



Endpoint Management & Security with Microsoft

What is the true cost of “free”?

By Sedulo Group in partnership with BlackBerry



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Introduction

This whitepaper presents an analysis of the total cost of ownership (TCO) associated with Microsoft Intune & Defender for Endpoint, a cloud-based device management and security solution. The study challenges the common perception that these products are a cost-effective solution by uncovering hidden costs and factors that can contribute to a higher TCO than what is typically advertised by Microsoft. This is often overlooked by customers already utilizing Microsoft products to support their organization.

The paper delves into the various components of Intune and Defender for Endpoint's TCO, including licensing fees, implementation and integration costs, ongoing management and maintenance expenses, and the impact on IT resources and productivity. Through research and case studies, the whitepaper demonstrates that the true TCO can be significantly higher than the initial licensing costs, often leading to unexpected financial burdens for organizations.

Furthermore, the paper explores the potential limitations and drawbacks of Intune and Defender for Endpoint, such as compatibility issues, integration challenges, and the need for additional 3rd-party tools or services to address specific organizational requirements, which can lead to gaps in operability, security, and resilience. These factors are shown to contribute to operational risk, increasing the overall TCO and ultimately undermining the perceived cost-effectiveness of these solutions.

The findings presented in this whitepaper aim to provide IT decision-makers and business leaders with a more comprehensive understanding of the financial implications of adopting Microsoft infrastructure. By highlighting the hidden costs and potential pitfalls, organizations can make more informed decisions and explore alternative device management solutions that provide better cybersecurity architecture and savings when coupled with Microsoft.



Executive Summary

When reviewing licensing costs, implementation costs and potential 3rd-party costs to support a more robust security architecture, findings are contrary to Microsoft's claims that Intune and Defender for endpoint will lead to a lower TCO for organizations. In fact, speaking with several customers of these products and reviewing their financials, the majority saw a negative impact on TCO.

It is likely that organizations already entrenched within the Microsoft ecosystem purchase these solutions to fill in gaps within their architecture and capture savings from bundling services together without doing a full, robust review of what will actually be needed.

Over 3 years, most customers that we interviewed saw losses between licensing costs and implementation costs to the expected benefits. Ranging from \$7,000 in benefit over 3 years at best, to \$750,000 in losses, \$2,000,000 in losses, and capping at \$14,400,000 in losses between the four firms interviewed.

Key Findings:

- Microsoft's security package of Intune + Defender for Endpoint Security has gaps that typically need to be filled with additional 3rd-party tools (such as an Endpoint Security product).
- IT decision-makers need to be prepared before renewing their cybersecurity tools with a full review of the gaps in their current architecture to confirm what 3rd-party services they need in addition to Microsoft for a full-service security suite.
- Utilizing higher tiers of a Microsoft license (E5 vs E3) is typically done for access to a better feature-set for the security suite. The rise in these subscription rates can outweigh the benefit of purchasing 3rd-party products that can reduce the license need of Microsoft, negating the benefit of bundling Microsoft products.
- Carefully evaluate the true TCO of Intune and explore alternative solutions that may better align with their budgetary constraints, as bundling Microsoft products may not be the best option.



3 of 4 firms

saw a negative TCO by relying fully on Microsoft's Security Suite



Up to **\$14.4M** in losses over 3 years



3rd Party Tools are needed to fill gaps in Intune + Defender for Endpoint Security



Research Approach

The research team interviewed cybersecurity leaders across government and commercial organizations within the United States. Interview participants included manager and director-level employees responsible for cybersecurity operations, decision-making, budgeting, and reporting.

Primary research conducted with Microsoft Security was based on an MDM/UEM/Endpoint Security project for a mid-market consulting firm of approximately 3,000 endpoints: 1,500 workstations split evenly between Windows and macOS and 1,500 mobile devices split evenly between Android and iOS.

Platform Overview

MICROSOFT INTUNE

Microsoft Intune is a popular choice among Enterprise customers already heavily invested in the Microsoft ecosystem. This deep integration drives higher adoption rates, especially in organizations seeking to consolidate vendors and achieve licensing economies of scale.

Intune's customer base spans industries and geographies; however, the solution is not as attractive for government customers as it is not Federal Information Processing Standards (FIPS) compliant. Microsoft Tunnel, the VPN gateway solution for Microsoft Intune, is also not FIPS compliant, which limits the utility of Intune in a government or regulated environment. This requires procuring a separate FIPS-compliant VPN, such as those offered by Cisco, Zscaler, OpenVPN, and Workspace ONE.

MICROSOFT DEFENDER FOR ENDPOINT

Microsoft Defender for Endpoint is widely recognized by industry analysts and users alike for its comprehensive protection capabilities, integration within the Microsoft ecosystem, and advanced security features.

Leadership in Industry Analyses

Microsoft Defender for Endpoint is frequently positioned as a leader in industry analyses and reports. For example, Gartner has recognized it in their Magic Quadrant for Endpoint Protection Platforms, highlighting its completeness of vision and ability to execute. Such recognitions



reflect its effectiveness in detecting and responding to threats, as well as its innovation in endpoint security.

Integration and Ecosystem Compatibility

One of the more appealing features of Defender for Endpoint is its seamless integration with other Microsoft products and services, such as Microsoft 365, Azure Active Directory, and Microsoft Intune. This integration enhances its appeal to organizations heavily invested in the Microsoft ecosystem, offering streamlined security management and threat intelligence sharing across services.

Advanced Threat Protection and Response Capabilities

Defender for Endpoint offers a wide range of threat protection capabilities, including next-gen protection, endpoint detection and response (EDR), automated investigation and remediation, and vulnerability management. However, these features are not very highly rated among 3rd-party rating vendors such as The Tolly Group.¹

Wide Platform Support

While originally focused on Windows, Defender for Endpoint has expanded its support to include macOS, Linux, Android, and iOS platforms. This cross-platform capability is increasingly important as organizations manage diverse device environments; however, it's noted that Defender for Endpoint legacy support is lacking (missing Windows Server 2003/2008/2008 R2, Windows XP / Vista, and Catalina 10.15 and Big Sur 11 for macOS)

Licensing and Subscription

The licensing and subscription costs associated with Microsoft Intune and Defender for Endpoint are often underestimated and can contribute significantly to the total cost of ownership (TCO) for organizations.

Microsoft Intune is licensed on a per-user or per-device basis, with different pricing tiers and feature sets. While the base licensing fees may appear reasonable, the true TCO can quickly escalate when factoring in the need for additional licenses to cover all devices and users within an organization.

The pricing model for Intune can be complex, with potential for unexpected cost increases due to changes in licensing requirements or the addition of new features. Organizations may find themselves needing to purchase higher-tier licenses or add-ons to access critical functionality, further driving up the TCO.



¹ BlackBerry CylanceENDPOINT Resource Efficiency and Efficacy vs. Microsoft, Sophos, and Trellix <https://www.tolly.com/publications/detail/223114>

Similarly, Microsoft Defender for Endpoint, which is often bundled with Intune, also carries its own licensing costs. The pricing for Defender for Endpoint is based on the number of protected endpoints, and organizations may need to purchase additional licenses as their device count grows.

The licensing and subscription costs for both Intune and Defender for Endpoint can quickly add up, especially for larger organizations with a diverse device ecosystem and a growing user base. This can result in a TCO that is significantly higher than the initial estimates provided by Microsoft.

Microsoft Intune Licensing Scheme

On March 2023, Microsoft introduced changes to the Intune licensing model. As of April 2024, Intune's user-based licensing options, priced at Manufacturer's Suggested Retail Price (MSRP), are as follows:

- Microsoft Intune Plan 1: \$8 per user/month as a standalone license.
- Microsoft Intune Plan 2: \$4 per user/month, available as an add-on to Plan 1.
- Microsoft Intune Suite: \$10 per user/month, serves as an add-on to Plan 1 and encompasses all features in Plan 2.

Intune Plan 1, provides foundational features previously included with an Intune license:

- Cross-platform endpoint management.
- Built-in endpoint security.
- Mobile Application Management (MAM).
- Mobile Device Management (MDM).
- Note: Microsoft Configuration Manager is not part of M365 Business Premium.
- Plan 1 is bundled with the following plans:
- Microsoft 365 E3/E5, F1/F3, Business Premium.
- Enterprise Mobility + Security E3/E5.

Intune Plan 2, an optional addition to Plan 1, introduces:

- Intune Tunnel for MAM - Extends Microsoft Tunnel VPN Gateway support for non-enrolled Android or iOS devices.
- Management of Specialty Devices - Enhances management for devices like AR/VR headsets, conference rooms, and large smart screen devices.
- While Plan 2 adds features, the Intune Suite might be more appealing for customers seeking a more comprehensive offering as Plan 2 doesn't provide a lot of extra features.
- Endpoint Privilege Management (EPM) - Enables users to perform elevated tasks without administrative rights, supporting Zero Trust principles while maintaining productivity.
- Endpoint Analytics - Provides analytics to improve user experience, including custom device scopes, monitoring for regressions, and enhanced device timelines for better issue resolution.



If the Intune Suite's price of \$10/user/month exceeds a customer's budget, or they only need specific features, standalone add-ons for Plan 1 licensees are available:

- Microsoft Intune Remote Help: \$3.50/user/month.
- Microsoft Intune Endpoint Privilege Management (EPM): \$3/user/month.

Implementation and Integration

Microsoft Intune and Defender for Endpoint are designed to work together to provide a comprehensive device management and security solution for organizations. The integration between these two products can offer several benefits, but the implementation and integration process can also contribute to the overall total cost of ownership (TCO).

Seamless Integration

When properly integrated, Intune and Defender for Endpoint can provide a seamless experience for managing devices and securing an enterprise. The integration allows for the sharing of device data and security insights, enabling IT teams to make more informed decisions and take appropriate actions to mitigate risks. Integrating at this level typically comes with a 3rd-party implementation cost.

Onboarding and Configuration

Onboarding devices to Intune and Defender for Endpoint can be a straightforward process, with options to leverage Intune policies for device enrollment and configuration. However, organizations may need to invest time and resources to customize the configurations to align with their specific security, compliance, and device management requirements.

Potential Challenges

While the integration between Intune and Defender for Endpoint is designed to be seamless, organizations may still face challenges during the implementation process. These challenges can include the need for custom development, the deployment of additional 3rd-party tools, and the engagement of professional services, all of which can contribute to the overall TCO.

Some users find the process of deploying and managing applications, particularly 3rd-party apps, less straightforward in Intune compared to other MDM solutions.

"Intune can't push software updates to 3rd-party apps [...] we use Automox to fill this gap."

CISO, Small Real Estate/Web3 Financial Services Company



Intune is unable to push updates to 3rd-party applications. Customers commonly cite this as a weakness of Intune and must procure another 3rd-party solution to fill this gap.

Some users report limitations in terms of customization and flexibility. This includes less granular control in certain policy settings compared to some specialized MDM/UEM solutions.

Intune's problem is that Microsoft is pushing it like its feature complete at parity with the best MDMs. However, despite Microsoft having poured years of time and development, it's still missing features that were in SCCM or Group Policy... If you want Intune to do exactly everything that SCCM did in exactly the same way, that's not going to happen.

Senior IT Security Manager, Mid-market Professional Services Firm

[Microsoft Intune] is a real pain in big companies that need flexibility.

Digital Workplace Lead, U.S.-headquartered International Hotel Chain

Ongoing Management and Maintenance

The ongoing management and maintenance of Microsoft Intune and Defender for Endpoint can also contribute to the total cost of ownership (TCO) for organizations, beyond the initial implementation and integration costs.

The complexity of Intune and Defender for Endpoint can necessitate ongoing optimization and fine-tuning to ensure the solutions continue to meet the organization's evolving needs, as without optimization it can reach very high CPU usage (referenced in this report from The Tolly Group). This may involve regular reviews of configurations, policies, and integrations, as well as the implementation of updates and new features.¹

- Managing and resolving policy conflicts, especially in large organizations with numerous policies and settings, can sometimes be challenging within Intune.
- Some users report that the Defender for Endpoint agent can be resource-intensive, potentially impacting the performance of lower-spec devices. This is especially noticeable in scenarios with extensive real-time scanning and analysis.
- Defender for Endpoint covers limited enterprise applications and lacks some critical application coverage – which can cause fewer vendors to shop Microsoft for security reasons.



Despite Intune integrating seamlessly with Microsoft products, some users find its integration capabilities with non-Microsoft software and systems less robust. This can be a limitation for businesses heavily reliant on a diverse range of non-Microsoft solutions. This negative sentiment is exacerbated by organizations that rely on many homegrown applications.

"We have a number of applications that were custom built for us including our eCitation application which cannot be managed by Intune [...] at least we haven't figured out how yet. Any updates we do to this application have to be manually updated directly by the officer using a number of manual steps completed directly on the officer's mobile phone."

Cyber Security Director, Large U.S. Municipal Police Department

Impact on IT Resources and Productivity

The integration and management of Microsoft Intune and Defender for Endpoint can have a significant impact on an organization's IT resources and overall productivity. If properly implemented, these systems can save employees & users of the systems over \$100,000 to over \$1,000,000 – depending on the size of the organization. It is more likely that these savings will be counteracted by a rising TCO that outweighs those expected benefits, leading an organization to a deficit as opposed to a surplus.

False Positives and Alert Management.

Unless configured properly, Microsoft Defender for Endpoint tends to generate a high number of false positives leading to alert fatigue and complacency, which can be a concern for IT teams in terms of managing alerts and maintaining operational efficiency.

"Given the high volume of data and network activity characteristic of our operations, we've experienced instances of false positives that have led to alert fatigue among our IT staff. Distinguishing between genuine threats and routine operational activities requires fine-tuning of alert thresholds and continuous monitoring, which can be resource-intensive."

Cyber Security Director, Office of the Chief Technology Officer (OCTO), Large U.S. Municipal

Police Department

While Microsoft provides support and documentation, the responsiveness and effectiveness of support and the clarity of documentation can vary, leading to frustrations in resolving issues. Forrester reports that Microsoft's customer support lags behind the competition (Hewitt 2023).



¹ CylanceENDPOINT by BlackBerry Resource Efficiency and Efficacy vs. BitDefender, Microsoft, SentinelOne, and Vendor C <https://www.tolly.com/publications/detail/224116>

"While I am generally satisfied with the level of support from Microsoft, it can be a challenge to get a timely response without having to follow-up with them. I suspect that they give their big named accounts a little more of the white glove treatment than they do us little guys."

Senior IT Security Manager, Mid-market Professional Services Firm

These issues with TCO potentially outweighing the expected benefits lead to the conclusion that there can be an overall negative impact on IT resources and the enterprise as a whole when implementing Intune and Defender for Endpoint.

Limitations and Drawbacks

Microsoft Intune is one of the most popular Mobile Device Management (MDM) and Unified Endpoint Management (UEM) solutions owing to the ubiquitous nature of Microsoft's products and its inclusion in the tiered Microsoft Security licensing scheme with other Microsoft products. However, there are a number of common complaints and criticisms from Microsoft customers that are worth noting:

Complexity:

Intune's interface and extensive feature set can be overwhelming for organizations new to the Microsoft ecosystem. The learning curve can be steep, especially for businesses without dedicated IT teams familiar with Microsoft's administrative tools. Some customers use both SCCM and Intune under a "co-management" scheme which seems to increase the complexity of endpoint management.

[It's] difficult to find out why a certain machine that's listed in SCCM has the SCCM client active but, in fact, it does not. [It's] difficult to find out why the client can't be pushed down to the endpoint...Remote assistance features in SCCM are good, but sometimes remote options don't work for a particular endpoint, even though the machine is active and online."

Digital Workplace Lead, U.S.-headquartered International Hotel Chain

Not Suitable for Government Customers

Intune and Microsoft's Tunnel is not Federal Information Processing Standards (FIPS) 140-2 compliant. Microsoft's government customers, their suppliers, and other customers looking to



achieve FIPS 140-2 compliance are required to seek a 3rd-party VPN or ZTNA solution at an additional cost per user per year.

Mobile Encryption

Microsoft encrypts data at rest through Bitlocker, which can be managed through Intune. However, Bitlocker is only available for Windows and macOS and offers no coverage for Android or iOS mobile devices or Linux endpoints. This requires leaving data at rest vulnerable or procuring another 3rd-party solution that provides more device coverage.

Support

Customers and analysts often cite the unresponsiveness of Microsoft's support services as an ongoing problem.

Tech Stack Vulnerabilities

One of Microsoft's key value propositions is "We (Microsoft) own the technology stack, so we are in the best position to secure it." While this claim is true, the fact that Microsoft stating they can fix the vulnerabilities in their tech stack is not an impactful consideration. This is true for all vendors.

Cost Considerations

Intune is often perceived as more expensive than other MDM solutions, particularly for small businesses or those that do not require the full suite of features it offers. Its cost-effectiveness is most apparent when used within the broader Microsoft ecosystem. Due to the modular licensing scheme employed by Microsoft, a customer with the lowest O365 or M365 tier can add on additional products, such as Intune Plan 1, for an incremental cost subject to certain prerequisites and other restrictions.

"Intune's strongest selling point was just that it came with most of the bundled subscriptions we could save on spending for an MDM...The problem is companies are not going to shell out a license fee for an MDM when they already get Intune with their base Microsoft license. Intune is "good enough" for most MDM scenarios. For anything else you need to look at a more mature MDM."

Procurement Manager, US-based Mid-market Professional Services Firm

Microsoft Intune Relies Heavily on the Host Operating System for Overall Security

Microsoft Intune, when relying on Microsoft Security baselines, which in turn depend on the underlying Host Operating System (OS) for enforcing security policies, presents a security architecture inherently tied to the strengths and vulnerabilities of the Host OS. Microsoft Windows



has had issues for decades, and they have continued to build upon this technology instead of replacing it. This approach, while offering streamlined management and integration benefits, can also introduce specific security considerations which include:

1. **Host OS Vulnerabilities:** The effectiveness of security baselines applied through Intune is contingent upon the security of the underlying Host OS. If the Host OS is compromised or has unpatched vulnerabilities, it could undermine the security policies enforced through Intune. Regular updates and patch management are crucial to mitigate this risk.
2. **Dependence on OS-Level Security Features:** Security baselines in Intune leverage the built-in security features of the Host OS. This reliance means that any limitations or weaknesses in the OS's security features could limit the effectiveness of the security policies applied through Intune.
3. **Inconsistent Policy Enforcement Across Platforms:** While Intune supports multiple operating systems, there can be variations in how security baselines are implemented across different platforms (Windows, macOS, iOS, Android). This can lead to inconsistencies in security policy enforcement, especially in heterogeneous device environments.
4. **Configuration and Implementation Challenges:** Properly configuring security baselines requires a deep understanding of the Host OS's security features and how they interact with Intune policies. Misconfigurations or overlooking specific OS-level security settings can create security gaps.
5. **Potential for Security Policy Overlaps:** When multiple security solutions or policies are in place (e.g., 3rd-party security software alongside Intune-managed devices), there's a potential for policy overlaps or conflicts, which can inadvertently weaken security or affect system performance.
6. **Limited Control Over BYOD Devices:** In Bring Your Own Device (BYOD) scenarios, the reliance on the Host OS for security means that Intune's control is limited by the user's adherence to security policies and the state of their personal device's OS. This can introduce risks if personal devices are not regularly updated or secured, such as within an MDM framework.
7. **Impact of OS Updates:** Major updates to the Host OS can affect the functionality of security baselines and require adjustments to Intune configurations. There's also a risk of temporary exposure if updates to the OS introduce changes that are not immediately compatible with existing Intune policies.

Additionally, Defender for Endpoint has comments from existing customers regarding potential drawbacks to the solution:

Complexity and Usability

The platform's extensive features and capabilities, while powerful, can also lead to complexity. Users with less technical expertise might find the interface and array of options challenging to navigate. Additionally, the platform may "do too much" on its own without allowing users to



perform operations manually if required. Users are required to regularly move between separate consoles to perform tasks and need to use other Microsoft solutions, Intune and Purview, to access functions that other vendors in this space provide within their core endpoint protection platform (Harrington 2023).

"One issue with its automated capabilities is the lack of allowance for manual intervention. While not always necessary, there are moments when our IT security team needs to take action through the management console, a task made impossible because the platform restricts that kind of stuff."

Senior IT Security Manager, Mid-market Professional Services Firm

Integration with Non-Microsoft Products

While Defender for Endpoint integrates seamlessly with other Microsoft products, there may be limitations in its integration with non-Microsoft platforms and applications. This can result in gaps that need to be fixed by 3rd-party solutions. This is a drawback for organizations using a diverse range of IT solutions.

Initial Setup and Configuration

Setting up and configuring Defender for Endpoint to suit specific organizational needs can be complex and time-consuming. Users often mention proper initial configuration to ensure optimal performance and effectiveness.

Cost Considerations

For small businesses with limited budgets, the cost of Microsoft Defender for Endpoint might be a turn-off, especially if they only require a subset of the full range of features offered by Defender or a lighter Microsoft 365 subscription. This is partly overcome by the modular licensing scheme used by Microsoft. A customer with the lowest O365 or M365 tier can add on additional products, such as Defender for Endpoint Plan 1 for an incremental cost subject to certain prerequisites and other restrictions.

"It is expensive to purchase MDE which makes it hard for smaller organizations like ours to get the significant advantages offered by this exceptional protection tool... We faced some subscription fee challenges, where the price exceeded our projected budget. We ended up going with them anyway because we were already so deep with Microsoft."

Chief Information Security Officer (CISO), U.S.-based Technology Start-up (Financial Services)



Case Studies and Comparative Analysis

The research team conducted 78 initial reach-outs via direct email and/or LinkedIn to identify cybersecurity leaders across government and commercial customers willing to participate in a detailed feedback interview concerning their experience with Microsoft as a solution provider, their perceptions around the strengths and weaknesses of Microsoft Intune and Microsoft Defender for Endpoint, and the total cost of ownership including licensing, implementation costs, and expected benefits.

The interview requests yielded six organizations willing to participate, four of which were willing to provide information to support the development of a total cost of ownership analysis. The results of the total cost of ownership (TCO) discussion during those four interviews are included below.

It is important to note that the TCO Analysis contains estimates developed in collaboration with the interview participants to provide a more complete picture of the total cost and expected benefits of Microsoft's security products. Additionally, the estimated benefits of avoiding a security breach (which averages to about \$4.5M USD per incident) were not included in the analysis as the research team did not believe that its inclusion added substantive insight to the overall analysis.

Potential TCO-Saving Scenarios

There was curiosity when reviewing these capabilities about additional security products purchased that could alleviate some of the Microsoft licenses and what those savings would be. The research team has access to BlackBerry Cylance pricing and bundled it with the existing Microsoft products in Examples 1-4 and removed unnecessary overlapping products to save money. These examples will be covered as 1.5, 2.5, etc. after each verified example and their costs.

Highlighted Total Cost of Ownership (TCO) Summary (In Dollars)

Large U.S. Municipal Police Department	License + Implementation Costs	Expected Benefits – User + IT Productivity	Total cost over 3 years
Example 1	(15,281,347)	882,038	(14,399,309)
Example 1.5	(9,234,132)	2,046,524	(7,187,608)
Hypothetical savings by using Cylance over 3 years			\$ 7,211,701

Local Government – Emergency Management Services Dept.	License + Implementation Costs	Expected Benefits – User + IT Productivity	Total cost over 3 years
Example 2	(80,859)	86,785	5,926
Example 2.5	(80,065)	107,069	27,004
Hypothetical savings by using Cylance over 3 years			\$21,078



Mid-market Professional Services Firm, North America	License + Implementation Costs	Expected Benefits – User + IT Productivity	Total cost over 3 years
Example 3	(2,337,792)	378,432	(1,959,360)
Example 3.5	(1,641,275)	627,023	(1,014,251)
Hypothetical savings by using Cylance over 3 years			\$945,109

U.S. National Law Firm – Headquartered in Michigan	License + Implementation Costs	Expected Benefits – User + IT Productivity	Total cost over 3 years
Example 4	(1,225,423)	406,951	(818,471)
Example 4.5	(1,262,899)	649,515	(613,383)
Hypothetical savings by using Cylance over 3 years			\$205,088

In these 4 scenarios, vendors 1,3, and 4 are still in the red when it comes to TCO of their products. Vendor 2 is still in the black, with the least amount of difference in their solution TCO.

However, the vendor savings can be substantial over 3 years, especially looking at the large police department that was able to save \$7M+ by downgrading its Microsoft license, removing Intune and Zscaler. These savings also include purchasing an additional product, showing the kind of impact that can be gained by being able to downgrade Microsoft licenses & remove products.



Total Cost of Ownership Summary

Example 1

Large U.S. Municipal Police Department Microsoft 365 G5-GCC with Intune Suite add-on and Defender for Endpoint Legacy Solution: Ivanti (MobileIron)

License Costs - 6500 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (5,203,380)	\$ (5,203,380)	\$ (5,203,380)	\$ (15,610,140)	\$ (15,005,940)
Implementation Cost	\$ (275,407)	\$ -	\$ -	\$ -	\$ (275,407)	\$ (275,407)
Expected Benefits	\$ -	\$ 178,377	\$ 356,755	\$ 386,554	\$ 921,686	\$ 882,038
TOTAL COST OF OWNERSHIP (TCO)	\$ (275,407)	\$ (5,025,003)	\$ (4,846,625)	\$ (4,816,826)	\$ (14,963,861)	\$ (14,399,309)

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

² Products in license calculation: Microsoft 365 G5 – GCC (Base Microsoft Subscription), Intune Suite Addon (UEM), ZScaler Private Remote Access (Secure Access), Defender for Endpoint – Server GCC (Windows Server Security), MS Bitlocker (Device Encryption)

Example 1.5



Large U.S. Municipal Police Department Microsoft 365 G3-GCC with BlackBerry Cylance & Defender for Endpoint

License Costs - 6500 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (3,106,480)	\$ (3,106,480)	\$ (3,106,480)	\$ (9,319,440)	\$ (8,958,725)
Implementation Cost	\$ (275,407)	\$ -	\$ -	\$ -	\$ (275,407)	\$ (275,407)
Expected Benefits	\$ -	\$ 429,058	\$ 825,064	\$ 884,662	\$ 2,138,784	\$ 2,046,524
TOTAL COST OF OWNERSHIP (TCO)	\$ (275,407)	\$ (2,677,422)	\$ (2,281,416)	\$ (2,221,818)	\$ (7,456,063)	\$ (7,187,608)

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

² Products in license calculation: Microsoft 365 G3 – GCC (Base Microsoft Subscription), Defender for Endpoint – Server GCC (Windows Server Security), BlackBerry Cylance (Endpoint Protection)

Potential Savings

40%

on license costs over 3 years

50%

on TCO over 3 years



Total Cost of Ownership Summary

Example 2

Local Government – Emergency Management Services Dept.

Microsoft 365 G3-GCC with Microsoft Intune Plan 1 and Microsoft Intune Add-on

Legacy Solution: Microsoft Business Premium and M365 F1

License Costs - 48 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (25,283)	\$ (25,283)	\$ (25,283)	\$ (75,850)	\$ (72,914)
Implementation Cost	\$ (7,945)	\$ -	\$ -	\$ -	\$ (7,945)	\$ (7,945)
Expected Benefits	\$ -	\$ 22,896	\$ 30,528	\$ 37,138	\$ 90,561	\$ 86,785
TOTAL COST OF OWNERSHIP (TCO)	\$ (7,945)	\$ (2,388)	\$ 5,244	\$ 11,855	\$ 6,766	\$ 5,926

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

² Products in license calculation: Microsoft 365 G3 – GCC (Base Microsoft Subscription), Intune Plan 1 Addon (UEM), Intune Remote Help Add-on (Service Desk), MS Defender for Endpoint Plan 1 Add-on (Endpoint Security), Microsoft 365 F1 – GCC, Absolute Secure Access – Core (Secure Access)

Example 2.5

BlackBerry®
Cybersecurity

Local Government – Emergency Management Services Dept.

Microsoft 365 G3-GCC with **BlackBerry Cylance** & Defender for Endpoint Add-on

License Costs - 48 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (25,008)	\$ (25,008)	\$ (25,008)	\$ (75,024)	\$ (72,120)
Implementation Cost	\$ (7,945)	\$ -	\$ -	\$ -	\$ (7,945)	\$ (7,945)
Expected Benefits	\$ -	\$ 29,266	\$ 37,920	\$ 44,530	\$ 111,715	\$ 107,069
TOTAL COST OF OWNERSHIP (TCO)	\$ (7,945)	\$ 4,258	\$ 12,912	\$ 19,522	\$ 28,746	\$ 27,004

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

² Products in license calculation: Microsoft 365 G3 – GCC (Base Microsoft Subscription), Defender for Endpoint Plan 1 Add-on (Endpoint Security), BlackBerry Cylance (Endpoint Protection)

Potential TCO up 455%

over 3 years, driven by expected benefit



Total Cost of Ownership Summary

Example 3

Mid-market Professional Services Firm, North America

Microsoft 365 E5 with Intune Suite Add-on

Legacy Solution: Unknown / Not Disclosed

License Costs - 870 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (860,430)	\$ (860,430)	\$ (860,430)	\$ (2,581,290)	\$ (2,005,472)
Implementation Cost	\$ (332,320)	\$ -	\$ -	\$ -	\$ (332,320)	\$ (332,320)
Expected Benefits	\$ -	\$ 124,620	\$ 161,754	\$ 174,974	\$ 461,348	\$ 378,432
TOTAL COST OF OWNERSHIP (TCO)	\$ (332,320)	\$ (735,810)	\$ (698,676)	\$ (685,456)	\$ (2,452,262)	\$ (1,959,360)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

² Products in license calculation: Microsoft 365 – E5 (Base Microsoft Subscription), Intune Suite Addon (UEM), ZScaler Work from Anywhere (Secure Access)

Example 3.5

BlackBerry®
Cybersecurity

Mid-market Professional Services Firm, North America

Microsoft 365 E3 with BlackBerry Cylance

License Costs - 870 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (526,350)	\$ (526,350)	\$ (526,350)	\$ (1,579,050)	\$ (1,308,955)
Implementation Cost	\$ (332,320)	\$ -	\$ -	\$ -	\$ (332,320)	\$ (332,320)
Expected Benefits	\$ -	\$ 209,579	\$ 270,625	\$ 283,846	\$ 764,051	\$ 627,023
TOTAL COST OF OWNERSHIP (TCO)	\$ (332,320)	\$ (316,771)	\$ (255,725)	\$ (242,504)	\$ (1,147,319)	\$ (1,014,251)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

² Products in license calculation: Microsoft 365 – E3 (Base Microsoft Subscription), BlackBerry Cylance (Endpoint Protection)

Potential Savings

35%

on license costs over 3 years

48%

on TCO over 3 years



Total Cost of Ownership Summary

Example 4

U.S. National Law Firm – Headquartered in Michigan

Microsoft 365 E3 with Intune Suite Add-on

Legacy Solution: Unknown / Would Not Disclose

License Costs - 738 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (387,450)	\$ (387,450)	\$ (387,450)	\$ (1,162,350)	\$ (1,072,879)
Implementation Cost	\$ (152,544)	\$ -	\$ -	\$ -	\$ (152,544)	\$ (152,544)
Expected Benefits	\$ -	\$ 153,575	\$ 168,426	\$ 168,426	\$ 490,427	\$ 406,951
TOTAL COST OF OWNERSHIP (TCO)	\$ (152,544)	\$ (233,875)	\$ (219,024)	\$ (219,024)	\$ (824,467)	\$ (818,471)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

² Products in license calculation: Microsoft 365 – E3 (Base Microsoft Subscription), Intune Suite Addon (UEM), MS Tunnel (VPN), MS Teams Add-on (Collaboration Software)

Example 4.5

BlackBerry®
Cybersecurity

U.S. National Law Firm – Headquartered in Michigan

Microsoft 365 E3 with BlackBerry Cylance

Legacy Solution: Unknown / Not Disclosed

License Costs - 738 Units

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost ²	\$ -	\$ (446,490)	\$ (446,490)	\$ (446,490)	\$ (1,339,470)	\$ (1,110,355)
Implementation Cost	\$ (152,544)	\$ -	\$ -	\$ -	\$ (152,544)	\$ (152,544)
Expected Benefits	\$ -	\$ 241,048	\$ 270,749	\$ 270,749	\$ 782,547	\$ 649,515
TOTAL COST OF OWNERSHIP (TCO)	\$ (152,544)	\$ (205,442)	\$ (175,741)	\$ (175,741)	\$ (709,467)	\$ (613,383)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

² Products in license calculation: Microsoft 365 – E3 (Base Microsoft Subscription), BlackBerry Cylance (Endpoint Protection), MS Teams Add-on (Collaboration Software)

Potential Savings

25%

on TCO over 3 years



Conclusion

When reviewing licensing costs, implementation costs and potential 3rd-party costs to support a more robust security architecture, findings are contrary to Microsoft's claims that Intune and Defender for endpoint lead to a lower TCO for organizations. In fact, we see most companies' TCO is negatively impacted.

It is likely that organizations already entrenched within the Microsoft ecosystem purchase these solutions to fill in gaps within their architecture and capture savings from bundling services together without doing a full, robust review of what will actually be needed.

Over 3 years, most customers that we interviewed saw losses between licensing costs and implementation costs to the expected benefits. Ranging from \$7,000 in benefit over 3 years at best, to \$750,000 in losses, \$2,000,000 in losses, and capping at \$14,400,000 in losses between the four firms interviewed.

IT decision-makers need to carefully evaluate the true TCO of Intune and explore alternative solutions that may better align with their budgetary constraints and operational needs and do a full review of the gaps in the architecture to confirm what they will be paying for 3rd-party services in addition to Microsoft for a full-service security suite. Including outside products that can reduce the license need of Microsoft products may actually outweigh the benefits of bundling multiple of their products.



APPENDIX



Capability Comparison Matrices

Microsoft Intune Capability Comparison Matrix

Capability	Classification	Microsoft Intune (MDM Core)	Additional Explanation (if required)
Generally available, single license product SKU	Must-have	Yes	
Apple iOS support	Must-have	Yes	
iPadOS support	Must-have	Yes	
Apple macOS support	Must-have	Yes	
Google Android support	Must-have	Yes	
Device enrollment and provisioning for all supported OS	Must-have	Yes	
Device configuration and policy enforcement for all supported OS	Must-have	Yes	
OS patching and update management on all supported OS	Must-have	Yes	
Application deployment on all supported OS	Must-have	Yes	
Operate as a turnkey SaaS (UEM vendor hosted and operated, not IaaS)	Must-have	Yes	
Mobile management - Mobile Device Management (MDM)	Standard	Yes	
Mobile management - supervision (iOS)	Standard	Yes	
Mobile management - fully managed (Android)	Standard	Yes	
Mobile management - Mobile Application Management (MAM)	Standard	Yes	
Mobile content management (MCM) and EFSS	Standard	No, not natively	Capability provided by Microsoft OneDrive
Containerized mobile applications to protect corporate data	Standard	No, but the underlying requirement is met.	Intune uses application policies to separate corporate data and personal data.
Ability to deploy BYOD without MDM to ensure personal and work data isolation	Standard	No	Devices must be enrolled in Intune in order to deploy business applications to them.
Ability to erase corporate data from device remotely	Standard	Yes, with exceptions.	Except for Android Enterprise, personally owned devices with a work profile, and Linux devices.
3rd-party application package repository or store	Standard	No	
Enterprise app store for employee self-service	Standard	Yes	Through Company Portal
Direct integration with Microsoft Intune Graph API for app and data protection	Standard	Yes	
Agent-based management or prebuilt connector for CMT integration	Standard	Yes	Intune is agentless and has integrations for Cloud Managed Technologies.
Customizable reporting and dashboarding capabilities	Standard	Yes	More customizable reporting options are available through Microsoft PowerBI.
Support for Microsoft Autopilot, Apple Business Manager, Android Zero Touch Enterprise, or similar autoenrollment and provisioning	Standard	Yes	Microsoft Autopilot
Remote viewing/control of endpoints and review of device inventory, performance, and stability	Standard	Yes, but requires a higher license tier.	Microsoft Remote Help allows for remote access to endpoints (included in Intune Suite license).



Configuration of PC and mobile devices for limited use by frontline or task workers or to be used as kiosks, digital signage, utility, and/or a shared device	Standard	Yes	
Native or turnkey integration with 3rd-party VPN devices, per-app or on-demand VPN (or similar technology) to enable secure access to company apps and data	Standard	Yes	Integrations exist for Check Point, Cisco AnyConnect, Citrix, Microsoft Tunnel, NetMotion, Palo Alto GlobalProtect, Pulse Secure, Zscaler, and others.
Also, there is the ability to create custom VPN profiles using URI settings.			
Google ChromeOS support	Optional	Yes	
Windows Server support	Optional	Yes	
Linux support	Optional	Yes	Ubuntu only
tvOS support	Optional	No	
IoT device support	Optional	Yes	
Ruggedized device management (Android OEMConfig or AOSP) support	Optional	Yes	Both Android OEMConfig and AOSP support
Wearable device management support	Optional	Yes	Requires Intune Suite or Intune Plan 2 subscription.
3rd-party application patch automation	Optional	No	
Capabilities to minimize bandwidth for patching/updates	Optional	Yes	Through Delivery Optimization settings. Only available for Windows devices.
Roles-based access control (RBAC) to support geographic or line of business device population admin permissions	Optional	Yes	
Vulnerability assessment and prioritization (native or integration)	Extended	Yes, requires integration with another Microsoft product.	Requires integration with Microsoft Defender for Endpoint. Users then can understand and remediate vulnerabilities through Security Tasks in Intune.
Digital employee experience capabilities to analyze technology performance and employee sentiment	Extended	No	Accomplished through Microsoft Power Automate.
Visual workflow designer to enable simplified creation of automation routines	Extended	No, not natively.	Accomplished through Microsoft Power Automate.
IT service management (ITSM)	Extended	No, not natively.	Integrations with ITSM solutions are possible through Microsoft APIs or an intermediary solution. For example, a customer can import devices from Intune to Ivanti Neurons and then use the OOTB Neurons connector to an ITSM.
Configuration management database (CMDB)	Extended	Yes	



Capability Comparison Matrices

Microsoft Intune Capability Comparison Matrix

Capability	Classification	Microsoft Intune (MDM Core)	Additional Explanation (if required)
SaaS deployment option	Standard	Yes	
On-prem deployment option	Must-have	Yes	
On-prem to SaaS migration tools or methodology	Standard	Yes	
Agent-based protection	Must-have	Yes	
Agentless protection	Must-have	Yes	MDE is agentless for Windows and is built into the OS which requires no additional software installation.
Apple iOS support	Must-have	Yes	
iPadOS support	Must-have	Yes	
Apple macOS support	Must-have	Yes	
Google Android support	Must-have	Yes	
Google ChromeOS support	Standard	No	
Windows Server support	Must-have	Yes	
Linux support	Must-have	Yes	
tvOS support	Standard	No	
IoT device support	Standard	Yes	
Built-in Threat Intelligence	Must-have	Yes	
Real-time threat scanning	Must-have	Yes	MDE perform Microsoft continuous scans to detect and block threats. This feature uses Microsoft Defender Antivirus as well as behavior-based antivirus protection and cloud-delivered protection.
Cloud, virtual, and container-based workload support	Standard	No, not natively.	Requires Microsoft Defender for Cloud.
Email Scanning	Must-have	Yes	Performed through Microsoft Defender Antivirus and requires configuration.
Browser protection from malicious downloads and traffic analysis	Must-have	Yes	Capability is made up of Web threat protection Web content filtering, and custom indicators.
Zero-day vulnerability protection	Must-have	No, not natively.	Available through Microsoft Defender Vulnerability Management add-on which requires Microsoft Defender for Endpoint Plan 2.
Memory-based attack protection	Must-have	Yes	Available through Microsoft Defender Antivirus.
Data loss protection	Standard	No	Provided through a separate service called Endpoint DLP which requires a Microsoft E5 license or E5 Information Protection and Governance license.
Threat Intelligence	Must-have	Yes	Requires Defender for Endpoint Plan 2
File encryption	Must-have	No, not natively.	Bitlocker is a security feature in Windows that provides encryption for entire volumes.
Managed Detection and Response (MDR) services	Extended	Yes	



Machine learning and cloud-based look-up capabilities	Extended	Yes	
Offline threat defense	Standard	Partial	MDE requires connectivity to cloud endpoints. It does not support truly air-gapped systems. There is a gateway option if that is acceptable based on requirements.
Mobile Threat Defense	Must-have	Yes	
Legacy system support	Standard	Yes, license dependent.	Older versions of Windows are supported in MDE Plan 2 and Plan 1 supports Windows 10+
Low resource utilization	Must-have	No	Microsoft claims the agent is lightweight but multiple customers have reported that there is a noticeable degradation in system performance.
Anti-tamper mechanisms	Must-have	Yes	
Behavior-based detection and analytics	Standard	Yes	
Automated response and containment	Standard	Yes	
Automated patching	Standard	No	
Automated application control	Standard	Yes	Available through Windows Defender Application Control. Application Control policies are deployed with Configuration Manager.
Storage encryption	Must-have	No	Bitlocker is a security feature in Windows that provides encryption for entire volumes.
Event correlation using telemetry and event data across vendor-owned and 3rd-party security controls and threat intelligence sources	Standard	Yes	MDE has integrations with many 3rd-party solutions across security information and analytics, orchestration and automation, threat intelligence, network security, and other endpoint protection domains. Some integrations include AttackIQ, Elastic, Splunk, Fortinet, SNOW, Palo Alto, ThreatConnect, Blue Hexagon, Vectra, Symantec, Bitdefender, and others.
Provides severity rating, process tree, and mapping of events and alerts to MITRE ATT&CK framework	Standard	Yes	
At least 30 day endpoint telemetry and detection events storage on vendor infrastructure with options for long-term storage	Standard	Yes	Options for longer storage periods are available.



Example 1

Large U.S. Municipal Police Department

Microsoft 365 G5-GCC with Intune Suite add-on and Defender for Endpoint

Legacy Solution: Ivanti (MobileIron)

License Costs - 6500 Units

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ³	Upfront Cost	Yearly Cost	Present Value ² (3 Years)
Microsoft 365 G5 – GCC	Base Microsoft Subscription	User	\$ 648.00	6500	0%	\$ -	\$ 4,212,000	\$ 12,146,916
Intune Suite Add-on	UEM	User	\$ 90.60	6500	0%	\$ -	\$ 588,900	\$ 1,698,319
Zscaler Private Remote Access	Secure Access	User	\$ 60.00	6500	0%	\$ -	\$ 390,000	\$ 1,124,714
Defender for Endpoint – Server GCC	Windows Server Security	Device	\$ 60.00	208	0%	\$ -	\$ 12,480	\$ 35,991
MS Bitlocker	Device Encryption	User	NA	6500	0%	\$ -	\$ 0	\$ 0
Total						\$0	\$ 5,203,380	\$ 15,005,940

¹ The contracted agreement included a New Microsoft Master Enterprise Agreement lasting three years. Deployment began on 1/3/2024 and concluded on 3/31/2024.

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

³ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ³
Implementation Partner ²	External MS Partner Cost	No	\$245,026	\$0	\$0	\$0	\$245,026.00
Admin Training	MS Partner-provided Training	No	\$7,500	\$0	\$0	\$0	\$ 7,500.00
IT Project Manager ¹	Internal Project Manager	No	\$15,254	\$0	\$0	\$0	\$ 15,254.00
IT Support ¹	Internal IT Project Support	No	\$7,627	\$0	\$0	\$0	\$ 7,627.00
Total			\$275,407	\$0	\$0	\$0	\$275,407.00

¹ As part of the Statement of Work, the Government customer agreed to provide a Project Manager / Security Engineer to augment the staff provided by the implementation partner.

² The Scope of work included Microsoft 365 Security Planning, Design, and Discovery and Production Pilot services for a fixed fee with responsibility for user enrollment to transition to the Office of the Chief Technology Officer (OCTO) following the successful pilot enrollment of 500 users.

³ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Note: Per the interviewee, the department was required to upgrade every department-issued Samsung model S19, S20, or S21 phone to a Samsung S22 or higher as Microsoft Intune was not compatible with the earlier versions of that particular phone, which represented a significant expenditure. This was not a problem with MobileIron. Exact cost figures were not available at the time of the interview as the department was still in the process of identifying members requiring upgrades.



Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ⁴
Annual Hours Saved per Sworn User Per Year	0	0.5	1	1	NA
Annual Hours Saved per Professional User Per Year	0	2	4	5	NA
Number of Sworn Users	4500	4500	4500	4500	NA
Number of Professional Users	1750	1750	1750	1750	NA
Value Recapture per Saved Hour (Standard) ¹	60%	60%	60%	60%	NA
Average Labor Rate per Sworn User per Hour ²	\$39.02	\$ 39.02	\$ 39.02	\$ 39.02	NA
Average Labor Rate per Professional User per Hour ³	\$28.38	\$ 28.38	\$ 28.38	\$ 28.38	NA
Total Benefit from Sworn User Productivity	0	\$ 52,677.00	\$105,354.00	\$105,354.00	\$ 252,185.00
Total Benefit from Professional User Productivity	0	\$ 59,598.00	\$119,196.00	\$148,995.00	\$ 313,398.00
Total Benefit – User Productivity	\$0	\$112,275.00	\$224,550.00	\$254,349.00	\$ 565,583.00

¹ Assumes that the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for Police/Sheriff's office members (Occupational Employment and Wages 33-3051)

³ Source - Bureau of Labor Statistics average hourly rate for Administrative workers (Occupational Employment and Wages 43-0000)

⁴ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	5	5	5	5	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	10%	20%	20%	NA
Average Labor Rate per IT Employee per Hour ¹	\$63.56	\$ 63.56	\$ 63.56	\$ 63.56	
Total IT Productivity Increase		\$ 66,102.40	\$132,204.80	\$132,204.80	\$316,455.00

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.



Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (5,203,380)	\$ (5,203,380)	\$ (5,203,380)	\$ (15,610,140)	\$ (15,005,940)
Implementation Cost	\$ (275,407)	\$ -	\$ -	\$ -	\$ (275,407)	\$ (275,407)
Expected Benefits	\$ -	\$ 178,377	\$ 356,755	\$ 386,554	\$ 921,686	\$ 882,038
TOTAL COST OF OWNERSHIP (TCO)	\$ (275,407)	\$ (5,025,003)	\$ (4,846,625)	\$ (4,816,826)	\$ (14,963,861)	\$ (14,399,309)

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Example 1.5

Large U.S. Municipal Police Department

Microsoft 365 G3-GCC with BlackBerry Cylance & Defender for Endpoint

License Costs - 6500 Units

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ³	Upfront Cost	Yearly Cost	Present Value ² (3 Years)
Microsoft 365 G3 – GCC	Base Microsoft Subscription	User	\$ 276.00	6500	0%	\$ -	\$ 1,794,000	\$ 5,173,686
BlackBerry Cylance	Price per users	User	\$ 200.00	6500	0%	\$ -	\$ 1,300,000	\$ 3,749,048
Defender for Endpoint – Server GCC	Windows Server Security	Device	\$ 60.00	208	0%	\$ -	\$ 12,480	\$ 35,991
Total						\$0	\$ 3,106,480	\$ 8,958,725

¹ The contracted agreement included a New Microsoft Master Enterprise Agreement lasting three years. Deployment began on 1/3/2024 and concluded on 3/31/2024.

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

³ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ³
Implementation Partner ²	External MS Partner Cost	No	\$245,026	\$0	\$0	\$0	\$245,026.00
Admin Training	MS Partner-provided Training	No	\$7,500	\$0	\$0	\$0	\$ 7,500.00
IT Project Manager ¹	Internal Project Manager	No	\$15,254	\$0	\$0	\$0	\$ 15,254.00
IT Support ¹	Internal IT Project Support	No	\$7,627	\$0	\$0	\$0	\$ 7,627.00
Total			\$275,407	\$0	\$0	\$0	\$275,407.00

¹ As part of the Statement of Work, the Government customer agreed to provide a Project Manager / Security Engineer to augment the staff provided by the implementation partner.

² The Scope of work included Microsoft 365 Security Planning, Design, and Discovery and Production Pilot services for a fixed fee with responsibility for user enrollment to transition to the Office of the Chief Technology Officer (OCTO) following the successful pilot enrollment of 500 users.

³ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Note: Per the interviewee, the department was required to upgrade every department-issued Samsung model S19, S20, or S21 phone to a Samsung S22 or higher as Microsoft Intune was not compatible with the earlier versions of that particular phone, which represented a significant expenditure. This was not a problem with MobileIron. Exact cost figures were not available at the time of the interview as the department was still in the process of identifying members requiring upgrades.



Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ⁴
Annual Hours Saved per Sworn User Per Year	0	2	4	4	NA
Annual Hours Saved per Professional User Per Year	0	4	8	10	NA
Number of Sworn Users	4500	4500	4500	4500	NA
Number of Professional Users	1750	1750	1750	1750	NA
Value Recapture per Saved Hour (Standard) ¹	60%	60%	60%	60%	NA
Average Labor Rate per Sworn User per Hour ²	\$39.02	\$ 39.02	\$ 39.02	\$ 39.02	NA
Average Labor Rate per Professional User per Hour ³	\$28.38	\$ 28.38	\$ 28.38	\$ 28.38	NA
Total Benefit from Sworn User Productivity	0	\$210,708.00	\$421,416.00	\$421,416.00	\$ 1,008,740.00
Total Benefit from Professional User Productivity	0	\$119,196.00	\$238,392.00	\$297,990.00	\$ 626,796.00
Total Benefit – User Productivity	\$0	\$329,904.00	\$659,808.00	\$719,406.00	\$ 1,635,132.95

¹ Assumes that the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for Police/Sheriff's office members (Occupational Employment and Wages 33-3051)

³ Source - Bureau of Labor Statistics average hourly rate for administrative workers (Occupational Employment and Wages 43-0000)

⁴ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	5	5	5	5	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	15%	25%	25%	NA
Average Labor Rate per IT Employee per Hour ¹	\$63.56	\$ 63.56	\$ 63.56	\$ 63.56	
Total IT Productivity Increase		\$ 99,154	\$ 165,256	\$ 165,256	\$ 411,391.50

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (3,106,480)	\$ (3,106,480)	\$ (3,106,480)	\$ (9,319,440)	\$ (8,958,725)
Implementation Cost	\$ (275,407)	\$ -	\$ -	\$ -	\$ (275,407)	\$ (275,407)
Expected Benefits	\$ -	\$ 429,058	\$ 825,064	\$ 884,662	\$ 2,138,784	\$ 2,046,524
TOTAL COST OF OWNERSHIP (TCO)	\$ (275,407)	\$ (2,677,422)	\$ (2,281,416)	\$ (2,221,818)	\$ (7,456,063)	\$ (7,187,608)

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.



Example 2

Local Government – Emergency Management Services Dept.

Microsoft 365 G3-GCC with Microsoft Intune Plan 1 and Microsoft Intune Add-on

Legacy Solution: Microsoft Business Premium and M365 F1

License Costs - 48 Units

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ⁴	Upfront Cost	Yearly Cost ²	Present Value ³ (After 3 Years)
Office 365 G3 – GCC	Base Microsoft Subscription	User	\$ 276.00	48	0%	\$ -	\$ 13,248	\$ 38,206
Intune Plan 1 Add-on	UEM	User	\$ 96.00	48	0%	\$ -	\$ 4,608	\$ 13,289
Intune Remote Help Add-on ¹	Service Desk	User	\$ 42.00	60	0%	\$ -	\$ 2,520	\$ 7,267
MS Defender for Endpoint Plan 1 Add-on	Endpoint Security	User	\$ 36.00	60	0%	\$ -	\$ 2,160	\$ 6,229
Microsoft 365 F1 - GCC	Base Microsoft Subscription	User	\$ 29.00	12	0%	\$ -	\$ 348	\$ 1,004
Absolute Secure Access – Core	Secure Access	Device	\$ 39.99	60	0%	\$ -	\$ 2,399	\$ 6,920
Total						\$0	\$ 25,283	\$ 72,914

¹ Intune Suite was not in general availability when the customer contracted with Microsoft in 2023; however, the customer indicated that the availability of Remote Help and other new features in the new Intune Suite offering will likely cause them to upgrade to Intune Suite at their annual renewal date in late 2024.

² A three-year time horizon was used even though the customer had a contract subject to annual renewal due to high switching costs.

³ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

⁴ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ²
IT Project Manager	Internal Project Manager	No	\$ 2,860	\$0	\$0	\$0	\$ 2,860
IT Support	Internal IT Project Support	No	\$ 5,085	\$0	\$0	\$0	\$ 5,085
Total			\$ 7,945	\$0	\$0	\$0	\$ 7,945

¹ The Government customer used internal resources for deployment.

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ³
Annual Hours Saved per User Per Year	0	3	4	4	NA
Number of Users	60	60	60	60	NA
Value Capture per Saved Hour ¹	60%	60%	60%	60%	NA
Average Labor Rate per User per Hour ²	\$28.38	\$ 28.38	\$ 28.38	\$ 28.38	NA
Total Benefit – User Productivity	\$0	\$ 3,065	\$ 4,087	\$ 4,087	\$ 10,784

¹ Assumes the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for administrative workers (Occupational Employment and Wages 43-0000)

³ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	0.5	0.5	0.5	0.5	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	30%	40%	50%	NA
Average Labor Rate per IT Employee per Hour ¹	\$63.56	\$ 63.56	\$ 63.56	\$ 63.56	NA
Total IT Productivity Increase		\$ 19,831	\$ 26,441	\$ 33,051	\$ 76,001

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.



Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (25,283)	\$ (25,283)	\$ (25,283)	\$ (75,850)	\$ (72,914)
Implementation Cost	\$ (7,945)	\$ -	\$ -	\$ -	\$ (7,945)	\$ (7,945)
Expected Benefits	\$ -	\$ 22,896	\$ 30,528	\$ 37,138	\$ 90,561	\$ 86,785
TOTAL COST OF OWNERSHIP (TCO)	\$ (7,945)	\$ (2,388)	\$ 5,244	\$ 11,855	\$ 6,766	\$ 5,926

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Example 2.5

Local Government – Emergency Management Services Dept.

Microsoft 365 G3-GCC with BlackBerry Cylance & Defender for Endpoint Add-on

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ⁴	Upfront Cost	Year 1 Cost ²	Present Value ³
Office 365 G3 – GCC	Base Microsoft Subscription	User	\$ 276.00	48	0%	\$ -	\$ 13,248	\$ 38,206
BlackBerry Cylance	Price per users	User	\$ 200.00	48	0%	\$ -	\$ 9,600	\$ 27,685
MS Defender for Endpoint Plan 1 Add-on	Endpoint Security	User	\$ 36.00	60	0%	\$ -	\$ 2,160	\$ 6,229
Total						\$0	\$ 25,008	\$ 72,120

¹ Intune Suite was not in general availability when the customer contracted with Microsoft in 2023; however, the customer indicated that the availability of Remote Help and other new features in the new Intune Suite offering will likely cause them to upgrade to Intune Suite at their annual renewal date in late 2024.

² A three-year time horizon was used even though the customer had a contract subject to annual renewal due to high switching costs.

³ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

⁴ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ²
IT Project Manager	Internal Project Manager	No	\$ 2,860	\$0	\$0	\$0	\$ 2,860
IT Support	Internal IT Project Support	No	\$ 5,085	\$0	\$0	\$0	\$ 5,085
Total			\$ 7,945	\$0	\$0	\$0	\$ 7,945

¹ The Government customer used internal resources for deployment.

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ³
Annual Hours Saved per User Per Year	0	6	8	8	NA
Number of Users	60	60	60	60	NA
Value Capture per Saved Hour ¹	60%	60%	60%	60%	NA
Average Labor Rate per User per Hour ²	\$ 28.38	\$ 28.38	\$ 28.38	\$ 28.38	NA
Total Benefit – User Productivity	\$0	\$ 6,130	\$ 8,173	\$ 8,173	\$ 21,568

¹ Assumes the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for administrative workers (Occupational Employment and Wages 43-0000)

³ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.



Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	0.5	0.5	0.5	0.5	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	35%	45%	55%	NA
Average Labor Rate per IT Employee per Hour ¹	\$ 63.56	\$ 63.56	\$ 63.56	\$ 63.56	NA
Total IT Productivity Increase		\$ 23,136	\$ 29,746	\$ 36,356	\$ 85,501

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (25,008)	\$ (25,008)	\$ (25,008)	\$ (75,024)	\$ (72,120)
Implementation Cost	\$ (7,945)	\$ -	\$ -	\$ -	\$ (7,945)	\$ (7,945)
Expected Benefits	\$ -	\$ 29,266	\$ 37,920	\$ 44,530	\$ 111,715	\$ 107,069
TOTAL COST OF OWNERSHIP (TCO)	\$ (7,945)	\$ 4,258	\$ 12,912	\$ 19,522	\$ 28,746	\$ 27,004

¹ The present value was calculated using a social rate of time preference of 2%, appropriate for cost-benefit analyses for government entities according to the Congressional Office of Management and Budget (OMB) Circular A-4.

Example 3

Mid-market Professional Services Firm, North America

Microsoft 365 E5 with Intune Suite Add-on

Legacy Solution: Unknown / Not Disclosed

License Costs

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ³	Upfront Cost	Year 3 Cost ¹	Present Value ² (After 3 Years)
Microsoft 365 - E5	Base Microsoft Subscription	User	\$ 684	870	0%	\$ -	\$ 595,080	\$ 1,479,876
Intune Suite Add-on	UEM	User	\$ 120	870	0%	\$ -	\$ 104,400	\$ 259,627
Zscaler Work From Anywhere	Secure Access	User	\$ 185	870	0%	\$ -	\$ 160,950	\$ 265,969
Total						\$0	\$ 860,430	\$ 2,005,472

¹ A three-year time horizon was used even though the customer had a contract subject to annual renewal due to high switching costs.

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

³ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ³
MS Partner Health Check ¹	Pre-deployment consulting services	No	\$ 18,040	\$0	\$0	\$0	\$ 18,040
MS Partner Implementation Support	External MS Partner Cost	No	\$ 194,350	\$0	\$0	\$0	\$ 194,350
IT Support	Internal IT Project Support	No	\$ 101,606	\$0	\$0	\$0	\$ 101,606
Other Support	Other Internal Support including UAT testers	No	\$ 18,324	\$0	\$0	\$0	\$ 18,324
Total			\$ 332,320	\$0	\$0	\$0	\$ 332,320

¹ Microsoft partner reviewed the customer's current environment to understand how it could benefit from Microsoft E5 and related services. The project duration was 3 weeks. The engagement was fixed price and structured as a credit towards the cost of the entire implementation project.

² Full deployment and professional support are scheduled for ten weeks and are structured as a fixed-price contract.

³ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).



Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ³
Annual Hours Saved per User Per Year	0	3	4	4	NA
Number of Users	870	870	870	870	NA
Value Capture per Saved Hour ¹	60%	60%	60%	60%	NA
Average Labor Rate per User per Hour ²	\$45.81	\$ 45.81	\$ 45.81	\$ 45.81	NA
Total Benefit – User Productivity	\$0	\$ 71,738	\$ 95,651	\$ 95,651	\$ 216,131

¹ Assumes the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for Management Analysts (Occupational Employment and Wages 13-1111).

³ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	2	2	2	2	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	20%	25%	30%	NA
Average Labor Rate per IT Employee per Hour ¹	\$63.56	\$ 63.56	\$ 63.56	\$ 63.56	NA
Total IT Productivity Increase		\$ 52,882	\$ 66,102	\$ 79,323	\$ 162,301

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (860,430)	\$ (860,430)	\$ (860,430)	\$ (2,581,290)	\$ (2,005,472)
Implementation Cost	\$ (332,320)	\$ -	\$ -	\$ -	\$ (332,320)	\$ (332,320)
Expected Benefits	\$ -	\$ 124,620	\$ 161,754	\$ 174,974	\$ 461,348	\$ 378,432
TOTAL COST OF OWNERSHIP (TCO)	\$ (332,320)	\$ (735,810)	\$ (698,676)	\$ (685,456)	\$ (2,452,262)	\$ (1,959,360)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).



Example 3.5

Mid-market Professional Services Firm, North America

Microsoft 365 E3 with BlackBerry Cylance

License Costs

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ³	Upfront Cost	Year 3 Cost ¹	Present Value ²
Microsoft 365 - E3	Base Microsoft Subscription	User	\$	405 870	0%	\$ -	\$ 352,350	\$ 876,242
BlackBerry Cylance	Price per users	User	\$	200 870	0%	\$ -	\$ 174,000	\$ 432,712
Total						\$0	\$ 526,350	\$ 1,308,955

¹ A three-year time horizon was used even though the customer had a contract subject to annual renewal due to high switching costs.

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

³ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ³
MS Partner Health Check ¹	Pre-deployment consulting services	No	\$ 18,040	\$0	\$0	\$0	\$ 18,040
MS Partner Implementation Support	External MS Partner Cost	No	\$ 194,350	\$0	\$0	\$0	\$ 194,350
IT Support	Internal IT Project Support	No	\$ 101,606	\$0	\$0	\$0	\$ 101,606
Other Support	Other Internal Support including UAT testers	No	\$ 18,324	\$0	\$0	\$0	\$ 18,324
Total			\$ 332,320	\$0	\$0	\$0	\$ 332,320

¹ Microsoft partner reviewed the customer's current environment to understand how it could benefit from Microsoft E5 and related services. The project duration was 3 weeks. The engagement was fixed price and structured as a credit towards the cost of the entire implementation project.

² Full deployment and professional support are scheduled for ten weeks and are structured as a fixed-price contract.

³ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ³
Annual Hours Saved per User Per Year	0	6	8	8	NA
Number of Users	870	870	870	870	NA
Value Capture per Saved Hour ¹	60%	60%	60%	60%	NA
Average Labor Rate per User per Hour ²	\$ 45.81	\$ 45.81	\$ 45.81	\$ 45.81	NA
Total Benefit – User Productivity	\$0	\$143,477	\$191,303	\$191,303	\$432,262

¹ Assumes the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for Management Analysts (Occupational Employment and Wages 13-1111).

³ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	2	2	2	2	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	25%	30%	35%	NA
Average Labor Rate per IT Employee per Hour ¹	\$ 63.56	\$ 63.56	\$ 63.56	\$ 63.56	NA
Total IT Productivity Increase		\$ 66,102	\$ 79,323	\$ 92,543	\$194,761

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).



Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (526,350)	\$ (526,350)	\$ (526,350)	\$ (1,579,050)	\$ (1,308,955)
Implementation Cost	\$ (332,320)	\$ -	\$ -	\$ -	\$ (332,320)	\$ (332,320)
Expected Benefits	\$ -	\$ 209,579	\$ 270,625	\$ 283,846	\$ 764,051	\$ 627,023
TOTAL COST OF OWNERSHIP (TCO)	\$ (332,320)	\$ (316,771)	\$ (255,725)	\$ (242,504)	\$ (1,147,319)	\$ (1,014,251)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Example 4

U.S. National Law Firm – Headquartered in Michigan

Microsoft 365 E3 with Intune Suite Add-on

Legacy Solution: Unknown / Not Disclosed

License Costs - 738 Units

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ⁴	Upfront Cost	Yearly Cost ²	Present Value ³ (After 3 Years)
Microsoft 365 – E3	Base Microsoft Subscription	User	\$ 405	738	0%	\$ -	\$ 298,890	\$ 743,295
Intune Suite Add-on	UEM	User	\$ 120	738	0%	\$ -	\$ 88,560	\$ 220,236
MS Tunnel	VPN	User	N/A - Included	738	0%	\$ -	\$ -	\$ -
MS Teams Add-on ¹	Collaboration Software	User	\$ 63	738	0%	\$ -	\$ 46,494	\$ 109,348
Total						\$0	\$ 387,450	\$ 1,072,879

¹ The customer's base M365 license did not include Microsoft Teams, a required add-on.

² A three-year time horizon was used even though the customer had a contract subject to annual renewal due to high switching costs.

³ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

⁴ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ²
IT Project Manager	Internal IT Project Manager	No	\$ 30,509	\$0	\$0	\$0	\$ 30,509
IT Project Support - Deployment, User Onboarding & Policy Configuration	IT Technicians	No	\$ 122,035	\$0	\$0	\$0	\$ 122,035
Total			\$ 152,544	\$0	\$0	\$0	\$ 152,544

¹ The customer is using internal IT resources for deployment, and deployment is expected to take a total of 12 weeks.

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ⁴
Annual Hours Saved per User Per Year	0	2.5	3	3	NA
Number of Direct Users ⁵	652	652	652	652	NA
Number of Indirect Users ⁵	83	83	83	83	NA
Value Capture per Saved Hour ¹	60%	60%	60%	60%	NA
Average Labor Rate per Direct ² User per Hour	\$ 72.31	\$ 72.31	\$ 72.31	\$ 72.31	NA
Average Labor Rate per Indirect User per Hour ³	\$ 28.38	\$ 28.38	\$ 28.38	\$ 28.38	NA
Total Benefit from Direct User Productivity	\$ -	\$ 70,719	\$ 84,863	\$ 84,863	\$ 198,184
Total Benefit from Indirect User Productivity	\$ -	\$ 3,533	\$ 4,240	\$ 4,240	\$ 11,502
Total Benefit – User Productivity	\$0	\$ 74,252	\$ 89,103	\$ 89,103	\$ 209,686

¹ Assumes the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for Lawyers (Occupational Employment and Wages 23-1011).

³ Source - Bureau of Labor Statistics average hourly rate for Administrative workers (Occupational Employment and Wages 43-0000).

⁴ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

⁵ Users include 652 attorneys and partners and 83 firm support personnel (Client Relations, Office Managers, Billing Specialists, IT Support, etc.) and interns.



Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	2	2	2	2	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	30%	30%	30%	NA
Average Labor Rate per IT Employee per Hour ¹	\$ 63.56	\$ 63.56	\$ 63.56	\$ 63.56	NA
Total IT Productivity Increase		\$ 79,323	\$ 79,323	\$ 79,323	\$ 197,265

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (387,450)	\$ (387,450)	\$ (387,450)	\$ (1,162,350)	\$ (1,072,879)
Implementation Cost	\$ (152,544)	\$ -	\$ -	\$ -	\$ (152,544)	\$ (152,544)
Expected Benefits	\$ -	\$ 153,575	\$ 168,426	\$ 168,426	\$ 490,427	\$ 406,951
TOTAL COST OF OWNERSHIP (TCO)	\$ (152,544)	\$ (233,875)	\$ (219,024)	\$ (219,024)	\$ (824,467)	\$ (818,471)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Example 4.5

U.S. National Law Firm – Headquartered in Michigan

Microsoft 365 E3 with BlackBerry Cylance

Legacy Solution: Unknown / Not Disclosed

License Costs - 738 Units

Product	Type	Licensed Unit	Annual Unit Cost	No. of Units	Expected Annual Uplift ⁴	Upfront Cost	Yearly Cost ²	Present Value ³ (After 3 Years)
Microsoft 365 – E3	Base Microsoft Subscription	User	\$	405 738	0%	\$ -	\$ 298,890	\$ 743,295
BlackBerry Cylance	Price per users	User	\$	200 738	0%	\$ -	\$ 147,600	\$ 367,059
MS Teams Add-on ¹	Collaboration Software	User	\$	63 738	0%	\$ -	\$ 46,494	\$ 115,624
Total						\$0	\$ 446,490	\$ 1,110,355

¹ The customer's base M365 license did not include Microsoft Teams, a required add-on.

² A three-year time horizon was used even though the customer had a contract subject to annual renewal due to high switching costs.

³ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

⁴ No annual uplift is expected as Microsoft does not provide an annual uplift, and prices remain relatively consistent year-over-year. Prices are subject to increase as warranted and determined by Microsoft to be appropriate.

Implementation Costs

Cost Driver	Description	Recurring?	Initial Cost (Year 0)	Year 1 Cost	Year 2 Cost	Year 3 Cost	Present Value ²
IT Project Manager	Internal IT Project Manager	No	\$ 30,509	\$0	\$0	\$0	\$ 30,509
IT Project Support - Deployment, User Onboarding & Policy Configuration	IT Technicians	No	\$ 122,035	\$0	\$0	\$0	\$ 122,035
Total			\$ 152,544	\$0	\$0	\$0	\$ 152,544

¹ The customer is using internal IT resources for deployment, and deployment is expected to take a total of 12 weeks.

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).



Expected Benefits – User Productivity Increases

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ⁴
Annual Hours Saved per User Per Year	0	5	6	6	NA
Number of Direct Users ⁵	652	652	652	652	NA
Number of Indirect Users ⁵	83	83	83	83	NA
Value Capture per Saved Hour ¹	60%	60%	60%	60%	NA
Average Labor Rate per Direct ² User per Hour	\$ 72.31	\$ 72.31	\$ 72.31	\$ 72.31	NA
Average Labor Rate per Indirect User per Hour ³	\$ 28.38	\$ 28.38	\$ 28.38	\$ 28.38	NA
Total Benefit from Direct User Productivity	\$ -	\$ 141,438	\$ 169,726	\$ 169,726	\$ 396,368
Total Benefit from Indirect User Productivity	\$ -	\$ 7,067	\$ 8,480	\$ 8,480	\$ 23,005
Total Benefit – User Productivity	\$0	\$ 148,505	\$ 178,206	\$ 178,206	\$ 419,373

¹ Assumes the employee does not use every hour recaptured to its maximum utility.

² Source - Bureau of Labor Statistics average hourly rate for Lawyers (Occupational Employment and Wages 23-1011).

³ Source - Bureau of Labor Statistics average hourly rate for administrative workers (Occupational Employment and Wages 43-0000)

⁴ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

⁵ Users include 652 attorneys and partners and 83 firm support personnel (Client Relations, Office Managers, Billing Specialists, IT Support, etc.) and interns.

Expected Benefits – IT Productivity Increase

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Present Value ²
Number of IT Personnel Dedicated to Device/Endpoint Security	2	2	2	2	NA
Number of Working Hours in a Year	2080	2080	2080	2080	NA
Estimated Efficiency Savings	0%	35%	35%	35%	NA
Average Labor Rate per IT Employee per Hour ¹	\$ 63.56	\$ 63.56	\$ 63.56	\$ 63.56	NA
Total IT Productivity Increase		\$ 92,543	\$ 92,543	\$ 92,543	\$ 230,143

¹ Source - Bureau of Labor Statistics average hourly rate for IT Technicians (Occupational Employment and Wages 15-1212)

² The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

Total Cost of Ownership Summary

Input	Initial (Year 0)	Year 1	Year 2	Year 3	Total (Cost) / Benefit	Present Value ¹
License Cost	\$ -	\$ (446,490)	\$ (446,490)	\$ (446,490)	\$ (1,339,470)	\$ (1,110,355)
Implementation Cost	\$ (152,544)	\$ -	\$ -	\$ -	\$ (152,544)	\$ (152,544)
Expected Benefits	\$ -	\$ 241,048	\$ 270,749	\$ 270,749	\$ 782,547	\$ 649,515
TOTAL COST OF OWNERSHIP (TCO)	\$ (152,544)	\$ (205,442)	\$ (175,741)	\$ (175,741)	\$ (709,467)	\$ (613,383)

¹ The present value was calculated using an annual discount rate of 10%, representing a typical weighted average cost of capital (WACC).

