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EnterpriseDB

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Business Value Highlights

42%

lower three-year cost of operations

65%

lower three-year cost of database licensing/maintenance

16%

more efficient database administration

168% three-year ROI

Payback period:

Four months

The Economic and Business Advantages of EDB Postgres Database Solutions

EXECUTIVE SUMMARY

The database industry has seen significant evolution of its technology, not only in terms of functionality but also in terms of simplicity, ease of use, and lower cost. The open source movement has led to a number of alternatives to large, complex, and expensive relational database management systems (RDBMSs) for addressing most enterprise data management problems. A leading example of this development is EDB Postgres, an open source variant of the pioneering RDBMS project PostgreSQL, which was originally developed by Dr. Michael Stonebraker and his team at the University of California at Berkeley. Thanks to a very active open source community, this RDBMS has continued to evolve aggressively to meet the needs of business users for both analytics and transaction support.

EnterpriseDB (EDB) based its EDB Postgres Platform on open source PostgreSQL and delivers three subscriptions — EDB Postgres Enterprise, EDB Postgres Standard, and EDB Postgres Developer.

The EDB Postgres Platform features the full range of capabilities one would expect of an enterprise-class RDBMS, building on PostgreSQL and adding greater performance, security, database administrator (DBA) and developer productivity features, and compatibility with traditional enterprise RDBMSs. The EDB Postgres Platform can be deployed to a wide range of infrastructure options from virtualized and container environments to public, private, and hybrid clouds. Professional services, training, 24 x 7 support, and RemoteDBA round out the platform ensuring enterprise customer success. IDC conducted a study to determine the extent to which this product not only serves as a replacement for much more expensive and complex database technology but also delivers measurable business benefits to its users.

IDC interviewed seven organizations that support their business operations with EDB Postgres database solutions. These organizations reported that EDB provides a cost-effective, scalable, and flexible database platform that meets their evolving business demands for database resources. IDC calculates that these organizations will spend an average of 42% less on EDB Postgres than on alternative database solutions while achieving a three-year return on investment (ROI) of 168% by realizing benefits in the following areas:

- **Optimizing database-related costs** by avoiding up-front licensing costs and spending less on ongoing maintenance costs
- **Making DBAs more efficient** by taking advantage of EDB Postgres' simplicity to require less DBA time to deploy, configure, and manage
- **Ensuring operational continuity** by limiting the frequency and duration of unexpected database-related outages
- **Meeting business demand** by making database environments more scalable and flexible

SITUATION OVERVIEW

Many enterprises confront increasing demands both for managing more data and for handling exploding database requests. Much of this comes as a result of the infusion of data from new sources, as well as database requests from mobile apps and other digital business applications. This combination means bigger databases (volume), higher transaction rates (velocity) and, when conventional software licenses are involved, mounting costs associated with those licenses.

Many enterprises are turning to open source RDBMSs to relieve such costs. Because these RDBMSs are often easier to administer and more flexible than alternatives, they yield staff time savings and greater operational flexibility. Such enterprises have not relaxed their operational requirements, however. These open source RDBMSs not only must meet the same standards of reliability, scalability, and manageability as the RDBMSs they replace but also, in many cases, must exceed them.

EDB Postgres Database Solutions

One such open source RDBMS is PostgreSQL, which is a community open source project managed by the PostgreSQL Global Development Group. Unlike a company-owned open source product, a community open source project has many contributors and is managed to the benefit of the community. This means that it takes improvements and enhancements from a wide variety of sources and is constantly being tested and refined by legions of users who are active members of the community. Other examples of community open source projects include

the projects of the Apache Foundation and of the Linux Foundation.

EDB offers two DBMS distributions — PostgreSQL and EDB Postgres Advanced Server (based on PostgreSQL with added capabilities and performance) in subscriptions. Its platform, called EDB Postgres, includes tools and facilities to make tuning and managing the system easier. It also includes SQL language compatibility with another leading RDBMS, to make migration from that RDBMS easier. The EDB Postgres family of offerings includes:

- **EDB Postgres Enterprise:** Subscription that includes EDB Postgres Advanced Server — PostgreSQL enhanced with features focused on performance, security, DBA and developer productivity, and compatibility with traditional RDBMSs
- **EDB Postgres Standard:** Subscription that includes PostgreSQL, the open source RDBMS
- **EDB Postgres Developer:** Subscription with a choice of DBMSs to support developers building applications with EDB Postgres
- **All subscriptions:**
 - Include additional tools for migration, management, and integration
 - May be deployed across a wide range of infrastructure including bare metal, virtual, and container environments as well as public, private, and hybrid clouds
 - Include global support (EDB offers professional services and training to enhance speed to solutions as well as team skills and maximize success.)

THE BUSINESS VALUE OF EDB POSTGRES

Study Demographics

IDC interviewed seven organizations in the United States and Europe that have deployed EDB Postgres database solutions to support their business operations. IDC asked database managers at these organizations a variety of qualitative and quantitative questions to understand the impact of EDB on their database-related costs and operations. The organizations varied substantially by size — averaging 18,400 employees with a median of 1,800 employees — but expressed common reasons for choosing EDB, including seeking an open source-based database solution that would help them avoid vendor lock-in while offering lower database-related costs (see Tables 1 and 2).

TABLE 1 Demographics of Interviewed Organizations That Deployed EDB Postgres

	Average	Median
Number of employees	18,400	1,800
Number of IT staff	4,000	200
Number of IT users	18,300	1,785
Number of IT business applications	48	14
Number of databases	259	19
Number of terabytes	50	11
Countries	United States, the Netherlands, and Sweden	
Industries	Communications, education, financial services, natural resources, professional services, and transportation	

n = 7 Source: IDC, 2016

On average at the time of interviews, interviewed organizations reported operating 37 EDB Postgres databases out of a total of 260 databases. However, the median organization relies on EDB for 42% of its total databases (8 of 19 databases). Interviewed organizations described their use of EDB Postgres in more detail in a number of areas as follows:

- **Migrations or greenfield deployments.** Thus far, organizations' use of the EDB Postgres Platform has been weighted toward net-new workloads, although more than half of interviewed organizations have migrated database workloads from other environments.
- **Operational use.** Several interviewed organizations are using EDB Postgres to support customer-facing services, while several are running mostly internal-facing workloads.
- **Workloads.** Transactional and business reporting were the most commonly cited workloads being supported by EDB Postgres.
- **Growth.** Interviewed organizations unanimously reported that they will extend their use of EDB Postgres and expect to add 31% more EDB Postgres databases per year.

TABLE 2 EDB Postgres Environments of Interviewed Organizations

	Average	Median
Number of EDB Postgres databases	37	8
Number of business applications	5	3
Number of terabytes	6	3

n = 7 Source: IDC, 2016

Business Value Analysis

Interviewed organizations described two primary areas of benefit from supporting business operations with EDB Postgres database solutions that are interrelated. First, respondents said they benefit from running database workloads on EDB Postgres at a cost that is substantially lower than that of alternative database solutions and moving away from capex-weighted licensing models. The second area of benefit involved the leveraging of these cost savings and EDB's opex-based pricing model to make their database environments much more scalable and flexible. At base, this has meant a consistent experience of spending less on deploying and running EDB Postgres databases while being able to better address business opportunities and take advantage of operational efficiencies. An IT manager at one interviewed organization explained:

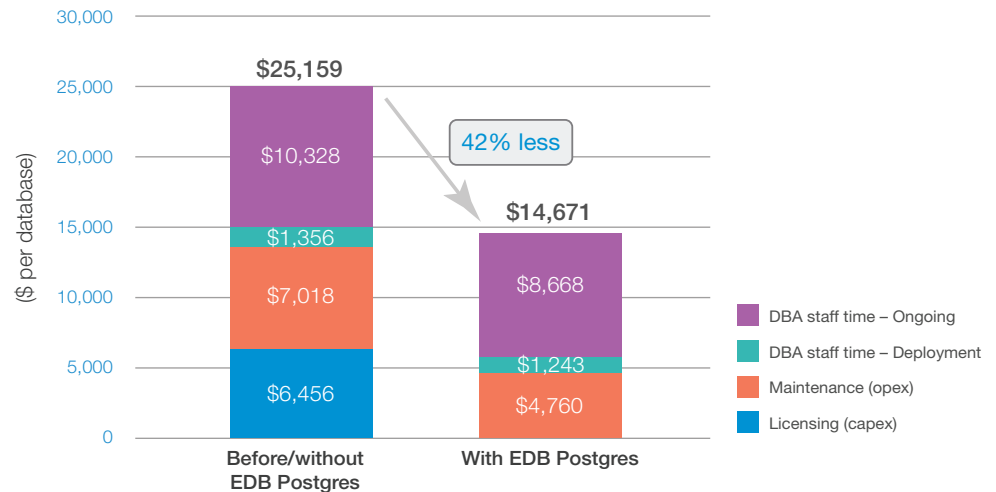
“*The scalability of EDB Postgres is important for us. We just started with the platform for customers to do queries, and we can very easily scale this up and down depending on the demand of our clients, which is difficult to predict. We aim to be flexible and offer high scalability. The EDB Postgres Platform can do this against relatively low cost.*”

Cost of Operations Benefits

Interviewed organizations consistently reported eliminating database-related licensing fees and spending much less on maintenance fees with EDB Postgres. In addition, they are saving DBAs time because of the ease of deploying and supporting EDB Postgres. As a result, IDC calculates that interviewed organizations are able to run EDB Postgres databases at an average total cost of operations that is 42% less over three years than that of their previous or alternative database solutions, which include both traditional and open source DBMSs

(see Figure 1). According to interviewed organizations, these cost and staff time efficiencies are directly enabling them to develop cost-effective and flexible database environments that support their business operations.

FIGURE 1 Average Annual Benefits per 100 Users



n = 7 Source: IDC, 2016

Database-Related Costs

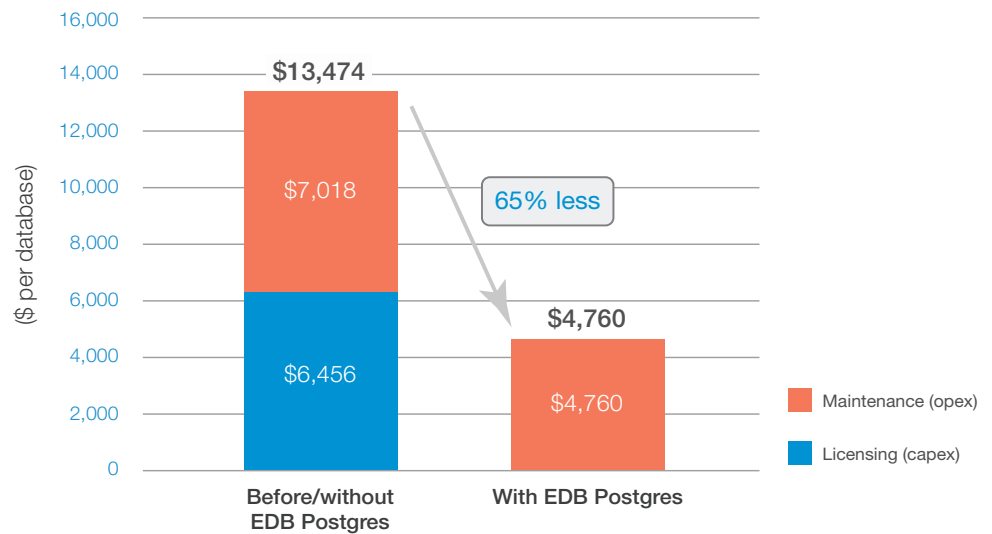
Interviewed organizations explained that EDB Postgres has two substantial advantages in terms of database-related costs:

- It does not carry up-front licensing costs like some database solutions.
- It has lower maintenance fees on an annual basis. This means that for more than three years, EDB Postgres costs substantially less than the organizations' previous or alternative database environments, including both traditional and open source DBMSs.

IDC calculates that interviewed organizations on average will spend a total of 65% less on database-related costs, including completely avoiding up-front licensing costs and lowering ongoing maintenance fees by 32% (see Figure 2). This means that, on a per-database basis, the interviewed organizations will save an average of \$8,714 over three years. A database manager at one interviewed organization confirmed this scale of savings for his organization:

“ Certainly, there has been a cost reduction on database licensing from going with EnterpriseDB. I’ll be ultraconservative and say we’ve reduced our costs by more than one-half going in this direction. If I were to do all of the manipulation and calculating, I could probably get to about 80% savings. ”

FIGURE 2 Three-Year Database-Related Costs per Database



n = 7 Source: IDC, 2016

These cost efficiencies are a major business benefit for interviewed organizations when viewed alone; however, database managers interviewed for this study explained that these cost savings also translate into greater database scalability and flexibility and ultimately better business results. The cost advantages of EDB Postgres are particularly important for these organizations in the context of facing constant pressure to expand their database environments to meet growing business demand. Several organizations noted benefiting from being able to set up databases without incurring capex costs and view lower maintenance fees as providing confidence that they will be able to grow their database environments cost effectively. A database manager at one organization referenced the importance of this flexibility for growing its customer-facing services:

“ EDB Postgres gives us the flexibility to use the same technology for a small or large deployment and choose to pay for the support when needed — this is really important for our external business. ”

Meanwhile, interviewed organizations also referenced the benefit of EDB Postgres in avoiding vendor lock-in and restrictive licenses. One interviewed organization explained that, even though its costs were not substantially different from the alternative database platform it considered at first, the EDB Postgres Platform enabled growth without being limited by a restrictive license:

“ *The price comparison between EDB Postgres and [the alternative] ended up being fairly close ... The difference though was that [the alternative] was going to give us a very restrictive license so we would have no room to grow ... [A]s we need to grow and need to put more into the database platform, that's where we would really start to see the cost difference.* ”

DBA STAFF EFFICIENCIES

Interviewed organizations also reported benefiting from the ease of deploying and managing their EDB Postgres environments. As a result, they require an average of 15% less DBA staff time over three years to deploy and configure, and then maintain and administer, compared with the previous or alternative database platform. Interviewed organizations homed in on the simplicity of the EDB Postgres Platform as driving these staff efficiencies (see Table 3). A database manager at one organization noted:

“ *There is a significant difference in DBA staff time with [our alternative database environment] — 10 hours per week with EDB Postgres compared with 40 hours per week previously ... EnterpriseDB is a much simpler model and is built to be operated without dedicated operators — it's not built on the premise of having people with deep knowledge about the database.* ”

For some organizations, these DBA efficiencies, which can free up DBA time to expand database environments or develop new applications and services, were an unexpected but pleasant surprise:

“ *The administration around EDB Postgres as compared with the other database is relatively low. We didn't expect this and calculated in that we would have to invest more time in administrating the database, but that was not true. It's even less ... I think what's important is that EDB Postgres is less complex than some other database management systems.* ”

TABLE 3 DBA Efficiencies

	Before/Without EDB Postgres	With EDB Postgres	Difference	Benefit (%)
Hours per database over three years				
Deployment/configuration (hours)	25	23	2	8
Administration/support (hours)	194	163	31	16
Total hours over three years	220	186	34	15

n = 7 Source: IDC, 2016

Operational and Business Benefits of EDB Postgres

In addition to — and often because of — EDB Postgres' lower overall cost of operations, interviewed organizations reported that EDB Postgres is generating value for them by serving as a scalable and flexible database environment that provides the strong database performance and reliability needed to support business operations. As a result, these organizations are capturing business value both in the form of additional revenue and in the form of higher employee productivity levels.

Database Scalability and Business Impact

Interviewed organizations explained that EDB Postgres positions them to better address customer-facing business opportunities while cost effectively supporting internal users. This generates additional value for these organizations and contributes to better business outcomes. For purposes of this study, IDC quantified only the value of additional revenue that these organizations attributed to EDB Postgres, which came to \$28,800 of additional revenue per database over three years (\$1.4 million per organization). For purposes of this study, IDC applied an assumed 15% operating margin on this additional revenue, meaning that these organizations will achieve an average operating margin gain of \$209,900 per organization (\$4,466 per database) per year over three years.

Interviewed organizations cited a number of ways in which they are realizing value with EDB Postgres by leveraging it as a high-performing, cost-effective database platform to better address business opportunities:

- **Scalability.** EDB Postgres enables organizations to scale their database resources to match business demand. In particular, organizations do not face limitations imposed by up-front capex costs when they need to build new databases or expand a database. A database manager explained: “The scalability of EDB Postgres is a real benefit. We just started with the platform for customers to do queries on our databases, and we can very easily scale this up and down depending on the demand of our clients, which is difficult to predict. We shoot to be flexible and offer high scalability, and EDB Postgres can do this against relatively low costs. It would be far more difficult with another platform.”
- **Flexibility.** EDB helps organizations avoid vendor lock-in by providing an open source-based alternative to other database solutions and gives them more flexibility to find database solutions that match their business and operational needs. A database manager commented: “We are always looking for alternative technology just in case our current technology proves to be a dead end or bottleneck in performance, which led us to EnterpriseDB.”
- **Cost impact.** Beyond paying less for their database environments, organizations can embed lower database costs in their pricing and better compete because the overall cost of operating EDB Postgres databases is lower than the overall cost of operating their previous or alternative solutions. A database manager explained: “We are better able to sell to new customers in this new space. Without EDB Postgres, we could go after them, but we wouldn’t win them.”
- **Integration.** EDB Postgres offers the ability to integrate with a number of Big Data analytics solutions, which can enable application development efforts and help tie Big Data analytics more closely to improved business and operational outcomes. A database manager noted: “As we come up with crazy query requirements for our application development, it’s easier to get [them] done and faster with EDB Postgres.”

Interviewed organizations spoke to how these attributes of EDB Postgres positively impact their business results:

- **More revenue and more customers.** A database manager at one interviewed organization explained: “EDB Postgres allows us to be not only the best provider in the world but the lowest-cost provider. That’s the best way to describe it ... We’re bringing in substantially more revenue because it has allowed us to take new contracts.”
- **Increased database functionality.** Another database manager commented: “EDB Postgres gives us the ability to expand the type of databases that we’re actually interacting with. In that sense, it gives us a flexibility that says I don’t have to be tied to this other database or a particular database. We can do functionality in multiple databases. For us, that’s key. It gives us flexibility.”

Database Reliability

Interviewed organizations also reported that EDB Postgres provides a reliable, robust database platform for their business operations. As a result, the organizations experience fewer unplanned database-related outages and resolve them in less time. For the four interviewed organizations that reported higher reliability as a benefit of EDB Postgres, this means lower levels of employee productivity losses related to such outages and less likelihood of business operational disruptions.

As Table 4 indicates, interviewed organizations reported a 62% lower impact of such unplanned outages on their operations with EDB Postgres, saving productive employee time worth an average of \$213,200 per organization (\$4,537 per database) per year over three years.

TABLE 4 Unplanned Downtime Impact Using EDB Postgres

	Before/Without EDB Postgres	With EDB Postgres	Difference	Benefit (%)
Number of unplanned downtime instances per year	7.9	6.0	1.9	24
MTTR (hours)	2.5	1.3	1.2	50
Productive hours lost per EDB Postgres database per year	99	38	61	62

n = 7 Source: IDC, 2016

ROI Analysis

IDC interviewed seven organizations using EDB Postgres database solutions and recorded their results to inform this study's analysis. IDC used the following three-step method for conducting its return-on-investment analysis:

- Gathered quantitative benefit information during the interviews using a before-and-after assessment.** In this study, the benefits included database-related cost reductions, staff time savings and productivity gains, and increased revenue.
- Created a complete investment (three-year total cost analysis) profile based on the interviews.** Investments go beyond the annual costs of using EDB Postgres and can include additional costs related to the database platform, including migrations, planning, consulting, configuration or maintenance, and staff or user training.

- Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of EDB Postgres over a three-year period. ROI is the ratio of the net present value (NPV) to the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

Table 5 presents IDC's analysis of the average discounted benefits, average discounted investment, and ROI for interviewed EDB customers. IDC calculates that these organizations will invest a discounted three-year average of \$12,246 per database (\$0.57 million per organization) in database maintenance, consulting related to deployment, and IT staff time related to deploying, configuring, and administering their EDB Postgres environments. IDC projects that in return, these organizations will realize discounted benefits worth an average of \$32,870 per database (\$1.54 million per organization) over three years in the areas discussed in this study. This results in an average three-year ROI of 168%, with breakeven in their investment occurring in an average of about four months.

TABLE 5 Three-Year ROI Analysis

	Per Organization	Per EDB Postgres Database
Benefit (discounted)	\$1.54 million	\$32,870
Investment (discounted)	\$0.57 million	\$12,246
Net present value (NPV)	\$0.97 million	\$20,624
Return on investment (ROI)	168%	168%
Payback period	4 months	4 months
Discount rate	12%	12%

n = 7 Source: IDC, 2016

CHALLENGES AND OPPORTUNITIES

The market for open source RDBMS is becoming crowded with competitors, and new entrants with innovative architectures and features appear all the time. EDB's experience in solving the real business problems of major enterprises gives the company an advantage in this regard, but EDB is continually challenged to keep ahead of the competition. The RDBMS market is very competitive, and new technologies are constantly emerging from both established and new vendors. Fortunately, although the PostgreSQL project forms the base for EDB Postgres, the product is enhanced with technology that gives it considerably greater performance and scalability than the community project software.

EDB also adds value with enterprise tool suites; a wide range of deployment options from on-premises to public, private, and hybrid clouds; and the services, support, and training needed by enterprises to be successful. The EDB performance optimizations for the RDBMS as well as compatibility APIs that ease transition from other leading database products have been identified by EDB customers as clear differentiators.

EDB should regard the coming wave of enterprise data from on-premises datacenters to the cloud as a great opportunity for the company's EDB Postgres cloud deployment options.

SUMMARY AND CONCLUSION

Although most people have gotten past the perception that open source products are "free," which they are most certainly not, after you deal with costs associated with data conversion, administration, application changes, and performance degradation, there is still the fact that different open source products and distributions vary quite a bit, especially from a cost perspective. Based on the results of this study, the cost factors listed in the prior sentence are not issues for EDB Postgres. In fact, customers found the product easy to administer, highly performant, and scalable. A 168% ROI and a payback period of just four months are not easily dismissed.

When most people consider migrating to an open source RDBMS, it is purely a matter of cost for them, and they are prepared to accept awkward administration and poor performance as the trade-off. IDC found that for the customers in this study, there were no trade-offs. In fact, their systems run faster, are easier to administer, and provide more flexibility than the systems they had used previously. EDB Postgres is a migration target not only for someone looking for the "typical" benefits of open source but also for anyone looking for a simpler-to-manage, high-performance, and lower-cost RDBMS that demands no compromise.

Those considering an RDBMS migration should consider the following:

- Be smart about the true cost of conversion, regardless of the target, in terms of operational changes, platform changes, and so on.
- Look for an RDBMS that represents a smooth migration target (i.e., compatible as possible with the former system).
- Take into account all the costs of running an RDBMS, including staff time costs, as you evaluate potential migration targets.
- Put EDB Postgres on your list of potential migration targets.

APPENDIX

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using EDB Postgres database solutions 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 database-related costs (licensing, maintenance fees, staff time, hardware, software) and improved revenue over the term of the deployment.
- Ascertain the investment made in deploying the solution and the associated use of EDB Postgres database solutions, 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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