Operational Cost Drives Stark Differences in First-Year Telephony, UC Costs

By Robin Gareiss
EVP and Founder, Nemertes Research

Executive Summary

Though IP telephony has existed for more than 15 years, fewer than 20% of companies have fully deployed it. Even fewer have fully deployed unified communications (the integration of text chat, voice, video, and conferencing into a seamless set of integrated applications). So we expect to continue seeing new and expanded deployments for many years to come—with variability in the prices and business models. The vendors, product offerings, and delivery channels continue to change—as does the pricing in certain areas. Most vendors remain quite competitive when it comes to capital costs (and they're all ready to negotiate to get the deal). Basic implementation costs do not vary significantly, but ongoing operational costs do. And costs vary based on rollout size, vendor, and product, meaning there is not one vendor that is the most cost-effective for every rollout and every size. For example, NEC and ShoreTel generally are the low-cost providers as measured by first year costs, but Avaya and ShoreTel have the lowest operational costs—meaning subsequent years should be most affordable with them.

One of the big changes in our annual cost assessments is the entry of Microsoft in the IP telephony space. Though Microsoft provides a compelling value proposition for its integrated collaboration product, Lync, ongoing operational costs—particularly when used for voice—are significantly higher than competitors. Organizations typically buy IP telephony based on RFPs that include list costs and technical evaluations but not real-world data on implementation and operational costs. This report provides that data, based on real-world experiences of 211 companies. Though Microsoft touts the ability of its solution to cut costs, companies in this benchmark are spending more on operational costs than those who use other vendors.

The Issue

Nemertes regularly benchmarks real-world spending on IPT and UC to document capital, implementation, and operational costs and how they vary based on factors such as rollout size and vendor selection. In 2012, we gathered detailed IP telephony cost data for several IP telephony vendors; seven garnered enough

responses to be counted individually: Alcatel-Lucent, Avaya, Cisco, Microsoft, NEC, Siemens, and ShoreTel. We also gathered UC cost data for several vendors, but only Avaya, Cisco, and Microsoft garnered enough responses to be counted individually.

Overall, we found operational costs are the most variable among all costs, yet most IT organizations have no way to determine what they will spend until they already have selected and implemented their chosen vendors. Nemertes recommends evaluating a bevy of factors; not just cost but also the technology capabilities of the proposed solution, existing relationships with the vendor, its customer-service capabilities, and referrals from existing customers. Cost should be one variable in vendor selection, and IT decision-makers must weigh the hard-dollar costs themselves with the value the product provides. In other words, the lowest price doesn't always equate to the highest value (though it can).

The Data

To obtain real-world IPT and UC cost data, Nemertes conducted detailed interviews with IT professionals representing 31 end-user organizations across a range of sizes and industries. (*For a detailed methodology, please read the "Methodology" section at the end of this report.*) We used that information to establish high and low parameters for each of the costs we analyzed. We then conducted online surveys of several hundred IT professionals and used stringent data validation and integrity checks, resulting in 180 valid responses.

We asked IT professionals to provide the following cost data, and then we implemented the formulas noted below to calculate a cost per endpoint (i.e., hardphone, conferencing bridge, softphone, etc.) The data includes the following:

- ***Capital***: Includes PBX, endpoint devices and licenses, servers, other hardware required for IPT. For UC, it includes any hardware, servers, bridges, and licenses. In some cases, bundled licenses for IP telephony include certain UC apps, but we separated the two in most cases when there was a distinguishable charge for those additional, bundled apps.
    - The formula we use is (total capital costs / number of endpoints)
- ***Implementation***: Includes staff time and third-party consultants and integrators
    - The formula we use is (Staff time * loaded hourly rate)+third-party costs / number of endpoints
- ***Operational***: Includes staff time, equipment maintenance, third-party managed services, training and certification
    - The formula we use is ((Number of FTEs * average annual loaded salary) +(equipment maintenance + managed services + training/certification)) / number of endpoints

Nemertes evaluated both mean and median for all data, but because of the drastic variations in rollout sizes, we use median to provide a more accurate set of cost data for IP telephony, and mean for UC. By using mean for IPT, a few very large or

very small rollouts affected the data as we further segmented it into smaller samples (either per vendor, or per vendor by size, etc.) For IP telephony, we gathered data on rollouts ranging from four endpoints up to 175,000. In this project, Siemens, ShoreTel, and NEC have the smallest rollouts overall, while Alcatel-Lucent, Cisco, and Avaya have the largest. Microsoft is squarely in the middle. For UC, the rollout sizes and data were more consistent, allowing us to use means vs. medians.

IP Telephony Key Findings

On average, total first year costs for IP telephony are $1,305 per end-point—though, that number varies greatly across sizes of rollouts and among vendors. Across sizes and vendors, IPT capital and implementation costs are fairly consistent. The median cost for capital (all vendors, all sizes of rollouts) is $540, and implementation is $61. Operational cost, however, is where there is a great deal of variability. The median cost is $704 per endpoint, per year.

	Capital	Implementation	Operational	Total 1st Year
NEC	$ 292	$ 96	$ 442	$ 830
ShoreTel	$ 544	$ 54	$ 305	$ 903
Cisco	$ 524	$ 55	$ 505	$ 1,084
Avaya	$ 727	$ 75	$ 322	$ 1,125
Alcatel Lucent	$ 500	$ 94	$ 841	$ 1,435
Siemens	$ 546	$ 146	$ 1,268	$ 1,961
Microsoft	$ 480	$ 90	$ 1,912	$ 2,482
Overall MEDIAN	**$ 540**	**$ 61**	**$ 704**	**$ 1,305**

Figure 1: IP Telephony Costs, All Rollout Sizes, Blue represents lowest cost; red represents highest

Overall, NEC and ShoreTel show the lowest total first-year costs at $830 and $903, respectively. The samples for NEC range from six to 1,500 endpoints while ShoreTel's range from 85 to 1,850 endpoints. On the high end of the cost spectrum are Siemens, whose total first-year costs are $1,961 per endpoint, and Microsoft with $2,482. Siemens sample, however, included rollouts between eight and 500 endpoints. Several of those participants were using HiPath 3000, Siemens' small business platform. But some were using HiPath 4000 or OpenScape and have large numbers of employees. In those cases, it is possible that the organizations invested heavily in IP PBXs with the ultimate goal to convert all TDM to IP but still haven't done so. That would artificially inflate the cost per unit. Microsoft's sample ranges from 10 to 4,500 endpoints and also includes companies using both OCS and Lync. The largest samples—and the broadest range—are from Avaya and Cisco, both of which have first-year costs that are less than the median. Avaya's range is 10 to 11,000, with a median rollout size of 1,017; Cisco's range is five to 175,000, with a median rollout size of 570.

As stated, the operational costs have a wide variation. ShoreTel and Avaya are significantly lower than median, at $305 and $322, respectively, while Microsoft and Siemens are significantly higher than median, at $1,912 and $1,268, respectively. Those operational costs are a significant contributor to Microsoft's highest total first-year costs of $2,482 per endpoint—triple NEC's costs and more than double first-year costs for Avaya, Cisco, and ShoreTel.

Many organizations are more concerned with the operational costs than capital. IT professionals rightly argue that they can get almost any vendor to come down on initial capital costs and often include assistance with the implementation. The big unknown, though, is how much the system will cost to operate on an ongoing basis. Avaya and ShoreTel have the lowest overall operational costs; Microsoft the highest; the rest somewhere in between—and all driven by different components of operational costs. What makes up operational costs? In Nemertes' UC Cost Data research benchmark, we gathered four types of operational data. (Please see Figure 2.) They include:

- ***Internal staff*** – Includes the total loaded cost of internal staff (measured as full-time equivalents) divided by the number of endpoints
- ***Annual equipment maintenance*** – Includes the amount the organization pays to the vendor or VAR for annual maintenance of equipment
- ***Third-party services*** – Includes any third-party partners, systems integrators, or consultants who help with ongoing operations of the system
- ***Training*** – Includes training costs for IT staff only (not end users)

IPT Per-Unit Costs/Overall Operational Costs (Median)				
	Internal Staff	Annual equipment maintenance	Third parties	Training
Avaya	$ 176.44	$ 66.67	$ 25.00	$ 7.56
ShoreTel	$ 251.38	$ 66.67	$ 50.00	$ 32.50
Cisco	$ 333.33	$ 155.36	$ 27.50	$ 19.10
Alcatel-Lucent	$ 338.82	$ 210.29	$ 75.00	$ 30.00
NEC	$ 434.26	$ 18.79	NA	$ 4.36
Siemens	$ 936.25	$ 24.83	$ 70.33	$ 65.16
Microsoft	$ 1,411.76	$ 123.08	$ 86.32	$ 81.66
Overall MEDIAN	$ 400.00	$ 100.00	$ 48.98	$ 24.50

Figure 2: Operational Cost Breakdown (Blue = lowest costs; red=highest costs)

We have found during our interviews both in this project and in previous years of conducting TCO research that operational costs tend to be highest during the first two years of usage, not surprisingly, as IT staffs gain expertise. Once that two-year

mark has passed, staff operational costs drop by about 20%. If the company deploys third-party, specialty management and monitoring tools, the staff and third-party management costs can drop by as much as 50% (Note: The sum of the operational costs in Figure 2 does not equal the overall operational costs in Figure 1 for each vendor because Figure 1 calculates the median of all costs combined, while Figure 2 calculates the median of just each breakdown area. And not all companies responded to all breakdown areas.)

On a per-endpoint, per year basis, Microsoft's costs are more than the median in all categories (though only slightly so for annual maintenance) and the highest overall with the exception of annual equipment maintenance, where Alcatel-Lucent prevails. Avaya and NEC share the lowest costs—Avaya in human management, including internal staff and third parties, and NEC in annual equipment maintenance and training. ShoreTel is competitive, either at or below the median for everything but training, where it's slightly higher than median. Cisco is below median in all areas but equipment maintenance, which adds up quickly with the larger rollouts. Siemens shops are spending more on human costs than median in all areas—internal staff, third parties, and training. But they are lower when it comes to annual equipment maintenance.

Here's a more detailed look at each category:

Internal staff – The largest single operational cost area overall is for internal staff to support the solution, where Avaya posts the lowest costs and Microsoft the highest. ShoreTel, Cisco, and Alcatel-Lucent customers spend less than median on internal staff, while NEC, Siemens, and Microsoft spend more than median. IT staffs managing Avaya, ShoreTel, Cisco, and Alcatel-Lucent have been doing so for some time, either in a hybrid TDM/IP environment (Avaya and Alcatel-Lucent) or in an all-IP world (ShoreTel and Cisco), so they have expertise and don't require as much staff to manage the systems. In this benchmark, both NEC and Siemens have small rollouts, so the people managing the systems aren't leveraged over a broad rollout, resulting in a lower cost per endpoint. Customers of Microsoft spend more than three times the median on internal staff per endpoint. They attribute the figure to challenges related to integration and sound quality. Often, Microsoft users start with Lync (and in some cases, OCS), using instant messaging and presence. But when they add voice and/or video, that adds complexity they often did not anticipate.

Annual equipment maintenance – The equipment maintenance figures are driven in large part by VARs who sell the equipment and manage it (and to a lesser extend, the equipment manufacturers themselves, who do offer maintenance services to the VARs to sell to the end customer). NEC is the lowest; Alcatel-Lucent is the highest. All vendors, except Alcatel-Lucent and Microsoft, are below median. These are prices that are easily negotiable, but they're also quite variable. For example, one company could buy a basic maintenance package that includes nothing but updates and 24-hour replacement of parts, while another could buy a platinum package with

on-site support, 4-hour replacement of parts, hands-on updates, and more. So much of this depends on what functions the internal staff wants to handle and which ones to wrap into maintenance contracts.

Third parties **–** Increasingly, we see organizations turning to third parties for help with specific projects and challenges, such as integration or directory support, to full, day-to-day management of the system to anything in between. Avaya customers spend the least on third-party support for their systems, and Microsoft customers spend the most. This makes sense, given the staffs at Avaya shops tend to be experienced telecom experts, typically with years operating Avaya systems. The same holds true for Cisco, which also is below median for third-party support. In Microsoft environments, on the other hand, telephony is a new application and internal staff expertise still is lacking, which explains why Microsoft customers spend nearly double on third-party partners compared to the median cost of seven vendors. ShoreTel is a bit different. Its customers tend to turn to third parties when they find their internal staff could be better utilized in other IT areas. They say the system is straight-forward to manage, and typically only a fraction of a person's time to handle, so they opt for third parties so the internal staff member can focus fully on another project or area of IT. IT staff from Alcatel-Lucent and Siemens say they turn to third parties typically for smaller rollouts (for similar reasons as ShoreTel) but also for larger ones because they technology is somewhat complicated and different enough from the TDM world to require some third-party expertise.

Training **–** Making sure the IT staff has ample training is an area that often slips through the cracks. Some companies are adamant about strict training budgets; others are not and expect their staffs to learn on their own—or already know it. NEC spends the least on training, often because the smaller rollouts come with enough training as to not require additional spending. Microsoft is the highest for all the reasons mentioned previously. In addition to NEC, Avaya and Cisco customers spend less than median for training; the rest spend more per endpoint, though ShoreTel and Alcatel-Lucent are not far from median in their training spending.

Not surprisingly, the per-endpoint costs change when viewing the data segmented by rollout size. For example, those with fewer than 1,000 endpoints spend, on median, $1,799 per endpoint for the first year, while those with 1,000 endpoints or more spend only $723. This is because companies can gain economies of scale as they increase the size of the deployment. They buy hardware, management tools, gateways, etc., that support a range of endpoints, and they leverage their training investments to support a larger user population. So, at the higher end of that range, the cost per endpoint decreases. (Please see Figure 3.) Costs also are more variable among small rollouts. In some cases companies make large up-front investments in infrastructure to support all eventual employees, but only gradually roll it out. Thus, for now, they have a disproportionately small number of IP endpoints for the

supporting infrastructure, required implementation and integration, and operational costs, so their cost per end unit is artificially high.

Rollout size also indicates shifts among the vendors, as well. Although NEC and ShoreTel post the lowest first-year costs for fewer than 1,000 endpoints, ShoreTel and Avaya post the lowest for those with 1,000+ endpoints. And, Microsoft's costs for smaller rollouts are significantly higher than median and the highest overall, but its 1,000+ costs are second highest, to Alcatel-Lucent.

	Capital		Implementation		Operational		Total 1st Year	
	<1000	1000+	<1000	1000+	<1000	1000+	<1000	1000+
ShoreTel	$ 568	$ 540	$ 130	$ 17	$ 401	$ 58	$ 1,099	$ 614
Avaya	$ 1,000	$ 310	$ 105	$ 65	$ 837	$ 285	$ 1,941	$ 659
Cisco	$ 625	$ 441	$ 86	$ 29	$ 1,100	$ 243	$ 1,811	$ 713
NEC	$ 250	$ 633	$ 83	$ 109	$ 678	$ 150	$ 1,011	$ 891
Microsoft	$ 480	$ 512	$ 112	$ 10	$ 2,314	$ 699	$ 2,906	$ 1,221
Alcatel Lucent	$ 800	$ 363	$ 82	$ 105	$ 780	$ 903	$ 1,662	$ 1,370
Siemens	$ 546	NA	$ 146	NA	$ 1,268	NA	$ 1,960	NA
Overall MEDIAN	$ 600	$ 444	$ 87	$ 40	$ 1,113	$ 238	$ 1,799	$ 723

Figure 3: IP Telephony Breakdown by Size of Rollout

Integrated UC Key Findings

Many IT professionals say they use UC, but their definition of UC varies considerably. Some view UC as simply instant messaging and presence, while others see it as unified messaging. For this research, we gathered data on those individual applications, as well as "integrated" UC. In the benchmark, 38.3% of IT professionals say they use integrated UC, meaning they have a single vendor that provides several, integrated (but not necessarily all) UC applications through a common user interface (e.g. a single desktop application supporting instant messaging, voice/telephony, and video) Only Avaya, Cisco, and Microsoft received enough individual responses for us to count them individually.

The challenge with gathering this data is that companies may use different combinations of UC apps—one may integrate IM, presence, and Web conferencing, while another may integrate unified messaging, IM, presence, and video conferencing. There is no meaningful way to separate out the individual applications and price points—in part because vendors don't price this way and in part because it would segment the sample too much. We did ask interview and survey participants to separate IP telephony from UC, where that information was available.

Overall, though, companies spend about $520 per end unit for first-year UC costs. Cisco posts the highest first-year cost, at $665.29, followed by Microsoft ($509.07), and Avaya ($406.45). In evaluating the individual cases of data, pricing was most variable with Microsoft—in fact, it was all over the map with wide swings in licensing costs. IT leaders say they were able to negotiate quite a bit with Microsoft, based on the value of their enterprise agreements. Overall operational costs, again, show a lot of variability, driven primarily by integration challenges.

UC Cost Per License Breakdown				
	Capital	Implementation	Operational	Total First Year
Avaya	$ 100.00	$ 252.45	$ 54.00	$ 406.45
Cisco	$ 194.13	$ 119.34	$ 351.82	$ 665.29
Microsoft	$ 333.54	$ 58.19	$ 117.34	$ 509.07
Average All Vendors	$ 187.52	$ 127.48	$ 206.85	$ 521.85

Figure 4: Integrated UC Costs

Moving forward, we expect tablet adoption and overall mobility growth to affect how organizations approach unified communications. As employees use their mobile device as their primary device, UC capabilities must extend to that device and work just as well as the non-mobile PC, laptop, or phone. So as they evaluate UC rollouts, not only will each vendor's mobile capabilities become more vital, so will the implementation timetable and priority of mobile UC. The study participants expect to increase tablet usage 235% in 2013, as measured by the raw number of tablets in use in the organizations. By the end of 2012, about 14% of employees used tablets for work purposes among the participants of this cost study, and they expected that percentage to rise to 26% by the end of 2013.

Though mobility is increasing among all industries, those using mobility the most pervasively include software and high-tech, healthcare, retail, and energy/utilities. As they develop business cases and applications for the mobile devices, integration with UC features will increase the likelihood of success of those business cases by ensuring employees truly treat their mobile devices as extensions of the desktop or stationary office with which they're comfortable.

With this increase in mobile devices comes the demand for UC-mobile integration. Employees want the same features on their mobile devices that they have at their desktop. The major IP telephony vendors, including Avaya, Cisco, and ShoreTel, have mobile UC clients that provide these capabilities. Other third-party apps also are available from vendors such as AudioCodes, CounterPath, and Varaha Already, 49% of organizations have deployed UC-mobile integration to varying degrees. These services include mobile-enabled audio/video/Web conferencing (64.1%,), IM and presence (59.1%), click-to-call (36.9%), and single number reach (34.4%).

Although we found price variability between the vendors in other areas of IP telephony and UC, there was very little difference in costs for mobile-enabled features. Vendors typically charge $10 for voice extension to mobile devices, and between $30 and $35 for other features including access to web conferencing and video. For those who want all the mobile-enabled features, vendors also offer bundled packages. (Please see Figure 5.)

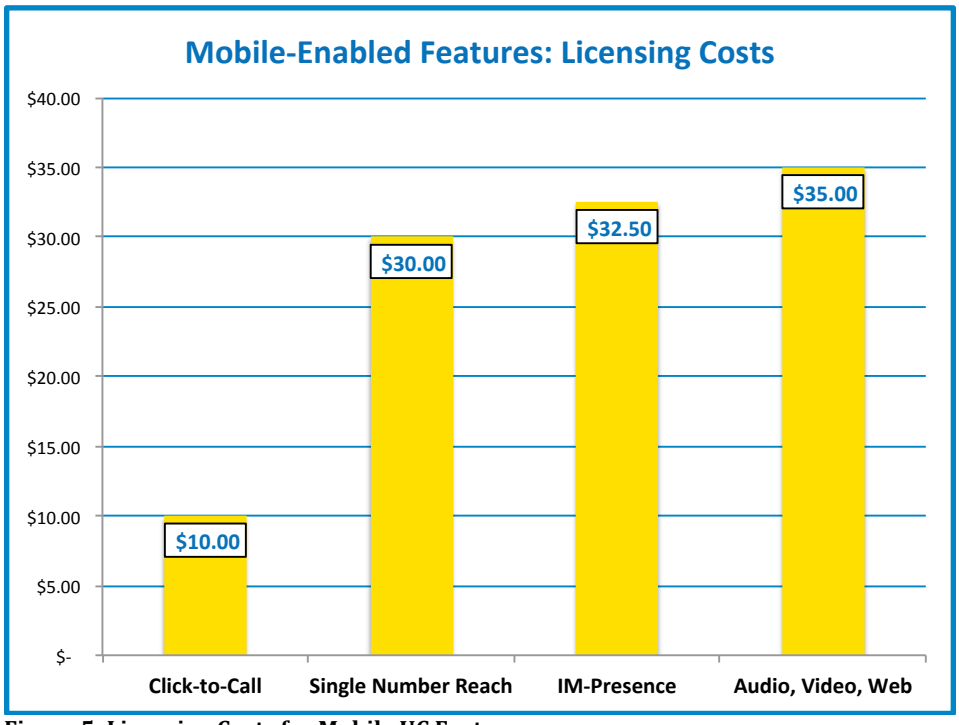

Figure 5: Licensing Costs for Mobile UC Features

UC Case Studies

Because UC costs continue to be difficult to isolate because of the different combinations of rollouts, it is useful to review case studies from real (yet, unnamed) companies from the benchmark. In order to receive the detailed cost data, we guarantee our benchmark participants anonymity, but these data points help to display what individual companies are using—and for what costs. The case studies also illustrate the wild ranges in pricing between companies. Some are lower than median; others are higher, but all represent real-world examples of actual costs from our detailed interviews.

Professional-Services Firm – This $15-billion global company employs more than 62,000 employees in nearly 1,000 locations worldwide. Thus far, it has 5,000 Avaya Aura licenses for the following UC services: Unified messaging, mobile twinning, find-me/follow-me, hot-desking, IM, presence, and audio conferencing. The associated costs:

- Capital & licensing: $500,000
- Implementation: $2.5 million
- Annual maintenance/management: $450,000

Financial-Services Firm – A $10-billion financial company that employs 14,500 employees at 250 locations uses Avaya Aura and Modular Messaging. So far it

has 200 unified messaging licenses and 11,000 IPT and audio conferencing licenses. The associated costs:

- Capital & licensing: $8 million
- Implementation: $2.3 million (IPT, audio); $4,000 (unified messaging)
- Annual maintenance/management: $2.3 million (IPT, audio); $70,000 (unified messaging)

Manufacturing Company **–** This $7-billion company employs nearly 20,000 people at more than 200 locations. It purchased 24,000 licenses for a variety of Microsoft Lync services, including IM, presence, voice, desktop video, limited audio and Web conferencing (wide-scale audio conferencing, as well as IP Contact Center, is with Avaya). The associated costs:

- Capital: $205,000 for servers, storage, virtualization licenses
- Licenses: $1.9 million for three years ($7.5 million for the entire ECAL, which includes Exchange, Sharepoint, and Lync)
- Implementation: $875,000
- Annual maintenance/management: $2 million
- WAN upgrades: $2 million annually to support Lync real-time apps

Financial-Services Firm **–** This $4-billion company, which employs 7,500 employees at 23 locations, has 13,000 licenses for Cisco unified communications services, including IM, presence, audio conferencing, and video conferencing. The associated costs:

- Capital and licenses: $2.75 million (including $1.25 million for video endpoints)
- Implementation: $1 million
- Annual maintenance/management: $495,000

Manufacturing Company **–** With $2.8 billion in revenue and 16,000 employees at 375 locations, this organization purchased 7,000 Microsoft Lync licenses, though only 500 are in use now. The prices below are for the 500 licenses in use. The services include IM, presence, unified messaging, and desktop video. The associated costs:

- Capital: $180,000
- Licenses: $137,500
- Implementation: $140,000
- Annual maintenance/management: $125,500

Consulting Company **–** This $650-million consulting has 4,500 ShoreTel Communicator licenses for its employees at more than 20 locations. The services include IP telephony, unified messaging, find-me/follow-me, IM, and presence (via Microsoft Outlook extension). The associated costs:

- Licenses: $700,000
- Implementation: $7,500
- Annual maintenance/management: $100,000

Law Firm – Cisco UCM was the choice for this $25-million law firm's 150 employees at four locations. The company uses softphones, IM, presence, unified messaging, and desktop video. The associated costs for the 150 licenses:

- Capital and licensing: $53,666
- Implementation: $3,750
- Annual equipment maintenance/management: $38,380
- Annual staff costs: $87,500

Conclusions and Recommendations

As is evident in the data Nemertes has gathered in this benchmark study, capital costs for IP telephony and UC is competitive. Vendors and resellers are aggressive in their competitive bids for capital and implementation (when requested), so it's clear that tough negotiators will find good results. Ongoing operational costs are not easy to find, yet, they are arguably the most important cost to evaluate because they dictate what the technology investment costs over the long term. We have found that operational costs generally are higher during the first two years of any UC deployment, as the IT staff gains expertise. After two years, costs generally drop by about 20%. However, even those figures are changing as time goes on because companies continue to integrate more with UC, whether it's an internal enterprise app, a cloud-based app, mobile capability, or social media feature. We recommend the following:

- Build a business case – All too many organizations are bypassing the important step of building a UC business case because it's difficult. Having one, however, hedges against losing funding for the project when money becomes tight.
- Demand referrals, and call them – Once organizations have arrived at a short list of two to three vendors, it's imperative to call references and understand not only what they paid for the capital and implementation, but also the ongoing operational costs. Tap into peer networks and ask vendors for references, as well.
- Don't underestimate – Most organizations say the rollouts take two to three times longer than they estimated (and that translates into more costs). Further, integration is more challenging than it appears on the surface, for both single UC vendor integration with enterprise apps and for multi-UC vendor integration with one another.

- Evaluate operational costs – Operational costs vary a lot from vendor to vendor. Consider cloud-based or managed services to stabilize costs and eliminate unpredictability. And look at individual vendors. Though Microsoft's cost of entry, added as part of an existing enterprise license, may be low, the operational costs are higher than other vendors and can create an unexpectedly high total cost of ownership. Companies with existing staff expertise with a specific vendor should not underestimate the ongoing operational savings that can result.

UC Cost Study Methodology

For this Nemertes UC Cost Study Research Project, analysts conducted in-depth phone interviews, ranging in duration from 30 minutes to 1.25 hours, with 31 IT professionals. We also conducted several short follow-up calls or exchanged emails to clarify and augment data. During the interviews, each analyst asked a pre-planned list of questions to ensure we asked the questions consistently. Many questions are open-ended, providing an opportunity for our participants to provide their own unbiased insight and observations.

After completing the interviews, we established reasonable ranges for each category of costs. We then sent email invitations to a prequalified list of IT professionals. The email contained a link to an electronic survey with a subset of the cost data questions asked during the interviews. We analyzed the survey data, eliminating respondents whose cost entries fell outside a "reasonable" range established by the interviews. We received 180 valid responses. To ensure the report is relevant to the largest possible group of readers, we deliberately sought to reach the broadest possible range of industries and company sizes.

To determine what participants were including in their UC initiatives, we asked open-ended questions about unified communications usage, plans and goals, and costs. The specific technologies included IP telephony, instant messaging, presence, desktop video conferencing, Web conferencing, room-based video conferencing, IP audio conferencing, and IP contact center. We also asked demographic questions, including number of employees, annual revenue, job titles, and IT budgets. As a result, individual interviews and surveys varied considerably in the number of questions answered and in the number of subject areas addressed, as well as in the degree of insight provided for each UC topic covered, based on the interest and expertise of the participants involved.

For the interviews and surveys, Nemertes drew participants from its database of IT professionals, its non-vendor client base, and to a lesser extent, from publicly available lists of IT executives and published case studies.

Nemertes guarantees confidentiality and anonymity for participants and their companies. Any reports or slides generated from this data include quotations from real individuals, identified only by title and/or industry affiliation. Please note these quotes are verbatim, with no changes in content or wording, except to correct grammar.

Timeframe

We conducted interviews and surveys with UC Cost study participants from IT organizations between July 2012 and September 2012. We asked participants to provide us with insight into ongoing unified communications initiatives and those planned for the next two years.

Participants

In selecting individual participants, we asked to speak with the individual or individuals within IT most closely associated with decision-making, operations and overall knowledge in the area of VOIP/UC. For example, to discuss communications technologies we typically speak with VPs, directors, and managers in network management, telecom, enterprise architecture, systems integration, collaborative applications, and unified communications, as well as CIOs and CTOs.

By Title

In this study, Nemertes secured interviews with a wide range of decision makers/influencers and their corresponding viewpoints. Managers, directors (of IT, telecom, security and other areas), and architects/senior architects represent the bulk of research participants (53.8%) Board members and senior management (CIOs, CTOs, CFOs, CSO/CISOs, senior/executive VPs and managing directors) represent 40.2% of participants. The remaining 6.1% of participants are engineers (including system administrators), architects and consultants.

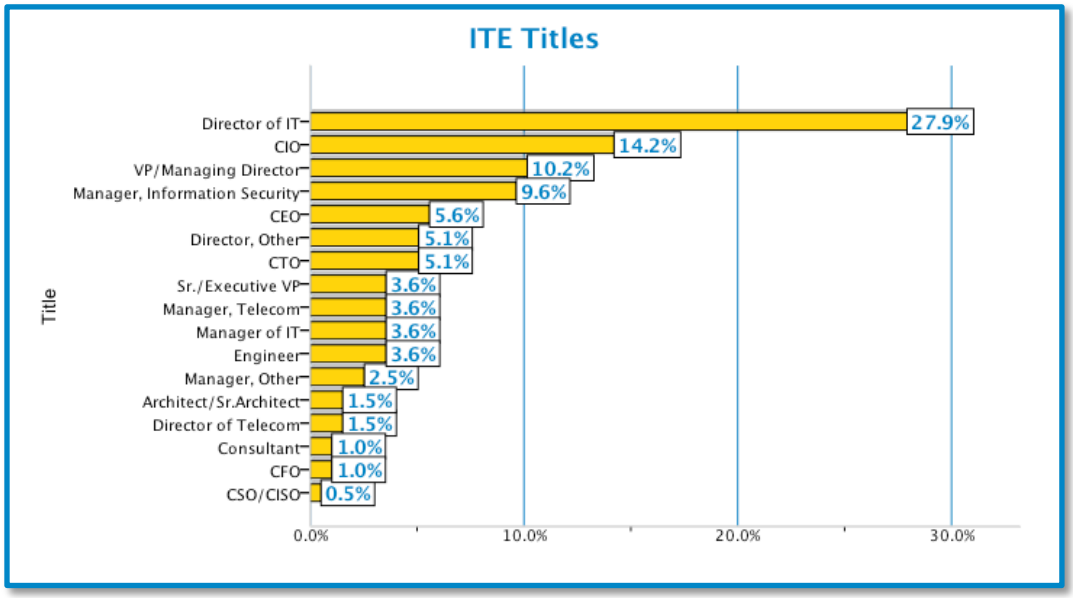

Figure 6: Participants by IT Executive Title (The figures add to 100.1% because we round to the tenth rather than the hundredth.)

By Industry

As noted, we sought to include the broadest possible range of industries in our research. Professional services (broadly covering all professional services sub-areas, including engineering, accounting, law firms, etc.), manufacturing, and healthcare top the list of industries represented, accounting for 24.6%, 22.3% and 8.5% of

participants, respectively. We also spoke to relatively high percentages in financial services (8.1%), education (6.6%), and retail (6.2%).

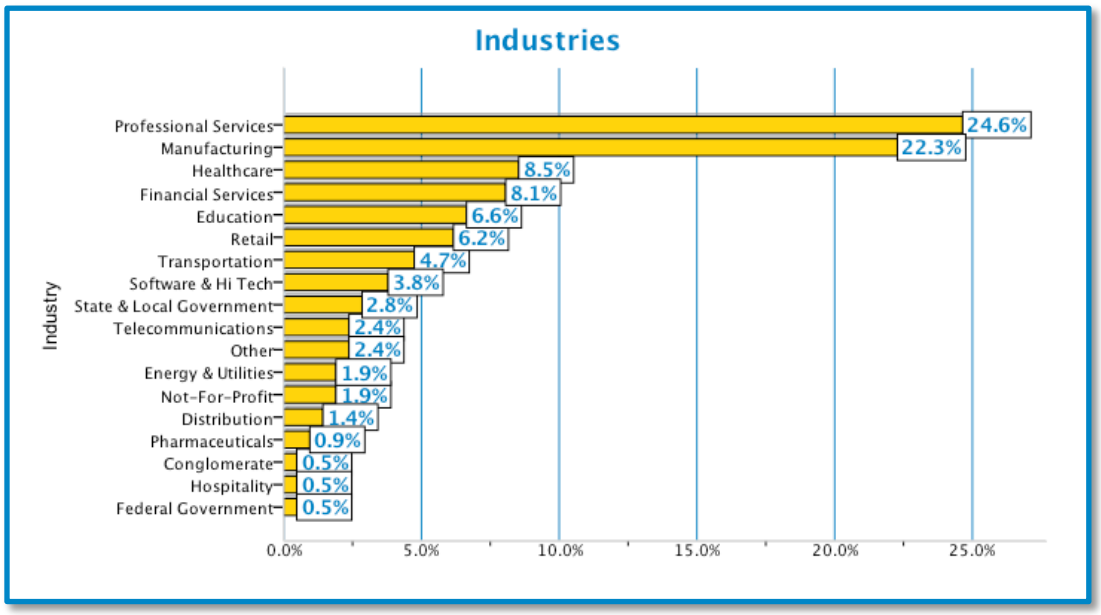

Figure 2: Participants by Industry

By Size: Number of Employees

We seek insight from organizations large and small. For benchmark analysis, we characterize companies as being small, midsize, and large by several measures, including employee size. Our size characterization cased on employee size is as follows:

- Small: 0-250
- Midsize: 251-2500
- Large: >2500

Slightly less than one-quarter (22.4%) of the participating companies are small. The largest group represented is midsize companies, with 45.2% of respondents. Large companies make up almost one-third of respondents: 32.4% in total.

Although this differs from the "traditional" business demographics, in which small businesses make up the largest percentage of total businesses, we do talk to many innovative small and large organizations, so a solid coverage of all types of companies is imperative.

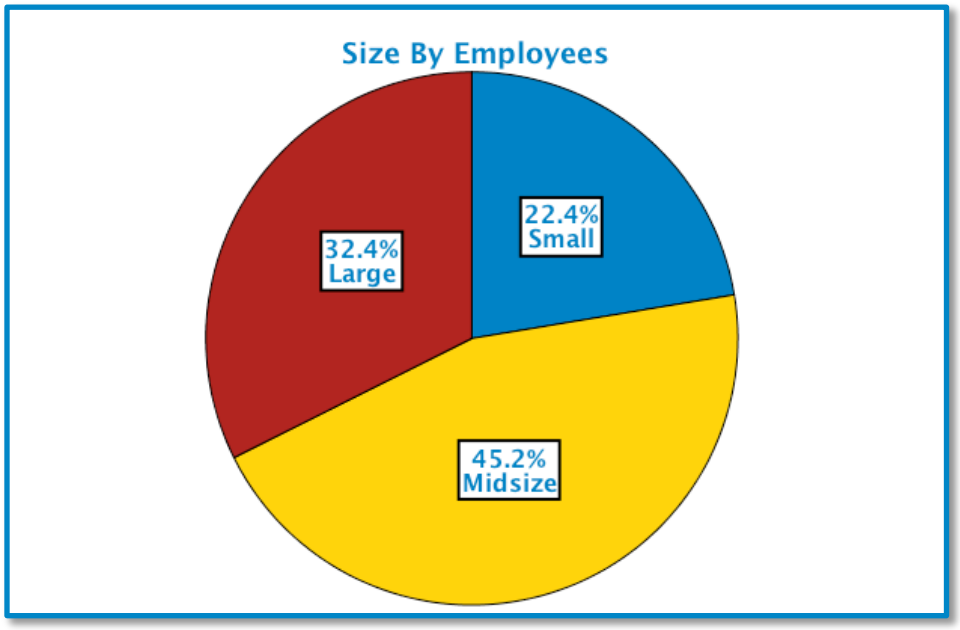

Figure 3: Participant Company Size by Number of Employees

By Size: Locations

Another metric we use for size is number of locations. We characterize the number of locations as follows:

- Small = 50 locations or less
- Midsize = 51 to 250 locations
- Large = >250 locations

UC Cost study data demonstrates that the largest grouping of companies based on number of locations is "small," at 85.2%, followed by large at 9.0% and midsize at 5.7%

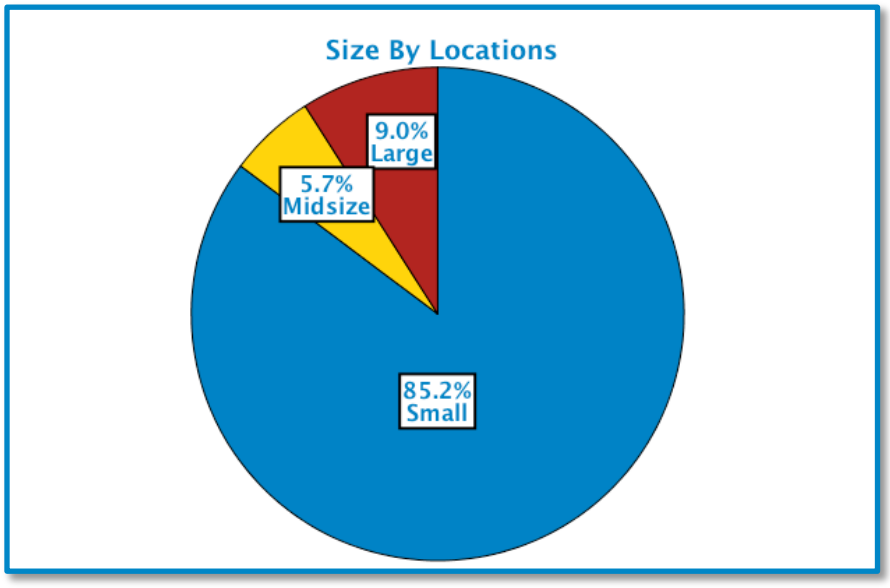

Figure 5: Participant Company Size by Locations

By IT Culture

We asked interview participants to describe the IT culture, or how the business views IT. Is IT a strategic differentiator, and how rapidly do they deploy new technologies? More than half (52.1%) say their IT culture is highly strategic (bleeding edge), 6.6% say aggressive, 24% say moderate, and 17.4% conservative.

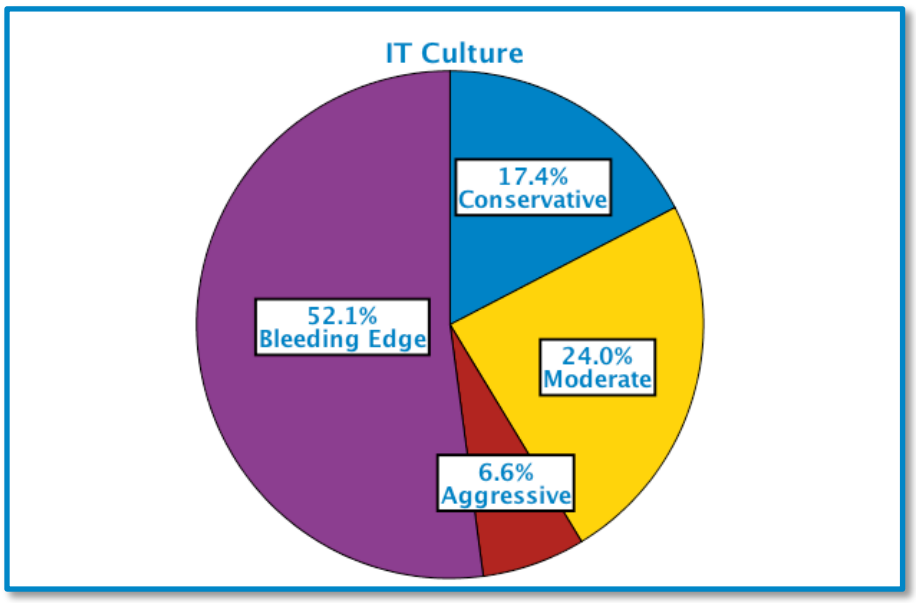

Figure 7: IT Culture

For Further Information

Nemertes has thousands of charts, correlation points and data analysis for this and numerous other topics. Though Nemertes segments data using the cut points noted in this Methodology statement, we can cut and correlate data using any numbers (so, for example, we can segment or correlate data using only companies with fewer than 100 employees, or only in the financial-services industry).

Nemertes uses this research data in hundreds of more detailed papers, presentations, strategy sessions and Webcasts. We also rely on the findings to assist in consulting projects, as well as conversations with our clients about various technology and business initiatives.

If you have further questions about our methodology, please contact *research@nemertes.com*. Clients, please contact *client-services@nemertes.com* for any assistance. Those interested in engaging with Nemertes, please contact *sales@nemertes.com*.

About Nemertes Research: Nemertes Research is a research-advisory and strategic-consulting firm that specializes in analyzing and quantifying the business value of emerging technologies. You can learn more about Nemertes Research at our Website, www.nemertes.com, or contact us directly at research@nemertes.com.