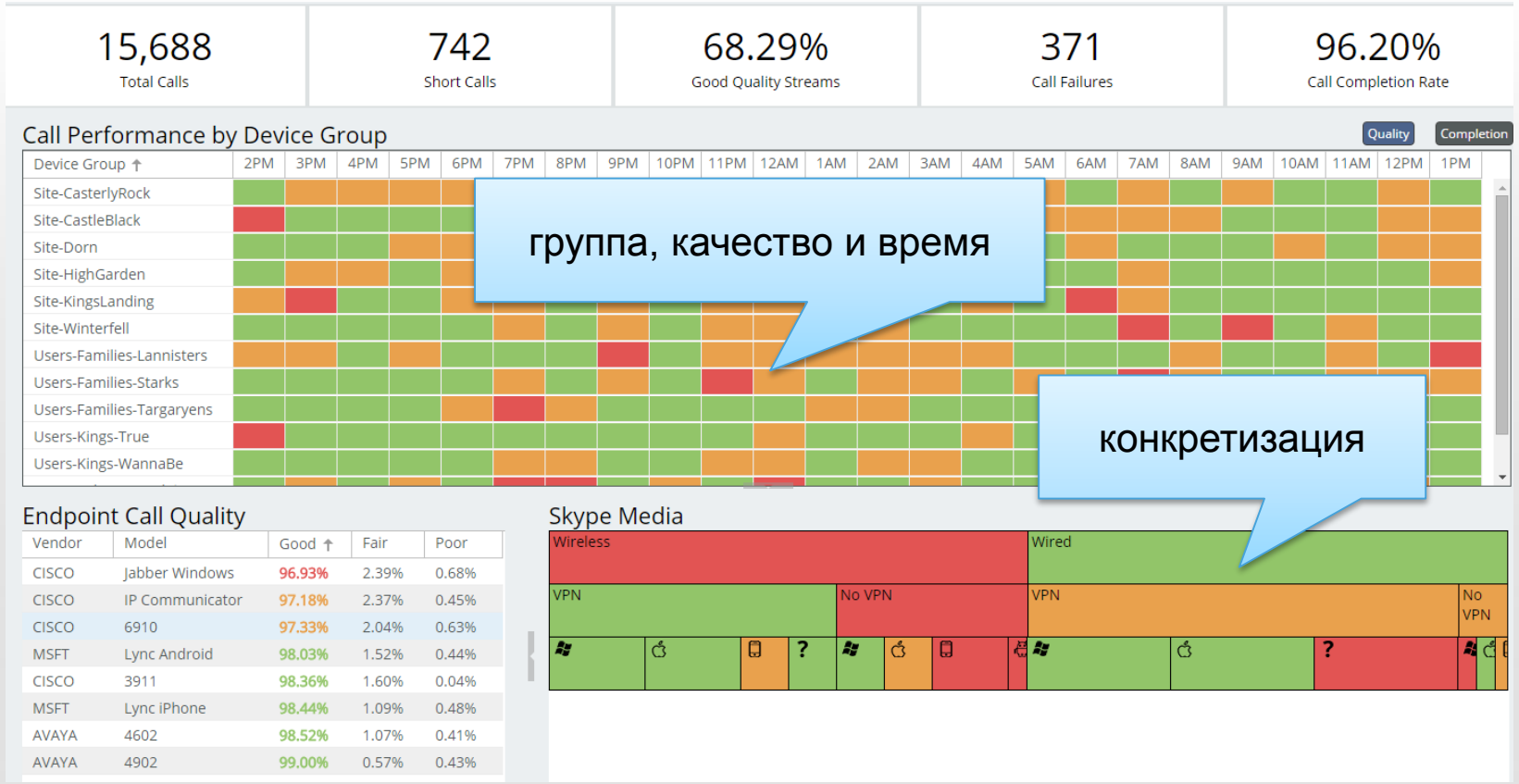
- Путь звонка



Визуализация в UCExpert 6.0...

статистика о качестве и использовании

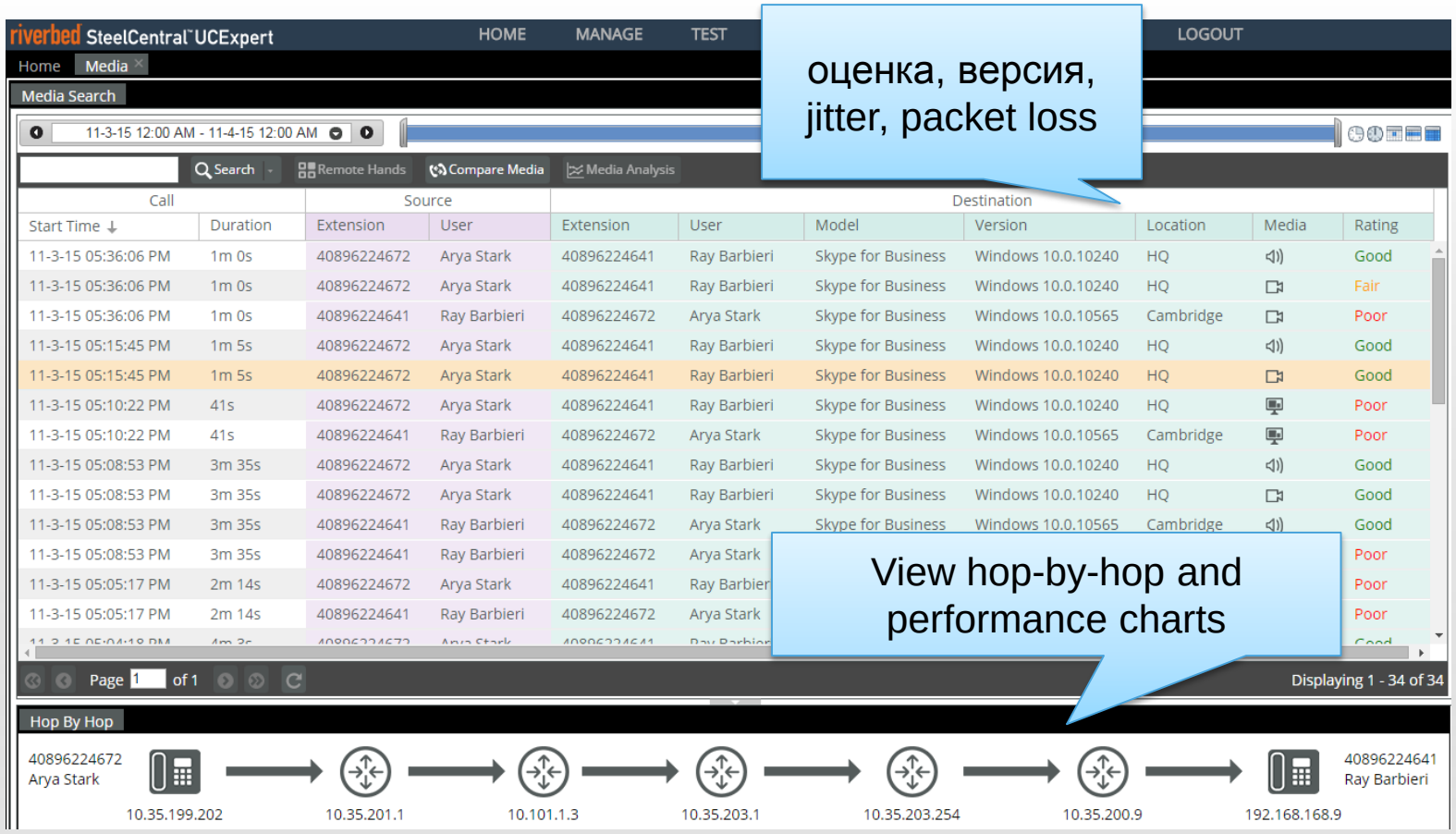
- качество по группам, локациям, устройствам и типу подключения
- категоризация качества



Детализация в UCExpert 6.0 (идём глубже)

Упрощает процесс поддержки

- Понимание есть ли проблема на сети
- изоляция проблемы в hop-by-hop сценарии



представления в UCExpert 6.0 …

Изоляция Первопричины

- больше данных меньше гаданий
- защита «сети» в тех случаях когда сеть не виновна.

Detailed Endpoint Performance Data

Quality

Rating	Good
Network MOS Avg	4.1
Network MOS Min	4.1
Packet Loss Rate	0
Packet Loss Rate Max	0
Jitter (ms)	1
Jitter Max (ms)	2
RTT	2
RTT Max	6
Packet Utilization	6657
Degradation Avg	0.07
Degradation Max	0.07333231
Rec Noise Level	-48
Rec Signal Level	-25
Mic Audio Timestamp Error (ms)	0.02
Speaker Audio Timestamp Error (ms)	0.0
Conceal Ratio Avg	
Relative One-Way Latency Avg(s)	.01

Detailed Endpoint User/Platform Data

Connection	Ethernet
Registered Inside	false
VPN	false
Link Speed (Mbps)	100
Capture Device	Microphone (High Definition Audio Device)
Capture Device Driver	Microsoft: 10.0.11082.1000
Render Device	Speakers (High Definition Audio Device)
Render Device Driver	Microsoft: 6.1.7601.17514
WiFi Driver	Microsoft Virtual WiFi Miniport Adapter;Microsoft
WiFi Driver Version	Microsoft:6.1.7600.16385;Microsoft:6.1.7600.1638
Operating System	Windows 6.1.7601
Operating System Arch	x64
Service Pack	1.0
Platform Type	1(Workstation)
WoW64	false
CPU Name	Intel(R) Core(TM) i5-2450M CPU @ 2.50GHz
CPU Cores	2
CPU Speed (MHz)	2494

Новые возможности в плане защиты сети

Сетевики

“доказать что это не сеть там где это не сеть.

показать где если это всё-таки сеть.”

Телеком/UC&C

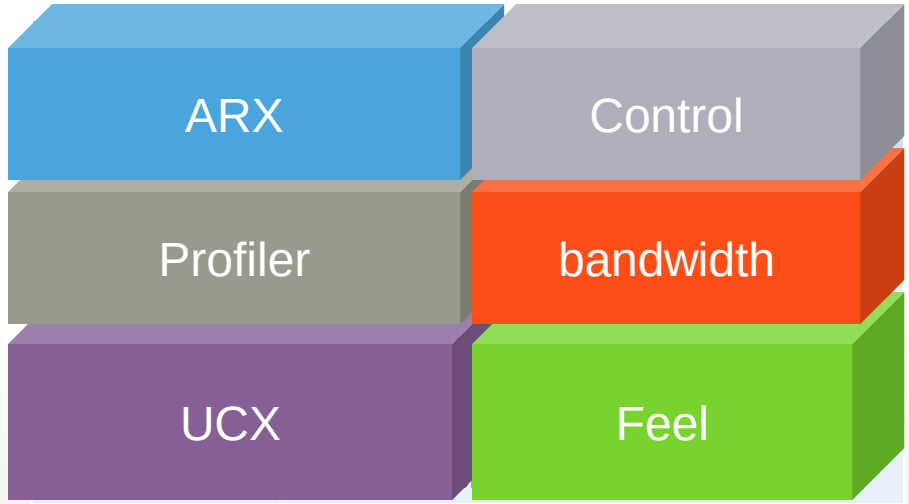
видимость в плане использования, производительности и инвентаризации.

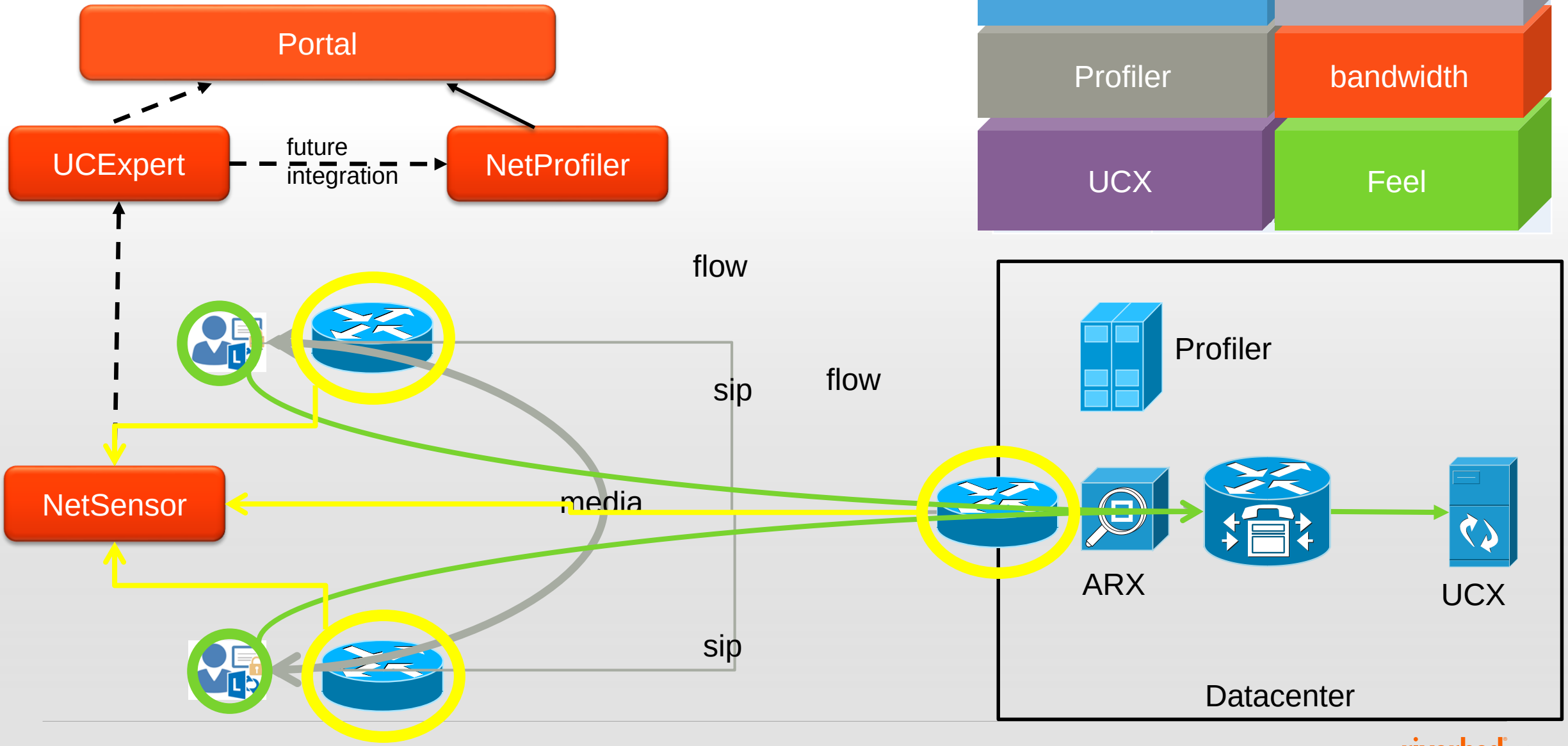
работа над проблемами удалённо и эффективно.

Поддержка

Упрощённый процесс triage и «маршрутизации» заявки к правильному специалисту.

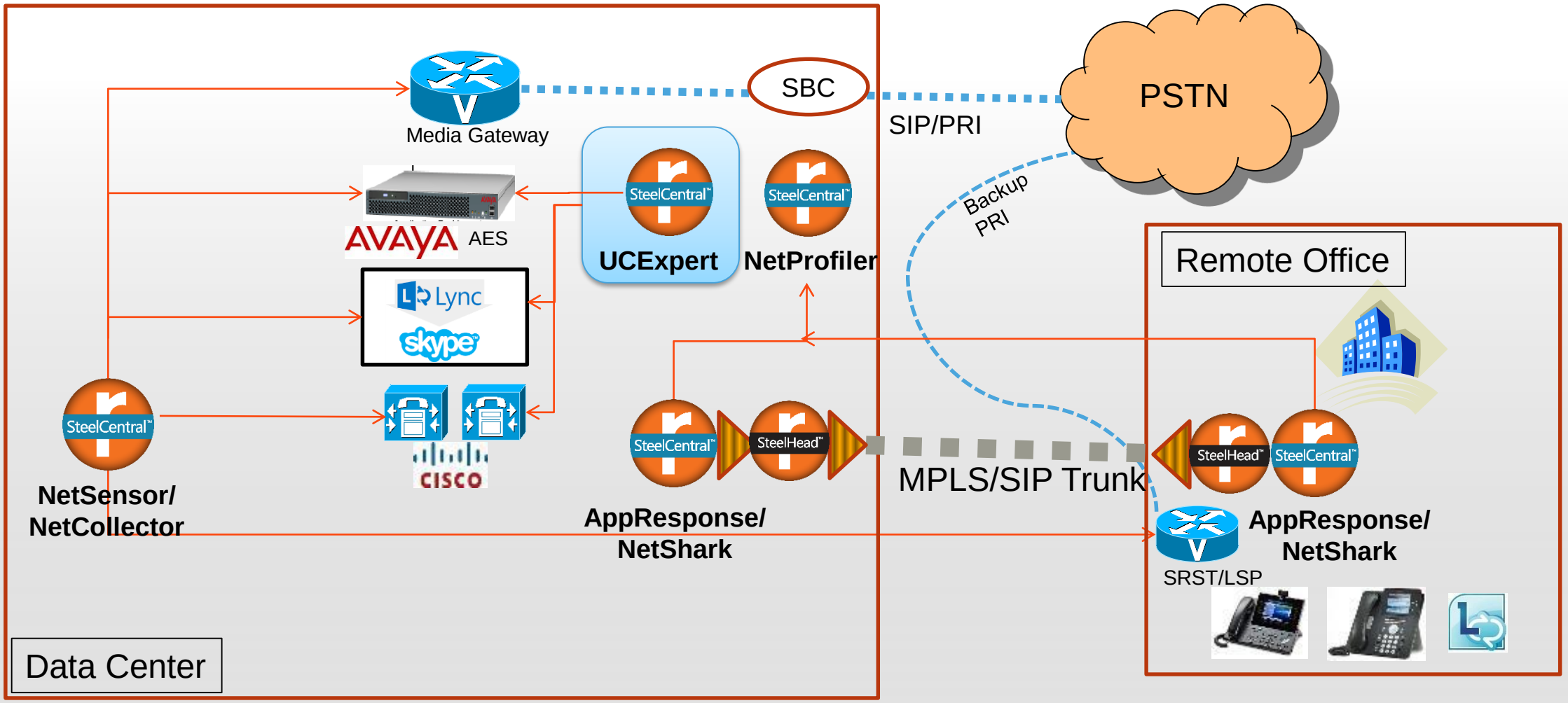
Целостная картина?





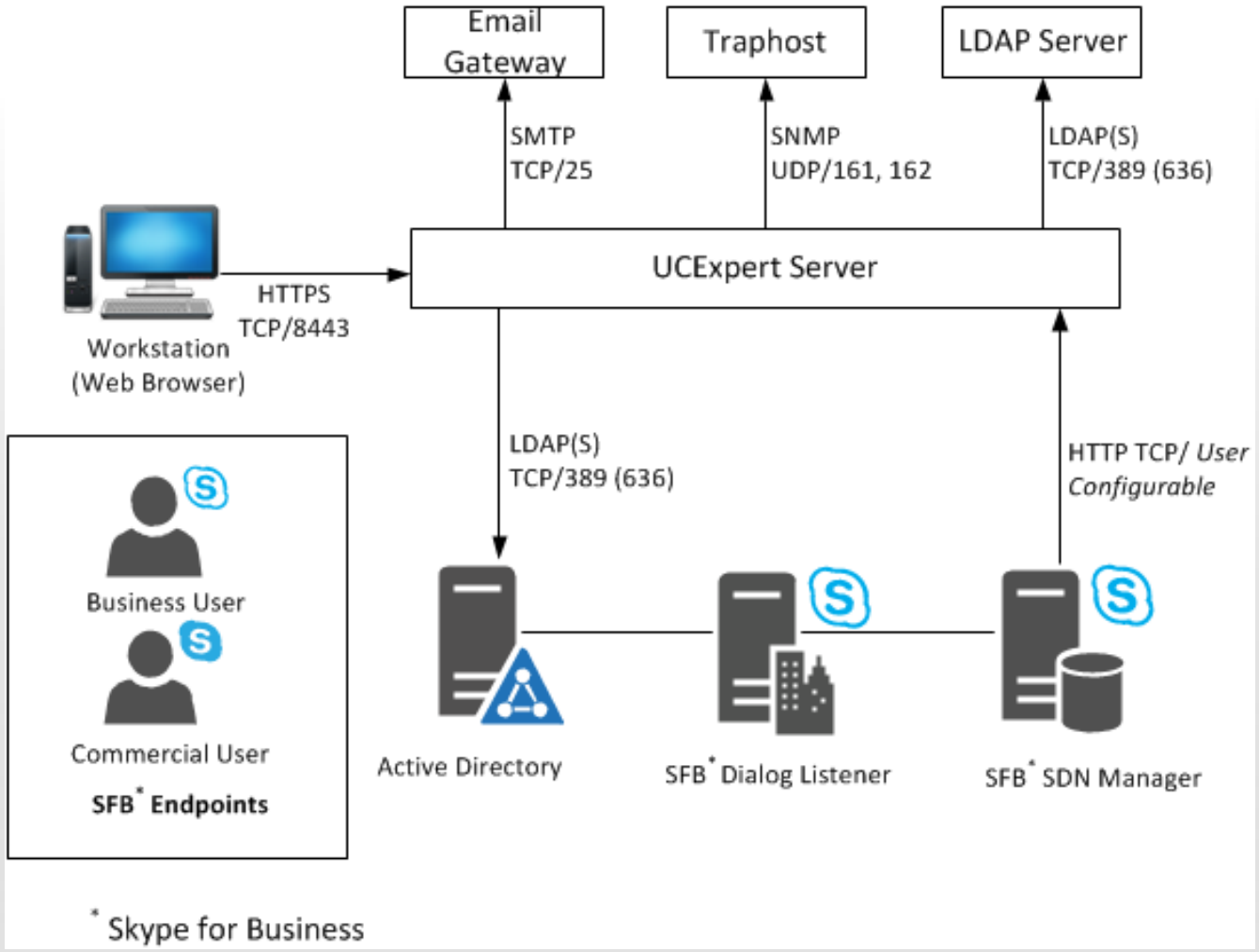
Media path

Точки «контроля»



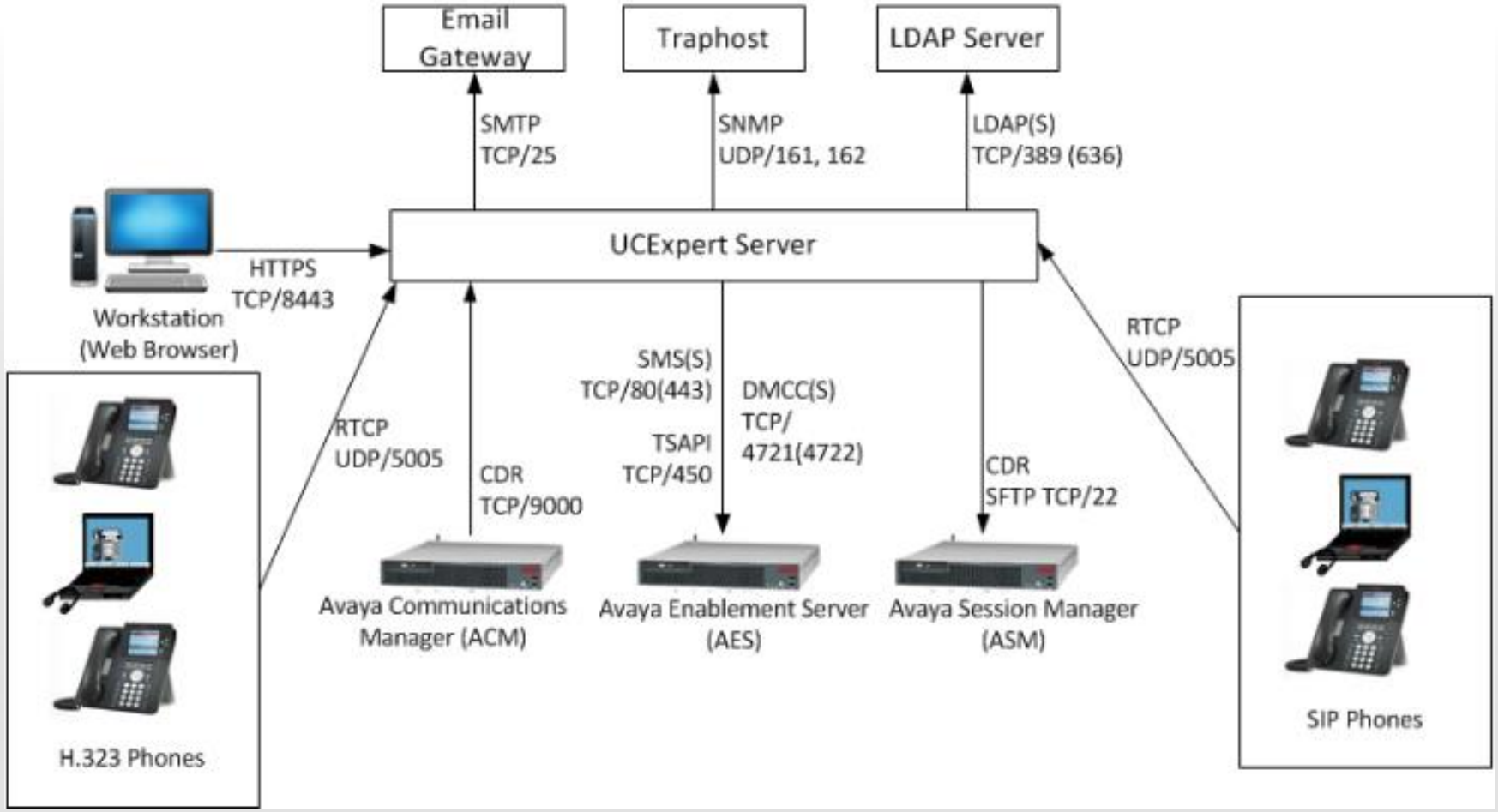
UCExpert & Lync Integration

- Lync SDN 2.2, compatible with 2010, 2013, and Skype 2015



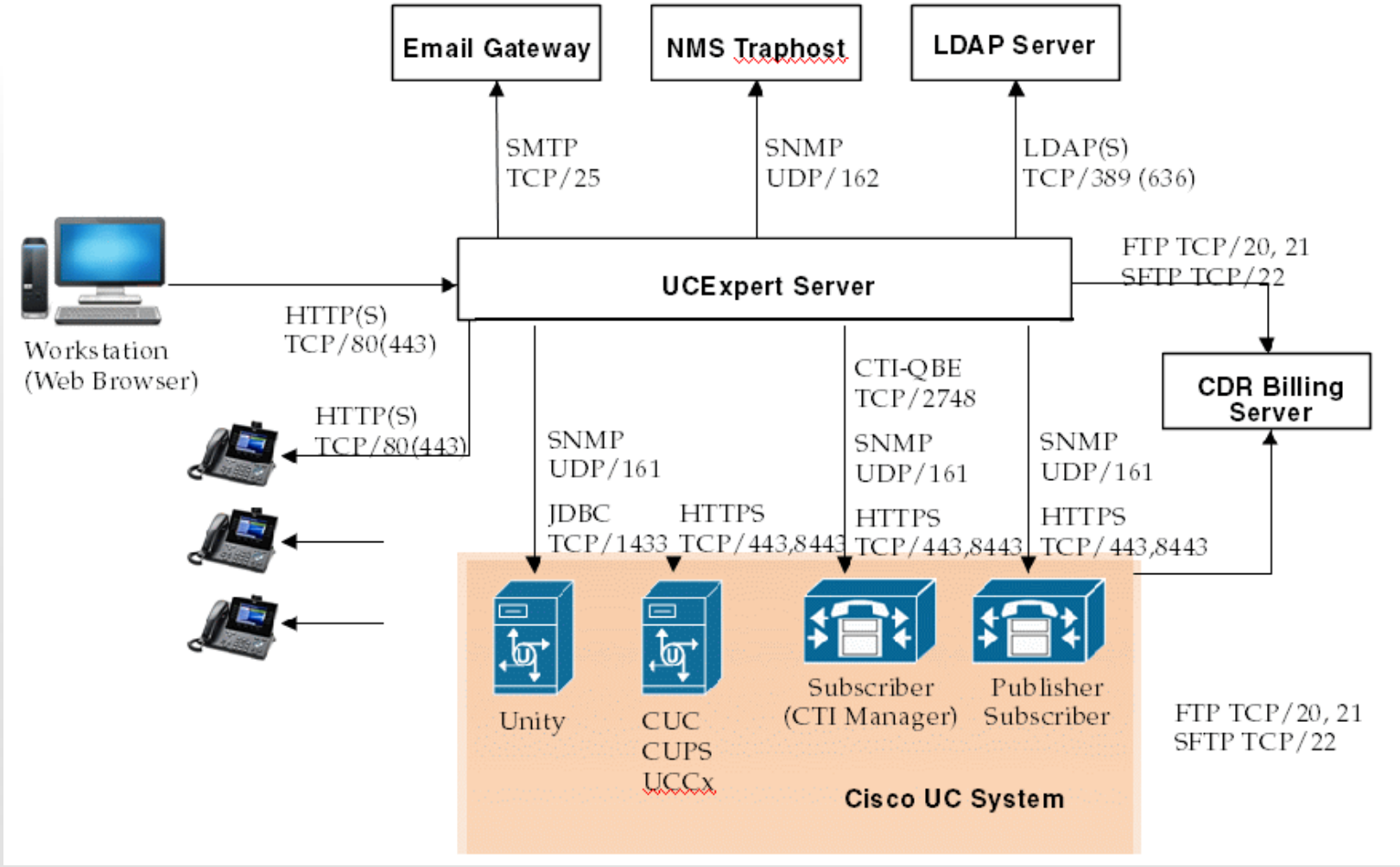
Avaya Architecture

- Enablement Services 6.3 with DMCC and TSAPI licenses
- H.323 and SIP endpoint support (including One-X)



Cisco Architecture

- Supports all hard phone and softphones including Jabber
- Telepresence endpoints registered to CUCM



UCExpert: простое решение сложных UC проблем

Platform

- Software or virtual appliance
- Agentless, centralized collection
- Web-based UI
- Uses only approved vendor APIs

Demo Режим:

https://<servername>:8443/ucxgui/?demo=true

Licensing

- Package Type (Standard/Enterprise)
- Number of phones or users (Microsoft)
- Perpetual or subscription

Competition

Competitive Landscape

Only a few competitors are multi-vendor, none have true end-to-end

- Single-Vendor Products
  - Microsoft (Built-in Reports)
  - Unify Square
  - Event Zero
  - Cisco Prime
  - Variphy, Uplinx, UnifedFX
  - Avaya SLA Monitor

- Multi-Vendor UC Products
  - IR Prognosis
  - Nectar
- General Purpose + UC
  - Netscout
  - Solarwinds
  - CA UC Monitor

- Full integration combining end user (UCX), flow (Profiler/Sensor) and packet (ARX/Alloy) will create a superior solution to them all

We're Not Far from Being a NetScout Killer

Footprint and Fluency

- NetScout is UC-fluent, they have tailored UC views
  - But requires a probe at every site - $$$

- Our key differentiators:
  - Footprint
    - SteelHeads for telemetry
    - Even better, we collect data directly from the UC endpoints (no probe needed!)
  - UC Fluency
    - Become more UC-fluent in UI/workflow
    - Leverage data from multi-domains to paint a richer UC picture
      - Multi-app context, QoS, Path Selection, infrastructure health, etc


Qualifying Customers

“Hook” Questions

1. Cisco UC upgrade
   - When are you planning to upgrade to CallManager 10/11?
   - Do you have a way to automate that everything is working properly end to end?
2. Lync or Skype for Business rollout
   - Are you looking to deploy Lync for enterprise communications?
   - How will you monitor and troubleshoot quality problems or measure adoption?
3. Call Center Quality Monitoring
   - Do you have issues with call quality reported by your agents?
   - Are you able to effectively and remotely troubleshoot their problems?
4. Ticket Escalations
   - Do you often find end user tickets escalated to you (network) when the network is not the problem?
   - Do you have an easy way to eliminate the network as the reason or, isolate the segment and identify the root cause quickly?

Key Terms to Listen For

Collaboration/UC&C

Session Border Controllers (SBC)

VoIP

IP Telephony

Prognosis

IP Phones

Cisco CallManager

Voice Quality

Video

Mean Opinion Score (MOS)

Jabber

Lync/Skype for Business

Telepresence

Contact Centers

Cisco Prime

Call Accounting

Avaya

Trunk Utilization

SIP Trunks

Benefits

Complete visibility and remote troubleshooting

Save Time

Find the information you need easily and quickly

Eliminate end user participation in troubleshooting efforts

Reduce Cost

Consolidate support services, remotely diagnose problems

Improve productivity and efficiency with existing staff

Improve Quality

Assess end user experience empirically

Identify and correct performance issues before users complain

Prevent outages via nightly testing

Case Study: Novartis

How We Beat Netscout, for Skype for Business app visibility

- Timeline
  - Initially $2M+ NPM opp including ARX, Netshark, Portal, Profiler
  - Deal was likely going to Riverbed
  - Netscout came in and changed the strategic driver to be Skype for Business visibility
  - UCX brought in to help counter-attack Netscout
- Benefits of Netscout
  - Central visibility and search, clean UI with UC focus
- Weaknesses exposed in Netscout approach
  - Appliances required for every branch (25 initially, eventually 85+), higher $$$
- UCX alternative
  - Leveraging SDN data, cover all offices globally from a central perspective, lower total $$


Next Steps

Summary

- Saturated Accounts (nothing left to sell)?
  - Talk to them about UC and their plans

- New Opportunities?
  - Include UCExpert from the start along side NetProfiler, AppResponse, etc.
  - Target UCExpert at Network & Performance Management teams, don't worry about having to find UC/Telecom groups
  - Increase competitive strength, counteract Netscout FUD

What's Next?

- Access UC Resources to help with your accounts
  - David Roberts: UC Product Manager
  - Hemant Seth: Center of Excellence technical resource
  - Ajay Ramachandran: pro services UC specialist

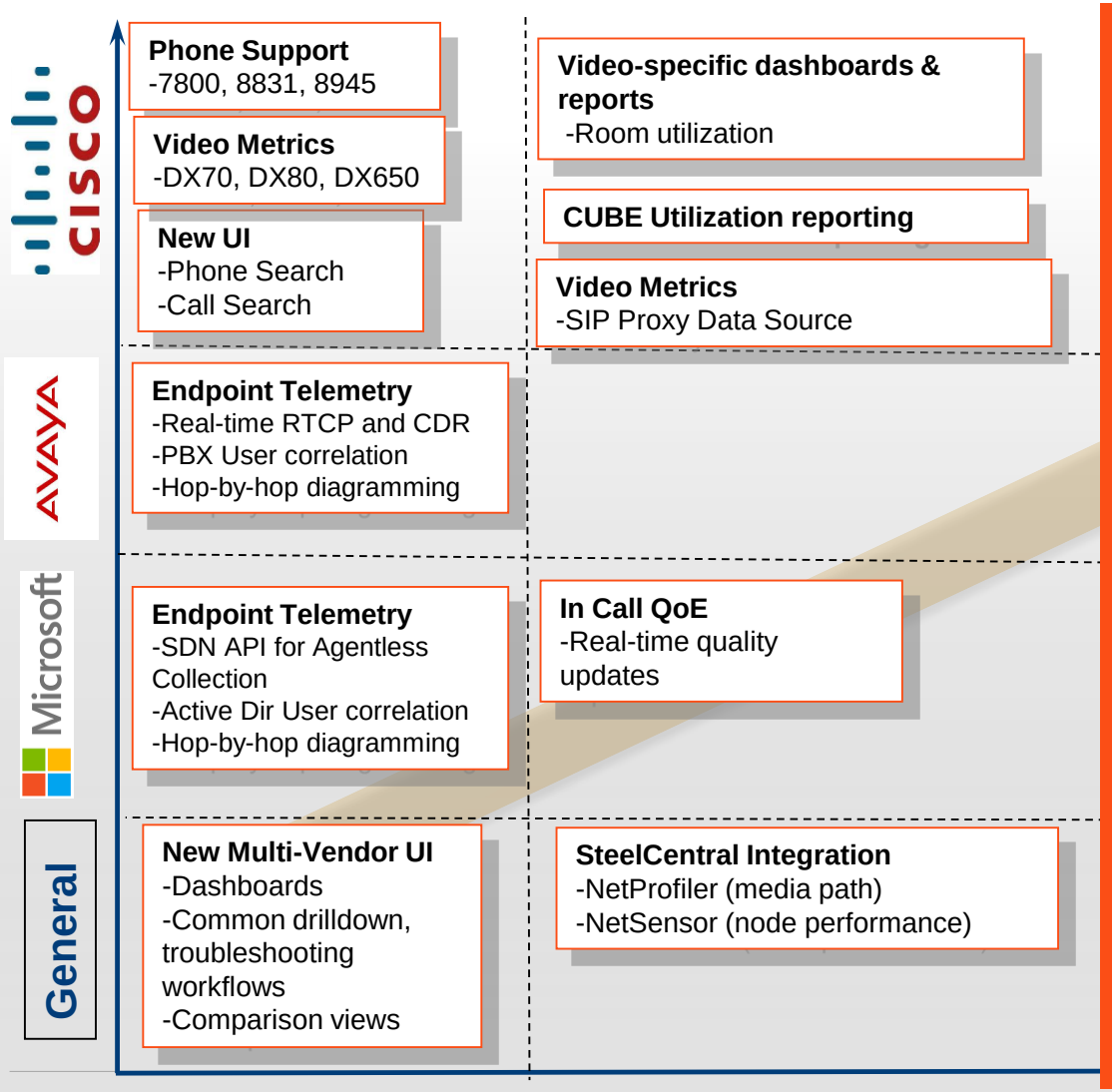
Thank You

SteelCentral UC Roadmap

Important

This roadmap is for information purposes only and is not a commitment, promise or legal obligation to deliver any new products, features or functionality. The development, release, and timing of any features or functionality described remains at Riverbed's sole discretion.

UCExpert Roadmap by Vendor



космические корабли бороздят...

BRAZOS Q1‘16 → CONGO Q3’16 → Future Considerations

UCExpert Roadmap

Multi-Vendor EUE

- Avaya, Cisco, Lync/Skype QoE EUE
- Global visibility, all calls, all locations
- Troubleshooting workflows
  - Call Failures
  - Call Quality
  - Hop-by-hop media path
- Reporting
  - Call Usage & History
  - Quality Analysis
- Performance and Adoption Dashboards

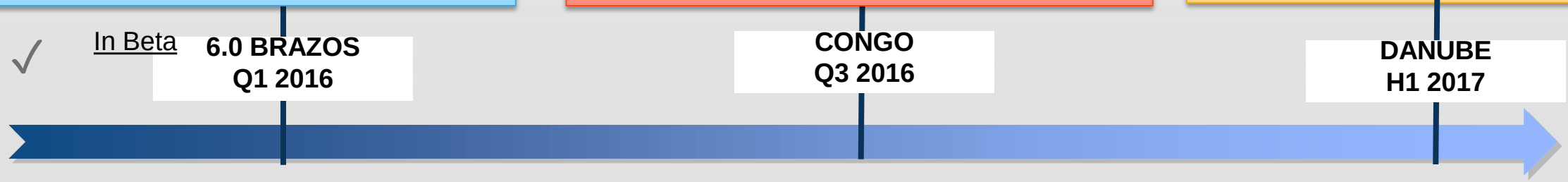
Intelligent Path Analysis

- Portal
  - Publishing UC EUE metrics
- NetProfiler Integration
  - Correlate with netflow interface QoS markings, existing API
- NetSensor Integration
  - Path and node health
- SSO/SAML authentication

Call Correlation

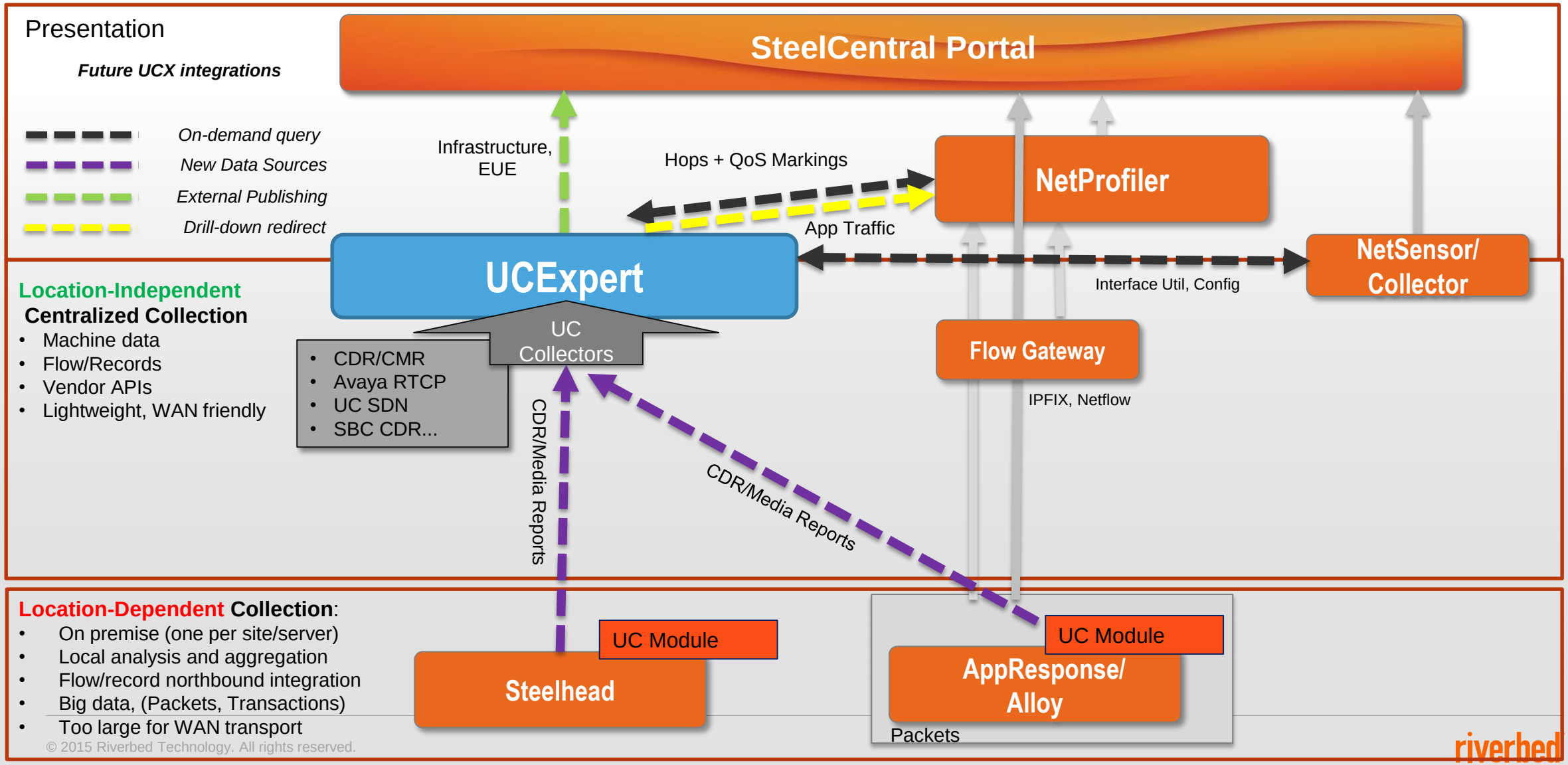
+ Contact-center focus

- AppResponse-UCM Integration
  - Steelflow/CDR collection
  - Ladder diagrams
  - Call stitching & federated search
- SBC Data sources
- UCX Baselining and Alerting



riverbed

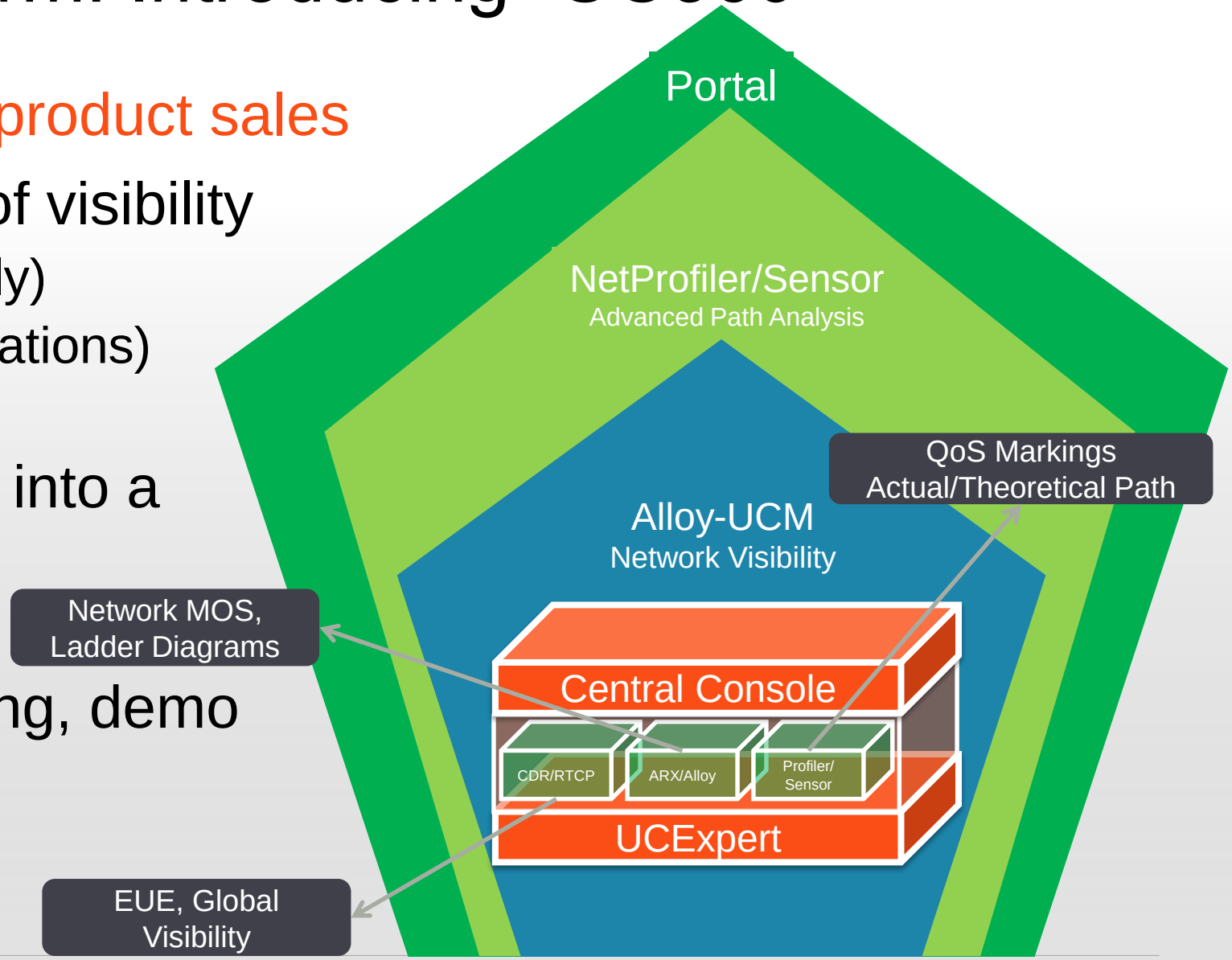
UC360 Integration Roadmap



Our Future UC Platform: Introducing “UC360”

One Solution, drive multi-product sales

- Modular, multiple levels of visibility
  - Level 1: Standard (UCX only)
  - Level 2: Enterprise (+integrations)
- Integrates all capabilities into a single UI/workflow
- Greatly simplify messaging, demo
- Beat Netscout



What's our "UC Solution" Today?

Great technology, not integrated, difficult story to tell

- Central UC Console
- EUE and device metrics from PBX

- Identify QoS mismarking
- RTP traffic utilization
- Competing applications

- Monitor PSTN VoIP quality
- Diagnose provider/signaling issues
- Export packets for playback

Datacenter

IP PBX

Lync skype cisco AVAYA

SteelCentral™ **UCExpert**

SteelCentral™ **NetProfiler**

SteelCentral™ **ARX +UCM**

SteelCentral™ **NetSensor**

Headquarters

SteelCentral™ **ARX+UCM**

WAN/PSTN

Branch Office

SteelCentral™ **ARX-UCM**

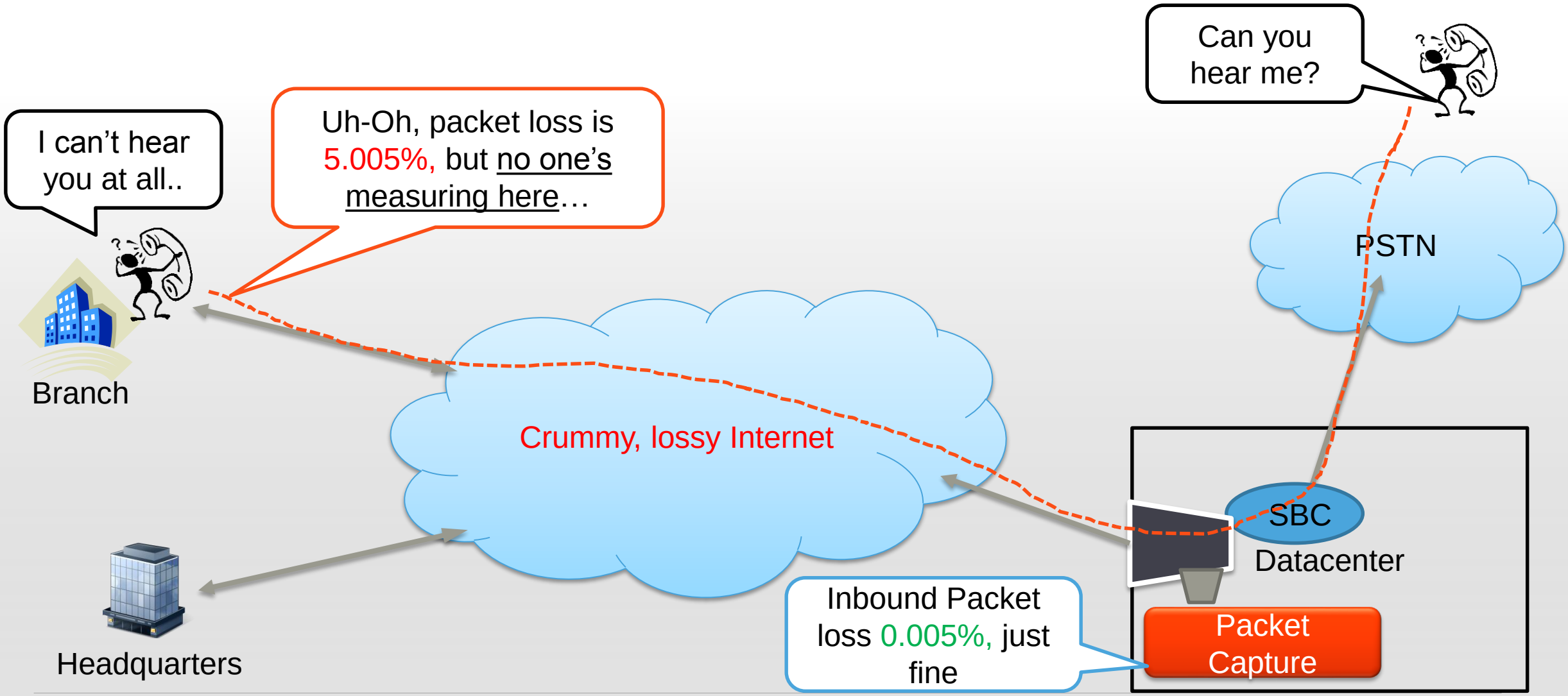
- Discover network devices
- Identify interface errors, device load along path


VoIP 101 Primer

Why is VoIP traffic unique?

- Call signaling uses well known TCP protocols (H.323, SCCP, SIP)
- The Media portion (RTP) is not like typical client-server apps, it's peering between VoIP endpoints, either physical or soft devices
- RTP is digitized audio/video data sent via UDP, not TCP
- Audio/Video is Coded and then Decoded at each endpoint
- Both signaling and media may (and are more often) encrypted making them difficult to analyze

The importance of properly deployed instrumentation



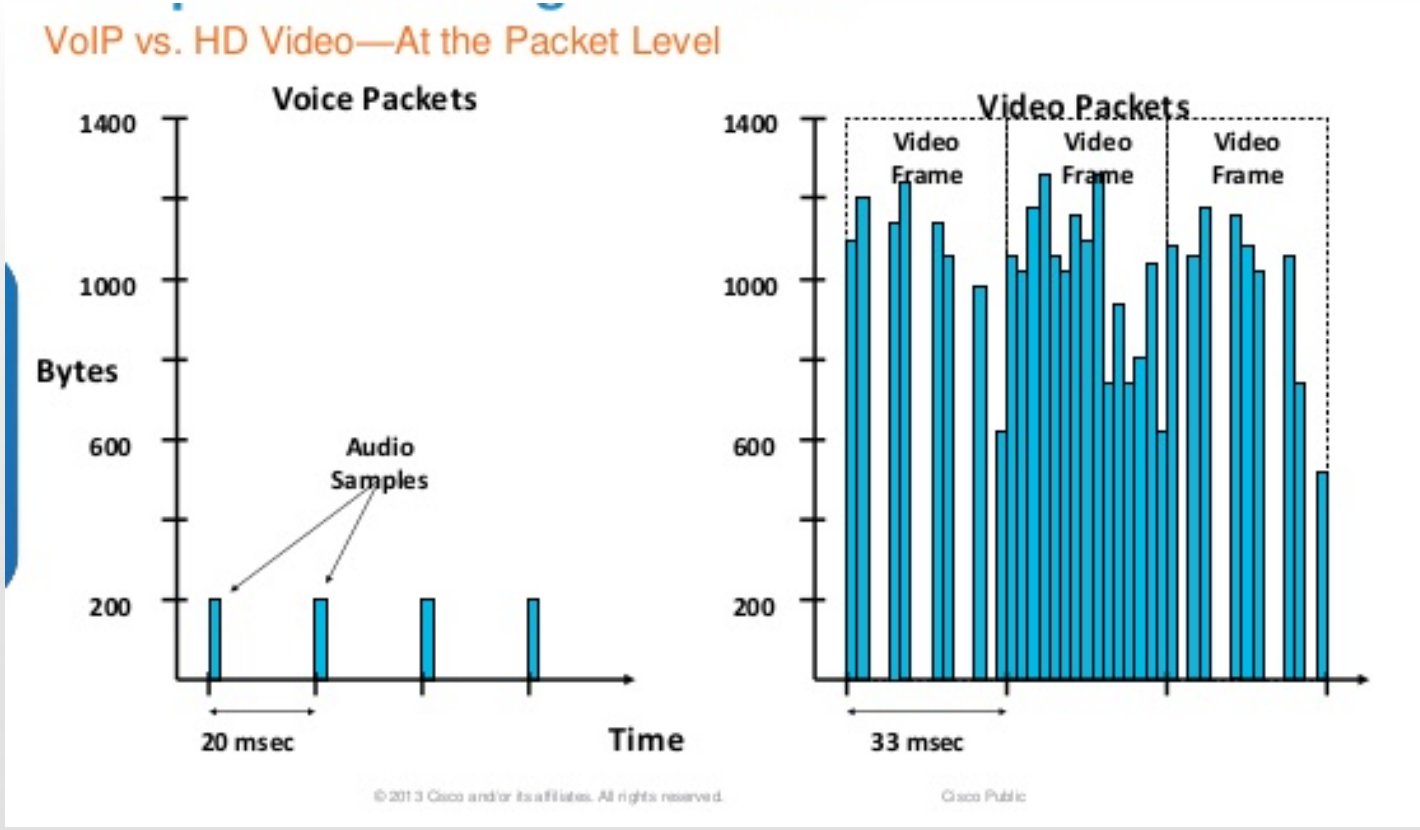
VoIP is very susceptible to network imperfections

- Media is sent over UDP and are only useful if they arrive in time.
- VoIP/Media is highly sensitive to latency and packet loss
- QoS is a critical factor in network design for VoIP. Real-time media is marked as the highest priority traffic (EF).
- Transcoding is sometime the culprit. Transcoders convert (resample) media from one codec (compression) to another.

How do Video and VoIP differ on the network?

- VoIP (audio) is much lower and steady bandwidth
- Video is higher and bursty bandwidth. Usage varies with content.
- Video codecs may dynamically adjust on the fly.

- Video is much more susceptible to imperfect network conditions



What is Jitter?

- Jitter - variation in the amount of time it takes for packets to travel between endpoints. Jitter can be caused by network congestion, timing drift, or route changes. For real-time applications, variations in arrival time can translate into lower voice/video quality.

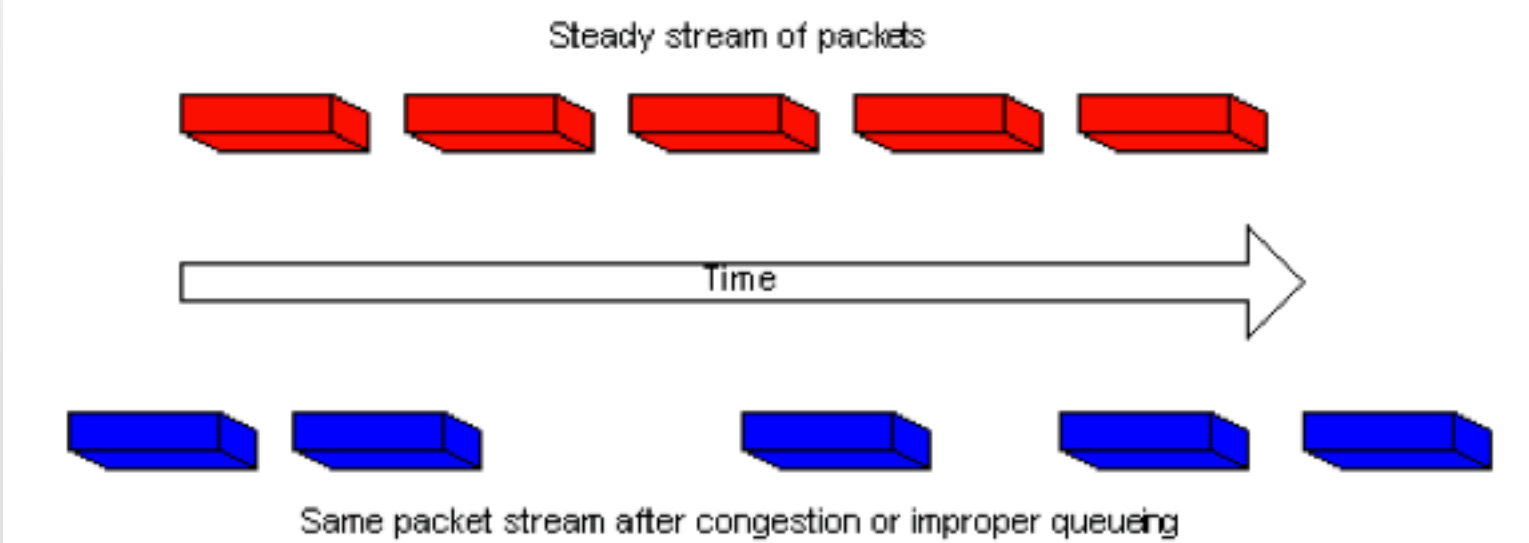


Figure 1: Packet stream after congestion

Monitoring VoIP 101

What is the need we are hearing?

- Consolidate tools
- Promote team collaboration
- Reduce fire-fighting situations
- Improve team efficiency
- Offer visibility into usage and adoption

CIO & IT Operations

Line of Business

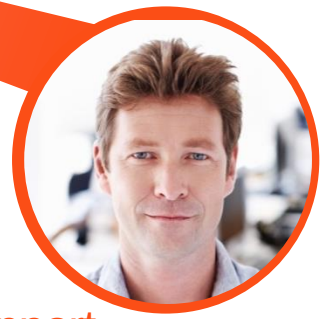
- User Call Usage Reports
- Client billing (e.g. law firms)

Network

- Tired of network-blame
- Simple troubleshooting
- Integration with packet/flow tools

Voice/Telecom

- Trunk and provider visibility
- Inventory management & changes
- Sufficient “network” level insight



Support

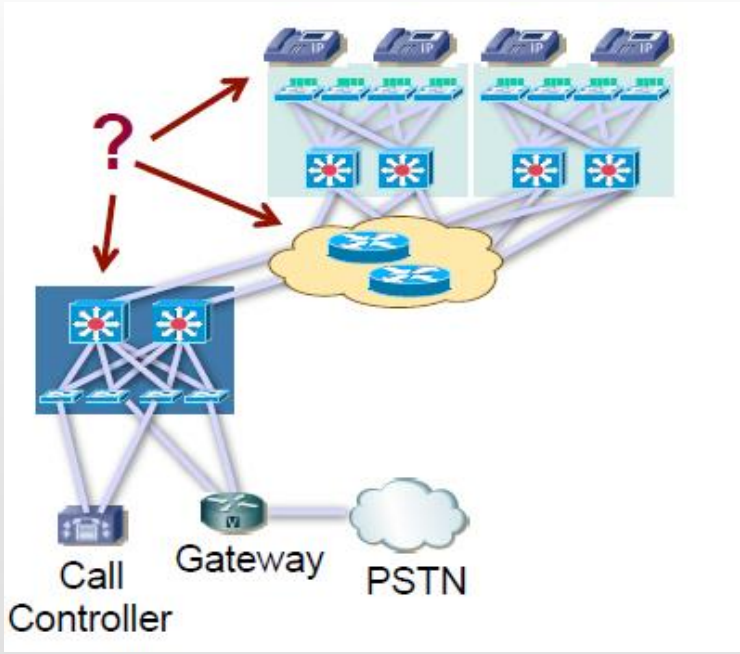
- Simple, repeatable workflows
- Remote support capabilities
- Ability to triage ticket (network, desktop, server)

Measuring VoIP quality requires a unique approach

- The most common, troubling, network-related issues of VoIP communication are associated with real-time media quality
- Other issues also exist around signaling, especially communicating with service providers over SIP trunks
- Unlike traditional TCP/client-server applications (where data center collection suffices), you must measure media performance at different locations…. where the users reside

The Five Steps to Resolution

1. Detect
2. Characterize
3. Scope the Size & Impact
4. Isolate and Determine Cause
5. Resolve and Prevent



What Tool Technologies Are Available?

Use the right approach for the problem

NETWORK-BASED

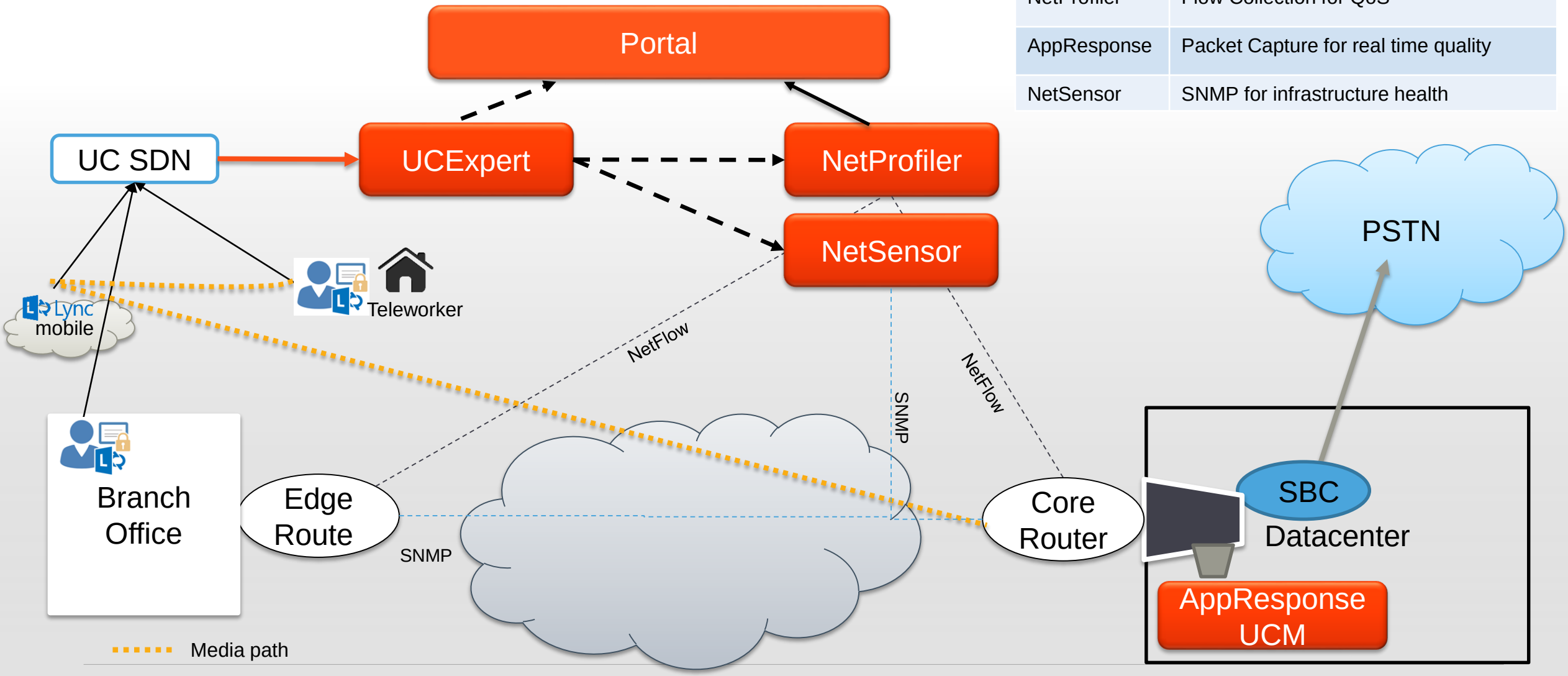
- Packet capture
  - Signaling messages, delays and establishment problems
  - Real-time analysis of media quality at point of observation
- Flow collection
  - Interface utilization, QoE marking
- Infrastructure monitoring
  - Collect and analyze data from infrastructure elements
  - Track configuration changes

APPLICATION-BASED

- End User Reports (CDR)
  - Experience quality by the end user
  - Device performance, user mistakes
- Synthetic calls, traffic generation
  - Simulate media streams (IPSLA) for single path and time
  - Simulate real calls, to test full application stack and logical routing
- Log Files
  - Application and device errors
  - Blocked calls
  - Trunk negotiation problems

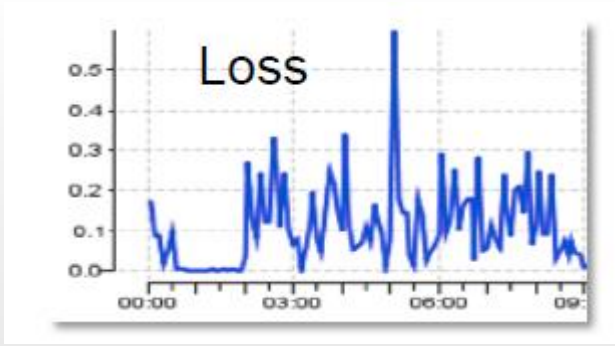
The Riverbed UC Solution

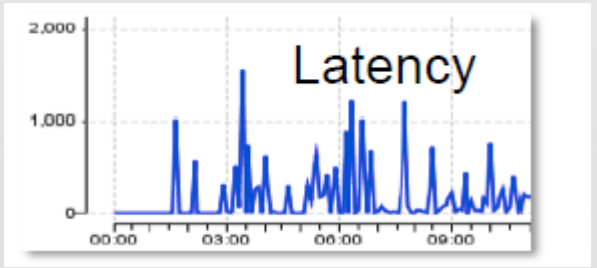
Product	Benefit
UCExpert	End User Reports, Synthetic testing
NetProfiler	Flow Collection for QoS
AppResponse	Packet Capture for real time quality
NetSensor	SNMP for infrastructure health



What Information Do I Need?

- Signaling: call setup and termination
  - Media traffic factors: delay, jitter, and packet loss
  - Many things influence these factors
  - Identifying the source of problems can be difficult
- •Monitoring QoE
  - Use simulated calls
  - Monitor real user calls
  - Both?
- Provide *Actionable Information*, not *Data*
  - Don’t overwhelm the network manager

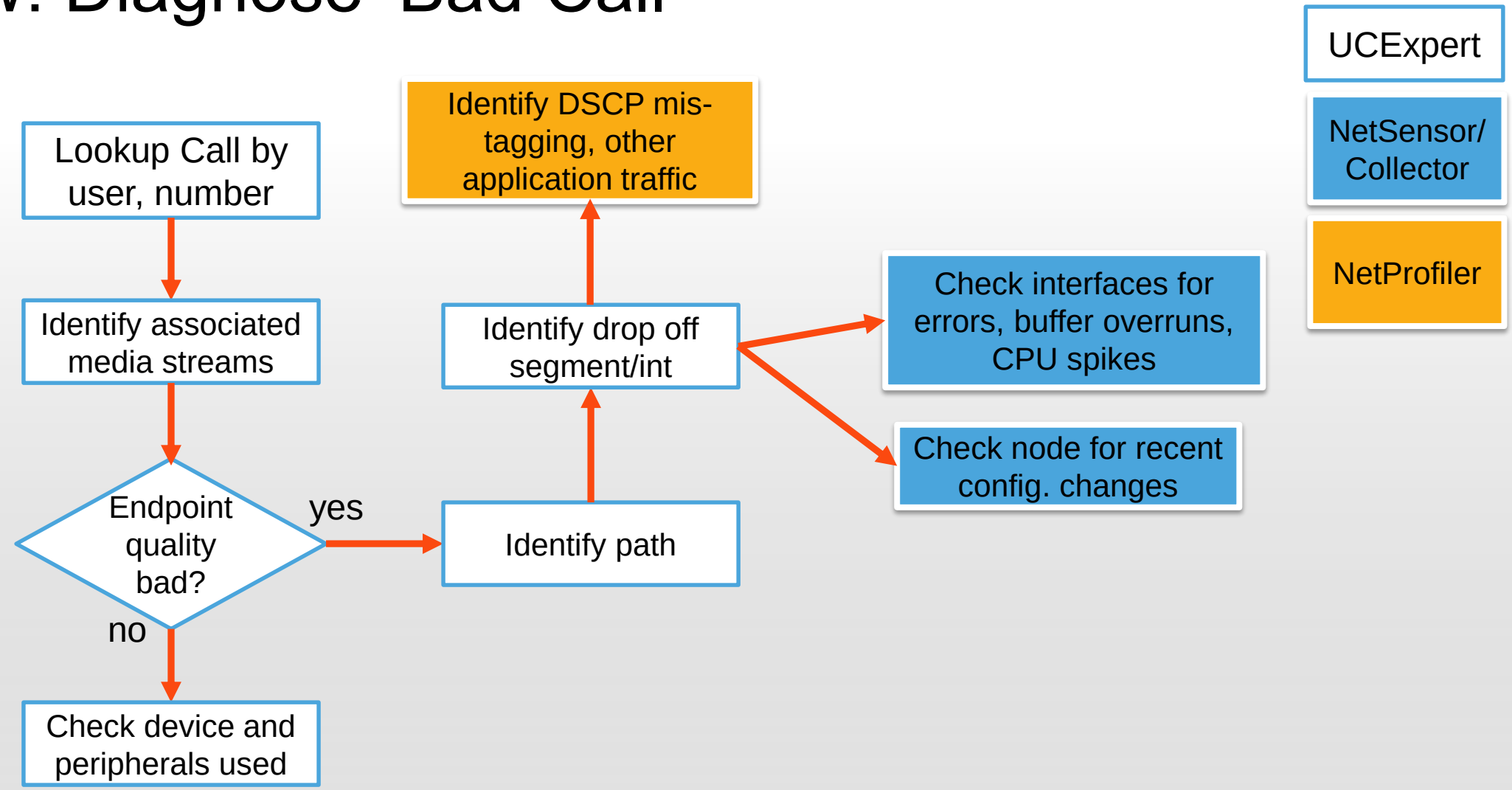




What is needed for the complete solution?

- Media quality measurements
  - EUE - automatically everywhere
  - Packet – VoIP Call Analysis (VCA) strategically placed (datacenter, HQ, contact centers)
- Hop-by-Hop (Media path) information, some options
  - EUE-based traceroute from the endpoint
  - Netflow correlation of UDP flows with EUE
  - Theoretical traffic path (NetSensor pathview)
- Infrastructure Element Performance/Health
  - NetSensor/Collector

Workflow: Diagnose ‘Bad Call’

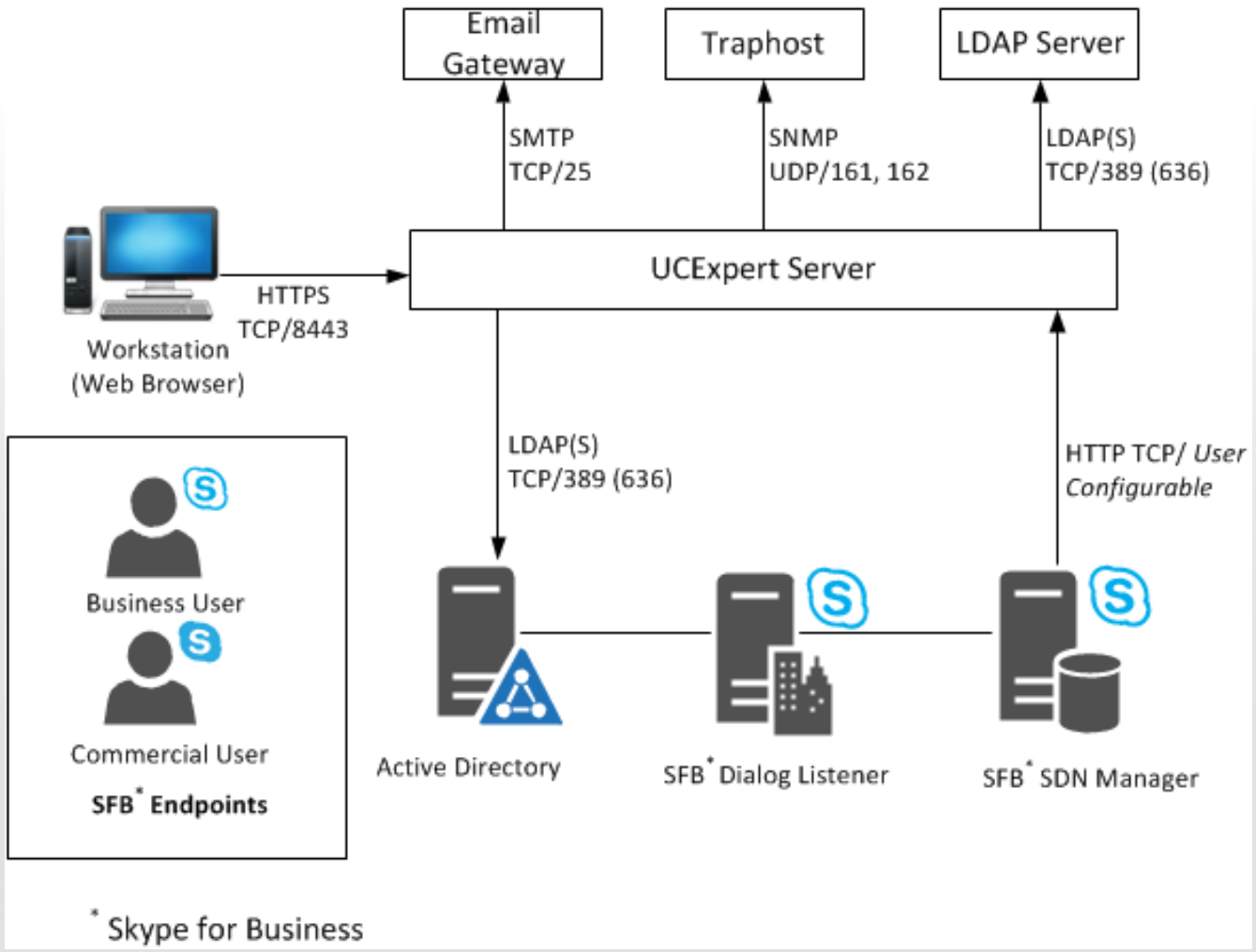


Breaking it down, key needs and components

	Availability	Setup	Experience	Usage
Description	Ability for endpoint to be used (online/offline)	Ability for users to make or receive calls	Ability to monitor call/session quality as experience by the end user.	Ability to measure use of communication platform over time, by logical groupings (locations, users, and modalities)
Dependencies	-Back-end servers -Network connectivity	-UC application configuration -Service providers	-Recording/Playback devices -Network transport -Transcoder performance -Endpoint performance	
Measurement Approach	Vendor KPI	EUE, Signal DPI	DPI, EUE, SNMP	EUE
Product(s)	NetSensor, UCX	UCX, ARX	UCX, ARX, NetSensor,	UCX

UCExpert & Lync Integration

- Lync SDN 2.2, compatible with 2010, 2013, and Skype 2015



Netscout vs. SteelCentral UC360

Key Feature	Netscout	SteelCentral UC360
Execute VQ Dashboard	Yes, in Voice/Video Manager (VVM)	UCExpert/Portal partial, incomplete
Probeless Solution	Missing	UCExpert
VQ Call Path Hop-by-Hop	Native graphical in VVM	UCExpert partial, incomplete
Payload RTP Analysis for content issues	Yes, using Psytechnics	Yes, in ARX using Telchemy VQMon
Vendor-specific CDR and endpoint data	Supports Cisco, Lync, Acme, IBM rolled up to VVM	UCX supports key vendors in 6.0

NPM Lync/Skype ID and Metrics

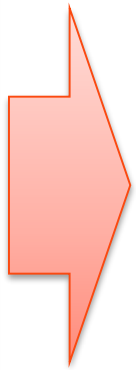
App	Description	Usage	QoS	Quality	
Media	Voice and Video calls between Lync clients	SH, NS, ARX			
Audio	Voice calls between Lync clients if the control channel is **not** encrypted	Yes			
Video	Video calls between Lync clients if the control channel is **not** encrypted	Yes			
Share	File and application sharing between Lync clients	Yes			
Control	Login, presence and IM	Yes			
Audio Sec	Voice calls between Lync clients if the control channel **is** encrypted	No			
Video Sec	Video calls between Lync clients if the control channel **is** encrypted	No			

Same L7 Identification available in Steelhead, NetShark and ARX
Decode Procera NAVL engine used

UCExpert Reset Strategy

Previous

- Focus on Telecom User/Buyer
- Not aligned with NPM strategy & excluded from SteelCentral messaging
- Exclusive focus on channel enablement as road to success
- Cisco UC market segment



New

Common NPM Buyer
targeting network team, EUE for UC

Solution Selling
Integration with NetProfiler, Alloy, and Portal

Investment in RB & Partner Sales Training

Skype for Business Focus
in addition to Cisco, Avaya