ESG Economic Validation

The Economic Benefits of Cisco UCS and the Cisco UCS TCO/ROI Advisor Tool

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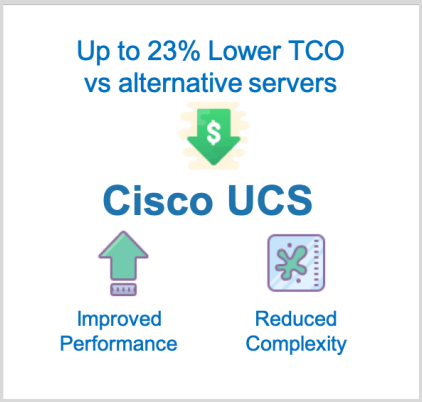
Executive Summary



Waves of innovation have led to a data center cluttered with hardware complexity and governed by inefficient operations. As organizations look to modernize their data centers, they are faced with the challenge of providing next-generation levels of performance, security, and agility while reducing costs and streamlining operations.

Cisco offers its Unified Computing System (UCS), a data center class product consisting of hardware, virtualization support, switching fabric, and management software. Cisco's platform dramatically reduces the level of complexity in the data center while enabling IT managers to meet SLAs and helping business units reach their goals. To help customers predict the impact of deploying UCS, Cisco created a tool that allows customers to compare a Cisco UCS deployment against a similar platform from competitors.

ESG was asked to analyze Cisco's UCS TCO/ROI Advisor Tool and to validate the assumptions behind the TCO/ROI calculations. ESG reviewed the content of the tool, interviewed customers with experience with UCS and competitive offerings, and compared the parameters used with existing industry and vendor collateral. We found the tool output to be an accurate representation of actual time and money spent by customers in deployed environments today.

In both blade and rack mount scenarios, the comparison tool revealed that Cisco UCS provides a 22 to 23% lower TCO when compared with a similarly configured alternative server solution. These savings come from three main categories: hardware costs lowered by 21%, maintenance lowered by 70%, and power savings of 30-60%. Customers who were interviewed confirmed savings in the same ranges predicted by the tool.

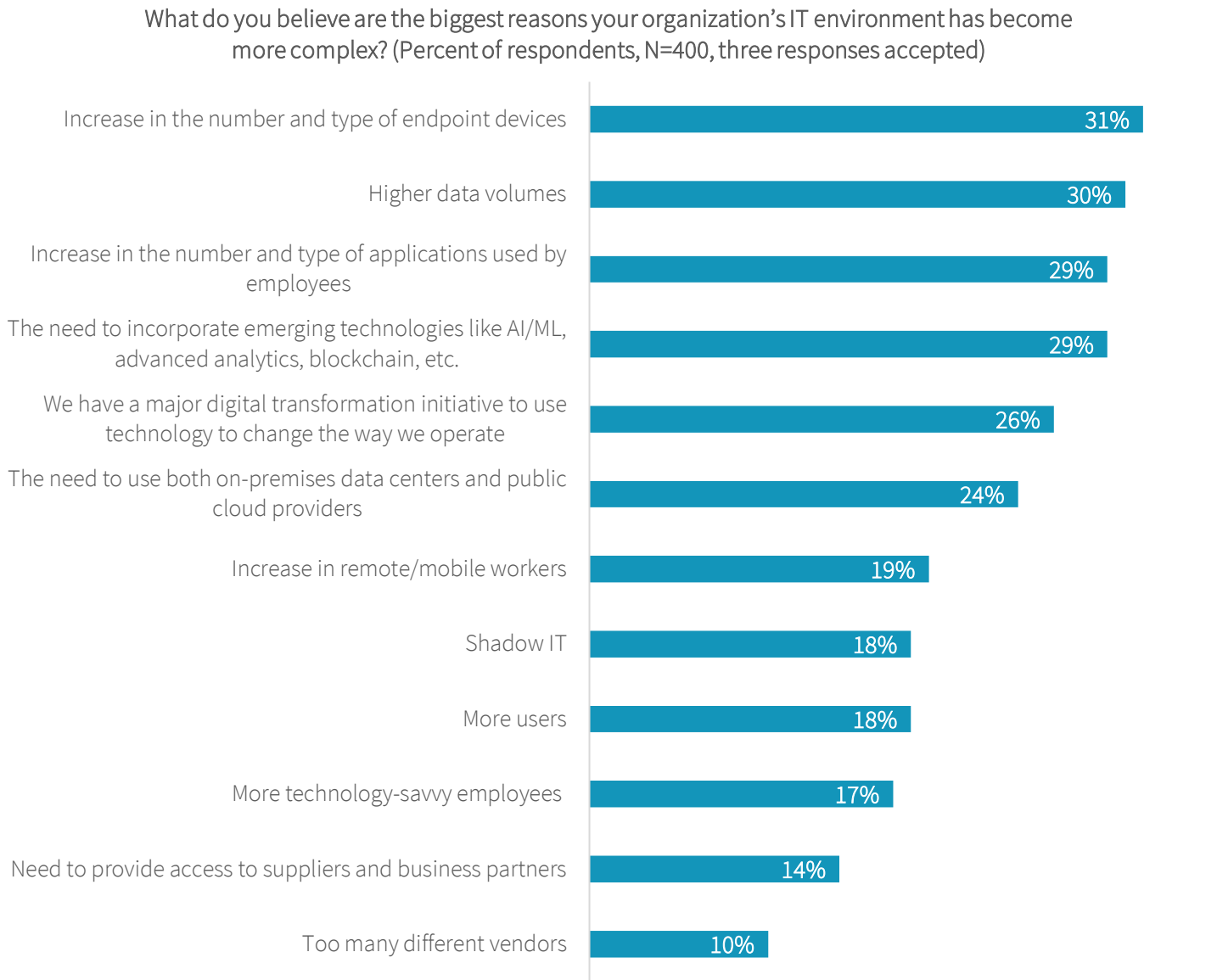
Introduction

This ESG Economic Validation focuses on the quantitative and qualitative benefits organizations can expect from implementing Cisco UCS servers and infrastructure. The analysis included customer interviews focusing on the impact that Cisco UCS has on IT operations and meeting business goals, significant review of existing internal and external case studies, conversations with ESG analysts and other industry experts, and an in-depth review of the assumptions behind the Cisco UCS TCO/ROI Advisor Tool.

Challenges

The task of running a capable and secure data center has been compared with wrestling an octopus; focus must be applied in so many different areas that it may seem to be impossible at times. Compounding this challenge is the exponential growth of data that needs to be transported and managed, a consistent flow of new endpoints and form factors, and expanded attack surfaces that must be protected locally, at the edge, and in the cloud. Addressing these challenges too often results in adding complexity to the IT ecosystem, which in turn results in added cost, redundancy in both systems and administrative tasks, stagnation of business growth opportunities, and added risk.

Figure 1. Top Drivers of Increased IT Complexity



Source: Enterprise Strategy Group

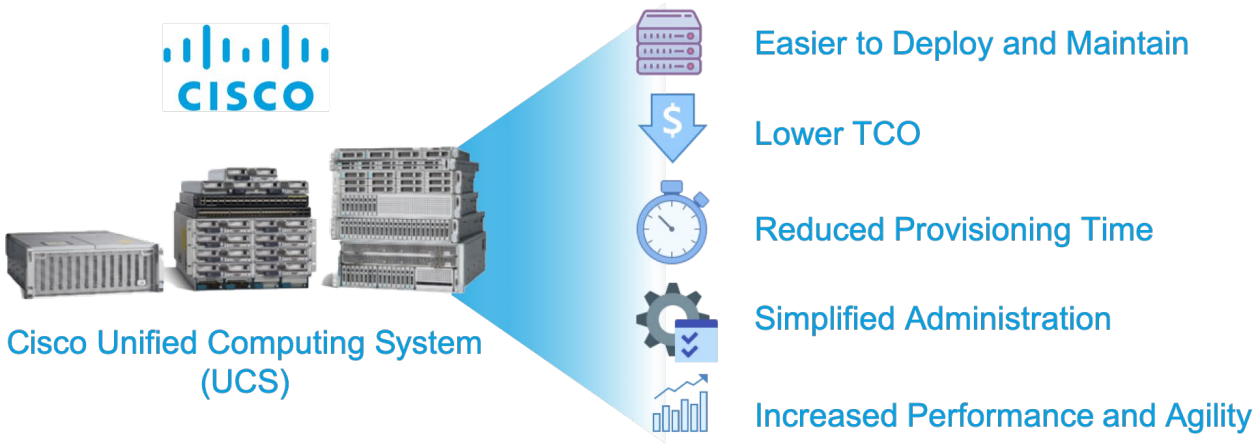
ESG research reveals that an overwhelming majority (66%) of IT professionals reported increased complexity over the previous two years, while only 5% reported a reduction in overall complexity. Complexity of the IT environment not only limits agility in addressing business challenges, but it also results in higher overall costs that inflate the total cost of ownership (TCO) of IT systems. ESG research identified the top sources of IT complexity (see Figure 1) and found that most IT departments are facing consistent pressure to adapt to changing requirements while maintaining current levels of spending.[1] The growth in the challenges they face exceeds the growth of their budgets, magnifying the importance of investing in the right technologies.

The Solution: Cisco Unified Computing System (UCS)

Reducing overall complexity involves far more than just adding the latest technology. Actually, adding technology that provides incremental benefits often results in the patchwork systems that contribute to complexity in the first place. Given the seemingly unsolvable task of providing services in a world of rapidly expanding data, endpoints, locations, security threats, and application demands, many IT leaders prefer to stay stagnant to eliminate risk. This also limits the ability to help companies maximize business opportunities and achieve their revenue goals. Solving these challenges requires a fundamental change in the IT ecosystem.

The solution to this challenge requires a simplified system able to provide services in an ecosystem that is ever increasing in complexity. Cisco UCS is a data center compute platform that combines hardware, virtualization support, switching fabric, and the management software into a single unified system. Customers deploying Cisco UCS report increased IT and end-user productivity, reduced total cost of ownership (TCO), reduced provisioning time, ease of management, and improved agility to address business needs. The key benefits of Cisco UCS are shown in Figure 2.

Figure 2. Cisco Unified Computing System (UCS)



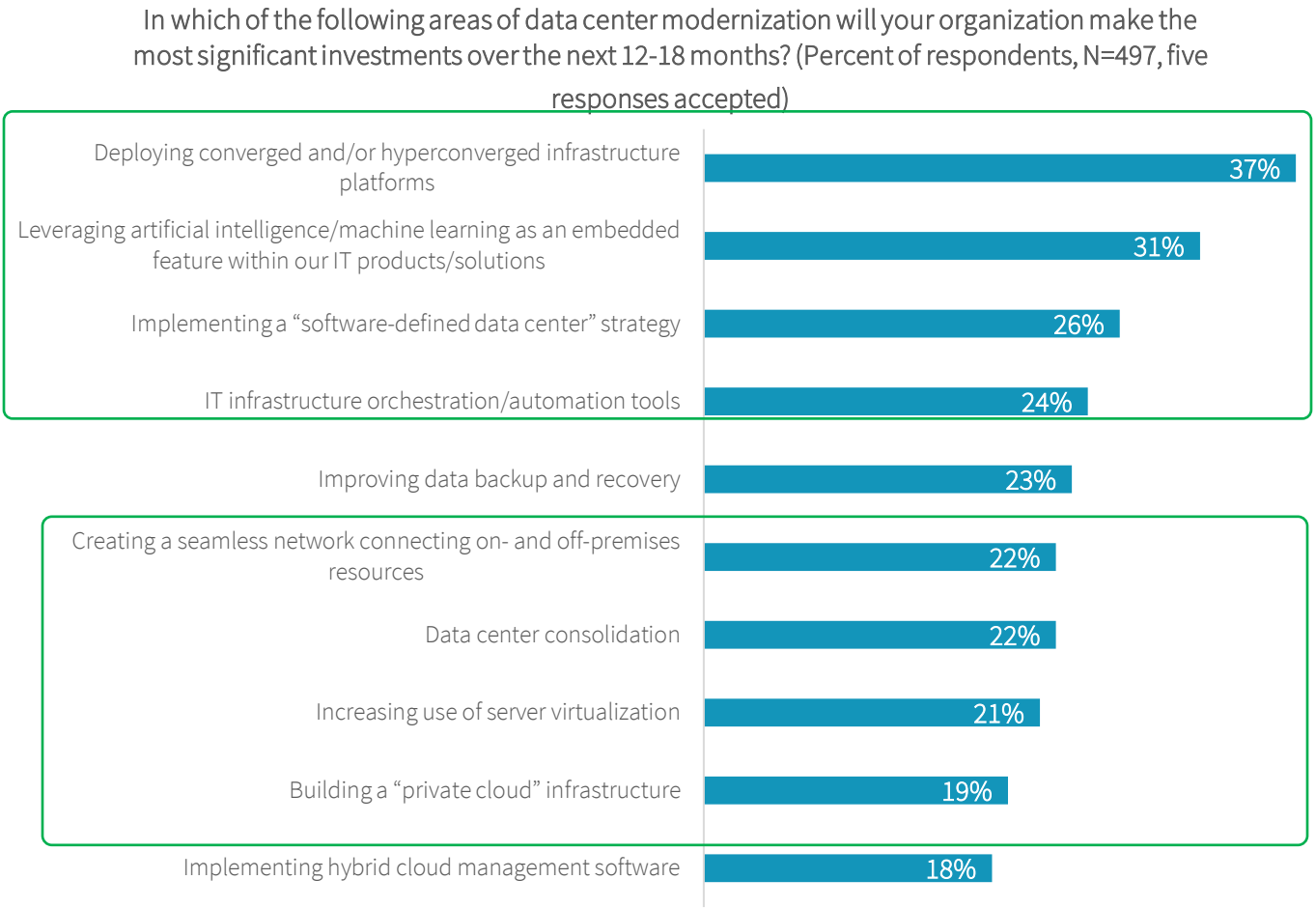
Source: Enterprise Strategy Group

The Cisco Intersight software-as-a-service infrastructure management platform allows organizations to seamlessly scale to support infrastructure in the data center, at the edge, and at remote locations with less effort. Intersight helps reduce administrative overhead by simplifying firmware updates and by providing HCL validation and insight. It provides intelligent and proactive support integration with the Cisco technical assistance center (TAC) and integration with ServiceNow through a northbound API and Cisco TAC. Intersight can even be used to automate the deployment of Cisco HyperFlex hyperconverged infrastructure at any location.

[1] Source: ESG Master Survey Results, *2019 Technology Spending Intentions Survey*, March 2019.

By combining hardware, virtualization support, switching fabric, and the management software, the Cisco UCS solution allows customers to focus their time and budget on using technology to solve business problems. ESG asked 497 respondents to identify the top areas that are critical for data center modernization success, and found that eight of the top ten items identified were directly, and positively, impacted by deploying Cisco UCS.[2] The top responses are shown in Figure 3, along with green boxes that identify the eight areas in which Cisco UCS would be expected to make a positive impact toward achieving the data center modernization goal.

Figure 3. Cisco UCS Directly Addresses Eight of the Top Ten Data Center Modernization Investment Objectives



Source: Enterprise Strategy Group

ESG Economic Validation

ESG completed a quantitative economic analysis on the Cisco UCS offerings, which included an in-depth review of the existing Cisco UCS TCO/ROI Advisor Tool, interviews with current customers who have deployed Cisco UCS, and guidance from our internal industry experts. ESG also conducted a review of hundreds of existing case studies and white papers.

ESG's Economic Validation process is a proven method for understanding, validating, quantifying, and modeling the economic value propositions of a product or solution. The process leverages ESG's core competencies in market and industry expertise.

[2] Source: ESG Master Survey Results, *2019 Technology Spending Intentions Survey*, March 2019.

Cisco UCS TCO/ROI Advisor Tool Evaluation

ESG's analysis included a study of the calculations and output of the *Cisco UCS TCO/ROI Advisor Tool*. The tool was created by Cisco to help compare the expected total cost of ownership (TCO) of Cisco UCS against equivalently configured server solutions from other vendors. The results can be formatted for use in a Cisco UCS Financial Analysis report. The tool was created in good faith, with all of the parameters, costs, and assumptions tunable by end-users to arrive at a fair and accurate comparison. ESG reviewed the costs, assumptions, and calculations built into the tool and compared them to those we have used in our own models, against publicly available information, and against our general knowledge of end-user IT solutions. ESG found the tool to be a fair and accurate representation of costs related to servers based on the specs and characteristics provided for the supported models.

Once ESG validated the model functionality, ESG used the tool to compare the savings that can be achieved with Cisco UCS with an equivalently configured solution from a leading server vendor. Two scenarios were modeled to reflect actual customer situations resulting in the output that calculated and compared the overall TCO and ROI.

Scenario 1: Blade – Cisco UCS versus HPE Cascade Lake

This scenario consisted of 64 HPE SY 480 G10 servers compared against Cisco UCS B200 M5 Servers using the UCS TCO/ROI Advisor Tool. The three-year results showed the expected TCO of the Cisco UCS configuration to be 22% lower than the comparable HPE config.

- **Hardware Cost** – Cisco UCS lower by 19%

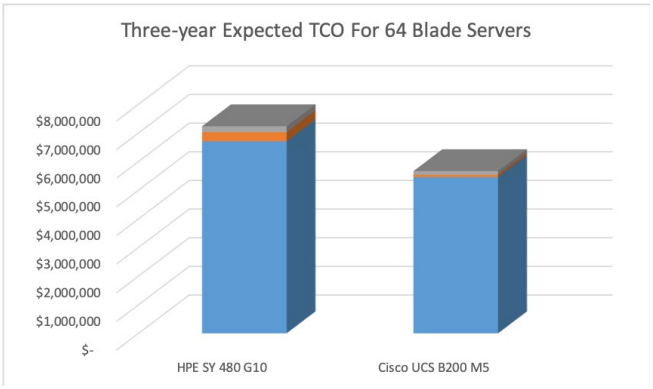
  HPE - $6,701,920 Cisco UCS - $5,450,504

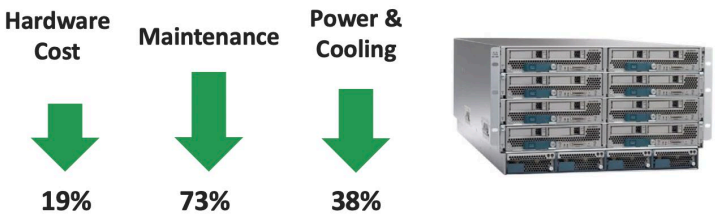
- **Maintenance Cost** – Cisco UCS lower by 73%

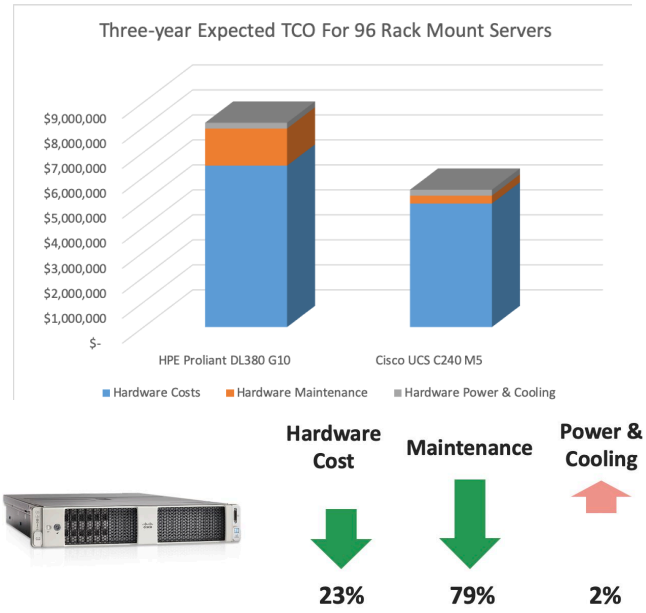
- HPE - $319,620 Cisco UCS - $84,803

- **Power & Cooling** – Cisco UCS lower by 38%

  HPE - $207,351 Cisco UCS - $127,704







Scenario 2: Rack Mount – Cisco UCS versus HPE ProLiant

This scenario compared 96 HPE ProLiant DL380 Gen 10 servers with Cisco UCS C240 M5 over a three-year period. The results showed the overall TCO to be lower for the Cisco UCS configuration by 23%.

- **Hardware Cost** – Cisco UCS lower by 23%
  HPE - $6,460,199 Cisco UCS - $4,944,872
- **Maintenance Cost** – Cisco UCS lower by 79%
  HPE - $1,484,188 Cisco UCS - $313,948
- **Power & Cool Cost** – Cisco UCS higher by 2%
  HPE - $232,998 Cisco UCS - $237,316

Highlights of the Analysis Reported by the Cisco UCS TCO/ROI Advisor Tool

- Cisco UCS showed a lower initial cost and much lower management cost. Both CapEx and OpEx costs are lower initially and ongoing.
- While the servers compared are based on similar specs, the Cisco UCS provides a lower hardware cost by deploying simplified intra-chassis switching for blades and minimizing the number of adapters and ports required for rack servers.
- In blade configuration, Cisco UCS showed a 38% lower power and cooling cost. In rack configuration, Cisco showed a 2% higher power and cooling cost.
- The HPE rack environment used 14 network switches compared with two in the Cisco environment.
- The HPE rack environment used 520 cables compared with 48 with Cisco.

ESG found the tool output results to be very much in line with results that customers shared in our interviews, reported in case studies, and described in our discussions with industry analysts. One discrepancy that came up is the reporting of slightly higher power consumption in the rack mount scenario. In scenario 2, the power and cooling costs were calculated as 2% higher in the Cisco UCS configuration when compared with the HPE ProLiant configuration.

Although ESG highlighted the slight difference as a negative for UCS in this scenario, the difference is relatively inconsequential to the overall TCO, and the power consumption between the rack mount solutions can be considered equivalent. For the blade scenario (scenario 1), the power savings with Cisco UCS was reported at 32%, and this was more in line with what customers reported to ESG. In general, customers interviewed reported a much lower power and cooling cost for Cisco UCS than that which was reported by the Cisco UCS TCO/ROI tool (compared with alternative offerings). One customer attributed power and cooling savings to the dramatic improvement in cabling efficiency with Cisco UCS, which allowed for better airflow across the server units.

Additional Feedback from Customers

As part of the validation of the Cisco UCS TCO/ROI Tool, ESG interviewed customers and industry analysts and reviewed publicly available information to vet the results. Five key benefits resonated throughout the reviewed content.

- **Reduced power consumption** – ESG found that customers report a 30-60% reduction in power consumed by servers and associated cooling. One reported, "Our cooling costs and power requirements were cut by 50%."
- **Increased efficiency of IT staff** – Customers report a 75% increase in efficiency in their IT staff when moving to a Cisco UCS environment: "The same staff of seven engineers who used to manage 90 servers now manages 150 Cisco servers." This same customer also reported a shift to more strategic work in their IT staff that has led to a more predictive environment that identifies both problems and opportunities at a much better rate than in the past.

"We can deploy a new node from the phone. Much easier and quicker than in the past. Not only does it eliminate travel, it allows us to spin up new capacity much quicker which allows us to respond to business needs. It also keeps my people happy because they can use their phone to deploy instead of driving to the office."

- **Reduced cabling** – Every customer studied mentioned the dramatic reduction in cabling, estimated to be 80% less than needed in competitive environments. One reported, "We used to have huge bundles of cables. They were expensive, confusing, and caused airflow and cooling problems. Cisco's cabling is much simpler, cheaper, and has completely eliminated any cabling issues."
- **Reduced provisioning** – Customers report an 80% reduction in provisioning: "Cisco takes 80% less time to provision than our old environment. Speed for new deployments along with time needed for replacements is much quicker with UCS. It eliminates a lot of the pain for both IT staff and business units."
- **Improved IT morale** – Customers report an uptick in overall IT morale when working in a Cisco UCS environment. This results in better employee retention and generally a more pleasant working environment. One customer summarized the difference of working in Cisco UCS environments compared with HPE, "I have worked in both environments. I know that people are happier working in an UCS environment. Happier people work harder."

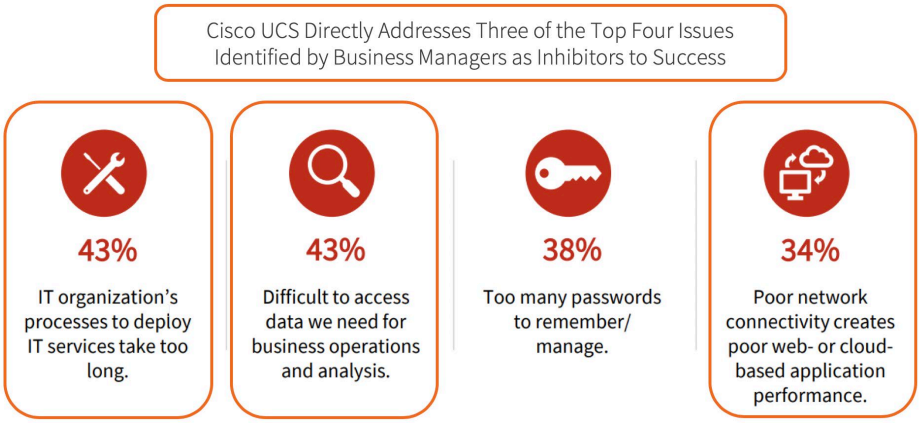
The Bigger Truth

Increases in data velocity, endpoint variety, data availability, and server security are not a new problem; however, the rate at which these demands are increasing places a burden on IT to constantly seek new solutions. The result is IT systems that are complex, expensive to purchase and maintain, and too often act as inhibitors to achieving the goals of the business. Experienced IT managers will agree that complexity is one of the biggest inhibitors to IT success. In addition to increasing the overall cost and time it takes to manage systems, it results in an environment that is error-prone and inflexible.

Cisco Unified Computing System (UCS) is a platform that delivers the density and next-generation capabilities demanded by modern data centers while removing much of the operational complexity that exists in some other server solutions. ESG identified that Cisco UCS positively impacted eight of the top ten areas in which organizations are making investments to modernize their data center, and directly addresses three of the top four issues identified by business managers as inhibitors to success including length of time to deploy IT services, availability of important data, and poor network connectivity.[3]

Cisco built the *Cisco UCS TCO/ROI Advisor Tool* as a credible tool to help customers compare solutions and understand the benefits that deploying a UCS platform can offer their business. ESG was asked to use our experience in economic modeling of IT environments to evaluate this tool to ensure the tool was fair, credible, and analogous with the analyses being performed by similar tools today. In addition to auditing the tool calculations and assumptions, ESG interviewed customers who had experience with both the Cisco UCS server platform and competitive server offerings to validate the assumptions used in the tool and gain insight into the impact UCS has on TCO and achieving business goals. ESG also studied available business cases and white papers along with interviewing industry analysts.

We found the output of Cisco's UCS Advanced TCO/ROI Comparison Tool were fair and accurate, and were well validated by information reported through our customer interviews. Additionally, customers reported benefits that are not considered by the tool but helped them to achieve their SLAs and enable their business units to reach their goals.



ESG then used the results of the tool to model two scenarios that demonstrate that Cisco UCS can deliver a 22% lower expected TCO when compared with an alternative server solution that was configured using equivalent hardware technology. The savings were provided by lower initial hardware cost, much lower operational and management costs, and a reduction in power and cooling requirements. Customers who make use of this tool can expect to see positive results that mirror those described in the scenarios highlighted in this report.

ESG has carefully studied the Cisco UCS offering and the UCS Advanced TCO/ROI Comparison Tool and strongly recommends that customers looking for a server platform to modernize their data center that excels in performance while reducing overall complexity consider Cisco UCS. ESG also recommends that customers considering UCS, or any competitive server offering, utilize the Cisco UCS Advanced TCO/ROI Comparison Tool to better understand the impact that the choice of server platform can have on the bottom line of the business.

[3] Source: ESG Master Survey Results, *2019 Technology Spending Intentions Survey*, March 2019.

Enterprise Strategy Group is an IT analyst, research, validation, and strategy firm that provides market intelligence and actionable insight to the global IT community.

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