

# Apple Silicon Spotlight: Apple's M1 Chip Changes The Conversation Around Enterprise Devices By Delivering Power And Performance At Competitive Prices

According to Forrester research, improving employee experience through better technology and tools leads to better business outcomes.<sup>1</sup> As the lines between work and home blur, employees' primary connections to their employers are the devices and tools they interact with to get work done. These tools and devices do more than provide access to organizational resources; they define and influence the organizational culture and the way employees interact with each other and with customers. This simple fact should give organizations more confidence to invest in the best tools for their workers. But it is still important for organizations to listen to what employees want and to consider the costs of these solutions and devices both up front and on an ongoing, operational basis.

In 2019, Apple commissioned Forrester to conduct a Total Economic Impact™ (TEI) study to better understand the benefits, costs, and risks associated with deploying Apple Mac devices in enterprise.

Apple released the M1 chip in November 2020, and the company has since released four enterprise-ready devices that leverage the new technology: the MacBook Air, the 13-inch MacBook Pro, the Mac mini, and the 24-inch iMac. One of the immediate benefits of the M1 Macs is that they significantly outperform their non-M1 chip predecessors, and they introduce a new standard of performance at each price point.

Apple commissioned Forrester Consulting to update the previous study and examine the impact that the updated macOS and the addition of M1 Macs have had on enterprises. To accomplish this, Forrester



Average device lifecycle cost savings over 3 years

**\$843 per Mac deployed**



Reduced IT support costs over 3 years

**\$12.4 million**

interviewed five customers with experience deploying Mac M1s and updated the original study.

Overall, the interviewees said their organizations were able to leverage M1's additional power and performance at a lower price point to expand their Mac user bases to new teams and roles. This brought Macs in-line with PCs when considering the most economical baseline device for workers.

This abstract will focus specifically on M1 Mac devices and the additional value they bring to organizations.

## INVESTMENT DRIVERS

Interviewees said their organizations were driven to adopt the new M1 Macs to:

- **Reduce costs.** Interviewees reported that M1 Macs outperformed their organization's currently deployed PCs and even some other Apple devices from higher price points. With this improved performance, organizations can shift more employees to a baseline Mac with M1,



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which saves money while giving employees a more powerful and more capable machine at a lower price point. A head of corporate IT in the financial services industry said: “The MacBook Air is our preferred device today because we are seeing great potential in the M1. With the performance improvements from M1, we are able to deploy the MacBook Air with M1 to many more areas and teams, including legal, HR, marketing, and in commercial areas.”

An IT director in the retail industry said: “The short-term benefits are that we can reduce our replacement footprint with less expensive computers for a portion of our staff without sacrificing processing power. That is pretty huge from a forecasting and budgeting perspective.”

**“With M1, you get a much more powerful machine with a much longer battery life that will make you much more productive as an employee. It’s pretty simple, and all of that comes at the added wonderful benefit of being at a lower price point.”**

*IT director, retail industry*

- **Improve employee experience and productivity.** Interviewees said some employees reported that fan noise in older Macs make it challenging to use the devices for video calls and that perceived performance issues with very large, complex spreadsheets leads some teams to prefer PCs. However, interviewees said the power efficiency of M1 solved these issues at their organizations. A head of corporate IT in the financial services industry said: “For spreadsheets, the compliments are happening across the board. [There are] no locks. It’s now a smooth and great experience to work with spreadsheets on Macs. Everybody [at my organization] wants a MacBook Air M1 now.”

An IT director in the retail industry said: “We have received really positive feedback on the M1 across the board. All our users who have them love them and rave about the battery life and how fast they are. I see productivity benefits on my side, too. I work with a lot of big reports and a lot of complex IT software, and I spend a lot less time waiting for small things than I used to. There is a speed improvement across the board.”

**Improve employee productivity by 5% with Mac devices and improve retention by 20% by allowing employees to choose Mac.**



- **Reduce their carbon footprints to achieve environmental, social, and corporate governance (ESG) goals.** ESG goals are becoming much more prevalent with many organizations publicly stating goals and tying compensation to ESG milestones and compliance. The MacBook Air and Mac mini are made from 100% recycled aluminum and have significantly smaller carbon dioxide footprints and consume less energy than PC counterparts. This means that deploying Apple devices can help reduce environmental impact at the individual, team, and organizational level.

A director in the technology industry said: “We have sustainability goals across all units, and people haven’t yet thought about the impact that their actual devices can have. So that is where we are trying to focus. We [are looking] at each group’s most commonly deployed PC devices and bringing data to show how Macs can improve their ESG performance with 100% recycled aluminum and reduced power consumption.”

## M1 FEATURES

While certain features and capabilities are still being tested or rolled out, interviewees reported that M1 Macs have many advantages over non-M1 Macs. They said M1 Macs:

- **Provide superior performance.** Interviewees reported that the MacBook Air M1 outperforms comparable PCs and even some previously purchased, higher price-point Macs across all tasks. Improved performance provides organizations with the flexibility to deploy devices with a lower entry point to a wider range of roles and teams than previously possible without

**“We’re getting computing power to entry-level positions that is on par with what we used to provide to only our high-end users. So, a lot of extra productivity comes with that.”**

*IT director, retail industry*

compromising processing power.

The director in the technology industry said their organization tested M1s against PCs. They said: “We test the performance on different devices, and when the test team got their hands on a MacBook Air M1, it outperformed all the PC devices they had.”

- **Significantly improve power efficiency with better battery life.** Interviewees reported that M1 Macs have a far superior battery life than any other devices available (Mac or PC), and testing confirmed that they consume less power. Additionally, interviewees said their M1 Macs are able to perform tasks that require significant

computing power without the device overheating or rapidly depleting battery if unplugged.

The IT director in retail said: “We’ve gotten a lot of feedback on the battery life, and I can attest to it as well. The battery life is phenomenal in terms of [today’s needs] and working remote, the COVID-19 pandemic, and all the new rules and policies we’ve had put in place. I can have my laptop completely unplugged for a full day and know that I’m going to be okay. That’s really important to people who need to work remotely or who find interesting places to work if they aren’t able to work from home.”

The director in the technology industry said: “We’ve got so many people who say, ‘This is the perfect machine for all of the video conferences.’ Specifically, [they like] the MacBook Air because it’s fanless, and that is what people prefer.”

**“From a performance perspective, it’s pretty impressive. The battery lasts forever.”**

*Director, technology industry*

- **Are compatible with iOS applications.** Interviewees said their organizations are currently testing app compatibility between iOS applications and M1 Macs, and that they have seen promising results. The IT director in retail said: “We have quite a few operational iOS apps, and those are the apps that we could see some real benefits of being able to run them natively on the M1s. It would reduce the need for custom development work and also reduce the total number of devices because an employee would be able to do everything they need on the Mac.”

## KEY RESULTS

To better understand the impact that M1 had on Mac deployments, Forrester calculated the three-year costs and benefits for an M1 Mac vs. an “average” Mac and a comparable PC for a composite organization based on the experiences of the interviewees’ organizations. The results are based on the original data and analysis collected for the 2019 study and combined with the additional data collected for this update to represent a forecast of potential benefits. The results of that analysis are below.

**Reduced IT support costs.** With Mac, organizations benefit from zero-touch deployments, fewer and simpler support tickets, and the ability for one FTE to manage more devices. For the composite organization, this leads to \$12.4 million in savings through:

- **Easier device deployment and management.** With zero-touch deployment, auto-enrollment in mobile device management (MDM), and a simple process for updates and patches, organizations can manage more Mac devices per IT FTE than PCs.
- **Reduced operating costs.** With fewer service tickets per device, reduced power consumption, and better residual value, organizations can reduce operating costs and the total cost of ownership over three years.

### **Reduced and avoided costs of PC deployment.**

With the MacBook Air as the new standard baseline device, organizations are no longer paying a premium to deploy Macs. For the composite organization, this benefit accounts for \$37.6 million in avoided costs through:

- **Improved power at a reduced price point.** Organizations can deploy baseline devices to a larger percentage of their employees, reducing the average device cost while giving employees more computing power than they had before.

Compared to the 2019 study, organizations using M1 Macs are able to reduce the average Mac device cost by \$300 in Year 3, and by \$200 when looking at all devices purchased during the three-year period.

- **Built-in features that reduce licensing costs and improve security.** There is no need to purchase an OS license or software maintenance contract for Mac because Apple keeps the OS and security up to date at no added cost. And the underlying architecture and included security features obviate the need for some additional endpoint security licenses.

**“The app compatibility really worked as advertised with our own app that we open source. We did not need to change a single line of code to run the app on the M1 Macs.”**

*Manager of native app experiences, technology industry*

**Reduced risk of a data breach.** Apple’s vertically integrated architecture and built-in security features make Mac devices more secure than their PC counterparts. Interviewees reported far fewer security incidents and alerts with their M1 Mac devices. One interviewee said their organization hasn’t had a single malware incident since migrating to a full Mac deployment. For the composite organization, this benefit accounts for \$4.5 million in avoided costs through:

- **Built-in security.** Automatic encryption and anti-malware capabilities help keep organizations safe and reduce the number of security incidents.

With M1, Apple vertically integrated its devices and enabled them to build security into the device architectures. This eliminates vulnerabilities associated with previous processors, and it further enhances the built-in security protections afforded by Mac devices.

- **Smaller attack surfaces.** Because employees set up their own devices through zero-touch deployments, there are no additional admins or other accounts that can provide bad actors with back-door access to the devices. This reduces the number of attack surfaces.

The head of IT in the financial services industry said: “We haven’t had any malware incident in the last three years since we moved to a 100% Mac deployment. We can see the traction and retention benefits, the productivity, and the innovation that Macs enable. But, ultimately, we went with Mac for security, and it’s very strong.”

**Improved employee productivity and engagement.** The composite organization sees a 20% improvement in retention rate, a 5% improvement in productivity for all employees, and overall better performance. This results in 48 hours of increased productivity over three years and \$76.9 million over three years. It also leads to:

- **Happier employees.** Interviewees reported that Mac users are less likely to leave the company and report higher employee satisfaction scores than their PC-using counterparts. Happier employees lead to better business outcomes.
- **Improved performance.** In addition to employees desiring Mac devices and being happier when they use them, the devices themselves outperform PC counterparts, and the M1 Macs even outperform previously purchased, more expensive Macs.

## DEPLOYMENT CONSIDERATIONS

The Forrester TEI analysis is based on the specific deployment details laid out for the composite

organization, which deploys multiple tiers of both Macs and PCs. According to interviewees, the MacBook Air with M1 and a starting price of \$1,000 is being used as a baseline device. It can be compared to PC devices that also start at \$1,000.

Your organization’s environment may differ from that of the composite organization. For example, if your organization has a higher knowledge-worker deployment, you can adjust the analysis to evaluate the lifecycle cost differences between two comparable devices rather than a blended rate that encompasses the whole Mac and PC deployment. In this scenario, your organization may see additional per-device savings beyond the \$843 modeled in this TEI analysis.

Deploying a higher percentage of M1 Macs may lead to additional lifecycle cost savings beyond \$843 per device.



## DEVICE LIFECYCLE COSTS FOR COMPOSITE ORGANIZATION

The information below is based on data collected from 10 interviewed organizations that deploy Macs in their environment and increase their Mac footprints annually.

The financial model is based on a composite organization that has the following characteristics:

- The organization anticipates deploying Macs to 33% of its workforce after three years of an employee-choice program.
- Both PC and Mac deployments consist of multiple device types at multiple price points to fit the needs of various teams and functions.
- The composite organization deploys 100,000 computer devices (one device per employee), and Macs make up the following percentage of the enterprise device deployment:
  - 10% (10,000 Macs) in Year 1, 21% (11,000 Macs) in Year 2, 33% (12,000 Macs) in Year 3
  - In Year 3, the organization has a total of 33,000 Macs deployed and 67,000 PCs.

For this scenario and to make a clear comparison, Forrester only leveraged the data available in the financial model and examined the forecasted costs to acquire, secure, and maintain each device for more than three years.

### ANALYSIS

Combining hardware, software, support, and operational costs over three years leads to a cumulative cost advantage for Mac deployments. Note that the risk adjustments in the tables below are the aggregated risk adjustments made to each benefit and cost category as described in the benefit and cost sections of the main TEI.

The primary differences between the M1 Macs and other Mac devices are improved performance at lower price points. This allows organizations to deploy lower price point devices to a wider range of employees without sacrificing performance, reducing the average cost of each device. The composite organization sees ongoing costs of management and support drop with improved reliability of M1 Macs.

## Total Average Estimated Per-Device Savings (3 years): \$842.71

Three-Year Hardware And Software Costs			Three-Year Support And Operational Costs		
Metric	PC	Mac	Metric	PC	Mac
Device costs	\$1,200	\$1,500	Provisioning	\$43	\$3.58
Incremental required software	\$570	\$120	Service tickets and resolution	\$540	\$162
Incremental peripherals	\$0	\$50	Additional general IT management	\$758.60	\$500.06
Residual value %	10%	25%	Energy costs	\$42	\$14
Residual value \$	(\$120)	(\$375)	Risk adjustment	\$0	\$69
Risk adjustment	(\$83)	\$64.75	<b>Total</b>	<b>\$1,383.60</b>	<b>\$748.64</b>
<b>Total</b>	<b>\$1,567.50</b>	<b>\$1,359.75</b>	<b>Differential</b>	<b>\$634.96</b>	
<b>Differential</b>	<b>\$207.75</b>				

A commissioned Forrester Consulting study based on data from 10 organizations who currently deploy Macs and have increased their Mac deployment annually.

## TOTAL ECONOMIC IMPACT ANALYSIS

For more information, download the full study: “The Total Economic Impact™ Of Apple Mac In Enterprise M1 Update,” a commissioned study conducted by Forrester Consulting on behalf of Apple, July 2021.

### STUDY FINDINGS

Forrester interviewed decision-makers from 10 organizations with experience deploying Macs with M1 and combined the results into a three-year composite organization financial analysis. Risk-adjusted present value (PV) quantified benefits include:

- Reduced IT support costs leading to \$12.4 million in savings.
- Reduced and avoided costs associated with PC deployment including a 60% reduction in energy consumption, totaling \$37.6 million.
- Improved employee productivity and engagement including a 20% improvement in retention, totaling \$76.9 million.



**Return on investment (ROI)**  
**336%**



**Net present value (NPV)**  
**\$101.3 million**

## Appendix A: Endnotes

<sup>1</sup> Source: “Best Practices: Technology Experience Management,” Forrester Research, Inc., April 8, 2021.

### DISCLOSURES

The reader should be aware of the following:

- The study is commissioned by Apple and delivered by Forrester Consulting. It is not meant to be a competitive analysis.
- Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Apple Mac.
- Apple reviewed and provided feedback to Forrester. Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester’s findings or obscure the meaning.
- Apple provided the customer names for the interview(s) but did not participate in the interviews.

### ABOUT TEI

Total Economic Impact™ (TEI) is a methodology developed by Forrester Research that enhances a company’s technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders. The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility.

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