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ISSUE PAPER

Minimizing Costs, Maximizing Value of IP Telephony

BY IRWIN LAZAR
VP AND SERVICE DIRECTOR, NEMERTES RESEARCH

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issue paper

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VP and Service Director, Nemertes Research

Executive Summary

IT leaders face the challenge of delivering improved collaboration capabilities while also minimizing cost of operations. Consequently, understanding the ability of IP Telephony (IPT) and Unified Communications (UC) solutions to provide robust technology affordably is critical for overall IT success. It is against this backdrop that IT leaders must evaluate 1.) the total cost of ownership for various delivery models, including on-premises, cloud, and hybrid; 2.) how to minimize staff resource commitments; and 3.) architectural alternatives that maximize resiliency and scalability.

Nemertes recently conducted a study of 189 organizations to gather real-world cost data for seven leading IPT and UC vendors: Alcatel-Lucent, Avaya, Cisco, Microsoft, Mitel, NEC, and ShoreTel. 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. Overall, IP telephony costs have dropped by 28% in 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.

The Issue

"Do more with less" continues as the predominant mantra within IT: 47% of companies have flat IT budgets, and another 19% are decreasing. At the same time, line of business leaders demand improved collaboration, internally and externally, to improve business processes, bolster customer support, speed time-to-market, increase agility, and foster a culture of innovation. These conflicting demands are driving IT to rapidly evaluate ways to minimize costs while delivering new services and capabilities. IT staffs are evaluating cloud-based services to lower up-front costs, while forcing those who choose on-premises solutions to carefully quantify initial and

ongoing investment expenses including staff resource requirements, reliability, scalability, and overall return on investment.

About the Nemertes Study

In support of the growing need to quantify both initial and ongoing costs of IP telephony and UC investments, Nemertes interviewed or surveyed 189 enterprises to gather detailed IP telephony cost data for a number of vendors. Nemertes directly interviewed IT professionals representing 52 end-user organizations, and gathered an additional 137 data points via surveys sent to a pre-qualified list of several hundred IT professionals.

Seven vendors received enough responses for us to analyze them individually: Alcatel-Lucent, Avaya, Cisco, Microsoft, Mitel, NEC, and ShoreTel.

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 reseller 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, but because of outliers in the data, we generally used median rather than mean.

Overall TCO Results

The results of this study show stark differences in total first-year costs among vendors, including both up-front and ongoing investments. Among all providers for all roll-out sizes, the median cost per endpoint to deploy IP telephony was $935. Broken down to individual vendors ShoreTel ranked lowest in first-year costs at $669 per-endpoint.

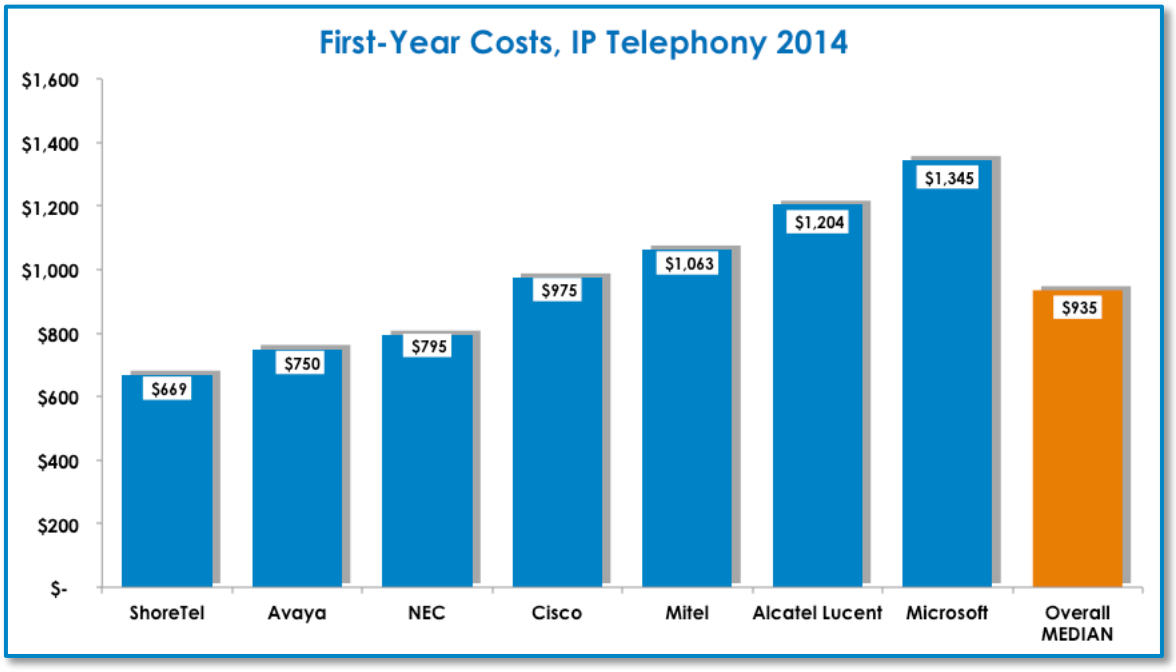

Figure 1: First-Year Costs, IP Telephony 2014

Because rollouts vary in size and complexity, Nemertes analyzed segmented data for rollouts of below 350 and above 350 endpoints. 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. Figures 2 and 3 show first year overall costs for all vendors, split by deployment size.

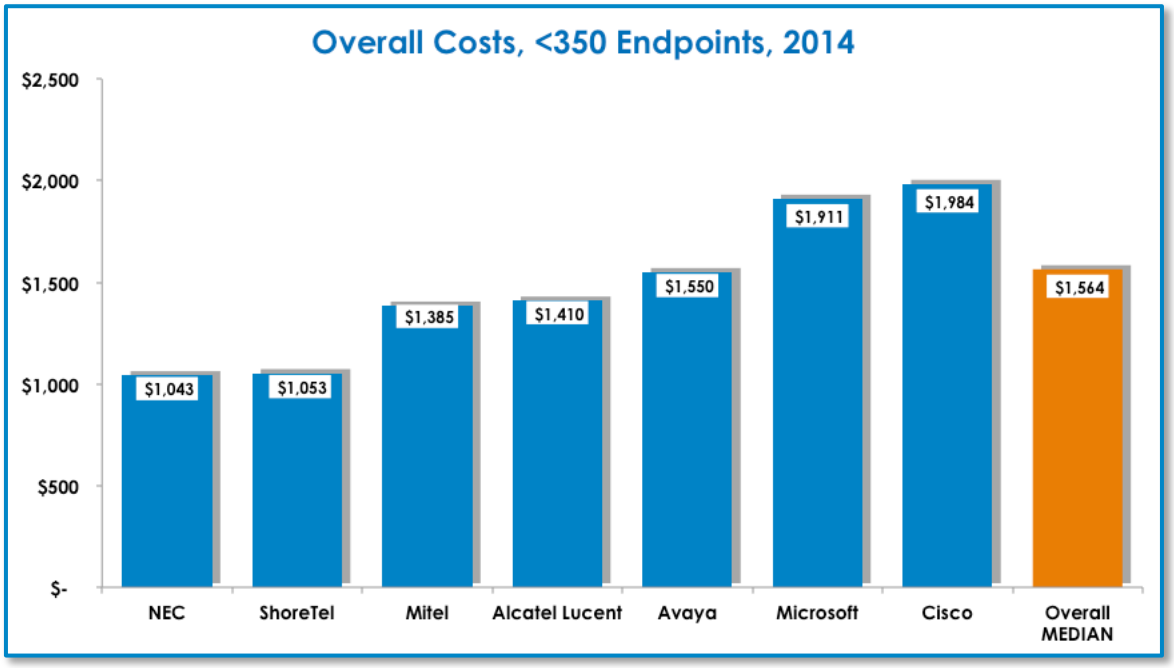

Figure 2: Overall Costs, <350 Endpoints 2014

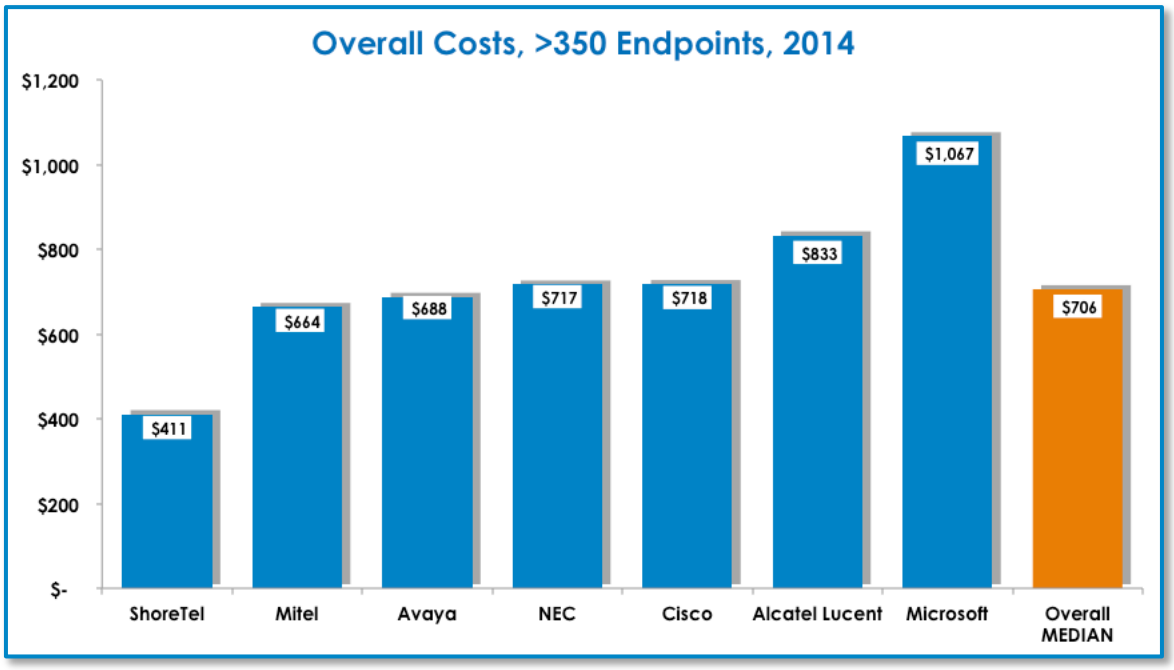

Figure 3: Overall Costs, >350 Endpoints, 2014

Additional Considerations

One way that many IT leaders are looking to reduce costs is by leveraging cloud-based solutions rather than on-premises. The adoption rate for cloud-based IP telephony has more than tripled in the last two years, rising to 13%, with another 27% either planning to go to the cloud, or evaluating cloud-based solutions.

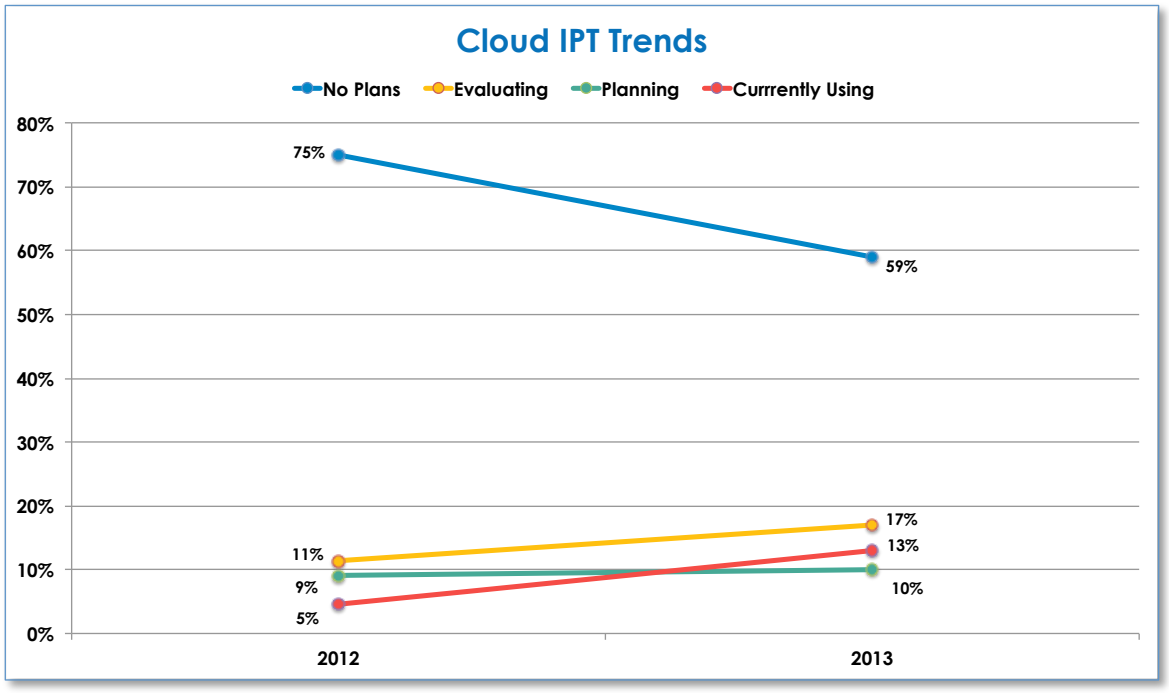

Figure 4: Cloud IPT Trends

The primary driver for cloud is the ability to minimize up-front investment by shifting from a capital-budget based purchase to one based on operational costs. This approach allows IT shops to easily allocate service costs out to lines of business, but may result in limits in use of additional cost features like web conferencing. For larger entities, the cost of cloud services can often exceed the cost of an outright purchase over a long-term (five year or more) term since the initial capital outlay for on-premises is offset by higher per-user recurring costs in a cloud model, and larger companies already have 7x24 IT support capabilities. "We like the predictability of an annual opex model, we no longer need to worry about capital cost budgeting," says the associate director of IT for a large university.

Another way IT leaders can reduce TCO is by evaluating solutions on their need for dedicated support staff, and by leveraging third-party support capabilities without having to pay to hire and train internal staff. Here again, Nemertes finds variances between vendors with ShoreTel and Mitel typically requiring lower staffing levels than Cisco and Microsoft. Using third-party providers for management can result in more predictable ongoing support costs over time. Both cloud and managed service approaches allow IT to shift resources into more strategic roles such as working directly with business units, or evaluating and testing new technologies for business impact. "We use a third party provider to manage our system, they even ship us fully configured phones, saving us the hassle of implementation," says the director of design and engineering at a large school system.

Finally, for on-premises deployments, system architecture has a direct impact on costs. Most companies are moving from appliance based IP-PBX architectures to one that leverages virtual servers for call control, conferencing applications, reporting, and management. Doing so results in a 42% reduction in hardware costs, according to our research, and potentially higher resiliency from spreading call control functions across multiple physical data centers and servers. System architects can also minimize network impact (and thus demand for additional bandwidth) by choosing voice codecs that reduce bandwidth need (e.g. G.729). "We saved $8,000 simply by leveraging our existing server cluster," says the CIO of a small professional services firm.

Conclusions and Recommendations

The marching orders for IT leaders are clear: maximize return on investment for all purchases while at the same time maximizing value. As a result, IT leaders should:

- Carefully evaluate total cost of ownership, both first year and ongoing costs, for all new technology purchases. Understand that large differences exist among different vendor solutions.
- Specific to IP telephony and UC, look at not just capital costs, but implementation and ongoing staffing and maintenance costs in any vendor evaluation.
- Evaluate cloud services with an eye toward understanding potential cost savings, agility, and ability to shift internal IT resources into more strategic functions. Look for vendors who can enable a seamless move to the cloud while preserving current investments and minimizing end-user disruption.
- Evaluate running IPT and UC applications on virtual servers within the data center to reduce system acquisition and ongoing costs while improving resiliency and scalability.
- Evaluate managed services to reduce training and staffing costs and provide expense predictability.

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.