Integrated Action Learning Project Plan

Implementation of an Upgrade of the Local Area Network for Sugar Land Bible Church

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Course Title: IT4991 Integrated Action Learning I – Project Planning and Action Learning Plan

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Project Description

My project would be to upgrade the local area network infrastructure for Sugar Land Bible Church. The purpose of this project is to improve network performance and availability, increase network security, provide in-house e-mail services and consolidate accounting functions to one application.

In producing my project, I would conduct a survey of all stakeholders and users to identify requirements. I would then develop a plan, budget and timeline for delivering the project. Upon approval of the plan, budget, and timeline, a design phase, which incorporates the user requirements and best practices for local area network design, would begin. The completion and approval of the design would trigger the beginning of the prototype phase where a demonstration of the system capabilities would be presented and user input about the system would be captured and used to fine-tune the design. Implementation of the new network would complete the delivery of the project. People who would be involved in my project include:

- Hans Meinardus – project sponsor (stakeholder)
- Sugar Land Bible Church deacon board – budget committee (stakeholder)
- Sugar Land Bible Church elder board – planning committee (stakeholder)
- Pastor Mark Choate – user
- Youth Pastor Jay Anderson – user
- Education Pastor Jim McGowan – user and system administrator
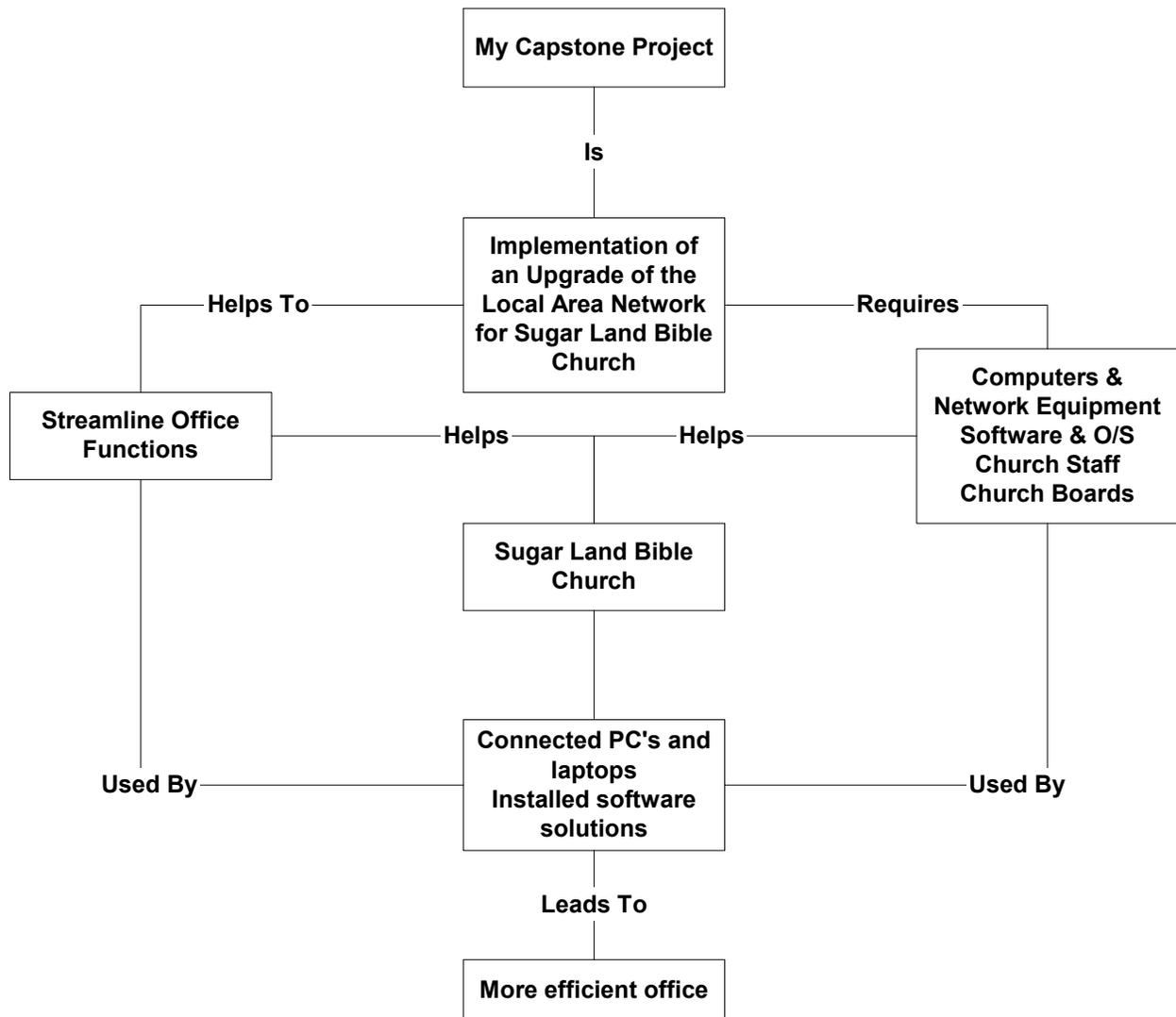- Janet Faught – user
- Gillian Hill – user
- Deacons – users

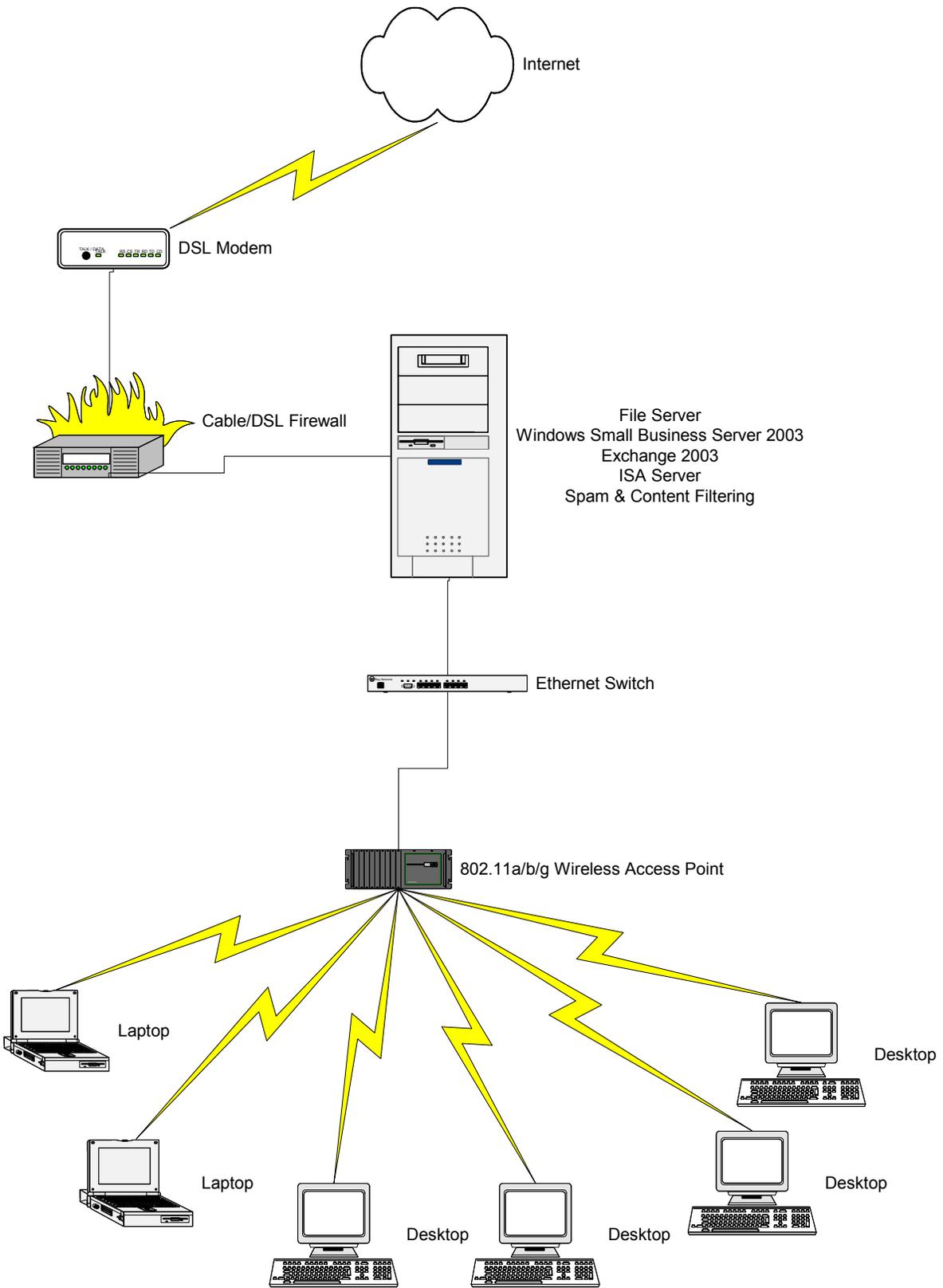When my project concludes, it would lead to:

- A new wireless local area network that will provide church-wide access;
- Upgraded file server hardware to support new services;
- Existing file server repurposed as a desktop PC;
- Upgraded file server operating system to Windows Server 2003;
- Installation of Microsoft Exchange 2003 to provide in-house e-mail services;
- Installation of Microsoft ISA Server for increased Internet security and control over web browsing content;
- Migration and consolidation of accounting functions from Quicken, QuickPay and QuickBooks to Microsoft Money Small Business edition.

I am interested in this project because Sugar Land Bible Church is my church and I want to give of my time and knowledge to improve the state of the technology at the church. In addition, my degree specialization and professional experience are in network technologies.

Prototype

The following prototypes depict the key concepts of my capstone project.

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                          ┌──────────────────────┐
                          │  My Capstone Project │
                          └──────────────────────┘
                                     │
                                     Is
                                     │
                          ┌──────────────────────┐
                          │   Implementation of  │
          Helps To────────│   an Upgrade of the  │────Requires────┐
                          │  Local Area Network  │                │
                          │ for Sugar Land Bible │                │
                          │        Church        │                │
                          └──────────────────────┘                │
┌──────────────────┐                                   ┌──────────────────────┐
│ Streamline Office │────Helps────────Helps─────────── │     Computers &      │
│    Functions      │                                   │  Network Equipment   │
└──────────────────┘                                   │    Software & O/S     │
                          ┌──────────────────────┐      │     Church Staff     │
                          │   Sugar Land Bible   │      │     Church Boards    │
                          │        Church        │      └──────────────────────┘
                          └──────────────────────┘                │
                          ┌──────────────────────┐                │
    Used By───────────────│  Connected PC's and  │────Used By─────┘
                          │       laptops        │
                          │  Installed software  │
                          │      solutions       │
                          └──────────────────────┘
                                     │
                                  Leads To
                                     │
                          ┌──────────────────────┐
                          │ More efficient office│
                          └──────────────────────┘
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Internet

DSL Modem

Cable/DSL Firewall

File Server
Windows Small Business Server 2003
Exchange 2003
ISA Server
Spam & Content Filtering

Ethernet Switch

802.11a/b/g Wireless Access Point

Laptop

Desktop

Laptop

Desktop

Desktop

Desktop

Objectives

In producing my project, my learning objectives are to:

1. Apply my professional experience as well as knowledge gained from the variety of courses I have completed as part of my Capella University degree program.
2. Improve my understanding of network security and project management.
3. Develop a better understanding of how churches and non-profit organizations operate.

In producing my project, my project objectives are to:

1. Create a stable, secure and scalable network infrastructure.
2. Enhance the performance of the network.
3. Provide a computing environment that fosters collaboration
4. Improve the ability to share information and data.
5. Increase the efficiency of accounting functions.

Feasibility Discussion

In performing a feasibility check I examined the following areas:

1. Level of need – The need for this project is high but not critical. The current local area network requires wires to be strung across floors and out of the ceiling to provide connectivity. E-mail is currently hosted by a third-party and there is no way to control SPAM or scan for viruses. Internet browsing is unchecked and unmonitored creating a great risk for the church. The current state of the accounting is inefficient and difficult to control access to specific financial information.
2. Technical issues – The church building is not conducive to the transmission of wireless network signals and will require multiple access points and repeaters to provide coverage. Server hardware will need to be purchased in conjunction with the wireless network equipment. Microsoft technologies are already in use in the church.
3. Economic issues – Microsoft is providing all software and licenses at no cost to the church. The cost of the server and wireless network equipment has been budgeted by the church for 2005.
4. Constraints – The primary constraints will be the availability of the various stakeholders for discussions and reviews. A secondary constraint will be the ability of the church to make the capital expenditures for the hardware when needed.

Project Schedule

This table describes the schedule I will follow to complete the project:

Tasks	Duration	Resources
Research Phase • Determine budget • Interview users • Identify other ongoing projects • Discover all aspects of existing LAN • Document user requirements • Document existing LAN	4/4/05 – 4/10/05	• D. Sandlin • Deacon board • Elder board • All pastors • All users
Design Phase • Design network infrastructure • Identify hardware requirements • Identify software requirements	4/11/05 – 4/24/05	• D. Sandlin • Hans Meinardus • Deacon board

• Develop upgrade and migration processes		

Proof of Concept Phase
• Order hardware
• Order software
• Build test network
  o Configure wireless LAN
  o Configure new server
  o Configure new PC's
  o Install configure applications
    ▪ MS Exchange
    ▪ MS ISA Server
    ▪ MS Sharepoint
    ▪ MS Money
• Test upgrade and migration processes
• Test functionality
• Modify design and upgrade and migration processes as needed
	4/25/05 – 5/8/05	• D. Sandlin
		• Hans Meinardus
		• Jim McGowan
		• Deacon board
		• All users

Implementation Phase
• Move test wireless LAN into production environment
• Install new server
• Install new PCs
• Migrate data
  o Documents
  o E-mail
  o Accounting data
  o Misc. data
• Test Implementation
• Train Users
	5/9/05 - 5/29/05	• D. Sandlin
		• Jim McGowan
		• Hans Meinardus
		• All Users

Documentation Phase
• Develop wireless LAN configuration documentation
• Develop server and operating system configuration documentation
• Develop application configuration documentation
  o MS Exchange
  o MS ISA Server
  o MS Sharepoint
  o MS Money
	5/30/05 – 6/5/05	• D. Sandlin

Project Completion Phase • Develop and present final project report	6/6/05 – 6/12/05	• D. Sandlin

Risk Management

In producing this project I performed the following risk assessment:

Risk Factor Checklist				
Risk Considerations		**Low Risk**	**Med. Risk**	**High Risk**
Funds not available for hardware				X
Technology is too difficult to use and maintain		X		
Accounting data lost or corrupted				X
Project schedule does not meet church needs			X	
Critical data is lost during file server upgrade				X
Wireless network does not provide adequate coverage		X		
E-mail delivery is unavailable for extended period of time			X	
High Risk Solutions				
Risk Considerations	**Problem and Solution**			
Funds not available for hardware	The variable income of the church may result in a shortage of funds for new hardware purchases. Existing hardware will be utilized as best as possible and the timeline adjusted to accommodate future purchases.			
Accounting data lost or corrupted	The migration of data from Quicken to Money results in data loss. All accounting data will be backed up twice prior to conversion to ensure roll-back is possible.			
Critical data is lost during file server upgrade	Upgrading the hardware and operating systems results in data being lost. The entire file server will be backed up twice and a test restore performed to ensure recovery is possible.			

Contingency Plan

Efforts to offset the risks are in place. If for some reason my project does not appear to be developing successfully regardless of the efforts made, I would present reasons why I am unable to proceed with the project as planned. Appropriate redirection of the plan would take place upon instructor and/or stakeholder approval and the new direction would be discussed in the final project report. Redirection might be to permit the research, analysis, development, or other phase(s) of my project to constitute my project in its entirety. The outstanding phase(s) e.g., testing and finalizing of my project would in such case be completed outside the scope of the capstone project. Upon approval, such redirection would represent my project in its entirety.

Research

Assisting Resources

In producing my project I would utilize the following assisting resources:

Books/Publications

1. Bender, S. L. (2003). *Producing the capstone project*. Dubuque, Iowa: Kendall/Hunt Publishing Company.

This textbook would be used as a reference for producing my project. It contains many helpful tips on producing documents and tracking my project progress. It offers many useful resources in its appendix section.

2. Stanek, W. R. (2003). *Microsoft Windows Server 2003 Pocket Consultant.* Redmond, WA: Microsoft Press.

This handbook would be used to provide implementation and troubleshooting tips during the server implementation.

3. White, G. (2003). *All-in-One Security+ Certification Exam Guide.* Emeryville, CA: McGraw-Hill/Osborne

This textbook would be used as a reference for implementing proper security measures to protect the network from unauthorized access.

<u>Internet</u>

1. Microsoft, Corp. (2004). *Microsoft Windows Small Business Server 2003 Getting Started Guide*.
    Retrieved February 21, 2005, from
    http://www.microsoft.com/technet/prodtechnol/sbs/2003/plan/gsg/sbsgsgab.mspx.

This online guide provides detailed instructions on planning for and implementing Windows Small Business Server 2003. It will be a valuable resource for configuring the various services bundled with Windows Small Business Server.

2. Microsoft, Corp. (2004). *Windows XP Service Pack 2 and Windows Small Business Server.* Retrieved
    February 21, 2005, from
    http://www.microsoft.com/technet/prodtechnol/sbs/2003/deploy/sbs_xpsp2.mspx.

This document will be used as a reference for properly configuring the user workstations to work with Windows Small Business Server.

3. Microsoft, Corp. (2004). *Best Practices for Windows Small Business Server 2003.* Retrieved February
    21, 2005, from http://download.microsoft.com/download/f/b/a/fba7f737-bdd3-4570-8873-
    43cab9c6e1db/SBS_BP.htm.

This document will be used to ensure the proper configuration of Windows Small Business Server 2003 and its bundled services.

4. Ochs, B. (2003). *Migrating from Small Business Server 2000 or Windows 2000 Server.* Retrieved
    February 21, 2005 from
    http://www.microsoft.com/technet/prodtechnol/sbs/2003/deploy/sbs2k203.mspx.

This online guide will be used to ensure proper techniques and methods are followed during the upgrade of the church's server operating system from Windows 2000 Server to Windows Small Business Server 2003.

<u>People</u>

1. Hans Meinardus, Project Sponsor

Hans Meinardus will be the primary contact throughout the project and will provide final project approval. He will also be the primary resource for ordering software.

2. Jim McGowan, Education Pastor and System Administrator

Jim will be the primary system administrator when the project is complete. He will be participating in knowledge transfer meetings and system reviews to learn the details of the new network infrastructure.

3. Sugar Land Bible Church Deacon Board, Budget Committee

The Deacon Board will be providing budget approval and oversight throughout the project.

4. Sugar Land Bible Church Elder Board, Planning Committee

The Elder Board will be providing final approval of the plan and guidance throughout the implementation.

Literature Review

I performed the following literature review concerning the value in producing my project:

1. Semas, J. H. (2001, November). *Tethered No More.* Retrieved February 28, 2005 from http://www.districtadministration.com/page.cfm?p=139

This article discusses the benefits of replacing a wired network with a wireless network. It states that communications is the killer application for PCs and wireless networking allows for the introduction of a variety of mobile computing devices. It also states that implementing a wireless network is more cost effective than implementing a wired network because the need for a cable run is no longer needed for connectivity. The wireless network can be made available anywhere in a facility and allow for more flexible use of workspace. Wireless networks also eliminate the need for troubleshooting wired connections at each location

2. Intel, Corp. (2004). *Standardizing on Wireless LANs: Integrating WLAN technology saves time,reduces costs, and adds value for Intel.* Retrieved February 28, 2005 from http://www.intel.com/business/bss/infrastructure/managing/standard_wlan.pdf.

This article provides insight into the implementation of wireless LANs by Intel, Corporation. It describes the real benefits seen by Intel through their implementation of wireless networks. First, Intel is lowering their equipment maintenance costs by replacing older equipment with new equipment that provides greater functionality at a lower cost and is easier to maintain. Next, they are lowering the cost of wiring buildings and upgrading existing wiring. There is no need to wire every office and cubicle, so reduced costs are seen by reducing the amount of cabling required in a building. The article states an almost 150% savings by using a 100% wireless building compared to a 100% wired building. Also, employee productivity is rising because they have better and faster access to data from more places allowing them to add two hours of useful working time per week. Lastly, Intel is improving security because they found that employees were using rogue wireless connections even when a wired connection was available. The rogue connections posed a serious security threat because they were unmanaged. Now the wireless connections are managed and network security is greatly increased.

3. Sharick, P. (2005, Feb. 22). *Upgrading Windows 2000 to SBS 2003.* Retrieved February 28, 2005 from http://www.windowsitpro.com/Article/ArticleID/45477/Windows_45477.html

This article explains the benefits of upgrading from Windows 2000 Server to Windows Small Business Server 2003. First and foremost, Microsoft is dropping support for Windows 2000 Server. This means there will be no more service packs or telephone support. Another reason to upgrade is that Small Business Server 2003 is more secure than 2000 Server and with the Premium edition additional network security can be added via Internet Security and Acceleration Server. Also, the inclusion of Exchange and Sharepoint Servers provides the ability to provide internal e-mail and document management functions and have access to these services remotely via web interfaces. Lastly, the upgrade from Windows 2000 Server to Small Business Server 2003 is fully supported and an Active Directory migration tool is provided to allow for easy migration of information from the old server to the new one.

Appendix

To evidence the completion of my project I would include the following appendixes to the IAL Project Final Report in TS4992:

Appendix A: Schematic of the subject network
Appendix B: Letter confirming project completion from stakeholder, Hans Meinardus