How to Evaluate Responses to a Request for Proposal for IP Telephony

Geoff Johnson, Eric J. Zwar, Rich Costello

Organizations need to be rigorous in evaluating vendors' bids to supply an IP telephony system. A systematic selection process will lead to widespread support during implementation and exploitation of IP features.
1.0 Introduction

Purchasing an Internet Protocol (IP) telephony system is a major investment that requires transparent due diligence. Enterprises that send out requests for proposals (RFPs) for an IP telephony system should have followed the steps in “Guidelines to Use for Managing IP Telephony Deployment,” “How to Plan the Implementation of IP Telephony” and “How to Develop a Request for Proposal for IP Telephony.” However, issuing RFPs is just one part of the procurement process. Vendors vary in how faithfully they follow instructions when submitting bids. As a result, purchasers must be rigorous in evaluating responses and bids.

Buyers must base their decisions on an objective evaluation of the responses. The evaluation team must be able to describe the decision logic and defend the assignment of weights and scores to each question and category in the selection criteria. We recommend that stakeholders agree on the weighting and scoring process before the RFP is issued. This will ensure objectivity and avoid superficial decisions.

There are several possible approaches to evaluation and selection. One starts by separating the "must have" criteria from the "would like" criteria. Proposals that do not meet all of the "must have" conditions should not be evaluated further. The final choice is then made via a weighted assessment of the "would like" categories and the remaining evaluation criteria. For an example, see “Evaluating Responses to RFPs for Network Services.”

Usually, an initial assessment will narrow the field of acceptable vendors down to two or three. These should then be subject to more rigorous assessment and be asked to make presentations about their proposals. Then, stakeholders can probe the vendors for any points that require clarification.

After the vendor presentations and the receipt of any subsequent clarifying information, the stakeholders must make their final assessment and provide a recommendation to senior management.

2.0 Selection Criteria

Formal evaluation will normally classify vendor responses into a framework of selection criteria. One approach is to score the responses and weight the categories to rank the bids and then make a further judgment on price. Another approach incorporates price as one of the criteria. Price is important, but the selected system must first fulfill the business’s unique operational, technical, and service or support objectives.

Vendors' offerings must be consistent with the requirements specified in the RFP and the goals established by enterprise management. Establishment of these objectives is a precondition to performing the individual assessments.

Each system should be evaluated according to criteria in the following major categories:

- System objectives
- Vendor viability
- System architecture
- Product support
Stakeholder representatives who took part in preparing the RFP will continue their work and take part in the evaluation. This will ensure that all requirements are objectively assessed. Criteria within the major categories are as follows.

2.1 System Objectives

Reliability

The system must have a history of dependable service under heavy traffic and usage of applications. Performance standards must equal those of a traditional PBX that is a leader in its class. The system must offer safeguards to allow call processing to continue in cases of major component failures or commercial power interruptions.

Maintainability

The system must provide the means to detect and diagnose system failures quickly and efficiently and permit repairs to be made expeditiously. The system must provide for both local and remote network monitoring, fault isolation (IP network, trunks and lines), and recovery from service failures.

Ease of Operation

End-user personnel must be able to use most features with a minimum of training. The system must provide a universal dialing arrangement compatible with all remote facilities.

Manageability

IP telephony facilitates immediate moves, adds and changes for handsets because the user is at an IP subnet address. But the system must allow technical personnel to make system modifications with a minimum of outside support. They should be able to change extension numbers, revise station features and update the system database.

Flexibility

The system must be capable of meeting the constantly changing business needs of the enterprise.

Accountability

The system must be capable of providing IP bandwidth performance data, call traffic statistics and detailed billing information on a continuing basis.

Investment Protection

The system must be designed to take advantage of future developments. These will include compliance with the Session Initiation Protocol (SIP), adoption of unified communications and integration with IT applications. The system should not be vulnerable to short-term technological obsolescence.

Cost Control

The system should make effective use of tie lines and available bandwidth so that the enterprise can limit its exposure to tariff increases and increased operating costs.

Modularity

The system must readily accept software updates, hardware expansions and reconfigurations without loss of service. These changes must require a minimal amount of time and the lowest
possible cost. The system must interface with the public switched telephone network (PSTN),
private network facilities, other corporate communications systems, enterprise LANs and WANs,
and the Internet with minimal engineering activity and expense.

### Integration Capability

The system must be able to integrate with the enterprise’s established telephony systems and, if
possible, permit feature transparency between systems. It must allow interfacing to established
and planned enterprise applications to exploit the capabilities of IP telephony.

### Convergence Capability

The system must be able to be an integral part of the enterprise’s converged voice, video and
data communications network, whether established or planned. It must support features such as
class-of-service differentiation as part of a wider policy for quality of service throughout the
enterprise’s networks.

### 2.2 Vendor Viability

#### Corporate Maturity

The selected vendor must have a history of success and substantial experience in marketing,
installing and servicing the system that is proposed.

#### Relationship to Original Equipment Manufacturer

If the bid is from a distributor or systems integrator, the bidder must demonstrate an effective
relationship with the original equipment manufacturer (OEM).

#### Financial Base

The vendor must have the financial resources to support large, complex and expensive
installations within the time frames specified by the purchaser.

#### Corporate Organization

The selected vendor must possess the resources to plan, implement and manage a large project
on a turnkey basis. It should have resources in management, engineering, installation and
training.

#### Technical Staff

The selected vendor must possess a qualified technical staff capable of engineering, installing,
testing and maintaining the proposed system. If the supplier is not an OEM, the technical
relationships with the OEM should be effective.

### 2.3 System Architecture

#### Design Philosophy

The vendor must specify the design of the system. Is it pure IP or hybrid of IP and time division
multiplexing (TDM)? Does it support some form of migration from TDM to IP? What operating
system does the system server utilize? Can it support nonproprietary handsets? Can it support
both wired and wireless handsets? What wireless protocols does it support — cellular, wireless
LANs or the standard for Digital Enhanced Cordless Telecommunications (DECT)? Can it support
seamless roaming between PBX locations, wireless LAN access points or fixed-to-mobile cellular
calls?
Standards

The vendor must specify what standards the system conforms to. These will likely be SIP, H.323, G.726, 727, 729, Q Signaling (QSIG) and Multiprotocol Label Switching (MPLS). The choice of standards must be consistent with the system's design objectives.

Capacities

The bidder must acquire a comprehensive understanding of the full range of port requirements and product capacity limitations, based on vendor data for bandwidth, trunk and line port capacities. Traffic-handling capacities must also be quantified.

Redundancy

The vendor must specify the standard level of redundancy (that is, key component duplication) for the system and what the incremental costs are if a higher level of redundancy is required.

Networking Capabilities

The vendor must specify what voice and data networking schemes, standards and services the system supports.

Transmission Tolerances

The vendor must specify what jitter, latency and packet losses the system can tolerate without noticeable degradation in voice quality.

Power Failure Operation

The vendor must specify what safeguards are offered to allow call processing in the event of a commercial power outage and describe the routine that enables automatic and manual power failure transfer.

Environmental Requirements

The vendor must specify the system's dimensions, weight and requirements for operating temperature, humidity, and power. It should state whether a separate room is required. The vendor must also specify how much space is required on each side of the system for proper airflow and system access.

2.4 Product Support

Spare-Parts Availability

The vendor must provide a schedule of all spare parts, including pricing, that will need to be maintained as on-site inventory.

Product Documentation Updates

The vendor must commit to providing documentation and support for new features and enhancements to the system.

Warranties

The vendor must specify the length of the warranty and what equipment and network access and services are covered.

Maintenance
The vendor must specify what is included in its standard day-to-day service and maintenance package. It should clearly state the costs of optional extra levels of coverage including levels of monitoring, trouble reporting routines and response times, and the administration of moves, adds and changes (MAC). Such MAC should be very simple in an IP telephony system as handsets can be simply plugged into or removed from an RJ45 data cabling socket. Purchasers should check that this is the case with the proposed system and that asset management for handset locations or personal allocation is still supported.

**Training**

The vendor must provide on-site training to users, technical support staff and console operators.

**Catastrophic Recovery Capabilities**

The vendor must provide a detailed plan for restoring service in case the system becomes totally inoperative as a result of system failure or a catastrophic condition.

### 3.0 Weighting the Criteria

Assigning weights to these criteria will be a matter of judgment for each enterprise. The objectives discussed above must drive the scoring process, and each major category must be weighted according to its importance to the individual enterprise. The sum of the weight values should total 100.

Generally, the category of system objectives should carry the most weight (say 40), followed by vendor viability (30). System architecture and product support could then each be assigned a weight of 15.

A small committee or group of expert individuals can undertake the evaluation and scoring of each vendor proposal and report to a working committee of the stakeholders or their representatives. The committee concept utilizes the round-table approach by promoting the exchange of ideas and allowing conclusions to be reached by consensus.

Once the decision on the preferred supplier is made internally, it should be subjected to a sensitivity analysis. Try to use extreme values of weightings and scores to see if they alter the decision. This gives a robust and defensible conclusion. Decisions taken in this way are more supportable and enforceable for stakeholders. A second-best supplier may also be chosen in case contractual negotiations with the preferred supplier fail. This process also maintains competitive tension in a “best and final offer” negotiation.

### 4.0 How Scoring Works

The methodical scoring process can be illustrated by an example. Each vendor will be graded on the basis of how well its proposed system meets the objectives specified in each category. Therefore, scoring guidelines need to be established. The following is a simple example:

- **1.0** = Excellent in meeting the objective
- **0.5** = Meets the objective to some degree
- **0.0** = Fails to meet the objective

Gradations between the scores above can be used, as shown in Table 1.

Each proposal must be evaluated and scored on a paragraph-by-paragraph basis. Each item should be given a consensus rating according to the response sequence specified in the RFP. The scores in each category are totaled. An average value is then obtained by dividing the total
score by the number of items within the category. A weighted average is now derived by multiplying the average total by the weight value assigned to the specific category. Table 1 and Table 2 present an example scoring scenario.

**Table 1. RFP Scoring**

<table>
<thead>
<tr>
<th>Category</th>
<th>Bidder 1</th>
<th>Bidder 2</th>
<th>Bidder 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.9</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Maintainability</td>
<td>0.5</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>0.9</td>
<td>0.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Manageability</td>
<td>0.3</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Flexibility</td>
<td>0.5</td>
<td>1.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Accountability</td>
<td>0.4</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Investment Protection</td>
<td>0.5</td>
<td>0.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Cost Control</td>
<td>0.2</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Modularity</td>
<td>0.9</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td>Integration Capability</td>
<td>0.5</td>
<td>0.9</td>
<td>0.7</td>
</tr>
<tr>
<td>Convergence Capability</td>
<td>0.5</td>
<td>0.8</td>
<td>0.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6.1</td>
<td>9.4</td>
<td>8.7</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>0.55</td>
<td>0.85</td>
<td>0.79</td>
</tr>
<tr>
<td><strong>Weighted Average (40%)</strong></td>
<td>22.2</td>
<td>34.2</td>
<td>31.6</td>
</tr>
</tbody>
</table>

Source: Gartner Dataquest (July 2005)

**Table 2. RFP Scoring: Weighted Total**

<table>
<thead>
<tr>
<th>Category</th>
<th>Weight</th>
<th>Bidder 1</th>
<th>Bidder 2</th>
<th>Bidder 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Objectives</td>
<td>40</td>
<td>22.2</td>
<td>34.2</td>
<td>31.6</td>
</tr>
<tr>
<td>Vendor Viability</td>
<td>30</td>
<td>29.0</td>
<td>30.0</td>
<td>26.4</td>
</tr>
<tr>
<td>System Architecture</td>
<td>15</td>
<td>11.3</td>
<td>13.8</td>
<td>12.5</td>
</tr>
<tr>
<td>Product Support</td>
<td>15</td>
<td>11.9</td>
<td>9.4</td>
<td>13.2</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td>100</td>
<td>74.4</td>
<td>87.4</td>
<td>83.7</td>
</tr>
</tbody>
</table>

Source: Gartner Dataquest (July 2005)

The total score is the sum of all weighted category scores for each bidder; the highest possible score is 100.

In this example, Bidder 2 is the winner from a technical and business requirements standpoint, with Bidder 3 running a close second. Price, so far, has not been a factor. Before considering price, the bidders’ offerings must first fulfill the unique operational, technical and support objectives specified in the RFP.

Since both candidates are within a few points of each other, price becomes a critical factor — especially if Bidder 3 submitted the lowest bid. The purchaser must understand the reason for the price variation by carefully examining the appropriate cost-related sections of each proposal. The purchaser may find a pricing error or misinterpretation. Perhaps the difference may lie in the
optional features or supplemental applications. Nevertheless, having identified the reason for the price difference, the purchaser can use the information to negotiate a more favorable price from the candidate with the highest score, in this case, Bidder 2.

The purchaser may also elect to determine exactly where the scoring differences lie. A re-examination of the vendors’ responses may reveal that Bidder 3’s deficiencies fall in the lesser-weighted categories and are relatively insignificant. If this is the case, Bidder 3 could become the preferred vendor. It is now up to the evaluation team to examine the entire picture, taking in objectives and price, weigh the risk factors associated with the requirements and evaluation criteria, and make a recommendation.

5.0 Conclusion

A thoroughly prepared and objectively evaluated RFP will ensure that the enterprise’s objectives for introducing IP telephony are met in a complete and cost-effective way. The intellectual effort invested in preparing an effective RFP reliably delivers savings in time, accuracy and confidence in the purchasing. These savings will be worth several times more than the costs of the original effort.

A best-practice process provides for effective stakeholder participation in the project. This will ensure the organization’s support for, and commitment to, the selection during implementation and the subsequent exploitation of the system’s features. The RFP process is key for customers to obtain leverage when trying to procure optimum competitive deals from vendors.

RECOMMENDED READING

"How to Develop a Request for Proposal for IP Telephony"
"How to Plan the Implementation of IP Telephony"
"Guidelines to Use for Managing IP Telephony Deployment"
"Evaluating Responses to RFPs for Network Services"
"The Road to Internet Protocol Telephony"
"Creating an Enterprise VoIP and IP-Telephony End-to-End View"
"IP Telephony Can Revolutionize Business Communications"
"Before You Start: Preparing for IP Telephony Deployment"
"IP Telephony for Enterprise Networks: Technology Overview"
"The Pressures and Consequences of IP Telephony"
"What IP Telephony Means for U.S. Organizations' E911 Support"
"Avoid Hidden Costs When Migrating From PBX to IP Telephony"
"Deploying Enterprise VoIP Is a Question of When, Not Whether"
"IP Telephony Solutions Lack Frequently Used Voice Features"
"SIP Handset Choices Increase for Enterprise IP Telephony (3Q05 Update)"
"Quality of Service Over IP Networks"
"CIOs Must Take Charge of Telephony"

**Acronym Key and Glossary Terms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECT</td>
<td>Digital Enhanced Cordless Telecommunications</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol</td>
</tr>
<tr>
<td>MAC</td>
<td>moves, adds and changes</td>
</tr>
<tr>
<td>MPLS</td>
<td>Multiprotocol Label Switching</td>
</tr>
<tr>
<td>OEM</td>
<td>original equipment manufacturer</td>
</tr>
<tr>
<td>PSTN</td>
<td>public switched telephone network</td>
</tr>
<tr>
<td>QSIG</td>
<td>Q Signaling</td>
</tr>
<tr>
<td>RFP</td>
<td>request for proposal</td>
</tr>
<tr>
<td>SIP</td>
<td>Session Initiation Protocol</td>
</tr>
<tr>
<td>TDM</td>
<td>time division multiplexing</td>
</tr>
</tbody>
</table>
REGIONAL HEADQUARTERS

Corporate Headquarters
56 Top Gallant Road
Stamford, CT 06902-7700
U.S.A.
+1 203 964 0096

European Headquarters
Tamesis
The Glanty
Egham
Surrey, TW20 9AW
UNITED KINGDOM
+44 1784 431611

Asia/Pacific Headquarters
Gartner Australasia Pty. Ltd.
Level 9, 141 Walker Street
North Sydney
New South Wales 2060
AUSTRALIA
+61 2 9459 4600

Japan Headquarters
Gartner Japan Ltd.
Aobadai Hills, 6F
7-7, Aobadai, 4-chome
Meguro-ku, Tokyo 153-0042
JAPAN
+81 3 3481 3670

Latin America Headquarters
Gartner do Brazil
Av. das Nações Unidas, 12551
9º andar—World Trade Center
04578-903—São Paulo SP
BRAZIL
+55 11 3443 1509