



**Communication
Solution
Technologies
(CST)**

S.C.C.S.

A Proposal to Thomas Jefferson University/Hospital

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Communication Solution Technologies: Proposal

Table of Contents

A - Introduction.....	3
1 Current Situation.....	,4
2 Solution.....	5
2.1 Objectives	<u>6</u>
2.2 Benefits	<u>6</u>
3 Implementation Plan	7
3.1 Hardware and Software	7
3.2 Network and Servers	8
3.3 Staff Training	8
3.4 Schedule.....	8,9
4 Conclusion.....	10
B – References.....	11



A - Introduction

We are Communication Solution Technologies (CST). We have been in the network communication industry since 1988. Our corporate headquarters is located in Hoboken New Jersey which is only minutes away from downtown Manhattan New York. We have created many software, hardware and network design of communication and collaboration solutions for many companies in industries such as universities, hospitals and government agencies. We have over twenty years of communication and collaboration software, hardware and network design solutions experience. Over the years we have developed many trustworthy relationships with our vendors. Some of our vendors that we have partnered with to assist with many network communication and collaboration solution projects are companies such as Avaya, Cisco, Brocade, Ciena, Intel, IBM Lotus Notes, Verizon, HP, Dell and many more. These partnerships with our vendors help us develop a cost effective, reliable and excellent customer support service to our clients (24/7 support). We have developed a solution called Software Collaboration and Communication System (SCCS). The SCCS system is a web base portal system that will help bridge the communication issues that many companies are faced with today by using the latest communication technologies like VoIP, wireless network and Satellite.

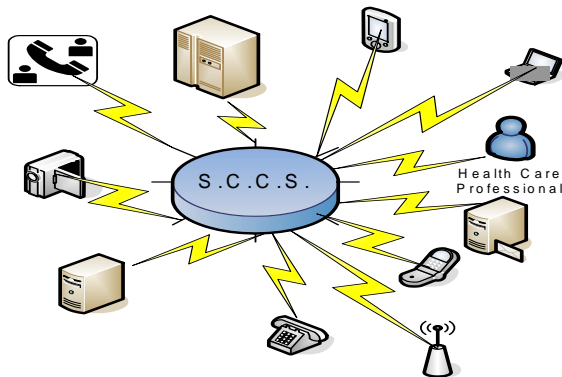
1- Current Situation

The 1990's and into 2000 saw a rapid technological change in communications technology and the market is still in transition. The Internet introduced new ways of communicating along with wireless technology which allowed the use of mobile devices such as cell phones and PDA's. The development of the unified communication system is the goal. Thomas Jefferson University/Hospital (TJU) is a well known medical and academic facility located in Philadelphia, Pennsylvania (1). TJU treats more than 25,000 inpatients and more than 300,000 outpatients every year. TJU has enrolled 2,600 future health care professionals. Despite these large numbers of patient service, TJU believes in providing individualized patient care services (1). TJU is designed to support the concept of "patient-centered" care which means that care is provided at bedside when ever possible. The hospital seeks ways to provide the best, effective and compassionate care possible to its patients. It also attempts to provide patient care that is affordable and culturally sensitive (1). TJU believes that they are a model for the healthcare system to mimic across the country and even the world. TJU provides quality and effective medical care to their patients on a daily basis. Therefore, TJU will have to continue to look and examine its work processes (communication) by taking advantage of new emerging technologies which can improve efficiencies in its administrative and operations. Many hospitals in the Philadelphia region have taken advantage of these new communication technologies which has made them better integrated digital hospitals. Now, these hospitals who have transformed their communication systems can easily transfer patients' information to the healthcare professionals who need them either locally or worldwide. The adoption of a communication and collaboration system will allow healthcare professionals, administrative staff members and employees to communicate with one another through this central communication system regardless of geographical locations (2). Healthcare professionals and all who use this system will be able to read, check emails, review patient's records, X-Rays, video or teleconference with one another, track and submit their work to a central web base database system. Healthcare professionals will be able retrieve patient's

information from this communication system called S.C.C.S. The healthcare professional will be able to participate in video conferences or meetings for real-time collaboration about a particular subject matter (learning) and even submit patient's record or retrieve these records. The business administrative staff members will be able to use this collaborative communication system to also retrieve patient's records and communication with a healthcare professionals.

2- Solution

Exhibit 1 – The Software Communication and Collaboration System developed by Communication Solution Technologies (CST). (4).



Communication Solution Technologies (CTS) propose a custom Web Base Application system that would work using Voice over Internet Protocol (VoIP) and wireless solution system called Software Collaboration and Communication System (S.C.C.S) that not only delivers rich, reliable and cost-effective services, but is also scalable to adapt to future escalating requirements. S.C.C.S software system is the central communication hub for all collaborative tools such as cell phones, laptops, Video, web and computer workstations etc... CTS S.C.C.S can handle the many different communication issues/problems that many large organization

face day-to-day. In this case, Thomas Jefferson University has many healthcare professionals who use many types of communication devices and need to access one system (S.C.C.S) in order to use its collaborative tools such as Instant messages (IM) or video-conference which will allow physicians to communicate quickly with one another about a patient's condition for instance. All healthcare professionals will be able to communicate with one another via our web base system S.C.C.S. CTS will call on our vendor support who we have partnered with throughout our years of existence in the Communication and Collaboration industry. CTS will call upon Microsoft for the operating system and software development platforms, Cisco and Avaya Wireless Networks for a WI-FI environment, IP/PBX provider Verizon and Avaya for technical support. Dell will be used for hardware support, Hewitt Packard (HP) for PDA smart-phones, and AsusTech for notebooks/tablet PC provision and support (2).

2.1 Objectives:

Today's modern hospital such as Thomas Jefferson University/Hospital (TJU) need continually examine their communication processes for better and faster services so they can provide the best and most effective medical services to their patients. Affordability is one of the main objectives of today's organizations such as TJU. Being able to quickly and easily contact their physicians and providing seamless communication channels between them is very important to the delivery of quality healthcare.

- **Improve communication and collaboration.** Improve the way TJU contacts their healthcare professionals and provide easier voice and data communication methods for faster collaboration
- **Reduce costs, deliver better ROI.** Deliver better return on investment (ROI) and lower communication costs.

2.2 Benefits:

Return on Investment:

- Avaya's PBX-IP Media Gateway preserves TJU 's investment in legacy PBX telephony system by bridging it to the new VoIP network. This permits TJU to continue to use the existing legacy phone system and allow seamless

communications between the IP Network and the Public Switched Telephone Network (PSTN) (2).

- By using the hospital's existing LAN and Intel architecture – based servers, desktops PCs, notebooks and tablet PCs, TJU is able to minimize the costs of implementing a Web Base database and VoIP solution into the hospital. Although, some hardware will need to be upgraded depending on their end-of-life cycle (old nursing stations).
- CST's twenty plus years of experience with providing Communication and Collaboration system has given us one top reputation in the computer network industry.
- Easy communication channel amongst employees and healthcare professionals thus increasing the efficiency amongst the working environment.



- Performance and analysis of various Healthcare Professionals and employees who use the web base S.C.C.S system.

3 Implementation Plan

This section presents our plan for obtaining the objectives discussed in the previous section. The primary needs for a successful implementation will come in the area of staff training, for both server administration and healthcare professionals. The users will have to login to the S.C.C.S web portal system to use the communication and collaboration tools such as video-conferencing, IM, retrieve X-rays etc... Finally, costs for the first year of operation will be minimal in relation to the costs of Thomas Jefferson University's (TJU) current legacy communication systems.

3.1 Hardware and Software Needs:

Computer system needs both hardware and software will be minimal especially if the collaborative software system uses S.C.C.S system which has most of the collaborative tools necessary to communicate. S.C.C.S system will allow healthcare professionals both remotely and locally to check email, use Same-Time (IM), retrieve voice messages, make phone calls, use online phone directory, view incoming and outgoing history phone logs and access any applications/databases for documentation purposes. TJU has current IT staff members who will be

able to deploy and support the hardware, network and software issues that may arise (3).

3.2 Network and Servers:

The hardware requirements for the network and server side of the S.C.C.S. system mostly are in place. TJU is equipped with TCP/IP LAN and the high performance Cisco routers and switches to accommodate it which will reduce costs. A network wireless access point will need to be installed and this will require the assistance of Cisco's wireless technologies. PBX-IP Media Gateway will need to be installed too. TJU already has PCs in place across the university/hospital departments, but many nursing workstations will need to be upgraded with newer and faster processors (Intel) to accommodate the new S.C.C.S. system.

All of these PCs have TCP/IP capabilities which will allow access to the S.C.C.S via internet. Microsoft's Internet Browser will allow easy and access to the S.C.C.S system (3).

3.3 Staff Training:

The primary focus of the S.C.C.S system should be in staff training. Most, if not all, aspects of necessary training can be handled within the University community and should again be achieved at a low cost to the department. In-house training of the S.C.C.S training will be provided by TJU's IT training staff (3).

3.4 Schedule:

This section presents CST schedule, cost and qualifications for completing the proposed communication and collaboration system. CST staff will follow the schedule presented in Figure 1. Most of the time will be spent on building, training, programming and coordinating the S.C.C.S system with our vendor support.

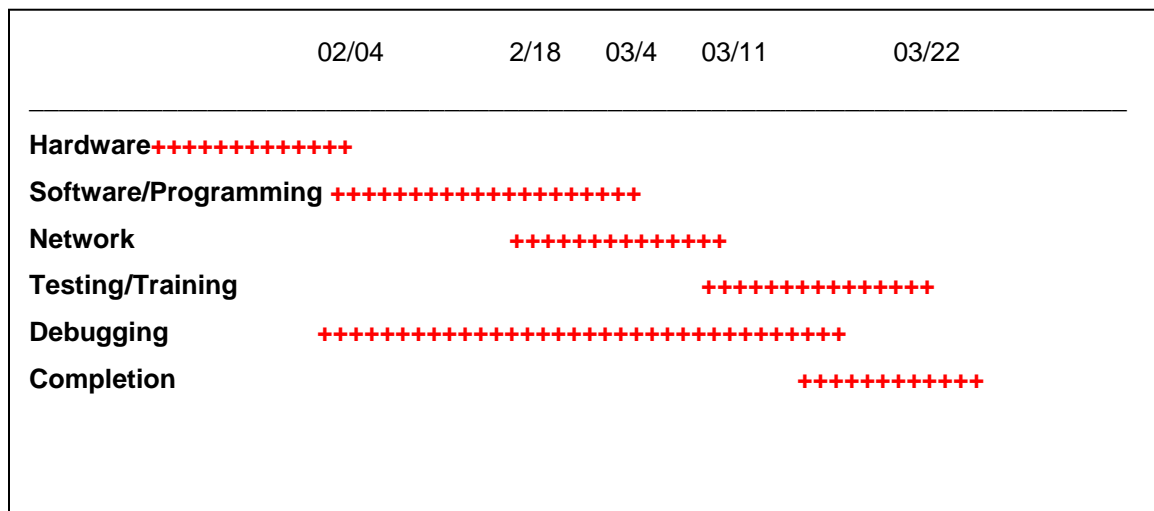


Figure 1. Schedule for completion of the S.C.C.S system. The formal presentation will be on March 22.

Cost

Initially, the value focused on cost savings. Videoconferencing is expected to reduce travel costs for many healthcare professionals that can simply connect to a Videoconference to review a patient's medical record and even a physician can assist in an operation procedure remotely. This will allow quick and easy access to the patient who needs immediate attention. Also, a physician will be able to pull up x-rays through our communication and collaboration system (S.C.C.S) and be able to give a quicker prognosis to patients' ailments.

By using most of the existing network and hardware infrastructure in place at TJU will save a lot of cost. For instance, if new PC's had to be purchased in every department would have cost millions of dollars. By just upgrading the nursing stations PC's (150) will only cost approximately \$225,000 per workstation while if the whole hospital and university's PC's had to be upgraded would have cost much more (50,000 total healthcare professionals locally and remotely would cost approximately \$75 Million). Using the S.C.C.S web portal

system will allow a big cost savings, because it will allow the user community to login via the Internet. Most software cost comes from the individual licensing one each user's PC or device. Therefore, the individual software product (S.C.C.S) does not need to be installed on each healthcare professional's PC or hardware device, because the S.C.C.S system is web base database.

4 Conclusion

Organizations such as the healthcare industry have not fully used communication technology investments to their maximum, because of the considerable time and expense needed to deploy and manage different communication platforms and systems. S.C.C.S. web base portal is an excellent solution for Thomas Jefferson University (TJU) current problem of inadequate communication and collaboration system. S.C.C.S. which is a Unified Communication and Collaboration system enables organizations to maximize the value and utility of communications technology investments. S.C.C.S will break down the walls of communication and use a unified communication system (web base) to better communication across all platforms and different technologies (i.e. cell phones, mobile PDA, laptops and workstations etc...) This system will give healthcare professionals (i.e. physicians, administration etc...) the same information and communication flow whether they are in the office, working from home or traveling.

S.C.C.S will be the key technological innovation that will simultaneously improve the bottom and top lines of the business.

Therefore, deciding to improve the way you communicate with your health care professionals is one of your key objectives. Our web base portal system will offer a unique, reliable and cost effective way of using a communication and collaborative system. We look forward to hearing from you soon and hope you will choose our proposal. We look forward to hearing from you soon.

Reference:

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