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# DigiCert PKI Platform Optimizes Security Operations Leading to Improved Business Results

## EXECUTIVE SUMMARY

Organizations can save nearly $1 million annually by adopting a cloud-based, fully managed PKI service to address the growing complexity of network and endpoint security and authentication requirements, according to an IDC analysis of the costs associated with managing PKI.

The IDC study commissioned by DigiCert found IT security and infrastructure sta frequently burdened by implementing and managing PKI due to a variety of factors, including rising pressures of providing secure and reliable connectivity across hybrid and multicloud environments, the skyrocketing number of connected devices requesting network access, and the soaring pace of data growth in the organization. Organizations found that cloud-based, managed security services improve e ciency and free up the IT security and infrastructure teams to improve reliability and the security posture. In some cases, the automation provided by the managed PKI service can eliminate costly vulnerabilities and con guration issues that result in costly disruption and identify errors that can lead to the loss or exposure of sensitive data.

The DigiCert PKI Platform (previously known as Symantec Managed PKI) is a cloud-based (with an on-premises option) security service platform designed to enable organizations to quickly issue digital certi cates for authentication, encryption, and digital signing. The platform helps companies manage con dential information, authenticate the identity of users and devices, and verify the integrity of documents. IDC conducted research that explored the value and bene ts of using DigiCert PKI Platform to optimize the tasks and processes that support these goals and activities. This research was based on interviews with multiple DigiCert customers that used the service platform. IDC found that they realized signi cant bene ts by leveraging its capabilities to help IT and security teams be more productive and better contribute to business needs.

Based on IDC's calculations, these organizations realized discounted bene ts worth $951,000 per organization per year by:

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ANALYZ

# DIGICERT PKI PLATFORM PRODUCT OVERVIEW

DigiCert's managed PKI service is an automated, cloud-based PKI platform that can support a wide variety of security use cases from secure email, Wi-Fi device authentication, and secure remote access to mobile device management, document signing, and strong web authentication. The DigiCert PKI Platform service can support high-volume, fast certi cate issuance and provides automatic certi cate deployment and custom certi cate request approval rules on a publicly trusted root compatible with all major operating systems and secure applications including email, document signing, mobile device management, and remote access. In addition to certi cate issuance and management for user and device certi cates, the service reduces costly con guration errors by eliminating the need for self-signed certi cates and providing manual tracking. The service also provides the  exibility to use various provisioning processes and supports leading mobile device management vendors.

For managing user and device certi cates, the service can be customized to your organization's unique certi cate work ows and Active Directory to support rule-based automatic provisioning and issuance within minutes. The tool supports a variety of protocols including REST, Simple Certi cate Enrollment Protocol (SCEP), Enrollment over Secure Transport (EST), and Windows Autoenrollment.

# THE BUSINESS VALUE OF DIGICERT PKI PLATFORM

## ﹏﹒d﹐De﹐﹐g a﹐h c

IDC conducted research that explored the value and bene﹐ts of using DigiCert PKI Platform to optimize IT infrastructure. The project included nine interviews with organizations using the service platform that had experience with or knowledge about its bene﹐ts and costs. During the interviews, companies were asked a variety of quantitative and qualitative questions about the impact of the solution on their IT and security operations, businesses, and costs.

Table 1 presents study demographics and pro﹐les. Organizations interviewed had a base of 42,389 employees of which 35,833 of those employees were using IT services. These IT users are supported by an IT sta﹐ of 9,766. IT teams were responsible for the operation of 508 business applications serving 28.89 million external customers. From a vertical industries standpoint, organizations come from the manufacturing, government, marketing, telecommunications, nonpro﹐t, ﹐nancial services, education, and retail sectors. (Note: All numbers cited represent averages.)

**TABLE 1**

## Firmographics of Interviewed Organizations

|  | A﹐e age | Med a |
|---|---|---|
| Number of employees | 42,389 | 6,000 |
| Number of IT sta﹐ | 9,766 | 300 |
| Number of IT users | 35,833 | 5,000 |
| Number external customers | 28.89 million | 3,200 |
| Number of business applications | 508 | 125 |
| Number of devices used by employees | 59,167 | 25,000 |
| Revenue per year | $29.0 billion | $800 million |
| Industries | Manufacturing (2), government, marketing, telecommunications, nonpro﹐t, ﹐nancial services, education, and retail | |

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## Ch  ce a  d U e  f D g Ce  PKI P a f

The companies surveyed described usage patterns for DigiCert PKI Platform as well as provided a snapshot of their overall IT and business environments. They also discussed the rationale behind their choice of the DigiCert platform. Customers cited a number of factors for choosing DigiCert including improved management made possible by a cloud-based solution, fully automated issuance and renewal capability, and the ability to standardize key security functions. The company's reputation with Fortune 500 companies was cited as well as the bene t of the expertise available from DigiCert sta  that helped with implementation. Study participants elaborated on these bene ts:

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**Ea     a a    :**

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**TABLE 2**

## Organizational Usage of DigiCert PKI Platform

| | A e age | Med a |
|---|---|---|
| Number of branches/sites | 47 | 16 |
| Number of internal users supported | 31,306 | 4,200 |
| Number of external users supported | 2.89 million | 2,000 |
| Number of external-facing websites | 165 | 55 |
| Number of business applications | 435 | 20 |
| Number of network endpoint devices | 75,356 | 3,350 |
| Total revenue | 36% | 34% |

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Table 3 provides more data on DigiCert certi cate usage. The greatest usage was noted in two areas: multidomain and SSL inspection, both at 89% of organizations surveyed. The code signing and client application were calculated at 67%, and Wi-Fi device authentication and VPN were calculated at 56%. Additional usage patterns are also presented in Table 3.

**TABLE 3**

## DigiCert Certi cate Usage

| | Pe ce age f l e e ed O ga a |
|---|---|
| Multidomain | 89 |
| SSL inspection | 89 |
| Code signing | 67 |
| Client | 67 |
| Wi-Fi device authentication | 56 |
| VPN | 56 |
| Document signing | 44 |
| S/MIME | 11 |

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**TABLE 4**

## PKI Environment Management Impact

| | Bef‗ e D g Ce‗ PKI P‗a f | W‗ h D g Ce‗ PKI P‗a f | D│e e‗ce Be‗e‡‗ (%) | |
|---|---|---|---|---|
| PKI environment management (FTE equivalent per organization per year) | 7 | 2.8 | 4.2 | 60 |
| Sta‗ time cost per year | $697,000 | $276,000 | $422,000 | 60 |

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As described previously, DigiCert PKI o‗ered companies the bene‗t of speeding up certi‗cate issuance signi‗cantly and creating a smoother process for security teams. IDC looked more closely at how these e‗ciencies a‗ected issuance, as shown in Figure 1. The time required to deploy certi‗cates was signi‗cantly reduced from 27.2 hours on average to 7.6 hours, representing a 72% improvement.

**FIGURE 1**

## IT Certi‗cate Security Sta‗ Impact

Ti‗ e de‗ ‗ e ce‗ i ca e ‗ ,

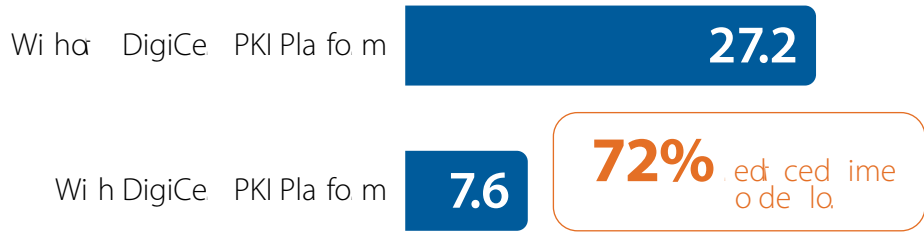| | |
|---|---|
| Wi ho‗ DigiCe‗ PKI Pla fo‗ m | **27.2** |
| Wi h DigiCe‗ PKI Pla fo‗ m | **7.6** |

**72%** ‗ ed‗ ced‗ ime
o de‗ lo‗

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Table 5 shows quanti‗ed gains in certi‗cate security sta‗ e‗ciency associated with routine tasks. FTE equivalence values (per organization per year) showed that about 3.5 FTEs were freed up, a 60% improvement. These gains were re‗ected in sta‗ time cost savings per year, which were calculated at $352,000.

**TABLE 5**

## IT Certi‗cate Security Sta‗ Impact

| | Bef‗ e D g Ce‗ PKI P‗a f | W‗ h D g Ce‗ PKI P‗a f | D│e e‗ce Be‗e‡‗ (%) | |
|---|---|---|---|---|
| IT certi‗cate security (FTE equivalent per organization per year) | 5.9 | 2.4 | 3.5 | 60 |
| Sta‗ time cost per year | $589,000 | $237,000 | $352,000 | 60 |

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As mentioned previously, study participants discussed how DigiCert PKI allowed admins to do their jobs with a minimal amount of interruption and overhead. Table 6 looks at the impacts of the platform on IT teams and IT infrastructure management. Average equivalent FTEs (per year per organization) needed to manage any PKI-related IT infrastructure were reduced from 5.5 to 3.2, representing a 42% improvement. Translated into financial terms, this amounted to an annual cost savings of $233,000.

**TABLE 6**

## IT Infrastructure Management Impact

| | Bef‿e D g Ce‿ PKI P‿a f | W‿h D g Ce‿ PKI P‿a f | D｜e e ce | Be e‿ (%) |
|---|---|---|---|---|
| Management of IT infrastructure productivity impact (equivalent FTEs) | 5.5 | 3.2 | 2.3 | 42 |
| Salary cost per year per organization | $552,000 | $319,000 | $233,000 | 42 |

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These benefits extended to auditing teams as well. Some organizations described to IDC a newfound ability to implement audit policies as a result of utilizing the DigiCert PKI Platform. Other organizations that had previous policies in place told IDC about the time savings they were achieving as a result. Table 7 shows the overall impacts of the platform on audit and compliance teams. After deployment of DigiCert PKI Platform, these organizations saw about 1.2 FTEs freed up, representing a 25% improvement. Translated into financial terms, this amounted to annual cost savings of $115,000.

**TABLE 7**

## Audit Policy Sta‿ Impact

| | Bef‿e D g Ce‿ PKI P‿a f | W‿h D g Ce‿ PKI P‿a f | D｜e e ce | Be e‿ (%) |
|---|---|---|---|---|
| Audit policy sta (FTE equivalent per organization per year) | 4.5 | 3.4 | 1.2 | 25 |
| Sta‿ time cost per year | $454,000 | $339,000 | $115,000 | 25 |

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The security team efficiencies described previously also meant less disruption for LOB users. One practical outcome was that help desk operations related to security and certificate issuance not only received less calls but, when calls were made, they were more quickly resolved. As one study participant commented: "We are also able to respond faster to our internal trouble tickets with our different hardware and software — we have been able to reduce that queue dramatically." As shown in Table 8, IDC calculated that post-deployment calls and tickets per week were reduced from 13.4pos7 (e f8ip w)7.1 (e r

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**TABLE 8**

## Help Desk Impact

| | Bef e D g Ce PKI P a f | W h D g Ce PKI P a f | D \| e e ce | Be e (%) |
|---|---|---|---|---|
| Calls/tickets per week | 13.4 | 4.6 | 8.9 | 66 |
| Time to resolve (hours) | 15.4 | 2.9 | 12.6 | 81 |
| Total FTE Impact | 3.7 | 0.4 | 3.4 | 90 |
| Total sta time value per year | $372,000 | $36,200 | $336,000 | 90 |

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## U a ed D e

Interviewed companies spoke to IDC about the impacts of the DigiCert PKI Platform on unplanned downtime and business productivity. Companies described how they were able to reduce the incidence of unexpected outages and discussed how this bene t extended to LOB operations.

IDC quanti ed these bene ts as shown in Table 9. The average frequency of outages per year was reduced substantially from 11.3 to 2.3, a 79% improvement. In addition, average time to resolve was reduced from 8.7 hours to 1.6 hours, representing an 81% improvement. Overall, these organizations are observing a 76% improvement in end-user productivity, as represented by the value of the time they gained back.

**TABLE 9**

## Unplanned Downtime Impact

| | Bef e D g Ce PKI P a f | W h D g Ce PKI P a f | D \| e e ce | Be e (%) |
|---|---|---|---|---|
| Frequency per year | 11.3 | 2.3 | 8.9 | 79 |
| Time to resolve (hours) | 8.7 | 1.6 | 7.1 | 81 |
| Lost productivity due to unplanned outages (FTE impact) | 16.4 | 4 | 12.4 | 76 |
| Value of lost productivity per year | $1.14 million | $277,000 | $870,000 | 76 |

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Less downtime for business end users translates into positive revenue impacts. As shown in Table 10, across all companies surveyed, total additional revenue per year amounted on average to $3,010,366. In addition, total recognized revenue per year under the IDC model was $451,555 after taking into account a 15% operating margin.

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**TABLE 10**

| Unplanned Downtime Revenue Impact | |
|---|---|
| | **Pe‿ O‿ga‿‿a** |
| Total additional revenue per year | $3,010,366 |
| Assumed operating margin | 15% |
| Total recognized revenue per year — IDC model | $451,555 |

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## ‿‸‿e I‿ac‿ f D‿g Ce‿ PKI P‸a f

As described previously, interviewed companies discussed how using the DigiCert PKI Platform service led to optimized performance for the core security operations supporting their businesses. They described how this resulted in better business results and lower operational cost. Study participants underscored the value of having quick turnaround times for certi cate issuance and more con dence in data security across their organizations. Also cited were the bene ts of full encryption that gave employees more freedom to work in their locations of choice. In the case of one company, this approach was supportive of new initiatives in corporate security policy. As a result of these bene ts and other e ciencies described, companies were able to generate more business opportunities leading to improved business results. Study participants elaborated on these bene ts:

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**M‿ ‿ b‿ ‿ :**

**F‿ ‿ a‿ :**

Table 11 presents quanti ed bene ts for business end users after companies adopted DigiCert PKI Platform. On average, there were gross productivity gains of 26%. Translated monetarily, this resulted in a value of end user time of $147,000. Additional metrics are also presented in Table 11.

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**TABLE 11**

## ROI Summary

IDC's analysis of the financial and investment benefits related to study participants' use of DigiCert PKI Platform is presented in Table 14. IDC calculates that, on a per organization basis, interviewed organizations will achieve total discounted five-year benefits of $8.56 million based on IT and security staff efficiencies, increased user productivity, improved cost of operation, and other factors as described.

These benefits compare with projected total discounted investment costs over three years of $2.01 million on a per organization basis. At these levels of benefits and investment costs, IDC calculates that these organizations will achieve a five-year ROI of 326% and break even on their investment in 13 months.

**TABLE 14**

## Five-Year ROI Analysis

|  | Pe O ga . a | Pe 1,000 U e |
|---|---|---|
| Bene t (discounted) | $8.56 million | $273,300 |
| Investment (discounted) | $2.01 million | $64,200 |
| Net present value (NPV) | $6.55 million | $209,100 |
| ROI (NPV/investment) | 326% | 326% |
| Payback period (months) | 13 | 13 |
| Discount rate | 12% | 12% |

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# CHALLENGES/OPPORTUNITIES

IT teams, especially at large organizations, are frequently managing siloed or fragmented PKI implementations, which may include a mixture of customized infrastructure to support internal-certi cate authority operations and on-premises infrastructure to support email security, document signing, or other use cases. While the compounding management overhead and ability to scale to support business growth is often the catalyst for a managed PKI service, it can complicate the implementation and extend the time to replace legacy infrastructure without disrupting existing work ows.

# CONCLUSION

PKI has withstood the test of time. Researchers have not come up with a better framework for authentication, encryption, and digital signing applications. This study has documented how cloud-delivered and a fully managed PKI service has proven its ability to support the scalable application of con dentiality, authentication integrity, access control, and nonrepudiation of transactions. Organizations have integrated the service with their existing security infrastructure, including secure Wi-Fi, web authentication, mobile device management, secure remote access, and solutions for digitally signed/encrypted mail and document signing.

Driving the need for a cloud-delivered and fully managed PKI service is the desire of security and operations teams to reduce complexity at a time when hybrid and multicloud environments are multiplying, making the job of managing sensitive resources much more di cult. The corporate network is becoming increasingly distributed and while these changes, ushered in by digital transformation, foster e ciency and productivity improvements, managing risk, security, cost, control, visibility, and oversight has become a signi cant challenge. Attackers seize on the resulting complexity, and this is placing pressure on security teams to prevent cybercriminals from successfully targeting high-risk employees and exploiting technology gaps and disjointed processes to steal sensitive information. It only takes one misstep — an inadequately con gured or mismanaged security solution, poorly communicated policies, or a gap in enforcement mechanisms — to generate a ssure that cybercriminals can squeeze through to reap valuable data. This is one of the many factors that have prompted organizations to adopt a cloud-delivered and fully managed PKI service. In addition, as the IoT landscape evolves, organizations are expected to be collecting and analyzing more sensor data than ever before. These devices require a mechanism to authenticate to other systems and often an encrypted tunnel for transmitting sensor data.

As this study has shown, DigiCert's customers had shown an increased ability to deploy the appropriate certi cate correctly and quickly, thus building trust among their end users and freeing up IT security and infrastructure sta to work on other critical projects. Furthermore, these customers showed increased business bene ts from stronger performing certi cates. What that results in is that these DigiCert customers are achieving overall economic value of more than 4 to 1 on their investment.

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## APPENDIX

### Methodology

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from current users of DigiCert PKI Platform as the foundation for the model. Based on interviews with organizations using the service platform, IDC performed a three-step process to calculate the ROI and payback period:

1. **Gather quantitative benefit information during the interviews using a before-and-after assessment of the impact of DigiCert PKI Platform.** In this study, the benefits included staff time savings, productivity benefits, and operational cost reductions.

2. **Calculate the total savings (over a three-year analysis) by**

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