



# Evaluating Total Cost of Ownership for Enterprise Communications

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## Executive Summary

Microsoft® Lync™ Server 2010 provides customers the opportunity to reduce their total cost of ownership (TCO) for communications by 39 percent vs. other solutions. Lync Server 2010 offers savings via infrastructure and operational consolidation, and specific opportunities to reduce initial and ongoing costs in terms of devices, hardware, software, network provisioning, implementation services, and support. By taking advantage of these options, organizations can significantly reduce both capital and operating expenses for communications.

## Overview

Communications—including e-mail, telephony, audio conferencing, video, instant messaging, and Web conferencing—are a vital element of any organization's infrastructure and operations, and enterprises incur significant expense deploying and operating the systems that provide these functions. For an organization with 5,000 employees, the total expense incurred across these systems usually exceeds US\$ 2.5 million per year—including hardware, maintenance contracts, device/handsets, software licenses, service contracts, network provisioning, monthly network charges, administration, user provisioning, and support. Often, enterprises have different solutions for e-mail, telephony, video, and other communications capabilities, with each solution incurring its own capital and operational expense within its infrastructure silo—each system has a separate hardware footprint, maintenance contract, external implementation services, and internal support staff.

[The State of Montana](#) achieved significant cost savings by using their existing Active Directory as the basis for deploying Microsoft Lync telephony, saving \$100K over a traditional PBX approach with the very first site deployed.

In contrast, a communications solution based on Lync Server 2010 allows organizations to streamline their communications infrastructure and significantly reduce their TCO for communications, while delivering the reliability and quality required for mission-critical business communications. By integrating voice, audio conferencing, video conferencing, Web conferencing, instant messaging, and presence within a consolidated infrastructure and operations model, Microsoft Unified Communications allows organizations to leverage a single set of infrastructure investments and operational approaches across the entire spectrum of business communications.

One approach that allows Microsoft to offer a choice of innovative solutions at significantly lower cost is to eschew the proprietary, hardware-focused approach to communications of competing vendors. Instead, with Lync Server, Microsoft has taken an approach based on published interfaces and vendor choice, an approach that uses standard server hardware and fosters broad multi-vendor choice for end user devices, servers, network infrastructure, and network services. This approach enables customers to choose among multiple vendors, each pursuing innovation targeted to address specific needs while competing vigorously on features and price. The Microsoft approach to building a horizontal ecosystem moves the communications ecosystem toward an innovation and competition environment similar to the open, vibrant PC ecosystem and away from the closed, proprietary, and expensive mainframe approach to communications.

## Framework for Assessing Communications TCO

A complete framework for assessing TCO describes the communications capabilities required by an organization and then decomposes these capabilities into common components required to deliver the required capabilities. The component costs to support each capability can then be modeled and the total cost to support the full solution understood. Some costs will be acquisition costs, incurred at the beginning of deployment or shortly thereafter, and others will be recurring costs. To capture the relative impact of both initial and recurring costs, TCO assessments must be made over multiple years. To this end, the following discussions of TCO are all based on a three-year time frame.

### Communications Capabilities

Any evaluation of TCO for business communications must include the following capabilities, which customers are seeking to integrate into their environments today:

- **Voice** includes telephony-related functions and infrastructure, including PBXs/IP-PBXs, telephony gateways, telephone handsets, and any other infrastructure or operational roles related to maintaining telephony.
- **Audio Conferencing** includes on-premises telephone and audio conference bridges.
- **Video Conferencing** includes desktop video solutions.
- **Web Conferencing** includes application or document sharing.
- **Instant Messaging and Presence** includes rich presence controls and display and the ability to send real-time text messages to others.

[Lync Server 2010](#) provides a full suite of communications capabilities in a single, truly unified platform—one product delivers Presence, Instant Messaging, Conferencing, and Voice.

Delivering these capabilities requires customers to acquire both infrastructure and end user software, multiple types of hardware, associated support contracts, implementation services, and network services, and to manage the communications infrastructure on a continuing basis.

### Components of TCO for Enterprise Communications

To deliver on all of the required communications capabilities, organizations must invest in and maintain the following types of equipment and support processes:

#### Devices

Devices include telephony handsets and other voice or video devices used in the organization. Most organizations today provide the majority of employees with a dedicated handset. High-end devices, typically allocated to executives or sales functions, can list for \$800 per device. Mid-range devices for typical Information Workers represent the majority of devices across the organization and list for \$400-600, while low-end devices for manufacturing facilities, staff, and common area phones have list prices of \$200. Given the range in functions and voice usage, most organizations select a mix of different devices, including high-end, mid-range, and low-end devices.

## Hardware

The hardware category includes centralized servers and other infrastructure such as load balancers, PSTN gateways, or Survivable Branch Appliances. Some vendors require all hardware, even general purpose data center servers, to be purchased from a single vendor or small set of certified vendors. Some communications platforms may also require additional specific security hardware for VPN services in the datacenter, headquarters, branch, and telecommuters' home offices.

## Software

Software includes both license and maintenance costs for server software, client software, and embedded software. There are many approaches that vendors take to licensing software for communications. Microsoft, for example, delivers an all-in-one license model, while some vendors favor an a la carte approach, licensing many individual components separately.

## Network

All communications platforms require connectivity to a service provider(s) to facilitate communications among customer sites, federated companies, remote, anonymous, and PSTN users. These costs can become significant, especially when the chosen solution requires a high degree of traffic engineering support from the carrier or high provisioned bandwidth thresholds to compensate for codecs that perform poorly under constrained network conditions.

## Services

Services costs are primarily fees paid to systems integrators or resellers who assist with planning, build-out, piloting, and deployment of communications solutions. As complexity increases, these fees typically increase as well.

## Support and Operations

Support and operations costs include the cost of administration (all tiers), helpdesk and end user provisioning costs, and hardware maintenance contracts.

## TCO of an IP Telephony-centric Communications Platform

For many organizations, the TCO of the communications platform based on traditional approaches breaks down along these lines:

An ecosystem of partners has [announced](#) solutions and services that complement Lync Server, including Survivable Branch Appliances, IP Phones, E911, contact center, and call recording.

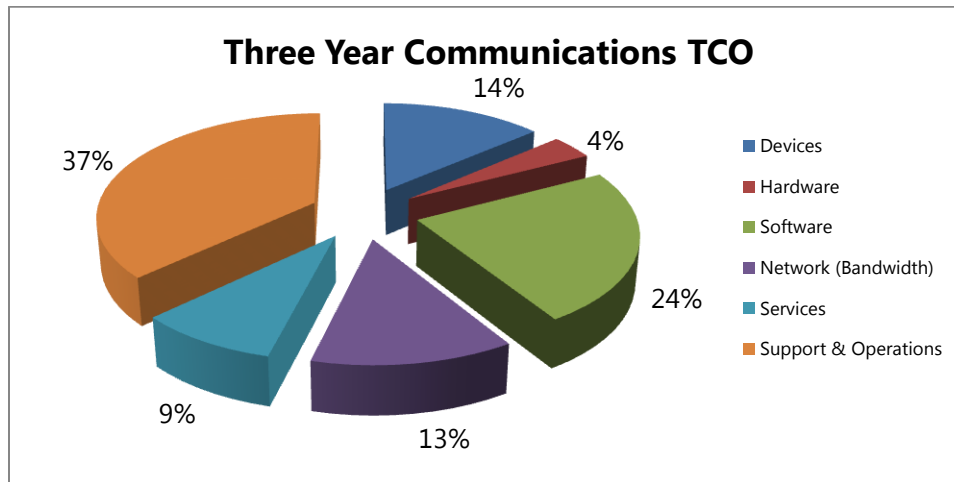


Figure 1: Traditional IP-PBX TCO: Cost Components<sup>1</sup>

The annualized 3-year TCO for traditional or legacy IPT and/or PBX solutions, is typically \$400-500 per user per year (\$1200-1500 per user over 3 years) for an enterprise of 5,000 employees. TCO per user per year is similar even for significantly larger enterprises (50,000+ employees).

## Transforming the TCO for Enterprise Communications

Lync Server 2010 can significantly reduce an enterprise's overall spend on communications. Fundamentally, the Microsoft solution enables TCO reduction through *consolidation* of the communications capabilities and footprint. As described above, organizations have often maintained siloed environments for different communications capabilities. The Microsoft approach is to provide a single platform capable of meeting customers' requirements across the entire set of communications capabilities at high scale.

By including all common communications capabilities in an integrated and highly scalable platform, Lync Server 2010 delivers a substantially lower-cost alternative to the high-cost, multi-solution, siloed environments often found today:

Microsoft has been named a leader in the Gartner Groups's [2009 Magic Quadrant for Unified Communications](#) and a visionary in the [2009 Magic Quadrant for Corporate Telephony](#).

<sup>1</sup> Based on Microsoft assessment of costs to deliver unified communications capabilities for a typical solution based on an IP-PBX.

- Lync Server 2010 natively includes **Instant Messaging/Presence** capabilities, through the Lync 2010 client, which act as a fundamental “dial tone” and foundation for all real-time communications needs without requiring additional software.
- The extensive **Voice** capabilities in Lync Server 2010 provide communication and collaboration capabilities with reliability and quality consistent with customer needs.
- **Audio/Video/Web Conferencing** capabilities offer every employee simple access with enhanced security to a full suite of conferencing capabilities from any physical location, and eliminate the need to pay for separate audio and Web conferencing services.

The TCO discussion and analysis below excludes certain communications items, including e-mail, hosted services, room video conferencing systems, telephony carrier charges, mobile devices, and call centers in the interest of focusing on core, controllable cost levers in the enterprise when evaluating alternative approaches. While Lync Server can address most organizations communications requirements, these specific elements are heavily influenced by customer and partner considerations.

The Microsoft approach results in opportunities for significant consolidation across several dimensions:

- **Infrastructure consolidation:** As noted above, a single, unified infrastructure using Lync Server 2010 can address most organizations’ communications requirements.
- **Physical consolidation:** The Microsoft solution is the highly scalable among enterprise-grade solutions, with both a “scale-up” and a “scale-out” model.
  - The scale-up model allows a single pool (a collection of 5-10 servers maintained in a datacenter) to service communications needs, across all capabilities, for up to and beyond 100,000 users
  - The scale-out model allows very large enterprises (e.g. with 300,000 employees) to deploy multiple pools across a few globally-coordinated datacenters (e.g. one pool in Chicago to service the Americas, another in Paris to service EMEA, another in Singapore to serve all of Asia-Pacific).

New IP phone models were [announced](#) at **VoiceCon Orlando 2010** by Polycom and Aastra. Optimized IP, USB, and PC phone products are offered by Polycom, ClearOne, Plantronics, Jabra, Logitech, Microsoft, HP, Lenovo, and others.

This high scale enables an enterprise to consolidate all of its communications operations into a small number of datacenters, and, with high centralized call volumes, negotiate bulk arrangements for PSTN connectivity with carriers to a greater extent than possible with other approaches.

- **Operations consolidation:** Rather than having one team per capability for administration, support, and other operations, organizations can share fewer teams across all communications capabilities, serving more end users from internal training investments and driving service efficiencies and cost reductions.
- **License consolidation:** Large organizations can reduce the burden of complying with multiple different license terms and managing different maintenance and support agreement timeframes by consolidating all of their Microsoft licensing under a single Enterprise Agreement. These

customers may also realize substantial discounts across the full Microsoft stack through offers such as the ECAL Suite.

TCO reductions facilitated by Microsoft solutions across different TCO components are described below relative to the TCO of an alternative IP Telephony solution from a large provider of IP Telephony and networking solutions.

## Devices

End user devices, such as telephone handsets, typically account for 10-20 percent of the three year TCO for enterprise communications and 30 percent of the initial purchase price (which includes devices, hardware, software, and services).

Traditional IP Telephony/PBX solutions are siloed, single-vendor stacks that extend from proprietary hardware/software infrastructure elements to proprietary end user devices. Most vendors require end user devices to be sourced from the same vendor as the PBX. These device sales are a significant source of profit for companies that pursue proprietary device hardware approaches, with the profits from phones alone sometimes representing more than 50 percent of the profit for an entire telephony system.

Microsoft can facilitate a 41 percent or greater reduction in device cost, based on two approaches:

1. **Vendor Choice:** The Microsoft approach, consistent with its approach to the PC industry, has been to foster an ecosystem in which multiple vendors deliver handsets and devices that connect with Microsoft Lync Server, facilitating reduced cost and more rapid innovation. With Lync Server 2010, this vendor ecosystem delivers a full range of devices, including high-end IP telephone handsets for executive or sales functions, mid-range IP telephone handsets for typical Information Workers, mid-range USB telephone handsets, and low-end IP-phone handsets for common area phones.
2. **User Experience:** Deployments of Lync Server have shown that the user experience of the Lync client decreases requirements for standalone IP Phones, allowing the use of high quality, significantly less expensive USB-based peripherals. [We estimate](#)<sup>2</sup> that the use of USB devices instead of IP phones can reduce Capital Expenses for communications by 19 percent if just half the user based adopts USB devices. For video, the rich Microsoft desktop user experience

**USB handset devices OPTIMIZED for use with Microsoft Lync from Microsoft hardware partners are often less than one-third of the cost of standalone IP telephones.**

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<sup>2</sup> See page 53 of the linked RFP response.



combined with integrated or inexpensive USB video cams deliver an integrated video experience at a fraction of the cost of desktop phone devices with video capabilities.<sup>3</sup>

## Hardware

Hardware consists of infrastructure in the datacenter and in the branch office. Hardware such as servers, storage devices, gateways, PBX chassis, gateways, and survivable branch appliances generally account for 4-6 percent of the three-year communications TCO, and sometimes significantly more.

Datacenter hardware costs in a Microsoft environment are typically a tiny fraction of IP Telephony- or legacy TDM-based solutions. Lower datacenter spend is partially due to Microsoft enabling customer choice among industry standard server hardware platforms running Windows Server® and the very high scale of the Microsoft solution relative to others in the market. For example, in a 50,000 user enterprise, the Microsoft approach results in a 77 percent reduction in datacenter hardware relative to alternative approaches.

In legacy TDM voice environments, each site often has its own local PBX infrastructure, with its own deployment footprint, administration, support, and maintenance contracts. Any organization with multiple sites can find this approach extremely expensive, with the pain being felt even more so as organizations grow and become more physically diverse. Modern IP Telephony deployments consolidate hardware into many clusters, though each cluster still has associated hardware, deployment, and operational costs replicated across clusters rather than one highly consolidated environment. Many IP telephony-focused vendors also require their own high priced “appliances” on which to run their software, versus enabling an ecosystem of partners to deliver competitively priced hardware/software bundles.

The Microsoft communications approach can facilitate a reduction of hardware costs to just 2 percent of total TCO under expected-case assumptions. However, the hardware can range up to 9 percent under unlikely assumptions, such as full on-site redundancy for even the smallest of sites with a high ratio of sites to users that require the highest possible levels of resiliency at a very large number of sites.

Hardware TCO in a Microsoft environment is correlated with customer requirements for branch resilience and corresponding investments in survivable branch appliances. Under high-end assumptions in which an

**Customers may use servers from their vendor of choice, and may select survivable branch appliances from [Audiocodes](#), [Dialogic](#), [Ferrari](#), [HP](#), and [NET](#). They may also re-use gateways from [Cisco](#) and other vendors as documented via the [UC Open Interoperability Program](#).**

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<sup>3</sup> For instance, one IP Telephony vendor recently introduced a video capable phone that lists for \$795 before the purchase of a \$265 USB video camera designed specifically to be mounted on the phone (\$1,060 for video on a 5.6-inch screen). For comparison, the Microsoft Life Cam Cinema (one of many tested and supported webcams) lists at \$79.95 and offers 720p video quality.

enterprise with a very large number of branch offices<sup>4</sup> desires failover capability in every branch office regardless of size, the customer would deploy a basic branch office appliance at each branch office, driving overall hardware TCO up to 9 percent of total 3 year TCO. However, most customers do not require this level of resiliency in every branch, and under expected scenarios, the hardware spend drops to 7.5 percent of total TCO. This assumes a gateway appliance for PSTN connectivity in every branch that does not have a branch office appliance for resiliency.

Additional reductions in hardware cost are facilitated by SIP Trunking, allowing an organization to connect with the PSTN directly via IP rather than via a PSTN gateway appliance. Major carriers are offering SIP Trunking services qualified for Lync Server, which allow customers to reduce the number of deployed hardware gateways by centralizing PSTN connectivity via SIP trunks to datacenters. Expected SIP Trunking penetration assumptions over the next three years drive the total hardware cost for a large customer to only 2 percent of the TCO of the overall enterprise communications environment.

## Software

Software licensing and maintenance costs can represent 20-30 percent of the TCO of an enterprise communications environment. These costs include server licenses, client licenses, and software maintenance fees. Customers that elect to use multiple vendors to provide different capabilities will often see higher costs for software licensing.

The total software cost for a Microsoft-based environment is about 10 percent lower than the total software cost for an IP Telephony-based communications solution. This lower spend includes all capabilities for every user in the enterprise<sup>5</sup>. However, because the overall TCO of a Microsoft solution is significantly lower than the TCO of alternative solutions, the software cost as a percent of three year solution TCO rises a few percentage points relative to total spend, ranging from 20-30 percent of total TCO.

In the near term, organizations that have Enterprise Agreements with Microsoft can take advantage of special terms associated with the introduction of a new voice client access license for Lync Server 2010, which can reduce the total software spend by a factor of 30 percent.

See the Yankee Group white paper "[Network Considerations for Microsoft OCS Deployments](#)" for more information about how customers are deploying Lync Server on their networks.

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<sup>4</sup> Over 700 branch offices in a large 50,000 user enterprise.

<sup>5</sup> IM/Presence, Audio/Video/Web/IM Conferencing, LiveMeeting, Roundtable, IP Phone licensing, Voice, and Voice-related functions such as Response Groups.

## Network Bandwidth<sup>6</sup>

Network bandwidth costs can represent 13-17 percent of the three year TCO in a typical enterprise communications environment. These include the incremental bandwidth to connect branch sites with headquarters or datacenter sites, as well as the cost of voice trunks. If incurred across site-specific Network Service Providers or carriers (e.g. if network connectivity and/or PSTN connectivity is a function delegated out to each site, as opposed to centrally negotiated) these costs can be significantly higher.

The Microsoft approach to these costs results in a significant reduction of at least 30-35 percent relative to alternative IP Telephony solutions.

Unlike traditional solutions, Microsoft relies on a Quality of Experience approach to leverage endpoint computing power and achieve significant reductions in the bandwidth required for audio and video using the adaptive RTAudio and RTVideo codecs. The associated reduction in network bandwidth charges can be significant—several million US\$ in expense for large organizations (50,000 users or more). Other vendors are beginning to use an adaptive codec-based approach as well, using codecs such as iSAC that adapt to network conditions.

Organizations that require a high degree of control for bandwidth management purposes can enable Call Admission Control (CAC) in Lync Server 2010 to enable further reductions in bandwidth where required.

Centralized SIP Trunking, in conjunction with a centralized datacenter topology enabled by Microsoft's approach to communications, allows an organization to consolidate a large fraction of its existing PSTN trunks into centralized SIP Trunks. By consolidating capacity across a large number of branch offices, the organization can often accomplish a significant (50 percent or more) reduction in enterprise-wide PSTN trunk charges.

## Services

Services cost can represent 8-12 percent of the three year TCO for communications, including the cost of Systems Integrator (SI) services to plan, build, pilot, and deploy communications infrastructure. In a typical environment with siloed single-stack solutions for each capability, integration services can be challenging to procure and offer little potential to leverage skills across multiple capabilities, resulting in higher spend overall.

**Hundreds of Microsoft Voice Partners are available to help customers assess their readiness and deploy the Microsoft communications platform. Partners can assist customers to communications enable their line of business applications and workflows, improving processing quality and reducing time required to address exceptions.**

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<sup>6</sup> This figure does not include additional network capital spend to upgrade the network infrastructure to handle rich media communications (voice, video), which can be very significant and can alone exceed 25 percent of the TCO.

The Microsoft approach to communications enables organizations to reduce their services spending to approximately one-third that of the corresponding expense for alternative communications solutions.

This is due to:

1. **Microsoft Services expertise:** Microsoft has a broad ecosystem of SIs working with Microsoft-based technologies, such as Windows Server, Microsoft Exchange Server, Microsoft SharePoint® Server, and Microsoft SQL Server®. This ecosystem extends to Lync Server, with more than 400 partners qualified as Voice Ready Partners capable of servicing customer needs. Other communications solutions tend to have smaller, more specialized SI communities whose services can be more challenging to source and procure.
2. **Deployment and administration:** Microsoft communications solutions are significantly easier to deploy than alternative communications solutions, and use familiar components such as Active Directory® and PowerShell. This reduces reliance on SIs, and makes many deployment steps simpler than those for alternative solutions.
3. **Services consolidation:** Unlike approaches that require multiple similar services engagements at each large deployment site (e.g. at each cluster), Microsoft has a highly centralized approach to deployment and provisioning that better leverages shared services investments across all sites. For example, when Lync Server is deployed for the first time, it prepares Active Directory for communications entities anywhere in the organization—adding additional servers or users anywhere becomes a relatively trivial deployment. As long as the organization and/or service provider pays attention to design and operational aspects for the enterprise wide deployment up front, Microsoft’s “deploy once-expand-anywhere” architecture significantly reduces aggregate services spend.

**Alutiq saved \$1MM in hardware and licensing costs by moving from a traditional IP telephony focused vendor to the Microsoft communications platform and cut IT time administering communications by 85 percent.**

## Support and Operations

Support and Operations costs can represent 32-36 percent of the TCO for a communications platform, including administration, helpdesk, end user provisioning, and maintenance contract costs.

Administration includes the architecture, engineering, and management staff that maintain the communications environment. Existing enterprise environments often have different administration teams and practices across communications capabilities, increasing administration costs.

Helpdesk costs include Tier 1 helpdesk operations—the initial point of contact for end users—and escalated support arrangements. This function is often outsourced. Like administration, existing enterprise environments often have different helpdesk teams and practices across different capabilities, leading to increased cost.

End-user provisioning costs cover Moves, Adds, and Changes (MACs)

- “Moves” for office moves from one location to another

- “Adds” to provision new employees arriving on board
- “Changes” to handle modifications in the services or functions available to an employee<sup>7</sup>.

Such provisioning is often tied to automated processes linked to the organization’s Enterprise Resource Planning (ERP) or Human Resources (HR) systems. Provisioning costs can increase in an environment where (as is typical) the different communications capabilities require separate provisioning systems and investments in MAC infrastructure automation.

Finally, maintenance contracts cover hardware maintenance for PBX equipment and gateways, and any other communications hardware in the organization. For a multi-site organization, separate sites may have maintenance contracts specifically for the hardware at the physical location, representing a significant cost across the entire enterprise.

Of TCO components, Support and Operations is the largest for a communications platform, and is also the largest recurring cost. Support and Operations therefore provide a significant opportunity to streamline expenses relative to existing communications solutions. With the approaches enabled by the Microsoft communications platform, organizations can achieve significant reductions in support and operations spend for communications versus existing solutions. These cost reductions in support and operations can be achieved by pursuing:

1. **Administrative consolidation:** With the Microsoft approach, rather than staffing multiple teams to administer email, telephony, video, audio conferencing, and the like, IT can effectively have a single extended team administer all communications infrastructure.
2. **Helpdesk consolidation:** Rather than establishing multiple helpdesk support arrangements (often outsourced to different support teams) across different communications services, IT can have a single Tier 1 Helpdesk support solution across all of its communications services.
3. **MAC cost reduction:** Lync Server 2010, by leveraging technologies such as Active Directory and a standards-based Edge Server, effectively drives down the administrative cost of moves to zero, the cost of adds to near-zero<sup>8</sup>, and the cost of changes to near-zero.<sup>9</sup> This approach represents a significant departure from the traditional operational paradigm for enterprise communications and enables significant cost savings.

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<sup>7</sup> Examples include adding video service where not previously present, or upgrading the type of phone for an employee changing job functions.

<sup>8</sup> For Lync Server, an “add” is accomplished by setting user properties in Active Directory and shipping the user a self-configurable handset device, if needed.

<sup>9</sup> Sometimes, but not always, requiring an update to a user property in Active Directory.

4. **Maintenance contracts:** As described above, the hardware footprint required by Lync Server is a fraction of the server footprint required for alternative solutions<sup>10</sup>. Enterprises of this scale typically run several thousand servers—often in a central datacenter—for other enterprise applications, making the additional hardware required for communications services is a trivial incremental investment. The only additional hardware footprint in such an enterprise consists of load balancers, PSTN gateways and (if used) Survivable Branch Appliances. This light footprint results in a very substantial reduction in hardware maintenance contract expense for communications solutions across an enterprise.

For large organizations, support and operations costs can decline by as much as 56 percent by using the Microsoft communications platform.

Microsoft Lync Server 2010 Release Candidate is available as a [downloadable trial](#).

## Summary

A large organization running the Microsoft communications platform can reduce its annualized three-year TCO by 39 percent, relative to IP Telephony-based communications solutions. A typical 5,000 user organizations can see net CapEx and OpEx reduction of over US\$ 2MM over three years. Organizations of all sizes can benefit, however—a typical 50,000 user organization can save US\$25MM over three years, and a typical 1,000 user organizations can see reductions of more US\$ 750K over three years.

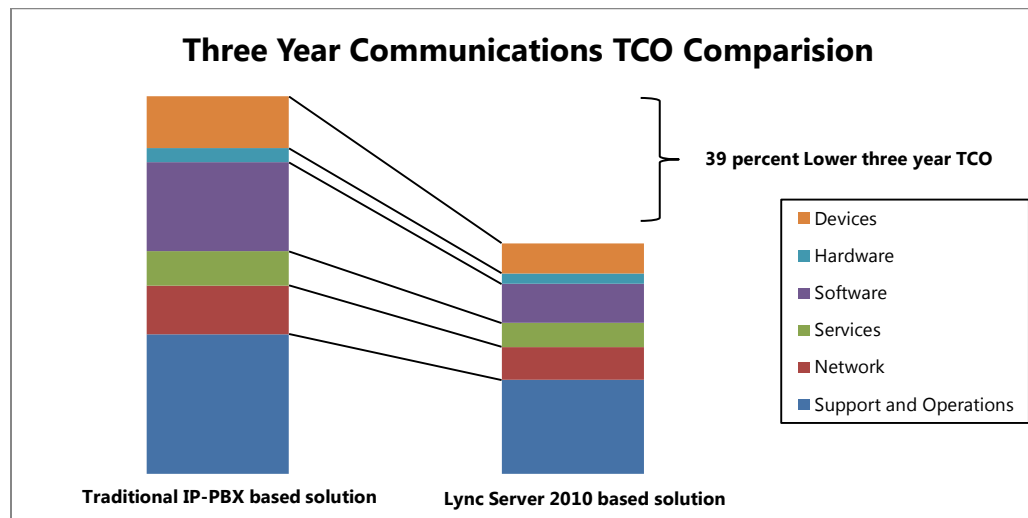


Figure 2: Three year TCO of IP-PBX based solution vs. Lync Server 2010 based solution

<sup>10</sup> For example, all communications services for a global enterprise with 50,000 users can be powered by a total of only 12 mid-range Windows Servers running in a single global datacenter, plus 12 additional servers in a shadow datacenter to ensure resiliency.

As discussed above, the Microsoft solution accomplishes savings through consolidation of communications assets—including infrastructure, physical, and operational consolidation. Infrastructure consolidation allows organizations to deploy a smaller server and infrastructure footprint to deliver most communications capabilities, including Voice, Audio/Video/Web Conferencing, and IM/Presence. Physical consolidation is enabled by Microsoft's very high scale, which allows even the largest global organizations to service all of their communications needs through 2 or 3 pools maintained at geographically distributed datacenters. Operations consolidation is facilitated by the ability for the enterprise to now share operations teams and skill sets across all communications capabilities.

In addition, the Microsoft approach has created a multi-player vendor ecosystem for telephone handsets and devices that can connect with Lync Server, facilitating not only reduced cost for a significant TCO component, but also more rapid innovation in end user devices.

The Microsoft approach fundamentally transforms the cost economics of communications from proprietary, siloed, high cost environments to an open, consolidated, easy-to-administer, and lower cost environment that delivers more capabilities and value while reducing communications costs.

Microsoft offers a [savings calculator](#) for doing a preliminary assessment of the cost savings available with our communications platform versus IP-PBX focused solutions.

## Next Steps

While the analysis presented above is broad and covers "expected" scenarios, every enterprise has a different starting point for business requirements, current communications infrastructure, and desired goals for infrastructure consolidation. If you are interested in a detailed analysis of how your specific enterprise communications environment could benefit from potentially significant TCO reduction, please contact your Microsoft account team for a customized analysis and set of recommendations.