



Office of the Chief Information Officer

## Business Case Analysis for **Office 365**

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# 1. EXECUTIVE SUMMARY

## 1.1. Background

In 2009 the state of Washington made the decision to consolidate distributed Microsoft Exchange e-mail systems into a centrally managed shared email service. The service is hosted by Consolidated Technology Services (CTS) and incorporates an off-premise Secure Email component from M86. More than 51,000 mailboxes from 46 agencies have migrated to the service to date. In addition to email, CTS hosts a central Microsoft SharePoint service and Live Communication Service.

Over the past decade private industry has made significant progress to commoditize many of the desktop business applications we use today. This trend creates an opportunity for the state to adopt a Software as a Service (SaaS) enterprise solution for email, collaboration, and common business applications that is rich in functionality and uniform across the enterprise. In many cases these continuously updated services can be obtained through public cloud offerings deployed by major industry leaders.

This opportunity is the focus of two action items in Washington's Information Technology Strategy:

Action 3: Encourage adoption of public cloud platforms where appropriate.

Action 4: Encourage adoption of Software-as-a-Service (SaaS) for applications purchased by state agencies where appropriate.

## 1.2. Business Question

With the apparent advantages of cloud based email and common business applications, the state is asking the question: Given our install base, is there a business case at this time to adopt a cloud based solution? This detailed business case analysis addresses this question by determining whether implementing a cloud based solution for email and collaboration can:

- Reduce the state's overall IT expenditures
- Provide increased functionality and business value to employees
- Retain or improve the quality of service
- Position the state to make better use of future technology innovations

## 1.3. Business Case Analysis

Multi-agency teams from the DNR, OCIO, CTS and 12 other agencies conducted the detailed business case analysis. Two alternatives were considered:

- Continue using the current Shared Email service.
- Adopt an all cloud-based Email Collaboration service using Microsoft Office 365 and M86 Secure Email.

Essentially, if Office 365 can meet state requirements, deliver expected benefits, and generate sufficient savings, the state should pursue implementation. Success for this

phase of the initiative is to gather the essential facts and select the best alternative for the state.

#### **1.4. Summary of Conclusions**

The business case analysis produced the following conclusions:

1. There is no statewide financial benefit to move to Office 365. Office 365 will cost \$381,220 more over five years and leave \$1.9 Million in stranded costs unrecovered in Fund 419 for the initial Shared Email service investment.
2. Office 365 does not satisfy the state's critical records management requirements to accurately store, protect, search and retrieve email records. This alternative would increase time and effort for records management and increase the risk of failing to satisfy public disclosure and litigation requirements, resulting in financial loss.
3. Gap analysis team members were enthusiastic about the speed and convenience of Lync in Office 365 to exchange information and collaborate to produce results. Office 365 will bring valuable productivity improvements to employees, teams, and organizations when members work in different locations, mobile conditions, or are teleworking.

Large organizations are often moving to cloud based Email to solve a problem with current email systems. They are running outdated platforms such as GroupWise or Lotus Notes, or disparate email services resulting in reliability problems, complexity, or higher cost. In contrast, the Washington's Shared Email service:

- Is less expensive than Office 365. Gartner gave an "impressive" cost effectiveness rating.
- Provides proven, industry leading Email, secure email, filtering, and archive /search
- Is operational with consolidation nearly complete: 46 agencies, 51,000 mailboxes
- Achieved Microsoft's "Outstanding" rating in a formal Risk and Health Assessment
- Provides the lowest risk, lowest resource impact alternative to the state.

#### **1.5. Summary of Recommendations**

The business case recommendations are based on conclusions from the financial analysis, requirements gap analysis, employee hands-on experience with Office 365, Gartner research and consultation, and Office 365 feedback from other states.

1. The state should continue to use the Shared Email service
2. Finish migrating the remaining agencies to Exchange 2010 and the Symantec Vault.

Immediate Next Steps:

1. Determine whether there is a business case to implement Lync online or on-premise to complement the collaborative features of the Shared Email service.
2. Determine whether there is a business case to implement SharePoint on-line to reduce cost or improve productivity.

Longer Term Next Steps:

3. To prepare for a future on-premise or cloud based email service agencies should:
  - a. Continue to eliminate public folders. Microsoft has announced shared folder end of life support and they aren't supported in Office 365.
  - b. Resolve network bandwidth constraints and related expenses in agency networks
  - c. Resolve Enterprise Active Directory inconsistencies
4. CTS should continue to implement ADFS to enable new authentication options.

## 2. BUSINESS CASE ANALYSIS TEAM

The effort to complete the business case was jointly sponsored by the OCIO, CTS and DNR and included the following team members:

Executive Sponsors

Rob St. John, CTS  
Christy Ridout, CTS

Project Directors

Dave Kirk, OCIO  
Bob Micielli, DNR

Project Manager

Carol Gravatt, DNR

Project Oversight

Debbie Kendall, OCIO

CTS Project Lead

Laura Parma, CTS

Financial Analysis Team

Zayne Elrod, CTS  
Larry Dzieza, OCIO

Business Requirements Gap Analysis Team

Over 50 people from the following 15 agencies participated in the review of the suite of products included in Office 365:

Department of Natural Resources	Liquor Control Board
Department of Labor and Industries	Department of Corrections
Department of Agriculture	Legislative Services
Department of Transportation	Department of Health
Department of Fish & Wildlife	Office of Financial Management, and OCIO
Department of Commerce	Department of Ecology
Department of Social and Health Services	Consolidated Technology Services
Department of Early Learning	

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## 3. BUSINESS CASE ANALYSIS

### 3.1. Overview

The business case analysis is based on a financial analysis and a requirements gap analysis, along with input from employee hands-on experience with Office 365, Gartner research and consultation, and Office 365 feedback from other states.

### 3.2. Objectives

The objectives are to:

- Develop a Business Case to determine the feasibility of implementing a cloud based email and collaboration solution for the State of Washington.
- Determine how a proposed service meets state requirements for email/messaging, collaboration, security, infrastructure integration, and desktop integration.
- Identify requirements gaps and develop proposed mitigation strategies.
- Perform a live evaluation of Office 365 in the cloud based test environment.
- Develop a preliminary operational model for the service.
- Determine the technology architecture and estimated costs with supporting state services and rates needed to acquire, integrate and operate a service that meets identified requirements.
- Determine agency migration efforts needed.

### 3.3. Alternatives Analysis

The business case analyzed two alternatives:

- Continue using the current Shared Email service.
- Adopt an all cloud-based Email Collaboration service using Office 365 and M86 Secure Email.

Other alternatives using hybrid computing models operate IT infrastructure and services both on premises and in the cloud. These alternatives provide additional flexibility but require extra costs and resources. Hybrid operation with the Symantec Vault on premises diminishes a user's experience and productivity.

### 3.4. Scope

The following are considered in scope for this business case:

- The scope of the Office 365 Service will include:
  - Cloud based software services:
    - Microsoft Exchange 2010 Online.
    - Microsoft SharePoint Online.
    - Microsoft Lync Online Instant Messaging.
    - Microsoft Office Web Apps ("Lite" online versions of Office software).
    - Secure Email from M86.
    - Microsoft Office Professional as it relates to the above services.
  - Tight integration with Microsoft Office Professional on the desktop.

- CTS services for ADFS, DirSync, Internet connectivity, and tenant management.
- The business case will analyze two alternatives as described in Section 3.3.
- The financial analysis in the business case will only include a comparison of the five components of the current on-premise shared email service (Exchange 2010, Secure Email from M86, Symantec Vault, inbound filtering, and outbound filtering) with Office 365/M86 Secure Email.
- The scope of agencies included in the analysis is as follows:
  - Agencies that are members of the Enterprise Active Directory (EAD)
  - DOT, LSC, LCB, WSP (each will run their own tenant and operate their own ADFS/DIR SYNC deployment)
  - Smaller agencies hosted by an agency above
 Other agencies are not included in the analysis
- The requirements for all components of the current shared email service are in scope.
- Requirements gap analysis and mitigation strategies.
- Microsoft Enterprise Agreement and Licensing model.
- Technology architecture (networks, security, cloud infrastructure, etc.) to operate a cloud based service.
- CTS costs for services and infrastructure to operate a cloud based service.
- Preliminary operational model with organization roles and responsibilities.

The following are out of scope for this business case:

- \* ADFS infrastructure and services project at CTS.
  - \* Enterprise Active Directory remediation in preparation for a cloud based solution.
  - Hybrid model running email/collaboration related components on premises.
  - Implementation phase to operate a cloud based service.
  - Fully defined governance model – to be defined in the implementation phase.
  - Agency SharePoint migration efforts – to be evaluated by agencies on a case by case basis.
  - Agency assessments and expenses for network bandwidth upgrades. These connections must be assessed on a case by case basis for each agency.
- \* Indicates out-of-scope projects on the critical path for this project.

### **3.5. Strategic Alignment**

The Office 365 service will directly support the following key goals for technology in Washington State.

- Innovate and deliver better services to make public interaction with state government more streamlined and responsive.
- Continually focus on making state business operations efficient, nimble, and frugal.
- Build and support credible, well-planned, trusted IT organizations that save money and make employees more productive.

Two action items in the state IT Technology Strategy drive this business case analysis:

- Action 3: Encourage adoption of public cloud platforms where appropriate.

- Action 4: Encourage adoption of Software-as-a-Service (SaaS) for applications purchased by state agencies where appropriate.

### **3.6. Assumptions**

This section contains the most defining assumptions used in the business case analysis. A complete set of assumptions can be found in Appendix B and in documents containing detailed analysis.

- Total costs were developed assuming that all of the agencies currently supported by shared services email will be converted to the cloud based offering.
- The scope of the Business Case Analysis is based upon Email and does not include SharePoint, Lync or WebApps. If these functions are deployed in a future deployment, additional network capacity both for agency networks and the Internet Bandwidth and Security Infrastructure capacity will need to be evaluated.
- The scope of the project charter articulates a cloud-based offering including the service provided by M86 today for secure email. Hybrid solutions are excluded.
- Agency network bandwidth requirements must be assessed prior to implementation to determine if additional capacity is required.
- In-scope agencies will have to plan for agency leads, communication activities, testing, planning and coordination with other agency activities.
- CTS will operate central infrastructure for agencies in the EAD that enable Office 365 operation.

### **3.7. Financial Analysis**

The financial analysis compares statewide and individual agency costs of the two stated alternatives over a five year period. Costs for the two alternatives are computed as follows:

- Shared Email Alternative - Assumes all in-scope agencies use this service and pay the published Shared Email rates and the assumed Vault Storage Costs. The sum of the costs to agencies becomes the cost of the alternative.
- Office 365 Alternative – Assumes all in-scope agencies use this service, paying Microsoft for identified expenses and sharing new costs incurred by CTS where applicable to enable Office 365 operation.

In the statewide summary analysis below, the Office 365 alternative will cost \$381,220 more over five years than to continue using the state's recently implemented Shared Email service. There is no statewide financial benefit to move to Office 365.

Draft Office 365 Business Case Analysis						
Statewide Summary Analysis						
As of October, 2012						
----- Shared Email Service -----						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Annual Mailbox Cost	\$ 4,051,038	\$ 4,051,038	\$ 4,051,038	\$ 4,051,038	\$ 4,051,038	\$ 20,255,189
Secure Email	\$ 323,660	\$ 323,660	\$ 323,660	\$ 323,660	\$ 323,660	\$ 1,618,299
Annual Vault Storage Cost	\$ 502,875	\$ 375,900	\$ 378,792	\$ 394,865	\$ 416,312	\$ 2,068,745
<b>Estimated Cost: Shared Email Alternative</b>	<b>\$ 4,877,573</b>	<b>\$ 4,750,598</b>	<b>\$ 4,753,489</b>	<b>\$ 4,769,563</b>	<b>\$ 4,791,009</b>	<b>\$ 23,942,233</b>
----- Office 365 -----						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Annual Office 365 S/W Licensing Change	\$ 541,408	\$ 1,774,516	\$ 2,297,258	\$ 2,366,883	\$ 2,359,539	\$ 9,339,605
Other Microsoft Expenses	\$ 885,537	\$ 885,537	\$ 885,537	\$ 885,537	\$ 885,537	\$ 4,427,684
CTS Services	\$ 2,011,391	\$ 2,011,391	\$ 2,011,391	\$ 2,011,391	\$ 2,011,391	\$ 10,056,954
DOT ADFS and Dir Sync	\$ 99,842	\$ 99,842	\$ 99,842	\$ 99,842	\$ 99,842	\$ 499,210
<b>Estimated Cost: Office 365 Alternative</b>	<b>\$ 3,538,178</b>	<b>\$ 4,771,286</b>	<b>\$ 5,294,028</b>	<b>\$ 5,363,653</b>	<b>\$ 5,356,309</b>	<b>\$ 24,323,453</b>
<b>Benefit or (Cost) of Office 365</b>	<b>\$ 1,339,395</b>	<b>\$ (20,688)</b>	<b>\$ (540,538)</b>	<b>\$ (594,090)</b>	<b>\$ (565,299)</b>	<b>\$ (381,220)</b>

For each agency, a summary and detailed analysis is available in a separate worksheet.

A decision to implement Office 365 would raise stranded investment cost and cash flow considerations to be addressed in an implementation phase:

- **Investment in the CTS Shared Email Service:** The existing shared email service was priced to recover its initial startup costs over a five-year period, at full implementation. Migrating to a new solution before the end of the five-year period would leave some of the initial investment unrecovered.

Assuming a 14-month migration period, CTS would continue to receive some revenue from customers as they migrated. Further, some of the infrastructure required to host the existing service would be re-purposed. Given assumed revenues and costs of re-purposed infrastructure, (in addition to those already incurred) CTS estimates that the unrecovered amount of the initial investment in the Exchange 2010 email service would total \$1.93 million.

- **Cash flow requirements:** The five-year costs incurred by CTS for implementation and support of Office 365 are \$13.9 million (excluding license costs), of which \$8.1 million are incurred within the first two years. This level of cash outlay cannot be sustained by CTS, so another funding mechanism would be necessary to support the investment in the transition to Office 365.

This analysis uses Microsoft data in current agency licensing arrangements, new pricing for Office 365, and costs incurred by CTS for Active Directory Federation, Directory Sync with Office 365, Tenant administration, network bandwidth increases for redundant Internet connections through separate ISPs, and project team expenses for an implementation phase.

The financial analysis is based only on the five components of shared email vs. the comparable functionality in Office 365 and M86 secure email. Costs to implement Lync, SharePoint and other Office 365 features are not included in the financial analysis, and the benefits are considered an added bonus.

The five year analysis does not include a Microsoft licensing price increase. At the time of this writing a cap on increases is under negotiation in a new Enterprise Agreement.

Implementing Office 365 would require the Department of Social and Health services and other agencies to upgrade network capacity at some work locations across the state. These agency specific upgrade costs are not included in the analysis.

The Shared Email cost estimate includes CTS projected vault storage costs that decrease as more agencies adopt the Vault and storage utilization grows. The projected monthly storage costs per GB in the financial model are \$1.55, \$.88, \$.70, \$.55, and \$.48 for years 1 - 5 respectively.

For other assumptions used in the financial analysis please refer to Section 3.4, Scope; Section 3.7, Assumptions; and Appendix B.

### **3.8. Requirements Gap Analysis**

A gap analysis was performed to determine if Office 365 could meet or exceed the state's requirements for Email and collaboration. The requirements came from two sources within the last year: the Shared Email service and new requirements established for components of Office 365. The gap analysis covered five categories and consisted of over 400 individual requirements. Five gap analysis teams from 15 agencies were each assigned one of the categories below:

- Exchange 2010 Online
- Online Archive and Search
- SharePoint Online
- Lync Online
- Office Web Apps

Each team rated the level of impact or importance of each requirement and determined whether Office 365 passed the applicable requirements, passed with an accepted mitigation as described in the report, or failed. Analysis results were based on evaluating the current production version of Office 365 from March through July, 2012. Office 365 passed requirements in four of the five categories and failed requirements for Archive and Search.

Microsoft could not provide an operational Archive/search environment for the team to evaluate all requirements, or supply an adequate amount of test data to satisfactorily evaluate search capabilities. However the team observed enough to determine that the current production version of Office 365 does not satisfy the state's critical records management requirements to accurately store, protect, search and retrieve email records. This gap in functionality would put the state at risk of failing to meet its public

disclosure and litigation requirements, increase the time and effort of public records disclosure, and create high risk of financial loss and loss of credibility with the public.

Several other large organizations adopting Office 365 are using third party archive solutions to mitigate this shortcoming. Here in Washington the current Shared Email service provides third party industry-leading archive and search capabilities that meet critical state records management requirements for email.

Microsoft announced a new 2013 version of Office 365 that offered the possibility of closing archive and search requirements gaps. However, Microsoft could not provision a 2013 preview environment in a timely manner, hindering the evaluation. From the new features team members were able to observe the new version will be a step in the right direction, but still will fall short in archive and search capability. Furthermore, Microsoft does not guarantee that preview environment features will carry through to the 2013 production version. This nullifies any 2013 version evaluation results.

The archive and search team could not recommend relying on the archive/search capabilities of Office 365 for high volume, high risk business functions like records management, public disclosure, litigation, and investigation support.

Department of Corrections staff on the archive and search team provided the following feedback, which summarized the position of other team members:

### **DOC Evaluation – Microsoft Office 365 Email Archiving** September 2012

The Department currently uses Symantec's "Discovery Accelerator" email archiving solution. The need to search email using industry standard case management technology is essential for the Department to effectively and efficiently meet its public disclosure and electronic records litigation requirements. Currently the Department handles or receives more than 4,400 public disclosure requests for electronic data per year, more than 750 lawsuits per year, and approximately 250 internal investigations per year. Most of these requests require the search of multiple email mailboxes per request. There are substantial penalties for failure to produce records in a timely and complete manner. For these reasons, the Department considers email archiving a critical information system to meet its public mandate, fiduciary responsibilities, and the expectation of the public.

Specifically, to meet industry standard professional case management requirements, the Department needs the following capabilities in its email archiving solution:

- A defined case must be able to search across multiple mailboxes and/or all Department mailboxes and retain the production in a single data repository.
- A single case must be able to contain multiple searches.
- The solution must be able to modify and refine searches once complete.

- The solution must be able to define roles and responsibilities in a manner that enforces the principle of least privilege to ensure case confidentiality.
- Email output must be in a format that can be shared outside of the Department.
- Be able to select mailboxes to be searched from an existing list of archived mailboxes.
- Full indexing of all mailboxes in the archive.
- Analysis of searches, to include highlighted search terms, and the ability to mark or tag search results for responsiveness.
- Place search results on legal hold so they cannot be deleted based on retention.
- Once an email is archived the general staff should not be able to delete those emails from the archive for litigation and compliance reasons.

Our review of the Microsoft solution revealed that the current Office 365 archiving system lacks most of the above requirements. The impact of using a product like Office 365 that does not meet the basic business need of the Department would be financially and politically significant. We would not be able to meet Public Disclosure deadlines and deadlines set by the courts. We would suffer financial loss and potentially lose credibility with the public.

We are aware that Microsoft is currently redesigning its email archiving and beta-testing a solution that may meet some or all of the Department's basic needs. However, the Department is concerned about abandoning a well-designed and time-proven system for a beta system or new adopter in the industry. When the re-designed Microsoft solution demonstrates that it meets our basic business needs and has been vetted in the industry for a lengthy period of time, we would be more likely to change our email archiving solution.

For the Department, the lack of an adequate existing email archiving solution and the lack of industry experience in the beta email archiving solution is a fatal flaw in moving email to Office 365 in the short term. We believe the move would take us from a solution with well-designed case management functions to a system that lacks capability or is at best untested in the business environment. For the preceding reason and the others noted above, DOC is concerned about moving our email solution to Office 365 until we have thoroughly implemented, tested and vetted these changes.

Another gap analysis team member added the following view. "Though our agency's public disclosure/e-discovery workload is quite small relative to DOC's, the same requirements and expectations apply. At this time, the email archiving/discovery components of Office 365, as presented, do not meet these requirements, and as you note, it remains unclear what features are to be included in the final production version due out early next year. Our agency is not interested in taking steps back in the arena of public disclosure and electronic discovery, therefore, today, we cannot support moving

from our current email archiving/discovery solution in favor of an untested, still-in-production option. We remain open to seeing what features are available in the final O365 archiving/discovery product. We must be clear, however, that following the presentations to date, O365 does not offer a product that rivals the established features of our current solution."

In categories where Office 365 passed requirements, gap analysis teams identified important ways Office 365 could improve information exchange and collaboration, teleworking and mobile workforce productivity, and provide better employee access to SharePoint documents from outside the State Government Network. Feedback from agency evaluators is summarized below:

- Each user receives 25 GB of storage in the user's primary mailbox.
- Conference rooms and resources do not require a user subscription license.
- The Office 365 subscription gives each user the ability to download up to five copies of Microsoft Office Professional on devices outside the organization.
- Office 365 provides the ability to see a person's availability from within the Office 365 products and easily communicate with them.
- Online meetings enable users to connect wherever they are through PC-based audio, video, and web conferencing, both as scheduled meetings and spontaneous, ad hoc collaboration sessions. Users can collaborate, share information, and coordinate their efforts in real time.
- Integration among services. Quickly check a colleague's calendar for availability, email and invitation and click the URL in the invite to start the meeting.
- The new co-authoring capabilities help people work on Office documents simultaneously with colleagues in different locations.
- Access, view, edit, and share Microsoft office files from almost any computer with an Internet connection. And, access and view PowerPoint, Word, and Excel content from a browser on mobile devices.
- Lync would replace video conferencing services for some users with no lost functionality.

Three time and resource consuming dependencies to implement Office 365 were surfaced by Microsoft and participating agencies in Solution Alignment Workshops:

- Replace public folders
- Resolve Enterprise Active Directory inconsistencies across agencies
- Upgrade agency Wide Area Network bandwidth where necessary

See Appendix A – Business Requirements Gap Analysis Report for the list of requirements that passed with mitigations or failed.

### **3.9. Conclusions**

The conclusions of the Office 365 business case analysis below are organized within the four key questions the state is using to evaluate Software as a Service.

By implementing Office 365 for email and collaboration can the state:

1. Reduce overall IT expenditures?

Adopting Office 365 now would:

- Cost \$381,220 more than the Shared Email service alternative in the statewide financial analysis.
- Leave \$1.9 Million in stranded costs unrecovered in Fund 419 for the initial investment in the Shared Email service.

2. Provide increased functionality and business value to employees?

Office 365 does not satisfy the state's critical records management requirements to accurately store, protect, search and retrieve email records. This gap in functionality would:

- put the state at risk of failing to meet its public disclosure and litigation requirements,
- increase the time and effort of public records disclosure,
- create high risk of financial loss and loss of credibility with the public.

Gap analysis team members were enthusiastic about the speed and convenience of Lync in Office 365 to exchange information and collaborate to produce results. Office 365 will bring valuable productivity improvements to employees, teams, and organizations, especially when members work in different locations, mobile conditions, or are teleworking.

3. Retain or improve the quality of service?

Office 365 is designed for high service reliability through data center site redundancy. The state's Internet connections to Office 365 are redundant with failover to multiple/different national network carriers.

4. Position the state to make better use of future technology innovations?

The state could capitalize on synergies between Office 365, mobile device support, client and cloud based software, and opportunities to deliver the same user experience on smart phones, tablets, and work stations.

Many large organizations are moving to cloud based Email to solve a problem with current email systems. They are replacing outdated platforms such as GroupWise or Lotus Notes, or are consolidating disparate email services that result in reliability problems, complexity, or higher cost. In contrast, the Washington's Shared Email service:

- Is less expensive than Office 365. Gartner gave an "impressive" cost effectiveness rating.
- Provides proven, industry leading Email, secure email, filtering, and archive /search
- Is operational with consolidation nearly complete: 46 agencies, 51,000 mailboxes
- Achieved Microsoft's "Outstanding" rating in a formal Risk and Health Assessment
- Provides the lowest risk, lowest resource impact alternative to the state.

### **3.10. Recommendations**

The business case recommendations are based on conclusions from the financial analysis, requirements gap analysis, employee hands-on experience with Office 365, Gartner research and consultation, and Office 365 feedback from other states.

1. The state should continue to use the Shared Email service
2. Finish migrating the remaining agencies to Exchange 2010 and the Symantec Vault.

Immediate Next steps:

1. Determine whether there is a business case to implement Lync online or on-premise to compliment the collaborative features of the Shared Email service.
2. Determine whether there is a business case to implement SharePoint on-line to reduce cost or improve productivity when using SharePoint sites and documents.

Longer term Next Steps:

3. To prepare for a future on-premise or cloud based email service agencies should:
  - a. Continue to eliminate public folders. Microsoft has announced shared folder end of life support and they aren't supported in Office 365.
  - b. Identify network bandwidth constraints and related expenses in agency networks
  - c. Resolve Enterprise Active Directory inconsistencies
4. CTS should continue to implement ADFS to enable new authentication options.

As with other large organizations, Washington may evaluate its email strategy again when these or other trigger events occur:

- Significant savings emerge from Office 365 or other cloud based email alternatives
- Online Archive/Search capabilities mature and are proven in the industry
- Significant upgrades or investments are required for the on-premise service

### **3.11. Preliminary Operational Model**

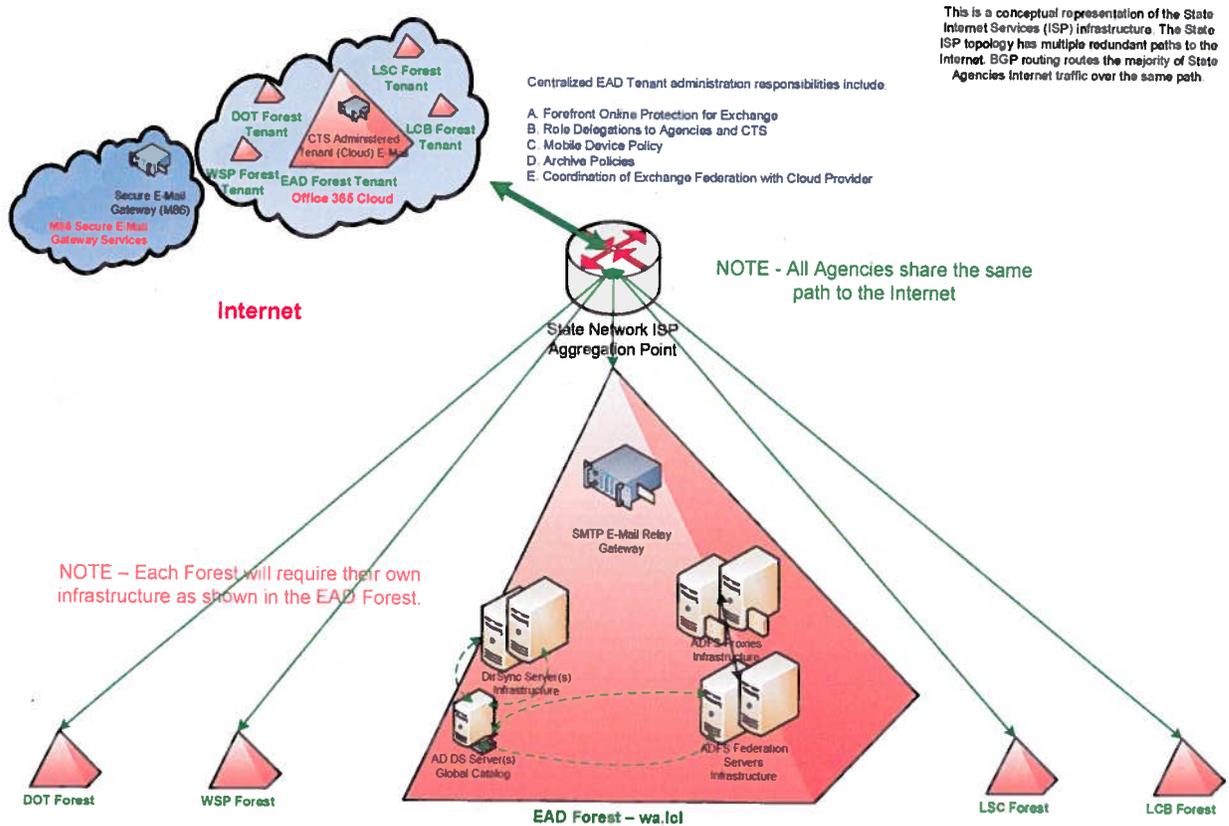
The business case is based upon a preliminary operational model. The preliminary operational model is based upon a number of base elements. They include:

- Agencies will require "same signon" from their LAN logon to reach a cloud based email offering. This is accomplished via Active Directory Federation Services (ADFS).
- Agencies will require the ability to synchronize their cloud and non-cloud directory information. This is accomplished via Directory Synchronization (DIR SYNC).
- CTS will be responsible for administration of a tenant in Office 365 that supports the agencies who are members of the Enterprise Active Directory (EAD). In this model, the current on premises delegated Exchange administration roles would be in effect in Office 365 for both CTS and for agencies. The CTS administration role for the Office 365 EAD Tenant will include:
  - EAD Tenant Exchange Management Role
  - EAD Tenant Filtering Administration via FOPE
  - EAD Tenant Licensing Administration
  - EAD Tenant Policy Management for Active Sync Policies

- EAD Tenant Policy Management for Archive
- When an agency deploys to Office 365, the agency provides Tier 1 support to their users. Agencies escalate Tier 2 calls in the following way:
  - Escalation to Microsoft for Tier 2 for Exchange, Archive, Active Sync, BlackBerry
  - Escalation to CTS for Tier 2 for ADFS and DIR SYNC

### 3.12. Technical Architecture

A Conceptual Design for Office 365 and ADFS is shown below.



#### Overview of Technology Architecture:

The design is based upon a 5 tenant model. Each tenant requires the required ADFS and DIR SYNC structures to meet agency requirements. The tenant managed by CTS would support those agencies who are members of the Enterprise Active Directory. The traffic to the cloud offering uses redundant Internet connections managed by CTS.

The diagram represents the shared and non-shared nature of State Infrastructure components necessary for the consumption of cloud services. Office 365 allows some roles to be

delegated within a tenant, while other roles can only be performed by the tenant owner (CTS, LSC, DOT, LCB, WSP).

### **IT Security Considerations**

Based on the high level IT Security information provided by Microsoft, the Office 365 cloud based infrastructure and email service itself appears to satisfy OCIO IT Security Standards.

However, this information has not been validated by the state in a security design review.

In general, Microsoft's Office 365 solution needs to address 3 main security domains: authentication, data storage security, and infrastructure security.

**Authentication:** At a high level, authentication control is maintained with the integration of ADFS and the state active directory. If agencies outside the State forest have an expectation/business need for authentication control that is different than what is provided with the default authentication functionality provided by Microsoft, further analysis would be needed.

**Data storage security:** Again, at a high level the Right's management server would enable the service offering to encrypt data for data at rest in office 365. Agencies that have a business need for encryption that is not met by the Right's management server would require further analysis against state specific use cases.

**Infrastructure Security:** In answers provided to Washington from Microsoft, Microsoft explains that they have implemented segmentation physically, logically and within the active directory infrastructure that resides at Microsoft to maintain the controls for the service and between tenants. Based on this high level response the solution would meet the state's requirements. A full security review has not been conducted to validate the information provided by Microsoft.

If the decision is made to implement Office 365, the state's corresponding on-premise infrastructure and Internet connection must undergo a security design review.

### **3.13. CTS Services & Costs**

CTS will need to stand up new service elements to meet the requirements of a cloud based email offering for EAD agencies. The elements of the new services include:

- ADFS
- DIR SYNC
- Tenant Administration for Office 365 EAD Tenant

CTS will also have to add infrastructure to meet the bandwidth increase needs for use of a cloud service including:

- Additional bandwidth for Internet Access to Office 365
- NOTE: Bandwidth considerations to support the migration are not sized. This will be based upon the finalization of the Migration Statement of Work from the vendor and assumed migration approach.

CTS is expected to manage and coordinate the assumed 14 month project to migrate EAD based agencies to Office 365.

CTS has included the additional costs to move ADFS and DIR SYNC to Production.

CTS has included additional costs from M86 to transition the connection from the current on premises shared email service to Office 365.

CTS will retain the SMTP Mail Relay service element.

### **3.14. Microsoft Licensing & Pricing**

In the financial analysis, the Microsoft licensing cost change shows the impact of adding Office 365 to an agency's existing software licensing agreement. It is not the cost of an Office 365 mailbox.

The cost change is the difference between what the agency is paying today and what they would pay with Office 365, divided by number of agency users.

Agencies will continue to manage their own licensing agreements and pay Microsoft directly.

Appendix C summarizes Microsoft software licensing when enrolling in Office 365. For additional information, agencies should contact their Microsoft representative.

### **3.15. Migration Effort**

Microsoft has proposed a Statement of Work to migrate EAD member agencies to Office 365. The assumed agency experience during a migration is:

- Planning conducted with the EAD agency implementation coordinators working with CTS lead.
- CTS Project Manager coordinating with the Microsoft vendor Project Manager as per Statement of Work.
- Day before migration – agency users are successfully using Email, Vault, Secure Email, Active Sync or BlackBerry device.
- Day after migration – agency users have:
  - Active Email in the cloud
  - Vaulted email moved to Archive in the cloud under agency retention policies
  - Secure email functioning for email outbound from government domains
  - Active sync device functioning synchronized to Office 365 with agency policies
  - BlackBerry device functioning synchronized to Office 365 with agency policies

Agency preparations for migration could include:

- Public Folder Mitigation
- Agency network bandwidth assessment and readiness
- Enterprise Active Directory remediation tasks
- Vault Migration

These and other agency unique tasks are not included in this statewide analysis.

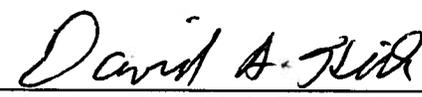
#### 4. APPROVALS

The undersigned approve this business case analysis:

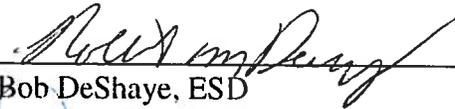
*Approved by Bharat Shyam Via Email on 10/30/12*  
Approved by: Bharat Shyam, Chief Information Officer  
OCIO Date

  
Approved by: Rob St. John, Executive Sponsor  
CTS Date *10/24/2012*

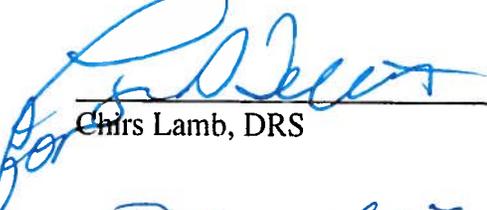
  
Approved by: Christy Ridout, Executive Sponsor  
CTS Chair, Email Steering Committee Date *10/24/2012*

  
Approved by: Dave Kirk, Project Director  
OCIO Date *10/30/2012*

The undersigned Cloud Based Email and Collaboration Service Steering Committee members approve this business case analysis.

  
Bob DeShaye, ESD  
Date 11/7/2012

  
Doug Hoffer, DOC  
Date 10/24/2012

  
Chris Lamb, DRS  
Date 11/24/2012

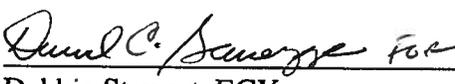
  
Sue Langen, DSHS  
Date 10/24/2012

  
Dave Marty, OIC PATRICK M. SHEA  
Date 11/6/2012

  
Melissa Rohwedder, DOL  
Date 11-6-2012

  
Ron Seymour, DFI  
Date 10/24/2012

  
David Sorrell, DOR  
Date 10/24/2012

  
Debbie Stewart, ECY  
Date 10/24/2012

DID NOT PARTICIPATE  
Gent Welsh, Mil  
Date

  
Gary Wilkinson, Comm  
Date 11/6/2012

## APPENDIX A: BUSINESS REQUIREMENTS GAP ANALYSIS REPORT

### Purpose

The business requirements gap analysis was performed as part of the project to develop a business case to determine the feasibility of adopting Microsoft Office 365 as an enterprise solution for the state of Washington. 15 agencies participated in the review of the suite of products included in Office 365. The purpose of the evaluation was to identify requirements and constraints of the products in a cross-agency environment, considering requirements of all Washington State Government agencies and to evaluate the functionality of those requirements. This was a functional evaluation and did not consider financial aspects which are addressed separately in the business case.

### Products Evaluated

The following Office 365 Products were evaluated:

- Exchange Online (including online archiving)
- SharePoint Online
- Lync Online
- Web Apps

### Derivation

- Evaluation criteria were determined using the following sources of information:
- Shared Services Email requirements
- Secure Email requirements
- Online Archiving requirements
- Microsoft Office 365 Service Descriptions
- Multi agency user feedback

### Contributing Agencies

Department of Natural Resources	Liquor Control Board
Department of Labor and Industries	Department of Corrections
Department of Agriculture	Legislative Service Center
Department of Transportation	Department of Health
Department of Fish & Wildlife	Office of Financial Management / OCIO
Department of Commerce	Department of Ecology
Department of Social and Health Services	Consolidated Technical Services
Department of Early Learning	

## Evaluation Lab

The evaluation lab was set up to assist in both the visualization and implementation of features to match the requirements for an Office 365 implementation. This included a multi-tenant design, complete with the proper federation technologies to bridge each tenant associated with the Office 365 tenancies. A single Office 365 tenant created a consolidated topology similar to the existing consolidated Exchange 2010 deployment for the Shared Services Email project. State agencies that were aligned with the CTS tenant included:

- CTS.wa.gov - Consolidated Technology Services
- OFM.wa.gov – Office of the CIO
- WDFW.wa.gov - Department of Fish & Wildlife
- LNI.wa.gov - Department of Labor and Industries
- COMMERCE.wa.gov - Department of Commerce
- DSHS.wa.gov - Department of Social and Health Services
- AGR.wa.gov – Department of Agriculture
- ECY.wa.gov – Department of Ecology
- DNR.wa.gov – Department of Natural Resources

The following separate tenants per agency created the autonomous requirements to align with criteria specific to a state agency. State agencies that were aligned with autonomous Office 365 tenants included:

- DOT.wa.gov – Department of Transportation
- LEG.wa.gov – Washington State Legislature
- LIQ.wa.gov – Washington State Liquor Control Board

Exchange Federated Delegation was established between all evaluation agency domains, to enable Office 365 features specific to free/busy and calendar sharing across both agencies and tenant boundaries. Shared namespace features, such as message tracking and cross-premises mailbox search were not possible.

Lync Federation was established between all evaluation agency domains, to enable Office 365 features for presence, chat and conferencing across both agencies and tenant boundaries. Tenant wide and agency wide administrative roles were implemented along with a SharePoint Online Site Collection. The site's organization provided agency, product evaluation team, and statewide levels.

Microsoft attempted in August and September 2012 to provide a preview environment of Office 365 2013 but it was not available until October 3, as the business case analysis was concluding.

## Office 365 Operating System and Software Requirements

**Table 1: Operating systems and browser combinations supported by Microsoft Office 365**

Operating system	Supported browsers
Windows 7 (32-bit)	Windows Internet Explorer 8 and later versions Firefox 3 and later versions Chrome 6 and later versions
Windows 7 (64-bit)	Internet Explorer 8 and later versions Firefox 3 and later versions Chrome 6 and later versions
Windows Vista with Service Pack 2 (32-bit)	Internet Explorer 7 and later versions Firefox 3 and later versions Chrome 6 and later versions
Windows Vista with Service Pack 2 (64-bit)	Internet Explorer 8 Internet Explorer 7 Firefox 5
Windows XP with Service Pack 3 (32-bit)	Internet Explorer 7 and later versions Firefox 3 and later versions Chrome 6 and later versions
Windows XP with Service Pack 2 (64-bit)	Internet Explorer 8 Internet Explorer 7 Firefox 5
Windows Server 2008 and Windows Server 2008 R2	Internet Explorer 8 and later versions Firefox 3 and later versions Chrome 6 and later versions
Mac OS X 10.5 or Mac OS X 10.6	Firefox 3 and later versions Safari 4 and later versions

**Table 2: Software supported by Microsoft Office 365**

Software	Supported Version
System software	Microsoft .NET Framework 3.0 (for Windows XP) Java client 1.4.2 (for Macintosh OS X)*
Office clients	Microsoft Office 2010 or Office 2007 Service Pack 2 Office 2008 for Mac and Microsoft Entourage® 2008 Web Services Edition Office 2011 for Mac and Outlook 2011 for Mac Microsoft Lync 2010 client .NET Framework 2.0 or later
Client applications	Office desktop set up
Browser software for Microsoft Online Services Portal	Internet Explorer 7 or later Mozilla Firefox 3.x Apple Safari 3.x
Browser software for Outlook Web App	Internet Explorer 7 or later Firefox 3 or later Safari 3 or later on Macintosh OS X 10.5 Chrome 3 and later versions Outlook Web App also has a "light" version that supports a reduced set of features across almost any browser

### Gap Analysis Results Summary:

Below is a summary of the most significant gaps found by the evaluation team. The first column (after item #) labeled Requirement if populated is from the Shared Services email project

requirements. If this column is blank, the gap is based on a limitation determined to be pertinent but not a requirement. The next column describes the gap in more detail and includes the evaluation team's recommended solution or mitigation for the gap. The last column includes the team's assessment of the potential impact of the gap based on their collective opinion. Documentation on the complete gap analysis is available upon request.

#	Requirement	Gap Description / Recommended Solution	Pass with Mitigation/Fail	Potential Impact
<b>Exchange Online</b>				
1	Support for public folders	<p><u>Gap Description</u> - Public folders are not supported in Office 365.</p> <p><u>Recommended Solution</u>- Shared mailboxes and document libraries are supported, offering same plus some additional functions. Third party tools are available to automate the migration to SharePoint. Additional analysis needs to be done to understand what purpose they serve, who uses the data and determine migration path.</p>	Pass	High
2	Ability to configure message size limits per agency within the parameters set by ETAG (30 MB Limit) which includes attachments	<p><u>Gap Description:</u> The message size limit for Exchange Online is 25 MB, including attachments. Messages larger than this limit will not be delivered, and the sender will receive a Non-Delivery Report (NDR).</p> <p><u>Recommended Solution:</u> Will need to adapt to the new limit. Administrators can create transport rules to limit the maximum size of any individual attachment. An email client may limit the size of an individual file attachment to a value less than the message size limit.</p>	Pass	Low
3	Ability to send bulk mail	<p><u>Gap Description:</u> Each Exchange Online mailbox can send messages to a maximum of 1,500 recipients per day. An email message can be addressed to a maximum of 500 recipients. These limits apply to emails sent within an organization as well as to messages delivered to external organizations. For the purposes of these limits, a distribution group that is stored in the GAL counts as one recipient. In a personal distribution group, each recipient is counted separately.</p> <p><u>Recommended Solution:</u> While users should try to adapt to the limit, Microsoft states that exceptions may be made on a case by case basis. The limit is intended to discourage users from sending unsolicited bulk messages. Agencies should consider other sources such as listserv to send these types of messages.</p>	Pass	Low

4		<p><u>Gap Description:</u> Users have a message rate limit of 30 messages per minute. If a user submits messages at a faster rate, Exchange Online will deliver the messages but will queue the messages at the server and throttle the rate of delivery.</p> <p><u>Recommended Solution:</u> Evaluation team members felt that agencies could live with this. Since Microsoft says this is configurable, there is a possibility that exceptions could be made on a case by case basis.</p>	Pass	Low
5		<p><u>Gap Description:</u> Deleted item recovery is set to 14 days. Currently agencies can configure this.</p> <p><u>Recommended Solution:</u> Evaluation team members felt that agencies could live with this.</p>	Pass	Low
6		<p><u>Gap Description:</u> Deleted mailbox recovery is set to 30 days. Currently agencies can configure this.</p> <p><u>Recommended Solution:</u> Evaluation team members felt that agencies could live with this.</p>	Pass	Low
7	Ability to prevent a record from being deleted	<p><u>Gap Description:</u> The current version of Office 365 allows users to delete or modify records that have been placed in retention archive.</p> <p><u>Recommended Solution:</u> There is not an acceptable mitigation for this requirement. Agencies are required to comply with state statutes regarding archiving.</p>	Fail	High
8	Ability to place individual records on legal hold	<p><u>Gap Description:</u> The current version of Office 365 does not provide the ability to place individual records on legal hold.</p> <p><u>Recommended Solution:</u> The option of putting the whole mailbox on legal hold was not determined to be a workable solution for the state.</p>	Fail	High
9	Ability to search records in a timely manner	<p><u>Gap Description:</u> Microsoft could not provide a complete operational Archive/search environment for evaluation, or supply enough test data to satisfactorily evaluate search capabilities. The team observed enough to determine that the current version of Office 365 falls short in providing the ability to search records in a timely</p>	Inconclusive Recommend Fail	High

		<p>manner. The preview archive/search environment for the 2013 version was six weeks late, severely curtailing an evaluation. While some gaps might close in the preview environment, Microsoft could not guarantee that features in the preview environment would promote to the 2013 production version, or behave the same.</p> <p><u>Recommended Solution:</u> The evaluation team determined that timely searches for public disclosure requests were essential for many agencies, especially the larger ones that have thousands of requests. The team found that a lack of an adequate existing email archiving solution and the lack of industry experience in the preview email archiving solution is a fatal flaw in moving email to Office 365 in the short term. The team could not recommend relying on the archive/search capabilities of Office 365 for high volume, high risk business functions like records management, public disclosure, litigation, and investigation support. Please refer to section 3.17, for more evaluator comments. No acceptable mitigations. Impact is determined to be High.</p>		
<p><b>Lync Online</b> (The following gaps or shortcomings were not developed by comparing Lync with pre-defined requirements, but rather were identified as possible limitations with an instant messaging solution when observing Lync or reviewing documentation.)</p>				
10		<p><u>Gap Description:</u> Lync Online supports a maximum meeting capacity of 250 users.</p> <p><u>Recommended Solution:</u> Use other conferencing products when needing to include more than 250 users.</p>	Pass	Low
11		<p><u>Gap Description:</u> Lync online does not provide the ability to make or receive phone calls from land lines or cell phones. This feature is only available using Lync On Premise.</p> <p><u>Recommended Solution:</u> If an agency requires this functionality, Lync On Premise should be considered.</p>	Pass	Low
12		<p><u>Gap Description:</u> Lync instant messaging is not supported on blackberry devices at this time. Blackberry has its own messaging client.</p> <p><u>Recommended Solution:</u> There is no workaround for</p>	Pass	Low

		this. Lync messaging is supported on other mobile devices including, android, iphone, ipad and windows mobile devices.		
<b>Web Apps</b> (The Web Apps product is a full fidelity viewing and light editing version of the Microsoft Office Suite. The following are examples of functionality that is not provided.)				
13	Use of macros is not supported in Excel	Web Apps will not load any file type containing script, such as VBA. VBA is commonly used by power excel users.	Pass	Low
14	Web Apps use by non-Office 365 users	Unlike Google Docs where users can share and set permissions to anyone without Google account to view or edit the document, Office Web App requires users must have an Office 365 account.	Pass	Low
15	Web Apps Co-Authoring	Excel and OneNote co-authoring is only available in the browser. For Word and PowerPoint, co-authoring is only available in the desktop version.	Pass	Low
16	Web Apps Document Printing	Users can only print from the Word application in Web Apps. For other documents in Office Web Apps, users must switch to Microsoft Office and print to any available printer. Web apps are intended for use for light editing only.	Pass	Low

### Summary of added functionality

#	Functionality	Comments
1	Unlimited personal archive	Each user receives 25 GB of storage in the user's primary mailbox. The maximum size of the primary mailbox is 25 GB. The user also receives unlimited storage in the user's personal archive . Administrators can use Remote PowerShell to reduce maximum mailbox sizes for some or all of their users.
2	Free conference rooms and resource mailboxes	Conference rooms and resources do not require a user subscription license. The mailbox quota for conference rooms and resources is 250 MB.
3	Five user subscription licenses to Office Professional.	The Office 365 subscription gives each user the ability to download up to five copies of Microsoft Office Professional on devices outside the organization.
4	Lync Online - Presence	Office 365 provides the ability to see a person's availability from within the Office 365 products and easily communicate with them.
5	Lync Online meeting	Online meetings enable users to connect wherever they are through PC-

		based audio, video, and web conferencing, both as scheduled meetings and spontaneous, ad hoc collaboration sessions. Users can collaborate, share information, and coordinate their efforts in real time.
6	Use Lync to collaborate within SharePoint sites	Lync Online serves as the presence engine for SharePoint team sites and portals, providing presence and IM access from within SharePoint sites.
7	Use Lync to communicate with other organizations	Communicate with other organizations who can use Lync attendee which provides instant messaging functionality (but not audio, video or desktop sharing).
8	SharePoint online provides the ability to collaborate and share documents from any browser	The new co-authoring capabilities help people work simultaneously with colleagues on Office documents.
9	Using SharePoint online Web Apps provides increased productivity when you are outside the office	Access, view, edit, and share Microsoft office files from almost any computer with an Internet connection. And, access and view PowerPoint, Word, and Excel content from a browser on mobile devices.
10	Ability to search both "live" and "archived" data within a single tool.	
11	Ability, to search SharePoint and Exchange data within a single tool.	

## APPENDIX B: BUSINESS CASE ASSUMPTIONS

The following assumptions were made in developing the business case:

1. The scope of agencies included in the analysis is as follows:
  - Agencies that are members of the Enterprise Active Directory (EAD)
  - DOT, LSC, LCB, WSP (each will be their own tenant, require their own ADFS/DIR SYNC deployment)Other agencies are not included in the analysis.
2. Total costs were developed assuming that all of the agencies currently supported by shared services email will be converted to the cloud based offering.
3. The existing EAD Service providing support to multiple state agencies will form one “tenant”
4. DOT, LCB, LSC and WSP will each form a separate “tenant”
5. Each tenant will require ADFS, DIR SYNC infrastructure to provide federation and single sign on services to the cloud offering.
6. CTS will provide the cost input to the financial model for the ADFS and DIR SYNC “new service elements” for the EAD member agencies. It is assumed to be highly available and have DR support plan.
7. DOT, LCB, LSC and WSP will provide the cost input to the financial model for their respective ADFS and DIR SYNC functions. It is assumed that individual tenant environments would also provide DR.
8. In the current state of WA implementations, there is no single unified Global Access List (GAL). There is also no plan to include a single unified GAL as part of the cloud offering.
9. The scope of the Business Case Analysis is based upon Email and does NOT include SharePoint, Lync or WebApps. If these functions are deployed in a future deployment, additional network capacity both for agency networks and the Internet Bandwidth and Security Infrastructure capacity will need to be evaluated.
10. The scope of the project charter articulates a cloud-based offering including the service provided by M86 today for encrypted external email.
11. The scope of the cloud-based offering and M86 provided encrypted external email will have encrypted email support to all mailboxes in the EAD.
12. Inbound and outbound filtering is provided in the cloud-based email by FOPE.
13. Filtering will be administered by each tenant.
14. Mobile devices used in conjunction with cloud-based email offering will be Active Sync and can also be BlackBerry, connected to the BlackBerry service part of the license for the cloud.
15. Costs for migration of 15TB of compressed Vault data to the cloud-based email are included in the Business Case Analysis and in the vendor implementation Statement of Work.

16. Bandwidth requirements for Email traffic on agency networks must be assessed and determined if additional capacity is required. If required, could have additional financial impact to the Business Case analysis. This will include implications for agencies currently using tools like WAN accelerators with constrained agency networks. Impacts to agencies include DSHS, DOC and potentially other agencies that currently use these types of technologies. Vendor documented that WAN accelerators are not supported.
17. Agency AD pre-requisite activities and/or remediation activities and costs have not specifically been included in the business case analysis for in-scope agencies. These may have personnel and financial impacts to agencies not included in the analysis.
18. Vendor will provide pre-migration support and pre-migration documentation to enable successful migrations of email and vaulted email, remote devices, filtering, encrypted email. Assumed to be part of vendor implementation statement of work.
19. Each Agency will provide Tier 1 support to consumers of the cloud-based offering. Agencies will escalate to cloud-provider for Tier 2 support. Agency help desks for EAD member agencies, will escalate Tier 2 issues for ADFS and DIR SYNC to CTS Service Desk.
20. No additional infrastructure is required to enable mailbox migrations from state to cloud-based email offering. Based upon discussion with Microsoft 5/17/12, the ability to onboard and offboard mailboxes between on-prem and the cloud does require that CTS existing CAS/HUB servers be converted to "Exchange Hybrid". It also requires the ADFS and DirSync infrastructure.
21. Assumption for network and security infrastructure impacts is: Agency use of cloud-based email will be 95% outlook client based and 5% OWA based use.
22. Agencies may need to retain their agency premiere support agreements with Microsoft. Agencies will need to review those expectations with the vendor.
23. Include one-time migration costs for email, vault content, filtering, mail relay, mobile devices. This is assumed to be part of vendor Statement of Work for implementation.
24. In-scope agencies will have to plan for agency leads, communication activities, testing, planning, coordination with other agency activities
25. Agencies will need to perform Security Design Review prior to deployment as per OCIO Security Standards
26. During the migration of vaulted data, state employees would still have access to their data during business hours.
27. SMTP Mail relay function is not provided in the cloud-based email offering. A state provided, on prem solution will need to be retained. CTS will continue to require filtering to support this and other traffic as well.
28. Assuming shared email boxes are supported in the cloud-based email offering
29. Assuming function currently available to users in public folders will be delivered in a different way in the cloud-based email offering

30. Assuming a mixed mode of cached configuration and on-line configurations will be supported in the cloud to allow for use of shared mailboxes
31. Assuming no additional infrastructure required for migration including additional network bandwidth, etc.

### **Financial Assumptions**

32. Costs for the two alternatives are computed as follows:
  - Shared Email Alternative - Assumes for analysis purposes that all in-scope agencies will use this service, and will and pay the published Shared Email rates and the assumed Vault Storage Costs. The sum of the costs to agencies becomes the cost of the alternative.
  - Office 365 Alternative – Assumes all in-scope agencies use this service, paying Microsoft for identified expenses and sharing new costs incurred by CTS to enable Office 365 operation.
33. This financial analysis was designed to support a go/no go business decision by comparing costs at the agency and statewide levels, with non-recurring costs spread over five years. For implementation a separate tool would be required for annual cash flow planning and budgeting.

Additional assumptions and statements defining the financial analysis can be found in Section 3.4, Scope; Section 3.7, Assumptions; and in Section 3.8, Financial Analysis.

Financial Analysis Worksheet – Listed below are the definitions of the rows in the financial analysis worksheet and the assumptions used in calculations. The final version of the business case will include a link to an online version of the financial analysis worksheet.

#### Shared Email Alternative

34. The assumed email retention period for the analysis is five years.
35. # Shared Email users (Exclude Resource Mbxs) = # Shared Email users (w Resource Mbxs) / 1.2. The number of resources mailboxes is 20% of user count.
36. # Shared Email users (w Resource Mbxs) = Count per agency from CTS July 2012 Billing. For in-scope agencies not in the Shared Email Service, this number is the DES headcount x 1.2.
37. Annual Vault Storage in GB = An initial .3GB/user, compounded 3.5% growth per month for the first 2 years, leveling off at 2% monthly compounded growth afterwards. This trend is based on average actual historical data on Vault storage for users in the Vault as of this writing.
38. Vault Storage Cost per GB = This is based on a CTS-adopted cost methodology that projects costs per GB for the assumed amounts of storage in this financial analysis, using the assume five year retention period.

39. Legacy agency applications not compatible with Exchange 2010 in the Shared Email Service or O365 may require application integration - an on-premise implementation of a back version of Exchange. These costs are not included in the 5 year financial analysis.

#### Office 365 Alternative

40. O-365 Monthly S/W Licensing Change per User= A figure provided by Microsoft based on the difference between the costs of the agency's current licensing and Office 365 licensing. This figure includes the reseller margin and DES brokerage fee. For agencies without an Enterprise Agreement, the cost to bring licensing up to date and enroll in Office 365 is \$12.23 per user per month. Please refer to Appendix C, Microsoft Software Licensing for Office 365, or the agency Microsoft representative.
41. Microsoft's User Count = a Microsoft established user count based on March DES agency head count data, or a number mutually established by the agency and Microsoft.
42. MSFT Annual Inactive Mailbox Cost in Archive = Note as of 10/10/2012: Per Steve Finney Email, this rate has been changed to \$0/user/month. Previous assumption: \$1.85/ mo. x the number of agency separated employees, with a five year retention period. The number of agency separated employees = 10% annual staff turnover, which is a statewide average accumulated over the five year analysis period. Agencies with higher than average turnover rates should figure accordingly. A separating employee's active mailbox is closed and the user license can be assigned to another employee. The separated employee's archived email shifts to an inactive mailbox at the \$1.85/mo rate for the applicable retention period.
43. MSFT Implementation Annual Cost per Statement of Work (SOW) = The \$2.45M cost of the Microsoft Statement of Work to help CTS migrate EAD agencies and WSP to Office 365. This includes Email and 15TB of compressed Vault data. This amount is allocated to agencies based on their portion of the total user count, spread over five years. Other non EAD agencies in scope, DOT, LSC and LCB, will obtain their own SOW with Microsoft, which are estimated at \$400,000, \$85,000, and \$85,000 respectively.
44. MSFT Premier Support for Office 365 = \$560,000 for each of years one and two for help in migrating to the new service. This amount is allocated to all in-scope agencies based on their portion of the state user count, spread over five years.
45. CTS: Dirsync and ADFS = The annual costs for CTS to establish and operate these two services. The recurring costs are shared according to user count between the agencies in the Office 365 tenant managed by CTS. This includes agencies in the current shared Email service and other in-scope agencies in the EAD. DOT, WSP, LCB, and LSC will operate their own ADFS and Dirsync.

46. CTS: Secure Email = the \$.56 per user per month charge for using M86 secure email, which is assumed to be used by all agencies in scope.
47. CTS: Internet Access Upgrade = The costs CTS incurs, shared by all agencies in scope according to user count, to increase the bandwidth of redundant Internet connections from the state to Microsoft Office 365. CTS used a Microsoft network bandwidth calculator to estimate these costs.
48. CTS: Office 365 Service Support = The CTS costs for staff and infrastructure to establish and administer the tenant in Office 365, shared by all agencies included in the CTS managed tenant according to user count. The staffing model was developed with input from Microsoft and was validated by Gartner. DOT, WSP, LCB, and LSC will operate their own tenant, similar to their practice today.
49. CTS: Project Implementation = The cost CTS incurs for the Office 365 project implementation team, shared by agencies in the CTS managed tenant, according to agency user count. The cost is spread over the five year analysis period. DOT, WSP, LCB, and LSC will run their own implementation projects and may share them with small agencies they host. These costs have not been estimated or included.
50. CTS: SMTP Relay = Recurring and non-recurring costs incurred by CTS to operate this service for bulk email distribution, shared by all agencies in scope according to user count.
51. CTS: M86 Transition = the Cost M86 will bill CTS to reconfigure the M86 Secure Email service to receive state email from Office 365 rather than from the CTS on-premise service, shared by all agencies in the CTS managed tenant according to user count.

Agencies in and out of Scope

52. Agencies in and out of scope of the financial analysis are listed below. The following key explains the codes in the table regarding scope:

- In: The agency is in scope and is in the CTS Shared Service.
- In, No SS = The agency is in scope but not currently in the CTS Shared Service.
- In, No SS, No EAD = The agency is in scope, but not in the CTS Shared Service or the Enterprise Active Directory.

Agency	Agencies in / out of Office 365 Scope
<b>Consolidated Technology Services</b>	In
<b>Department of Corrections</b>	In
<b>Department of Enterprise Services</b>	In
<b>Department of Licensing</b>	In

<b>Department of Revenue</b>	In
<b>Department of Social &amp; Health Services</b>	In
<b>Dept of Ecology</b>	In
<b>Dept of Financial Institutions</b>	In
<b>Dept of Fish &amp; Wildlife</b>	In
<b>Dept of Retirement Systems</b>	In
<b>Econ and Revenue Forecast coun</b>	In
<b>Employment Security Department</b>	In
<b>Office of Financial Management</b>	In
<b>Utilities &amp; Transportation</b>	In
<b>Wa. St. Health Care Authority</b>	In
<b>Washington State Department of Agriculture</b>	In
<b>Washington State Dept of Labor &amp; Industries</b>	In
<b>Washington State Dept of Veterans Affairs</b>	In
<b>Archaeology and Historic Pres</b>	In
<b>Board for Volunteer Firefighter</b>	In
<b>Caseload Forecast Council</b>	In
<b>Com Asian-Pacific Amer Affairs</b>	In
<b>Department of Early Learning</b>	In
<b>Department of Services for the Blind</b>	In
<b>DSHS Wa. St. Health Care Authority</b>	In
<b>Environmental &amp; Land Use Heari</b>	In
<b>Gov. Office of Indian Affairs</b>	In
<b>Human Rights Commission</b>	In
<b>Leoff Plan 2 Retirement Board</b>	In
<b>Military Department</b>	In
<b>Ofc of Minority &amp; Women's Bus</b>	In
<b>Off of Administrative Hearings</b>	In
<b>Office of Civil Legal Aid</b>	In
<b>Office of State Treasurer</b>	In
<b>Office of the Governor</b>	In
<b>Recreation and Conservation Fu</b>	In
<b>State Board of Accountancy</b>	In
<b>State Conservation Commission</b>	In
<b>State Investment Board</b>	In
<b>State Lottery Commission</b>	In
<b>Transportation Improvement Bd.</b>	In
<b>WA Citizen's comm on salaries</b>	In
<b>WA Fire Commissioners Association</b>	In

<b>Wa St Comm African-American Af</b>	In
<b>WA St Comm on Hispanic Affairs</b>	In
<b>WA State School Director's Association</b>	In
<b>Wa Traffic Safety Commission</b>	In
<b>Department of Natural Resources</b>	In, No SS
<b>Dept of Commerce</b>	In, No SS
<b>Dept of Health</b>	In, no SS
<b>Off of Insurance Commissioner</b>	In, No SS
<b>State Parks &amp; Recreation Comm</b>	In, No SS
<b>Washington State Office of the Attorney General</b>	In, No SS
<b>Washington State Department of Transportation</b>	In, No SS, No EAD
<b>Board of Pilotage Commissioner</b>	In, No SS, No EAD
<b>Freight Mobility Strategic Inv</b>	In, No SS, No EAD
<b>Transportation Commission</b>	In, No SS, No EAD
<b>Washington State Liquor Control Board</b>	In, No SS, No EAD
<b>Washington State Patrol</b>	In, No SS, No EAD
<b>Legislative Service Center</b>	In, No SS, No EAD
<b>House of Representatives</b>	In, No SS, No EAD
<b>Joint Leg Audit and review Com</b>	In, No SS, No EAD
<b>Joint Leg Systems Committee</b>	In, No SS, No EAD
<b>Joint Transportation Comm</b>	In, No SS, No EAD
<b>Leg Eval &amp; Account Prog Comm</b>	In, No SS, No EAD
<b>Office of State Actuary</b>	In, No SS, No EAD
<b>Office of Legislative Support Services</b>	In, No SS, No EAD
<b>Office of the Lieutenant Gov</b>	In, No SS, No EAD
<b>Redistricting Commission</b>	In, No SS, No EAD
<b>State Senate</b>	In, No SS, No EAD
<b>Statute Law Committee</b>	In, No SS, No EAD
<b>Office of the Secretary of State</b>	Out
<b>Public Disclosure Commission</b>	Out
<b>Public Employment Relations Co</b>	Out
<b>Puget Sound Partnership</b>	Out
<b>State School for the Blind</b>	Out
<b>Supt. of Public Instruction</b>	Out
<b>Tobacco Settlement Authority</b>	Out
<b>WA ECON DEV FINANCE AUTH</b>	Out
<b>WA Horse Racing Commission</b>	Out
<b>WA Pollution Liab Ins Program</b>	Out

<b>WA State Housing Finance comm</b>	Out
<b>Washington State Arts Comm.</b>	Out
<b>Washington State Auditor's Office</b>	Out
<b>Washington State Gambling Comm</b>	Out
<b>Washington State Historical Society</b>	Out
<b>Work Force Train &amp; Ed. Cor Bd.</b>	Out

Costs in the financial analysis

53. Summary Microsoft and CTS costs for Office 365 implementation and ongoing support are listed in the table below.

<b>Item</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>5-Year Total</b>
<b>Directory Synchronization</b>	190,796	163,353	162,276	162,276	162,276	840,976
<b>ADFS</b>	128,922	101,479	100,401	100,401	100,401	531,605
<b>Secure Email</b>	156,000	334,000	336,000	336,000	336,000	1,498,000
<b>Internet Access Upgrade</b>	225,120	225,120	225,120	225,120	225,120	1,125,600
<b>O-365 Service Support</b>	470,512	1,007,378	1,013,410	1,013,410	1,013,410	4,518,120
<b>Project Implementation</b>	711,896	80,619	-	-	-	792,515
<b>MS Statement of Work</b>	2,107,242	348,575				2,455,817
<b>MS Premier Support</b>	560,000	560,000				1,120,000
<b>SMTP Relay</b>	77,110	77,110	77,110	77,110	77,110	385,552
<b>M86 Transition</b>	111,999	12,000				123,999
<b>Subtotal</b>	<b>4,739,597</b>	<b>2,909,634</b>	<b>1,914,318</b>	<b>1,914,318</b>	<b>1,914,318</b>	<b>13,392,184</b>
<b>Contingency at 10%</b>	<b>473,960</b>	<b>48,494</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>522,454</b>
<b>Total</b>	<b>5,213,557</b>	<b>2,958,128</b>	<b>1,914,318</b>	<b>1,914,318</b>	<b>1,914,318</b>	<b>13,914,638</b>

## APPENDIX C: MICROSOFT SOFTWARE LICENSING FOR OFFICE 365

Office 365 Licensing Changes		
<i>Office 365 Plan E3 is a Microsoft product for a suite of hosted technologies, including Office, SharePoint, Lync, and Exchange. This is a listing of licensing changes and similarities to the Department's current Microsoft Enterprise Agreement (EA).</i>		
	<b>Current EA</b>	<b>Office 365</b>
Individual department enrollments	x	x
<i>Each department will maintain administration and product mix of their current EA.</i>		
Anniversary Date	x	x
<i>Anniversary dates will remain as they are today. Those agreements in their last year will be extended one year to ensure at least one payment is made under their current agreement terms.</i>		
True-up	x	x
<i>The true-up process will remain on an annual basis as it is today.</i>		
Products involved:		
<i>There will be three items listed on the EA, Office 365, Windows OS, and the Bridge CAL suite. User counts and device counts can be different.</i>		
Office	x	x
	Stand alone	Stand alone
Windows OS		
Windows CAL	x	Bridge CAL
	Core and eCAL	x
Exchange Std CAL		
Exchange Ent CAL	eCAL	x
	Core and eCAL	x
Lync Std		
Lync Ent	eCAL	x
	Core and eCAL	x
SharePoint Std		
SharePoint Ent	eCAL	x
	Core and eCAL	Bridge CAL
System Center Configuration Mgr		
System Center desktop suite	eCAL	Bridge CAL
	Core and eCAL	Bridge CAL
Forefront desktop A/V		
Forefront Security Suite	eCAL	Bridge CAL
Rights Mgmt	eCAL	Bridge CAL

Counts	User or Device	
	Device	User
<i>Office</i>	Device	User
<i>Windows OS remains as device counts.</i>	Device	Device
<i>Bridge CAL</i>	Either	Either
Additional products on EA (SQL, Visio, etc)	x	x
On premise license	x	x
<i>Office 365 will allow for both on-premise and hosted Enterprise functionality for SharePoint, Exchange, and Lync.</i>		
Software Assurance Benefits	x	
<i>SA benefits will still be provided for on-premise license purchases, such as Windows and SQL Servers.</i>		
<b>Payment</b>		
Organizations with anniversaries before December 31st, 2012 will have their first adjustment in FY' 2014. Those with anniversaries after January 1st, will have their adjustment in FY '13.		

**From:** Shyam, Bharat (OCIO)

**Sent:** Tuesday, October 30, 2012 10:37 AM

**To:** Kirk, Dave (OCIO); Ridout, Christy (CTS); St. John, Rob (CTS)

**Subject:** RE: Email Approval for O365 Business Case

I approve the o365 business case. We should keep email in the shared email service through the next biennium and revisit this in 2014-15.