OPERATING SYSTEM UPGRADES

SNHU, 16EW5, IT-328

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INTRODUCTION

Southern New Hampshire University (SNHU) has approved the Operating System Upgrades project to move forward and progress toward implementation. The goals of this project include upgrading the operating systems on all employee computers within the Sales and Marketing departments at SNHU. By upgrading the operating systems for these departments, SNHU's sales and marketing departments will be able to remain most competitive in the marketplace and ensure that documents and presentations created at SNHU are immediately usable and compatible with third party vendors. Additionally, these upgrades will serve as a test case for the entire organization, allowing major upgrades to be completed while not impacting the productivity of mission-critical departments like management and technical operations.

PROJECT MANAGEMENT APPROACH

The Project Manager, Michael Singletary, retains overall authority and responsibility for managing and executing the project according to this Plan and the sub-plans and additional documents that may be attached. The project team consists of members from SNHU management, Information Technology, Sales and Marketing, Software Development, and Human Resources teams. The project manager will work with all human and technology resources for the project as part of the planning process. The project sponsor will be responsible for reviewing and approving all plans contained within this document and added or modified later. The project sponsor is also responsible for making all funding decisions related to the project. Any changes to the structure of authority must be accompanied by a request to the project manager, in writing, and requires the signatures of both the project sponsor and project manager.

The project team consists of a variety of employees from across multiple departments within the organization. Throughout the course of the project, each of these team members will continue to report

directly to their current management team as defined in the organization chart. No changes are being made. The project manager is also responsible for communicating with these existing management teams regarding the status, progress, and performance of the project.

PROJECT SUMMARY

The Operating System Upgrades project was initiated as a way to fully modernize the sales and marketing departments at SNHU. By utilizing SNHU's internal information technology team to complete the majority of the upgrades, full compatibility and relevance to the organization can be achieved. Additionally, these upgrades serve as a great learning and development opportunity for the information technology team that can be used later as the organization as a whole receives operating system upgrades to computers fleet-wide. All team members involved in the project will likely be exposed to new material and experiences, which further help to foster SNHU's culture of learning, personal development, and achievement.

A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was completed during the proposal phase of the project to best evaluate how this may benefit, challenge, or potentially harm the organization. Based on the information discovered during the process, final approval was received as the benefits were determined to far outweigh any risks.

SWOT ANALYSIS

PROJECT SCOPE

The scope of SNHU's Operating System Upgrades project includes the planning, design, development, testing, and implementation of the Windows 10 Operating System Upgrades across the sales and marketing team computers. This upgrade will best position SNHU and its employees for the increasingly technologically competitive marketplace and enhance the efficiency of the affected departments. The scope of this project also includes completion of all documentation, resources, and training to be used with the new operating system and the changes to internal and external software that are required to ensure compatibility. Project completion will be realized when the upgrades and training and documentation have been fully completed and all employees in the sales and marketing departments are comfortably using the new operating system.

While the majority of the work for this project will be completed internally, some outsourcing of software development for the required third-party software is necessary.

The breakdown of the work required to complete the project are included below, in the Work Breakdown Structure (WBS).

WORK BREAKDOWN STRUCTURE MILESTONES

The WBS for the Operating System Upgrades project is made up of separate milestones that will not exceed 60 working days, but require those full 60 days to complete. In order to ensure that all software changes and updates are made to guarantee compatibility and to allow for ample time to train employees to work with these changes, a full 60 days of working time is required. Each segment of the project is broken down into a larger milestone that allows for easy progress tracking and ensuring that the project remains on the projected timeline.

An overview of the WBS is included below, and the full version may be seen in the included attachment. Please see the appendices and references for the included detailed WBS.

Milestone	Description	Date
Upgrade Operating System	**Completion of the Operating System Upgrades Project**	**9/5/16 – 12/1/16**
Create Backup Plan	**Procure and develop VMware images to use on upgraded workstations to alleviate compatibility issues.**	**9/5/16 – 9/9/16**
Interface with 3rd party developers	**Work with developers of critical 3rd party software to procure development of**	**9/5/16 – 10/3/16**

Milestone	Description	Date
	updated software for Windows 10	
Interface with internal developers	**Work with SNHU software development team to implement fixes for internal software for Windows 10**	**10/3/16 – 10/31/16**
Training	**Develop and implement training program for affected employees for easy transition to new OS and software updates**	**11/1/16 – 11/30/16**
Final Implementation (Roll out Upgrades)	**Implement OS upgrades across computers in Sales and Marketing departments**	**12/1/16 – 12/1/16**

IN-SCOPE AND OUT-OF-SCOPE

The scope of the Operating System Upgrades project was determined prior to receiving final approval to proceed with the project. A number of items were defined as being "in-scope", or highly relevant and required for completion of the project. A smaller number of items were identified as being "out-of-scope", meaning that these items may be considered as the timeline and progress of the project allows.

Below are the approved definitions of both in-scope and out-of-scope items as they relate to this project:

In-Scope

- Verification of hardware compatibility

- Procurement of Windows 10 licenses for impacted employees
- Procurement of VMware licenses for use within risk management plan
- Internal development time to allow for first-party software compatibility fixes
- External development time with third-party developer to ensure required software compatibility fixes
- Employee time outside of normal duties to properly test updated software in Windows 10 test environment
- Creation of all documentation and training materials required to address changes
- Ample time to allow for Human Resources training employees to teach changes to workflow to affected employees

Out-Of-Scope

- Addressing compatibility issues with non-mission-critical software packages
- Additional software development time to make changes to software not required for compatibility

COST MANAGEMENT AND ANALYSIS

The Project Manager is responsible for managing and reporting on the project's cost throughout the duration of the project. During each of the budgetary update meetings, as detailed in the communications plan below, the Project Manager will present and review the project's cost as planned and as it is currently progressing throughout the project timeline. The Project Manager is responsible for accounting for cost or budget deviations, and will work with the Project Sponsor to reign in any budgetary concerns. All budget authority and decisions, including changes, is assigned to the Operating System Upgrades Project Sponsor.

PROJECT BUDGET

The approved budget for the Operating System Upgrades project is **$64,000**, which includes the software costs for procuring the Windows 10 software licenses, approved expenditures for the software development changes required from the third-party software vendor, and food and drink costs for the various meetings and training sessions required to get the impacted employees up to speed on changes associated with the completion of the project.

An additional fund of **$4,100** has been established to account for the unknown variable of the cost of the third-party development changes required for a core software package. Prior to initiation of the project and discussions with this third-party developer, it is impossible to accurately predict the cost of this aspect of the project. Any budgetary changes requested after the depletion of this contingency fund must be submitted in writing to the Project Manager and Project Sponsor.

It is estimated that the majority of the budget for the project will go to procuring the software required to complete the Operating System Upgrades. This software includes both the Windows 10 licenses required for every workstation, and the VMware Fusion desktop virtualization software to be used per the Risk Management plan for each affected workstation. Both of these software packages make up over **$26,800** of the project budget.

Additionally, significant labor costs are associated with the development of and integration of the training programs required for the project. Training and development costs are expected to consume over **$10,000** of the project budget.

At least **724** labor hours are expected throughout the course of the project, involving a fluid number of employees across multiple departments. Another full **24** hours of work time is accounted for in the contingency to deal with any unexpected issues that may arise.

Please see the next section, Budget Overview, for a detailed breakdown of the items approved for the project budget and their costs.

Budget Overview

	PROJECT TASKS	LABOR HOURS	LABOR COST ($)	MATERIAL COST ($)	TRAVEL COST ($)	OTHER COST ($)	TOTAL PER TASK
PROJECT DESIGN	Develop Functional Specifications	20.0	$1,100.00	$0.00	$0.00	$200.00	$1,320.00
	Develop System Architecture	12.0	$480.00	$0.00	$0.00	$100.00	$592.00
	Develop Preliminary Design Specification	8.0	$320.00	$0.00	$0.00	$50.00	$378.00
	Develop Detailed Design Specifications	20.0	$1,100.00	$0.00	$0.00	$150.00	$1,270.00
	Develop Acceptance Test Plan	40.0	$1,600.00	$0.00	$0.00	$300.00	$1,940.00
	Subtotal	**100.0**	**$4,600.00**	**$0.00**	**$0.00**	**$800.00**	**$5,500.00**
PROJECT DEVELOPMENT	Develop Components	0.0	$0.00	$0.00	$0.00	$0.00	$0.00
	Procure Software	4.0	$100.00	$26,800.00	$0.00	$1,500.00	$28,404.00
	Procure Hardware	4.0	$100.00	$0.00	$0.00	$2,000.00	$2,104.00
	Development Acceptance Test Package	40.0	$2,600.00	$50.00	$0.00	$1,000.00	$3,690.00
	Perform Unit/Integration Test	16.0	$520.00	$0.00	$0.00	$500.00	$1,036.00
	Subtotal	**64.0**	**$3,320.00**	**$26,850.00**	**$0.00**	**$5,000.00**	**$35,234.00**
PROJECT DELIVERY	Install System	16.0	$640.00	$0.00	$0.00	$0.00	$656.00
	Train Customers	404.0	$10,160.00	$200.00	$0.00	$1,010.00	$11,774.00
	Perform Acceptance Test	24.0	$600.00	$0.00	$0.00	$0.00	$624.00
	Perform Post Project Review	2.0	$100.00	$0.00	$0.00	$0.00	$102.00
	Provide Warranty Support	0.0	$0.00	$0.00	$0.00	$0.00	$0.00
	Archive Materials	2.0	$80.00	$0.00	$0.00	$0.00	$82.00
	Subtotal	**448.0**	**$11,580.00**	**$200.00**	**$0.00**	**$1,010.00**	**$13,238.00**
PROJECT MANAGEMENT	Customer Progress Meetings/Reports	14.0	$305.00	$0.00	$0.00	$0.00	$319.00
	Internal Status Meetings/Reports	6.0	$260.00	$0.00	$0.00	$0.00	$266.00
	Third-Party Vendor Interface	4.0	$160.00	$0.00	$0.00	$1,000.00	$1,164.00
	Interface to Other Internal Departments	24.0	$960.00	$0.00	$0.00	$0.00	$984.00
	Configuration Management	8.0	$320.00	$0.00	$0.00	$0.00	$328.00
	Quality Assurance	16.0	$520.00	$0.00	$0.00	$0.00	$536.00
	Overall Project Management	40.0	$1,400.00	$0.00	$0.00	$0.00	$1,440.00
	Subtotal	**112.0**	**$3,925.00**	**$0.00**	**$0.00**	**$1,000.00**	**$5,037.00**
OTHER COST	Other cost	0.0	$0.00	$0.00	$0.00	$0.00	$0.00
	Other cost	0.0	$0.00	$0.00	$0.00	$0.00	$0.00
	Other cost	0.0	$0.00	$0.00	$0.00	$0.00	$0.00
	Subtotal	**0.0**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Subtotals		**724.0**	**$23,425.00**	**$27,050.00**	**$0.00**	**$7,810.00**	**$59,009.00**
Risk (Contingency)		24.0	$960.00	$100.00	$1,500.00	$1,500.00	**$4,060.00**
Total (Scheduled)		**748.0**	**$24,385.00**	**$27,150.00**	**$1,500.00**	**$9,310.00**	**$63,069.00**

RISK MANAGEMENT PLAN

PURPOSE OF THE RISK MANAGEMENT PLAN

In order to ensure a smooth transition to the new Windows 10 Operating System, a detailed risk identification and mitigate plan is being put forth. Although the project is expected to contain very little risk, it is crucial to identify potential risk factors and create a mitigation plan in order to be prepared to address any number of issues that may arise from this large-scale rollout of the major Operating System upgrade.

RISK MANAGEMENT PROCEDURE

Process

To reduce the potential impact of the identified risks of the upgrades, the project manager will work closely with the internal customers and teams impacted by the upgrades to identify mission critical functionality that must be preserved throughout the project and after its completion. It is crucial to identify these risks early in order to properly create mitigation plans and to minimize or eliminate identified issues that may negatively impact the affected teams. The Project Manager will also serve as the Risk Manager for this project.

Risk Identification

Identifying the risks associated with the project will be a multi-team effort, involving all stakeholders, affected teams, and upper management who will evaluate current business systems and processes that will be impacted. Ongoing risk identification procedures will continue throughout the project timeline, as additional factors may be identified during testing.

Risk Analysis

Each risk identified will be paired with a detailed assessment to evaluate the potential impact on the project outcomes, and operations of each affected team and its members. Risks will be ranked on a scale to identify highest priority considerations that require immediate and continued attention and to identify risks that may be unavoidable to not require mitigation.

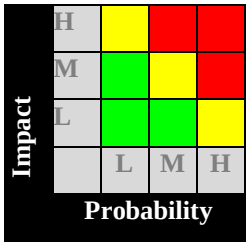
Qualitative Risk Analysis

The probability and impact of each identified risk is analyzed by the Project Manager after review and input from stakeholders and the project team using the identifiers below:

Probability

- High – Greater than 70% probability of occurrence
- Medium – Between 30% and 70% probability of occurrence
- Low – Below 30% probability of occurrence

Impact



- High – Risk that has the potential to greatly impact project cost, project schedule or performance
- Medium – Risk that has the potential to slightly impact project cost, project schedule or performance
- Low – Risk that has relatively little impact on cost, schedule or performance

High priority risks that are classified as RED and YELLOW in the chart above will receive extra attention that include full implementation of their risk management plan.

Risk Response Planning

Each major risk (those falling in the Red & Yellow zones) will be assigned to a project team member for monitoring purposes to ensure that the risk will not "fall through the cracks".

For each major risk, one of the following approaches will be selected to address it:

- Avoid – eliminate the threat by eliminating the cause
- Mitigate – Identify ways to reduce the probability or the impact of the risk
- Accept – Nothing will be done
- Transfer – Make another party responsible for the risk (buy insurance, outsourcing, etc.)

For each risk that will be mitigated, the project team will identify ways to prevent the risk from occurring or reduce its impact or probability of occurring. This may include prototyping, adding tasks to the project schedule, adding resources, etc.

For each major risk that is to be mitigated or that is accepted, a course of action will be outlined for the event that the risk does materialize in order to minimize its impact.

Risk Monitoring, Controlling, And Reporting

The level of risk on a project will be tracked, monitored and reported throughout the project lifecycle.

A "Top 10 Risk List" will be maintained by the project team and will be reported as a component of the project status reporting process for this project.

All project change requests will be analyzed for their possible impact to the project risks.

Management will be notified of important changes to risk status as a component to the Executive Project Status Report.

IDENTIFIED RISKS

Technology Risks

Undetected Security Threats

All new Operating System updates have the potential to introduce unexpected security issues to computers that are upgraded. Although these updates go through extensive internal testing with the developer (Microsoft) and some testing in the real world through beta testing, not all scenarios and configurations can be tested. This leads to the potential for security threats specific to a certain setup that must be dealt with internally. Realized risks associated with security threats can lead to loss of productivity and data integrity, potentially impacting many teams throughout the organization. Not properly addressing these concerns will lead to increase costs and work hours. A detailed analysis and mitigation plan can be found in the MASTER RISK LIST document attached.

Incompatibility Issues

The project's plan calls for extensive planning and testing, yet it may not be possible to prepare for all use cases of the required software most likely to be affected by the Operating System upgrades. As a result of this, many of the compatibility issues will be identified during initial testing, which may result in additional documentation of previously undiscovered incompatibility issues. Dealing with these issues is accounted for in the risk management plan, but unforeseen problems will result in extra work hours for development, testing, and quality assurance. Details of the analysis and mitigation plan are found in the MASTER RISK LIST document attached.

Internal Core Software Changes May Increase Cost

Although time and expense costs have been budgeted for development time needed to customize internal software for the upgrades, it is difficult to predict the scope prior to real-world utilization of the software packages during user testing. As a result of this unknown, the potential cost and work hour increases are considered a risk to the scope of the project. A Virtual Machine environment will be created and pre-

installed during the Operating System upgrades to provide for a contingency option that will allow the regular performance of work functions as internal development is completed. Details of the analysis and mitigation plan are found in the MASTER RISK LIST document attached.

External Development Costs are Unknown

Due to a mission-critical software package for the Sales and Marketing department being a third party-solution, close cooperation is required from this third-party developer in order to ensure compatibility after the OS upgrades. Although the project scope already includes work and monetary budgets to allow for development costs from the third-party, it is considered a risk to the project since this scope and cost is unknown. Additionally, time constraints may be applied by the third-party that adversely impact the project timeline. In order to help mitigate this risk, the Virtual Machine contingency plan will also be applied to this risk to allow for continuation of work and reduce impacts to affected teams. Details of the analysis and mitigation plan are found in the MASTER RISK LIST document attached.

Process Risks

Poor Training Process May Impact Productivity

The training portion of the project scope is critical to ensuring a smooth process transition during the upgrades. The training and development team will work closely with affected teams and its members, as well as the IT team and project manager to develop a comprehensive training program for the new Operating System. Since the upgrade to Windows 10 is considered a major OS upgrade, it is important to properly identify workflow, navigation, and administrative changes that must be communicated to affected users. Missing important aspects of these changes constitute a major risk to the project, and this risk is to be transferred to the training and development team. The project manager and IT teams will serve as consultants to this process, but may need to take over as a contingency if deficiencies are identified in the training. A detailed analysis and mitigation plan can be found in the MASTER RISK LIST document attached.

Errors in Upgrade Images May Cause Widespread Issues

To provide for a smooth upgrade process while limiting the number of hands-on attendants during the upgrade, specific upgrade images will be created during the project to allow for unattended upgrades for computers at scale. This process introduces an inherent risk to the project as any errors found in these images will be rolled out to all machines simultaneously. The impact of this errors may be minimal or major, depending on what, if any, errors are made. Extra computers will be made available for core team members to use in the office in this event, and the telework agreement may be initiated for other affected employees as a contingency. A detailed analysis and mitigation plan can be found in the MASTER RISK LIST document attached.

People Risks

Testing Will Not Identify All Issues

The best testing plans can never identify every negative impact that will be a result of the upgrades, and so these unexpected issues must be planned for. Due to their unknown nature, it is impossible to properly detail a risk management and mitigation plan for every issue. Instead, a comprehensive work alternative will be in place that will be able to generally cover any unexpected issues. In some cases this may appear to be an overreaction and can be adjusted, and in others this may not be enough. A good foundation is necessary for a starting point to minimize work impact, however. In order to best mitigate any compatibility issues following the upgrades, the Virtual Machine software installed on each computer during the upgrade imaging can be utilized. This will function as a temporary fix only, but will allow for the continued work of all employees, albeit in a less than ideal situation. A detailed analysis and mitigation plan can be found in the MASTER RISK LIST document attached.

COMMUNICATIONS PLAN

COMMUNICATIONS DOCUMENTS

Throughout the Operating System Upgrades project, numerous communications milestones and procedures will take place. These documents will serve as official status reports and updates to the relevant parties, and will be used as a method for tracking the success, challenges, and progression of the project throughout its timeframe.

Project Communication Table

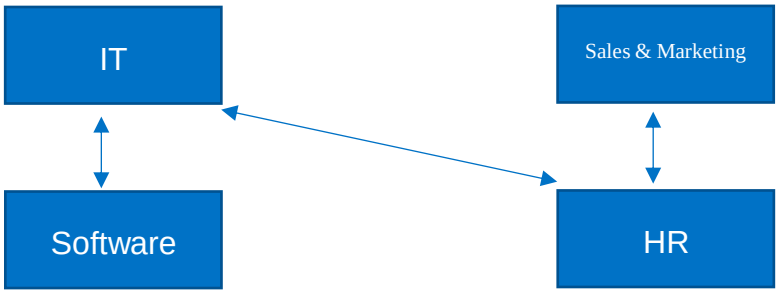
Document	Recipients	Responsibilities	Update frequency
Executive updates	All C-level officers and their VPs.	High-level updates regarding overall success, failures, budget, and timeline updates.	Weekly.
Risk management document	Associated VPs, directors, and Project Manager (PM).	Continual and frequent updates regarding changes to risks, and implementation of risk management procedures.	Nightly.
Issue management document	VPs and PM.	Higher-level overview of current, realized, risks, and the plans to mitigate.	Nightly.
Budget management document	VP Finance, PM.	Updates regarding progression of budget, requests for increases, explanations for reductions.	Weekly.
Project schedule	All associated team members.	High-level overview of current project progress, forecasting for changes, and	Weekly.

Document	Recipients	Responsibilities	Update frequency
		estimated completion date updates.	

Team Structure

A number of teams will be involved throughout the project and must work closely together to ensure an efficient and effective rollout of the Operating System Upgrades. In addition to the Information Technology (IT) team's involvement, the Sales and Marketing teams affected by the upgrades are also involved, as well as the Human Resources team and Software Development teams for training and specialized coding, respectively.

Below is an overview of the involved teams and their relationships during the project.



Team Goals

- Information Technology (IT): To provide a comprehensive and efficient upgrade of the Operating Systems, while assisting both the Software Development and HR teams with their related tasks involving development and training.
- Software Development: To work closely with IT team to ensure software compatibility issues are resolved in an appropriate and timely manner to limit workflow disruptions.

- Sales & Marketing: To utilize the resources provided by HR team, in conjunction with input from IT, to effectively learn new systems and immediately report, in detail, any issues encountered throughout the project.
- Human Resources (HR): To develop and deliver an effective and comprehensive training program to ease transition of employees to new Operating System and software, and provide ongoing support for this training.

Team Assignments

Operating System Upgrades Project Team

Name of team	Team goals	Team leads	Team roles
Information Technology	To provide a comprehensive and efficient upgrade of the Operating Systems, while assisting both the Software Development and HR teams with their related tasks involving development and training.	Vice President of Technology, Director of Technology	Direct implementation of upgrades, ongoing communication with Software Development and HR teams to discuss risks, changes, and training of employees. Ongoing support for impacted teams throughout and after project.
Software Development	To work closely with IT team to ensure software compatibility issues are resolved in an appropriate and timely manner to limit workflow disruptions.	Director of Software Development	Work closely with IT team to make requested changes to internally-developed software to ensure maximum compatibility with new OS. Consult with HR regarding any changes to existing internal software for training.
Sales and Marketing	To utilize the resources provided by HR team, in conjunction with input from IT, to effectively learn new systems and immediately report, in detail, any issues	Sales Manager, Marketing Manager	Absorb training delivered by HR, report issues not covered by training immediately, submit detailed IT tickets to document any issues found while testing and during

Name of team	Team goals	Team leads	Team roles
	encountered throughout the project.		normal work after project completion.
Human Resources	To develop and deliver an effective and comprehensive training program to ease transition of employees to new Operating System and software, and provide ongoing support for this training.	Director of Training and Development	Work closely with IT and Software Development teams to create an effective training program to reduce workplace interruption following upgrades. Continue to provide support after project completion to communicate changes to employees.

Team Roles and Responsibilities

It is the responsibility of each team involved in the project to take their roles seriously and to follow the direction provided above. By following their roles, each team will help to ensure a smooth transition during the project and provide for effective communication between all teams and their leaders. Failure to accept these roles as responsibilities will severely impact the success of the project, potentially leading to long delays, budgetary conflicts, and loss of productivity throughout the company.

RISKS AND ISSUES MANAGEMENT

Potential Exceptions and Problems

While this project is straightforward and standard operating procedure for many companies worldwide, a number of potential risks have been identified that may negatively impact the project and affected teams. Below is an overview of these risks, what may cause them and how to identify them, result of inaction, and ways this can be overcome.

- **Undetected Security Threats**: New security issues may be introduced during upgrades to a newer Operating System that were not caught during vendor's testing. Identification will take place mostly through third-party antivirus, spyware, and malware software, and could jeopardize security of company computers and documents if not detected and mitigated.
- **Incompatibility Issues**: Major changes to Operating Systems can, and often do, introduce previously absent incompatibility issues with any number of software packages. While limited in terms of potential damage, these issues may impact workflows and efficiency of affected employees if not quickly dealt with. Increases in IT tickets regarding software bugs will signal the presence of this issue, and require mitigation steps.
- **External Development Costs are Unknown**: Although thorough budget forecasting was done during the planning for the project, it is impossible to accurately estimate the costs of software development services provided by third-party developers. Sales and Marketing teams utilize a core software package developed externally, that may require major changes for continued use. This cost is unknown until any issues are discovered after testing.
- **Errors in Upgrades Causing Widespread Issues**: Any issues present in custom-developed upgrade images may roll-out to all affected computers and introduce consistent issues across company computers. Detailed testing in a development environment will be necessary to identify and correct issues discovered. Failure to identify and resolve all upgrade process issues will greatly impact work across many team members.
- **Testing Will Not Identify All Issues**: As with all projects, it is impossible to identify every potential problem that may arise as a result of the implementation, especially when dealing with third-party software outside of the control of the company. Despite the detailed and best efforts of our teams, there will be issues that cannot be immediately identified prior to implementation. Triggers to signify presence of these issues include increased and consistent IT support tickets that demonstrate similarities in work-impacting issues amongst numerous affected team members.

Appropriate Corrective Measures

- **Undetected Security Threats**: Resolution for these threats is transferred to the software packages currently utilized to secure work computers on site. Automatic updates to virus, spyware, and malware definitions must be enabled and IT employees must regularly view event logs to monitor threat situation.
- **Incompatibility Issues**: Issues with compatibility should be identified during end-user testing by team members from Sales and Marketing teams identified as testers. Proper identification and documentation of compatibility issues is vital to success in mitigating this threat. HR team, in conjunction with IT team, are responsible for creating and communicating incompatibility report documentation that will be used by IT team to develop resolution efforts.
- **External Development Costs are Unknown**: By utilizing the Budget Management Document detailed above, the Project Manager is responsible for updating the relevant parties of any requested changes to the project's budget. Identification will occur during communication with third-party developer based on compatibility issues identified in the incompatibility report document detailed above. Once a comprehensive list of compatibility issues is identified, Project Manager will work with IT and Software Development teams to facilitate communication between internal and external teams to develop a budget for required third-party changes.
- **Errors in Upgrades Causing Widespread Issues**: Errors with upgrade images will be identified during IT testing in the development environment. Once an issue is identified, IT team will rework upgrade images and re-test upgrade process to ensure corrective actions are effective. In cases of extreme impact, IT team will work with Software Development team to create custom solutions to allow for efficient and effective upgrades.
- **Testing Will Not Identify All Issues**: Although this risk cannot be completely corrected prior to project completion, consistent use of the compatibility report document and risk management tracking documents will allow for efficient resolution to identified issues. It is the responsibility of affected team members, the IT team, and HR team to properly report, troubleshoot, and retrain employees to reduce work-impacting issues.

Tracking Risks and Issues

Date recorded	Risk description	Probability	Impact	Mitigation plan
7/3/16	Undetected security threats may lead to an insecure environment	50%	4	Security risks may be mitigated by implementing a corporate-level security platform on each computer, as well as implementing proper access controls for user accounts to limit access to system files.
7/2/16	Incompatibility issues in software cannot be overcome within project timeframe	50%	5	Impact reduction is possible through software virtualization, at least in the short term. Deployment of Virtual Machine software to impacted team members will allow incompatible software to function within newer OS version while updates are made for full compatibility.
7/1/16	Changes required to core third-party software package may result in expensive charges from developer	30%	2	Mitigation is achieved by implementing VM plan detailed above. Risk may be completely reduced by implementing internal plans if issues are detected in testing.
6/30/16	Inherent issues in created OS upgrade images may roll out problems across employees in affected departments	40%	5	Risks can be reduced by extensive user testing during this phase of implementation. Testing should involve multiple upgrade tests using custom upgrade images, and should be repeated when any changes to images are made.
6/29/16	Internal software compatibility issues may require more development time and resources than planned	20%	2.5	To mitigate risks to IT team, responsibility for mitigation of this risk is shifted to the software development team. With the assistance of the IT team, the software development team is responsible for owning the requirements for acceptance of the internal software.

PROCUREMENT PROCESS

In order to ensure efficient progression of the project and proper management of the project budget, a procurement process has been activated. This process details the resources needed from third parties to complete the project, and when procurement happens during the project.

PROCUREMENT PROCESS TIMELINE DURING PROJECT

	Beginning	Middle	End
Planning	**Plan Procurement Management**: Assignment of appropriate budgets approved to obtain Windows software licenses and third-party software development time.		
Executing		**Conduct Procurements**: Selecting third-party vendors for software licenses (Microsoft). Requesting changes to budget approvals as needed based on input from third-party software developer.	
Monitoring and Controlling		**Control Procurements**: Monitoring work performed by third-party developer to remain in budget. Providing continual budget updates per	

		communication table requirements. Final requests for budget changes based on statement of work and performance of third-party developer.	
Closing			**Close Procurements**: Final payments submitted to third-party software developer. Final budget updates provided per communication table requirements, and project timeline updates if any changes required due to scope of work.

PROCUREMENT AND REQUISITION PROCESS DETAILS

The Project Manager will provide oversight and management for all procurement and requisition activities as a part of this project. The Project Manager is authorized to approve all procurement actions up to the proposed budget of the project, **$64,000**. Any amounts requested beyond the approved budget must be submitted according to the Change Management Plan below, and be approved by the Project Sponsor.

While this project requires very minimal procurement, if a procurement is required it will be the responsibility of the Project Manager to work with the project team to identify all resources in need of procurement to ensure the success of the project. The Project Manager will ensure that these procurement requests are reviewed by Management and presented to the appropriate Financial departments within the

company and CCB within the project team. After review, a determination will be made as to the necessity of the procurement and actions regarding vendor selection and purchase will proceed if applicable.

If a procurement outside of the initial project scope is required, the Project Manager will be responsible for selecting the relevant vendors and outside resources necessary to complete the procurement. The Project Manager will also monitor the progress of procurement and provide updates as detailed in the Communications Plan.

CHANGE MANAGEMENT PLAN

INTRODUCTION

This Change Management Plan for the Operating System Upgrades project was created in order to define, explain, and plan for changes within the overall scope of the project. Each member involved within the project will be required to request changes in accordance with this plan, and all requests must follow the process detailed within this Change Management Plan document.

CHANGE MANAGEMENT APPROACH

The approach for Change Management within the Operating System Upgrades project will ensure that each change proposed by a member of the project is properly defined, reviewed, and discussed amongst interested parties. Requested changes must follow this process in order to ensure that approved changes are implemented properly, and follow the proper communication channels defined in the Communications Plan document.

There are three main areas that this will cover, which include:

- Verification that requested changes fit scope of the project, and are beneficial to all parties involved

- Discussion and agreement as to how the changes are to be implemented, and which members of the project will be involved
- Management of responsibility for ensuring that approved changes are carried out as agreed upon

This process was designed to ensure that it is followed for all requested changes to the project, and will prevent changes being made without the full knowledge and understanding of all involved parties.

DEFINITIONS OF CHANGE

Many types of potential changes may exist, and the definition of change may vary from person to person. In order to remove confusion and streamline the change request process, definitions of what is considered to be a change are defined here. Any requests that are included in the definitions below constitute a change that must follow this Change Management approach and process. These types of changes include:

- **Schedule Changes**: Any changes that will impact the defined and approved progression of the project. Depending on the scope of this change, the project schedule may need to be reworked to accommodate any trickle-down effect on other aspects of the project. Examples of schedule changes may include: increasing time of user testing and acceptance, or time required to complete software modifications.
- **Budget Changes**: Any changes that impact the approved project budget. In order to accommodate Budget Changes, proper proposals to the Finance Department must be submitted with full details of why the budget change request should be approved, and the expected impact to the budget. It is not likely that a budget change will be required unless another change affecting both the schedule and scope are submitted.
- **Scope Changes**: Any changes that are required and will also have an impact on the final delivery of the Operating System Upgrades. Due to the limited scope of the project itself, it is highly unlikely that any changes to the scope of the project will be requested.

Any approved changes must be immediately sent to the relevant parties by the Project Manager. The Project Manager is also responsible for updating any necessary project documentation in order to enable other project members to effectively communicate per the Communications Plan as required.

CHANGE CONTROL BOARD (CCB)

The Change Control Board (CCB) members comprise the authority for all proposed change requests submitted for the Operating System Upgrades project. This board serves to review all submitted change requests, identify their impact to the project, analyze the risk, scope, cost, and schedule, and to ultimately approve or deny these requests. Listed below are each member of the CCB, their position within the project, and their role in the CCB.

Name	Position	CCB Role
S. Singletary	OS Upgrade Project Sponsor	CCB Chair
M. Singletary	OS Upgrade Project Manager	CCB Member
R. Singletary	OS Upgrade Project Technical Lead	CCB Co-Chair
E. Singletary	OS Upgrade Project Departmental Lead	CCB Member
V. Singletary	OS Upgrade Project Financial Lead	CCB Member

All change requests submitted to the Operating System Upgrades Project Manager will be documented, and the CCB will meet weekly to review these submitted requests. In order for a request submission to be approved for the project, all CCB members must agree on this approval. If more information is required to make a decision on approval or denial, notification will be sent to the requestor to submit this information. In extreme cases, the CCB may meet outside of this schedule to consider mission-critical change requests.

ROLES AND RESPONSIBILITIES

The roles and responsibilities for all responsible parties as part of the Change Management process are defined below:

Project Sponsor:

- Approve all changes to budget change requests
- Approve all changes relating to the project schedule
- Approve any changes to the accepted project scope
- Chair the CCB

Project Manager:

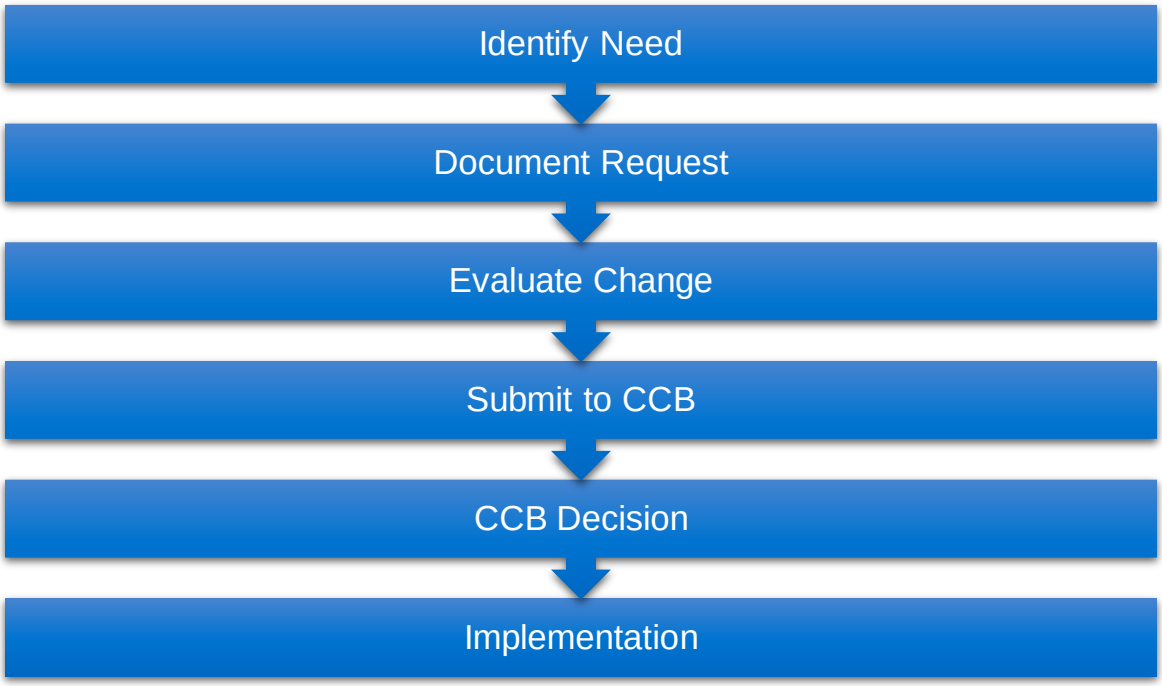
- Handle the documentation of all change requests submitted during the project
- Prior to all CCB meetings, analyze the risk, cost, schedule, and scope impacts of requested changes to be discussed
- Follow-up with requestors of changes to obtain more information or address concerns
- Modification documentation, as required, to accommodate approved changes by the CCB
- Participate on CCB

Project Team/Stakeholders:

- Submit all change requests using appropriate forms
- Provide all relevant information when submitted change request forms to ensure efficient review
- Be able to promptly respond to all requests regarding approval of submitted changes

CHANGE CONTROL PROCESS (WATERFALL SDLC)

The Change Control Process for the Operating System Upgrades must follow the standard change process utilized in all projects. The project manager has the responsibility of executing this defined Change Management process for each submitted change request.



1. Identify the need for a change (Stakeholders) – Change requestor will submit a completed change request form to the project manager.

2. Document the change request (Project Manager) – The project manager will document all submitted change requests throughout the project.
3. Evaluate the change (Project Manager, Team, Requestor) – The project manager will analyze the impact of all requests in regards to the risk, cost, schedule, and scope of the project.
4. Submit change request to CCB (Project Manager) – The project manager will submit the change request, as well as the preliminary analysis, to the CCB for review.
5. Obtain Decision on change request (CCB) – The CCB will discuss the proposed change and decide whether or not it will be approved based on all submitted information.
6. Implement change (Project Manager) – If a change is approved by the CCB, the project manager will make the required changes to project documentation as it relates to the impact of the approved change.

Any member of the project is able to submit a change request for the Operating System Upgrades project, provided the required change management process above is followed.

TRANSITION PLAN

As per the Work Breakdown Structure, the transition plan for this project follows a waterfall method that ensures prerequisite parts of the project progression are completed prior to moving on to the next steps. Throughout the progression of the project, the Project Manager will be responsible for assembling and disseminating information regarding the current project progress, status, and next steps to the relevant parties as defined in the Communications Plan. The inherent logical progression of the waterfall method used in the Work Breakdown Structure and Change Control Process, as well as the communications schedule documented in the Communications Plan, will ensure smooth transitions throughout each step of the project.

JOB DESCRIPTION

As part of the open and honest policy at SNHU, the information below is a copy of the job description created for best selecting the project manager for this project. Our selected project manager met or exceeded all of the desired skills and experience, and requirements for the job and was selected by an impartial panel as the best candidate to lead this and future projects.

PROJECT MANAGER JOB DESCRIPTION

We are seeking an experienced IT Project Manager that will be responsible for the successful planning, execution, and completion of a company-wide Operating System modernization project that will result in the upgrade of all company-issued computers to the latest version of the Microsoft Windows 10 Operating System.

Exceptional candidates for this position will have experience with coordinating company resources across departments, creating and maintaining appropriate budgets, identifying external resources needed, communicating the ongoing status of the project, and successful and timely completion as defined by the scope of work agreed upon for this project.

Responsibilities include (but are not limited to):

- Creating an accurate scope of work that details necessary steps to complete project.
- Coordinating and assigning tasks to relevant employees within the organization.
- Creating and managing the budget for the project.
- Promptly communicating project status and critical changes to senior leaders.

A successful IT Project Manager candidate will possess, at least, the following requirements:

- Bachelor's degree or equivalent work experience.

- 4+ years of Project Management (or related) experience.
- Ability to communicate effectively both verbally and in writing.
- Familiarity with the Microsoft Windows Operating System, its management, and upgrade process at scale.
- Excellent time management skills.
- Experience with creating and staying within project budgets.
- Ability to take complex technology concepts and describe them in more familiar ways.
- Strong understanding of the impact of major software upgrades and how they impact various teams and employees.

APPENDICES AND REFERENCES

Document Name	Description
Project Budget	**Detailed breakdown of submitted and approved budgets for entire project.**
Master Risks List	**Detailed description of identified risks, their impacts, and their mitigation plans.**
Work Breakdown Structure	**Detailed breakdown of the tasks required to complete project, their subtasks, and estimated and approved dates for begin/end of each task.**