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# The Total Economic Impact™ of Microsoft Surface for Education

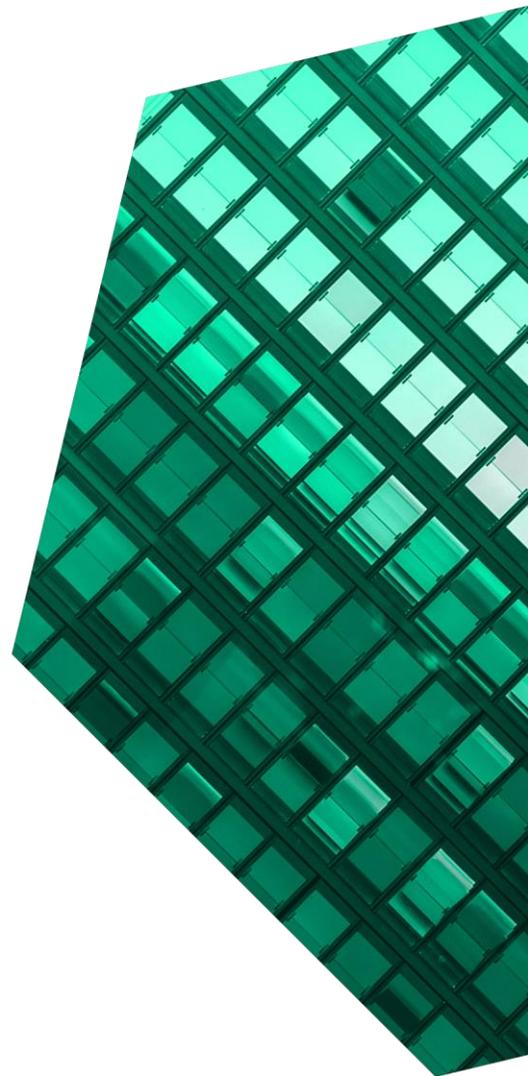
Lower Total Cost Of Ownership, Increased Productivity,  
And Improved Student Outcomes In K-12

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Consulting Team: Jonathan Lipsitz  
Mbenoye Diagne  
Sophia Christakis

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## ABOUT FORRESTER CONSULTING

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## Executive Summary

Access to individual computing devices is critical for the education of K-12 students. Benefits of this access include better instruction, enhanced creativity and collaboration, fulfillment of accessibility and special learning requirements, and teaching workplace technology skill sets. Microsoft Surface devices create better outcomes for students, while also making it easier for IT organizations to support 1:1 student device models as well as freeing up teachers' and administrators' time.

Microsoft commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) for K-12 schools deploying [Surface](#). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Surface on their organizations. Adopting Surface as the device of choice for an institution improves student outcomes, helps overworked IT departments, frees up instructors' time, and reduces total cost of ownership (TCO) for devices.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four K-12 organizations (both stand-alone schools and school districts) and surveyed 164 additional institutions with experience using Surface. For the purposes of this study, Forrester aggregated the experiences of the interviewed and surveyed customers and combined the results into a single [composite organization](#). This study focuses on the incremental benefits of using Microsoft 365 Education on Surface devices. Two other Forrester Consulting TEI studies describe in greater detail the general benefits of Microsoft 365 Education and the benefits of the accessibility and assistive features.<sup>1</sup>

Prior to using Surface, the composite organization provided end-user devices to faculty and administration from different vendors. It also had a mix of student devices and was moving towards a 1:1 student device model. However, prior attempts to switch over yielded limited success, resulting in

### KEY STATISTICS



Return on investment (ROI)  
**44%**



Net present value (NPV)  
**\$12.1 million**

difficulties supporting devices and headaches for teachers. These limitations led to a high TCO, lost time for teachers, and did not best serve students educational needs.

After the investment in Surface, the organization realized increased productivity for all users and lower total costs. Key results from the investment included time savings for faculty and staff (namely teachers, administrators, and IT), device cost reduction, fewer security breaches, and better student performance. These outcomes made a 1:1 student device initiative more successful.

Student time savings which can be applied towards better learning.

**20 minutes per week**



## KEY FINDINGS

**Benefits.** Risk-adjusted present value (PV) quantified benefits, as applied to a composite organization with 25,000 students, 1,563 teachers, and 391 administrators include:

- **Students learning outcomes improve across a wide range of areas.** Switching to Surface devices improves student learning and attitude. The survey found that the top benefits of Surface for students are better engagement, quality of work, creativity, and comprehension. These benefits arise from a combination of device features such as inking and higher resolution screens as well as optimized performance. Students also enjoy having a modern device which brings them a sense of pride, and they benefit from having their own device whether it remains on campus or can be taken home. Additionally, Microsoft 365 For Education's accessibility and assistive capabilities are improved because of better device performance and higher quality screens and cameras; this benefit is not quantified in the study.
- **Teachers are saving two hours per week and have higher satisfaction.** All teachers are given a Surface Pro device which they use in school and can take home. This has saved them time because of improved device performance, less downtime, features such as inking, and improved connectivity to Surface Hub and Studio devices. More importantly, teachers are more creative and providing better instruction to students. The time savings component is quantified for the study and equates to \$7.8 million over four years.
- **Administrators are saving 1.25 hours per week.** Improved device performance also benefits non-teaching administrators. The survey found that the top activities enhanced by moving to Surface are setting up virtual meetings, communicating with other employees and the community at large, and collaborating with others. This time savings over four years is worth \$1.6 million.
- **The amount of effort to support a 1:1 device strategy was cut in half.** Without moving to Surface devices, the IT organization would require nine FTEs to support all students,

“ Moving to Surface devices has raised student confidence and their desire to learn more. ”

— Directory of technology, private high school

teachers, and staff. With Surface, five FTEs can either not be added as new hires or reassigned to other activities as existing staff. This savings is subtracted out of the total IT staff costs shown in the Costs section of the study. Additionally, the number of helpdesk tickets is reduced by 18%. The total four-year savings is \$2.2 million

- **Other device management and instructional technologies can be retired.** Eliminated product categories include remote monitoring and management (RMM) solutions (which can be replaced with Intune and Autopilot), IT training solutions, and accessibility solutions for students. These savings total \$915,000 over four years.
- **The likelihood of a security breach is reduced by 10%.** Surface-specific features improve overall security and compliance. Given the sensitive nature of minors' information, improving security and compliance is a top priority for schools. Improved security results in less downtime, lower remediation costs, and fewer fines. These benefits amount to \$1.2 million.
- **Device purchase and warranty costs are 10% lower than for the previous devices.** Prior to Surface, schools were spending more on employee and student devices. Additionally, the replacement period for employees was increased from three years to four years. The eliminated device costs are \$21.9 million, which is \$2.2 million higher than the Surface device costs included in the Costs section of the study.
- **Per device deployment costs are reduced by 62%.** Previous devices needed three hours to be fully setup for students and employees. Setting up Surface devices is highly automated and streamlined. It is still necessary to touch each device to apply asset tags and ruggedized cases, but \$4.0 million in internal effort to setup new devices is replaced with a service contract that only costs \$1.7 million.

## Reduction in device and other technology hard costs.

13.6%



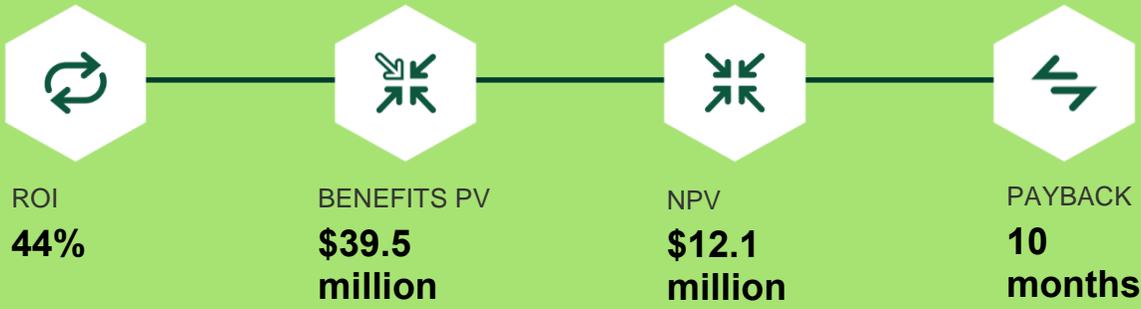
**Costs.** Risk-adjusted PV costs, based on a “big bang” deployment of all devices in the initial period, include:

- **Deployment costs total \$1.9 million.** Deployment efforts include a four-month pilot to evaluate various devices and create the images for Surface devices. The effort to deploy new Surface devices to students and employees, as well as room-based devices, is outsourced with an average cost of \$62 per device.
- **\$19.7 million is spent on all Surface devices.** This cost is \$2.2 million less than the other vendor device costs shown in the Benefits section of the study. Student devices cost \$175 less each and employee devices cost \$350 less each. They all include an extended four-year warranty. Twenty Surface Hubs and ten Surface Studios are also added to the total device count.
- **All students and employees have A3 licenses, which total \$2.6 million.** For the composite organization, it is assumed that all users have an A3 license to take advantage of the enhanced device management and security features compared to the free A1 license. If an organization already has A3 licenses, this cost category is accounted for and may be excluded from the financial analysis.
- **Total pre-Surface management costs were \$3.1 million.** Providing and managing devices for all students and employees would require nine IT FTEs. With Surface, only four FTEs are needed. The corresponding benefit for five FTE savings can be subtracted from this, and results in internal management costs of \$1.7 million

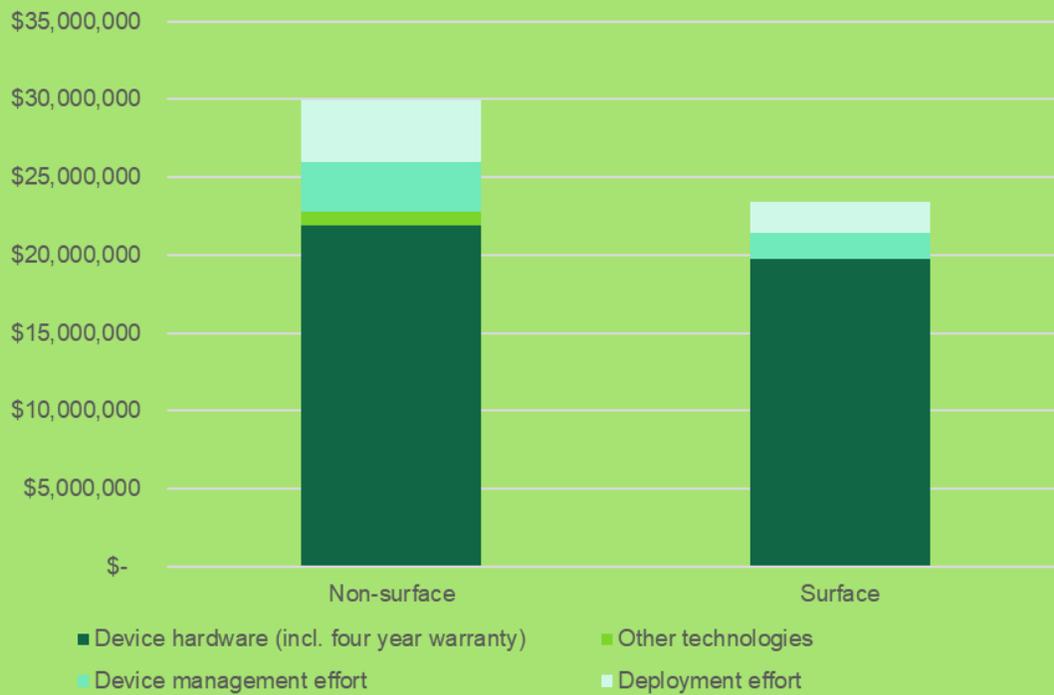
The financial analysis based on the customer interviews and survey found that a composite organization experiences benefits of \$39.5 million over three years versus costs of \$27.4 million, adding up to a net present value (NPV) of \$12.1 million and an ROI of 44%.

**Survey key takeaways.** Some of the most important findings from the survey include:

- **Key drivers/objectives for using Surface.** K-12 educational technology decision makers say the desire to make administrative tasks easier and more efficient, improve student outcomes, and more seamlessly integrate with their Microsoft 365 environment were the top drivers that led their organization to deploy Microsoft 365-powered Surface devices.
- **Surface's impact on the Microsoft 365 Education experience.** Two-thirds or more agree that using Surface has improved users' overall experience with Microsoft 365, including students (75%), teachers (69%), and non-teaching staff (66%).
- **Digital inking in practice.** Surface users credit the device's digital inking features with: aiding distance learning; providing an easier way to visualize theoretical or difficult-to-explain topics; enabling greater student engagement and creativity not necessarily bound by standardized answers; and reducing need for traditional learning supplies, like notebooks, pens, erasers, etc.
- **Top IT/security benefit of Surface.** "Greater ease in managing and provisioning users" is the top IT-related benefit reported by Surface users, followed closely by "reductions in overall IT/security costs or cost avoidance." Microsoft 365-powered Surface device users are much more likely to have realized IT/security cost reductions/avoidance than non-users.
- **Top student/educational benefit of Surface.** "Improved student engagement" and "improved quality of student work" are tied as the top student/educational benefits of Surface, and both are more likely to have been realized among Microsoft 365 users with Surface than those without.
- **Top teaching/operational benefit of Surface.** Teacher time savings is the top operational benefit cited by Surface users in the study. The top time-saving areas include setting up classroom technology, administering assignments/tests, and creating/reusing class lesson plans. Surface users were more likely than non-users to cite teacher time savings as a benefit they've realized from their Microsoft 365 environment.
- **Surface and remote learning.** Using Surface has helped schools adjust to learning and teaching changes brought on by the COVID-19 pandemic, primarily through enablement of better video/chat communication with students, remote device deployment and management, online submission of student work, and improved security. Surface users were more likely to say that their Microsoft 365 environment improved their ability to adapt to external forces that can disrupt school operations (like public health events) than non-users.
- **Surface's impact on learning and teaching experiences for special needs students.** Surface users most often cited "improved learning experiences for students with special needs" as a benefit of using Microsoft 365-powered Surface devices, primarily by allowing the same device to grow with the child as their learning progresses and providing a greater feeling of inclusion due to reduced need for special/different devices. The second most cited benefit is improved teaching experiences for students with special needs. Microsoft 365 Surface users are also more likely to have realized improved learning.



TCO Savings: \$6.6 million (21.9%)



## TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews and survey, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in the Surface For Education.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that Surface For Education can have on an organization.

### DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Microsoft and delivered by Forrester Consulting. It is not meant to be used as 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 the Microsoft.

Microsoft reviewed and provided feedback to Forrester, but 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 of the study.

Microsoft provided the customer names for the interviews but did not participate in the interviews.

Forrester fielded the double-blind survey using a third-party survey partner.



### DUE DILIGENCE

Interviewed Microsoft stakeholders and Forrester analysts to gather data relative to Surface For Education.



### CUSTOMER INTERVIEWS AND SURVEY

Interviewed four decision makers and surveyed 164 decision makers at organizations using Surface For Education to obtain data with respect to costs, benefits, and risks.



### COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed and surveyed organizations.



### FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews and survey using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.



### CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

# The Microsoft Surface For Education Customer Journey

## Drivers leading to the Surface For Education investment

### KEY CHALLENGES

Forrester interviewed four organizations and surveyed 164 organizations with experience using Surface For Education. For more details on the organizations that participated in this study, see [Appendix B](#).

Prior to deploying Surface devices, the composite organization had a mix of vendor solutions. It was also in the process of adopting a 1:1 student device program.

The interviewed organizations struggled with common challenges, including:

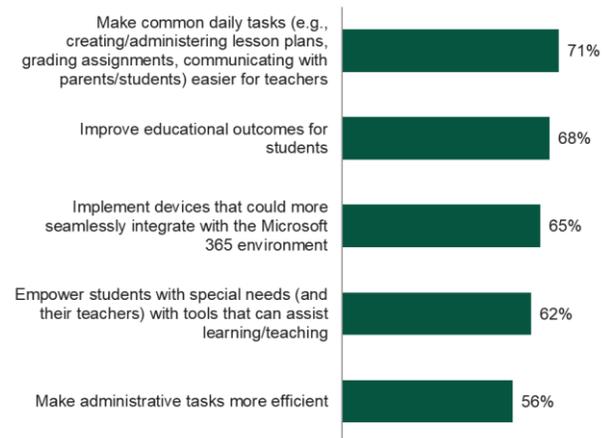
- **Device performance problems led to downtime and negatively impacted learning.** Previous devices did not meet performance needs in terms of battery life, application execution, and replacement lifecycle. This led to downtime for teachers, administrators and students, and difficulty teaching courses with special software requirements, like mathematics, properly.
- **Too much effort was required to support a 1:1 student device initiative.** The IT organization would not have had the number of employees required to deploy and support a 1:1 device program. This meant some or all students would not have access to their own devices, whether as part of a take-home or classroom-cart model. This was one factor contributing to a TCO which was deemed too high.
- **COVID-19 accelerated the need to rollout new devices and a 1:1 model.** The rapid shift to remote learning exacerbated existing deficiencies. It also put new demands on the IT organization such as zero-touch device management and support for a much larger user community. Timelines for a 1:1 device program

were compressed, especially to support students who did not have their own personal device at home.

**“We looked at BYOD, Surface, and other vendor solutions. Surface was the clear winner across many categories, and the first choice of faculty, administration, and students.”**

*Director of technology, 6-12 grade private school*

What are the key drivers or objectives that led your school system to deploy Microsoft 365-powered Surface devices? (Select all that apply)



Base: 78 educators, administrators, and IT staff with knowledge of their K-12 school's educational technology initiatives  
Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, July 2020

**“COVID hit and threw a wrench in our plans. 75% of the district is on free and reduced meal plans. We had to rollout 18,500 Surface devices with all the necessary security very quickly.”**

*Deputy CIO, public school system*

## COMPOSITE ORGANIZATION

Based on the interviews and survey, Forrester constructed a TEI framework, a composite company, and a ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four companies that Forrester interviewed and the 164 companies that Forrester surveyed and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

**Description of composite.** The composite organization is a US public school system. It has 25,000 K-12 students, 1,563 teachers, and 391 other staff all using Surface devices as part of a 1:1 device initiative. Fifth through twelfth graders can take their devices home with them, and K through fourth grade use a classroom-cart model.

**Deployment characteristics.** A “big bang” deployment for all students and employees is used. Students use Surface Go devices and employees use Surface Pro devices. Additionally, 20 Surface Hub and 10 Surface Studio devices are implemented. A fourth-year warranty is purchased and included in the purchase price.

### Key assumptions

- 25,000 students
- 1,563 teachers
- 391 staff (with Surface devices)
- “Big bang” deployment

## PHASED VERSUS “BIG BANG”

When a school first adopts Surface and/or moves to a 1:1 model, it needs to decide how fast to rollout to all students. A big-bang rollout is used for the financial analysis to tell the total cost-benefit story in as simple a way as possible. Additionally, COVID has made special capital funding available and accelerated the need to get devices into students’ hands.

A four-year student rollout scenario was also created which phased in costs and benefits. Doing so increased the ROI from 44% to 57% because the large capital investment was pushed out. However, total benefits were reduced by nearly \$5.0 million. Additionally, students will not realize the improved learning benefits until they have a Surface device, possibly four years later.

# Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits							
Ref	Benefit	Year 1	Year 2	Year 3	Year 4	Total	Present Value
	Improved student outcomes						(non-quantified)
Atr	Improved teacher experiences	\$1,427,801	\$2,855,601	\$2,855,601	\$2,855,601	\$9,994,604	\$7,753,870
Btr	Administrator time savings	\$288,668	\$577,336	\$577,336	\$577,336	\$2,020,676	\$1,567,652
Ctr	Device management IT savings	\$551,312	\$750,812	\$750,812	\$750,812	\$2,803,748	\$2,198,609
Dtr	Eliminated other technologies	\$0	\$405,000	\$405,000	\$405,000	\$1,215,000	\$915,614
Etr	Fewer security breaches	\$372,332	\$372,332	\$372,332	\$372,332	\$1,489,329	\$1,180,243
Ftr	Replaced device costs	\$22,415,060	\$0	\$0	\$2,227,560	\$24,642,620	\$21,898,781
Gtr	Replaced deployment effort	\$4,201,034	\$0	\$0	\$304,549	\$4,505,583	\$4,027,133
	Total benefits (risk-adjusted)	\$29,256,206	\$4,961,081	\$4,961,081	\$7,493,190	\$46,671,559	\$39,541,902

## IMPROVED STUDENT OUTCOMES

Interviewees all reported that moving to Surface devices has improved student outcomes. These are incremental improvements to those realized by moving to Microsoft 365 Education which were explored in another Forrester TEI study.<sup>2</sup> The incrementality was linked to improved performance and specific features such as digital inking and high-quality screens. Interviewees shared the following examples:

- “Inking, screen resolution, and camera and microphone quality are all invaluable to our students and faculty. The Surface device is the most complete package. All the features stand out in different circumstances. For example, high-quality microphones were very important for remote learning.”
- “A lot of studies show that you retain information better if you write. I’ve heard students like the feel

of the pen on the screen. It gives the feeling of real writing. We had problems with other devices.”

- “Surface Hub has been great during COVID. Students miss seeing their teachers, and Hub gives the full classroom experience for someone remoting in.”
- “Surface has allowed more collaboration between students and teachers.”
- “On-time submission of assignments and real-time grading works best when devices are reliable.”
- “Surface has contributed to higher homework turn-in rates.”
- “All of our math is done with a stylus. The math teachers were skeptical because they thought students would have to type equations. Now they

are very pleased. The move to Surface drove a whole new classroom design.”

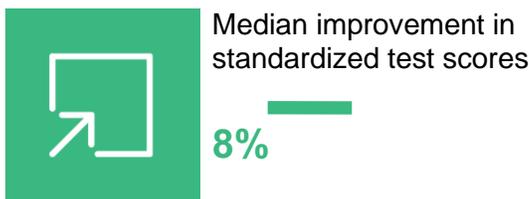
- “Surface batteries last all day, which our previous devices did not do. Connectivity is better. This means less downtime trying to charge or connect their devices.”

**“Digital inking has been especially beneficial in arts, broadcasting, math, and science classes.”**

*Director of technology, public school system*

The survey also revealed how student outcomes have improved, including:

- 63% of survey respondents reported improved student engagement because of Surface. Of these respondents, three-quarters said that students have a “better overall attitude/enthusiasm when it comes to learning” and a “higher incidence of students seeking help from or collaborating with other students”. 60% reported “higher incidence of students seeking help from or collaboration with teachers”.
- The top two subjects that have benefited from Surface are math (87% of respondents) and science (80%).
- Students are saving twenty minutes per week because of Surface. The most commonly cited activities for which time is being saved are completing homework assignments (71% of respondents), searching for/retrieving work (71%), signing into devices (64%), and taking notes (64%).



Moving students to Surface devices has also improved accessibility. These benefits are incremental to other benefits realized with Microsoft 365 Education’s accessibility and assistive features that were outlined in a previous TEI study.<sup>3</sup>

Interviewees shared the following examples:

- “Accessibility has increased because they have more access to technologies that are not outdated and meet their needs.”
- “A special education student doesn’t want to be known as the one with a problem. With Surface, they use the same device as everyone else.”
- “If students get diagnosed with a learning disability, they can use specialized software without having to learn a new hardware platform.”
- “We use some of the same accessibility features for students in our parent-teacher meetings.”

The survey asked how students with accessibility/special needs have benefited from Surface devices. Of those who reported a benefit, 88% said that “the same device can grow with the child as their development/learning progresses.” 71% reported a “greater feeling of inclusion (reduced need for a special/different device).” 65% said that the “Surface camera and mic can help students communicate ideas without having to type them.”

The improved student outcomes and accessibility benefits were not included in the financial analysis.

**“Surface is a competitive advantage in recruiting because our students all say they love the technology.”**

*Director of technology, 6 – 12<sup>th</sup> grade private school*

## IMPROVED TEACHER EXPERIENCES

**Evidence and data.** Teachers have benefited from Surface devices in terms of time savings, greater job satisfaction, and being empowered to create more innovative lesson plans and classroom experiences. Some shared examples included:

- “Because of the performance, inking, and screen resolution, things like grading time have been reduced. One of the English teachers told me that she was able to cover content in the first three weeks of school that would usually take five to six weeks. She was excited about the new machines.”
- “We have noticed that teachers have become braver and bolder since they have switched to Surface devices.”
- “Teachers are creating better lessons plans and collaborating more with their Surface devices. This is especially important during the COVID pandemic.”

The survey revealed that:

- The top three ways that teachers benefit from Surface are time savings, improved communication with colleagues, and improved remote/online teaching experiences.
- The median time savings attributed to Surface devices was two hours per week.
- Survey respondents using Surface devices were twice as likely to say that in-person teaching experiences and group teaching experiences have improved compared to schools using Microsoft 365 Education on other devices.
- They were also 50% more likely to say that they could adapt to external forces such as COVID and that experiences for special needs students have improved.

**Modeling and assumptions.** Forrester made the following assumptions for the financial analysis:

- Only the time savings is included in the financial analysis.
- There are 1,563 teachers saving two hours per week on average, and the school year is 36 weeks. Fifty percent of the time savings is realized in the first year as they come up to speed on the new technology.
- The average annual fully burdened salary of a teacher is \$58,000 + 40% for benefits and taxes.
- A productivity capture of 50% is applied because not all time savings translate into completion of additional work.
- The financial savings represent the opportunity for teachers to deliver more value to students and possibly avoidance of additional hiring because teachers have more time available to them.

**Risks.** Some factors which could result in this benefit being lower than interviewees reported include:

- Lower fully burdened cost.
- Not making full use of the Surface capabilities.
- Incomplete adoption of Surface devices across the entire student body.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a four-year, risk-adjusted total PV of \$7.8 million.

**“On a scale of 1 to 10, with 10 being the highest, I would say teacher satisfaction with Surface is 8.5.”**

*Director of technology, private high school*

Improved Teacher Experiences						
Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Year 4
A1	Total number of students		25,000	25,000	25,000	25,000
A2	Total number of teachers	16:1 student-teacher ratio	1,563	1,563	1,563	1,563
A3	Total number of non-teacher staff (using Surface)	A2*25]%	391	391	391	391
A4	Annual time savings (hours) [50% realized in Year 1]	2 hours[survey*36 weeks [50% in Year 1]	36	72	72	72
A5	Average fully burdened salary (hourly)	(\$58,000+40%)/(36 weeks*40 hours)	\$56.39	\$56.39	\$56.39	\$56.39
A6	Productivity capture		50%	50%	50%	50%
At	Improved teacher experiences	A2*A4*A5*A6	\$1,586,445	\$3,172,890	\$3,172,890	\$3,172,890
	Risk adjustment	↓10%				
Atr	Improved teacher experiences (risk-adjusted)		\$1,427,801	\$2,855,601	\$2,855,601	\$2,855,601
<b>Four-year total: \$9,994,604</b>			<b>Four-year present value: \$7,753,870</b>			

### ADMINISTRATOR TIME SAVINGS

**Evidence and data.** Similar to teachers, administrators save time because of better device performance and uptime. Most of the time savings had to do with conducting meetings and communicating internally and externally. The survey found up to two hours per week were saved.

**“Everyone wants a Surface, from the security guards to the support staff. This will become a reality in the next few months.”**

*Director of technology, private high school*

**Modeling and assumptions.** Forrester made the following assumptions for the financial analysis:

- 391 non-teacher staff are using Surface devices and save 1.25 hours per week (more

conservative than the survey findings) and work 48 weeks per year. Fifty percent of the time savings is realized in the first year as they come up to speed on the new technology.

- The average annual fully burdened salary of an administrator is \$75,000 + 40% for benefits and taxes.
- A productivity capture of 50% is applied because not all times savings translate into completion of additional work.

**Risks.** Some factors which could result in this benefit being lower than interviewees reported include:

- Lower fully burdened cost.
- Fewer staff being given Surface devices.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a four-year, risk-adjusted total PV of \$1.6 million.

Administrator Time Savings						
Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Year 4
B1	Total number of non-teacher staff (using Surface)	A2	391	391	391	391
B2	Annual time savings (hours)	1.25 hours*48 weeks	30	60	60	60
B3	Average fully burdened salary (hourly)	(\$75,000+40%)/(48 weeks*40 hours)	\$54.69	\$54.69	\$54.69	\$54.69
B4	Productivity capture		50%	50%	50%	50%
Bt	Administrator time savings	B1*B2*B3*B4	\$320,742	\$641,484	\$641,484	\$641,484
	Risk adjustment	↓10%				
Btr	Administrator (risk-adjusted)		\$288,668	\$577,336	\$577,336	\$577,336
<b>Four-year total: \$2,020,676</b>			<b>Four-year present value: \$1,567,652</b>			

### DEVICE MANAGEMENT IT SAVINGS

**Evidence and data.** All interviewees said that it takes less IT effort to manage Surface devices compared to previous solutions. This includes the total lifecycle management of the solutions (deployment is discussed separately later in the study) as well as device-related helpdesk savings. One interviewee reported reducing their IT team from eight down to five FTEs after moving all users over to Surface devices. Another said that device related helpdesk tickets went down by 70% and mean time to resolution was cut in half. Using Surface devices in conjunction with Microsoft For Education A3 licenses, which includes Intune and Autopilot, streamlined and automated many processes.

The survey revealed that the activities with the greatest time savings (excluding device provisioning), were managing/provisioning users, ongoing security configuration, compliance/audit activities, managing and updating windows, and managing helpdesk tickets. The survey also found that helpdesk tickets were reduced by 18% on average.

**Modeling and assumptions.** Forrester made the following assumptions for the financial analysis:

- Less device management effort meant that a team of nine FTEs to support a 1:1 model (see costs section) could be reduced by reassigning staff to other activities and avoiding future hires. This represents 3 FTEs worth of reduced effort in Year 1 and increases to 5 FTEs beginning in Year 2.
- The average fully burdened cost of an IT professional is \$75,000 + 40%.
- Prior to Surface, each user (student, teachers, and staff) had one help desk ticket per year which took a half hour to resolve. The number of tickets was reduced by 18% as per the survey findings, which is significantly less than the savings some interviewees reported.

**Risks.** Some factors which could result in this benefit being lower than interviewees reported include:

- An IT organization that has already automated a lot of processes.
- Not moving all students over to Surface devices.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a four-year, risk-adjusted total PV of \$2.2 million.

Device Management IT Savings						
Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Year 4
C1	FTE savings (avoided future hire and reassigned)		3	5	5	5
C2	Average IT fully burdened cost	\$75,000+40%	\$105,000	\$105,000	\$105,000	\$105,000
C3	Device management IT savings	C1*C2	\$315,000	\$525,000	\$525,000	\$525,000
C4	Original number of device helpdesk tickets	(A1+A2+A3) 1 ticket per user	53,908	53,908	53,908	53,908
C5	Original helpdesk costs	C4*.5 hours \$54.69	\$1,474,047	\$1,474,047	\$1,474,047	\$1,474,047
C6	Helpdesk savings	C5*18%	\$265,328	\$265,328	\$265,328	\$265,328
Ct	Device management IT savings		\$580,328	\$790,328	\$790,328	\$790,328
	Risk adjustment	↓5%				
Ctr	Device management IT savings (risk-adjusted)		\$551,312	\$750,812	\$750,812	\$750,812
<b>Four-year total: \$2,803,748</b>			<b>Four-year present value: \$2,198,609</b>			

### ELIMINATED OTHER TECHNOLOGIES

**Evidence and data.** Interviewees said that after they moved to Surface, they could eliminate other vendor solutions across a range of areas. These included device management software, security solutions, educational software, and accessibility solutions. One private school even replaced their learning management system (LMS) with Windows and Teams which they could not have previously done because of device performance issues. Interviewees also said that they eliminated training contracts for both IT and non-IT users.

Another area of savings is reduced printing and supplies. One school reported eliminating all student printers other than one copier in the library; the “reliability and performance of Surface devices” contributed to this.

**“We have experienced an overall reduction in management costs. There are a lot of benefits with Surface and from it being a part of the Microsoft ecosystem.”**

*Deputy CIO, public school system*

**“We switched to Intune which is part of the A3 license. That has reduced the cost of our previous device management solution from \$250,000 to \$150,000. We hope to fully replace it in the near future.”**

*Deputy CIO, public school system*

The survey found that third-party software and service costs were reduced by 4% on average, and third-party security solution costs by 5%.

**Modeling and assumptions.** Forrester made the following assumptions for the financial analysis:

- The various examples shared by interviewees were scaled up or down to meet the size of the composite organization.
- Intune and Autopilot replaced a third-party device management solution.
- Training solutions that were available for IT, staff and teachers which covered different technologies were no longer required.

- Better device performance meant that third-party accessibility solutions could be replaced with native solutions built into Microsoft 365 Education.

**Risks.** Some factors which could result in this benefit being lower than interviewees reported include:

- Other solutions can not be replaced for technical or commercial reasons.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a four-year, risk-adjusted total PV of \$915,614.

Eliminated Other Technologies						
Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Year 4
D1	Third-party device management solution		\$150,000	\$150,000	\$150,000	\$150,000
D2	Online training solutions		\$50,000	\$50,000	\$50,000	\$50,000
D3	Accessibility solutions		\$250,000	\$250,000	\$250,000	\$250,000
Dt	Eliminated other technologies	D1+D2+D3	\$450,000	\$450,000	\$450,000	\$450,000
	Risk adjustment	↓10%				
Dtr	Eliminated other technologies (risk-adjusted)		\$405,000	\$405,000	\$405,000	\$405,000
<b>Four-year total: \$1,215,000</b>			<b>Four-year present value: \$915,614</b>			

**FEWER SECURITY BREACHES**

**Evidence and data.** Interviewees felt that Surface provides better security in several areas compared to their previous devices. This includes features such as Windows Hello, Secure LTE, device encryption, and Intune for remote wipe. Interviewees also said that moving to Surface has made compliance easier.

The survey found that two-thirds of respondents have experienced fewer security incidents (including data breaches) since moving to Surface. The average reduction in breaches was 10%.

**Modeling and assumptions.** Forrester made the following assumptions for the financial analysis:

- Forrester’s research into the cost of a security breach has found it to be \$53 per user. This includes the remediation costs and fines, and it is applied to all student, teacher, and staff Surface users.
- The research has also found the average downtime for an affected user is 3.6 hours. It was assumed that 20% of the teachers and staff experienced downtime during any given breach.

- Research also shows that organizations experience 2.6 security breaches of varying size and severity per year.
- The 10% reduction in breaches from this study's survey was applied to the above assumptions.

**Risks.** Some factors which could result in this benefit being lower than reported include:

- Previous devices being more secure than those of interviewed organization.
- Lower breach costs than Forrester's research.

To account for these risks, Forrester adjusted this

benefit downward by 5%, yielding a four-year, risk-adjusted total PV of \$1.2 million.

**“One of the reasons we went with Surface was compliance. Microsoft was able to supply the certificates of compliance for various regulations that our board of education required. Some of the other vendors could not or refused to.”**

*Director of technology, public school system*

Fewer Security Breaches						
Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Year 4
E1	Average number of security breaches	Forrester research	2.6	2.6	2.6	2.6
E2	Number of internal employees	A2+A3	1,954	1,954	1,954	1,954
E3	Number of Surface users	A1+A2+A3	26,954	26,954	26,954	26,954
E4	Average cost of a breach (excluding downtime)	\$53 (Forrester research)*E3	\$1,428,562	\$1,428,562	\$1,428,562	\$1,428,562
E5	Employee downtime per breach (hours)	Forrester research	3.6	3.6	3.6	3.6
E6	Average employee salary	((A2*A5)+(A3*B3))/(A2+A3)	\$56.05	\$56.05	\$56.05	\$56.05
E7	Percentage of employees affected	Forrester research	20%	20%	20%	20%
E8	Percentage reduction in likelihood of a breach	Survey	10%	10%	10%	10%
Et	Fewer security breaches	((E1*E4)+(E1*E2*E5*E6))*E8	\$391,929	\$391,929	\$391,929	\$391,929
	Risk adjustment	↓5%				
Etr	Fewer security breaches (risk-adjusted)		\$372,332	\$372,332	\$372,332	\$372,332
<b>Four-year total: \$1,489,329</b>			<b>Four-year present value: \$1,180,243</b>			

### REPLACED DEVICE COSTS

**Evidence and data.** This is a TCO savings component which should be compared to the corresponding Surface device purchase costs in the Costs section of the study. The net result is TCO

savings of \$2.2 million on device purchase costs over four years.

All four interviewees, both private and public schools, said that the cost of Surface devices for students and employees was less than their previous devices.

They also reported improved reliability. Two of the interviewed organizations said they extended the refresh frequency from three to four years for faculty and staff devices. In addition, all organizations said they buy an optional fourth year warranty to cover the devices for replacement over the entire time.

The survey found an average reduction in the cost of buying and maintaining devices of 9%.

**Modeling and assumptions.** Forrester made the following assumptions for the financial analysis:

- A “big-bang” approach is used to roll out Surface to all students, teachers, and staff who need individual computers. (The phased rollout option was discussed earlier in the study.)
- The average cost of a student device prior to moving to Surface was \$850 (down to \$675 with Surface).
- The average cost of a staff device prior to moving to Surface was \$1,250 (down to \$850 with Surface).
- The original three-year refresh for teacher and staff devices resulted in their devices being refreshed in Year 4.

**Risks.** Some factors which could result in this benefit being lower than reported include:

- Previously having lower cost devices than the interviewed organizations.
- Not rolling out devices to all students.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$21.9 million.

**“Moving to Surface was a huge cost savings for the school. Pushing out the faculty device refresh from three to four years is large.”**

*Director of technology, private high school*

### Replaced Device Cost

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Year 4
F1	Number of student devices added	A1	25,000	0	0	0
F2	Cost per student non-Surface device with four-year warranty		\$850	\$850	\$850	\$850
F3	Number of faculty and administrator devices added	A2+A3	1,954	0	0	1,954
F4	Cost per staff Non-Surface device with three-year warranty		\$1,200	\$1,200	\$1,200	\$1,200
Ft	Replaced device costs	F1*F2+F3*F4	\$23,594,800	\$0	\$0	\$2,344,800
	Risk adjustment	↓5%				
Ftr	Replaced device costs (risk-adjusted)		\$22,415,060	\$0	\$0	\$2,227,560
<b>Four-year total: \$24,642,620</b>			<b>Four-year present value: \$21,898,781</b>			

### REPLACED DEPLOYMENT EFFORT

**Evidence and data.** This benefit is the replacement of effort associated with the previous devices. It should be compared to the Surface deployment costs in the Costs section of the study. The net savings is \$2.1 million.

**Modeling and assumptions.** Forrester made the following assumptions for the financial analysis:

- Previously it took three hours to setup each new device, based on a Forrester survey.
- This includes the staff devices refreshed in Year 4.
- This effort is eliminated and replaced by the effort included in the Cost section of the study.

**Risks.** Some factors which could result in this benefit being lower than reported include:

- Less time being required than found in the survey.
- Lower IT costs.
- Not rolling out devices to all students.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a four-year, risk-adjusted total PV of \$4.0 million

**“In the past we would manually image every device. This year we used Intune for Education which was totally hands-free.”**

*Director of technology, private high school*

### Replaced Deployment Effort

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Year 4
G1	Number of student devices added		25,000	0	0	0
G2	Number of faculty and administrator devices added		1,954	0	0	1,954
G3	IT deployment effort	3 hours*\$54.69	\$164.06	\$164.06	\$164.06	\$164.06
G4	Variable 4					
Gt	Replaced deployment effort	G1*G2*G3*G4	\$4,422,141	\$0	\$0	\$320,578
	Risk adjustment	↓5%				
Gtr	Replaced deployment effort (risk-adjusted)		\$4,201,034	\$0	\$0	\$304,549

**Four-year total: \$4,505,583**

**Four-year present value: \$4,027,133**

### FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Surface For Education and later realize additional uses and business opportunities. Some of the examples shared by interviewees included adding more Surface Hub and Studio

devices, providing more staff with Surface devices, and switching to a 1:1 student device model (for those who have not already done so).

None of these future opportunities are included in the financial analysis.

# Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs								
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Year 4	Total	Present Value
Htr	Surface device setup and deployment	\$1,956,830	\$0	\$0	\$0	\$0	\$1,956,830	\$1,956,830
Itr	Surface device costs	\$19,709,445	\$0	\$0	\$0	\$0	\$19,709,445	\$19,709,445
Jtr	Office 365 license costs	\$0	\$826,206	\$826,206	\$826,206	\$826,206	\$3,304,824	\$2,618,962
Ktr	Ongoing management	\$0	\$992,250	\$992,250	\$992,250	\$992,250	\$3,969,000	\$3,145,299
	Total costs (risk adjusted)	\$21,666,275	\$1,818,456	\$1,818,456	\$1,818,456	\$1,818,456	\$28,940,099	\$27,430,536

## SURFACE DEVICE SETUP AND DEPLOYMENT

**Evidence and data.** Interviewees said that setting up and deploying Surface devices was easier than with their previous devices. Some organizations are using Intune and Autopilot to automate the process. However, devices still usually need to be “touched” to apply asset tags and ruggedized cases.

**Modeling and assumptions.** For the financial model, Forrester applied a similar approach as the one used by the largest interviewed school district which is twice the size of the composite organization:

- A pilot effort which included creating images and going through the deployment process for a subset of users took four months and required four IT FTEs.
- In order to rollout devices to all students, as well as teachers and administration, a third-party deployment contract was put in place which cost \$62 per device. Intune and Autopilot could still be used for software and image deployment, but the devices had to be ‘touched’ to apply asset tags and ruggedized cases.
- Two internal FTEs remained involved for three months overseeing the deployment project.

**Risks.** Some factors which could result in this cost being higher than reported include:

- Not automating the imaging and software deployment portion of deployment.

To account for this risk, Forrester adjusted this cost upward by 5%, yielding a four-year, risk-adjusted total PV (discounted at 10%) of \$2.0 million.

## Surface Device Setup And Deployment

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3	Year 4
H1	Pilot						
H2	Duration (months)		4				
H3	Number of FTEs		4				
H4	Monthly fully burdened cost	\$105,000/12	\$8,750				
H5	Total pilot costs		\$140,000				
H6	Deployment						
H7	Number of devices		26,954				
H8	Deployment contract (per device)		\$62				
H9	Deployment internal labor costs	3 month*2 FTEs*\$8,750	\$52,500				
H10	Deployment costs		\$1,723,648				
Ht	Surface device setup and deployment		\$1,863,648				
	Risk adjustment	↑5%					
Htr	Surface device setup and deployment (risk-adjusted)		\$1,956,830				
<b>Four-year total: \$1,956,830</b>			<b>Four-year present value: \$1,956,830</b>				

### SURFACE DEVICE COSTS

**Evidence and data.** Interviewed schools all provided devices to students as part of a 1:1 model. Every teacher and administration who needed a personal device also were given a Surface. Schools were also adding Surface Hub and Surface Studio in some classrooms.

**Modeling and assumptions.** For the financial analysis, Forrester made the following assumptions:

- Each student received a Surface Go with a ruggedized case and four-year warranty.
- Each staff user received a Surface Pro with a four-year warranty.
- Staff devices do not need replacing in Year 4.

**Risks.** Some factors which could result in this cost being higher than reported include:

- Higher spec devices being deployed.
- More Surface Hub and Surface Pro devices being deployed.

To account for these risks, Forrester adjusted this cost upward by 5%, yielding a four-year, risk-adjusted total PV of \$19.7 million.

## Surface Device Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3	Year 4
I1	Number of student devices added		25,000				
I2	Cost per student Surface Go with ruggedized case and four-year warranty		\$675				
I3	Number of faculty and administrator devices added		1,954				
I4	Cost per staff Surface Pro with four-year warranty		\$850				
I5	Surface Hub	20*\$10,000	\$200,000				
I6	Surface Studio	10*\$3,500	\$35,000				
I7	Surface device costs	$I1*I2+I3*I4+I5+I6$	\$18,770,900				
	Risk adjustment	↑5%					
I7r	Surface device costs (risk-adjusted)		\$19,709,445				
<b>Four-year total: \$19,709,445</b>			<b>Four-year present value: \$19,709,445</b>				

## OFFICE 365 LICENSES

**Evidence and data.** Interviewees generally were on A3 licenses to take advantage of the advanced device management and security features. Some schools already had the licenses as part of a prior project and some added them.

**Modeling and assumptions.** For the financial analysis, Forrester made the following assumptions:

- A3 licenses were added for all student and staff users with a Surface device.

**Risks.** There were no risks since adding a new license for every user was the highest cost scenario. Therefore, no risk-adjustment was applied.

The four-year, cost total PV was \$2.6 million. If these licenses are already in place so the cost is zeroed out, the ROI increases to 59% and the NPV to \$14.5 million.

Office 365 Licenses							
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3	Year 4
J1	Number of students		25,000	25,000	25,000	25,000	25,000
J2	Office 365 A3 license costs	\$2.50*12 months	\$30.00	\$30.00	\$30.00	\$30.00	\$30.00
J3	Number of faculty and administration		1,954	1,954	1,954	1,954	1,954
J4	Office 365 A3 license costs	\$3.25*12 months	\$39.00	\$39.00	\$39.00	\$39.00	\$39.00
Jt	Office 365 licenses	J1*J2+J3*J4	\$826,206	\$826,206	\$826,206	\$826,206	\$826,206
	Risk adjustment	0%					
Jtr	Office 365 licenses (risk-adjusted)		\$826,206	\$826,206	\$826,206	\$826,206	\$826,206
<b>Four-year total: \$3,304,824</b>			<b>Four-year present value: \$2,618,962</b>				

### ONGOING MANAGEMENT

**Evidence and data.** This cost represents the level of effort required to manage a 1:1 program prior to Surface for all students as well teachers and staff. There is a corresponding savings in the Benefits section of the study, and the two net out to a cost of \$1.7 million over three years. This is in line with all schools saying that it took less effort to manage Surface devices than the previous devices.

**Modeling and assumptions.** For the financial analysis, Forrester made the following assumptions:

- Nine IT FTEs would have been required to manage nearly 27,000 devices. This includes

repurposing machines as students graduate or employees leave.

**Risks.** Some factors which could result in this cost being higher than reported include:

- An even lower level of automation or than what was previously in place.
- Higher fully loaded IT costs.

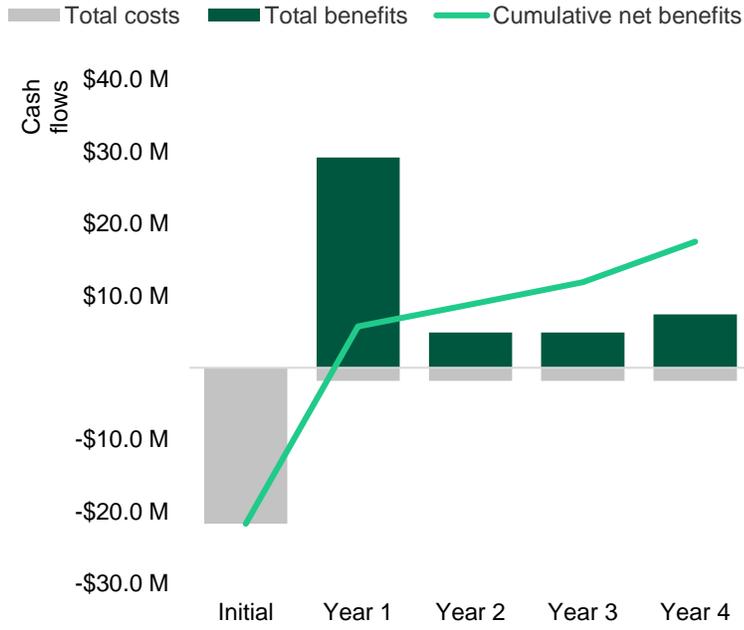
To account for these risks, Forrester adjusted this cost upward by 5%, yielding a four-year, risk-adjusted total PV of \$3.1 million.

Ongoing Device Management							
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3	Year 4
K1	Number of FTEs	9 FTEs*\$105,000		\$945,000	\$945,000	\$945,000	\$945,000
Kt	Ongoing device management	K1		\$945,000	\$945,000	\$945,000	\$945,000
	Risk adjustment	↑5%					
Ktr	Ongoing device management (risk-adjusted)			\$992,250	\$992,250	\$992,250	\$992,250
<b>Four-year total: \$3,969,000</b>			<b>Four-year present value: \$3,145,299</b>				

# Financial Summary

## CONSOLIDATED FOUR-YEAR RISK-ADJUSTED METRICS

### Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

**These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.**

### Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Year 4	Total	Present Value
Total costs	(\$21,666,275)	(\$1,818,456)	(\$1,818,456)	(\$1,818,456)	(\$1,818,456)	(\$28,940,099)	(\$27,430,536)
Total benefits	\$0	\$29,256,206	\$4,961,081	\$4,961,081	\$7,493,190	\$46,671,559	\$39,541,902
Net benefits	(\$21,666,275)	\$27,437,750	\$3,142,625	\$3,142,625	\$5,674,734	\$17,731,459	\$12,111,366
ROI							44%
Payback							10 months

## Appendix A: Total Economic Impact

Total Economic Impact 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.

### TOTAL ECONOMIC IMPACT APPROACH

**Benefits** represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

**Costs** consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

**Flexibility** represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

**Risks** measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."



### PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



### NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.



### RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



### DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



### PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

## Appendix B: Interview And Survey Demographics

Interviewed Organizations			
School type	Interviewee	Number of students	Number of employees with Surface devices
Private high school	Director of technology	880	170
Public school system	Deputy CIO	52,500	13,000
Private 6 <sup>th</sup> – 12 <sup>th</sup> grade	Director of IT	950	166
Public school system	Director of technology	1,500	400

### Survey Demographics

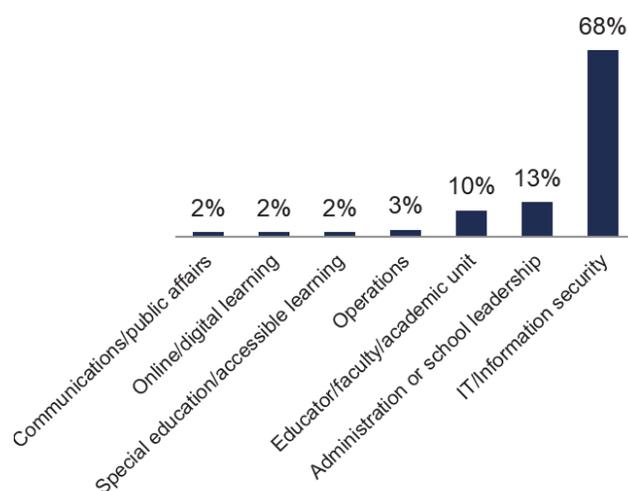
#### Country



#### Model



#### Role



#### Are Using M365



100% Come from schools that have deployed Microsoft 365

#### Are Using Surface



48% Users  
52% Non-users

Base: 164 educators, administrators, and IT staff with knowledge of their K-12 school's educational technology initiatives

Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, July 2020

# Appendix C: Endnotes

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<sup>1</sup> “The Total Economic Impact™ Of Microsoft 365 Education,” Forrester Research, Inc., January 2018.  
“Microsoft Accessibility And Assistive Technologies For Education,” Forrester Research, Inc., February 2019.

<sup>2</sup> *Ibid.*

<sup>3</sup> *Ibid.*

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