

A Forrester Total Economic Impact™ Study Prepared For Siemens Enterprise Communications

The Total Economic Impact Of OpenScape Voice from Siemens Enterprise Communications

As Deployed By Birmingham And Solihull Mental Health NHS Foundation Trust

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FORRESTER

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Executive Summary

In October 2010, Siemens Enterprise Communications commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises may realize by deploying OpenScape Voice. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of the OpenScape Voice platform on their organizations.

OpenScape Voice provides a voice over Internet protocol (VoIP) application and supports enterprise telephony applications on a native SIP standards-based platform. It is designed to scale from midsize (300) to large and very large enterprises (up to 100,000 users). For a more detailed overview about OpenScape Voice, please refer to page 22.

OpenScape Voice Enables A Foundation For Next-Generation Communications

As today's employees shift from working in single, stationary office environments to working anywhere, anytime, and across organizational boundaries, the challenge of reaching key personnel in a timely manner increases. The inability to reach others at critical times results in numerous delays and lost productivity — all of which have particularly significant repercussions in healthcare environments.

While this study highlights next-generation communication capabilities, its primary purpose is to illustrate the financial impact of deploying the OpenScape Voice platform within Birmingham and Solihull Mental Health NHS Foundation Trust (BSMHFT), a large regional health organization in the UK. The organization serves a population of more than 1 million, employs approximately 4,000 people, and operates from more than 140 sites in a variety of settings, from hospitals through to community sites and day centers. The organization opted to invest in the OpenScape Voice platform in an effort to create a next-generation telecommunications platform that promoted mobility and continuously improved the quality of their service, as well as the operational and financial efficiency of their organization.

Our interview with this existing Siemens Enterprise Communications customer and subsequent financial analysis found that this organization expects the seven-year risk-adjusted ROI, costs, and benefits shown in Table 1.

Table 1

Seven-Year Risk-Adjusted ROI¹

ROI	Payback period	Total benefits (PV)	Total costs (PV)	Net present value (NPV)
16%	60 months	£1,646,000	(£1,421,000)	£225,000

Source: Forrester Research, Inc.

- **Benefits.** BSMHFT expects to realize benefits of about £1.65 million over a seven-year period. These benefits are mainly generated from cost savings related to the decommission of Centrex lines and legacy private branch

exchange (PBX) switches, productivity gains, avoided travel time, and travel costs due to new audioconferencing capabilities and reduced mobile call charges.

- **Costs.** Over the same period, the company expects to incur incremental costs of about £1.4 million. Costs mainly include the investment in new hardware and software, internal labor costs, external project management charges, training expenses, and recurring maintenance fees.

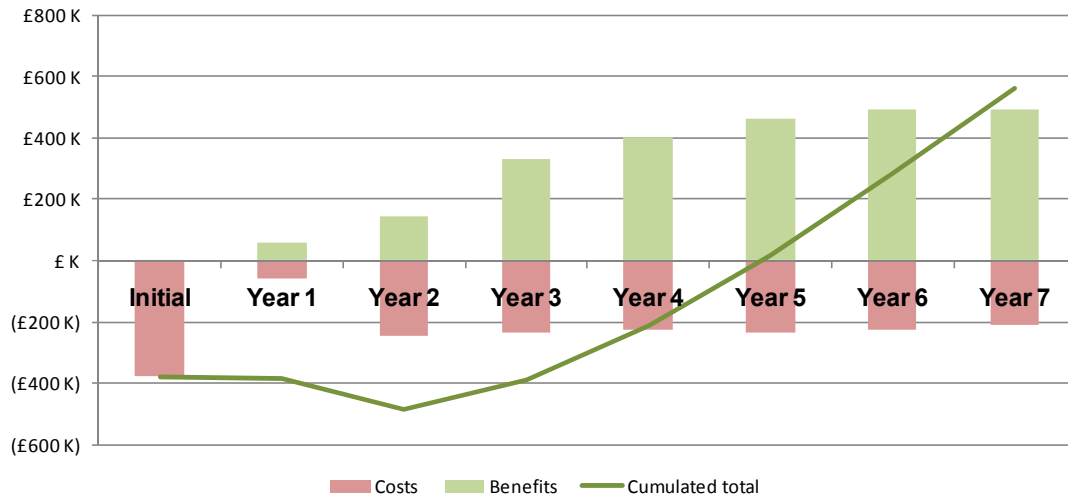
While the benefits mentioned above drove the existing business case, the interviewed organization considers that the introduction of the OpenScape Voice platform laid the foundations for realizing further benefits in the future. In particular, the organization wants to improve patient services, provide better support to their mobile end users (including doctors and nurses), and create further cost efficiencies.

The organization is, for example, now in the process of enabling mobile and secure access to data, taking advantage of advanced unified communications capabilities, installing wireless networks together with fixed-mobile convergence (FMC) on all major sites, promoting the use of mobile and videoconferencing, and deploying OpenScape Alarm Response (OScAR) within their hospitals. However, at the time of publication of this study, the interviewed organization either had not yet elaborated on concrete plans for these capabilities, or it didn't have enough experience to be able to evaluate their financial impact. These potential future benefits were therefore not included in this business case.

Based on these findings, companies looking to deploy OpenScape Voice can see cost savings and productivity gains. Using the Total Economic Impact™ (TEI) framework, many companies may find the potential for a compelling business case to make such an investment.

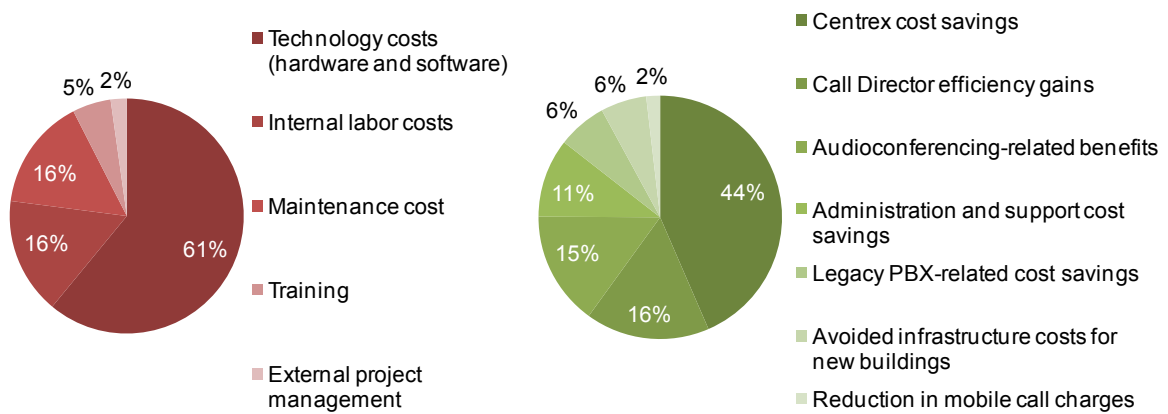
Figure 1 summarizes the yearly and cumulated cash flow, and Figure 2 shows the breakdown of the quantifiable benefit and cost categories for the interviewed organization.

Figure 1
Summary Financial Results (Risk-Adjusted)



Source: Forrester Research, Inc.

Figure 2
Breakdown Of Total Costs And Benefits (Seven-Year PV, Risk-Adjusted)



Source: Forrester Research, Inc.

Factors Affecting Benefits And Costs

Table 1 above illustrates the risk-adjusted financial results that were achieved by the interviewed organization. The risk-adjusted values take into account any potential uncertainty or variance that exists in estimating the costs and benefits,

which produces more conservative estimates. The following factors are examples that affect the financial results that an organization may experience:

- **Migration timeline.** Organizations that introduce a new communications infrastructure often face a lot of internal and external constraints that have an impact on the rollout plan. Organizations that are able to replace the legacy infrastructure relatively quickly and deploy advanced features rapidly will start accruing benefits earlier and experience faster time-to-value.
- **VoIP-related savings.** Depending on the legacy infrastructure that was in place before the introduction of the OpenScape Voice platform, organizations may realize more or less of the conventional VoIP savings, such as reduced telephone and conferencing call charges, lower network management and support costs, or long-term reduction in capital expenditure.
- **End user adoption.** The benefits associated with end user productivity and collaboration are dependent on how successful each company is at leveraging the end-to-end functions of the new platform, how effectively users are trained, how well new processes are adopted by the users, and how many people use the solution.

Disclosures

The reader should be aware of the following:

- The study is commissioned by Siemens Enterprise Communications and delivered by the Forrester Consulting group.
- Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers should use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Siemens Enterprise Communications OpenScape Voice platform.
- Siemens Enterprise Communications reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.
- The customer names for the interviews were provided by Siemens Enterprise Communications.

TEI Framework And Methodology

Introduction

From the information provided in the interviews, Forrester has constructed a TEI framework for those organizations considering implementing Siemens Enterprise Communications OpenScape Voice. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

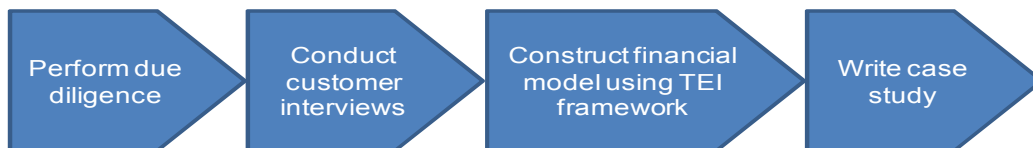
Approach And Methodology

Forrester took a multistep approach to evaluate the impact that OpenScape Voice can have on an organization (see Figure 3). Specifically, we:

- Interviewed Siemens Enterprise Communications marketing and sales personnel and Forrester analysts to gather data relative to OpenScape Voice and the enterprise telecommunications marketplace.
- Interviewed one organization currently using Siemens Enterprise Communications OpenScape Voice to obtain data with respect to costs, benefits, and risks.
- Constructed a financial model representative of the interviews using the TEI methodology. The financial model is populated with the cost and benefit data obtained from the interviews.

Figure 3

TEI Approach



Source: Forrester Research, Inc.

Forrester employed four fundamental elements of TEI in modeling Siemens Enterprise Communications OpenScape Voice solution:

1. Costs.
2. Benefits to the entire organization.
3. Flexibility.
4. Risk.

Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves the purpose of providing a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

Analysis

Interview Highlights

A single organization was interviewed for this study: Birmingham and Solihull Mental Health NHS Foundation Trust (BSMHFT), a regional healthcare and social care service organization in the UK. The organization serves a population of more than 1 million people, employs approximately 4,000 people, and operates from more than 140 sites in a variety of settings, ranging from large hospitals to day centers and smaller community sites. The organization provides a wide range of inpatient, community, and specialist services, including home treatment.

The IT department of this organization manages a total of 5,000 telecom extensions across the 140 sites. The 10 largest sites were equipped with a PBX switch while the rest of the smaller community and remote sites were connected via 2,500 leased Centrex lines. The voice and data networks were completely separated except for two sites, which previously deployed VoIP equipment.

The customer interviews uncovered the context of the organization's environment and a number of insights, including the following:

- In 2007, as the organization was prepared for the opening of a new hospital, it decided to modernize the whole telecommunications infrastructure. The organization wanted to create a next-generation communications platform that would — among other things — enable advanced unified communications capabilities, improve patient services, push the use of audioconferencing and videoconferencing, promote user mobility, enable home working, and create operational efficiencies.
- Following a public tender and thorough selection process, the organization chose the Siemens Enterprise Communications OpenScape Voice platform. The main driving factors for this decision were:
 - The provision of an open, SIP solution with a complete enterprise feature set.
 - The high scalability of the system and its ability to integrate with the existing iSDX network.
 - The provision of a flexible and open platform for building a companywide unified communications strategy.
- The deployment was subdivided into three phases:
 - **Phase I:** Invest in 700 extensions on the OpenScape Voice platform. From October 2007 to January 2008, the organization prepared an off-site dummy installation and then migrated the system to the newly built hospital in March 2008.
 - **Phase II:** Update internal infrastructure and gradually migrate all of the 5,000 extensions to the OpenScape Voice platform with the priority to remove costly Centrex lines and eventually decommission the legacy PBXs together with corresponding DPNSS lines.

At the time of the interviews, the organization had laid the foundations of its next-generation telecommunications platform and was rolling the infrastructure out to the entire corporation.

- It has wirelessly enabled one of its major sites and can now take advantage of the solution's FMC feature. As traditional cell phones do not work in most of the organization's buildings, installation of wireless networks has been prioritized to provide mobile access. They are now working to roll out wireless networks and the FMC feature set to its five other large sites.
 - Call Director has been implemented as part of OpenScape Contact Center to automatically route service orders, such as catering or engineering requests, to the correct service provider. Having different service providers for different sites, the organization found this feature very helpful. It has also fully enabled audioconferencing capabilities and is currently piloting videoconferencing.
 - It was also in the early stages of installing a centralized ICT help desk, a virtually centralized switchboard, and OScAR — a system that broadcasts emergency calls to the right medical staff in a given hospital.
- **Phase III:** Provision an organizationwide unified communications strategy that integrates next-generation communication capabilities. A pilot of unified communications is now implemented, providing presence, instant messaging, and audioconferencing facilities. Implementation of mobile unified communications is also under way, bringing all the unified communications facilities to BSMHFT's BlackBerry devices.

While the organization has started to and will continue to realize hard cost savings, create operational efficiencies, and realize some productivity gains, it is convinced that the real value-add of the new platform is still to come. The organization especially intends to:

- Better support its large mobile workforce of mostly doctors and nurses by enabling capabilities such as mobile access to patient records or mobile conferencing.
- Improve patient services by making more use of conferencing capabilities and implementing features such as OScAR at its hospitals in order to broadcast emergency calls to the right medical staff.
- Create other productivity gains through the use of advanced unified communications features (including presence indicators), the promotion of audioconferencing and videoconferencing, and an increased support for remote workers.
- Improve its call center capabilities with better queue handling and reporting capabilities.

Framework Assumptions

At the time of the interviews, the organization was still rolling out the OpenScape Voice infrastructure across the corporation. The numbers that are indicated in the cost and benefit sections below are thus based on a mix of actual and expected extrapolated values. They are based on the organization's best knowledge, and the financial model takes into account the forecasted rollout plan over the examined period.

Table 2 provides the model assumptions that Forrester used in this analysis.

Table 2
Model Assumptions

Ref.	Metric	Calculation	Value
A1	Hours worked per day		8
A2	Average number of working days per year		220
A3	Average fully loaded annual salary rate		£58,000
A4	Average fully loaded hourly salary rate	$A3/A2/A1$	£32.95

Source: Forrester Research, Inc.

The discount rate used in the PV and NPV calculations is 10%, and time horizon used for the financial modeling is seven years. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult with their respective company's finance department to determine the most appropriate discount rate to use within their own organizations.

Costs

This section describes and lists the incremental costs expected by the interviewed organization for deploying and running the OpenScape Voice platform over a seven-year period.

Technology Costs

The principal cost incurred by the customer is related to the investment in hardware, software, and licenses for the Siemens Enterprise Communications OpenScape Voice platform. This includes the costs for the core OpenScape Voice platform, licenses for 5,000 extensions, nearly 5,000 IP phones, approximately 800 dual-mode mobile phones, the wireless infrastructure for six buildings, the OpenScape Alarm Response (OScAR), the Call Director, and the base installation of ProCenter. The resulting expected technology costs are indicated in row B1 of Table 3 below.

Professional Service Costs

While most of the deployment is done by internal resources, the interviewed organization used Siemens Enterprise Communications project management capabilities especially to help with the major new installations. The related costs are indicated in row B2 of Table 3 below.

Internal Labor Costs

The interviewed organization has very skilled and proficient voice and data teams. Most of the planning and deployment tasks are done with internal resources. At the time of the interview, the organization was still ramping up but expects the workload to drop from Year 5 onward. The expected labor costs related to the deployment of the new telecommunications infrastructure are indicated in row B3 of Table 3 below.

Maintenance Costs

The maintenance fees indicated on row B4 of Table 3 contain the OpenScape Voice maintenance costs for the different purchased components and the increasing number of migrated extensions.

Training Costs

The initial training costs contain the charge for technical and admin training courses as well as a budget for the creation of training material, user guides, and online tutorials. In the subsequent years, the organization provisions an annual training budget for new hires of about £5,000. The total training costs are indicated in row B5 of Table 3 below.

Total Costs

Table 3 summarizes the incremental costs expected by the reference organization for deploying and using OpenScape Voice platform over a seven-year period.

Table 3

Total Costs (Non-Risk-Adjusted)

Ref.	Costs	Initial	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
B1	Technology costs (hardware and software)	£238K	£0	£172K	£147K	£127K	£127K	£127K	£110K	£1,047K
B2	Professional service costs	£27K	£4K							£31K
B3	Internal labor costs	£50K	£30K	£30K	£40K	£40K	£40K	£25K	£18K	£273K
B4	Maintenance costs		£20K	£26K	£35K	£44K	£53K	£62K	£71K	£311K
B5	Training costs	£49K	£5K	£5K	£5K	£5K	£5K	£5K	£5K	£84K
B6	Total costs	£363K	£59K	£233K	£227K	£216K	£225K	£219K	£204K	£1,746K

Source: Forrester Research, Inc.

Benefits

The interviewed organization reported quantifiable benefits in terms of cost savings related to the legacy infrastructure, productivity gains for the end users and the telecom staff, avoided travel costs, avoided infrastructure costs for new buildings, and reduced mobile call charges.

For the interviewed organization, however, the newly built telecommunications infrastructure will be an enabler for realizing many more benefits in the future. Especially, the organization wants to improve patient services, provide

better support to its mobile end users (including doctors and nurses), and create further cost efficiencies. It is, for example, planning to enable mobile access to data, take advantage of advanced unified communications capabilities (including presence), install wireless networks and enable FMC on all major sites, promote mobile and videoconferencing, introduce the concept of “hot desking,” and deploy OScaR. However, at the time of publication of this study, the interviewed organization either had not yet elaborated concrete plans for these capabilities, or it didn’t have enough experience to be able to evaluate their financial impact. These potential future benefits were therefore not included in this business case.

The benefit categories that were quantifiable for this case study are discussed below.

Centrex Cost Savings

By decommissioning all 2,500 Centrex lines and moving these extensions over to the OpenScope Voice platform, the organization realizes cost savings in terms of avoided rental fees of about £1 million over the seven-year period as indicated in Table 4 below.

Table 4
Centrex Cost Savings (Non-Risk-Adjusted)

Ref.	Costs	Value/ calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
C1	Total number of Centrex lines decommissioned		500	1,500	2,250	2,500	2,500	2,500	2,500	
C2	Annual rental fee per Centrex line	£72								
C3	Centrex cost savings	C1*C2	£36K	£108K	£162K	£180K	£180K	£180K	£180K	£1,026K

Source: Forrester Research, Inc.

Call Director Efficiency Gains

The Call Director is seen as an efficiency tool by the interviewed organization. The Call Director that has been introduced between Year 2 and Year 3 of this analysis automatically routes a given service request, such as a catering or engineering service request, to the correct service provider for the concerned site. The end users and help desk agents no longer have to figure out which number to call for a given service request at a given location. The organization estimates that this kind of request now takes 60% less time and results in productivity gains for their end users.

Forrester assumes that only 50% of the time gained (see D7) will actually translate into productive work for the organization. Table 5 illustrates the calculation used.

Table 5

Call Director Efficiency Gains (Non-Risk-Adjusted)

Ref.	Costs	Value/calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
D1	Average number of service requests per day	200								
D2	Average number of minutes to deal with a service request (before introduction of Call Director)	7								
D3	Efficiency gains due to Call Director	60%								
D4	Average number of minutes saved per day	840 (D1*D2*D3)								
D5	Average number of hours saved per year	5,110 (D4/60*365)								
D6	Average fully loaded hourly salary rate (for whole organization)	£32.95 (see A4)								
D7	Percent of saved time that actually translates into productive work	50%								
D8	Starting in Year 3		0%	0%	100%	100%	100%	100%	100%	
D9	Call Director efficiency gains	D5*D6*D7*D8	0	0	£84K	£84K	£84K	£84K	£84K	£421K

Source: Forrester Research, Inc.

Audioconference-Related Benefits

The interviewed organization reports that its staff holds hundreds of face-to-face meetings each day, and for many of those meetings, at least one participant has to travel to another site. While — before the introduction of the OpenScape Voice platform — end users were able to set up audioconferences through an external service provider, the organization reports that this capability was not much used in the past. Since the introduction of the new platform, setting up audioconferences has become much easier, and the organization is promoting its use throughout the company. This results in avoided travel costs and saves time for participants who do not have to travel from one site to another anymore.

The expected number of avoided face-to-face/in-person meetings due to the new audioconferencing capability is indicated in row E1 and is based on high-level estimations. Other underlying assumptions include the average number of people per meeting who avoid travel (see E2) for a given meeting, the time these individuals save per avoided travel (see E3), and the average mileage and parking costs avoided (see E5).

With regard to the travel time saved, Forrester assumes that only 50% of this time gained (see E7) will actually translate into productive work for the organization. Table 6 illustrates the calculation used.

Table 6
Audioconference-Related Benefits (Non-Risk-Adjusted)

Ref.	Costs	Value/calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
E1	Average number of face-to-face meetings avoided due to audioconference capability		-	100	500	1,200	1,500	1,500	1,500	
E2	Average number of traveling participants per meeting	2								
E3	Average number of minutes saved per person per avoided travel	60								
E4	Number of hours saved per year due to audioconference capability	$E1 * E2 * (E3 / 60)$	-	200	1,000	2,400	3,000	3,000	3,000	
E5	Average travel cost avoidance per person per avoided meeting (mileage plus parking)	£15								
E6	Average fully loaded hourly salary rate	£32.95 (see A4)								
E7	Percent of saved time that actually translates into productive work	50%								
E8	Travel cost avoided	$E1 * E2 * E5$	£0	£3K	£15K	£36K	£45K	£45K	£45K	
E9	Productivity gains	$E4 * E6 * E7$	£0	£3K	£16K	£40K	£49K	£49K	£49K	

Ref.	Costs	Value/calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
E10	Audioconference-related benefits	E8+E9	£0	£6K	£31K	£76K	£94K	£94K	£94K	£397K

Source: Forrester Research, Inc.

Administration And Support Cost Savings

By gradually moving from the decentralized, legacy voice infrastructure to a centralized system, the organization's voice team realizes productivity gains. The voice team spends less time with the system's administration and support tasks such as moves, adds, and changes (MAC). The estimated workload before the introduction of OpenScape and the forecasted reduction of efforts over the examined period are indicated in rows F1 to F4.

With regard to the time saved, Forrester assumes that only 50% of this time gained (see F7) will actually translate into productive work for the organization. Table 7 illustrates the calculation used.

Table 7

Administration And Support Cost Savings (Non-Risk-Adjusted)

Ref.	Costs	Value/calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
F1	Average amount of hours spent on admin tasks per week (BEFORE OpenScape)	25								
F2	Average amount of hours spent on MAC and support tasks per week (BEFORE OpenScape)	80								
F3	Percent of reduction in admin tasks due to OpenScape		10%	25%	50%	75%	75%	75%	75%	
F4	Percent of reduction in MAC and support tasks due to OpenScape		10%	20%	30%	40%	50%	50%	50%	
F5	Number of weeks per year	52								
F6	Number of hours freed up per year	$[(F1 * F3) + (F2 * F4)] * F5$	546	1,157	1,898	2,639	3,055	3,055	3,055	
F7	Percent of saved time that actually translates into productive work	50%								

Ref.	Costs	Value/ calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
F8	Average fully loaded hourly salary rate	£32.95 (see A4)								
F9	Administration and support cost savings	$F6 * F7 * F8$	£9K	£19K	£31K	£43K	£50K	£50K	£50K	£254K

Source: Forrester Research, Inc.

Legacy PBX-Related Cost Savings

The organization plans to remove the remaining nine legacy PBXs in Years 5 and 6. This will result in cost savings from cancelled maintenance contracts and decommissioned DPNSS lines. The forecasted cost savings are indicated in Table 8 below.

Table 8

Legacy PBX-Related Cost Savings (Non-Risk-Adjusted)

Ref.	Costs	Value/ calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
G1	Number of decommissioned PBXs		-	-	-	-	5	9	9	
G2	Average cost savings per decommissioned PBX (maintenance and DPNSS lines)	£7,500								
G3	Legacy PBX-related cost savings	$G1 * G2$	£0K	£0K	£0K	£0K	£38K	£68K	£68K	£173K

Source: Forrester Research, Inc.

Avoided Infrastructure Costs For New Buildings

During the examined period in this analysis, two new buildings were opened and had to be connected to the telecoms infrastructure. If the OpenScape Voice platform had not been in place, the organization would have had to either deploy a new PBX for each of the new sites or rent new Centrex lines. The organization assumes that, in average, it avoided £14,000 per year per site. The resulting cost avoidance is indicated in Table 9 below.

Table 9

Avoided Infrastructure Costs For New Buildings (Non-Risk-Adjusted)

Ref.	Costs	Value/ calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
H1	Costs avoided for first new building		£14K	£14K	£14K	£14K	£14K	£14K	£14K	
H2	Costs avoided for second new building				£14K	£14K	£14K	£14K	£14K	
H3	Avoided infrastructure costs for new buildings	H1+H2	£14K	£14K	£28K	£28K	£28K	£28K	£28K	£168K

Source: Forrester Research, Inc.

Reduction In Mobile Call Charges

Due to the mobile connect feature of the OpenScape Voice platform, mobile cross-network call charges drop by £0.05 per minute. The interviewed organization indicates that this reduction in call charges applies to about 172,000 call minutes per year. The resulting cost savings are indicated in Table 10 below.

In the case of the interviewed organization, internal calls from mobile phones do not benefit from a cost reduction because this kind of calls is now included within its new mobile operator contract. However, the readers should evaluate how far this applies to their own environment.

Table 10

Reduction In Mobile Call Charges (Non-Risk-Adjusted)

Ref.	Costs	Value/ calc.	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
I1	Average number of cross-network call minutes per year that benefit from reduced call charges due to mobile connect feature		-	-	172K	172K	172K	172K	172K	
I2	Saved cost per minute	£0.05								
I3	Reduction in mobile call charges	I1*I2	£0	£0	£8.6K	£8.6K	£8.6K	£8.6K	£8.6K	£43K

Source: Forrester Research, Inc.

Total Benefits

Taking into account only the benefits that were quantifiable at this stage of the deployment, the interviewed organization expects to achieve total benefits of approximately £2.48 million over the seven-year period. Table 11 shows the total non-risk-adjusted benefits that were quantifiable for this study.

Table 11

Total Benefits (Non-Risk-Adjusted)

Ref.	Costs	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
J1	Centrex cost savings	£36K	£108K	£162K	£180K	£180K	£180K	£180K	£1,026K
J2	Call Director efficiency gains	£0	£0	£84K	£84K	£84K	£84K	£84K	£421K
J3	Audioconference-related benefits	£0	£6K	£31K	£76K	£94K	£94K	£94K	£397K
J4	Administration and support cost savings	£9K	£19K	£31K	£43K	£50K	£50K	£50K	£254K
J5	Legacy PBX-related cost savings	£0	£0	£0	£0	£38K	£68K	£68K	£173K
J6	Avoided infrastructure costs for new buildings	£14K	£14K	£28K	£28K	£28K	£28K	£28K	£168K
J7	Reduction in mobile call charges	£0	£0	£9K	£9K	£9K	£9K	£9K	£43K
J8	Total benefits	£59K	£147K	£346K	£420K	£483K	£513K	£513K	£2,481K

Source: Forrester Research, Inc.

Flexibility

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for some future additional investment. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so. There are multiple scenarios in which a customer might choose to implement OpenScape Voice and later realize additional uses and business opportunities. Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

With the current deployment, the interviewed organization realized benefits in the form of cost savings and productivity gains as described above. However, the organization is convinced that this foundation will help it to further improve patient services, realize more productivity gains for its end users, and reduce operational costs even

more in the future. In particular, the interviewed organization considers features around mobility and collaboration. For example, it intends to:

- **Enable mobile access to data.** The mobile workforce includes doctors and nurses who visit patients at their homes. The provision of mobile and secure access to the patient’s records will, for example, save them time and provide more timely treatment and services.
- **Better support remote workers.** The MobileConnect feature integrates with mobile devices — including smartphones — to allow remote employees full access to business telephone features and some business process applications from their mobile devices. These features promote increased productivity and eliminate the expense of a desktop telephone for those workers who spend much time away from their desks.
- **Improve emergency services.** The introduction of OScaAR will be used in the organization’s hospitals to broadcast emergency calls to target populations and eliminate the time-consuming task of searching for an available and appropriate medical staff — a vital requirement in emergency situations.
- **Adopt advanced unified communications (UC) features.** By making a strategic vendor choice for UC, the interviewed organization has the platform to add additional UC solutions in the future that fully interoperate with the OpenScape Voice application.
- **Promote mobile conferencing.** The ability to participate in and conduct meetings on the fly can be beneficial for medical and field staff.
- **Improve staffing service.** The new call center capabilities, including better routing and queue handling, will improve the efficiency of the staffing service.

However, at the time of publication of this study, the reference organization either had not yet elaborated concrete plans for these capabilities, or it didn’t have enough experience to be able to evaluate their financial impact. While Forrester believes organizations can take advantage of these flexibility options, estimating a specific option value is too variable. As a result, quantification of any value associated with these options is not included in the analysis.

Risk

Forrester defines two types of risk associated with this analysis: implementation risk and impact risk. “Implementation risk” is the risk that a proposed investment in OpenScape Voice may deviate from the original or expected requirements, resulting in higher costs than anticipated. “Impact risk” refers to the risk that the business or technology needs of the organization may not be met by the investment in OpenScape Voice, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

Quantitatively capturing implementation and impact risk by directly adjusting the financial estimates results in more meaningful and accurate estimates and a more accurate projection of the ROI. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates. The risk-adjusted numbers should be taken as “realistic” expectations, as they represent the expected values considering risk.

The following implementation risks that affect costs are identified as part of this analysis:

- Technical requirements might change over the seven-year period, and the technology costs — including the associated maintenance fees — might be higher.
- The amount of external project management needed depends on the complexity of the environment and might be higher.
- The amount of training needed over the seven-year period may depend on the employee turnover, and the costs may thus be higher.
- The amount of internal effort required for the design, integration, and migration depends on the complexity of the environment and might be higher.

The following impact risks that affect benefits are identified as part of the analysis:

- The decommissioning of the Centrex lines might take longer than expected, and the cost savings might thus be lower.
- The number of service requests might be lower than anticipated, which has an impact on the resulting productivity gains.
- The number of avoided travels might be lower than anticipated, which has an impact on the resulting productivity gains and travel cost savings.
- End user and customer service productivity gains depend on the ability of the concerned staff to reallocate their time productively.
- The decommissioning of the legacy PBXs might take longer than expected, and the cost savings might thus be lower.
- The avoided infrastructure costs for the new buildings might be lower than expected.
- The call charges from the mobile operators might decrease over time, and the expected cost savings with regard to cross-network calls might thus be lower.

Table 12 shows the values used to adjust for risk and uncertainty in the cost and benefit estimates. The TEI model uses a triangular distribution method to calculate risk-adjusted values. To construct the distribution, it is necessary to first estimate the low, most likely, and high values that could occur within the current environment. The risk-adjusted value is the mean of the distribution of those points. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Table 12

Cost And Benefit Risk Adjustments

Costs	Low	Most likely	High	Mean
Technology costs (hardware and software) — medium risk adjustment	100%	100%	115%	105%
Professional service costs — low risk adjustment	98%	100%	105%	101%
Training costs — low risk adjustment	98%	100%	105%	101%
Maintenance costs — low risk adjustment	98%	100%	105%	101%
Internal labor costs — medium risk adjustment	100%	100%	115%	105%
Benefits	Low	Most likely	High	Mean
Centrex cost savings — low risk adjustment	90%	100%	105%	98%
Call Director efficiency gains — medium risk adjustment	80%	100%	103%	94%
Audioconference-related benefits — medium risk adjustment	80%	100%	103%	94%
Administration and support cost savings — low risk adjustment	90%	100%	105%	98%
Legacy PBX-related cost savings — low risk adjustment	90%	100%	105%	98%
Avoided infrastructure costs for new buildings — high risk adjustment	50%	100%	100%	83%
Reduction in mobile call charges — low risk adjustment	90%	100%	105%	98%

Source: Forrester Research, Inc.

Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Financial Summary

The financial results calculated in the Costs and Benefits sections can be used to determine the ROI, NPV, and payback period for the organization's investment in OpenScope Voice. These are shown in Table 13 below.

Table 13

Cash Flow — Non-Risk-Adjusted

Cash flow — original estimates										
	Initial	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total	PV
Costs	(£363K)	(£59K)	(£233K)	(£227K)	(£216K)	(£225K)	(£219K)	(£204K)	(£1,746K)	(£1,366K)
Benefits		£59K	£147K	£346K	£420K	£483K	£513K	£513K	£2,481K	£1,715K
Total	(£363K)	£0	(£85K)	£119K	£204K	£258K	£294K	£309K	£736K	£350K
ROI	26%									
Payback	57 months									

Source: Forrester Research, Inc.

Table 14 below shows the risk-adjusted ROI, NPV, and payback period values. These values are determined by applying the risk-adjustment values from Table 12 in the Risk section to the cost and benefits numbers in Tables 3 and 11.

Table 14

Cash Flow — Risk-Adjusted

Cash flow — risk-adjusted estimates										
	Initial	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total	PV
Costs	(£379K)	(£61K)	(£243K)	(£236K)	(£225K)	(£234K)	(£227K)	(£211K)	(£1,815K)	(£1,421K)
Benefits		£56K	£143K	£331K	£402K	£464K	£493K	£493K	£2,382K	£1,646K
Total	(£379K)	(£5K)	(£100K)	£95K	£178K	£230K	£266K	£282K	£567K	£225K
ROI	16%									
Payback	60 months									

Source: Forrester Research, Inc.

Siemens Enterprise Communications OpenScape Voice: Overview

Siemens Enterprise Communications OpenScape Voice is a major component of the Siemens Enterprise Communications Unified Communications Portfolio. It provides organizations with a carrier-grade voice communications system that delivers high resiliency and advanced features on its platform. The media event server delivers a dual software image and signal redundancy to deliver the high level of uptime that is expected from carriers. As a native SIP-based softswitch, OpenScape Voice is independent from the underlying hardware. This provides high reliability for voice communications and a scalable architecture, which supports up to 100,000 users per cluster.

The OpenScape Voice server can be housed in a data center to allow users to manage and administer the system from a centralized location. Its standard IT tools make it easier for customers to manage applications and integrate with existing applications. This also results in lower support costs. The base system runs on a Linux server, which is a nonproprietary operating system that reduces support costs and increases flexibility.

The Enterprise Communications OpenScape Voice application supports multiple locations and mobile workers who can access the same features as employees working from office locations.

Security is another important feature for the Enterprise Communications OpenScape Voice platform. As such, it offers many security features to meet the needs of an organization's individual security requirements. It provides comprehensive security features that include account and password management, event logging, file transfer security, media streaming security, and defense against denial-of-service attacks. It also offers greater flexibility for administrators in defining password rules, password aging, and password reuse policies to ensure that end users' passwords are kept up to date and secure.

Appendix A: Total Economic Impact™ Overview

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility.

Benefits

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

Costs

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs in the form of fully burdened labor, subcontractors, or materials. Costs consider all the investments and expenses necessary to deliver the proposed value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing costs associated with the solution. All costs must be tied to the benefits that are created.

Risk

Risk measures the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections, and 2) the likelihood that the estimates will be measured and tracked over time. TEI applies a probability density function known as “triangular distribution” to the values entered. At minimum, three values are calculated to estimate the underlying range around each cost and benefit.

Flexibility

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprise wide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point in time. However, having the ability to capture that benefit has a present value that can be estimated. The flexibility component of TEI captures that value.

Appendix B: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Although the Federal Reserve Bank sets a discount rate, companies often set a discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their respective organization to determine the most appropriate discount rate to use in their own environment.

Net present value (NPV): The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

Present value (PV): The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total net present value of cash flows.

Payback period: The breakeven point for an investment. The point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Return on investment (ROI): A measure of a project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

A Note On Cash Flow Tables

The following is a note on the cash flow tables used in this study (see the example table below). The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1. Those costs are not discounted. All other cash flows in Years 1 through 3 are discounted using the discount rate (shown in Framework Assumptions section) at the end of the year. Present value (PV) calculations are calculated for each total cost and benefit estimate. Net present value (NPV) calculations are not calculated until the summary tables and are the sum of the initial investment and the discounted cash flows in each year.

Table [Example]

Example Table

Ref.	Category	Calculation	Initial cost	Year 1	Year 2	Year 3	Total

Source: Forrester Research, Inc.

Appendix C: Related Forrester Research

“Jump-Starting The Unified Communications Market,” Forrester Research, Inc., September 10, 2010

“Enterprise Communications: The Next Decade,” Forrester Research, Inc., March 9, 2010

Appendix D: Endnotes

¹ Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information on Risk, please see page 18. Please also note that the annual values in the cost and benefit tables of this report have been rounded.