

## Avaya IP Office Release 6

### Small Office Deployment & TCO vs ShoreTel IP Phone System

### Executive Summary

The Total Cost of Ownership (TCO) of a solution may be calculated in multiple ways, the simplest of which considers the cost of acquisition, installation, operation and maintenance of products/services. A typical product refresh/replacement cycle is 5 years, so the TCO of a solution includes the overall cost of owning the product over 5 years.

“Right-sizing” an IP telephony solution to the small office is important as any excess hardware, software or system costs are multiplied across the multitude of small offices. This is especially the case for companies that need to deploy solutions to many small offices. Furthermore, since IT support is not likely to be present at each small office, it is important for vendors to provide an easy-to-use interface that allows non-technical office staff to make commonly required moves, adds and changes.

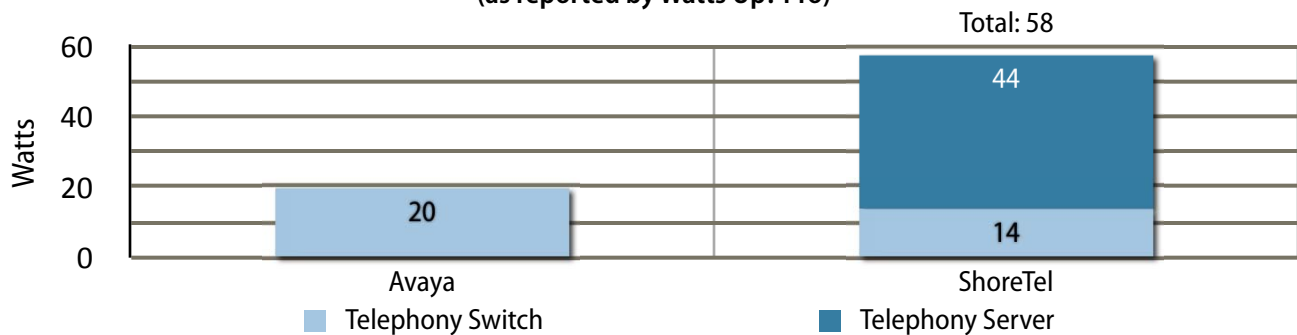
The Avaya IP Office is targeted at small and medium businesses scaling from 2 to 384 users. It can easily be implemented in a sub-20 person office requiring basic telephony and voice messaging without requiring a Windows server and, thus, has lower complexity and system power demands than the comparable ShoreTel solution. See Figure 1. IP Office easily scales as businesses grow in both size and sophistication requirements by simply adding phones and applications. The Avaya solution supports a browser-based client implementation across Microsoft Windows, Linux/Unix and Apple Mac OS X operating systems.

### The Bottom Line

The Avaya IP Office 500 solution running IP Office Release 6:

- 1 Delivers up to 24.7% savings in acquisition and ownership costs compared to the ShoreTel Unified Communications Platform
- 2 Can provision an office of ~20 users without requiring a dedicated Microsoft Windows server system
- 3 Requires 1/3rd the power for telephony infrastructure in a ~20 user office than the comparable ShoreTel solution
- 4 Provides a browser-based user interface enabling platform-independent client access across Microsoft Windows, Linux and Apple OS X
- 5 Provides easy deployment of user functionality via the Avaya one-X portal
- 6 Part of a full family of LAN/WAN infrastructure products offered by Avaya

**Small Office IP Telephony Power Consumption**  
Avaya vs ShoreTel: System Infrastructure  
(as reported by Watts Up? Pro)



Note: Infrastructure configuration for sub-20 user environment. Both solutions require a LAN switch to provide connectivity between system infrastructure and VoIP telephones.

Source: Tolly, May 2010

Figure 1



## Introduction

With the Avaya IP Office Release 6 telephony solution, Avaya introduced a hardware design that provides a unified communications solution that could be easily and cost-effectively deployed, with minimal effort, to small offices of under two dozen knowledge workers.

While the system can also scale to much larger work groups, the so-called “sub-20” office configuration of the product can be deployed using a single system appliance, the Avaya IP Office 500, that provides essential telephony functions as well as basic voice mail functionality.

The Avaya approach contrasts with that of ShoreTel that requires the presence of a Windows server in addition to its voice

switch to provide voice mail and other functions even for very small offices.

For businesses requiring more from the telephone system, IP Office provides a choice of user solutions targeting ‘types’ of user within a business – such as power user, mobile worker and teleworker. Avaya implements its telephony client as a browser-based (Java) client; the telephony client is platform-independent whereas ShoreTel requires its telephony client software to be installed on a Microsoft Windows system.


### Capital Costs

The capital cost of the equipment for both solutions formed the most notable difference in total cost of ownership of both solutions. The Avaya solution is

**Avaya, Inc.**

**IP Office  
Release 6**

**Sub-20 User  
Office  
Deployment  
& Total Cost  
of Ownership**



*Tested  
May  
2010*

implemented as an appliance with optional pluggable line cards, while the ShoreTel solution is configured with a voice switch

### Small Office IP Telephony “Sub-20” System Setup Process Avaya vs ShoreTel

System Element	Avaya	ShoreTel
Voice Switch/Controller	Connect controller to Ethernet network. System software supplied on SD card inserted in controller. Download any software upgrades and restart controller. Insert analog line card (if analog lines are to be used).	Connect the voice switch to Ethernet network. Find the Voice Switch in the ShoreWare Director management console and connect it to the ShoreWare Director Server
Application Server	Not required for basic functionality. Advanced functionality like call handling/monitoring/reporting, voice mail-to-email, etc. may be implemented using a dedicated server.	Power on ShoreTel Windows Small Business Edition Server. Connect via Remote Desktop Connection. Set time zone and static IP address. Activate server. Install ShoreWare Director application on server. Add ShoreTel licenses. Register ShoreWare Director and request the system key from ShoreTel.
System Configuration	Install the IP Office Admin Suite on a Windows PC. (This does not need to be a server and is not a dedicated resource.) Assign static IP address for IP Office appliance. Install license keys. Update the firmware if needed. Configure user extensions.	Connect to ShoreGear voice switch. Upgrade firmware if needed, reboot switch. Configure ShoreWare Director by configuring site location information, IP address range for IP phones and configure users.
Client Configuration	On client machine, set browser to Avaya one-X Portal to install/run Java client program	On client machine, set browser to ShoreWare Director to download and install Call Manager client (Windows systems only).

Note: Both systems require a LAN switch for communication with IP phones as well as a DHCP server to provide IP addresses. The DHCP server does not have to be implemented on a Windows server. The vendors do not follow the same order for setup steps.

Source: Tolly, May 2010

Figure 2



appliance and a dedicated application server. The Avaya solution came in almost 24.7% lower in cost than the comparable ShoreTel solution.

Additional infrastructure like Power over Ethernet (PoE) switches and optional application servers may vary depending on the user's choice of the hardware. See Figure 6.

### Software Upgrades

Avaya provides software upgrades at US \$199 per release, and the company supports the two most recent software releases. According to Avaya, the user is not required to always update to the latest release, and may update from any old software release to the latest version as a single upgrade. In contrast for the ShoreTel solution, customers

that don't upgrade within the company's specified upgrade window will be charged a 20% premium when they do eventually upgrade. The software upgrade costs are generally included in the partner support contracts. See Figure 6.

### Services/Maintenance

End users require a business partner contract typically costing between 6% to 18% of the solution cost depending on the service level desired. A typical service package costing 12% of the solution cost covers parts and labor, along with advance replacement for hardware and software updates. See Figures 7 and 8 for a breakdown of the support costs for the 20, 50 and 100 user solutions for both Avaya

and ShoreTel solutions provided by a VAR that offers both Avaya and ShoreTel systems.

### Installation

While system installation is typically performed by the vendor's business partner, it is useful to understand the steps and components involved as this can impact the cost and complexity of the systems.

As noted earlier, the Avaya IP Office solution implements a basic voice mail (Essential Edition) integrated into the IP Office 500 appliance and thus can support a small office without requiring a dedicated server. In contrast, the ShoreTel solution requires and includes a dedicated PC server for the Small Business Edition. ShoreTel Enterprise Edition is required for businesses with more

**IP Phone Power Consumption  
Avaya vs ShoreTel**

Vendor	Model	Display Type	PoE Power Consumption <sup>(1)</sup> (W)		Actual Power Consumption <sup>(2)</sup> (W)		Effective Power Consumption <sup>(3)</sup> (W)	Power Consumption (W) in a Solution <sup>(4)</sup>		
			On-hook (idle)	Off-hook (in use)	On-hook (idle)	Off-hook (in use)	90% on-hook, 10% off-hook	20 users	50 users	100 users
Avaya	1608	monochrome	3.47	3.81	3.90	4.20	3.93	7.86	19.65	39.30
	1616	monochrome	2.22	2.88	2.70	3.20	2.75	5.50	13.75	27.50
	9620L	monochrome	2.17	2.27	2.50	2.70	2.52	15.12	37.80	75.60
	9650	monochrome	4.33	4.56	5.00	5.10	5.01	30.06	75.15	150.30
	9620C	color	3.95	4.04	4.30	4.60	4.33	8.66	21.65	43.30
	9650C	color	3.70	3.96	4.20	4.40	4.22	8.44	21.10	42.20
	<b>Total Power Consumption (W) of Phones in the Solution</b>								<b>75.64</b>	<b>189.10</b>
ShoreTel	IP 230	monochrome	--	4.40	--	3.50	3.50	14.00	35.00	70.00
	IP 560B (S6G)	monochrome	4.33	4.97	5.50	5.80	5.53	66.36	165.90	331.80
	IP 265B (S36)	color	3.85	4.36	4.40	4.60	4.42	8.84	22.10	44.20
	IP 565B (S6C)	color	4.25	4.78	5.50	5.60	5.51	11.02	27.55	55.10
	<b>Total Power Consumption (W) of Phones in the Solution</b>								<b>100.22</b>	<b>250.55</b>

Notes:

- (1) Read from PoE Switch management console. Reports PoE power draw reported at the switch port.
- (2) Additional power consumption of the PoE LAN switch after plugging in the phone. Read from Watts Up Pro meter.
- (3) Effective usage of the phone in a typical office is assumed to be 90% on-hook (idle) and 10% off-hook (in use). Other usages like Call Centers may have higher off-hook usage ratio.
- (4) Each solution is assumed to consist of 20% economy-range phones, 60% mid-range phones and 20% executive-level phones.
- (5) Actual power consumption may vary for different PoE switches.

Source: Tolly, May 2010

Figure 3



### Avaya IP Office System Components

Component Type	Component Name	Version and Notes
Telephony Control Unit	Avaya IP500 V2	Firmware: 6.0 (8); Mode: IP Office SD Card Slots: SD04G, 4096 MB (2 total) Control Unit Slots: Base: Combo DS 6/Phone 2/VCM 10; Daughter card: ATM (4 total)
Client Unified Communication Application	Avaya one-X®Portal for IP Office	Version: 6.0.32.5
System Management Console	Avaya IP Office Manager Enterprise Edition SP2	Version 8.0 (8) installed on a single, non-dedicated Windows machine
System Reporting	Avaya IP Office Customer Call Reporter	Version 1.2.2.78 installed on a single, non-dedicated Windows machine
Voice Mail	Avaya IP Office Voicemail Pro	Version 6.0 (22)

Source: Tolly, May 2010

Figure 4

### ShoreTel System Components

Component Type	Component Name	Version and Notes
Telephony Switch	ShoreGear 90 Voice Switch	Boot ROM Version: 1.1.3.24; Firmware Version 15.6.6206.0
Client Unified Communication Application	ShoreTel Operator Call Manager	Build 15.6.6206.0
System Management Console	ShoreTel Director Small Business Edition	Build 15.6.6206.0. Customer-installed on a Microsoft Windows Small Business Server 2003 provided by ShoreTel

Source: Tolly, May 2010

Figure 5

than 50 users and can use a customer supplied PC Server.

The Avaya solution, with its Essential Edition implemented delivers call handling, automated attendant, voice mail and voice mail to email features out of the box. This configuration would meet most typical needs of a sub-20 person small office.

For larger number of users or businesses requiring a greater degree of sophistication, implementing the Preferred and Advanced Edition configurations involved configuring an additional PC server with additional software components to deliver advanced functionality like higher capacity voice messaging, Unified Communications (UC), monitoring call reporting and recording. Also of note, IP Office includes a 128-party secure meet-me audio conference bridge, supporting 64 users in any one conference.

The ShoreTel solution came bundled with a pre-configured server that was required irrespective of the user density served. While this fact increases the maintenance complexity and power requirements for a sub-20-person small office, the solution implemented some advanced features like voice mail-to-email notification service by default. The installation of the solution out of the box was also relatively straightforward. See Figure 2.

The Avaya solution included the one-X Portal client unified communication application to allow easy and secure access to the Avaya telephony, messaging, mobility and conferencing applications. The deployment to the end users was also very easy, delivered by providing just a URL link to the user to access the user-specific applications. This feature can yield

significant time savings when scaling up to hundreds of users.

#### End User Training

Both the Avaya and ShoreTel solutions were deemed to be on par in terms of the training requirements for the end users.

#### Ease of Use

The Avaya solution implemented the client access solution as a platform-independent browser-based (Java) application, it can be used across all major desktop platforms. The ShoreTel client access application had to be installed on a Microsoft Windows server, thus limiting the available options to the user.

#### Administration

The Avaya solution delivered software upgrades using Secure Digital (SD) memory



cards that can be plugged into the IP Office appliance, to initiate the upgrade process. Once the IP Office appliance has been upgraded, the upgrades get automatically downloaded to the IP phones at the next synchronization interval. For the Preferred or Advanced Editions, the one-X Portal application and other software components installed on the server might need to be updated alongside the upgrade to the voice switch. The upgrade process involved downloading the update code over the Internet, backing up of any user profiles, voicemails and databases from the IP Office appliance and/or servers, and then applying the updates either on an SD card plugged into the IP Office appliance, or remotely over the Internet.

In contrast, the ShoreTel solution was more complex to upgrade, as both the ShoreGear

appliance and the application server may need to be updated. Updates from different versions might also require a conversion from one type of database to another.

The ongoing maintenance effort in terms of user moves, adds and changes (MACs) was roughly on par in terms of effort on both solutions.

### Power Consumption

The Avaya phones exhibited up to 24.5% lower power consumption than the comparable ShoreTel phones. See Figure 3 for detailed breakdown of the power consumption figures for the phones.

The power consumption figures for the voice switch and application server components are once again in favor of the Avaya solution at ~20W compared to ~58W for the ShoreTel

solution. This was because the basic configuration of the Avaya solution does not require a dedicated server. Assuming that the Avaya solution implemented a similar server hardware as the ShoreTel solution for advanced functionality, the Avaya solution still consumed less power than the ShoreTel solution. See Figure 1 for more details.

### Test Bed Setup

The test bed consisted of the Avaya and ShoreTel solutions with the components as outlined in the Figures 4 and 5, along with the phones mentioned in Figure 3.

The power measurements were noted using the Watts Up? Pro Meter was used to measure the IP phones. An Avaya PoE switch was used to provide PoE for both solutions under test.

**Comparison of 5-Year Projected Capital and Ongoing Costs  
Avaya vs ShoreTel**

	Note	Projected 5-year Costs					
		20 Users		50 Users		100 Users	
		Avaya	ShoreTel	Avaya	ShoreTel	Avaya	ShoreTel
<b>Power Consumption Costs<sup>1</sup></b>	<b>Phones</b>	\$ 325.67	\$ 431.50	\$ 814.18	\$ 1,078.75	\$ 1,628.36	\$ 2,157.51
	<b>Communications Server<sup>2</sup></b>	--	\$ 188.15	\$ 188.15	\$ 188.15	\$ 188.15	\$ 188.15
	<b>Controller/Voice Switch</b>	\$ 83.96	\$ 58.99	\$ 83.96	\$ 58.99	\$ 83.96	\$ 58.99
<b>Solution Acquisition<sup>3</sup> and 5-year Support Contract Costs</b>		\$ 13,526.40	\$ 15,414.40	\$ 38,323.20	\$ 50,862.40	\$ 73,049.60	\$ 90,409.60
<b>5-year Total Costs</b>		\$ 13,936.03	\$ 16,093.04	\$ 39,409.49	\$ 52,188.29	\$ 74,950.07	\$ 92,814.24
<b>Avaya solution advantage against ShoreTel</b>		--	13.40%	--	24.49%	--	19.25%
<b>Optional Voice Conferencing<sup>4</sup></b>		Up to 128 lines included	Up to 6 lines included	Up to 128 lines included	\$ 16,300.00	Up to 128 lines included	\$ 16,300.00

Notes:

1. Power Consumption costs were calculated using the formula "\$0.0983\*(W/1000)\*5\*365\*24" where \$0.0983 is the U.S. national average retail price of a unit of electricity for the commercial sector, as of March 2010. These prices were published by U.S. Energy Information Administration's Electric Power Monthly for March 2010, found online at [http://www.eia.doe.gov/cneaf/electricity/epm/table5\\_6\\_b.html](http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html)
2. ShoreTel solution requires a dedicated server for all cases. For 50 and 100 user scenario, both solutions incorporate a server, and power consumption may vary depending on the server hardware configuration. For simplicity, both solutions were assigned equal power consumption for servers.
3. All prices shown were sourced from a VAR specializing in both Avaya and ShoreTel solutions. See detailed breakdown of costs of both solutions in Figures 7 and 8.
4. ShoreTel solution for voice conferencing starts at \$9,300 for the first 12 lines and \$7,000 per each additional set of 12 lines.

Source: Tolly, May 2010

Figure 6



**Capital Costs for 20, 50 and 100 User Solutions for Avaya IP Office 500**

	Order Code	Quantity	Item	Unit Price	Total Price	
20-User Deployment	700476005	1	AVAYA IPO IP500 V2 CONTROL UNIT	\$ 650.00	\$ 650.00	
	700479710	1	AVAYA IPO IP500 V2 SYSTEM SD CARD MU-LAW	\$ 50.00	\$ 50.00	
	700476013	1	AVAYA IPO IP500 V2 COMBINATION CARD ATM	\$ 600.00	\$ 600.00	
	229447	1	AVAYA IPO LIC R6 AV IP ENDPOINT 20 RFA	\$ 1,245.00	\$ 1,245.00	
	171987	1	IPO LIC RECEPTIONIST RFA 1 LIC:DS	\$ 599.00	\$ 599.00	
	700458540	20	AVAYA 1608-1 IP Phone	\$ 249.00	\$ 4,980.00	
		1	IPO R6 Essential System Package - + 4 Year APR (not phones) total 5 year	\$ 330.00	\$ 330.00	
	<b>Solution Sub-total</b>				<b>\$ 8,454.00</b>	
	<b>5-Year Business Partner Support Contract (@ 12% of Solution Cost Per Year)</b>				<b>\$ 5,072.40</b>	
<b>5-Year Total Solution Cost</b>				<b>\$ 13,526.40</b>		

	Order Code	Quantity	Item	Unit Price	Total Price	
50-User Deployment	700476005	1	AVAYA IPO IP500 V2 CONTROL UNIT	\$ 650.00	\$ 650.00	
	700479710	1	AVAYA IPO IP500 V2 SYSTEM SD CARD MU-LAW	\$ 50.00	\$ 50.00	
	700476013	1	AVAYA IPO IP500 V2 COMBINATION CARD ATM	\$ 600.00	\$ 600.00	
	700417389	1	IPO 500 MC VCM 32	\$ 900.00	\$ 900.00	
	700417439	1	IPO 500 TRNK PRI UNI SINGLE	\$ 950.00	\$ 950.00	
	215181	2	IPO LIC IP500 T1 CHANNELS ADD 8	\$ 730.00	\$ 1,460.00	
	171991	1	AVAYA IPO LIC PREFERRED (VM PRO) RFA LIC:DS	\$ 2,395.00	\$ 2,395.00	
	229447	2	AVAYA IPO LIC R6 AV IP ENDPOINT 20 RFA	\$ 1,245.00	\$ 2,490.00	
	171987	1	IPO LIC RECEPTIONIST RFA 1 LIC:DS	\$ 599.00	\$ 599.00	
	229440	2	AVAYA IPO LIC R6 OFF WORKER 5RFA	\$ 445.00	\$ 890.00	
	700458540	50	AVAYA 1608-1 IP Phone	\$ 249.00	\$ 12,450.00	
	244886	1	IPO R6 Preferred System Package + 4 Year APR (not phones) Add to 1 year included	\$ 518.00	\$ 518.00	
	<b>Solution Sub-total</b>				<b>\$ 23,952.00</b>	
	<b>5-Year Business Partner Support Contract (@ 12% of Solution Cost Per Year)</b>				<b>\$ 14,371.20</b>	
<b>5-Year Total Solution Cost</b>				<b>\$ 38,323.20</b>		

	Order Code	Quantity	Item	Unit Price	Total Price	
100-User Deployment	700476005	1	AVAYA IPO IP500 V2 CONTROL UNIT	\$ 650.00	\$ 650.00	
	700479710	1	AVAYA IPO IP500 V2 SYSTEM SD CARD MU-LAW	\$ 50.00	\$ 50.00	
	700476013	1	AVAYA IPO IP500 V2 COMBINATION CARD ATM	\$ 600.00	\$ 600.00	
	700417389	1	AVAYA IPO 500 MC VCM 32	\$ 900.00	\$ 900.00	
	700417439	1	IPO 500 TRNK PRI UNI SINGLE	\$ 950.00	\$ 950.00	
	215181	2	IPO LIC IP500 T1 CHANNELS ADD 8	\$ 730.00	\$ 1,460.00	
	171991	1	AVAYA IPO LIC PREFERRED (VM PRO) RFA LIC:DS	\$ 2,395.00	\$ 2,395.00	
	174461	1	AVAYA IP400 VoiceMail Pro RFA 8	\$ 5,495.00	\$ 5,495.00	
	229444	3	AVAYA IPO LIC R6 AV IP ENDPOINT 1 RFA	\$ 75.00	\$ 225.00	
	229445	1	AVAYA IPO LIC R6 AV IP ENDPOINT 5 RFA	\$ 350.00	\$ 350.00	
	229447	4	AVAYA IPO LIC R6 AV IP ENDPOINT 20 RFA	\$ 1,245.00	\$ 4,980.00	
	171987	1	IPO LIC RECEPTIONIST RFA 1 LIC:DS	\$ 599.00	\$ 599.00	
	229438	1	AVAYA IPO LIC R6 OFF WORKER 20 RFA	\$ 1,584.00	\$ 1,584.00	
	700458540	100	AVAYA 1608-1 IP Phone	\$ 249.00	\$ 24,900.00	
	244886	1	IPO R6 Preferred System Package + 4 Year APR (not Phones) Add To 1 Year Included - 5 Years Total	\$ 518.00	\$ 518.00	
	<b>Solution Sub-total</b>				<b>\$ 45,656.00</b>	
	<b>5-Year Business Partner Support Contract (@ 12% of Solution Cost Per Year)</b>				<b>\$ 27,393.60</b>	
<b>5-Year Total Solution Cost</b>				<b>\$ 73,049.60</b>		

End users obtain support from Avaya through Business Partner support contracts that typically cost 12% of the solution cost per year for 8hrs x 5days a week support that may also include software upgrades. All prices shown were sourced from a VAR specializing in both Avaya and ShoreTel solutions.

Source: Tolly, May 2010

Figure 7



**Capital Costs for 20, 50 and 100 User Solutions for ShoreTel Unified Communications Platform**

	Quantity	Item	Unit Price	Total Price
20-User Deployment	1	SBE - 20 users, analog trunk, operator call manager (includes PC Server)	\$ 3,995.00	\$ 3,995.00
	20	ShoreTel IP Phone 230	\$ 259.00	\$ 5,180.00
	1	ShoreCare Partner Support 5 year no phones	\$ 459.00	\$ 459.00
	<b>Solution Sub-total</b>			<b>\$ 9,634.00</b>
	<b>5-Year Business Partner Support Contract (@ 12% of Solution Cost Per Year)</b>			<b>\$ 5,780.40</b>
	<b>5-Year Total Solution Cost</b>			<b>\$ 15,414.40</b>
	Quantity	Item	Unit Price	Total Price
50-User Deployment	1	ShoreGear 220T1A - 220 IP Phones	\$ 6,495.00	\$ 6,495.00
	40	Extension and Mailbox License	\$ 200.00	\$ 8,000.00
	10	Extension	\$ 140.00	\$ 1,400.00
	50	ShoreTel IP Phone 230	\$ 259.00	\$ 12,950.00
	10	Professional Call Manager	\$ 80.00	\$ 800.00
	1	Operator Call Manager	\$ 595.00	\$ 595.00
	1	ShoreCare Partner Support 5 year - no phones	\$ 1,549.00	\$ 1,549.00
	<b>Solution Sub-total</b>			<b>\$ 31,789.00</b>
	<b>5-Year Business Partner Support Contract (@ 12% of Solution Cost Per Year)</b>			<b>\$ 19,073.40</b>
<b>5-Year Total Solution Cost</b>			<b>\$ 50,862.40</b>	
	Quantity	Item	Unit Price	Total Price
100-User Deployment	1	ShoreGear 220T1A - 220 IP Phones	\$ 6,495.00	\$ 6,495.00
	90	Extension And Mailbox	\$ 200.00	\$ 18,000.00
	10	Extension	\$ 140.00	\$ 1,400.00
	100	ShoreTel IP Phone 230	\$ 259.00	\$ 25,900.00
	20	Professional Call Manager	\$ 80.00	\$ 1,600.00
	1	Operator Call Manager	\$ 595.00	\$ 595.00
	1	ShoreCare Partner Support 5 Year No Phones	\$ 2,516.00	\$ 2,516.00
	<b>Solution Sub-total</b>			<b>\$ 56,506.00</b>
	<b>5-Year Business Partner Support Contract (@ 12% of Solution Cost Per Year)</b>			<b>\$ 33,903.60</b>
<b>5-Year Total Solution Cost</b>			<b>\$ 90,409.60</b>	

End users obtain support from ShoreTel through Business Partner support contracts that typically cost 12% of the solution cost per year for 8hrs x 5days a week support that may also include software upgrades. All prices shown were sourced from a VAR specializing in both Avaya and ShoreTel solutions.

Source: Tolly, May 2010

Figure 8



### About Tolly

The Tolly Group companies have been delivering world-class IT services for more than 20 years. Tolly is a leading global provider of third-party validation services for vendors of IT products, components and services. You can reach the company by e-mail at [sales@tolly.com](mailto:sales@tolly.com) or by telephone at +1 561.391.5610.

Visit Tolly on the Internet at: <http://www.tolly.com>

### Competitive Interaction

Tolly Group shared the test results with ShoreTel executives for comment. ShoreTel representatives noted that ShoreTel did not officially participate in the project.

ShoreTel disagreed with the test and results. Tolly and ShoreTel could not agree on a suitable manner for detailing ShoreTel's concerns in this document.

Tolly notes that, for purposes of comparison, this report used a single phone model, each vendor's basic model, in the 20/50/100 user configurations. Actual configurations may vary.

Tolly has offered to publish alternative ShoreTel configurations as a separate appendix to this report should ShoreTel provide such configurations to Tolly. Readers should check this document's abstract page on <http://www.tolly.com>.

For more information on the Tolly Fair Testing Charter, visit: <http://www.tolly.com/FTC.aspx>



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