

White Paper

Solve the multiple dilemmas of UC management

Focus on: Multiple technologies and multiple vendors

Dilemma, conundrum, difficult – or just a perplexing situation! Call it what you will; juggling performance management of multiple technologies from multiple vendors distributed across multiple locations, supporting multiple applications with multiple stakeholders is no easy task!

In this white paper, we focus on the first two dilemmas, multiple technologies and multiple vendors, with more to follow.

By Sue Bradshaw, Technology Writer, Integrated Research



Preface

The potential reach of UC portfolios is wide. As they evolve and spread they will touch multiple people across multiple locations and utilize multiple technologies; and present multiple dilemmas when it comes to managing them.

Although performance data may be available across individual technologies and vendor platforms, it cannot be easily correlated. This means that you cannot tell how the performance of one technology is affecting another. In fact by the time you do achieve some degree of correlation by comparing information from different management interfaces, each with its own terminology, functions and features; the conditions that caused the issue in the first place will have changed. And you may be none the wiser!

This white paper looks at the dilemmas of:

1. Managing multiple technologies

UC includes infrastructure and services that span technologies like servers, appliances, VoIP and video together with SIP phones, session border controllers, and virtualization. And that's just to start with! UC drivers differ widely, for some collaboration and increased efficiency may be the most important aspects and for others, the ability to unify different message types like voice, email and fax in one inbox.

Leveraging the available metrics from all these disparate sources can be quite overwhelming and potentially confusing – unless there is a way to combine them into an ordered, useful information array that shows the impact of one on another.

2. Managing multiple vendor platforms

Whichever platform you have today, and however successful your VoIP deployment has been; as UC applications roll out it's inevitable that other vendors' products and devices will need to be integrated with it.

In a similar way to the dilemma of managing multiple technologies, either across vendors or within a single vendor, lacking a single view across all technologies creates a lack of insight into overall UC ecosystem performance.

And this can spell disaster as undetected performance issues can cause expensive outages of essential business systems.

About Integrated Research and Prognosis

Integrated Research is the creator of Prognosis® multi-vendor UC ecosystem management for Avaya Aura™, CS1000, Cisco and Microsoft UC platforms. Prognosis helps you manage the infrastructure needed to implement and maintain successful UC and SIP solutions. For more information visit www.prognosis.com/uc

Dilemma 1 – Managing Multiple Technologies

The core concept of Unified Communications is one of unifying ‘multiples’. And the goal of unifying multiple devices and technologies like phones, unified messaging, directory services, video endpoints and calendars into a cohesive UC solution is indeed an ambitious one.

Take for example unifying multiple technologies to create a more streamlined and effective communication process. How much time have you lost over the years playing ‘telephone tag’ or being available to take a call on your cell then returning to the office to find the call you’ve been waiting for in your desk phone’s voice mail?

One of UC’s key goals is to allow people to send messages using one medium and receive the same communication on another. For example, you can receive a voicemail message and choose to access it through e-mail or a cell phone. If the sender is online according to Presence information and currently accepting calls, the response can be sent immediately through text, chat or a video call. Otherwise, it may be sent as a non real-time message that can be accessed through a variety of media.

In the ‘pre-UC’ world a user lifts a handset and receives a dial tone either from the phone or PBX. The user calls a number directly or selects a person from a contact list. If the called party is available and answers the call the phone conversation goes ahead. If the called party is busy or unavailable, the calling party either hangs up or is diverted to voice mail.

How does UC change things?

Within the context of UC, many more technologies can be involved in the call process. As previously, the user selects a person from a contact list, which can be supplied by a directory service and potentially complemented with Presence services. Integration with calendar information and time of day rules enables the call to be placed to the user at their current location, and in the medium that makes most sense, for example to their cell or desk phone.

And as before, if the called party is available and answers, the phone conversation proceeds.

However, when the called party is not available, or the time zone is not conducive to speaking, the person’s computer has been idle for more than a specified period and so on, UC makes other options available.

The call may be diverted to the user’s unified messaging inbox for the caller to leave a voice mail, or be forwarded or diverted to another number. If the person is on the phone, a message may be sent as a text message.



As such UC application performance management must happen at the speed of sound. But the breadth of technologies involved makes it highly complex to manage.

What are the issues?

Potential issues include HTTP server and PBX performance and availability, phone de registration, voice quality, DSP utilization, routing capacity, virtualization and load balancing to name just a few. It’s vital to manage UC servers’ physical and virtual memory, CPU activity and disk usage, user load and for some platforms, temperature sensors, fan speed and power supply information to ensure service availability.

Potentially performance data is all there at your fingertips but while you juggle different management interfaces, you’ll also lack a consolidated view of the performance of the entire UC ecosystem. And while you perfect your juggling skills, the environment has moved on; and the conditions that caused a problem in the first place may no longer even be apparent.

Solving the dilemma of managing multiple technologies means pulling all the information you need into a single ‘pane of glass’ so you can view it any point in time. But there’s more to it than that. Even when you can unify information presentation, how can you gauge the impact of one technology on another?

Correlating information across technologies

For example you may be able to see how a PBX is performing and the amount of processing power it's using to service the busy hour, but what happens when a call is sent out to the PSTN via a session border controller and ITSP's SIP trunk? If the user advises you that the quality of such calls is low, how will you associate all these different devices to ensure you can see end-to-end activity? Relationships between a PBX and one or more session border controllers, incorporating the 'MOS cost' at each stage is invaluable to troubleshooting a voice stream that crosses multiple technologies.

And to complicate things a little more, as the availability of technology usually outstrips the corporate technology cycle, you're also likely to need to manage a hybrid UC environment, quite often with multiple versions of the same technology from a vendor. This means that even as you define and deploy UC, you must still manage legacy device performance, and deliver a consistent, high quality user experience. Analog and digital phones may be linked by IP trunks, so there is a need to monitor them and relate them to IP trunk availability, performance and capacity.

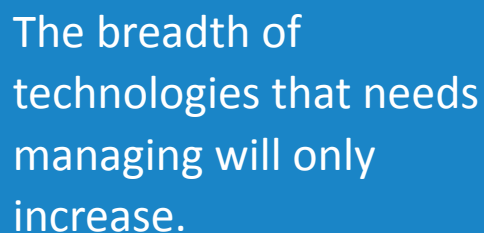
Correlation across multiple technologies is key to managing the performance of diverse UC environments.

What's next?

To move forward there are business cases to make and budgets to plan and acquire. Testing and interoperability are huge factors. And as you deploy UC, the breadth of technologies that needs managing will only increase and include other technologies like high-definition video room systems, SIP phones, virtualized UC applications and desktops.

Users will demand the same level of service, and introducing virtualization means that hardware faults will have greater impact. Any VM host performance issues have the potential to affect delivery of the UC service and the performance of virtualized desktops with real-time applications.

The next dilemma we discuss concerns managing the availability and performance of multi-vendor environments to ensure a high quality user experience for all.



The breadth of technologies that needs managing will only increase.

Dilemma 2 – Managing Multiple Vendors

The dilemma of managing multiple technologies is a vexing one, and as UC is still being defined and evolving uniquely to suit individual business requirements, your multi-technology portfolio is likely to incorporate products from multiple vendors distributed across multiple locations and servicing multiple stakeholders.

If you're a Cisco customer, you may have a mixture of Windows-based CallManagers, Linux-based closed appliances running Cisco Unified Communications, VoIP, SRST and messaging-enabled routers, Unity and more. And if you're an Avaya customer your contact center may include IP-PBXs with SIP phones or older IP-enabled PBXs still supporting digital or analog phones.

And now with the release of Microsoft Lync, with its multiple servers, applications and devices, the management challenge is to ensure the success of this new technology, as well as handling interaction with other vendors' equipment.

The release of Microsoft Lync is a game changer; its adoption has been rapid as many organizations are able to access Lync licenses through their existing Microsoft purchasing arrangements.

Whichever platform you have today, and however successful your VoIP deployment has been so far, as UC applications roll out it's inevitable that other vendors' products and devices will need to be integrated with it.

These include the increased pervasiveness of session border controllers (SBCs) from vendors like Acme Packet to securely interconnect UC networks; multi-vendor IP-PBX environments, server virtualization, new devices and UC applications.

Performance data from such a myriad of information is not easy to correlate. This leads to a lack of insight into how one vendor's product can impact not just its own performance but that of those depending on it.

For example if you're trying to investigate call quality issues in calls that originate from one vendor's VoIP network, and traverse SBCs to another, it will be difficult to follow the call from origin to destination. Each vendor will log information in terms of its own call or voice stream identifier with different amounts of delay.

The information is available but it's uncorrelated.

The advantages of end-to-end voice quality correlation

However, if you're able to correlate voice streams that traverse one or more SBCs and terminate in other UC networks, you can see details of the related voice streams' path. This helps you identify where voice quality issues are occurring, and the availability of deep drill down metrics allows you to look at issues from multiple perspectives.

Your users won't know that their calls have traversed multiple network hops and crossed multi-vendor boundaries. But end-to-end voice quality correlation showing details of the originating and terminating calls gives you the insight you need to ensure quality voice delivery and resolve quality issues.

Insight across multiple technologies turns what is otherwise a potentially overwhelming set of unrelated metrics into invaluable component relationships across UC ecosystems. This is important to achieving ROI because it reduces the time it takes to identify



The release of Microsoft Lync is a game changer.

the causes of problems. And as quality issues frequently cross multiple domains of operation, it makes it easier and quicker to convince the right team to address the issue, resulting in reduced mean-time-to-repair.

And there are further benefits; this level of insight helps you predict and prepare your environment so you can reduce future impacts on your users, customers and your business.

Bringing UC insight to the user experience

The solution to the dilemma of managing multiple technologies and vendors is to understand the user's complete UC experience through a single pane of glass.

In this way you can rapidly identify, address and resolve UC quality of experience issues by viewing all the factors that affect it. This view can include multiple technologies, vendors, versions, locations, UC networks and more.

Through a single user interface all the aspects that make up VoIP as part of the evolving UC performance management 'big picture' are correlated for you. And not just in real time. At any point in time you can view the availability, status performance and capacity of the path your users' communications take and easily answer the following type of questions:

- What is performance like right now?
- What was it like this time yesterday, last week, month and year?
- What was happening when all users in one part of the network experienced poor call quality or couldn't place an outgoing call?
- How much more load is being placed on the UC network than last month?
- Do I need to monitor more now that there are more technologies in the frame?
- Am I approaching capacity of any link, gateway, trunk, server or PBX?
- When is my busy hour?
- Do I have sufficient redundancy and capacity in my backup routes?
- How do I know if my UC solution will scale as I roll out more users?



Bridging the knowledge gap

You can break down UC management into a product you can buy, to the features it offers and the solution it provides. Prognosis obtains information from multiple technologies spanning hardware, software and applications. The features Prognosis provides turn this information into real-time displays, alerts and stored information to use for troubleshooting and capacity planning, and availability service level reporting.

As successful performance management of a UC environment requires the server, network and telephony teams to work together, having this type of information correlated at your fingertips helps bridge the gap between them. It helps you optimize IT operations, and you can use it for capacity planning purposes to ensure the success of your UC portfolio as it matures and expands. Now you can turn server and application expertise into real-time unified communications management.

And crucially, with this knowledge you can minimize expensive outages in the future.

As the IT administrator you can use all this information to monitor, measure and manage your UC network infrastructure and staff resources. Across technology, vendor, version and location this can be done using one product, Prognosis for Unified Communications.

In Part 2 we will look at two more UC's performance management dilemmas

- **Managing multiple stakeholders**

Improving user perception and satisfaction and keeping stakeholders informed about UC performance is vital to ensuring its success. Part 2 will explain how to provide the information needed at operational and executive level, showing historical trending and service level reporting to provide quantitative measurement of the actual service delivered.




- **Managing UC events over time**

You usually can't go back to any point in time but with Prognosis you can add the dimension of time to analyze the user's experience. You can pause, replay and jump to any moment and understand the prevailing conditions at the time. This will help you find the answers to problems, across vendors, applications, devices and time.



Contact us

Americas **t:** +1 (303) 390 8700 **f:** +1 (303) 390 8777 **e:** info.usa@ir.com
Asia Pacific/Middle East/Africa **t:** +61 (2) 9966 1066 **f:** +61 (2) 9966 1042 **e:** info.ap@ir.com
United Kingdom **t:** +44 (0) 1344 894 200 **f:** +44 (0) 1344 890 851 **e:** info.europe@ir.com
Germany **t:** +49 (69) 710 455 255 **f:** +49 (69) 710 455 450 **e:** info.germany@ir.com

 twitter.com/IRPrognosis
 facebook.com/IntegratedResearch
 linkedin.com/companies/integrated-research

For more information visit our website at www.ir.com

UC0178-01



About Integrated Research (IR) - IR is a leading global provider of high-definition performance monitoring, diagnostics and reporting software. The creator of award-winning Prognosis® and PowerMinder® - IR builds scalable, customizable solutions designed to manage continuity-critical IT infrastructure, payments and communications ecosystems. IR provides real time solutions that give customers the insight they need to run their business, reduce their operating costs, minimize risk, and gain competitive advantage.