

# The Business Case for **Service Provider Business Voice Services**

## Executive Summary

Forecasts from research firms Ovum, Gartner, and Probe estimate that, through 2007, service providers will generate more than \$12 billion on business voice services in the United States alone. Service providers can use the Cisco® SP Business Voice Solution to bundle data, voice, and multimedia IP traffic to gain a competitive advantage in this new world of packetized communications. In fact, the Cisco Business Voice Solution offers service providers numerous benefits, including reduced customer churn, higher margins, and new revenue opportunities made possible by a common IP infrastructure.

This document compares four business-case scenarios and assesses how quickly service providers can expect to recoup investments in business voice services under each scenario. Several common assumptions underlie the scenarios, the primary one being that service providers have an existing quality-of-service (QoS)-enabled IP network. Appendix I describes the assumptions in more detail.

The scenarios are created for service providers combining one or more of the following service options:

- Provisioning of voice-transport services.
- Rental of customer-located IP telephony (IPT) equipment to end customers. IPT equipment includes such devices as IP phones, customer premises equipment (CPE) routers, Cisco CallManager or Cisco CallManager Express, and Cisco Catalyst® switches. Service providers can either purchase or lease the IPT equipment that they rent to customers.
- Remote management of customer-located IPT equipment.

Table 1 shows how these service options have been combined to define the four scenarios.

**Table 1** IPT Revenue-Source Comparison by Scenario

| IPT Revenue Source       | Scenario          |                          |     |     |
|--------------------------|-------------------|--------------------------|-----|-----|
|                          | 1                 | 1A                       | 2   | 3   |
| IPT equipment rental     | Yes<br>(purchase) | Yes<br>(operating lease) |     |     |
| IPT equipment management | Yes               | Yes                      | Yes |     |
| Voice transport services | Yes               | Yes                      | Yes | Yes |



Comparing these scenarios generated the following three conclusions or value themes:

1. Service providers can profitably offer voice transport services to small and medium-sized businesses and large enterprises. Furthermore, by expanding the reach of their on-net voice networks and thus reducing public switched telephone network (PSTN) termination expenses, service providers can generate even higher margins and quicker paybacks (for example, scenario 3).
2. Service providers can earn higher revenues and margins and produce even quicker paybacks by bundling remote management and rental of customer-located IPT equipment in addition to offering voice-transport services (for example, scenarios 1 and 1A).
3. When offering bundled business voice services including customer-located IPT equipment rental, service providers can markedly shorten payback periods by leasing customer-located IPT equipment (for example, scenario 1A) rather than purchasing it (for example, scenario 1). Note that this paper always assumes that IPT equipment is located at the customer's premises.

Additionally, Cisco has developed an Excel-based service provider Business Voice Solution Payback Tool that enables service providers to calculate their own business voice service payback periods and conduct sensitivity analyses. This tool is available from Cisco account representatives.

## **Introduction**

This document compares four business-case scenarios and assesses how quickly global and domestic service providers can expect to recoup their investments under each scenario. The document begins by describing the market for business voice services and then presents the Cisco Business Voice Solution network architecture for service providers. The general benefits that service providers can expect to gain by offering business voice services are also listed.

Next, the document introduces each of the four business-case scenarios and compares them financially. It explores the various economic drivers that affect the payback periods associated with each scenario and illustrates how these drivers vary by customer size.

The focal point of the document describes the key findings of the business-case scenario analyses and categorizes them into three value themes. The document concludes by explaining how the Cisco Voice Payback Tool can help service providers predict how quickly they will earn positive returns on their business voice solution investments.

## **Market Overview**

The market for managed business voice services offers tremendous potential. Forecasts from research firms Ovum, Gartner, and Probe estimate that service providers will generate more than \$12 billion through 2007 from business voice services in the United States alone. Service providers will generate these revenues by bundling an increasingly diverse array of value-added services and delivering them over a common IP platform. By capitalizing on their IP networks, service providers will reduce operating expenses and maximize revenue.

Looking to cut costs and increase functions, businesses are driving the demand for managed IP services. And almost 30 percent of some 500 IT decision makers polled by Cisco in 2002 stated that they intend to outsource their IP services. Service providers that bundle data, voice, and multimedia IP traffic stand to gain the most in this new world of packetized communications.



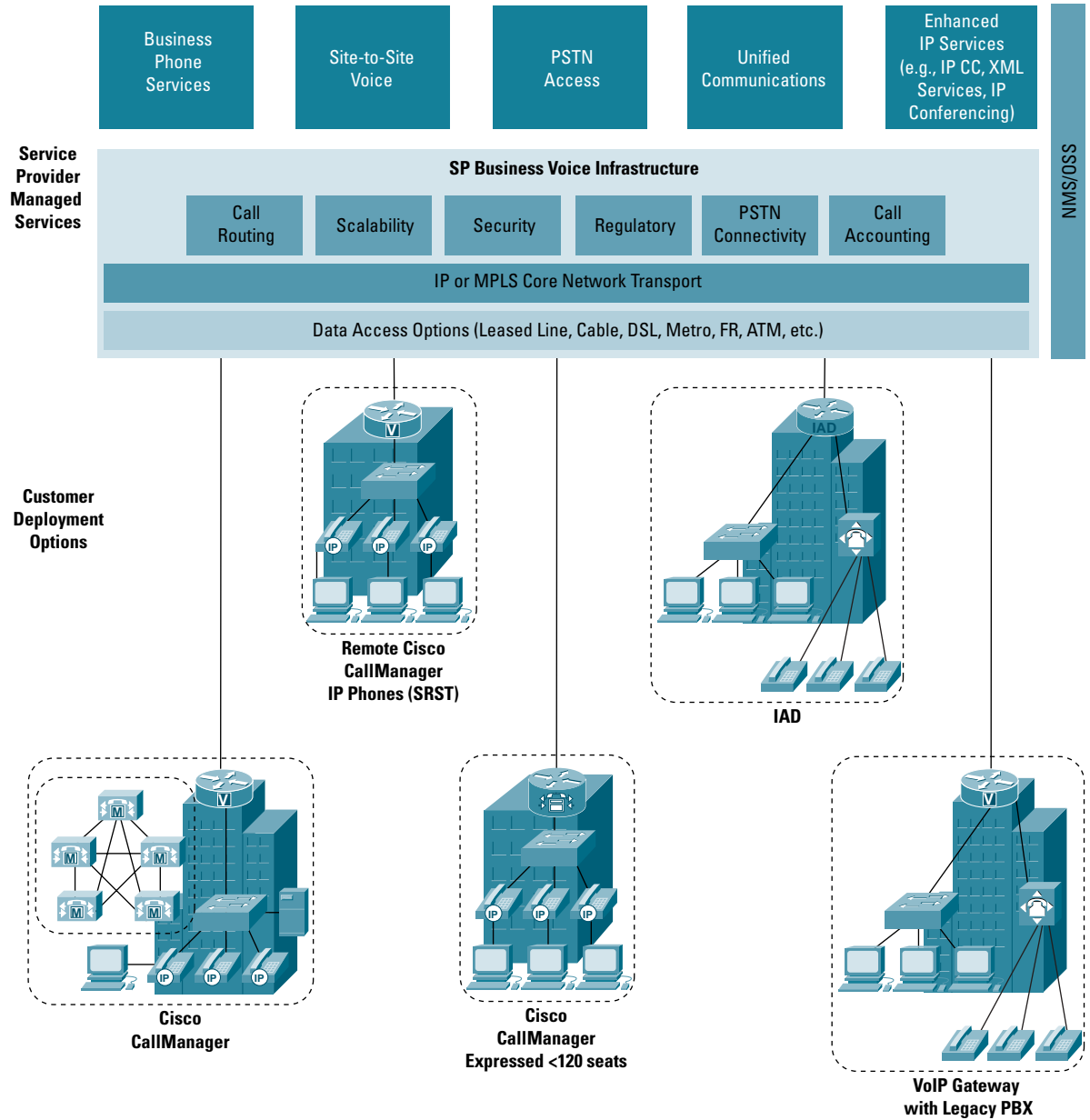
### **Service and Solution Overview**

With the Cisco Business Voice Solution, service providers overlay new voice and video services on top of existing data services. In other words, the Cisco Business Voice Solution can be used to offer a portfolio of business voice services over a common infrastructure. This capability allows service providers to target different markets—small businesses, medium-sized businesses, and enterprises—all with one investment.

For example, service providers may elect to offer managed IP private branch exchange (PBX) services to one set of customers, provide PBX interconnections over IP to another set, and offer PSTN access to yet another. The Cisco Business Voice Solution makes this versatility possible by using a common call-routing and network operations infrastructure. Figure 1 illustrates the architecture underlying Cisco's Business Voice Solution.



**Figure 1**  
High-Level Architecture for the Cisco Service Provider Business Voice Solution



By capitalizing on their respective strengths, IP virtual private network (VPN) service providers, carriers, and information technology (IT) outsourcers can all increase revenues and improve their competitiveness by offering business voice services.



## **The Benefits of Business Voice Service**

Service providers stand to gain several general benefits by offering business voice services:

**Capital expenditure savings**—With a Multiprotocol Label Switching (MPLS) or clear-IP infrastructure in place, service providers can add voice services to their data networks easily and inexpensively.

**Economies of scale**—By sharing network resources among many small, medium-sized, and large enterprises, service providers can reduce their capital and operating expenses per user. Each new customer increases profitability.

**Broader market and higher revenue potential**—Layering voice services on their data networks enables service providers to capture larger markets and generate higher revenues than with data services only.

**Loyal customers and reduced churn**—Service providers that offer managed services integrate themselves with their customers, who would otherwise incur substantial costs to switch providers. As an example, by reducing customer churn from 1.8 to 1.5 percent, service providers are able to keep customers for an additional 11 months—a 15 percent increase in lifetime value.

**Higher margins**—Today, bandwidth is a commodity, and commodities sell strictly on price. However, service providers can protect margins by bundling value-added business voice services and distinguishing themselves from access-based competitors.

**New revenue opportunities**—Service providers gain a versatile platform that they can use to introduce value-added services such as video, unified messaging, and other advanced IP services. New services create new revenue opportunities.

## **Four Case Studies**

Now that this paper has outlined the business voice services market and benefits, the paper will focus on four business-case scenarios. By contrasting the differences between these scenarios, particularly financially, service providers can readily assess the relative merits of one business approach over another. Refer to Table 1 in the Executive Summary for an overview of these scenarios.

**Scenario 1**—This is the most-comprehensive scenario and it assumes that service providers deliver a complete bundle of services including voice transport and PSTN termination, IPT remote network management, and IPT CPE rental. Service providers own all of the IPT CPE including IP phones, routers, and Cisco Catalyst switches. Service provider revenue comes from voice transport and PSTN termination fees, recurring per-user fees for remote network management, and IPT CPE rental charges.

**Scenario 1A**—This scenario parallels scenario 1 in all aspects except one. Rather than purchasing the customer-located IPT equipment, service providers in scenario 1A lease it and then rent it to customers. The same services and revenue sources that apply in scenario 1 also apply in scenario 1A.

**Scenario 2**—This scenario assumes that service providers provide voice transport and PSTN termination and IPT remote network management services. In this scenario, end customers purchase (or lease through another party) their own IPT CPE including IP phones, routers, Cisco CallManager or Cisco CallManager Express, and Cisco Catalyst switches. Service provider revenue comes from voice transport and PSTN termination fees as well as recurring per-user fees for remote network management.



**Scenario 3**—This scenario assumes that service providers provide voice transport and PSTN termination only and thus generate revenue strictly from these services; service providers do not rent customer-located IPT equipment to customers nor do they manage customer IPT equipment. As in Scenario 2, customers either own their IPT CPE or lease it from third parties.

### Comparing the Scenarios Financially

Now this paper examines some of the financial differences between the scenarios. How do their revenue and operating-expense models differ? And how do their payback periods and margins vary? (Payback period is defined as the number of months that a service provider requires to recover the one-time capital expenses and one-time operating expenses associated with its business voice service.) Table 2 summarizes the financial differences of the four scenarios.

**Table 2** Scenario Financial Comparison

|  | <b>Scenario 1:<br/>(Purchase)</b><br>-IPT rental<br>-IPT management<br>-Voice transport   | <b>Scenario 1A:<br/>(Operating Lease)</b><br>-IPT rental<br>-IPT management<br>-Voice transport   | <b>Scenario 2:</b><br>-IPT management<br>-Voice transport                              | <b>Scenario 3:</b><br>-Voice transport |
|--|---|---|--|--|
| <b>Service revenue</b>                       | Highest   | Highest   | High   | Moderate                               |
| <b>Upfront IPT capital expense</b>           | Yes   | No  | No   | No                                     |
| <b>Operating expenses for IPT management</b> | <ul style="list-style-type: none"> <li>• Higher network operations center (NOC) cost for IPT management</li> <li>• Higher IPT equipment-maintenance cost</li> </ul> | <ul style="list-style-type: none"> <li>• Higher NOC cost for IPT management</li> <li>• Higher operating expenses associated with operating lease</li> </ul> | <ul style="list-style-type: none"> <li>• Higher NOC cost for IPT management</li> </ul> | None                                   |
| <b>Payback period</b>                        | Longer  | Shortest  | Shorter  | Short                                  |
| <b>EBITDA<sup>1</sup> margin</b>             | Highest   | Higher  | Medium   | Lowest                                 |
| <b>Net margin</b>                            | Medium  | Medium  | Medium   | Lower                                  |

1. Earnings before interest, taxes, depreciation, and amortization.

As Table 2 reveals, scenario 1 offers the highest revenue potential but takes the longest to pay off (scenario 1A also offers the same revenue potential). In scenario 1, service providers can also generate CPE rental income long after they fully depreciate the CPE equipment.

Scenario 1A offers the shortest time to payback. Here service providers have no capital expenses for customer-located IPT, and they generate the highest incremental revenue from two sources: customer-located IPT equipment rental and remote management of IPT-equipment.

Scenario 2 also offers a quick payback. In this case, service providers avoid upfront capital expenses, and they generate extra revenue by managing IPT equipment on behalf of their customers.



Finally, scenario 3 offers a moderately short payback period but limited revenue opportunities. Service providers that operate under this scenario cannot easily bundle services and offer the value-added benefits that ultimately enrich profitability.

Appendix I contains assumptions common to all scenarios.

### **How Various Economic Factors Affect Payback**

In this section, we examine in more detail the factors that most influence payback periods. This insight can help service providers better understand the effects of various cost and revenue drivers. For instance, if the IPT equipment rental fee carries the most weight in determining a given payback period, service providers should carefully consider the consequences before reducing these fees.

As part of the sensitivity analysis, the following variables were increased and decreased by 20 percent for each customer type under each scenario to gauge their payback-period effect:

- Number of customers
- Minutes of usage (MOU)
- IPT equipment management fee
- IPT equipment rental fee
- Basic monthly service fee and access revenue
- CPE management fee
- Domestic off-net pricing
- International off-net pricing
- Domestic off-net termination
- International off-net termination
- Access expense
- General and administrative expense
- NOC expense
- IP backbone bandwidth expense
- Marketing cost



Table 3 summarizes the variables that most influenced payback periods in each scenario and for each customer type.

**Table 3** Top Factors Affecting Payback Periods by Scenario and Customer Type

| Customer                | Scenario 1<br>Top Drivers                                  | Scenario 2<br>Top Drivers   | Scenario 3<br>Top Drivers   |
|-------------------------|--|---|---|
| <b>Small Business</b>   | 1. IPT equipment rental fee                                | Tie: All variables have a small effect  | 1. Tie:<br>– Domestic off-net pricing<br>– Basic monthly service fee and access<br>2. Tie<br>– Domestic off-net termination<br>– Access expense |
| <b>Medium Business</b>  | 1. IPT equipment rental fee<br>2. Domestic off-net pricing | Tie: All variables have a small effect  | 1. Domestic off-net pricing<br>2. Domestic off-net termination  |
| <b>Large Enterprise</b> | 1. IPT equipment rental fee<br>2. Domestic off-net pricing | Tie:<br>• Marketing cost operating expense<br>• Domestic off-net pricing<br>• Domestic off-net termination<br>• Basic monthly service pricing<br>• IPT equipment management fee<br>• Minutes of usage<br>• Number of businesses | 1. Domestic off-net pricing<br>2. Domestic off-net termination  |

Figure 2 further illustrates how various economic drivers can affect payback periods in a specific situation—in this example, one involving a medium-sized business in scenario 3, where a service provider offers voice transport only. Using a payback-calculation formula, it was determined that a service provider in this situation could expect to recoup its investment in four months. What would happen to the payback period, however, if domestic off-net prices were to fall by 20 percent? The orange bar next to the heading “Domestic off-net pricing” in Figure 2 illustrates this effect. In short, this price reduction would increase the payback by four months. Given that the base payback period is four months, the new payback period would therefore be eight months (the original four months plus the additional four).

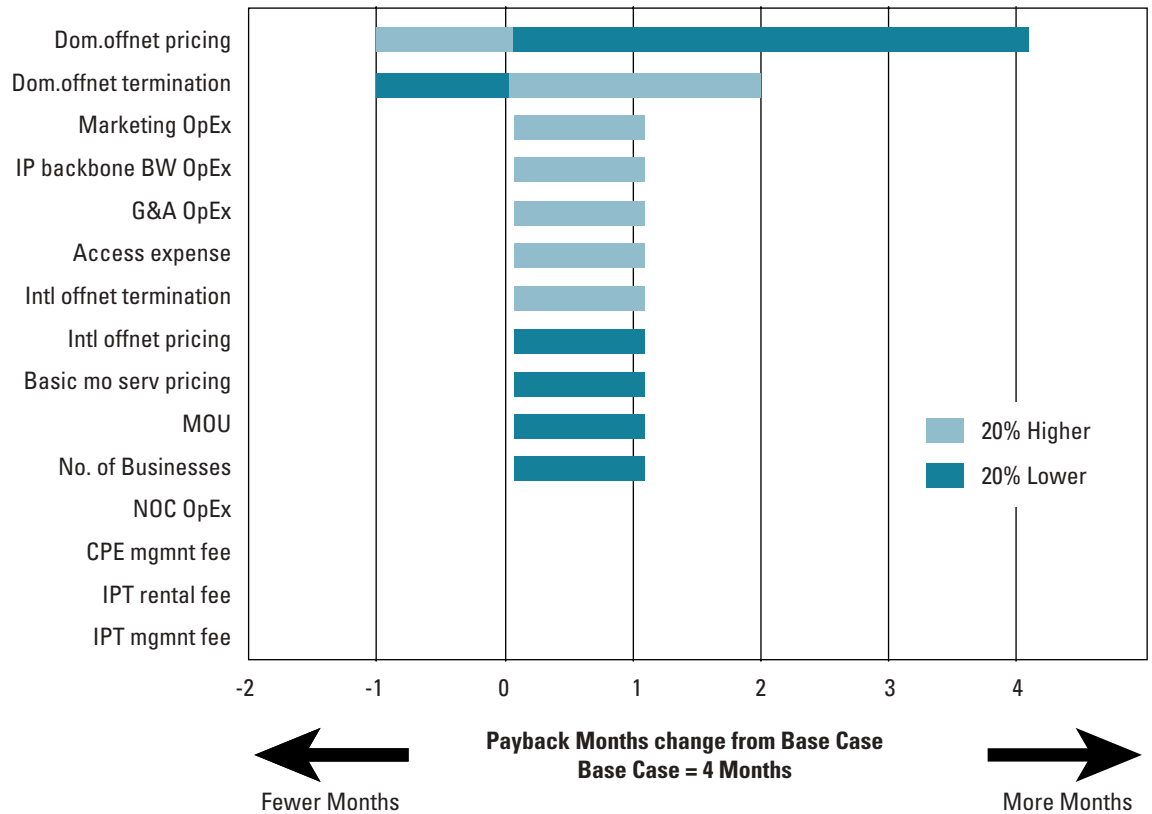
Conversely, if off-net pricing were to increase by 20 percent, the new payback period would fall by one month, as indicated by the white bar in the chart. This would result in a new payback period of three months.



**Figure 2**

Scenario 3 Payback Sensitivity Analysis for a Medium-Sized Business

- Base case payback period is 4 months or 0 deviation from the center.
- Dark green bar indicates, if domestic off-net pricing is lowered by 20%, paycheck period will be extended by 4 months (4+4= 8 months); light green bar indicates, if domestic off-net pricing is raised by 20%, payback will be shorter by 1 month (4-1= 3 ) months



**Key Findings**

In this section, three key conclusions or value themes that the analyses generated are explained.

**Value Theme Number 1**

*Service providers can profitably offer IPT voice-transport services to small and medium-sized businesses and large enterprises. Furthermore, by expanding the reach of their on-net voice networks and reducing PSTN termination expenses, service providers can generate even higher margins and quicker paybacks.*

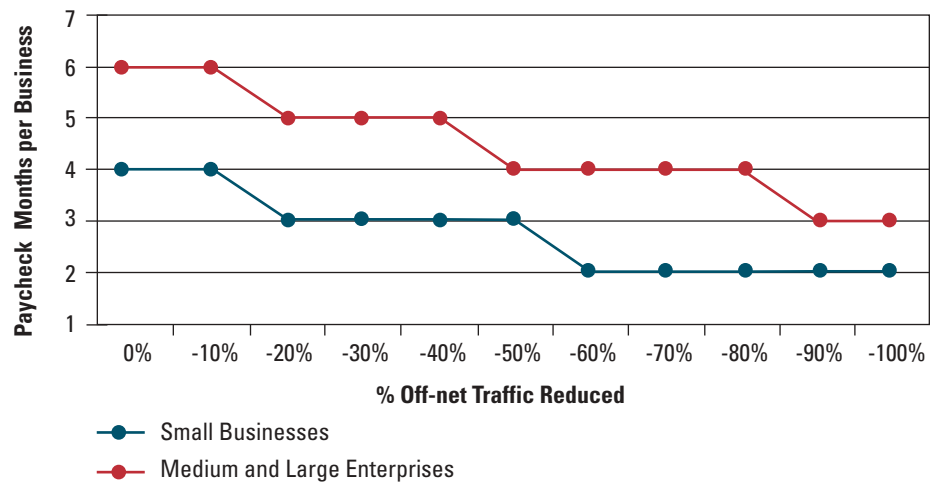
This value theme applies to scenario 3. In this scenario, service providers do not rent customer-located IPT equipment nor do they offer remote management of IPT equipment. They simply deliver voice-transport services using a business model that can produce positive profit margin and relatively quick payback.



This business model generates a long-term EBITDA margin of up to 29 percent. Moreover, after five years of operation, service providers can achieve paybacks of six months for each small-business customer and four months for each midsized-business and large-enterprise customer. Because many service providers consider 18 months an acceptable payback period for tactical investments, these shorter payback periods are highly attractive.

In addition, service providers can reduce termination expenses and speed payback as they expand their on-net VoIP networks. As Figure 3 reveals, service providers in scenario 3 can cut their payback times in half if they carry 100 percent of their traffic on their network.

**Figure 3**  
Payback Reductions Associated with Reducing Off-Net Traffic in Scenario 3



### Value Theme Number 2

Service providers can earn higher revenue and margins and produce even quicker paybacks by bundling IPT CPE management and equipment rental in addition to offering voice-transport services.

This value theme applies to scenarios 1 and 1A. Service providers can generate higher per-user revenues by moving from a pure voice-transport business model to a value-added business voice solution model. Figure 4 illustrates how adding IPT equipment management and IPT CPE equipment rental services boosts per-user revenues for every size of customer: small businesses, medium-sized businesses, and large enterprises.



**Figure 4**  
Monthly Per-Extension Revenue Analysis by Scenario

|   |   | <b>Scenario 1 and 1A</b>          |                 |                 |
|---|---|-----------------------------------|-----------------|-----------------|
|   |   | <b>Monthly Recurring Revenues</b> |                 |                 |
|   |   | Small                             | Medium          | Large           |
|   |   | Business                          | Business        | Enterprise      |
| <b>Voice Transport<br/>+IPT Management<br/>+ IPT Rental</b> | IPT management fee (optional)                 | \$ 10.00                          | \$ 15.00        | \$ 15.00        |
|   | IPT rental fee (optional)                     | \$ 25.00                          | \$ 35.00        | \$ 35.00        |
|   | Basic monthly service + access charge revenue | \$ 12.52                          | \$ 6.25         | \$ 7.10         |
|   | CPE router management fee (optional)          | \$ 5.83                           | \$ 2.50         | \$ 3.44         |
|   | Domestic off-net                              | \$ 11.34                          | \$ 22.68        | \$ 22.68        |
|   | International off-net                         | \$ 1.92                           | \$ 1.92         | \$ 1.92         |
|   | <b>Total Recurring Revenues:</b>              | <b>\$ 66.61</b>                   | <b>\$ 83.35</b> | <b>\$ 85.14</b> |
|   |   | <b>Scenario 2</b>                 |                 |                 |
|   |   | <b>Monthly Recurring Revenues</b> |                 |                 |
|   |   | Small                             | Medium          | Large           |
|   |   | Business                          | Business        | Enterprise      |
| <b>Voice Transport<br/>+IPT Management</b>                  | IPT management fee (optional)                 | \$ 10.00                          | \$ 15.00        | \$ 15.00        |
|   | IPT rental fee (optional)                     | \$ -                              | \$ -            | \$ -            |
|   | Basic monthly service + access charge revenue | \$ 12.52                          | \$ 6.25         | \$ 7.10         |
|   | CPE router management fee (optional)          | \$ 5.83                           | \$ 2.50         | \$ 3.44         |
|   | Domestic off-net                              | \$ 11.34                          | \$ 22.68        | \$ 22.68        |
|   | International off-net                         | \$ 1.92                           | \$ 1.92         | \$ 1.92         |
|   | <b>Total Recurring Revenues:</b>              | <b>\$ 41.61</b>                   | <b>\$ 48.35</b> | <b>\$ 50.14</b> |
|   |   | <b>Scenario 3</b>                 |                 |                 |
|   |   | <b>Monthly Recurring Revenues</b> |                 |                 |
|   |   | Small                             | Medium          | Large           |
|   |   | Business                          | Business        | Enterprise      |
| <b>Voice Transport</b>                                      | IPT management fee (optional)                 | \$ -                              | \$ -            | \$ -            |
|   | IPT rental fee (optional)                     | \$ -                              | \$ -            | \$ -            |
|   | Basic monthly service + access charge revenue | \$ 12.52                          | \$ 6.25         | \$ 7.10         |
|   | CPE router management fee (optional)          | \$ -                              | \$ -            | \$ -            |
|   | Domestic off-net                              | \$ 11.34                          | \$ 22.68        | \$ 22.68        |
|   | International off-net                         | \$ 1.92                           | \$ 1.92         | \$ 1.92         |
|   | <b>Total Recurring Revenues:</b>              | <b>\$ 25.78</b>                   | <b>\$ 30.85</b> | <b>\$ 31.70</b> |

Despite having to invest in customer-located IPT equipment up front, service providers in scenario 1 can expect paybacks of 13 months for small-business customers, 16 months for medium-sized businesses, and 17 months for large enterprises. These payback periods reflect the additional monthly revenues that scenario 1 service providers generate from renting and managing IPT equipment.

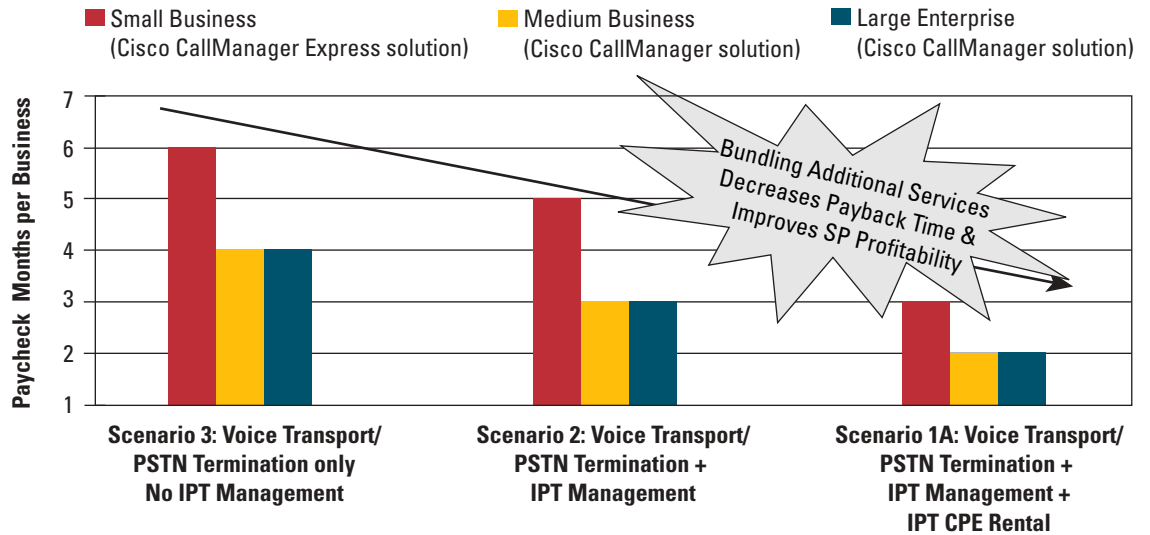
To better understand how these additional services can substantially increase monthly revenues, consider a service provider and one of its medium-sized business customers. As Figure 4 shows, if this service provider offers voice-transport services only, given the assumptions in Appendix I, the service provider stands to generate \$30.85 a month for every user at a medium-sized business.

But if the service provider adds IPT equipment management services, the monthly revenue per user at a medium-sized business is \$48.35 a month—a 57 percent increase. And if the service provider offers both IPT-equipment management and rental services on top of voice-transport services, the company can expect to generate \$83.35 a month per user—170 percent more revenue than the voice-transport-only option produces.



Figure 5 illustrates the payback-period impacts of adding managed services. The chart shows that as service providers augment their voice-transport services with IPT equipment management and IPT equipment rental services, the latter under an operating lease model, they can achieve successively quicker paybacks, regardless of customer size.

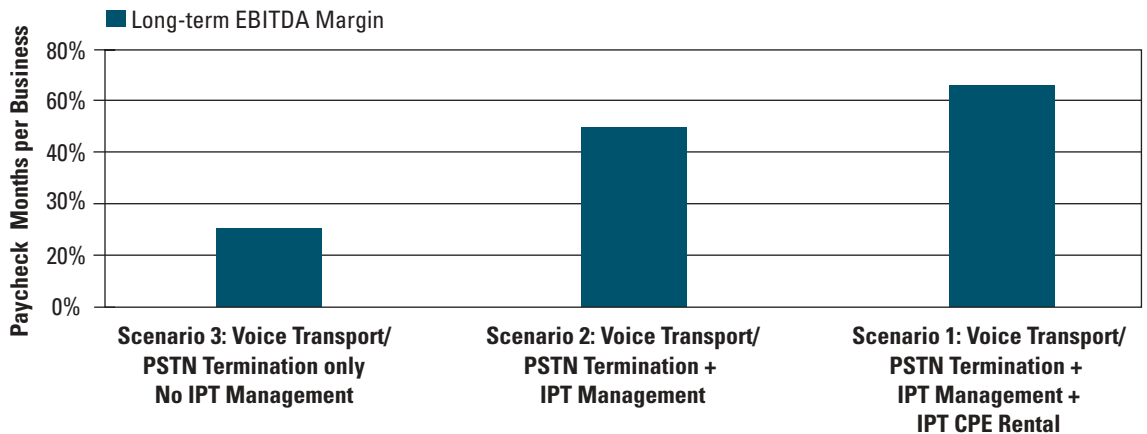
**Figure 5**  
The Payback-Period Impact of Adding Managed Services



**Note:** revenue opportunity & payback from additional managed services (e.g., enhanced IP services, UM, video) was not included and thus represents potential upside to business case.

Moreover, service providers can achieve higher EBITDA margins by adding more business voice services. Figure 6 reveals the differences in the EBITDA margins among the three main scenarios.

**Figure 6**  
Differences in EBITDA by Scenario





Finally, when service providers offer IPT equipment rental or management services, the Cisco Zero Touch deployment feature can reduce provisioning expenses by as much as \$250 per branch office. The actual savings will vary according to each service provider's infrastructure, but the savings can be substantial.

### **Value Theme Number 3**

*When offering bundled business voice services including IPT CPE rental, service providers can markedly shorten payback periods by leasing IPT equipment rather than purchasing it.*

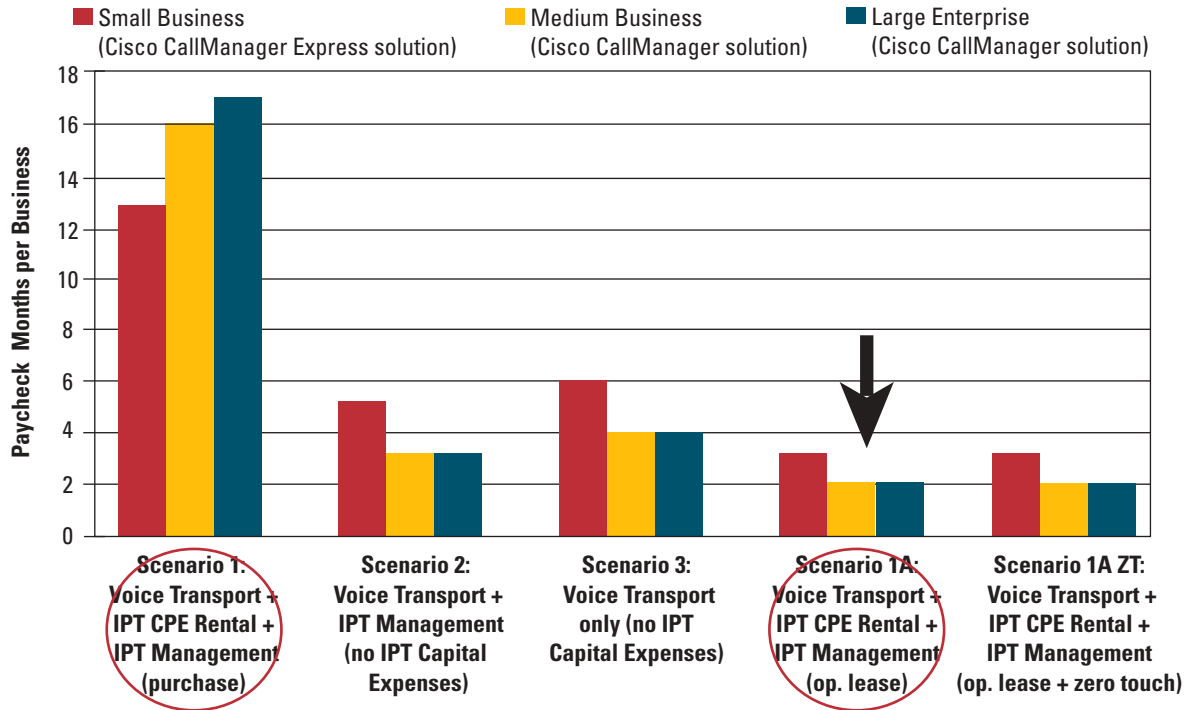
This value theme applies to scenario 1A. By varying scenario 1 to incorporate an operating-lease business model, service providers can significantly reduce payback periods and improve EBITDA. Rather than purchasing IPT equipment as they do in scenario 1, service providers lease this equipment in scenario 1A. This approach enables service providers in scenario 1A to reduce the payback period for small businesses from 13 months to three months, for medium-sized businesses from 16 months to two months, and for enterprises from 17 months to two months.

*How does an operating lease reduce the payback periods so dramatically?* First, service providers avoid upfront capital expenses; they simply pay regularly scheduled lease expenses. Second, service providers generate extra revenue and margin by leasing IPT equipment. And third, by assuming no capital leases, service providers avoid adding liabilities to their balance sheets as well as paying interest on new debt.

In short, an operating lease enables service providers to offer both IPT CPE equipment rental and remote management services without spending capital upfront. This combination cuts payback periods appreciably—up to 15 months. Figure 7 illustrates the substantial differences in payback periods between scenarios 1 and 1A.



**Figure 7**  
The Payback-Period Impact of Operating Leases



- With optional lease, Service Provider can save IPT Capital Expenses without compromising its ability to offer both IPT rental and management services.
- Relative to the Scenario 1 purchase option, operating lease (Scenario 1A) reduces payback by up to 15 months!

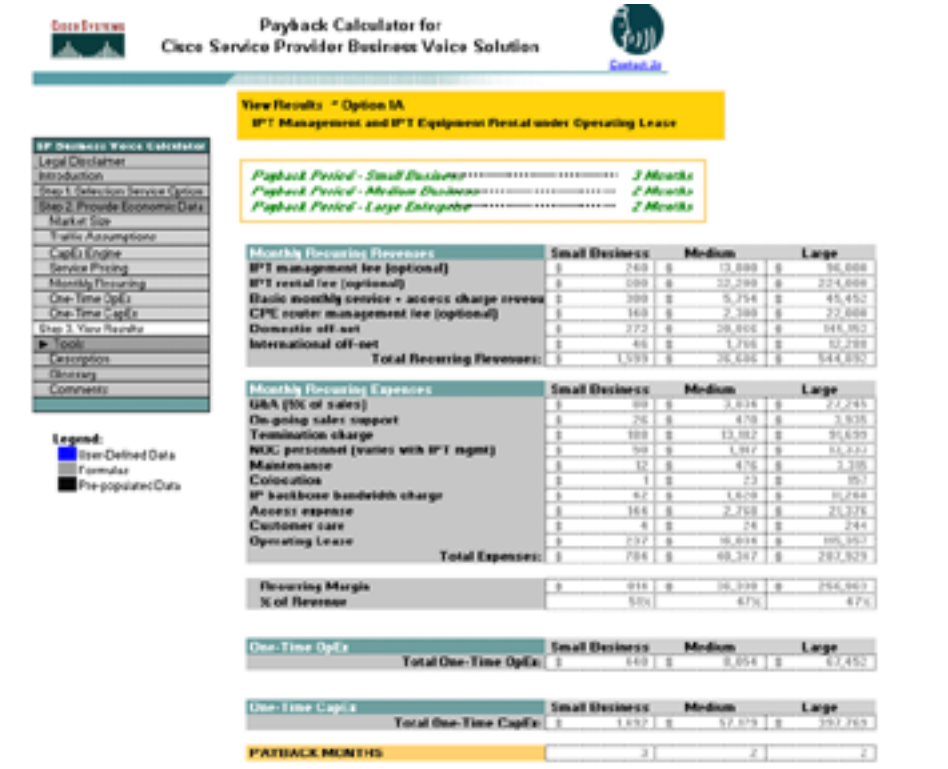
**Footnote:** Under Scenario 1A, operating lease is applied to IPT equipment only (CallManagers, CPE routers, switches, IP phones, etc.); service providers still owns network equipments (PSTN trunking gateways, network management systems, Cisco PGW2200 route processor modules, etc.)

### Cisco Voice Payback Tool Simplifies Calculations

Fortunately, the Cisco Voice Payback Tool makes it simple for service providers to determine their own business voice payback periods and perform sensitivity analyses. Service providers can use the Excel-based Voice Payback Tool to easily conduct their own “what if” scenarios and find out how quickly they can expect to recoup their investments in a Cisco Business Voice Solution. Cisco account managers are available to answer questions and provide additional information about this tool.



**Figure 8**  
The Cisco Business Voice Payback Tool Simplifies Payback Calculations



### Cisco Partnership Leads to Success

Cisco Systems® provides expertise and resources that service providers can capitalize on to deliver successful business voice services. Cisco's industry-leading technology and solutions, vast internetworking expertise, and ability to identify and influence business demand for service provider offerings enable service providers to launch new services, boost revenue, and enjoy an advantage over their competitors.

The Cisco Powered Network program is the primary Cisco vehicle for strategic service provider partners. By offering service providers access to Cisco resources, the Cisco Powered Network program can help providers market their services more effectively.

For additional information about how Cisco can help your organization launch profitable business voice services and generate a high return on your investment, call your Cisco account representative today.



## APPENDIX I—Scenario Assumptions

Seven assumptions underlie the four business-case scenarios:

### Assumption Number 1

Service providers offer voice-transport service in all four business-case scenarios (for example, voice VPN intra-enterprise on-net call routing and off-net call routing services between the service providers' VoIP networks and the PSTN).

### Assumption Number 2

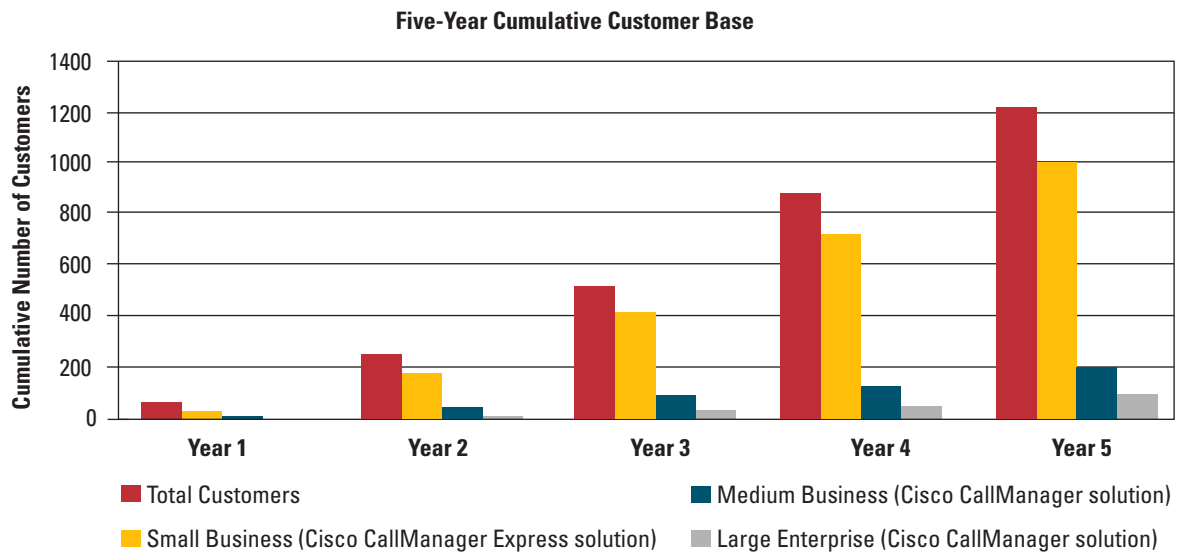
Service providers can be located in any geographic region—Asia Pacific, Europe, Africa, or North America, for example—and they operate up to nine data centers. These nine data centers are comprised of three large, three medium-sized, and three small data centers.

### Assumption Number 3

Service providers will have 1250 customers (1000 small, 200 medium-sized, and 50 large enterprises) by the end of the fifth year.

**Figure 9**

Assumed Five-Year Growth of Customer Base



### Assumption Number 4

As summarized in Table 4, each type of customer—small business, medium-sized business, and large enterprise—has a specific average number of telephone extensions and sites:

- Each small business has one small site and 24 telephone extensions at that site.
- Each medium-sized business has one large site and five small sites. The large site has 800 telephone extensions, and each of the five small sites has 24 extensions, producing a total of 920 extensions.



- Each large enterprise has two large sites, nine medium-sized sites, and 50 small sites. Given the estimated number of extensions at each of these sites (800, 400, and 24 respectively), each large enterprise has a total of 6400 extensions.

**Table 4** Telephone-Extension Distribution by Customer Size and Site Size

| Company Profile                   | Each Small Business | Each Medium-Sized Business | Each Large Enterprise | Average Number of Extensions Per Site |
|-----------------------------------|---------------------|----------------------------|-----------------------|---------------------------------------|
| Number of large sites             | -                   | 1                          | 2                     | 800                                   |
| Number of medium-sized sites      | -                   | -                          | 9                     | 400                                   |
| Number of small sites             | 1                   | 5                          | 50                    | 24                                    |
| Number of extensions per business | 24                  | 920                        | 6400                  |                                       |

**Assumption Number 5**

Service revenue comes from the following potential pricing components, not all of which apply to each scenario:

1. IPT management fee
2. IPT rental
3. Monthly basic service fee and access revenue
4. CPE management fee
5. Domestic off-net calls
6. International off-net calls

Table 5 presents the assumed prices and unit measurements for each pricing component. The table also shows which of the three scenarios applies to each component.

**Table 5** Service Pricing Assumptions

| Revenue Pricing Component   | Unit Price | Unit     |
|---|------------|----------|
| IPT management fee for medium-sized, large enterprises (optional) | \$15       | Per user |
| IPT management fee for small businesses (optional)                | \$10       | Per user |
| IPT CPE rental fee for medium-sized, large enterprises (optional) | \$35       | Per user |
| IPT CPE rental fee for small businesses (optional)                | \$25       | Per user |
| <b>Basic Monthly Service and Access Charge Revenue</b>            |            |          |
| Cisco 3700 Series Router site                                     | \$3,977    | Per site |
| Cisco 3600 Series Router site                                     | \$2,192    | Per site |
| Cisco 2600 Series Router site                                     | \$380      | Per site |
| Cisco 1700 Series Router site                                     | \$330      | Per site |
| Cisco CallManager Express site (small business)                   | \$300      | Per site |



**Table 5** Service Pricing Assumptions (Continued)

| Revenue Pricing Component                       | Unit Price | Unit       |
|---|------------|------------|
| <b>CPE Router-Management Fee (optional)</b>     |            |            |
| Cisco 3700 Series Router site                   | \$800      | Per site   |
| Cisco 3600 Series Router site                   | \$600      | Per site   |
| Cisco 2600 Series Router site                   | \$400      | Per site   |
| Cisco 1700 Series Router site                   | \$200      | Per site   |
| Cisco CallManager Express site (small business) | \$140      | Per site   |
| Intra-enterprise on-net                         | \$0        | Per minute |
| Domestic off-net                                | \$0.042    | Per minute |
| International off-net                           | \$0.080    | Per minute |

**Assumption Number 6**

As Table 6 reveals, each scenario requires different capital investments:

**Table 6** Capital Expenditure Comparison by Scenario

| Capital Expenditure Items   | Scenario 1 | Scenario 1A | Scenario 2 | Scenario 3     |
|---|------------|-------------|------------|----------------|
| PSTN trunking gateway equipment   | Yes        | Yes         | Yes        | Yes            |
| Cisco call-routing server   | Yes        | Yes         | Yes        | Yes            |
| Basic network management system (NMS)   | Yes        | Yes         | Yes        | Yes            |
| Incremental NMS for IPT management  | Yes        | Yes         | Yes        |                |
| IPT equipment <ul style="list-style-type: none"> <li>• Cisco CallManager solution at medium-sized businesses and large enterprises</li> <li>• Cisco CallManager Express solution at small business</li> </ul> | Yes        |             |            |                |
| Zero Touch license  | Optional   | Optional    | Optional   | Not applicable |

## Assumption Number 7

Table 7 presents the operating expense assumptions. With the noted exception, these operating expenses apply to each scenario:

**Table 7** Operating Expense Assumptions

| Operating Expense Item  | Expense Assumption  |
|---|---|
| General and administrative  | Five percent of revenue   |
| Marketing and customer-acquisition cost   | One month service revenue from basic monthly fee and access revenue and CPE management fee (where applicable)                                 |
| Sales support   | 70 percent of one month fixed revenue per year  |
| Long-distance termination charge  | \$0.025 per minute for domestic long distance<br>\$0.06 per minute for international long distance  |
| Voice incremental NOC personnel <sup>1</sup>  | Basic NOC: \$10 per user annually<br>Incremental IPT management NOC:<br>\$15 per user annually  |
| Maintenance   | 10 percent of equipment list price annually   |
| Monthly colocation cost per chassis (Cisco routers, access servers, or route processor modules) | Cisco 3660: \$78; Cisco 3745: \$89;<br>Cisco AS5350: \$30; Cisco AS5400 HPX: \$60;<br>Cisco AS5800: \$417; Cisco MGX <sup>®</sup> 8850: \$625 |
| IP backbone bandwidth charge  | \$200 per Mbps; based on overall system backbone requirement  |
| Net provisioning  | Assume that provisioning costs offset installation revenues   |
| Customer care   | \$4 per site monthly  |

1. Applies only to scenarios 1 and 2



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