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IP Telephony and Unified Communications Total Cost of Ownership

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Executive Summary

Understanding the Total Cost of Ownership (TCO) of IP Telephony (IPT) and Unified Communications (UC) alternatives is critical for sound decision-making. Nemertes recommends considering capital, implementation, and operational costs in TCO analysis.

Nemertes recently interviewed and surveyed 189 enterprises to gather cost data for seven leading IPT and UC vendors: Alcatel-Lucent, Avaya, Cisco, Microsoft, NEC, ShoreTel, and Mitel. We then used this data to develop a first-year TCO analysis comparing each vendor to overall aggregate costs and comparing 2014 TCO data to data gathered for last year's TCO study. Nemertes finds that real-world IP telephony costs have dropped by 28% over the last year, while integrated UC costs have increased by 83%. Costs still vary based on size of deployment and product, meaning that no single vendor is the most cost-effective (defined as offering the lowest TCO) for every situation.

Enterprise IT leaders should invest the necessary time and care to make sure they understand all areas of cost and develop a complete TCO picture in support of IPT and UC purchasing decisions.

Background

Nemertes recommends that enterprises evaluate a number of factors in making IPT and UC vendor and product decisions. Initial capital and licensing costs are one piece of the puzzle, but the lowest up-front price doesn't always mean the highest value. IT decision-makers should also consider the technical capabilities of the proposed solution, existing relationships with the vendor, customer-service capabilities, and referrals from existing customers. We believe the more important cost variables are implementation and operational because they are good indicators of each vendor's ease of use. What's more, these costs aren't on a list somewhere, nor are they easy to find without research like this that tracks real-world costs.

In support of enterprise decision-making, Nemertes has benchmarked real-world spending on IPT and UC for nine years. Nemertes collects data concerning capital, implementation, operational costs, and how they vary based on factors such as rollout size and vendor selection. This year, Nemertes studied 189 enterprises to gather detailed IP telephony cost data for a number of vendors. Seven vendors received enough responses for us to analyze them individually: Alcatel-Lucent, Avaya, Cisco, Microsoft, NEC, ShoreTel, and Mitel. We also gathered UC cost data for Avaya, Cisco, IBM, and Microsoft.

Methodology and Definitions

For this project, analysts conducted 52 in-depth phone interviews to establish a reasonable range for each category of costs. We then sent email invitations to a prequalified list of several hundred IT professionals. The email contained a link to an electronic survey containing a subset of the cost data questions asked during the phone interviews. We analyzed the survey data, eliminating respondents whose cost entries fell outside a "reasonable" range established by the interviews. Through this process we received 137 valid survey responses.

Nemertes used the following definitions of cost data for the phone interviews, online surveys, and subsequent analysis and calculated costs per endpoint using the formulas noted.

1. **Capital Cost**: Includes PBX, endpoint devices and licenses, servers, and other hardware required for IPT. For UC, it includes any hardware, servers, gateways, and licenses. In some cases, bundled licenses for IP telephony include certain UC applications.
   a. The formula we use is (total capital costs / number of endpoints).

2. **Implementation Cost**: Includes staff time and third-party consultants or integrators.
   a. The formula we use is as follows:

$$\frac{(Staff\ Time \times Loaded\ Hourly\ Rate) + Third\text{-}party\ Costs}{Number\ of\ Endpoints}$$

3. **Operational Cost**: Includes staff time, equipment maintenance costs, third-party-managed services, training, and certification costs. We gathered four types of operational data:
   a. **Internal staff**–Includes the total loaded cost of internal staff (measured as full-time equivalents) divided by the number of endpoints.
   b. **Annual equipment maintenance**–Includes the amount the organization pays to the vendor or VAR for annual maintenance of equipment.

c. **Third-party services**–Includes any third-party partners, systems integrators, or consultants who help with ongoing operations of the system.

d. **Training**–Includes training costs for IT staff and end users, where applicable.

e. The formula we use is as follows:

$$\frac{(Number\ of\ FTEs \times Average\ Annual\ Loaded\ Salary) + (Equipment\ Maintenance + Managed\ Services + Training\ or\ Certification)}{Number\ of\ Endpoints}$$

Using these definitions and formulas, Nemertes calculated total costs per endpoint in each of the categories. Nemertes evaluated both mean and median for all data.

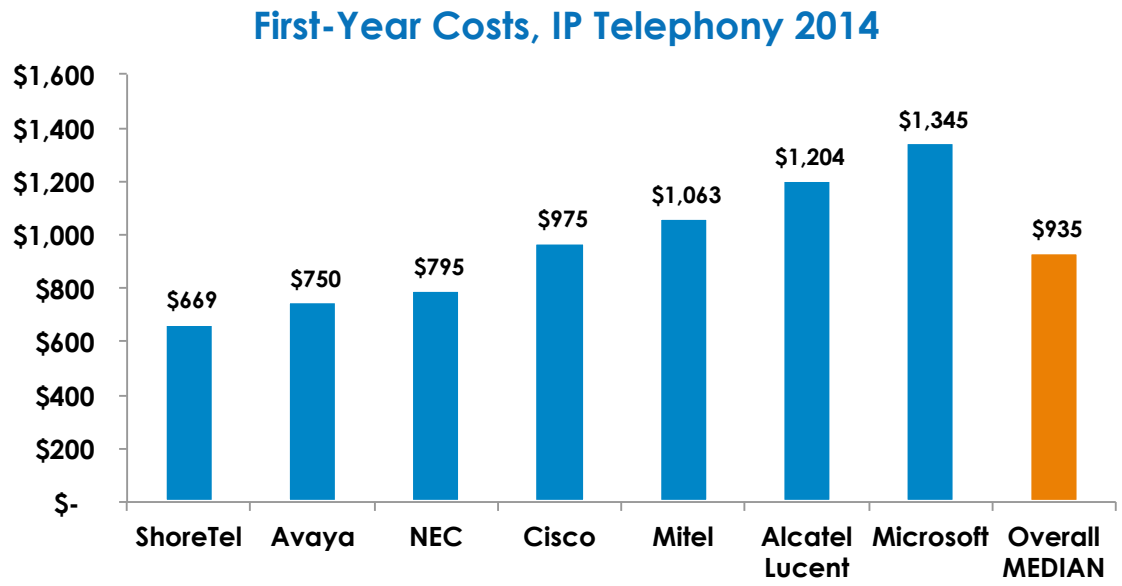

Figure 1: IP Telephony First-Year Costs, by Vendor

IP Telephony Key Findings

Total First-Year Costs

Median first-year costs for IP telephony are $935 per endpoint, which is a decrease of 28% from $1,305 in 2013. First-year costs decreased for all vendors. This decrease is driven primarily by lower operational costs. For rollouts less than 350 endpoints, the median first-year cost is $1,378 per endpoint; for rollouts more than 350 endpoints, the media first-year cost is $626 per endpoint. Overall IPT capital and operational costs decreased from 2013, but implementation costs increased. Operational costs still vary significantly between vendors. The median operational cost is $353 per

endpoint, per year. Those with the highest costs in each column are shown in red. Those with the lowest are shown in blue. (Please see Figures 2 and 3.)

	Capital	Implementation	Operational	Total 1st Year
ShoreTel	$ 300	$ 69	$ 300	$ 669
Avaya	$ 500	$ 76	$ 174	$ 750
NEC	$ 431	$ 89	$ 275	$ 795
Cisco	$ 552	$ 93	$ 330	$ 975
Mitel	$ 471	$ 114	$ 478	$ 1,063
Alcatel Lucent	$ 520	$ 111	$ 573	$ 1,204
Microsoft	$ 455	$ 85	$ 805	$ 1,345
Overall MEDIAN	**$ 495**	**$ 87**	**$ 353**	**$ 935**

	Capital	Implementation	Operational	Total 1st Year
Overall MEDIAN	$ 495	$ 87	$ 353	$ 935
<350	$ 518	$ 89	$ 771	$ 1,378
>350	$ 424	$ 82	$ 120	$ 626

Figure 2 - IP Telephony Costs by Vendor (2014)

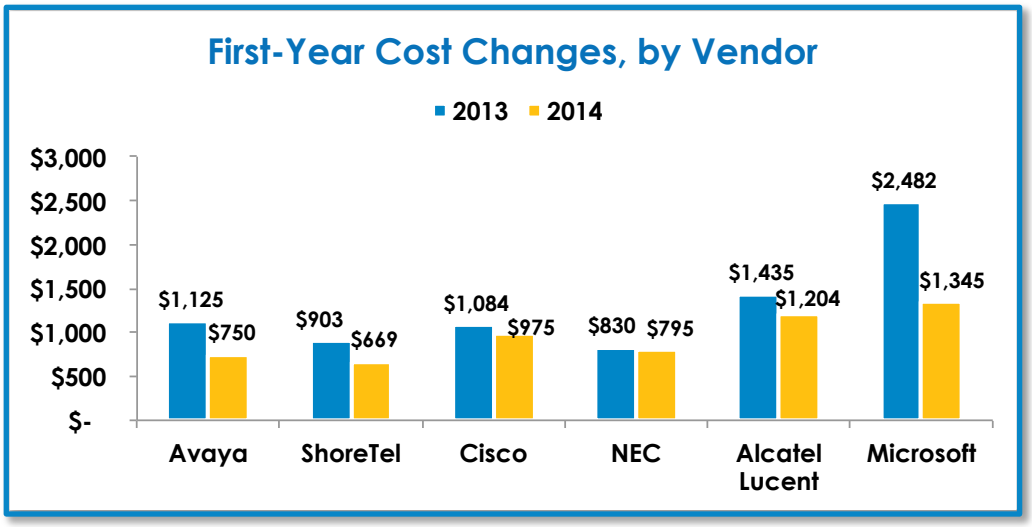

Figure 3 - First-Year Cost Changes by Vendor

ShoreTel, Avaya, and NEC generally have the lowest total first-year costs; all three fall below the overall median. As was found in Nemertes' 2013 UC and IPT TCO study, Microsoft still has the highest total first year cost, but that cost has decreased from $2,482 to $1,345 per endpoint. This drop is driven by a sharp decrease in Microsoft's operational costs, which Nemertes expected would happen as IT staffs' learning

curves shortened. Data for Microsoft includes primarily Lync implementations, though a small percentage was still using Office Communications Server (OCS).

Operational Costs

Overall operational costs decreased significantly between 2013 and 2014. In fact, operational costs dropped for all vendors. (See Figure 3.)

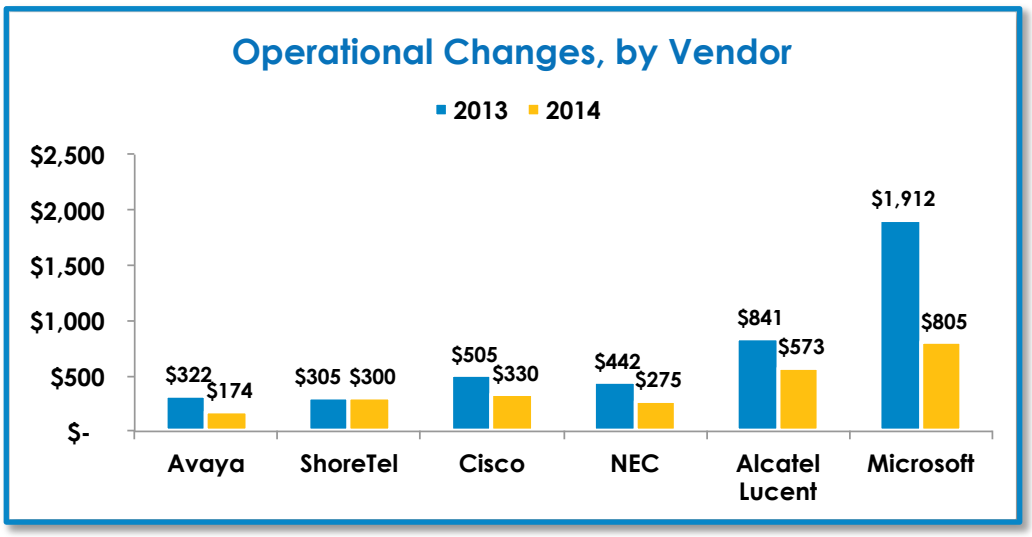

Figure 4 - Operational Cost Changes by Vendor

Consistent with the Nemertes 2013 UC and IPT TCO study, operational costs vary between vendors more so than capital or implementation costs. Avaya, NEC, and ShoreTel provide the lowest operational costs at $174, $275, and $300 per endpoint, respectively. As was found in last year's UC and IPT TCO study, operational costs are still the prime factor in Microsoft's highest total first-year costs ($1,345 per endpoint). However, Microsoft's operational costs have dropped significantly from $1,912 last year to $805 per endpoint this year.

Actual costs by vendor vary considerably based on the size of the rollout, as well. As rollouts grow, economies of scale kick in, and the cost per unit decreases. (Nemertes' cost-data clients have access to the more detailed costs.)

Integrated Unified Communications Key Findings

Definitions of UC vary considerably between enterprises. Some view UC as simply instant messaging and presence, while others see it as unified messaging. Nemertes' definition of UC Is broad, covering the "unification" of any communications and collaboration apps. In this study, we asked about "integrated" UC. Only about one-third of companies identify a single strategic vendor that provides all or most UC apps in an integrated fashion. Others have single vendors providing integrated UC, but they do not view them as their "strategic UC vendor."

There is no meaningful way to separate the costs for individual UC applications but Nemertes was able to identify overall integrated UC cost data for Avaya, Cisco, IBM, and Microsoft, as well as those who use a combination of vendors. Overall, UC costs are increasing from last year's UC TCO study. Enterprises spend a median of $954 per license in first-year integrated UC costs, which is an increase from $522 last year. Avaya has the lowest total first-year cost at $817 per license. Avaya also has the lowest capital cost ($167 per license) primarily because of heavy use of virtualization and enterprises leveraging existing handsets and mobile extensions for Web conferencing. Microsoft has the highest first-year cost at $1,265 per license.

UC Cost Per License Breakdown: 2014				
	Capital	Implementation	Operational	Total First Year
Avaya	$ 167.00	$ 50.00	$ 600.00	$ 817.00
Combination	$ 182.00	$ 153.00	$ 533.00	$ 868.00
IBM	$ 388.00	$ 50.00	$ 495.00	$ 933.00
Cisco	$ 311.00	$ 52.00	$ 588.00	$ 951.00
Microsoft	$ 400.00	$ 119.00	$ 746.00	$ 1,265.00
Overall MEDIAN	$ 275.00	$ 102.00	$ 577.00	$ 954.00

Figure 5 - UC Cost Per License Breakdown

Using a combination of best-of-breed providers provides the second lowest first-year and capital costs. Although implementation costs for using a combination of vendors is high, operational costs are appealing; however, many IT executives state that integration can be challenging.

Overall median costs have increased for all vendors except for implementation costs, which have decreased. Operational costs have increased substantially from $207 to $577 per license. Based on information from Nemertes interviews with IT executives, the increase in operational and capital costs is driven by companies adding or integrating new applications into their UC suites, which results in more to buy and manage. This can also create a learning curve that requires third-party assistance, training, and more internal staff.

Conclusion and Recommendations

It is important for enterprises to consider all areas of cost when making decisions concerning IPT and/or UC deployments: capital, implementation, and ongoing operational. Nemertes research indicates that capital costs are highly negotiable and enterprise IT leaders should aggressively deal with vendors to reduce these costs. To some extent, implementation costs are negotiable for those outsourcing the entire installation. Even in that case, there always are *some* internal costs, if for nothing else, to manage a third-party partner. Operational costs are more difficult to identify but

are more impactful to total cost of ownership. Enterprise IT leaders should invest the necessary time and care to make sure they understand these costs. Expect that operational costs are initially high but will drop about 20% after two years as experience and knowledge grow. We also recommend the following:

- Consider virtualization–Nemertes estimates that enterprises can save 43% by using virtualization for IPT and UC.
- Beware of integration pitfalls–Many companies state that integration between multiple vendors is difficult.
- Consider moving to the cloud–Cloud-based or managed services reduce hardware footprint (and maintenance cost), can stabilize costs, and improve expense predictability.

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 52 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 137 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 January and February 2014. 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. IT Directors, CIOs, and Information Security Managers represent the bulk of research participants (51.9%). Figure 6 illustrates the percentage of participants by title.

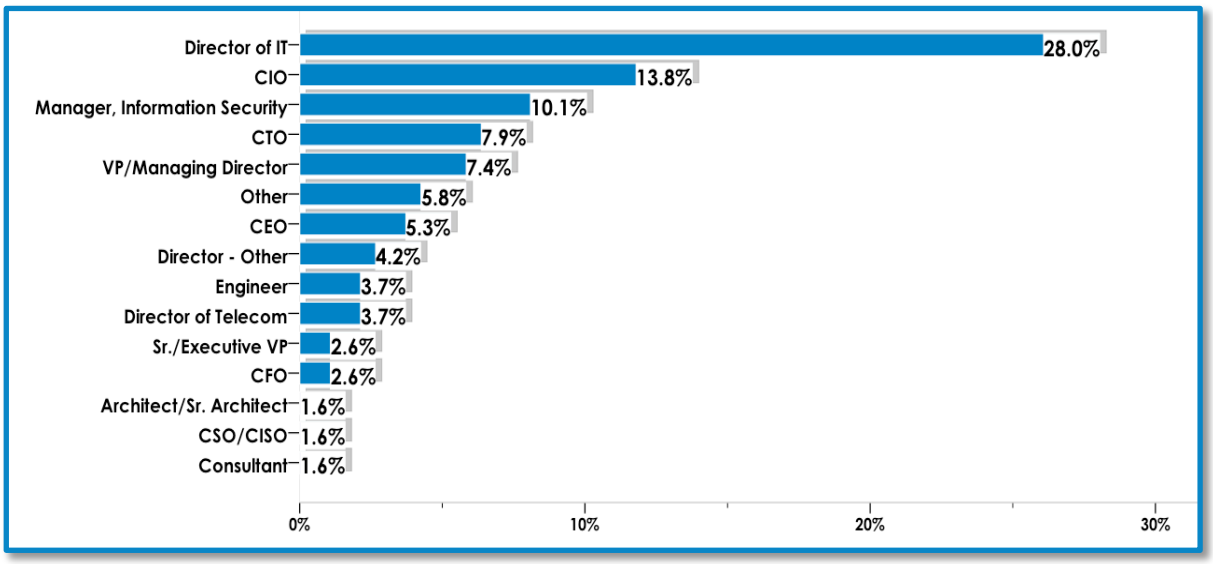

Figure 6 - Participants by Title

By Industry

As noted, we sought to include the broadest possible range of industries in our research. Manufacturing, professional services (broadly covering all professional services sub-areas, including engineering, accounting, law firms, etc.), financial services, and education top the list of industries represented, accounting for 16.9%, 13,8%, 13.2%, and 12.2% of participants, respectively. We also spoke to relatively high percentages in healthcare (9.0%) and retail (9.0%).

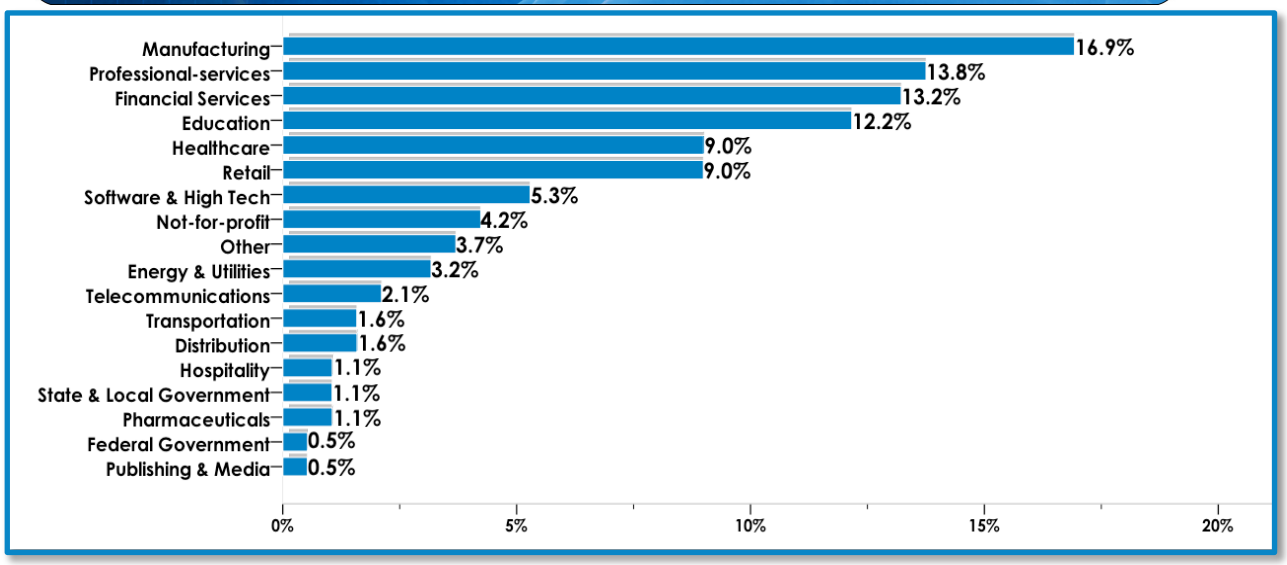

Figure 7 - Participants by Industry

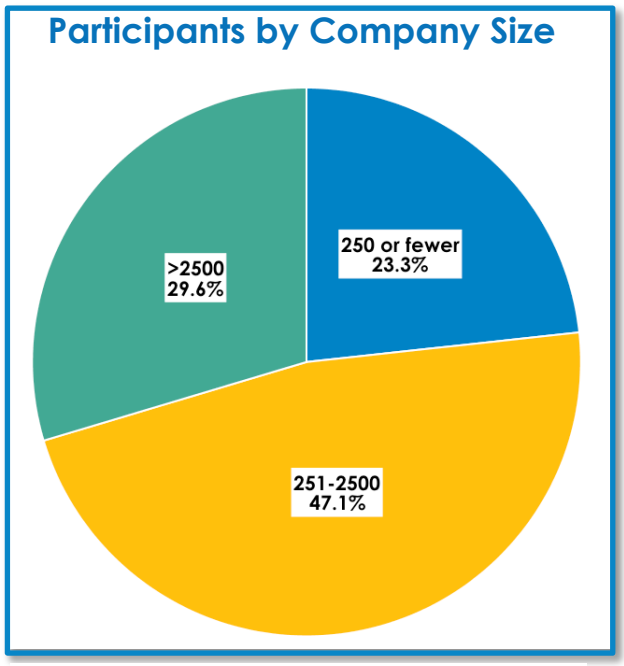

Figure 8 - Participants by Company Size (by Employee Count)

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: 251-2,500
- Large: >2,500

Slightly less than one-quarter (23.3%) of the participating companies are small. The largest group represented is midsize companies, with 47.1% of respondents. Large companies make up 29.6% of respondents.

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.

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? The distribution is fairly even: 21% say their IT culture is highly strategic (bleeding edge), 23.8% say aggressive, 30.7% say moderate, and 23.8% conservative.

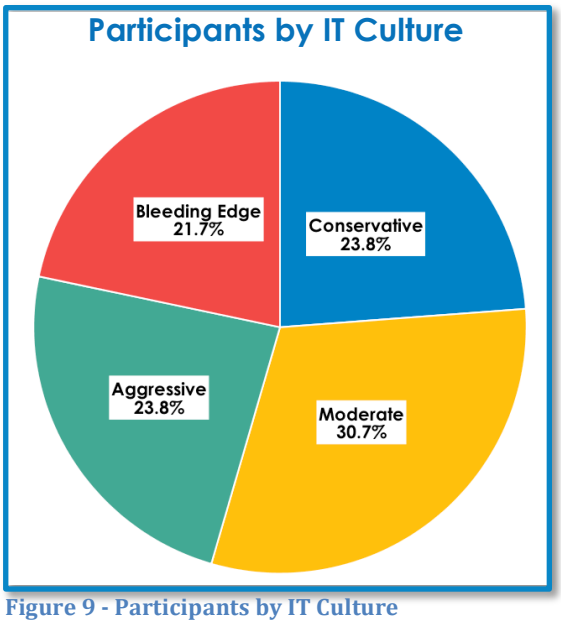

Figure 9 - Participants by IT Culture

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 could cut and correlate data using any numbers.

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.