# MOVING UP TO NEXT LEVEL ENTERPRISE COMMUNICATIONS

## INCREASE EFFICIENCY AND IMPROVE OPERATIONS BY MITIGATING THE RISKS OF AGING SYSTEMS

WHITE PAPER

## ABSTRACT

Aging communication systems make enterprises vulnerable to security threats and system failures, and often restrict an organization's ability to evolve business processes to meet operational requirements and business objectives. Unplanned operational and capital costs continue to increase as these systems remain in service beyond their support contracts and expected life cycle. And when these systems fail, they seriously restrict an organization's ability to deal with customers. By analyzing existing risks, identifying new system requirements, and adopting centralized and virtualized solutions that leverage existing infrastructure elements, every organization can mitigate the risks and eliminate unplanned costs associated with continuing to operate and maintain aging systems. At the same time, they can lay the foundation for the introduction of new capabilities, features, and functions that will improve business processes, increase employee efficiency, and deliver a higher return on communication network investments.

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# AGING COMMUNICATION SYSTEMS CREATE RISKS

Communication systems that have been in service for a long time usually continue to perform as expected. Operational costs associated with these systems appear to be under control. But aging systems are very vulnerable to three main risks:

- Security threats, such as toll fraud
- System failures, which create major disruptions in daily business processes
- Inability to accommodate business group or corporate evolution requirements

Usually, unplanned operational and capital costs associated with these risks increase as systems age:

- Outdated security policies increase vulnerability to expensive toll fraud attacks.
- Spare parts are expensive and are more difficult to find as the system ages, so the duration of downtimes increases during failures.
- The lack of service contracts and vendor support when systems reach end of life often leads to hasty and expensive fixes for every outage.
- System maintenance personnel with the right skills are no longer on staff because they have left or retired, so ongoing operations costs are high.
- Unavailable system features or options to support new requirements can only be added by purchasing a new system, which usually comes with high upfront costs.

In addition to these unplanned costs, the cost of business disruptions and loss of customer satisfaction can be huge if telephony services are down for several hours or days. Therefore, to avoid potential disruptions and increases to operations budgets, all organizations with aging communication systems should identify the risks they face and take action to avoid them before they affect the bottom line.

# AGING COMMUNICATION SYSTEMS ARE EXPENSIVE

Despite an old communication system's apparent stability, most organizations underestimate the cost of maintaining and operating an aging system beyond its end-of-life date. Every organization should be aware of the three areas that can create substantial operational cost increases and address them before they affect operations budgets.

### Underestimated costs of toll fraud attacks

A typical statement from Information Technology (IT) managers with old systems is: "We cannot be hacked. The system was secured during installation."

However, maintaining security for communication systems is a continuous improvement process. Unfortunately, aging systems cannot always comply with the latest security requirements because they are built with outdated security policies and insufficient protections. For this reason, aging Private Branch Exchange (PBX) systems are prime targets for toll fraud. Hackers take advantage of known security breaches in old systems, such as weak password controls or no replay counters, to divert PBX features. For example, a hacker may use transfer features to resell call minutes or place calls to international premium rate numbers, which belong to the hacker. This toll fraud usually happens during non-business hours and is only detected when the phone bill is received.

It may result in tremendous financial losses over a few hours, and can be as much as between $4,000 to more than $150,000.

## Underestimated costs of fixing a system failure

Another typical statement from IT managers with old systems is: "Our telecom system never goes down."

Unfortunately, sooner or later a failure will occur. The goal is not to determine when, but to limit its impact. On aging systems, the time needed to fix failures increases as the system ages, especially if the system has reached the end of its support contract. Downtime is longer because there is no Service Level Agreement (SLA) with the original supplier and fixes have to be patched together with the IT team.

The cost of fixing these failures increases with the age of the system:
- Without a service contract, the business has no guarantee of resolution time or level of priority the equipment supplier will give if an issue arises. If the IT team has to contact the supplier to resolve an issue, it will pay the highest price to open a case. Full prices in the industry can range between $4,000 and $10,000 per case, depending on the complexity of the problem.
- When a vendor stops selling a product the necessary spare parts become scarce. This makes it difficult to find new replacement parts and very expensive to acquire used parts in mint condition. Even if parts are sold on online sites, such as eBay®, they may be delivered with no hardware warranty.

## Underestimated costs of system evolutions

Businesses with old systems often assume that the system they have provides all the functionality they need. Typically, these businesses will state: "Our telecom system meets our current needs."

But this view does not take into account the reality that business needs change. What may have worked when the system was purchased may not be enough to support changes in how the business operates today:
- New features the business requirements, such as enterprise mobility capabilities for employees or integration with business processes, may be required.
- As new standards evolve and business systems are updated, the IT team will not be able to implement advanced applications on top of the aging system, such as recording and notification services.
- When the system is operating close to capacity limits it may not be possible to add licenses or hardware necessary for new users.

Adapting the old system to new business processes results in unplanned costs associated with:
- Fallback technology: Employees may begin using their corporate cell phones instead of the enterprise communication system for their daily routines, thereby increasing enterprise mobile telecom bills.
- Forklift upgrades to new technology: New systems brought in to replace old infrastructures come with high upfront costs for the communication systems, as well as for cabling, Local Area Network (LAN) equipment, wireless infrastructure, desk and wireless phones, and expensive IT and employee training.

In short, aging systems expose enterprises to risks and additional costs. Therefore, every organization should to take proactive action to avoid these costs as soon as possible.

# AVOIDING UNPLANNED COSTS

For most situations, an enterprise IT team will be able to implement tactical processes on its own, which enables the enterprise to avoid unplanned costs associated with aging systems. However, involving other business lines may be necessary when business continuity, applications for user efficiency, and new standards drive the need for an up-to-date communication system. For these situations, a joint task force approach may be needed.

## Identify internal drivers for change

Specifically, a joint team approach can be used to assess how badly the system is currently exposed to toll fraud attacks and to determine if it is compliant with the security measures to be taken. Table 1 provides an example of typical security questions that can be used to make this assessment.

**Table 1: Security assessment example**

| QUESTION | YES | NO |
|---|---|---|
| Has the security policy been updated in the last year? | | |
| Have the same system passwords been used for more than a year? | | |
| Do end users use default voicemail passwords? | | |
| Has the system administration team recently undergone personnel changes? | | |

**Note:** A majority of "yes" answers requires immediate action.

A joint team can also assess how critical the communications system is to the business and what the ideal SLA should be. If a system is mission-critical, reliability and security will be a high priority. This is a key consideration in organizations that are driven primarily by processes, such as factories. Table 2 provides an example of typical SLA assessment questions.

**Table 2: SLA assessment example**

| QUESTION | YES | NO |
|---|---|---|
| Is the communication system no longer supported by the vendor? | | |
| Do users complain from lack of standardized services across teams or sites? | | |
| Are users noticing a reduction in performance? Do employees complain about not being able to call colleagues because the lines are busy? | | |
| Is the system operating close to system capacity (for example, you can't add dozens of new users)? | | |
| Are operational costs increasing? | | |
| Is the number or the severity of issues increasing? | | |
| Is the communication system blocking operating software, servers and network infrastructure updates because it is not compliant with recent technology? | | |

**Note:** A majority of "yes" answers requires immediate action.

Finally, a joint team can assess how innovative technologies can contribute to business efficiency and how easily users will adopt new technology. User reactions often determine a project's success, and organizations are more effective when users adopt new technologies faster. This is a key consideration in creative businesses, which are driven largely by individual behaviors. Table 3 provides an example of questions that can be used to assess usage expectations.

**Table 3: New expectations assessment example**

| QUESTION | YES | NO |
|---|---|---|
| Does a recent acquisition require people in different locations to communicate regularly? | | |
| Do users request the ability to operate multiple devices – potentially their own – and telecommute? | | |
| Does a new governance model require a larger number of people to make decisions? | | |
| Is there a strong demand for enterprise cellular mobility services? | | |
| Have your competitors changed how they communicate with customers? | | |

**Note:** A majority of "yes" answers requires immediate action.

## Identify external drivers for change

There are also many external drivers for change to consider. These range from tactical to strategic and may include:

- New threats to Linux Operating System software that make it necessary to update the software release
- Service and support contracts that may be about to expire, which increases the risk of system outages, high service costs, and delays in issue resolution

- New business obligations, such as new contracts that may require additional software licensing, which can best be purchased under a cost-effective site license rather than costly individual licenses
- Regulatory and legislative changes, such as the Sarbanes-Oxley Act in the United States, which may require new processes and equipment
- New enterprise-scale projects, such as construction of a new building, a new business application deployment, a new network infrastructure, or a company acquisition, which offer the opportunity to reduce costs and deliver new services

## Identify and implement a transformation path

Once internal and external drivers for change have been identified, the enterprise can then develop an effective transformation path. The ideal plan offers ways to:

- Diminish the level of risk, curb maintenance costs and decrease operational expenses
- Leverage existing communication system elements as much as possible because a forklift upgrade may lead to massive upfront costs as well as additional spending. For example, training IT teams on a new system can take as much as 25 days for each engineer (industry average). Likewise, users may spend an average of three hours to learn how to use the new interface. By comparison, updating an existing system costs an average of two to five days for IT staff and has positive impact on employees because changes are only related to new features and applications.
- Re-allocate operational savings to budgets for innovation, introduce a roadmap for evolution, and anticipate the costs of future upgrades (for example, mobility services, collaboration, Bring Your Own Device (BYOD) programs)
- Deliver communications services to lines of business or directly to end users

# ALCATEL-LUCENT ENTERPRISE APPROACH TO AGING SYSTEMS

As shown in Figure 1, Alcatel-Lucent Enterprise can provide organizations with end-to-end support for a smooth transition from legacy infrastructures to new systems with a three-step process that:

- Mitigates risks with up-to-date software that leverages existing investments
- Curbs maintenance costs and drastically reduces communication bills with centralized communications and voice over WAN (VoWAN)
- Virtualizes applications to save on operations and get budgets for innovations that meet business expectations

**Figure 1. Alcatel-Lucent Enterprise blueprint for transformation**
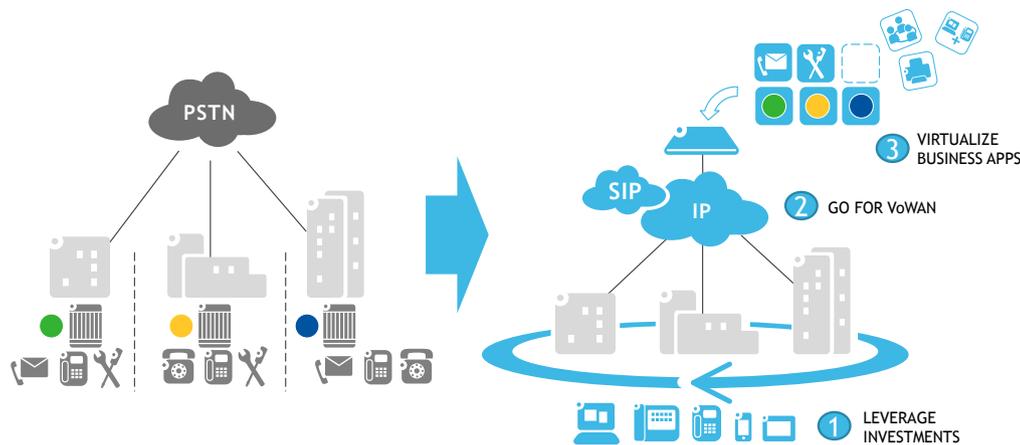


## Get up-to-date software that leverages existing investments

Alcatel-Lucent Enterprise helps organizations leverage the components of their communications system that have value and update only components that are no longer able to meet operations objectives. An existing Alcatel-Lucent system, such as the Alcatel-Lucent OmniPCX™ 4400 or an Alcatel-Lucent OmniPCX Enterprise Communication Server (CS) PBX, can be transformed to the latest version of the OmniPCX Enterprise CS. Valuable assets such as telephone sets, wireless infrastructure and existing cabling can be reused, and third parties can be interconnected with Session Initiation Protocol (SIP) or Q-Signaling (QSIG) protocol.

In addition, commercial programs can help transform Time-division Multiplexing (TDM) licenses to Internet Protocol (IP) or SIP user licenses to improve user experiences with the latest business telephony features. This includes wideband audio, touchscreen desk phones, software-based clients on PC and MAC, call shifting, desk sharing, and embedded conferencing capabilities.

Installing the latest software also mitigates the risk of toll fraud attacks and addresses further business continuity requirements. The OmniPCX Enterprise CS redundancy capabilities offer business continuity for data centers and remote sites, and disaster recovery plans can be put in place to meet company standards.

With the latest software and hardware, the communication solution is compliant with most industry standards and regulations, such as the Restriction of Hazardous Substances directive (RoHS), or the Sarbanes-Oxley security policy that is widely used by large banks.

Most importantly, the new software becomes the starting point for future evolution because it is the foundation of the Alcatel-Lucent OpenTouch™ Suite offering.

## Go for VoWAN IP communications

The flexible TDM/IP architecture of the OmniPCX Enterprise CS offers a smooth transformation from highly distributed systems over the Public Switched Telephone Network (PSTN) to communication servers that are networked over IP. With this transformation, a massive amount of off-net traffic is transformed into free on-net voice over IP (VoIP) calls. This can reduce communications bills by up to 20 %. In addition, PSTN subscriptions can be centralized, optimized and converted to SIP trunks to further reduce off-net bills. New sites can introduce IP phones that leverage IP cabling.

Finally, to make enterprise communications services available at work, at home and on the go, business line requirements for optimized real estate and new mobility and commuting use can be met with hot desking, VoIP on PC, smartphones or tablets, and a single number feature.

## Virtualized and centralized communications

The OmniPCX Enterprise CS also supports virtualization and centralization of communications functions. It scales high and controls a large number of remote sites from its centralized software. Therefore, IT teams can deliver substantial savings on operations by reducing the number of systems required and by limiting hardware investments. Centralized software also provides an opportunity to deliver standardized services and premium help desk services across all sites, which improves SLAs from, for example, a Next Business Day (NBD) to a four-hour response time for a remote branch office.

A single, centralized management point simplifies operations. It allows IT teams to manage additional virtualized applications, such as multimedia collaboration and mobility services. Virtualization can be achieved on any compatible server. As a result, IT teams can optimize deployments and maintenance of the communication software and can meet specific business group needs for messaging, visual collaboration, and mobility by adding an OpenTouch Multimedia Services virtual machine. This virtualization and centralized management can reduce administrative workloads by up to 60 percent.

With the  Alcatel-Lucent Enterprise OpenTouch Suite, employees can collaborate from any location — home, office or on the move — using the device of their choice, without disruption or compromise to quality or security. This suite provides employees with easy, real-time access to their business community and the ability to share documents and work on them collaboratively in real time, and use video at their desk or in conference rooms. This improves employee productivity and enables them to react more quickly to meet business requirements.

To ensure every organization gets a tailored solution to fit its specific needs, the Alcatel-Lucent Enterprise OpenTouch Suite offers flexible deployment models. This gives IT

departments the ability to deliver a high standard of collaboration experiences from the enterprise data center or through cloud-based services.

### Get multi-year evolutions

Finally, to make the transition as smooth as possible and remove the risks created by aging systems, Alcatel-Lucent Enterprise solutions are offered with optional multi-year evolution contracts. This gives every organization the opportunity to choose an optimization or innovation path with predictable pricing that meets specific business objectives.

## CONCLUSION

Although aging communications systems may continue to deliver the level of service and functionality they were configured to provide when they were originally designed and installed, keeping them in service makes an enterprise vulnerable to unseen costs. Security threats, such as toll fraud, system failures that create major disruptions in daily business processes, and inability to accommodate business group or corporate evolution requirements can seriously compromise any business operation.

To avoid potential process disruptions and increases to operations budgets, all organizations with aging communication systems should identify the risks they face and take action to avoid them before they affect the bottom line. A thorough analysis by all internal stakeholders can identify internal and external drivers for change, and a path towards a system transformation that addresses all business requirements.
The ideal solution:

- Mitigates potential risks with up-to-date software that leverages existing investments
- Curbs maintenance costs and drastically reduce communication bills with centralized communications and VoWAN
- Centralizes and virtualizes applications to save on operations costs and free funds for innovations that meet business expectations

Alcatel-Lucent Enterprise helps organizations leverage the components of their communications system that have value and update only components that are no longer able to meet operations objectives. A business communications solution built on the Alcatel-Lucent OmniPCX Enterprise CS can mitigate the risk of security threats, system failures, and major disruptions that can seriously affect daily operations. In addition, it can provide all the advanced features and functions an enterprise needs to address business and customer service requirements today, while laying a solid foundation for evolution to new OpenTouch Suite capabilities when they are needed tomorrow.

## ACRONYMS

| | | | |
|---|---|---|---|
| BYOD | Bring Your Own Device | QSIG | Q-Signaling |
| IP | Internet Protocol | RoHS | Restriction of Hazardous Substances |
| IT | Information Technology | SIP | Session Initiation Protocol |
| LAN | Local Area Network | SLA | Service Level Agreement |
| NBD | Next Business Day | TDM | Time Division Multiplexing |
| PBX | Private Branch Exchange | VoIP | Voice over IP |
| PSTN | Public Switched Telephone Network | VoWAN | Voice over Wide Area Network |