

FORRESTER®

The Total Economic Impact™ Of Android Enterprise

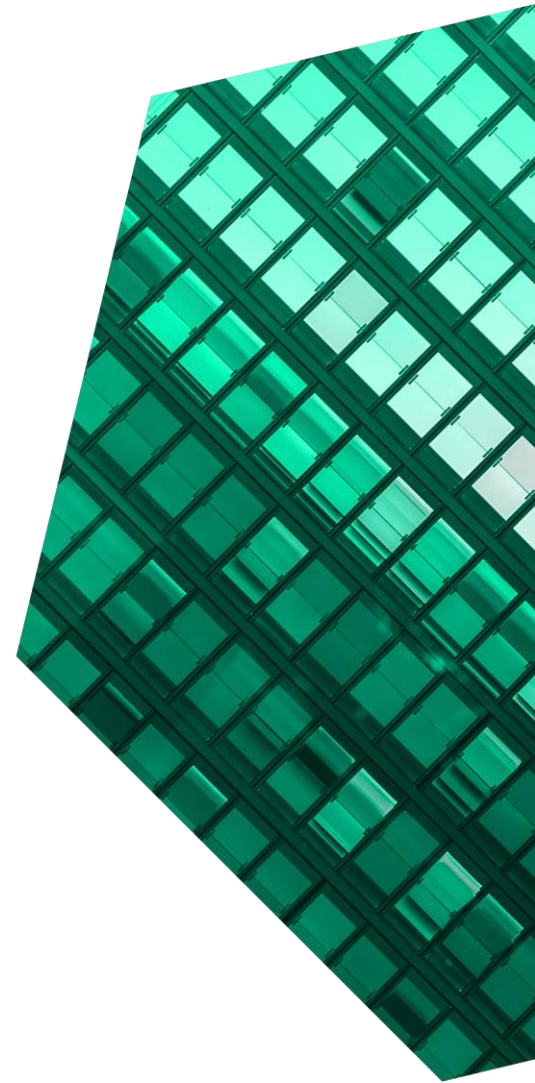
Cost Savings And Business Benefits
Enabled By Android Enterprise

MAY 2021

Table Of Contents

Project Director Edgar Casildo

Executive Summary	1
The Android Enterprise Customer Journey	8
Key Challenges	8
Composite Organization	9
Analysis Of Benefits	10
End-User Efficiency Gains	10
Increased Revenue From Higher Customer Retention	13
Reduced Non-Android Device Annual Cost Savings	15
Endpoint Deployment And End-User Setup Time Savings	16
Endpoint Management And Help Desk Cost Savings	18
Unquantified Benefits	21
Flexibility	21
Analysis Of Costs	23
Incremental Device Costs	23
Enterprise Mobility Management Fees	24
Professional Services And Initial Implementation Costs	24
Financial Summary	26
Appendix A: Total Economic Impact	27
Appendix B: Interview And Survey Demographics	28
Appendix C: Endnotes	29



ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. For more information, visit forrester.com/consulting.

© Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on the best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies.

Executive Summary

To compete in today's rapidly changing world, organizations must digitize processes and keep users connected across geographies and devices. Providing users with mobile devices is an integral part of this digital transformation. By deploying Android devices managed with Android Enterprise to users, organizations can recognize the benefits of digitization while reducing hardware and support costs.

Android Enterprise is a modern management framework built by default into Android mobile devices. It allows IT teams to manage their Android devices and applications at scale through its robust enterprise APIs and secure application deployment via Google Play.

The Android Enterprise framework creates a consistent management experience across all Google Mobile Services-certified (GMS-certified) smartphones, tablets, and rugged devices, providing one standardized approach regardless of manufacturer. The comprehensive framework dramatically reduces support costs and improves data security while giving organizations powerful tools to enroll and configure devices, isolate work data, and manage and distribute business applications. The world's largest organizations across various industries deploy this product globally.

Google commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying [Android Enterprise](#). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Android Enterprise on their organizations. Android Enterprise is a modern management framework built by default into Android mobile devices. Android Enterprise allows IT teams to manage their Android devices and applications at scale through its robust enterprise APIs and secure application deployment via managed Google Play.

KEY STATISTICS



Return on investment (ROI)

161%



Net present value (NPV)

\$1,340 per device

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers and surveyed 92 customers with experience using Android Enterprise. 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](#).

Prior to using Android Enterprise, the interviewed customers used a variety of mobile devices, many of which relied on operating systems and management frameworks that were either no longer supported or approaching end of life, such as Device Manager. These devices were difficult to manage and posed a serious security risk, since they no longer received regular security updates. As a result, these devices were costly to support and provided limited value to end users, who still relied heavily on PCs and paper processes.

The interviewees chose Android Enterprise to help them achieve their digital transformation goals.

The features and functionality Android Enterprise provided made it easier for IT teams to manage and secure their environments. Meanwhile, end users gained access to a wider range of mobile devices that better suited their needs and gave them access to essential business applications. These benefits helped the interviewees achieve their digital transformation goals, decreased support costs, and improved business outcomes.

Help desk cost savings:

\$30 per device



KEY FINDINGS

Quantified benefits. The composite organization receives the following risk-adjusted present value (PV) benefits by leveraging Android Enterprise:

Simplifies device and application management

- **Eliminates 30% of Android-related help desk calls.** Android Enterprise improves device stability and usability offered, which leads to a significant reduction in the number of help desk calls Android users submitted annually. Additionally, the enhanced management capabilities offered through Android Enterprise enable IT teams to address issues more quickly than before. These reductions save the composite organization \$30 per device per year by Year 2.
- **Reduces the time spent deploying and managing applications by 31%.** Android Enterprise makes deploying applications, managing updates, troubleshooting, and supporting end users easier, since IT configures devices and applications from a centralized location.

“Android Enterprise enables us to manage our Android devices as a platform instead of individual devices.”

Information systems engineer, software

- **Increases the number of applications end users have access to by 69%.** The extensive application management and policy controls allow IT teams to securely distribute and configure more applications than before, enabling them to focus on other value-added tasks. Access to these business applications also helps drive end-user business outcomes.

Improves data security and privacy

- **Reduces the resources required for audit and compliance management by 75%.** The advanced auditing capabilities in Android Enterprise make it easier for security and compliance personnel to comply with internal and external governance requirements. The Android work profile separates work and personal applications and data, making it easier to adhere to regulatory standards and alleviate privacy concerns for both users and IT admins.

Accelerates device deployment and employee setup

- **Decreases device configuration times by 75%.** The variety of endpoint configuration options, including zero-touch enrollment capabilities, allows IT teams to configure Android devices at scale quickly and easily. These benefits also enable IT teams to set up a user on a new device in a fraction of the time it took before.

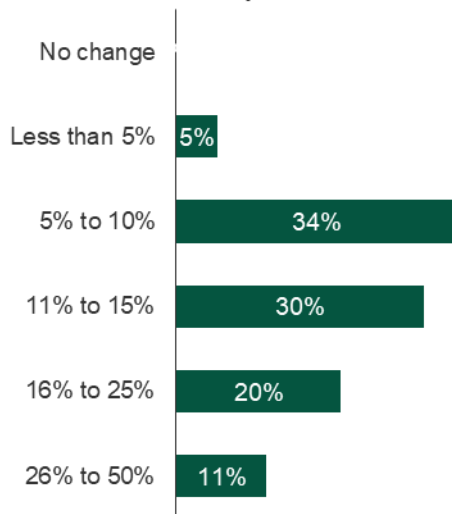
Expands mobilization at a lower cost

- **Increases the number of Android devices by 83%.** The lower hardware and support costs associated with Android Enterprise-managed Android devices make it more feasible for the

composite organization to provide more employees with corporate-owned devices.

- **Reduces per-device spending by 32% for knowledge workers.** Android Enterprise enables the composite organization to offer a broader range of Android devices. These devices appeal

“With Android Enterprise, what is the percentage reduction in time spent by your field service workers to complete field visits?”



Base: 36 customers who marked “Reduced time to complete field visits” of the 78 customers surveyed using Android devices managed with Android Enterprise

Source: A commissioned study conducted by Forrester Consulting on behalf of Google, November 2020

to a wider set of end users and are cheaper than the end users’ current devices.

Improves employee and business outcomes

- **Increases frontline worker and knowledge worker productivity.** Users experience fewer OS-related crashes or malfunctions that hinder their ability to work. As a result, users spend more time performing value-added tasks instead of troubleshooting malfunctions. Additionally, the security capabilities within Android Enterprise give IT teams the confidence needed to grant mobile users access to important business applications and data. This reduces mobile users’

reliance on paper processes and enables them to be more productive remotely.

- **Increases customer retention by 2% by Year 3.** Android Enterprise’s end-user productivity improvements translate into improved customer outcomes, improved retention rates, and increased revenue. Frontline workers can access the data and applications they need to support their customers at all times, reducing customer support times and improving customer satisfaction and retention. Sixty-eight percent of survey respondents reported an improvement in customer satisfaction after implementing Android Enterprise.

Unquantified benefits. Benefits that are not quantified for this study include:

- **Reduced likelihood of a security breach or regulatory fine.** Android Enterprise improves data security and compliance, which reduces the risk of a major data loss event and any resulting compliance fines and legal costs. These are especially important since many of the interviewees were replacing mobile devices running operating systems that were reaching end of life.
- **Improved employee experience.** There was a near-unanimous agreement that Android Enterprise increased employee satisfaction. Ninety-nine percent of survey respondents either agreed or strongly agreed that Android Enterprise increases employee satisfaction. Survey

“I can’t stress how massively important it is that we can separate work and personal data with the work profile. It helps us give our end users an extra level of security, something that is incredibly important to our users.”

Technical architect, financial services

respondents also reported that Android Enterprise increased employee satisfaction scores increased by an average of 7%.

Android Enterprise enables organizations to create the work environments that Forrester found correlated with high employee engagement, while eliminating the most common causes of employee burnout among knowledge workers.¹

- **Increased organizational agility.** Organizations can tailor the Android experience to meet their unique objectives. IT teams can choose from a wide assortment of devices the one that best addresses a particular need. Organizations can also tailor the user experience by enabling kiosk mode for frontline employees or adjusting the device launcher to fit a particular workflow.
- **Faster application development.** Because Android supports both native and web application development, organizations can use their existing internal web development team to develop applications for Android. Because Android has strong support for web applications, developers that were building web applications could also build for Android. In contrast, other mobile device operating systems have more limited support for web applications and require more specialized training.

Costs. The benefits of Android Enterprise are so substantial that the composite organization expands its Android environment. That expansion results in the following risk-adjusted present value costs:

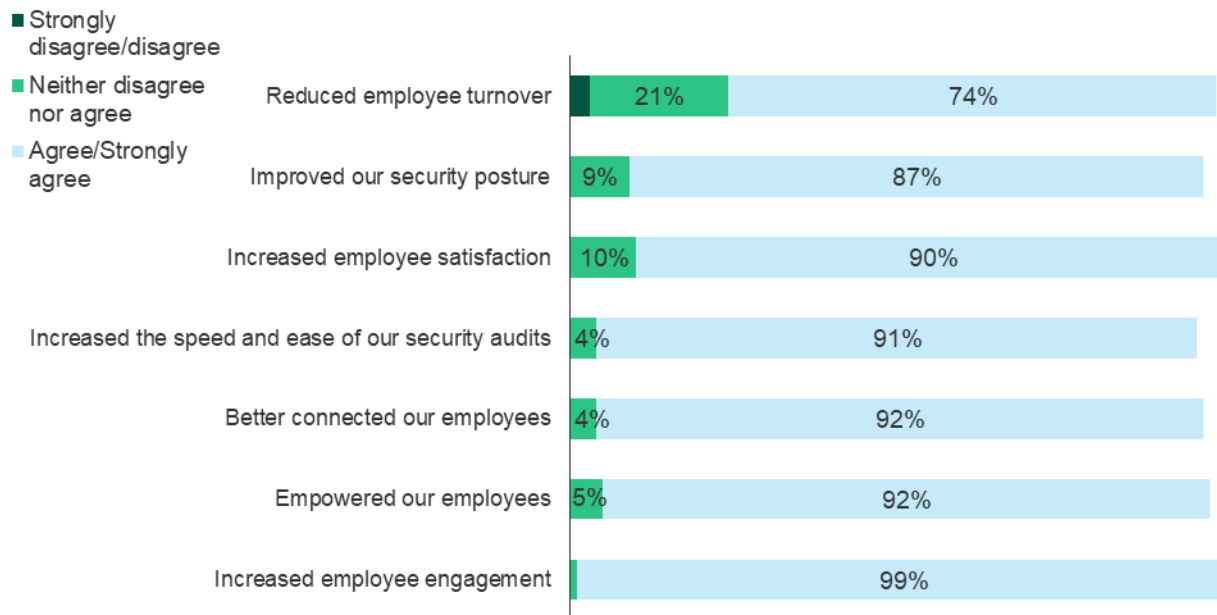
- **Enterprise Mobility Management (EMM) licensing fees of \$10 per device per month.** The composite organization purchases additional EMM licenses for the additional Android devices it acquires.
- **Incremental device costs of \$55 per device per month.** Forrester quantified the leasing,

telephony, and data costs associated with the incremental devices purchased.

Because the composite organization already had IT managed and supported Android devices — and because Android Enterprise reduces the time and effort needed to manage Android devices — the composite organization does not need to hire additional resources.

The financial analysis based on the customer interviews and survey found that a composite organization experiences benefits of \$8.4M over three years versus costs of \$3.2M, adding up to a net present value (NPV) of \$5.1M and an ROI of 161%.

“How much do you agree with the following statements?”

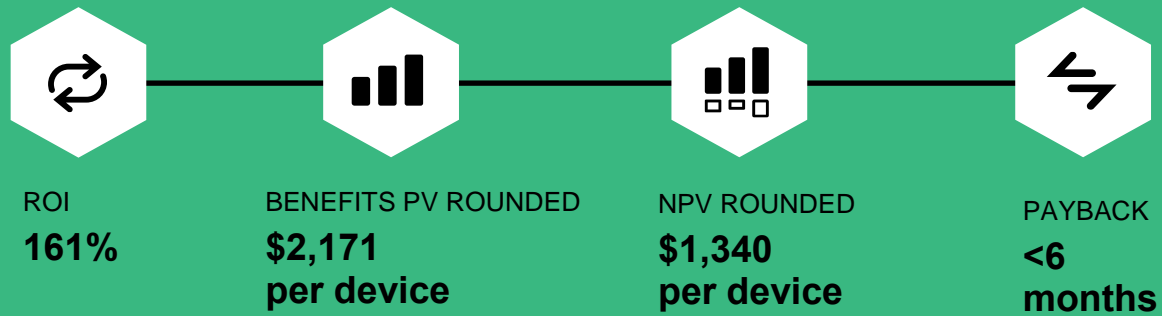


Base: 92 customers using Android devices managed with Android Enterprise

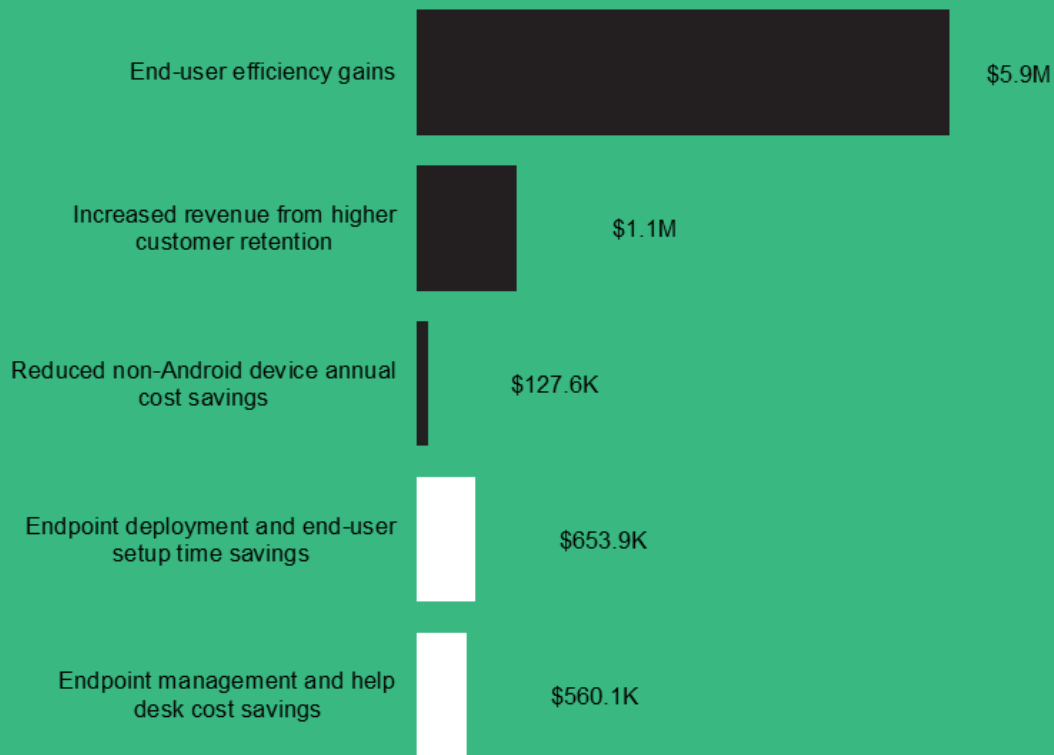
Note: Not showing “Don’t know/doesn’t apply” responses

Source: A commissioned study conducted by Forrester Consulting on behalf of Google, November 2020

Forrester calculated the following three-year risk-adjusted benefits for the composite organization:



Benefits (Three-Year)



Business benefits: \$1,855 per user

IT benefits: \$315 per user

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 Android Enterprise.

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 Android Enterprise can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Google 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 study to determine the appropriateness of an investment in Android Enterprise.

Google 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.

Google 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 Android stakeholders and Forrester analysts to gather data relative to Android Enterprise.



CUSTOMER INTERVIEWS AND SURVEY

Interviewed four decision-makers and surveyed 92 decision-makers at organizations using Android Enterprise 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 Android Enterprise Customer Journey

■ Drivers leading to the Android Enterprise investment

KEY CHALLENGES

Forrester interviewed four organizations and surveyed 92 decision-makers at organizations with experience using Android Enterprise. For more details on the respondents who participated in this study, see [Appendix B](#).

The respondents' organizations struggled with common challenges, including:

- **Diminished end-user productivity returns from legacy devices.** End users had limited access to essential business applications and data on their legacy devices. Because of this, end users still relied heavily on PCs and paper processes. Others had access to business applications and data on their mobile devices, but these devices malfunctioned so often that they were more of a detriment than a help.
- **The inability to provide more frontline workers with mobile devices.** The interviewees noted that increasing their non-Android device footprint wasn't feasible; alternatives were either too costly or ran operating systems nearing end of life, which raised long-term concerns.

The interviewees and survey respondents hoped that lowering the support costs for their Android devices would enable them to provide a wider user base with mobile devices and drive business outcomes.
- **Delays while frontline workers served customers.** Frontline workers often had to troubleshoot technical issues while supporting a customer or rely on slower workflows. These issues caused delays and frustrated both the customers and the frontline workers.
- **High support costs for IT teams.** IT teams often lacked the ability to manage their legacy

devices remotely. The inconsistent user experience (UX) across devices limited the usefulness of help desk documentation.

Consequently, IT teams would often have to walk users through troubleshooting procedures and fixes over the phone — a slow and error-prone process. One interviewee reported that it was often easier to wipe a device and reconfigure it (a process that could take the better part of a day) than spend time troubleshooting the issue.

- **Time-consuming application deployment and maintenance.** The technical architect for the financial services firm explained: "Before [Android Enterprise], rolling out a new in-house application was chaotic. Application development teams would have to coordinate with operations teams all over the globe to roll out a new app."

These factors restricted the number of custom applications development teams could create, which meant that end users continued to rely heavily on either paper-based processes or laptops and desktops.

- **Inefficient methods of enforcing governance policies.** The interviewees reported that IT teams lacked efficient ways to enforce security policies, set application permissions, or audit many of their legacy devices, making it difficult to prove compliance with various regulatory requirements.

COMPOSITE ORGANIZATION

Based on the interviews and survey, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four companies that Forrester interviewed and the 92 companies that Forrester surveyed and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

- The multibillion-dollar organization is based in the United States and has global operations. It has 5,000 employees, including 1,500 knowledge workers, 2,000 service workers, and 1,500 field service workers.
- Before adopting Android Enterprise, the organization had 2,100 corporate Android devices and 1,800 non-Android devices. After adopting Android Enterprise, the organization increases its Android footprint while decreasing its non-Android environment. By Year 3, the organization has 3,850 Android devices and 900 non-Android devices.
- By Year 3, 100% of field service workers, 80% of service workers, and 50% of knowledge workers have an Android device. Previously, only 67% of field service workers, 50% of service workers, and 20% of knowledge workers had an Android device.

Key assumptions

- **\$2.5 billion in revenue**
- **5,000 employees**
- **3,850 Android devices by Year 3**

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Business Benefits						
Atr	End-user efficiency gains	\$1,260,324	\$2,344,680	\$3,753,360	\$7,358,364	\$5,903,456
Btr	Increased revenue from higher customer retention	\$200,000	\$400,000	\$800,000	\$1,400,000	\$1,113,449
Ctr	Reduced non-Android device annual cost savings	\$31,388	\$62,775	\$62,775	\$156,938	\$127,578
IT Benefits						
Dtr	Endpoint deployment and end-user setup time savings	\$258,370	\$272,150	\$258,370	\$788,891	\$653,917
Etr	Endpoint management and help desk cost savings	\$177,975	\$252,450	\$252,450	\$682,875	\$560,101
	Total benefits (risk-adjusted)	\$1,928,057	\$3,332,055	\$5,126,955	\$10,387,067	\$8,358,501

END-USER EFFICIENCY GAINS

Evidence and data. The interviewees could provide their users with more stable and performant devices that supported a wide range of workflows, which resulted in significant productivity increases. Frontline workers received Android devices that met their specific needs (e.g., rugged devices, devices with barcode scanners).

Android Enterprise addressed many of their legacy management frameworks' management and security shortcomings. It also provided users with a consistent UX. These improvements made IT teams confident that they could secure the network and support users while also expanding the Android environment and providing users with access to critical business applications and data.

- The director of digital workplace architecture and innovation explained that all of their field service engineers receive mobile devices: "We do this for two reasons: safety and connectivity. Our field engineers are dealing with industrial equipment all day; they need to be connected back to the office from a health and safety point of view."
- The same interviewee went on to explain: "[With Android Enterprise, we] have somewhere in the region of 168 mobile applications developed and deployed to our users. We've developed in-house applications to connect field technicians to both our EPR and CRM systems. These applications optimize their work. A field technician can report an issue when they're onsite with a picture attached, speeding up remediation times. This is

a key use case that wasn't possible with a laptop."

- The mobile operations manager explained that their organization created several custom applications to support its frontline workers. These applications:
 - Reduced the time it took to submit a form by 84%.
 - Eliminated the need for frontline workers to make support calls; instead, they could complete a request through a custom application. This reduced the time needed to perform a query by 72%.

These efficiency gains enabled the field service workers to respond to more calls in a day.

- The same interviewee went on to explain that mobile-device-utilization rates have increased sharply. Usage has increased from 60% a day to 80% a day.
- Survey respondents reported that service employees reduced the time needed to support a customer by an average of 14% after implementation. Similarly, survey respondents noted field service workers were able to complete a field visit 15% faster than before.
- Android Enterprise allowed survey respondents to increase the number of applications Android users had access to by an average of 69%. The improved Android Enterprise management features made creating and supporting custom and publicly available applications more feasible. IT teams could set policies at both the device and application level, reducing support costs.

Equally as important, Android Enterprise's security features gave IT teams the confidence needed to develop in-house applications or grant users access to publicly available applications. The information system engineer explained, "The security whitepapers that the Android Enterprise

team provided us the visibility we needed [to grant our mobile users access to more applications and data]."

"Which of the following benefits have your front-office roles experienced since implementing Android Enterprise?"



Base: 75 customers who marked "Frontline/front-office workers" as employee groups who have access to an enterprise mobile device of the 78 customers surveyed using Android devices managed with Android Enterprise
Source: A commissioned study conducted by Forrester Consulting on behalf of Google, November 2020

Modeling and assumptions. In modeling the composite organization, Forrester assumes:

- Android Enterprise increases time savings annually as the number of applications end users have access to increases.
- A 30% productivity capture rate is included since not all time savings translate into additional value-added work.
- Service and field service employees now access important business applications and data on company-owned Android devices, enabling them to support customers, complete field visits, and fill out requests faster than they could before.

- Similarly, knowledge workers are able to collaborate more effectively and work from anywhere with their new Android devices.

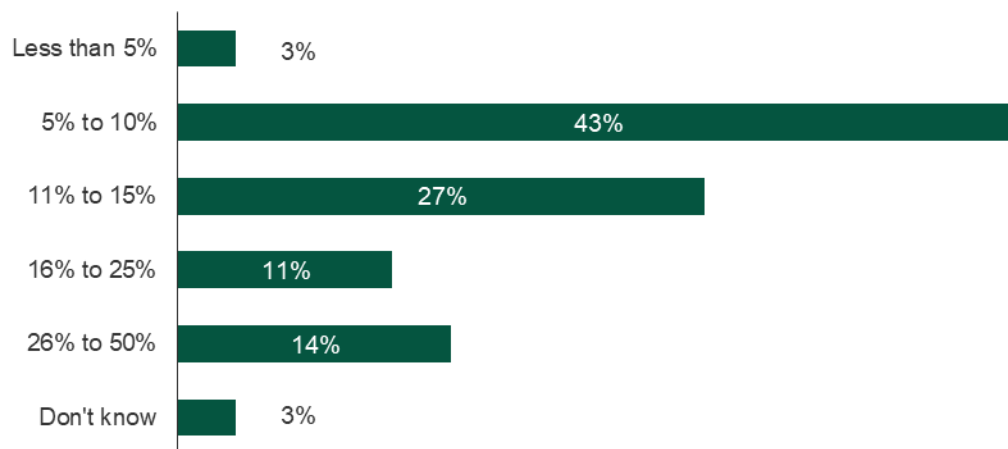
Risks. End-user productivity benefits will vary based on:

- The number of users and average labor rates.
- The presence and utility of existing devices.

- The number of employees who have access to mobile devices.

To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$5,903,456.

“Since your implementation of Android Enterprise, what is the percentage decrease in the time required to support a customer?”



Base: 37 customers who noted “Reduced support times” of the 92 customers surveyed using Android devices managed with Android Enterprise

Note: Percentages do not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of Google, November 2020

End-User Efficiency Gains					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Number of service employees	Composite	1,200	1,600	1,600
A2	Weekly time savings (hours)	Based on customer interviews and survey results	1.50	2.00	3.00
A3	Blended fully burdened service employee salary	Industry average	\$15	\$15	\$15
A4	Service employee time savings	$A1 \times A2 \times 52 \times A3$	\$1,404,000	\$2,496,000	\$3,744,000
A5	Number of field service employees	Composite	1,200	1,500	1,500
A6	Weekly time saved (hours)	Based on customer interviews and survey results	2.00	3.00	5.00
A7	Blended fully burdened field service employee salary	Industry average	\$27	\$27	\$27
A8	Field service employee time savings	$A5 \times A6 \times 52 \times A7$	\$3,369,600	\$6,318,000	\$10,530,000
A9	Number of knowledge workers	Composite	525	525	750
A10	Weekly time savings (hours)	Based on customer interviews and survey results	0.50	1.00	1.00
A11	Blended fully burdened knowledge worker salary	Industry average	\$35	\$35	\$35
A12	Knowledge worker employee time savings	$A9 \times A10 \times 52 \times A11$	\$477,750	\$955,500	\$1,365,000
A13	Productivity recapture	Assumption	30%	30%	30%
At	End-user efficiency gains	$(A4 + A8 + A12) \times A13$	\$1,575,405	\$2,930,850	\$4,691,700
	Risk adjustment	↓20%			
Atr	End-user efficiency gains (risk-adjusted)		\$1,260,324	\$2,344,680	\$3,753,360
Three-year total: \$7,358,364			Three-year present value: \$5,903,456		

INCREASED REVENUE FROM HIGHER CUSTOMER RETENTION

Evidence and data. Customers experienced faster and better support with Android Enterprise, which increased customer satisfaction and customer retention rates. Organizations can analyze data from applications to derive actionable insights and optimize processes, allowing them to continuously improve customer service. These improvements to

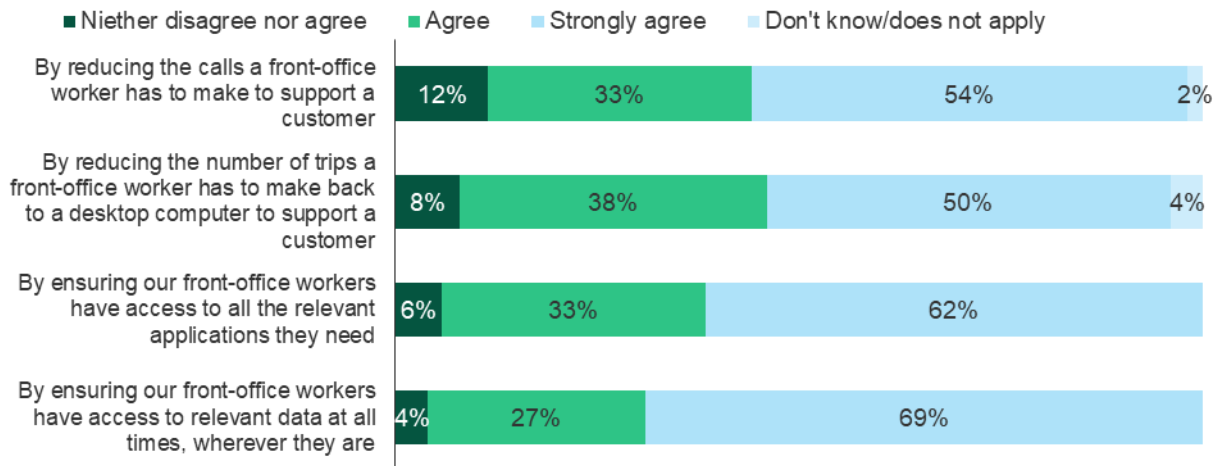
customer experience (CX) reduce customer churn and increase customer retention rates.

- Survey respondents reported a 3% average increase in customer retention. Additionally, survey respondents saw an average Net Promoter ScoreSM increase of 22.4 points.²

- The director of digital workplace architecture and innovation for the sales team explained, “For our sales team, being able to access our CRM system through their [Android devices] to view a customer’s details is so much quicker than getting your laptop out, and leads to a much better customer experience.”
- Customer retention increases by 2% over the first three years with the assumption that the additional 1% increase that the survey respondents experienced occurs over subsequent years.

“How much do you agree with the following statements?”

Android Enterprise has improved customer engagement ...



Base: 52 customers who noted “Improved customer engagement” of the 78 customers surveyed using Android devices managed with Android Enterprise

Source: A commissioned study conducted by Forrester Consulting on behalf of Google, November 2020

Modeling and assumptions. For the composite organization, Forrester assumes that:

- The starting customer retention rate is 24%, based on the survey data collected.
- Customer retention rates increase over time as the organization digitizes more paper-based processes and provides its employees with access to more business applications.
- Only 20% of the composite organization’s customer base is affected by Android Enterprise’s improvements.

Risks. Increases to an organization’s customer retention rate will vary based on:

- The organization’s current customer retention rate and industry standards.

To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV of \$1,113,449.

Increased Revenue From Higher Customer Retention					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	Customers affected by the improved customer service enabled through Android Enterprise	Composite	1,000,000	1,000,000	1,000,000
B2	Customer retention rate	Based on customer interviews and survey results	24%	24%	24%
B3	Improvement in retention rate (percentage points)	Based on customer interviews and survey results	0.5%	1.0%	2.0%
B4	improved customer retention rate with Android Enterprise	B2+B3	24.5%	25.0%	26.0%
B5	Additional customers retained	(B1*B4) -(B1*B2)	5,000	10,000	20,000
B6	Estimated annual revenue per customer	Composite	\$500	\$500	\$500
B7	Retained revenue through improved customer retention	B5*B6	\$2,500,000	\$5,000,000	\$10,000,000
B8	Operating margin	Composite	10%	10%	10%
Bt	Increased revenue from higher customer retention	B7*B8	\$250,000	\$500,000	\$1,000,000
	Risk adjustment	↓20%			
Btr	Increased revenue from higher customer retention (risk-adjusted)		\$200,000	\$400,000	\$800,000
Three-year total: \$1,400,000			Three-year present value: \$1,113,449		

REDUCED NON-ANDROID DEVICE ANNUAL COST SAVINGS

Evidence and data. Android Enterprise offers a more consistent management experience for IT administrators and a more consistent experience for end users. These improvements allow organizations to offer their knowledge workers a wider assortment of Android devices. As a result, more users selected Android as their corporate device.

The Android devices selected allowed the composite organization to lower its average expenditure per-device, enabling it to provide more knowledge workers with smartphones.

- The director of digital workplace architecture and innovation at the manufacturing firm noted: “The lower cost of an Android device compared to the alternatives opens up a lot of possibilities for us.

We can offer more employees a corporate device, which helps us attract more talent and helps our users be more productive.”

- Survey respondents increased the number of Android devices in their environment by an average of 42%.

Modeling and assumptions. Forrester assumes that:

- The composite organization leases both its non-Android and Android devices.
- Prior to adopting Android Enterprise, 20% of knowledge workers use corporate-owned Android devices. After adopting Android Enterprise, 50% of knowledge workers use corporate-owned Android devices.

- Only knowledge workers shift from higher-cost non-Android devices to Android devices.

Risks. Device cost savings will vary based on:

- The average cost of an Android device and a non-Android device.
- Android device adoption rates before and after adopting Android Enterprise.

- Device refresh cycles for an Android device and a non-Android device.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$127,578.

Reduced Non-Android Device Annual Cost Savings

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Non-Android devices replaced by Android devices	Composite	225	450	450
C2	Non-Android device annual cost	Based on customer interviews and survey results	\$480	\$480	\$480
C3	Android device annual cost	Based on customer interviews and survey results	\$325	\$325	\$325
Ct	Reduced non-Android device annual cost savings	$C1 * C2 - (C1 * C3)$	\$34,875	\$69,750	\$69,750
	Risk adjustment	↓15%			
Ctr	Reduced non-Android device annual cost savings (risk-adjusted)		\$31,388	\$62,775	\$62,775
Three-year total: \$156,938			Three-year present value: \$127,578		

ENDPOINT DEPLOYMENT AND END-USER SETUP TIME SAVINGS

Evidence and data. Android Enterprise’s enhanced device configuration and application management capabilities allow IT teams to set up a user on a new device in a fraction of the time it took before. IT teams leverage the various provisioning methods available through Android Enterprise — especially zero-touch enrollment — to achieve this. IT teams can set policies through their EMM solution and push them out to enrolled devices instead of doing this device by device.

Setting up a user on a new device is much easier than with traditional management frameworks. Organizations can distribute public and in-house applications through their managed Google Play

instance. Also, IT admins can configure and set permissions at the application level for all offered applications, rather than setting permissions application by application. They can also connect users to their company’s network from their EMM solution instead of manually connecting users.

- Administrators use Android Enterprise to manage the configuration and deployment of applications and updates to end users.
- The technical architect at the financial services firm explained: “Before [Android Enterprise], rolling out a new in-house application was chaotic. Application development teams would have to coordinate with operations teams all over the globe to roll out a new app. Now, they can

just work with our global operations team to upload a new app to our Google Play store.”

- The same interviewee explained that coordinating these updates used to take 10% of four application development FTEs’ time. That time is completely freed up because IT teams can now leverage the Google Play store to push out updates from one central management platform.
- The mobile operations manager stated: “With [our legacy management framework], we would spend 2.5 hours configuring a device and then spend an hour setting up a user on their new device. With Android Enterprise, we can set up a user on a brand-new, out-of-the-box phone in 15 minutes. And, once we move to a zero-touch deployment scheme, we expect that to be down to 7 minutes.”
- Survey respondents noted that they were able to reduce the time required to set up an Android device by 75%.

Modeling and assumptions. For the composite organization, Forrester assumes that:

- Administrators use Android Enterprise to manage the configuration and deployment of applications

and updates to end users. These tools save administrators a significant amount of time and ensure that applications stay up to date and secure.

- Half of the employees require a new endpoint configuration annually, which averages 1 hour of required labor for IT administrators. With Android Enterprise, this time is reduced by 75%.
- Prior to deploying Android Enterprise, a new Android device setup required an average of 4 hours for both IT and end users. With Android Enterprise, this time decreases by 90%.

Risks. Forrester recognizes that deployment and end-user setup savings may vary from organization to organization. Specific considerations include:

- Benchmark effort required for management and deployment.
- IT salaries.
- End-user salaries.

To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of \$653,917.

Endpoint Deployment And End-User Setup Time Savings

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	New devices configured	Composite	1,875	1,975	1,875
D2	Hours required to configure a device	Based on customer interviews and survey results	1	1	1
D3	Time saved on devices configuration due to Android Enterprise	Based on customer interviews and survey results	75%	75%	75%
D4	Fully burdened IT hourly salary	Industry average	\$53	\$53	\$53
D5	Device configuration time savings	$D1 * D2 * D3 * D4$	\$74,531	\$78,506	\$74,531
D6	Hours required to set up an end user on a newly configured Android device	Based on customer interviews and survey results	3	3	3
D7	Time saved on end-user setup due to Android Enterprise	Based on customer interviews and survey results	90%	90%	90%
D8	End-user and IT blended salary	Composite	\$39	\$39	\$39
D9	End-user setup time savings	$D1 * D6 * D7 * D8$	\$197,438	\$207,968	\$197,438
Dt	Endpoint deployment and end-user setup time savings	$D5 + D9$	\$271,969	\$286,474	\$271,969
	Risk adjustment	↓5%			
Dtr	Endpoint deployment and end-user setup time savings (risk-adjusted)		\$258,370	\$272,150	\$258,370
Three-year total: \$788,891			Three-year present value: \$653,917		

ENDPOINT MANAGEMENT AND HELP DESK COST SAVINGS

Evidence and data. By leveraging Android Enterprise, the built-in security features within Android, and an EMM solution, the interviewees improved their security posture and reduced support costs.

The security services within Android, such as SafetyNet, Google Play Protect, and Safe Browsing, prevent and detect security issues. These security features span the hardware, software, and application level.

Meanwhile, the improved permissions and auditing controls within Android Enterprise allow organizations to implement data loss protection (DLP) controls, enforce governance standards, and audit their devices.

Many of the interviewees raved about the Android work profile. The work profile alleviated both IT and end users’ privacy concerns; both parties could now be confident that the organization wasn’t inadvertently collecting personal data. The work profile also made it easier for organizations to secure company data. Audits were faster and cheaper since the organizations only had to audit the work profile for fully managed and personal devices.

The interviewees used their EMM solutions to configure their security policies and monitor the integrity of their devices. By leveraging an EMM solution with Android Enterprise, the interviewees were able to manage all of their devices in one centralized location, further enhancing efficiency gains.

Configuring application permissions was especially valuable for the interviewees. With their previous legacy management framework, end users had to set application permissions. This was inefficient and unsafe. End users would often reach out to IT with help configuring a new application, or because they accidentally changed the permissions of an existing application and were now experiencing performance issues. Additionally, organizations worried that users could download a malicious application and expose company data.

- The mobile operations manager explained reconfiguring the Android device with their legacy management framework resolved 20% of Android support tickets. Android Enterprise halved the number of support tickets submitted and reconfiguring the Android device only resolved 8% of tickets.
- Leveraging Android Enterprise helped survey respondents average a 12.3% decrease in time spent performing a security audit.
- The technical architect at the financial services firm stated: “With Android Enterprise, we don’t have the risk of a data leak. We separate personal and corporate data with the work profile, so we only have to audit the corporate container in the device. We can be certain that the personal data is not entering the work profile, and corporate [data] is not leaving the work profile.”
- The same interviewee went on to explain that, before Android Enterprise, security FTEs spent up to 20% of their time auditing their organization’s Android devices and implementing DLP policies. With Android Enterprise, security FTEs only have to spend 5% of their time on these tasks.
- Android Enterprise provides users and administrators with a more consistent UI and management workflow, which the information systems engineer noted, “allows us to provide

our users with really high-level support while reducing the time needed to support these devices.”

- The same interviewee went on to explain, “[Google] Play Protect has increased our security posture while ensuring we don’t collect any personally identifiable information (PII).”



Reduction in time spent managing Android devices:



Modeling and assumptions. For the composite organization, Forrester assumes that:

- IT administrators reduce the time spent administering their organization’s Android devices by half. The composite organization audits devices and implements security and system updates from a central platform in less time than before.
- Each Android user makes an average of five help desk calls a year, 30% of which are deflected because of Android Enterprise’s improved performance and stability. Users experience fewer issues after a device or application update. There are also fewer instances of users accidentally changing or misconfiguring an application or device setting causing a technical issue, since the application and device permissions are centrally configured.
- The average support ticket takes 30 minutes between the IT and end-user to resolve. The average hourly labor costs for an IT admin and end-user are \$38.94 per hour, which Forrester rounded up to \$40 for the sake of simplicity. Therefore, a support ticket costs an organization \$20 in internal labor costs.

- The average fully burdened end-user salary (including knowledge workers, service workers, and field service technicians) is \$52,000.
- The average fully burdened IT admin salary is \$110,000.

Risks. Security audit and help desk cost savings will vary based on:

- Industry-specific regulations.
- Benchmark IT productivity.

- Labor rates.
- An organization’s current security posture.
- Existing security automations.

To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$560,101.

Endpoint Management And Help Desk Cost Savings

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
E1	Employees dedicated to Android endpoint management	Composite	2	3	3
E2	Reduction in employees required for Android endpoint management due to Android Enterprise	Based on customer interviews and survey data	50%	50%	50%
E3	Fully burdened IT administrator salary	Composite	\$110,000	\$110,000	\$110,000
E4	Endpoint management time savings	$E1 * E2 * E3$	\$110,000	\$165,000	\$165,000
E5	Annual help desk calls related to Android devices before Android Enterprise	Total Android devices*5	14,625	19,250	19,250
E6	Percent of calls eliminated with Android Enterprise	Based on customer interviews and survey data	30%	30%	30%
E7	Average cost of a help desk call	Based on customer interviews and survey data	\$20	\$20	\$20
E8	Help desk cost savings	$E5 * E6 * E7$	\$87,750	\$115,500	\$115,500
Et	Endpoint management and help desk cost savings	$E4 + E8$	\$197,750	\$280,500	\$280,500
	Risk adjustment	↓10%			
Etr	Endpoint management and help desk cost savings (risk-adjusted)		\$177,975	\$252,450	\$252,450
Three-year total: \$682,875			Three-year present value: \$560,101		

UNQUANTIFIED BENEFITS

Additional benefits that customers experienced but were not able to quantify include:

- **Reduced likelihood of a security breach or regulatory fine.** Android Enterprise's improved data security and compliance reduces the risk of a major data loss event and any resulting compliance fines and legal costs. Many interviewees were replacing mobile devices that were running operating systems that were reaching end of life. These operation systems posed a serious security risk since operating systems would no longer receive security updates.
- **Increased organizational agility.** Organizations can tailor the Android experience to meet their unique objectives. IT teams can choose from a wide assortment of devices the one that best addresses a particular need. Organizations can also tailor the user experience by enabling kiosk mode for frontline employees or adjusting the device launcher to fit a particular workflow.
- **Improved employee experience.** There was a near-unanimous agreement that Android Enterprise increased employee satisfaction. Ninety-nine percent of survey respondents either agreed or strongly agreed that Android Enterprise increases employee satisfaction. Survey respondents also reported that Android Enterprise increased employee satisfaction scores by an average of 7%.

These findings align with Forrester's research on knowledge workers, which found that technology usage and satisfaction both play a significant role in employee engagement. According to Forrester Analytics' Global Business Technographics® Workforce Benchmark Survey, 2019, employees who scored in the top 20% of engagement are likely to be satisfied with their technology environment. In comparison, those in the lowest

50% were the most dissatisfied with their technology.³

The legacy devices and management frameworks of the interviewees' organizations created a work environment correlated with high employee burnout. Devices or applications broke frequently, users could not find or access task-critical information they need, and security policies hindered their ability to be productive, which are situations that are among the top 10 predictors of employee burnout.

Android Enterprise helps organizations reduce the key reasons for employee burnout and creates an environment correlated with increased employee satisfaction.

- **Accelerated application development speed.** The mobile operations manager's organization was able to use its existing web development team to build Android applications. If a different mobile device platform had been adopted, the organization would have had to hire new developers. This would have slowed down the development process as the organization onboarded new developers.

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Android Enterprise and later realize additional uses and business opportunities, including:

- **A further reduction of hardware costs by adopting additional Android or Chrome OS devices.** The operations manager explained they were investigating using Samsung DeX on existing devices, since their frontline workers were only using their laptops for 15 to 30 minutes a day. Replacing their frontline worker's laptops with these devices could save their department millions of dollars.
- **Faster expansion into new markets.** Android devices are the most economical and popular

options in several markets, such as Latin America and India. Because the interviewees have already invested in creating the policies and applications to support Android devices, supporting Android users in new geographies will be much easier.

- **Adopting a variety of ownership models.** Since migrating to Android Enterprise, the interviewees' organizations adopted various ownership models. This includes bringing your own device, choosing your own device, or company-owned, personally enabled. Each of these ownership models offers organizations cost and management benefits.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in [Appendix A](#)).

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Ftr	Incremental device costs	\$0	\$705,870	\$1,497,300	\$1,497,300	\$3,700,470	\$3,004,082
Gtr	EMM fees	\$0	\$41,580	\$88,200	\$88,200	\$217,980	\$176,959
Htr	Professional Services and Implementation	\$20,146	\$0	\$0	\$0	\$20,146	\$20,146
	Total costs (risk-adjusted)	\$20,146	\$747,450	\$1,585,500	\$1,585,500	\$3,938,596	\$3,201,187

INCREMENTAL DEVICE COSTS

Evidence and data. Many interviewees increased the number of Android devices in their environment as they recognized the value these devices provide, allowing them to decrease the cost to support Android users.

Modeling and assumptions. The composite organization plans and budgets for the purchase of devices each year as part of its two-year refresh schedule; though, this is an average and rugged devices may be refreshed less frequently. Forrester only quantifies the costs for the extra 1,750 devices the composite organization purchases for its

employees. Most of the interviewees adopted a leasing model with a telco provider, original equipment manufacturer (OEM), or managed services provider. Therefore, Forrester assumes that the composite organization pays \$62 per device per month; this cost includes hardware, telephony, and data fees.

Risks. Incremental device costs will vary based on:

- The average cost of an Android device.
- Telephony and data fees.

To account for these risks, Forrester adjusted this cost upward by 15%, yielding a three-year, risk-

Incremental Device Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Incremental Android devices	Composite		825	1,750	1,750
F2	Annual device leasing and telephony and data costs	\$55*12 months		\$744	\$744	\$744
Ft	Incremental device costs	F1*F2		\$613,800	\$1,302,000	\$1,302,000
	Risk adjustment	↑15%				
Ftr	Incremental device costs (risk-adjusted)		\$0	\$705,870	\$1,497,300	\$1,497,300
Three-year total: \$3,700,470			Three-year present value: \$3,004,082			

adjusted total PV of \$3,004,082. Enterprise Mobility Management Fees

Evidence and data. All of the interviewees' organizations leveraged an EMM solution to manage their Android devices. The features within Android Enterprise allowed the organizations to manage all of their mobile devices on a single platform.

Modeling and assumptions. Based on the customer interviews, Forrester assumes that:

- The composite organization enrolls all of its Android devices on its EMM solution.
- Licensing fees are charged on a per-device basis.

- The composite organization plans and budgets for the EMM licensing fees for existing devices. As a result, Forrester only quantifies the EMM licensing costs for the extra 1,750 (825 in Year 1) devices it purchases for its employees.

Risks. EMM licensing costs will vary based on:

- Whether organizations plan to increase the number of Android devices in their environment.
- EMM-specific licensing models and fees.

To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$176,959.

Enterprise Mobility Management Fees						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
G1	Incremental Android devices	Composite		825	1,750	1,750
G2	Enterprise Mobility Management licensing fees	\$4*12 months		\$48	\$48	\$48
Gt	Enterprise Mobility Management fees	G1*G2		\$39,600	\$84,000	\$84,000
	Risk adjustment	↑5%				
Gtr	Enterprise Mobility Management fees (risk-adjusted)		\$0	\$41,580	\$88,200	\$88,200
Three-year total: \$217,980			Three-year present value: \$176,959			

PROFESSIONAL SERVICES AND INITIAL IMPLEMENTATION COSTS

Evidence and data. The interviewees noted that adopting Android Enterprise was a straightforward process. The interviewees reviewed the management and security features in Android Enterprise, worked with their EMM providers to set policies, and test piloted a few devices before rolling out Android enterprise to the entire organization.

The interviewees dedicated an average of one employee over several months to test and implement Android Enterprise.

Modeling and assumptions. Based on the customer interviews, Forrester assumes that:

- The composite organization dedicates one FTE for one month.
- The organization engages with its EMM provider for assistance with implementing Android Enterprise.

Risks. Costs will vary based on:

- The size of an organization’s existing Android environment.
- Organizational agility and internal capabilities. Organizations without an existing Android environment may need more professional services.

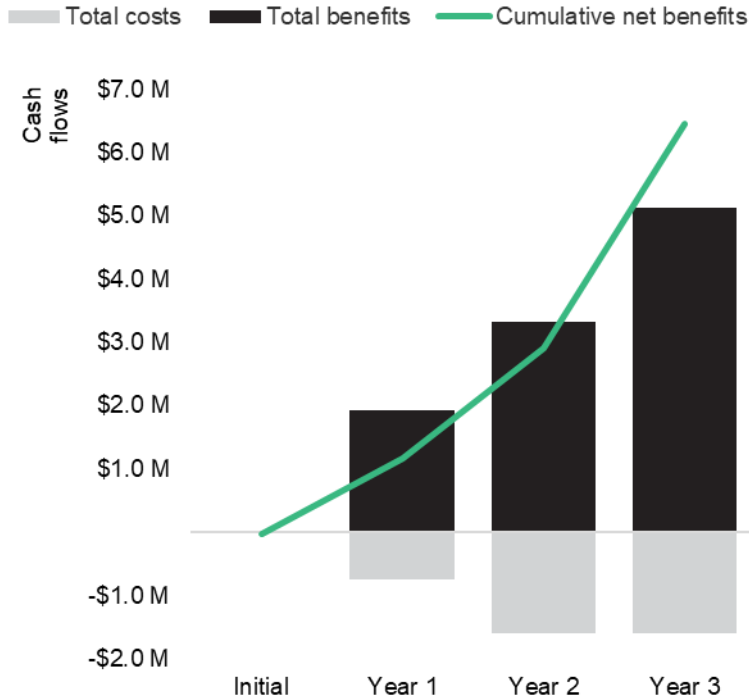
To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$20,146

Professional Services And Initial Implementation Costs						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
H1	FTEs dedicated to testing and initial implementation	Composite	1			
H2	Months spent on testing and initial implementation	Composite	1			
H3	FTE monthly salary	Composite	\$9,187			
H4	Professional services	Based on customer interviews	\$10,000			
Ht	Professional services and implementation	$H1*H2*H3+H4$	\$19,187			
	Risk adjustment	↑5%				
Htr	Professional services and implementation (risk-adjusted)		\$20,146			
Three-year total: \$20,146			Three-year present value: \$20,146			

Financial Summary

CONSOLIDATED THREE-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	Total	Present Value
Total costs	(\$20,146)	(\$747,450)	(\$1,585,500)	(\$1,585,500)	(\$3,938,596)	(\$3,201,187)
Total benefits	\$0	\$1,928,057	\$3,332,055	\$5,126,955	\$10,387,067	\$8,358,501
Net benefits	(\$20,146)	\$1,180,607	\$1,746,555	\$3,541,455	\$6,448,471	\$5,157,314
ROI						161%
Payback period (months)						<6

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."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



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

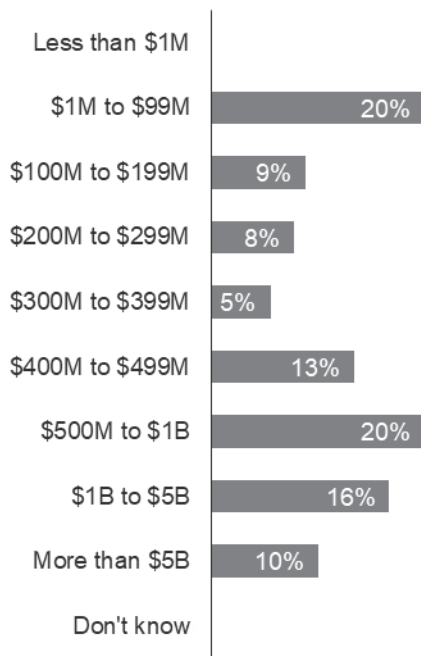
The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Interview And Survey Demographics

Interviewed Organizations			
Industry	Region	Interviewee	Android devices
Software	Headquartered in North America	Information system engineer	2,000
Civil service	Headquartered in Europe	Mobile operations manager	6,500
Financial services	Headquartered in Europe	Technical architect	22,500
Manufacturing	Headquartered in North America	Director of digital workplace architecture and innovation	31,000

Survey Demographics

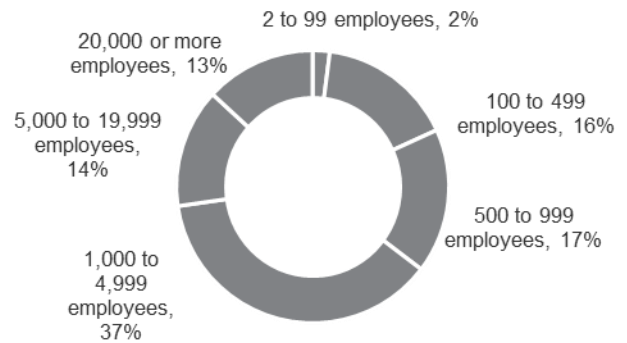
“Using your best estimate, what is your organization’s total annual revenue (in USD)?”



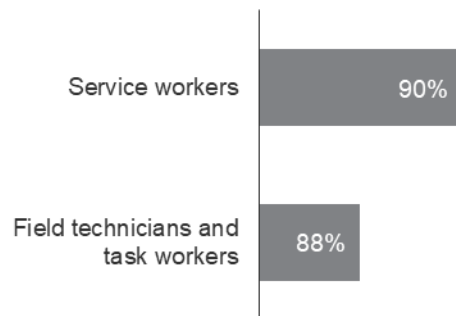
“In which country are you located?”

- 49% United States
- 15% France
- 14% Germany
- 12% United Kingdom
- 10% Canada

“Using your best estimate, how many employees work for your firm/organization worldwide?”



“Which of the following employee groups have access to an enterprise mobile device?”



Base: 92 customers using Android devices managed with Android Enterprise

Note: Percentages may not total 100 because of rounding.

Source: A commissioned study conducted by Forrester Consulting on behalf of Google, November 2020

Appendix C: Endnotes

¹ Source: “Forrester’s EX Index: A Deeper Look At The Data,” Forrester Research, Inc., March 4, 2020.

² Net Promoter and NPS are registered service marks, and Net Promoter Score is a service mark, of Bain & Company, Inc., Satmetrix Systems, Inc., and Fred Reichheld.

³ Source: Forrester Analytics Global Business Technographics® Workforce Benchmark Survey, 2019.

FORRESTER®