Legislative Council Staff
Nonpartisan Services for Colorado's Legislature

Memorandum

September 29, 2023

TO: Executive Committee of the Legislative Council

FROM: Manish Jani, Deputy Director, 303.866.5844

SUBJECT: Enterprise Email System

Summary

Decision Requested. On October 4, staff will be asking for the Executive Committee to decide whether the state should provide a cloud based enterprise email system for legislators and staff.

Reasons. Some of the reasons for requesting this change include:

- obsolescence of current email system and non-standard email architecture for legislators;
- reliability issues related to delivery, availability and performance;
- enhanced functionality;
- cybersecurity and fraud; and
- accessibility.

Product Options. Staff have evaluated the following cloud based enterprise products:

- Google Workspace Enterprise plus; and
- Microsoft 365 E3.

Both options are viable for the Colorado legislature. Microsoft is the more popular option among state legislatures due to existing legacy

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Microsoft systems. However, Google would facilitate better collaboration with Colorado's executive branch. In addition, the legislature could potentially benefit from the executive branch's significantly large Google footprint in the areas of new features, technical support, and cost.

Timeline. Should the Executive Committee approve moving forward with a new system, a phased transition for legislators and staff would be initiated on July 1, 2024. To meet this transition start date, stakeholder input, product evaluation and selection, vendor negotiations, contract execution, and implementation planning will commence starting in October, 2023. More information about this process starts on page 3.

Preliminary Estimated Costs. Preliminary cost estimates to provide a cloud-based enterprise email system to legislators and staff range from $304,110 to $463,360 and 0.5 FTE in the current FY 2023-24, and from $340,390 to $459,460 and 1.0 FTE in FY 2024-25, based on preliminary information received from Google and Microsoft. This includes the cost of an ongoing email administrator in LIS's system administration team and *very preliminary* estimates from Google and Microsoft. These estimates from Google and Microsoft could increase or decrease relative to those shown here, depending on final negotiations and actual requirements. More information is available on pages 6 through 8.

Background

In March 2023, the Joint Technology Committee (JTC) asked Legislative Information Services (LIS) to investigate the feasibility and cost of providing an enterprise email platform to legislators and present their findings to them on March 31.

As part of LIS's preparation for that presentation, staff requested direction from the Executive Committee about providing an enterprise email platform in a memorandum dated March 22, 2023 and titled "State-Provided Enterprise Email for Legislators." The Executive Committee asked LIS to conduct further research about a new email system for both legislators and staff and report back to them later in the year. LIS updated the JTC on the Executive Committee's decision later that month.

This memorandum summarizes the results of this research; the timeline for the decision making and, if applicable, implementation process; reasons to change to an enterprise email system; legal considerations specific to Colorado; and evaluation criteria for selecting a new email vendor. The contents of this memorandum were presented to the Legislative Management Team on September 14, 2023.

Timeline

On **October 4**, LIS will be asking for the Executive Committee's direction on whether the state should provide a cloud based enterprise email system for legislators and staff. In particular, staff is asking leadership to choose among four options:

1) No change;
2) Approve an enterprise email system for staff only;
3) Approve an enterprise email system for legislators only; or
4) Approve an enterprise email system for legislators and staff.

Staff respectfully recommends option 4, approving an enterprise email system for legislators and staff. Should the Executive Committee approve moving forward with a new system, a timeline for implementation that works backward from a July 1, 2024 implementation date will occur, as follows:

1) **Month of October.**
   a. **Stakeholder input.** LIS will convene a test group of volunteer users to provide feedback about the Google and Microsoft systems. In addition to key members and staff, this would also include feedback from security, accessibility, and system administration teams.
   b. **Initial cost negotiations with vendors.** This would identify initial setup costs, ongoing account licensing and maintenance costs, the need for additional FTE to manage the system, and an implementation timeline.
2) **October 23: Joint Technology Committee meeting**. LIS is scheduled to update the JTC on this topic on October 23. LIS plans to ask the JTC to recommend either Google or Microsoft to the Executive Committee. While staff usually makes specific vendor decisions, LIS is requesting a decision in this case because of the large impact this change will have on users.
3) **November and December: Final decision by the Executive Committee** on a vendor, including approving any required resources for FY 2023-24 either as a cash fund expense or a supplemental appropriation.
4) **January through June 2024: Preparation and initial implementation.** This includes final contract execution, the legislative process for requested appropriations, the initial setup and implementation, and communication with users.
5) **July 1, 2024**: Date on which the new email system will **go live**. Employee and member email accounts will be transitioned to the new system in small groups from July onwards.

Should a longer implementation timeline be desired, staff recommends waiting until July 1, 2025 to implement the new email system. Because of the significant technical and security difficulties related to the current email architecture for legislators, this delay is not recommended by LIS.

Current Email Architecture

The current on-premises email system for the legislature serves all email addresses ending in @coleg.gov (or all emails for the @coleg.gov domain). These include mailboxes for staff, legislators and shared email addresses such as for committees, ballot initiatives, business functions, among others.

Staff. Emails sent to email addresses ending in @coleg.gov for staff are routed to their respective mailboxes in the on-premises email system and are accessed directly from that system by staff.

Legislators. The official state email address is merely a pass-through address for legislators. Emails sent to legislators are immediately forwarded to the legislator's non-state provided external email address, after being processed by the General Assembly's email security system. Emails sent by legislators are sent directly from their external email address and do not interact with the legislative branch's infrastructure or email security system, unless that email is sent to legislative staff.

Reasons to Change

The biggest reason to change from the existing HCL Domino email system to a cloud-based enterprise email system is that the existing system is steadily becoming obsolete and, for legislators, operates in way that is increasingly recognized as a security threat by the email systems used by most of the rest of the world. This has resulted in a steady deterioration in the ability to ensure that inbound email is reliably delivered to legislators' inboxes. In addition, the likelihood that legislators who label their outgoing email with the @coleg.gov domain will not be able to ensure that their outgoing email will be delivered reliability is also steadily increasing. Eventually, standard cybersecurity protocol will cease to allow the delivery of email that uses the current email architecture for legislators at all, rendering the @coleg.gov email address unusable for members.

The current system's growing obsolescence is already affecting the legislature's ability to get expert technical help to support our email system, integrate with other systems, and incorporate new functionality. Further, the HCL Domino email system does not meet accessibility standards that are required by law beginning in July 2024, with no plans by HCL to address it.

The remainder of this section lists some primary reasons to change to a cloud-based email system starting with reasons that will affect both legislators and staff, followed by reasons that are specific to legislator email.

For Legislators and Staff:

Collaboration. The lack of integration with other systems makes it harder to collaborate with external workgroups and limits the use of internal collaboration within the email system, such as online meeting and chat tools and calendar compatibility.

Accessibility. The existing email system is not compliant with Colorado's new digital accessibility standards, with no clear roadmap for product improvement.

Improved performance, resiliency, and functionality. Cloud-based email systems are more resilient than on-premises systems, offering greater service availability and functional performance that will adjust with improvements in technology over time.

The current on-premises email system cannot compete with the more modern cloud based email systems because it lacks features and functionality that are standard with newer cloud-based systems. Because the email system is outdated, it is unlikely to gain these features in the future. Older technology perpetuates the impression of government being behind the times in terms of innovation and technology. Dissatisfaction with technology and tools has been attributed as a cause for staff attrition.

Improved access to third party tools. A shrinking market share leads to fewer third party tools that integrate with the current email system, limiting the ability to provide more functionality to our users. For example, one cannot create Zoom meetings directly from the email system. Further, as organizations move to newer email systems, there are fewer vendors and experts in the labor market who support this email system.

For Legislators:

To address problems created by non-standard architecture. Because the current email forwarding mechanism in place for legislators is not a typical implementation of email architecture within the industry, it is increasingly not trusted by standard cybersecurity protocol. This creates unpredictable issues in terms of reliable email delivery, security, and compliance requirements.

The non-standard architecture creates delivery issues leading to inbound emails not reaching legislators as email service providers keep tightening the security requirements. As this trend continues, personal email accounts external to the state system as currently maintained by legislators are less likely to accept forwarded emails. As mass emails and spam gets forwarded

from our on-premises email system, it impacts the reputation of the coleg.gov domain as perceived by the email providers used by legislators. Additionally, for legislators who have their personal email accounts set up to send outbound email as their official coleg.gov email address, these emails may be considered as spoofing by recipient mail systems.

Cybersecurity and fraud. Currently, not all emails sent or received by legislators for legislative purposes are contained within the legislative enterprise system or protected by the state's email security system. According to Proofpoint, over 90 percent of all security breaches occur via email. According to Verizon, business email compromises cost organizations more than $12.5 billion between 2013 and 2018. Security breaches can lead to loss of sensitive data, operational functionality, and reputation. Personal email accounts typically offer very limited to no security oversight compared with enterprise email systems.

Technical support. Member email accounts are typically free personal email accounts and considered non-enterprise. Usually such email accounts are not covered under a guaranteed Service Level Agreement (SLA) and may not receive the level of technical support that would be available from a paid enterprise Google or Microsoft email system.

Branding. Member email addresses advertised as non @coleg.gov email addresses and emails received by constituents or stakeholders with such email addresses may not be taken as seriously and may be considered to be spam.

Legal Considerations

There are some other important items to take into consideration when contemplating whether to offer state-provided email accounts to legislators. They include:

- the use of state resources for campaign purposes;
- data ownership and portability; and
- responding to Colorado Open Records Act (CORA) requests;

LCS has requested help from the OLLS in clarifying these areas of concern.

Cost Estimates

As shown in Table 1, preliminary cost estimates range from $304,110 to $463,360 and 0.5 FTE in the current FY 2023-24, and from $340,390 to $459,460 and 1.0 FTE in FY 2024-25, based on preliminary information received from Google and Microsoft. This includes the cost of an ongoing email administrator in LIS's system administration team and *very preliminary* estimates from Google and Microsoft. These estimates from Google and Microsoft could increase or decrease relative to those shown here, depending on final negotiations and actual requirements.

FTE. The new email system will create an additional administrative burden for the network system administration team. LCS respectfully requests 1.0 FTE for a new email administrator that would be hired by January, 2024 with a base salary of up to $100,000. LIS will also experience increased workload to integrate the new email system into existing applications and systems. These costs can be absorbed within existing appropriations.

Vendor costs. Both Google and Microsoft would require a one-time setup fee largely driven by the number of accounts that would need to be migrated from existing email systems, and annual license fees based on the number of email accounts/users. In addition, Google and Microsoft have provided preliminary quotes of $245 and $380 per user, respectively, for the first year. Because license fees are paid annually, the full cost for the first year is expected to be borne during the current FY 2023-24.

Google provided a preliminary quote of $37,425 for one-time setup and migration fees and a $245 license fee per user (or per email address). The estimate for the setup fee may be higher than quoted, depending on how many members wish to have their data migrated from their existing email accounts. This quote is for *Google Workspace Enterprise Plus*, which is the suite of products purchased by the executive branch. This includes Gmail and Google Calendar, Docs, Sheets, Slides, Drive, Meet, Chat and more. Over time, the legislature may choose to replace Zoom, Box, and Okta with Google products, although this is not recommended in the short run.

Microsoft provided a preliminary quote of between $68,000 and $88,000 for one-time setup and migration fees and a $380 license fee per user (or email address). The quote is for the Microsoft *365 E3 enterprise bundle*, which is a mid-level choice that includes Outlook, OneNote, SharePoint, OneDrive, Teams, Word, Excel, and PowerPoint. This cost will likely decrease somewhat during final negotiations, since it does not reflect the fact that the legislative branch already pays a total of $50,980 per year on license fees for Microsoft's operating system and productivity suite of Word, Excel, PowerPoint and more. Over time, the legislature may also choose to replace Zoom, Box, and Okta with Microsoft products, although this is not recommended in the short run.

License fee assumptions. License fee costs in Table 1 assume a total of 805 users in FY 2023-24, comprised of 105 for legislators, 100 for districts, 400 for staff, and 200 for other entities, such as committees or staff groups (e.g. "lcs.ga@coleg.gov"). In FY 2024-25, the assumed total will temporarily increase to 840 to accommodate the need for additional member email addresses between the 2024 election and the 2024 session. A five percent increase in license fees is also assumed. It is worth noting that other states and Gartner have reported significant increases in annual license fees from Microsoft over time, while Google's costs tend to increase at a more moderate pace.

Costs do not reflect savings from no longer using HCL for email, since the legislature will continue to use HCL applications and will not incur significant savings.

Table 1
Preliminary Estimated Costs of Implementing
Cloud-Based Enterprise Email for Legislators and Staff
License and setup fees are preliminary estimates based on current information and
could increase or decrease depending on negotiations with vendors and final requirements.

FY 2023-24, Current Year

Cost Components	Google	Microsoft
Legislative Council Staff		
Personal Services – Email Administrator	$56,510	$56,510
Operating expenses for FTE	$7,950	$7,950
Email system licenses[1]	$197,225	$305,900
One-time setup and migration fee	$37,425	$68,000 to $88,000
Subtotal – Legislative Council Staff	**$299,110**	**$438,360 to $458,360**
PERA AED and SAED	**$5,000**	**$5,000**
Total FY 2023-24 Cost	**$304,110**	**$443,360 to $463,360**
Total FY 2023-24 FTE	**0.5 FTE**	**0.5 FTE**

FY 2024-25, Budget Year

Cost Components	Google	Microsoft
Legislative Council Staff		
Personal Services – Email Administrator	$113,020	$113,020
Operating expenses for FTE	$1,280	$1,280
Email system licenses[1]	$216,090	$335,160
Subtotal – Legislative Council Staff	**$330,390**	**$449,460**
PERA AED and SAED	**$10,000**	**$10,000**
Total FY 2024-25 Cost	**$340.390**	**$459.460**
Total FY 2024-25 FTE	**1.0 FTE**	**1.0 FTE**

[1] FY 2023-24 license fees assume 805 users, including 140 for members, 100 for districts, 400 for staff, and 200 addition accounts for committees and miscellaneous groups. For FY 2024-25, costs assume an additional 35 users to accommodate additional members following the 2024 election, and a five percent increase in license fees is also assumed.

Email System Selection

Google and Microsoft are the two main solution providers in this space. There are a multiple of factors used to decide which service provider and which specific product edition of Google Workspace and Microsoft 365 to choose. While both of these solutions exceed our requirements for our immediate need of an email system replacement, a minimum implementation of either of these solutions would offer services categorized under the following:

- sending emails;
- managing calendars;
- creating documents, spreadsheets and presentations;
- video conferencing;
- file management; and
- team collaboration.

There are other services beyond these that would either be provided as a bundled offering or would need to be procured additionally as needed.

Product evaluation criteria. LIS is evaluating the Google and Microsoft products based on a number of different criteria, which are listed below. Current information about these evaluations, including expert opinions and feedback from stakeholders, other state legislatures, and Colorado state agencies, are explained in more detail below.

In addition to cost, criteria upon which each product is evaluated include:

- stakeholder feedback and appetite for change;
- the experience of other state legislatures;
- industry expert opinions;
- functionality affecting the user experience, including:
    - collaboration tools and functionality;
    - the availability of compatible tools from third party companies;
    - mobile capabilities;
    - accessibility compliance;
    - security features; and
    - ease of collaboration with other state agencies;

- the vendor's customer service profile, including:
  - service availability and service-level agreements (minimal to no service outages and the quality and speed of the vendor's response to outages);
  - the quality of technical support, including response rate and depth of access within the vendor's technical support team, along with the vendor's commitment to us and the product line we purchase;
  - vendor reporting transparency (the quality of reporting and access to application data; usage statistics, service outages, the location of the servers where the data are housed, and other information); and
  - the vendor's change management process for communicating new features and updates to users;
- technical criteria, including:
  - the quality of the vendor's technology and compatibility with existing legislative branch systems; and
  - the ease of data migration from the existing to the new email system; and
- legal criteria, including contracting and licensing, and regulatory compliance.

Stakeholder Feedback and Appetite for Change

Stakeholder feedback will be a key factor in the decision, since moving to Google Workspace can be a significant change for both end users and LIS, most of whom are probably more accustomed to working with Microsoft products. A willingness to accept or embrace change will be factored into the decision.

Other State Legislatures

LIS asked NCSL for a list of which state legislatures currently use Microsoft and Google. Most state legislatures are using Microsoft 365, including but not limited to Alaska, Alabama, the Florida House, the Hawaii House, Iowa, Maine, Maryland, Michigan, Montana, North Dakota, the New York Senate, Ohio, the Oklahoma Senate, South Dakota, Utah, Vermont, the Virginia House, the Virginia DLAS (central IT Office), Washington, West Virginia and Wyoming. NCSL indicated that these states enjoyed the compatibility between the Microsoft email system infrastructure and software and that many used Microsoft because it was also used by executive branch agencies.

NCSL did not identify any state legislatures who are currently using Google Workspace.

Industry Expert Opinions

LIS has consulted with Gartner's research and expert analysts. While Gartner provides a wealth of information on how to evaluate and, once selected, implement a solution, the analysts LIS spoke with offered differing perspectives on which vendor is better, depending on individual circumstances. Gartner's opinions on Microsoft, Google, and a third option known as "best in breed" are summarized below.

Microsoft. Microsoft is the most popular option among large enterprises and government. Some analysts consider Microsoft to have a better long term vision than Google. Microsoft provides an extensive set of features that add to functionality, but also add to administrative burden and licensing cost. Many organizations choose Microsoft because they are already using Microsoft on-premises solutions.

Google. Some analysts claim Google has a better security model. It costs less and has a smaller administrative burden than Microsoft. It is popular with smaller enterprises, especially with technology startup companies. It offers better collaboration tools than Microsoft. Younger employees are familiar with Google because they used it in school and in their personal life. Google Workspace supports both Google and Microsoft document formats. However, the Microsoft platform does not support Google document formats.

Best in breed. The "best in breed" model recommends purchasing only basic email, calendaring, and chat services from Google or Microsoft, while continuing to purchase other services from "best in breed" vendors such as Zoom for video conferencing and Box for online file management.

The User Experience

The user experience is affected by the availability of collaboration tools from the vendor and third parties, mobile capabilities, accessibility compliance, security features, and the ease of collaboration with other state agencies. Each of these is described in more detail below.

Collaboration tools and functionality. There are many differences between the feature sets offered by Microsoft and Google. Both do the basics well. In general, Microsoft offers deeper functionality across more areas than Google. Conversely, Google offers a simpler experience. The following bullets highlight baseline differences between the features of the two products.

- Personal productivity tools — Google has an edge if an organization's priority is simplicity. However, those looking for deeper functionality tend to lean toward Microsoft. Certain detailed features present in Microsoft Word and Excel are missing in their Google counterparts.

- Document formats — Microsoft largely defines the format standard for documents, spreadsheets and presentations. Google has been improving its support for Microsoft formats in its tools, but some level of incompatibility remains, especially with macros and complex documents and spreadsheets. Because Google's platform accommodates Microsoft tools, this may not be an issue.
- File management and sharing services — Google Drive offers good file management and sharing capabilities and Google Sites can deliver straightforward intranets very quickly. However, Microsoft SharePoint has far more features along these lines. SharePoint is also more complicated to implement and needs dedicated resources.
- Video conferencing — Google Meet offers easy-to-use conferencing capabilities. It does not offer some specific functionality that is offered by Microsoft Teams, which is a more specialized tool built for business communications.
- Portal, integration and application development — In most cases, this area is not a dominant driver when choosing between the two vendors, especially since the legislature does not use either of the technology platforms for application development but may do so in the future. Both products offer an array of low code user application development and third party integration potions. The capabilities and development models supported by the two products are very different, however.
- Offline support — Google and Microsoft both support offline modes. Offline support for mobile devices is largely comparable for both products.

The availability of compatible tools from third party companies. Both vendors are attracting third parties to their respective platforms, in the form of applications and professional services. Neither vendor has an absolute advantage here.

Mobile capabilities. Both Microsoft and Google support a range of devices and also offer support for mobile device management. They realize the importance of iOS support and offer their respective platforms for both the iPhone and iPad. In fact, both support the Apple iOS better than they do each other's Windows and Android platforms, especially on tablets.

Accessibility compliance. Following the passage of HB21-1110, Colorado state entities are required to make all digital products and services compliant to OIT's accessibility standards. As a result, both vendors will have to ensure they are in compliance with these standards. OIT's Technology Accessibility Program (TAP) team has been working closely with Google to ensure compliance. Microsoft products would have to be in compliance for other state entities that currently use Microsoft 365. It should be noted that the disabled community strongly prefers the accessibility features in Google vs. Microsoft.

Security features. Both vendors take security seriously. Microsoft provides additional security tools as part of their bundled offerings or add-ons while Google includes most of their security tools as part of their bundle. Microsoft has higher visibility in terms of malicious attacks, and there have been some general concerns expressed by security experts pleading for Microsoft to do more in this area. Both vendors synchronize well with our existing security features, including a robust identity management infrastructure that would accommodate our needs.

Ease of collaboration with other state agencies. Since OIT provides Google Workspace to all executive branch agencies, the use of Google Workspace by the legislative branch would greatly improve the collaboration with other state agencies. Other branches of Colorado state government, such as the Department of Law, State and the Public Defender's office, all use Microsoft 365.

Customer Service Profile

Factors affecting the vendor's customer service profile include service availability, technical support, reporting transparency, and change management processes. Each of these are described in more detail below.

Service availability and service-level agreements. Service availability (a.k.a. "uptime") and specifications for availability in service-level agreements that would guarantee minimal to no service outages and a guaranteed response rate to any outages that do occur, are important. Both vendors are typically fulfilling the contracted 99.9% uptime for multiple workloads. Occasionally, outages occur that get widespread press attention, but if uptime is examined over longer time periods, there are no substantial differences. Minor differences favor Google, but Microsoft continues to work on closing the gap.

Both vendors offer similar service-level agreements for uptime, recovery objectives and recovery speed, as well as compensation for missing the criteria in the agreements. One noticeable difference is that Google does not exclude scheduled downtime from its commitments, while Microsoft does.

Technical support. The quality of technical support, including response rate and the depth of access within the vendor's technical support team, along with the vendor's commitment to us and the product line, is important. Both vendors include 24/7 phone support as part of the base cloud service and offer enhanced support at an additional cost.

There are several ways to evaluate vendor commitment. While both Microsoft and Google are committed to their respective product lines, some differences remain. Google derives only a fraction of its revenue from Workspace, whereas Microsoft 365 and Office 365 make up a

significant portion of Microsoft's revenue. The likelihood of either vendor walking away from this business is extremely low.

Vendor reporting transparency. The two vendors have different approaches to what information they provide to customers. The information LIS requires to be provided would include:

- depth of information on outages (duration, cause, scale);
- known problems (both fixed and existing);
- application data (for example, with email, the ability to track messages based on sender, recipient, subject, date and message ID, attachment size, total transit time and delivery status);
- mailbox size, quota usage and trending;
- last logon dates and activity;
- delegates and mailbox permissions;
- mobile device and sync statistics;
- retention policy compliance; and
- evaluators may ask the vendors for sample copies of reports.

Change management process. A steady stream of functionality changes is inherent in the cloud model. Indeed, the lack of periodic, large, disruptive upgrades in favor of a constant drip-feed of new features is one of the main benefits of cloud platforms. Factors to be evaluated when assessing their change management strategies include the:

- frequency of change (from both an administrator and end-user perspective);
- ability to control the pace of change or test changes before full deployment;
- mechanism for communicating changes;
- clarity of the communication; and
- timeliness of change notification.

Both Google and Microsoft have a clear and simple process for communicating changes through their respective Workspace Release Calendar and Microsoft 365 Roadmap.

Some differences related to the ability to control the pace of change. Microsoft's optional Targeted Release Program provides earlier access to major updates before the standard release. Google's ability to control is more dependent on its scheduled release track, which gives information technology teams extra time after the initial release date.

Technical Criteria

Quality of technology and compatibility with existing legislative branch systems.
Considering the legislature has neither products as part of its core technologies (not withstanding Microsoft Office), this is a neutral evaluation for us. Both vendors have high quality technology that can be accommodated with existing legislative branch systems. However, from a system administration perspective, Microsoft is the preferred choice because our current expertise is centered on Microsoft infrastructure.

Data migration. Both vendors offer data migration tools into their respective services, and there are third-party migration tools and services available for both platforms. The effort to move email data from IBM Notes/Domino is similar for both vendors. Google also offers tools for migrating away from its service. Microsoft does not provide a specific tool, but a variety of export methods.

Legal Criteria

Contacting and licensing. Google and Microsoft use different language for contract details around indemnification and liability. We would request sample contracts for our legal attorneys for guidance on whether or not contract details should have a material impact on vendor selection. Unwillingness to include or amend specific items may lead to deal failure.

Other contract details where differences may be material are termination and exit clauses, price rise caps, data privacy, and contract complexity, duration, and renewal rights.

In general, contracting and licensing for Google is much more straightforward, with less room for negotiation. Microsoft licensing policies are notoriously labyrinthine, partly because they must accommodate a much larger slate of products and cover more complex deployment and upgrade situations. Enterprises with fewer than 3,000 seats appear more likely than average to be leaning toward Google, mostly due to the ease of licensing, pricing and administration.

Considering OIT uses Google Workspace while the Department of Law and State use Microsoft M365, both vendors have existing contracts with Colorado state entities and therefore would meet the required contractual terms and conditions to do business with the State.

Regulatory compliance. CGA is generally not subject to external regulations that would impact the selection process. Vendor differences do exist in terms of their ability to support specific regulations such as CJIS, FEDRAMP, PCI, FTI, among others.

Data storage location. The location of data storage is of importance to an organization due to concerns about regulatory compliance, legal jurisdiction, reputation, security and privacy. Data location can also affect network performance. This would include all related data, including

backups, disaster recovery and metadata With a few exceptions, Microsoft shares with its Office 365 customers the location where their data is stored to at least a regional level. Google generally does not divulge which data centers run Workspace and how data is distributed among them. Considering there are existing implementations of both vendors with state agencies with much more stringent compliance requirements than the CGA, this is not considered a critical concern.