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## Business Value Highlights

**319%**

Three-year ROI

**\$10,013**

Three-year discounted benefits per Chrome device

**61.1%**

Lower device cost

**62.4%**

More efficient ongoing device management

**90.1%**

Fewer reboots

**80.7%**

Less productive time lost for employees due to device-related problems

# The Business Value of Chrome Devices in Kiosk Mode

## EXECUTIVE SUMMARY

Customers and employees today expect a high level of interaction with the companies that impact their lives, but they don't always expect (or want) that interaction to come through direct communication with other people. As more people embrace mobile technologies such as smartphones and become increasingly comfortable with self-driven interactions, organizations face the challenge of how to offer up curated and controlled experiences to these users. For many years, organizations have attempted to manage these types of experiences using personal computers (PCs), placed into public and employee spaces, and running specialty kiosk software. The results have been decidedly mixed as the nature of PCs makes them inherently hard and time consuming to manage in an open environment.

Devices running Google's Chrome operating system (OS) have always offered a very different experience from traditional PCs. A fast-booting, always-updated, and exceptionally secure OS, Chrome offers users a robust and fluid experience without many of the hassles associated with PCs. And for companies that opt to use Chrome OS-based devices, Google offers a simple and straightforward method of controlling the devices via the Chrome management console. Within this management scenario, Chrome also offers a kiosk mode that can serve up a single app or public use settings. IDC interviewed 10 organizations that are supporting their customers and employees with Chrome devices built and configured as kiosks. These organizations are leveraging Chrome devices to provide a cost-effective, efficient, and user-friendly kiosk platform. IDC's analysis demonstrates that these organizations will achieve three-year average discounted benefits worth \$10,013 per Chrome device and an average return on investment (ROI) of 319% because these Chrome devices:

- » Generate additional revenue and drive higher stakeholder productivity by providing customers and employees a device for use as a kiosk that resonates with them
- » Cost much less than the devices they replaced

Businesses are looking for ways to use technology to empower their employees and to drive better experiences for their customers.

The greatest strength of the PC is also its greatest weakness: It is a highly complex device with an operating system built to provide a high level of customization and utility.

- » Minimize user downtime because of device-related problems
- » Reduce the need for support by providing higher levels of reliability and improved manageability

## Situation Overview

### Driving Better Consumer and Employee Interactions

In a world where nearly everyone is increasingly plugged in and comfortable with technology, businesses are looking for ways to use technology to empower their employees and to drive better experiences for their customers. In fact, when it comes to the increasingly important millennial generation of consumers (individuals aged 18–24), the expectation is that technology will replace many of the traditional interactions. Millennials, raised on always-connected devices, like to solve their own issues, expect instant results, and will do just about anything to avoid calling customer service or talking to in-store employees.

Servicing these types of customers and empowering these types of employees aren't always easy tasks. When such customers appear in a hotel lobby, a retail store, or a waiting area, one can't simply direct them back to the smartphone in their pocket for service. One needs to control the experience to offer up the right information at the right time in the right context. While phones and tablets can potentially serve this purpose, often the keyboard and larger display of a notebook or desktop are better suited to the job. However, in companies that lack a traditional IT infrastructure, rolling out such devices can be quite daunting. Even companies with an IT staff find that deploying and servicing customer-facing devices are very difficult tasks. For years, companies that wanted to place controlled-experience computers into public or employee spaces did so using traditional PCs running expensive kiosk software that required significant setup and maintenance time. Unfortunately, even when these devices were set up correctly, they still often offered up a subpar experience for the user.

### The Problem with PCs

The greatest strength of the PC is also its greatest weakness: It is a highly complex device with an operating system built to provide a high level of customization and utility. As a result, PCs can do an amazingly wide range of things. They're also incredibly easy to break and notably hard to keep secure. This means they must be rigorously maintained, with OS service and security patches regularly added, add-on antivirus and antimalware security suites constantly updated, and connections to the Internet forever monitored. And even when all these things are done well, over time, PCs will still slow down because the weight of update upon update causes the operating systems to grind to a halt. Eventually, this process leads to the inevitable

For example, consider a simple plan to place a handful of traditional desktop PCs as kiosks in the lobbies of a small hotel chain.

Sounds simple, but it's not.

need to replace an existing PC with a new PC, with a fresh OS, so the entire process can begin again. Bringing such a device into business can result in a set of challenges few are ready to face.

For example, consider a simple plan to place a handful of traditional desktop PCs as kiosks in the lobbies of a small hotel chain. The PCs will offer guests the ability to check in, access amenities, make reservations at the hotel restaurant, print airline boarding passes, and view local attractions. Sounds simple, but it's not.

Beyond the already high price of purchasing PCs, companies must contend with the additional cost and complexity of securing the PCs behind a firewall to keep bad actors at bay as well as managing the operating system on each desktop. This means regularly checking that each computer is downloading updates and that the updates are installed and working correctly, and then there's the task of installing software: most likely a pricey kiosk software suite that limits a guest's access to a browser and a few specific apps. Finally, there's the matter of making sure that each PC has third-party antivirus and antimalware software installed and regularly updated to ensure guests — and their data — aren't compromised while they use the device.

Unfortunately, it takes only one "bad actor" determined to cause mischief to create a situation on one of these machines that leads to a poor customer experience (at best) and a potential lawsuit (at worst). Adding a few PCs to the lobby seems like it should be a simple task, but it can quickly become a serious challenge. And it's not cheap: On average, the cost of a "cheap" PC escalates to well beyond \$1,000 per unit by the time all the requisite software is installed. And this doesn't cover the cost of the time an IT person spends constantly monitoring and upgrading the PC's software.

Now imagine the additional levels of complexity that adding such PCs to a company's breakrooms, manufacturing lines, or retail floors might entail, with their connections to sensitive employee and company data. It's enough to make an IT department or a business owner quit before he/she even starts.

## The Chromebook Advantage

### Overview

Google introduced Chromebooks to the market in 2011 as an alternative to expensive traditional notebook PCs. The market was initially slow to recognize the value proposition of these devices, but individuals, schools, and businesses have begun to recognize the power these devices bring to the table. In 2012, roughly 50,000 devices shipped into the market. IDC expects the number of devices to climb to 8.6 million in 2015 and 13.4 million by 2019.

Unlike more traditional PC operating systems, the Chrome OS is self-updating and thus won't be slowed down over time by updates.

As Google's fast, easy-to-use, always-secure operating system began to resonate with users, more hardware vendors entered the market. Today, Google and its partners offer a wide range of options and low price points, including Chromebook notebooks starting below \$150, Chromebox-standalone desktops starting below \$230, and Chromebase all-in-ones with starting price points below \$330. These devices boot fast and offer a highly responsive operating system, browser, and apps. They include data storage in the cloud, which means little to no personal data is stored on the device. The nimble, easy-to-use Chrome operating system is as simple to use as a browser. Unlike more traditional PC operating systems, the Chrome OS is self-updating and thus won't be slowed down over time by updates. And instead of requiring expensive, third-party security software for protection, Chrome devices ship with integrated security features, such as verified boot, that are constantly updated to keep users safe.

All of the aforementioned features come standard with Chrome devices. What's particularly powerful about Chrome is the ability to manage these devices at scale using a Web-based admin tool called the Chrome management console.

### **Chrome Management Console**

Google designed the Chrome management console to let business owners or employees easily manage their fleet of Chrome devices via a Web-based interface. From this admin console, more than 200 policies can be configured.

- » User settings permit the enabling of browser restrictions to allow or block applications and extensions and control security features such as password manager and screen lock.
- » Device settings facilitate easy management of hardware features such as printing, sign-in, power management, and reboots, which means there is no need to send IT staff to the individual device to configure these features.
- » Managed networks offer WiFi, Ethernet, and VPN configurations as well as the ability to manage certificates.
- » Chrome devices are capable of providing visibility to monitor all hardware, with features such as device status (which shows if the device has been provisioned or deprovisioned), last sync (when it last synchronized with policy setting in the admin console), the customizable asset ID, and even a serial number.

In total, the management console brings together a long list of important device settings, and it presents the settings in a simple, friendly manner that is easy to understand, even if one is not an IT professional.

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While traditional PCs require pricey kiosk software and inordinate amounts of setup time to configure settings, Google includes a built-in kiosk mode for admin console–managed Chrome devices.

The kiosk mode on Chrome OS represents a clear and compelling opportunity for companies interested in offering technology to their employees and their customers.

### **Secure from the Start**

A key strength of any Chrome device, including those used in kiosk mode, is the high level of security that is built into the operating system. While traditional PC operating systems frequently rely on aftermarket apps to secure them, Chrome’s security has been integrated since day one. The integrations include secure autoupdate, verified boot, and protected cached user data. Secure autoupdates ensure that system updates are downloaded only over Secure Sockets Layer, while verified boot quickly checks to ensure no tampering has occurred prior to system startup. Likewise, protected cached user data encrypts the OS, browser, and plug-ins to safeguard information from attack. Finally, the Chrome management console allows for device sharing across several individuals while simultaneously protecting the privacy of each user.

### **Kiosk Mode**

While traditional PCs require pricey kiosk software and inordinate amounts of setup time to configure settings, Google includes a built-in kiosk mode for admin console–managed Chrome devices. There are two usage scenarios in this mode: for single-application kiosk mode and for public sessions. The apps mode turns the Chrome device into a single-application appliance, restricting access to the browser and other specified apps. On customer-facing apps, this might be useful for a kiosk used only for checking guests into the hotel, for library visitors to check out books, or for restaurant guests to put their name into the queue for a table. Digital signage is another option, where sales promotions might run within a retail setting, encouraging shoppers to interact with the screen to access special promotions.

- » The single-application kiosk mode can also be used in employee scenarios. For example, in a retailer’s breakroom, Chrome devices might be set up to allow employees access to human resources content, schedules, and company news. On the restaurant floor, it might present just the application for customer orders. And on the warehouse floor, it might display a simple inventory app.
- » The public session mode enables a highly customizable Internet kiosk that lets a customer browse the Web and access only specific apps. This setting could be useful for Chrome devices set up in business centers, university labs, and Internet cafes. Most importantly, when the customer signs out, all data is erased and the kiosk returns to its original state. This protects the user’s identity, by purging all related information, and it also guarantees a great experience for the next person who uses the device.

The kiosk mode on Chrome OS represents a clear and compelling opportunity for companies interested in offering technology to their employees and their customers. To offer a better understanding of the actual value proposition and potential return on investment, Google commissioned IDC to interview existing Chrome customers and to run the numbers on the savings that are possible compared with using a traditional PC.

# The Business Value of Chrome Devices in Kiosk Mode

## Study Demographics

In spring 2015, IDC interviewed 10 organizations that have built and configured Chrome devices to be used as kiosks by their customers and employees. Interviewed organizations ranged from multinational corporations with tens of thousands of employees to organizations with only local operations with fewer than 100 employees. These organizations have deployed 2–500 Chrome devices as kiosks, and all 10 organizations are using the Chrome management console to deploy and manage their Chrome devices (see Table 1).

For the most part, these Chrome devices have replaced other devices; interviewed organizations are leveraging efficiencies enabled by Chrome devices to expand their device bases by an average of 23%. Of the 10 organizations interviewed for this study, 9 use these Chrome devices to support customers, primarily as public-facing kiosks in their stores, branches, and offices. In addition, half of these organizations have at least some employees using these Chrome devices, particularly as a convenient device for accessing a single application.

**TABLE 1**

Demographics of Interviewed Organizations		
	Average	Range
Number of employees	24,619	12–210,000
Number of IT staff	130	2–850
Number of internal IT users	22,514	12–189,000
Number of Chrome devices in kiosk mode	119	2–500
Number of Chromebooks in kiosk mode	49	0–200
Number of Chromeboxes in kiosk mode	57	0–500
Number of Chromebases in kiosk mode	13	0–137
Number of internal users: Chrome devices in kiosk mode	1,203	0–10,000
Number of external users per day: Chrome devices in kiosk mode	6,921	0–40,000
Countries	United States, United Kingdom, and Australia	
Industries	Financial services, property management, retail, service provider, government, and construction	

Source: IDC, 2015

Interviewed organizations described a consistent value proposition of configuring and deploying Chrome devices as kiosks for customer and employee use.

Chrome devices used as kiosks are reliable and were described by several organizations as user friendly and intuitive.

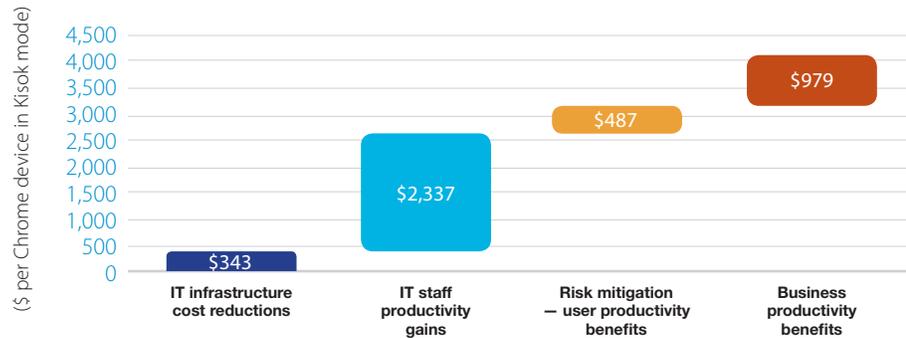
## Financial Benefits Analysis

Interviewed organizations described a consistent value proposition of configuring and deploying Chrome devices as kiosks for customer and employee use. Chrome devices cost substantially less than the devices they replaced, require less time to deploy and manage, are robust and reliable, and have generated positive response from users. Based on analysis of the organizations' use of Chrome devices as kiosks, IDC projects that the companies will record average benefits of \$4,146 per Chrome device per year over three years, or \$494,651 per organization, in the following four primary areas (see Figure 1):

- » **IT infrastructure cost reductions.** Chrome devices used in kiosk mode cost substantially less than replaced devices in terms of device hardware and associated management software and licensing. This enables organizations to not only lower costs compared with existing kiosks but also leverage cost savings to deploy more kiosks that help them attain more revenue and higher employee productivity. IDC calculates that Chrome device users will save an annualized average of \$343 per device per year over three years, or \$40,964 per organization.
- » **IT staff productivity gains.** Chrome devices used in kiosk mode require less staff time and effort to configure, deploy, manage, and support. IDC projects that these Google customers will achieve time savings and increased IT staff productivity worth an average of \$2,337 per device per year over three years, or \$278,759 per organization, which represents time savings that these organizations can reinvest in better supporting their operations and businesses.
- » **Risk mitigation — user productivity benefits.** Chrome devices used in kiosk mode require far fewer reboots and experience fewer system errors than the devices they replaced. As a result, IDC calculates that employees at these organizations will save productive time and avoid revenue losses worth an average of \$487 per device per year over three years, or \$58,116 per organization.
- » **Business productivity benefits.** Chrome devices used as kiosks are reliable and were described by several organizations as user friendly and intuitive, characteristics that enable these organizations to better serve their customers and support employees. IDC puts the value of increased revenue and user productivity with these Chrome devices at \$979 per device per year over three years, or \$116,812 per organization.

FIGURE 1

## Average Annual Benefits per Chrome Device in Kiosk Mode



**Average annual benefits per Chrome device in kiosk mode: \$4,146**

Source: IDC, 2015

### IT Infrastructure Cost Reductions

The value of Chrome devices configured as kiosks begins with offering organizations a cost-effective means of providing devices to support kiosk use scenarios. Organizations interviewed for this study indicated that they spent an average of \$397 per Chrome device, including hardware and the Chrome management console, compared with \$1,021 per device they replaced. Most interviewed organizations cited lowering device costs as a driver of their decision to deploy Chrome devices in kiosk mode. One Google customer explained the straightforward value proposition of using Chrome devices as follows: “Our previous devices cost about \$1,000, and then you add on other licensing costs, which are pretty high. So our Chrome devices ended up being about one-third of the price.”

The cost-effectiveness of Chrome devices offers organizations the opportunity to provide more devices to support customers and employees. Interviewed organizations indicated they are already doing this, with an average of 119 Chrome devices in kiosk mode compared with 97 replaced devices. The lower cost of Chrome devices means that organizations can be more aggressive in expanding their device bases; the organizations interviewed for this study on average could increase their device base to 250 with Chrome devices for the same investment cost of 97 of their previous devices. One interviewed organization already using 500 Chromeboxes in public guest mode at its stores to serve its customers set out its plans to expand its base of Chromeboxes used as kiosks in the coming years: “We’d like to max out at all of our 1,200 stores, so I’d say we’ll add 50 per year.”

The cost-effectiveness of Chrome devices offers organizations the opportunity to provide more devices to support customers and employees.

Organizations interviewed for this study praised Chrome devices for their ease of deployment, management, and support.

### IT Staff Productivity Gains

Organizations interviewed for this study praised Chrome devices for their ease of deployment, management, and support. The Chrome management console is central to the ability of the organizations to achieve efficiencies with these Chrome devices by enabling installation, configuration, and customization of devices in areas such as user settings, user access, network preferences, and application installation through a Web-based console. These efficiencies can be especially beneficial for organizations using Chrome devices at many locations. With the Chrome management console supporting their use of Chrome devices as kiosks, these organizations reported requiring 59.5% less IT staff time to deploy and 62.4% less time to manage and support Chrome devices than the devices they replaced (see Table 2).

Users praised the simplicity and intuitiveness of deploying and running Chrome devices:

- » **Ease and efficiency of configuration:** One organization explained, “The benefit of the management console for Google is that you’re able to manage the settings of that machine, so you can preset everything: the network that it looks for, the home pages, how it will run. With our previous devices’ management console, you had to go to each box to do this.”
- » **Simplicity of management:** One organization said, “Our Chrome devices are just very simple devices. You drop them, walk away from them, and leave them, and they just work, unlike previous devices we were using.”

In addition, Chrome devices used in kiosk mode require less time per device for support because they experience fewer problems such as lost files, unplanned downtime, and reimaging. This means not only a better user experience but also that less staff time is needed to respond to user inquiries, troubleshooting, and making device-related repairs. One organization explained the benefit as follows: “We’re working on other stuff now. By freeing up that time, we’re working on other projects, mainly development projects for internal applications. We get to spend more time on user-impacting things.”

TABLE 2

## IT Staff Efficiencies Using Chrome Devices in Kiosk Mode

	Previous Environment (Hours per Device per Year)	Chrome Devices in Kiosk Mode (Hours per Device per Year)	Change (%)
Device support — call center	56.2	17.3	69.1
Device management, including policy	25.4	13.8	45.4
Device downtime, response	3.3	0.0	99.1
Device imaging and reimaging	1.7	1.3	25.6
<b>Total</b>	<b>86.6</b>	<b>32.5</b>	<b>62.4</b>

“With our previous machines, I needed to reboot 2 or 3 per day out of an installation of 40. The Chromebooks almost never need to be rebooted.”

### Risk Mitigation — User Productivity Benefits

Interviewed organizations praised the Chrome devices they have configured as kiosks for their reliability, availability, and robustness. They reported that their Chrome devices require far fewer reboots (90.1%), suffer almost no hardware failures (98.7%), need to be reimaged less often (100.0%), have less unplanned downtime (83.4%), and are the cause of fewer lost files (100.0%). This means less staff time must be invested in maintaining and supporting Chrome devices used as kiosks and ensures that customers and employees using them have a better, more consistent experience (see Table 3). In total, because of these device-related reliability benefits, users experience 80.7% less productive time lost due to device-related issues.

In addition to experiencing fewer user-impacting problems, interviewed organizations explained that the Chrome devices they are using as kiosks require less time and effort to get up and running again when problems do occur. Organizations also benefit from not only the ease of rebooting Chrome devices either through the Chrome management console or application but also being able to recover in little time from a reboot. As one organization noted, “With our previous machines, I needed to reboot 2 or 3 per day out of an installation of 40. The Chromebooks almost never need to be rebooted. Also, it took almost five minutes with our old machines to reboot them if I was lucky enough to get them to reboot, compared to less than one minute with Chromebooks.” For organizations leveraging Chrome devices as kiosks to engage their customers or otherwise support their businesses, this is an important benefit in helping them provide a high-quality user experience.

Several organizations using Chrome devices in kiosk mode also commented favorably on the ease of securing them. This not only reduces the time burden of ensuring that firewalls, security software, and security policy are properly deployed and protecting these devices but also means that devices suffer the consequences of fewer security breaches. One organization described “[t]he ability to enforce security” as an important component of its selection of Chrome devices, and another organization noted that “[f]or my business case, the security and privacy aspect of the Chromebooks was important.”

TABLE 3

#### Risk Mitigation KPIs — Chrome Devices in Kiosk Mode Versus Previous Environment

	Previous Environment	Chrome Devices in Kiosk Mode	Difference	Benefit (%)
Reboots per device per year	104.7	10.4	94.3	90.1
Reboot time (minutes)	3.1	0.3	2.8	89.5
Files lost per device per year	2.4	0.0	2.4	100.0
Unplanned downtime instances per device per year	1.6	0.3	1.3	83.4
Device reimaging per device per year	0.2	0.0	0.2	100.0
Hardware failures per device per year	0.2	0.0	0.2	98.7

Source: IDC, 2015

Chromeboxes have helped with the sales process because they are easier to use for customers.

IDC projects that the organizations interviewed for this study will achieve a per-device total cost of ownership (TCO) that is 64.0% lower than that of the devices replaced.

## Business Productivity Benefits

Organizations using Chrome devices as kiosks also credited them with helping provide an enhanced user experience. They praised their Chrome devices for being reliable, intuitive, and user friendly — all qualities that have generated positive reactions from users. According to interviewees, these qualities can translate to positive business and operational outcomes for their organizations, including more satisfied customers, higher employee productivity levels, and even more revenue by enabling sales. They provided several examples of how Chrome devices used as kiosks have had this type of impact:

- » **Ease of use for customers.** An organization using Chromeboxes to provide customers coming into its stores with the opportunity to review the products it offers and create tailored selections on an application credited increased sales to its Chrome devices: “Our Chromeboxes have helped with the sales process because they are easier to use for customers. They are easier to navigate and perform better, whereas before a customer might just be there with another device watching a circle spin waiting for an application to load. I think that’s helped increase sales — \$1.5 million per year.”
- » **Positive customer experience.** An organization providing Chromebooks as a service to customers who use them during meetings cited positive response to the Chromebooks as helping its business: “I’ve been able to make some margin and do more business because the Chromebooks are sleek and agile and the users like it. So I have probably increased my revenue by another \$100,000 this year.”
- » **Improved employee experience.** An organization with employees using Chromeboxes and Chromebooks as kiosk devices said, “Our employees like the Chromeboxes. They love that they can now sit down at any box and log in. They also love how they can grab a laptop and they get the exact same experience.”

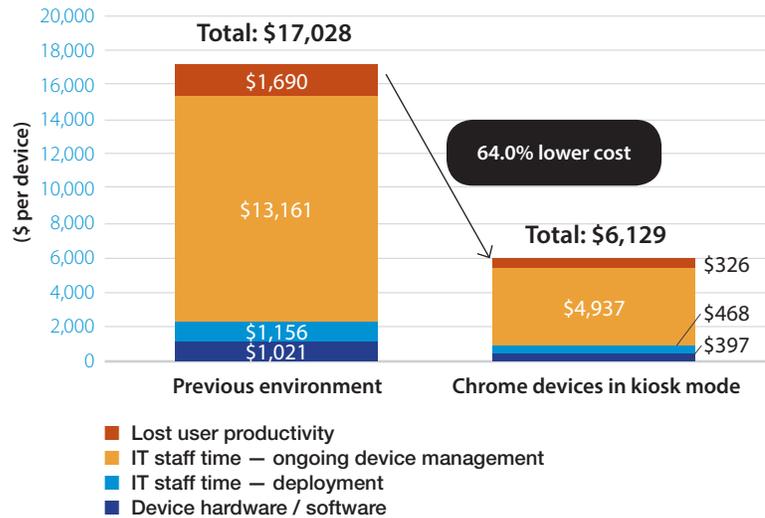
Organizations interviewed for this study using Chrome devices in kiosk mode cited net revenue gains and employee productivity increases that will be worth an average of \$979 per device per year over three years, or \$116,812 per organization.

## TCO Analysis

Given the lower cost of buying Chrome devices to be used as kiosks; the reduced time burden on staff deploying, managing, and supporting these devices; and the lower operational cost of lost productive time because of problems, IDC projects that the organizations interviewed for this study will achieve a per-device total cost of ownership (TCO) that is 64.0% lower than that of the devices replaced. While IDC has analyzed TCO from a three-year perspective for this study, Google provides support for Chrome OS devices for five years. This enables organizations to benefit from cost, operational, and reliability benefits from Chrome devices used as kiosks over an even more extended period of ownership (see Figure 2).

**FIGURE 2**

### Three-Year TCO Comparison — Chrome Devices in Kiosk Mode Versus Previous Environment



Source: IDC, 2015

### ROI Analysis

IDC uses a discounted cash flow methodology to calculate the ROI and payback period. ROI is the ratio of the net present value (NPV) and discounted investment. Payback period is the point at which cumulative benefits equal the initial investment.

Table 4 provides IDC’s three-year ROI analysis for interviewed organizations using Chrome devices as kiosks. IDC’s analysis shows that these organizations will invest a discounted average of \$2,393 per device over three years, including device and management console purchase costs and initial and ongoing management and support costs. This compares with total average discounted benefits over three years of \$10,013 from staff efficiencies, cost reductions, and increased revenue as described in this study. As a result, IDC projects an average three-year ROI for these organizations of 319% for their investment in Chrome devices used in kiosk mode, with breakeven in their investment occurring in an average of 4.9 months.

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TABLE 4

Three-Year ROI Analysis per Chrome Device in Kiosk Mode	
Benefit (discounted)	\$10,013
Investment (discounted)	\$2,393
Net present value (NPV)	\$7,621
Return on investment (ROI)	319%
Payback period	4.9 months
Discount rate	12%

Source: IDC, 2015

Once the Chrome OS value proposition is presented — lower cost to deploy, easy to maintain, and always secure — most businesses are likely to understand and embrace what it brings to the table.

## Challenges and Opportunities

At present, deploying Chrome devices in kiosk mode presents several key challenges and opportunities. The first challenge lies with the Chrome OS itself. While Google has been iterating on the operating system for years and has found clear acceptance in specific verticals such as education, the Chrome OS has not yet been widely embraced by traditional IT. Organizations with a long history of supporting primarily Windows-based devices are likely to hesitate at the idea of bringing in Chrome devices, even in a controlled setting such as kiosks. And organizations that are open minded enough to try this OS will still face a modest learning curve when it comes to deploying and managing. That said, the advantages of this fast, always-updated operating system are clear, especially when it comes to the valuable kiosk mode. Once the Chrome OS value proposition is presented — lower cost to deploy, easy to maintain, and always secure — most businesses are likely to understand and embrace what it brings to the table.

A second challenge is legacy applications. Unless a company is recently formed, the chances are strong that it will have some dependencies upon legacy Windows-based software. This may not be a showstopper for most kiosk deployments, but any firm exploring the option must conduct adequate due diligence. The upside here is that for just about any legacy app that exists, there is now a comparable, more modern app available for Chrome. Plus, there is a small but growing list of apps created specifically to serve the kiosk. Finally, Chrome can also use applications from Citrix and VMware to virtualize most legacy applications.

Within these dual challenges of Chrome OS and legacy Windows apps, there is also a key opportunity. Companies that explore the possibilities of Chrome devices for kiosk may find that the benefits of supporting the new OS far outweigh the costs and that the dependency

For businesses on the fence regarding adding this technology to the mix the question shouldn't be "Can I afford to do this?"; rather, the question should be "Can I afford not to do this?"

on legacy apps should be reevaluated. What starts as a kiosk deployment could lead to IT departments taking a close, hard look at other areas that might benefit from such evolved thinking. This is especially possible for companies that have already begun to dip their toes into the Google ecosystem around business-class applications.

## Summary and Conclusion

Google's Chrome devices running in kiosk mode represent a notable opportunity for companies to extend technology to their employees and to their customers. For employees, this can mean improved productivity and having an additional way of delighting customers. For customers, a well-placed device, with the right apps and connectivity, can mean the difference between a good customer service experience and a bad customer service experience. Chrome-based devices are fast, secure, and always up to date. And as IDC's data shows, these devices are significantly less expensive to deploy, secure, and manage than PCs running traditional desktop operating systems with added security and kiosk software. For businesses on the fence regarding adding this technology to the mix the question shouldn't be "Can I afford to do this?"; rather, the question should be "Can I afford not to do this?"

## Appendix

IDC's standard ROI methodology was used for this project. This methodology is based on gathering data from current users of Chrome devices in kiosk mode as the foundation for the model. Based on these interviews, IDC performs a three-step process to calculate the ROI and payback period:

- » Measure the savings from reduced IT costs (staff, hardware, software, maintenance, and IT support), increased user productivity, and improved revenue over the term of the deployment.
- » Ascertain the investment made in deploying the Chrome devices used in kiosk mode and the associated training and support costs.
- » Project the costs and savings over a three-year period and calculate the ROI and payback for the deployed solution.

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.

- » Downtime values are a product of the number of hours of downtime multiplied by the number of users affected.
- » The impact of unplanned downtime is quantified in terms of impaired end-user productivity and lost revenue.
- » Lost productivity is a product of downtime multiplied by burdened salary.
- » Lost revenue is a product of downtime multiplied by the average revenue generated per hour.
- » 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.

Because every hour of downtime does not equate to a lost hour of productivity or revenue generation, IDC attributes only a fraction of the result to savings. As part of our assessment, we asked each company what fraction of downtime hours to use in calculating productivity savings and the reduction in lost revenue. IDC then taxes the revenue at that rate.

Further, because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

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

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