

The Business Value of ChromeOS for Kiosks and Digital Signage



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Business Value Highlights

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Kiosk and Digital Signage Benefits:

- ⬇️ **34%**
lower cost of digital signage
- ⬇️ **26%**
fewer outages
- ⬆️ **34%**
faster resolution of outages
- ⬆️ **\$5.1 million**
higher annual revenue per organization

Overall Value of ChromeOS Devices:

- ⬆️ **245%**
three-year ROI
- ⬆️ **44%**
lower three-year cost of operations
- ➡️ **\$3,901**
three-year total savings per ChromeOS device
- ⬇️ **37%**
lower weighted device costs
- ⬆️ **36%**
more efficient device management
- ⬇️ **24%**
fewer security attacks
- ⬇️ **77%**
higher productivity, faster reboots

Executive Summary

Kiosks and digital signage are taking on more importance due to both customer and employee expectations.

Delivering timely, dynamic and interactive experiences for customers, and meeting employee expectations for kiosks and digital signage is both a challenge and a goal of many IT organizations. Many kiosk and digital signage solutions in the market today are cumbersome to manage and maintain. Businesses want and need dynamic endpoint technology to support these devices. This makes Google's cloud-first, easy-to-manage operating system, ChromeOS, a key technology for digital signage and kiosk deployments.

IDC spoke with organizations that use ChromeOS for their kiosk and digital signage devices. These devices often serve as the conduit through which study participants engage their customers, employees, and third parties. Performance, security, and the user experience are paramount; however, study participants indicated that manageability and cost-effectiveness were also of great importance.

Interviewed customers reported achieving strong business value from their use of ChromeOS for kiosks and digital signage by:

- **Driving over \$5 million higher annual revenue** per organization
- **Limiting security-related risk** associated with the entry and maintenance of customer data on kiosk devices
- **Lowering device costs by 34%** due to easy deployment and management
- **Reducing outages by 26% and improving resolution of outages by 34%**, resulting in higher customer satisfaction

IDC's research confirms business and operational gains specific to the use of ChromeOS for kiosk and digital signage purposes, including higher sales, increased customer engagement, and improved employee productivity. Using ChromeOS resulted in lower costs, staff efficiencies, improved security, and strong performance.

The Business Value of ChromeOS for Kiosks and Digital Signage

ChromeOS Use for Kiosks and Digital Signage by Interviewed Organizations

Study participants described how they used ChromeOS for kiosks and digital signage.

For example, the five interviewed organizations named the following use cases:

- Providing information to patients, their families, and employees at kiosks across their locations, Healthcare Organization, Australia
- Serving customers in retail locations with point-of-sale devices, as well as building more limited digital signage and informational kiosk use cases, Consumer Goods company, Europe, Middle East, and Africa (EMEA)
- Serving customer-facing kiosks for testing applications as well as customer communications, Telecommunications company, India
- Providing digital signage and kiosks for application interfaces on the manufacturing floor, Construction company, United States
- Updating older signage with ChromeOS across its network with Chromeboxes, Transportation organization, United States

Study participants understood the importance of selecting the right operating system and device for kiosk and digital signage purposes. They described needing to provide devices that performed well without interruption and that offered an intuitive user experience and interface. They recognized that customer and third-party engagement with these devices factored heavily into the overall perception of their organizations.



We're reengineering our retail stores to be more self-sufficient... ChromeOS kiosks make the stores more interactive and allow customers to make purchases and schedule appointments."

Several interviewed customers detailed the following considerations in selecting ChromeOS to power their kiosks and digital signage:

Meeting customer expectations while expanding their business (technology head, consumer products company):

“We have many stores that needed investment—we want to grow the business five times through new customer acquisition, investment in the business, and new technology. We’re reengineering our retail stores to be more self-sufficient, bringing in new tech to manage point-of-sale and kiosk, freeing the staff to handle nutritional advice and other services. ChromeOS kiosks make the stores more interactive and allow customers to make purchases and schedule appointments.”

Enabled compassionate care during the COVID-19 epidemic (CIO, healthcare organization):

“We introduced a new function with Chromebooks that was because of COVID-19 as our facilities were locked. If a patient was there, they couldn’t have visitors, so we needed some way for people to connect. Before, you’d expect people to do that themselves, but given the fact that we had to lock our doors, we felt that we had to provide some avenue for people to do this. It was just the right thing to do.”



“We’re reengineering our retail stores to be more self-sufficient, bringing in new tech to manage point-of-sale and kiosk, freeing the staff to handle nutritional advice and other services. ChromeOS kiosks make the stores more interactive and allow customers to make purchases and schedule appointments.”

Figure 1 (next page) shows survey participants’ leading responses for the most significant benefits and outcomes from using ChromeOS for kiosk and digital signage purposes. Increased productivity as a result of fewer reboots and improved security ranked relatively higher for these surveyed organizations. In addition to improved security, survey participants also had lower operational costs, improved customer satisfaction, increased employee retention, and increased business resilience from using ChromeOS for kiosks and digital signage.

In addition to improved security from using ChromeOS for kiosks and digital signage survey participants also had:



Lower operational costs



Increased employee retention



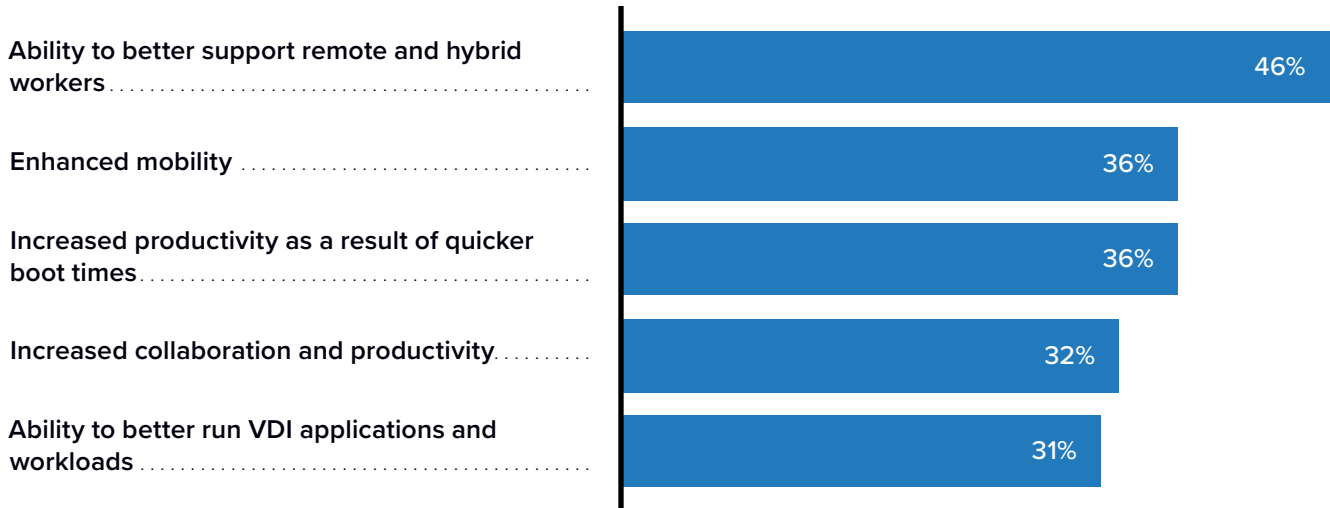
Improved customer satisfaction



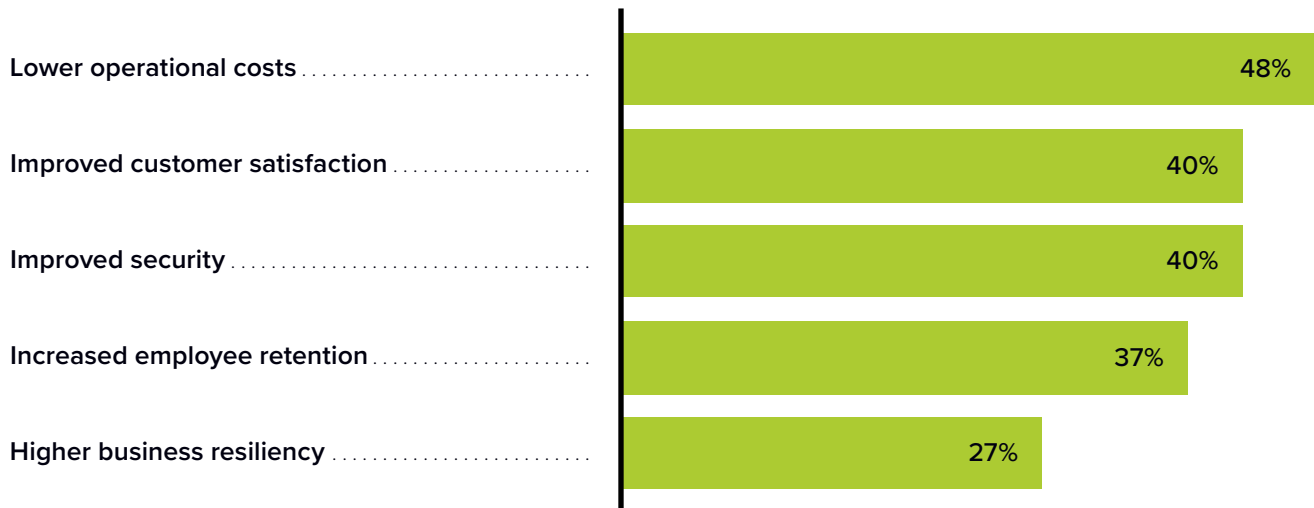
Increased business resilience

FIGURE 1
Benefits and Improved Outcomes from Using ChromeOS Devices — Surveyed Kiosk and Digital Signage Users
(% of respondents)

Most significant benefits



Most significant improved outcomes



n = 78, IDC Business Value Research, June 2022

For additional details about the organizations interviewed using ChromeOS for kiosk or digital signage purposes, see [Appendix B: Firmographics](#).

Kiosk and Digital Signage Specific Value

Study participants reported consistently that kiosk and digital signage devices running ChromeOS provide cost-effective and strong performance for their operational needs. The technology head at the consumer products company commented on his company's use of ChromeOS for point-of-sale devices and other kiosks and digital signage: *"Chromebooks are faster, better, and smarter. Every positive adjective. They don't break down. A classic example is that we had issues with retail technology going down on Black Friday, which is disastrous. We found significant improvement in this past year with Chromebooks as point-of-sale devices and customer-facing kiosks."*

Lower Device Costs for Kiosk and Digital Signage Use

Study participants experienced cost savings when using ChromeOS for kiosks and digital signage. Interviewed ChromeOS customers saved an average of 34% per device used for digital signage. For example, the interviewed transportation company commented: *"The price point is great with devices running ChromeOS. That really wasn't our consideration for this; had it been \$200 more we still would've bought it because that's the thing we needed... Our other devices were \$800–900 compared with \$400 on average for devices with ChromeOS."*

Better Business Results: Improved Customer/Employee Experience Through User Interface and Higher Device Performance

Devices running ChromeOS serve as a direct conduit for communication with customers or for customer-facing employees to perform work in the field. This makes kiosk performance, user interface, and reliability important to reaching revenue and customer satisfaction goals.

Customers provided numerous examples of how ChromeOS and ChromeOS devices have enabled their kiosks and digital signage operations:

Functional and secure, which helps enable business (CIO, construction and engineering company):

"Chromebooks are lightweight and cost-effective for use as employee-facing kiosks. They have a touchscreen and a keyboard. If they're stolen, we can replace them quickly without losing data or company assets..."



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We've been able to develop targeted solutions with digital signage and kiosking to provide application interfaces on the manufacturing floor with dashboards and scans. It's been a huge benefit to business opportunity; we've been able to scale up capacity because of it."

Good device for digital signage (technology head, consumer products company):

"What ChromeOS devices, including Chromebooks, Chromebases, and ChromeOS tablets, offer is visual attraction: it looks cool, helps attract and engage customers, helps sales, raises the brand."

As shown in **Figure 2** (next page), study participants linked their use of ChromeOS to important gains in kiosk and digital signage performance and reliability. Device outages are detrimental from both a business and an operational perspective; potential customers may have a negative experience, and internal staff must find ways to remedy issues occurring in stores, branches, and other locations in real time. With ChromeOS, study participants faced these issues less often and better resolved them when they occurred. They reported needing to reboot devices with ChromeOS 30% less frequently and experiencing 26% fewer outages than with other devices. They were also able to resolve outages 34% faster on average. These metrics reflect both enhanced customer experience and operational resiliency for organizations that used devices running ChromeOS for kiosks and digital signage.



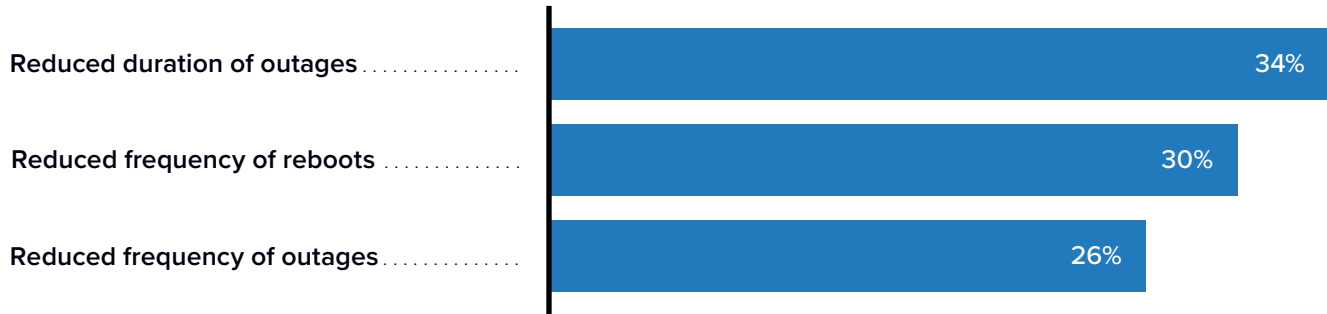
⬇️ Study participants reported needing to reboot devices with ChromeOS **30% less** frequently.

⬇️ They experienced **26% fewer** outages than with other devices.

⬆️ They were also able to resolve outages **34% faster** on average.

FIGURE 2
Impact of ChromeOS on Kiosk Performance

(% of improvement)



n = 5 for in-depth interviews, n = 78 for survey, IDC Business Value Research, June 2022

Study participants also saw improved business results when using ChromeOS for kiosks and digital signage. As shown in **Table 1**, interviewed organizations attributed revenue gains of an average of \$5.1 million per year to their use of ChromeOS. IDC applies a 15% net operating margin assumption to all revenue gains for purposes of its financial calculations, meaning that it values net revenue increases attributable to the use of ChromeOS for kiosk devices and digital signage at an annual average of \$763,500 per organization.

Study participants saw improved business results when using ChromeOS for kiosks and digital signage. Interviewed organizations attributed revenue gains of an average of **\$5.1 million** per year to their use of ChromeOS.

TABLE 1
Revenue Gains — Kiosk Use Cases

	Per Organization	Per Device
Higher revenue per year	\$5.1M	\$7,100
Assumed operating margin	15%	15%
Higher net revenue per year	\$763,500	\$1,100

n = 5 for in-depth interviews, n = 78 for survey, Source: IDC Business Value Research, June 2022

Beyond direct business gains, several study participants also described many other benefits for their organizations through ChromeOS. Specifically, they noted the positive impression that use of ChromeOS creates for customers, third parties, and employees through its better user interface, which is beneficial from brand and employee satisfaction perspectives.

The interviewed consumer products company, for example, commented: *“Devices running ChromeOS also provide intangible benefits such as brand appreciation for us through kiosks; the image of an omni-channel reflecting modernization of [our] brand. We see positive feedback on social media. It helps with the evolution of the business from multiple perspectives. Also, employees see it as an investment in them.”*

Improved Device Deployment and Manageability

Using ChromeOS for kiosks and digital signs makes management easier. These devices are typically onsite and directly used or viewed by customers, third parties, and employees. As such, study participants need to be able to manage and deploy these devices with ease remotely and ensure minimal disruptions and downtime.

Study participants noted their ability to easily manage kiosks and digital signs running ChromeOS. The interviewed telecommunications company providing customers with ChromeOS kiosk access noted: *“Compared with using laptops, we achieve 80% time savings for management with Chromebooks. ... Also, device management staff are now handling different applications. Before, some people were dedicated to some of those activities, but now there is no need to go with the separate manpower for that.”* Overall, IDC’s research shows that devices running ChromeOS require 36% less staff time to manage than alternative legacy devices.

Study participants also reported that kiosk and digital signage devices running ChromeOS offer strong performance and reliability, limiting the amount of support required and operational disruptions sustained. The interviewed healthcare organization commented: *“We do far fewer reboots with our Chromebooks. With our previous [other vendor] devices, we had to do more reboots, and they had to be done at the facility where someone had to go to the device and press the reset button or unplug it in cases where they couldn’t reboot it properly. With the current Chromebooks, we can do a reset much more simply through the device management software.”* Overall, study participants reported losing an average of 77% less time to device reboots with devices running ChromeOS, reflecting an improved and more consistent user experience.



ChromeOS also provides intangible benefits such as brand appreciation for us through kiosks; the image of an omni-channel reflecting modernization of [our] brand.”



Compared with using laptops, we achieve 80% time savings for management with Chromebooks. Also, device management staff are now handling different applications. Before, some people were dedicated to some of those activities, but now there is no need to go with the separate manpower for that.”

More Secure Devices and Reduced Risk

Organizations must maintain very strong security standards for kiosks and digital signage due to sensitive information and data from third parties. They cannot afford security or data breaches that compromise sensitive data.

Interviewed customers said using ChromeOS for kiosks and digital signage ensured both efficient and robust device security. The transportation organization explained: *“The attraction of devices with ChromeOS is not a lot has to be touched. We also like the security aspect of it because they are not attacked as much or phished or really exposed to anything, so it’s secure for the application we have on hand.”* Meanwhile, the telecommunications company described why ChromeOS provides a strong foundation for devices from the perspective of security for its customer-facing kiosk use case: *“Performance-wise, devices running ChromeOS are better than normal laptops because the laptops have multiple applications that run in the background and many security-related issues are there, so we cannot open to all the people. Whereas with Chromebooks, you can give it to any customer to experience it.”*

IDC’s research shows positive security outcomes for ChromeOS customers in a variety of areas for both kiosk/digital signage and other use cases. For example, study participants reported experiencing an average of 24% fewer security attacks than on legacy or other devices, 29% lower overall security risk, and a 29% more efficient device security teams.



We do far fewer reboots with our Chromebooks. With our previous [other vendor] devices, we had to do more reboots, and they had to be done at the facility where someone had to go to the device and press the reset button or unplug it in cases where they couldn’t reboot it properly. With the current Chromebooks, we can do a reset much more simply through the device management software.”

Study participants reported experiencing:

↓ an average of **24% fewer** security attacks than on legacy devices

↓ a **29% lower** overall security risk

↑ **29% more** efficient security teams

Challenges/Opportunities



Improved management and cost efficiency of kiosk and digital signage is only part of the upside of digitally transforming customer and employee engagement technologies.

Organizations will have to reinvest and channel their operational savings into efforts to create more engaging customer-facing apps, content, and overall digital experiences. This will involve expansion of app development resources, investment in digital tools to measure customer engagement and experiences, and analytics tools to ensure that key data from digital signage and kiosk deployments is captured.



To ensure successful deployment of ChromeOS in digital signage and kiosks, organizations will have to closely work with third-party service providers of content and digital experience technology.

Conclusion

Study participants using ChromeOS for kiosk and digital signage purposes achieved significant business value in terms of cost, staff efficiencies, security, and performance in line with the results of IDC's broader research into the value of devices running ChromeOS. IDC calculates that study participants will realize net savings of \$3,901 per device over three years, which would result in 44% lower cost of operations and a three-year ROI of 245%.

Appendix A: Methodology

IDC's standard Business Value/ROI methodology was utilized for this project.

This methodology is based on gathering data from organizations currently using ChromeOS devices as the foundation for the model. Based on interviews with organizations using ChromeOS devices, IDC performed a three-step process to calculate the ROI and payback period:

- **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using ChromeOS devices.** In this study, the benefits included device cost savings, IT team efficiencies and productivity gains, and user productivity gains.
- **Created a complete investment (three-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using ChromeOS devices and can include additional costs related to migrations, planning, consulting, and staff or user training.
- **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of ChromeOS devices over a three-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the three-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- IDC applies a net margin assumption (15%) for most user productivity gains and additional gross revenue attributed to interviewed organizations' use of ChromeOS devices resulting in the net productivity and revenue calculations applied to IDC's model.

Appendix B: Firmographics

Table 2 provides details about the organizations interviewed for this study using ChromeOS devices for kiosk and digital signage purposes.

TABLE 2

Demographics and Use of ChromeOS Devices by Interviewed Organizations

	Average
Number of employees	5,126
Number of IT staff	180
Number of business applications	125
Revenue per year	\$1.02B
Number of ChromeOS devices — total	717
Number of ChromeOS devices — digital signage	20
Number of ChromeOS devices — point-of-sale devices	340
Number of ChromeOS devices — customer-facing kiosks	153
Number of ChromeOS devices — employee-facing kiosks	164
ChromeOS devices for kiosk and digital signage use — growth rate	25%
Countries	United States (2), Australia, India, Netherlands
Industries	Construction and engineering, consumer wellness, healthcare, telecommunications, transportation

n = 5, Source: IDC Business Value Research, June 2022

Note: All numbers in this document may not be exact due to rounding.

About the IDC Analysts



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Phil is the program vice president on IDC's Enterprise Mobility team. His research provides insights into how enterprises deploy mobile devices and applications, as well as management and security platforms. Key markets he covers include enterprise mobility management (EMM) and enterprise mobile security, including mobile data and threat protection, and mobile device security technologies.

[More about Phil Hochmuth](#)



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Linn tracks market trends and industry developments that impact the worldwide and U.S. markets for PCs, thin clients, and monitors. He participates in cross-research streams that cover all device categories.

[More about Linn Huang](#)



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Matthew is responsible for carrying out custom business value research engagements and consulting projects for clients in a number of technology areas with a focus on determining the return on investment (ROI) of their use of enterprise technologies. Matthew's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

[More about Matthew Marden](#)



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