

WHITE PAPER

Force.com Cloud Platform Drives Huge Time to Market and Cost Savings

Sponsored by: Salesforce.com

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EXECUTIVE SUMMARY

IDC believes that the rise of Cloud computing has the potential to be among the most transformative developments in the world of information technology in the last 20 years. To date, Cloud computing is already having a significant impact on the way technology vendors are service-enabling and delivering applications, how CIOs think about infrastructure and datacenter optimization, how vendors are building platform-based BPO and other high-level service offerings, and how CIOs approach building and deploying custom applications and objects via Cloud-based platform as a service (PaaS). PaaS services bundle all stack components (hardware, infrastructure, storage) together with database, security, workflow, user interface, and other tools that allow users to create and host powerful business applications, Web sites, and mobile applications. The Force.com platform has emerged as an early leader among providers in defining and delivering PaaS solutions.

To understand the business value of PaaS, IDC interviewed ten companies that used Force.com to develop custom applications, and have been running the applications for at least 12 months. These ranged from large to small enterprises located in the U.S., Europe and Asia Pacific regions.

Study participants interviewed by IDC building enterprise custom applications on the Force.com platform experienced five key benefits compared to traditional in-house development:

- Faster to market.** Custom applications were developed and deployed in 76% less time and required 76% - 85% fewer developer hours;
- Lower cost.** Companies were able to reduce their three year TCO by 54%, saving \$560,000 per application;
- Higher quality.** Users of the custom applications built on the Force.com platform reduced Annual Downtime by 97% and 60% less time dealing with the service desk;
- Better performance.** The combination of the first three benefits contributed to better business performance and generated an additional \$3.9 million in annual revenue (\$390,000 operating income) for each firm.

- ☒ Accelerated pace of innovation. Force.com changed the process of custom application development so much that companies tripled their output of custom applications and doubled annual enhancements from 1 to 2.

Overall, benefits accounted for \$3.1 million annually for each company in the study. On average these companies were able to recognize benefit of \$8.21 for every \$1 invested in Force.com, in reduced costs for development and post-development management, and in higher revenue recognition due to increased agility and faster time to market.

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TABLE 1

Three-Year ROI Analysis

Benefit	\$7,088,954
Investment	\$863,359
NPV	\$6,225,595
ROI	721%
Payback (mo)	2.82
Discount rate	12%

Source: IDC, 2009

SITUATION OVERVIEW

The Significance of Cloud Computing

IDC believes that the rise of Cloud computing is one of the most transformative developments in how information technology services are created, delivered, and accessed, in the last 20 years. Cloud computing stands alongside milestones like the commercialization of the Internet in the 1990's, the advent of Java in 1995, and the growth and standardization of the world wide Web (URLs, browsers, HTTP), as a transformative advance in how we understand and consume information technology. Pervasive system availability and connectivity, a characteristic of the Internet and Web, is largely responsible for establishing the foundation for Cloud computing.

Cloud computing provides numerous strategic and tactical benefits, including IT decapitalization, accessibility, business agility, scalability, and cost-effectiveness. With Cloud computing platforms, the compute resources, storage resources, application logic, and development and deployment environments can now reside on the Web and be accessed 24x7 without having to rely on local replicas or resources other than a browser. In a climate where IT organizations are being asked to do more

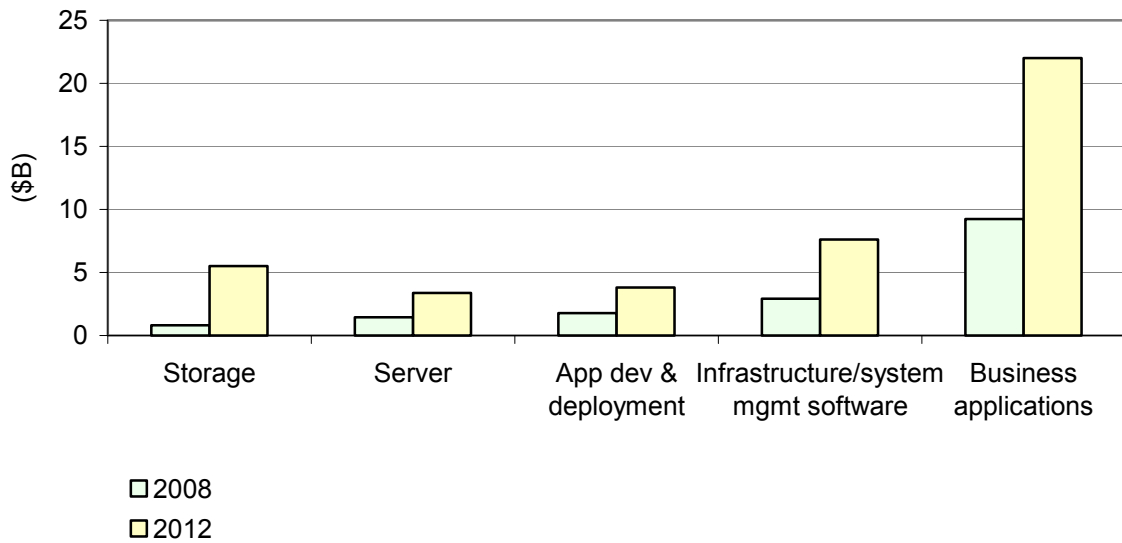
with less, Cloud computing can provide a far more rapid "time to value" for IT organizations which spend a disproportionate percentage of time and money on buying software and hardware to perform several common IT tasks, including custom application development, deployment, and maintenance.

The result is that some Cloud-savvy IT organizations are being transformed to focus on innovation and creating true business value, instead of maintaining a regime of license renewal and break-fix infrastructure problems. Given the increasing reliance of companies on a strategic and lean IT organization, IDC believes that Cloud computing will grow in importance for these firms, and will be a key channel for how IT services are delivered and consumed.

A key validation of the importance of Cloud computing is IDC's worldwide forecast for Cloud computing shown in Figure 1. This forecast is segmented by spending for types of service, including business applications as a service; application development and deployment (a superset of platform as a service or PaaS functionality); infrastructure and system management as a service; and core storage and server functions delivered as a Cloud-based service.

FIGURE 1

Worldwide Cloud IT Services Spending



Source: IDC, October 2008

The overall market for Cloud computing was already \$16.2 billion in 2008 but is expected to grow to \$42.3 billion by 2012, an impressive 24% compound annual growth rate (CAGR). But the true impact of cloud is more significant when measured against the CAGR for all software during 2008-2012, which IDC forecasts will be 6.24%. When seen in this light, what stands out is that while spending on Cloud IT services overall will comprise less than 10% of all revenue earned from software, it will comprise about 25% of incremental, year-over-year growth in 2011-2012. In short, Cloud services are set to take up a significant position in the plans and budgets of IT organizations worldwide.

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For the purposes of this paper, our focus is on the PaaS segment of application development and deployment which speaks to how CIOs are using platforms to develop innovative applications, and the rate at which dollars in the traditional application development and deployment arena will shift toward Cloud delivery. Growth in PaaS spending is important because it delineates the pace at which vendors are offering new ready-to-use SaaS-based tools for creating new custom applications, and the pace at which IDC expects buyers to turn to these services in lieu of traditional, on-premise-based software development tools, and the additional human, hardware, and other resources required to create and sustain the application environments. These new discrete services, which bundle all necessary stack components (hardware, infrastructure, storage, process automation, and tools), together comprise what is emerging as a PaaS offering. IDC believes that these platforms already provide a compelling alternative to traditional on-premise application development which will increase over time as PaaS matures.

The Evolution of Platform as a Service (PaaS)

The traditional application development and deployment (AD&D) market includes tools and technologies used by professional developers to build custom applications. Over the last 15 years, a transition has occurred among providers of AD&D products, from a focus on development tools to a focus on deployment-related tools. The result is that in 2009, deployment products (application servers, messaging, integration, database, and process automation) now account for over 65% of AD&D revenue.

Platforms for application development and deployment include a variety of tools designed to allow developers to build, deploy, and manage custom applications. From IDC's perspective, a platform must meet or exceed the following 4 criteria:

- ☒ A container for hosting and management of user interaction and business logic.
- ☒ A data tier that enables persistent data storage and access.
- ☒ A development environment for maintaining user interaction and business logic.
- ☒ A management environment that provides security and access control.

This definition of a platform applies regardless of delivery model, and so this definition applies equally to platforms that are traditionally licensed and platforms that are provided as a service. Vendors including IBM, Microsoft, and Oracle are well known for platform products delivered through a traditional on-premise licensing model.

But these vendors have been slower to innovate in delivering easy-to-use cloud-based platforms, and to lay out the value proposition for customers to use them, and this has provided an opportunity for vendors more closely aligned with SaaS delivery model, including Google and salesforce.com, to gain early traction and leadership in defining and delivering PaaS services.

Types of PaaS Developers and Applications

In the emerging world of Web-based development and deployment platforms, the notion of "who" is a developer is changing. While the majority of custom business applications, objects, and enhancements will continue to be built, tested, and deployed by application developers with significant Java or .Net skillsets; the emergence of more scripting-based tools such as Force.com pages (formerly Visualforce) and configuration-based development platforms such as Force.com, mean that a larger pool of application creators can become engaged in the development process. New Web applications can be created on Web 2.0 Social services like Facebook and LinkedIn, by non-professionals. CIOs can create custom applications and objects to enhance their users' experience and functionality of an application, like salesforce.com CRM, or to build vertical or company-specific integrations which add unique strategic value for these users. Web application builders can use platforms to build front-ends which let mobile and desktop users draw from Web-based data repositories. Interest in PaaS has given rise to 3 types of platforms delivered as a service so far.

- ☒ **Raw Compute Platforms** like Amazon Web services provide infrastructure as a service (IaaS): storage, processor, OS + virtualization, and bandwidth. Developers can upload their traditional software stack and run their applications on the Amazon infrastructure. IDC believes this type of platform will evolve to provide solutions to a variety of customer-managed environments and workloads, and provide new opportunities for partners to provide management, governance, monitoring, and other services.

- ☒ **Web Application PaaS** like Google App Engine provide APIs and functionality for developers to build Web applications that leverage its mapping, calendar, and spreadsheets, or draw from YouTube and other services. Similarly, social applications like LinkedIn and Facebook provide APIs so third-party professional and non-professional developers can write new application functionality that can draw from data mashups on the social site, and make these applications available to a broad community of consumer and business users.

Benefits of PaaS Platforms

The utility of a platform begins with the breadth of its functionality and the level of integration between its components. Emerging Cloud-based platforms are building on this baseline utility in novel ways which point directly to core value arguments for users:

- ☒ Developer accessibility is enhanced due the elimination of local software runtimes. This also largely eliminates shelfware.
- ☒ Infrastructure management is eliminated because software enhancements and provisioning are addressed by the service provider. This also addresses some scalability and resource utilization concerns.
- ☒ Developer productivity can be significantly enhanced especially when PaaS functionality is highly abstracted or extended in the areas of development, deployment, integration, or the software development lifecycle.
- ☒ Easier integration with other Web-based resources is typically a PaaS design point and eases the process of joining platforms or integrating content.
- ☒ Better integration between process owners and application developers. The traditional application development process provides numerous opportunities for the desired application functionality to drift off target. This is largely due to requirements that are not well formed, inconsistencies with existing data modeling, process models, business rules, and complex development environments that trade development efficiency for flexibility. Most PaaS platforms provide a more integrated development and deployment experience along with a more highly abstracted approach to application development which simplifies the development process. Consequently, the development process can be more streamlined and simplified, which helps improve desired application functionality.

While the exact composition, architecture, and ecosystem dependencies of the various emerging PaaS offerings will differ, in general the intent of PaaS offerings is to provide the infrastructure components needed to access and run applications over the Internet. PaaS platforms are typically delivered in the same way as a utility, like electricity or water: users simply "tap in" and take what they need without worrying about the complexity behind the scenes. Further, users can access a PaaS environment as often or as little as they need, and like a utility, PaaS usage is metered on a subscription basis so users only pay for what they use.

These easy-to-understand cost and business value attributes, when paired with the architectural benefits highlighted above, help build the story around the allure of PaaS. This is especially true during a time of intense budgetary pressures, when IT organizations are bent on decreasing costs, and focusing on transforming from cost centers into service centers, aiming to be more tightly aligned with the strategic goals of the business, rather than merely "keeping the lights on." With PaaS, corporate IT departments are becoming more able to focus on innovation instead of complex infrastructure, and can redirect a greater proportion of their IT budgets to creating applications that provide near-term strategic value to their organizations.

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Key Attributes of the Force.com PaaS

As noted earlier, the Force.com platform is a leading PaaS. Force.com not only delivers all the conventional benefits attributed to a PaaS, but also extends these benefits as a result of the following product attributes.

- ☒ *Multitenant architecture.* This is one of the most important characteristics of Force.com. In a multitenant architecture, many customers share one instance of an executable. Key characteristics of multitenancy include partitioning, multitenant security, a polymorphic application that is metadata-driven, and significant gains in scalability and manageability.
- ☒ *Programmable user interface.* Force.com provides a standard library of user interfaces, customizable with a drag-and-drop page layout editor to build a new UI based on HTML, Flash, JavaScript, and Cascading Style Sheets.
- ☒ *Unlimited database customizations* for building custom objects, fields, and relationships.
- ☒ *Workflow and approvals.* Point-and-click workflow approvals and an exception management engine will email alerts, assign tasks, and send outbound messages to other related systems.
- ☒ *Web site creation and management.* Force.com sites lets users run Web sites and Web applications that rely on forms or require integration with back-end systems and analytics. Users can build in HTML, Flash, and JavaScript.
- ☒ *Eclipse-based IDE and programmable logic.* Force.com includes a formula language as well as a Java-like code and Eclipse-based IDE for developers to write code that runs on Force.com. It also provides business logic components for enforcing rules, calculating results, and monitoring/managing exceptions.
- ☒ *Single-environment coding for Web or mobile applications.* Developers can write once, and deliver apps across multiple supported platforms.
- ☒ *Integrated* content library with search, user ratings, comments, and tagging.
- ☒ *Real-time analytics.* Built-in reporting and dashboards that users can set up and manage, with a library of standard reports and a report generation tool.
- ☒ *Granular security and sharing.* Users can control which data each user can access at the object, field, or record level and create custom rules across roles and profiles that are enforced across the user interface, API, search results, and analytics.

THE BUSINESS VALUE OF FORCE.COM

Study Demographics

IDC interviewed ten companies that had used Force.com to develop custom applications and have been running the apps for at least 12 months. These are large, medium, and small enterprises with a median 750 employees. They are located in the U.S., Europe and Asia Pacific and come from the communications, manufacturing, public sector, transportation, retail, healthcare and food industries. Custom applications varied widely in both function and scale, from an ERP system enabling 20 users to manage the entire company to a customer-facing portal serving 250,000 users. In all companies these applications were deemed critical to their businesses and in two cases these applications were the main revenue-generating activity.

TABLE 2

Demographics

Companies	10
Regions	NA, EMEA, AP
Industries	Communications, manufacturing, government, transportation, retail, healthcare, food
Custom applications with Force.com	2.50
Internal users	323
External customers	867
Total users	1,190

Source: IDC, 2009

Business Challenges in Application Deployment

Three of the companies were migrating from traditional application development and standardizing on Force.com. These companies had to make adjustments to the way they were doing business and train their development staff.

- At one behavioral healthcare provider, IT had historically been a utility. They developed a system for a patient intake management system on Force.com. Force.com enabled them to build five different discrete applications that addressed 200 different types of data and served different businesses. According to the developer – "Because of these applications, the company is starting to utilize IT in a more strategic capacity...not to just push information around...but to create value."

- ☒ A specialized personnel provider developed a customer-facing portal to enable communications and supply between customers and distributed resources. At first, they had to train their five-man development staff for three days to get them going. Since then, they have developed such a fast delivery cycle they have accelerated their application development from 3 to 20 annually.
- ☒ A consumer products company designed and built a public, consumer based website that supported millions of visits in only 21 days and integrated with Facebook and Twitter to promote volunteer and philanthropic events based on a user's zip code.

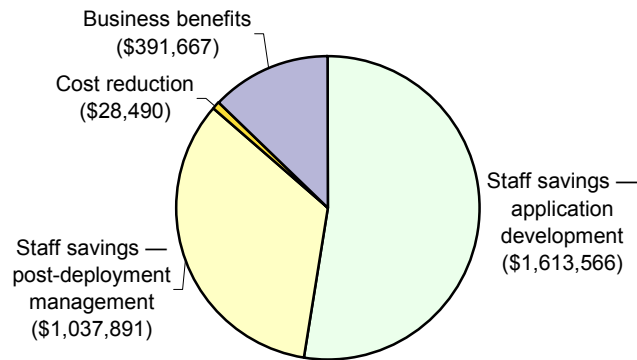
Benefits Analysis

Companies enjoyed nearly \$3.1 million a year in total benefits from using Force.com. The benefits came from the following sources:

- Staff savings – application development/deployment - \$1.6 million (53%). Decrease in the developer hours spent in all phases of application development from design to deploy.
- Staff savings – post deployment management -\$1.0 million (34%). Decrease in IT staff hours spent in application management to include troubleshooting and application enhancements.
- Cost reduction - \$28,490 (1%). Reduction of hardware, software and supporting infrastructure for development environment.
- Business benefits - \$.4 million (13%). Additional operational income resulting from improving the time to market, performance and quality of the applications.

FIGURE 2

Average Annual Benefits



Annual benefits = \$3.1 million

Source: IDC, 2009

Application Development TCO Benefits

The companies in the study were able to reduce the time to develop their custom apps by an average of 26 weeks (75%). But the savings were not just in terms of time saved, but reduced effort as well. As Table 3 shows, using Force.com made each phase of the application development process faster, simpler and more automated.

The Force.com approach is most advantageous in the scope of four core development activities: coding, configuration, assembly and integration and deployment:

- ☒ *Coding.* The heavy lifting of application development is reduced by 78%, saving 1.36 FTEs. While Force.com does provide a procedural language (Apex) similar to Java for the development of custom application logic, the polymorphic characteristics of Force.com allow much of an application to be developed through configuration setting rather than code. This accounts for the dramatic reduction in coding time.
- ☒ *Configuration.* 25% of the companies responded that configuration time was essentially zero (reduced 60% overall).
- ☒ *Assembly and integration.* As with coding the simpler development structure supported with tools reduced requirements for assembly and integration by 81%.
- ☒ *Deployment.* Deployment effort was essentially reduced to the push of a button.

TABLE 3

Application Development Staff Savings

Staff Savings — Application Development	Traditional	Force.com	Difference	Savings
Application development FTEs per app				
Design	0.10	0.05	53%	0.05
Model	0.02	0.01	33%	0.01
Coding	1.74	0.38	78%	1.36
Configure	0.10	0.04	60%	0.06
Assembly and integration	0.05	0.01	81%	0.04
Unit and system testing	0.03	0.01	55%	0.01
Deployment	0.01	0.00	76%	0.01
Total	2.05	0.50	76%	1.55

Source: IDC, 2009

Overall, companies were able to reduce the labor costs per application by 76%, saving \$262,000 per application. Staff savings from optimizing application development accounted for \$1.6 million annually or 53% of total benefits.

In addition to saving IT staffing resources, companies were able to reduce the servers and software infrastructure supporting internal application development. Although only \$28,000 a year, this savings is all capital expense - precious in an environment where finding funding for new technology is not just about cost but more and more, availability.

Finding that developing custom applications is now quicker and less expensive prompted several companies in the study to increase the number of future custom development projects. At the time of the study, companies had on average developed 2.5 applications. With Force.com, they are increasing the pace to add another 16 new custom applications over the next two years. At this rate, companies on average will save \$1.15 million annually in application development labor costs.

Post-Deployment Benefits

Reducing the costs of application development may be the most significant benefit of Force.com but it is certainly not the only benefit. At IDC, we focus on the full lifetime of the application and look particularly at the costs to manage in the first several months during the period when both the IT staff and the users are learning how to use and manage the application; the effort and costs associated with upgrading the application and the performance of the application as measured by downtime and service desk operations for internal applications and in revenue impact for external facing applications.

In the post-deployment period for any new application and especially custom applications integrated into existing frameworks, IT managers must deal with a high volume of service desk calls and application downtime issues related to "working the bugs out". Force.com's highly optimized structure proved to yield more reliable quality than traditionally developed applications. Service desk calls volume declined by 33%. Call issues were more easily identified and resolved so time lost per call fell by 42%. The net result was that IT time spent in service desk activities was reduced by 63% compared to traditional applications. Downtime instances within the first 30 days of deployment declined by 82%. Ongoing service performance has even fewer errors and annual downtime is reduced to almost nothing (97% decline). Improved application quality and reliability reduced IT management costs by \$150,000 annually.

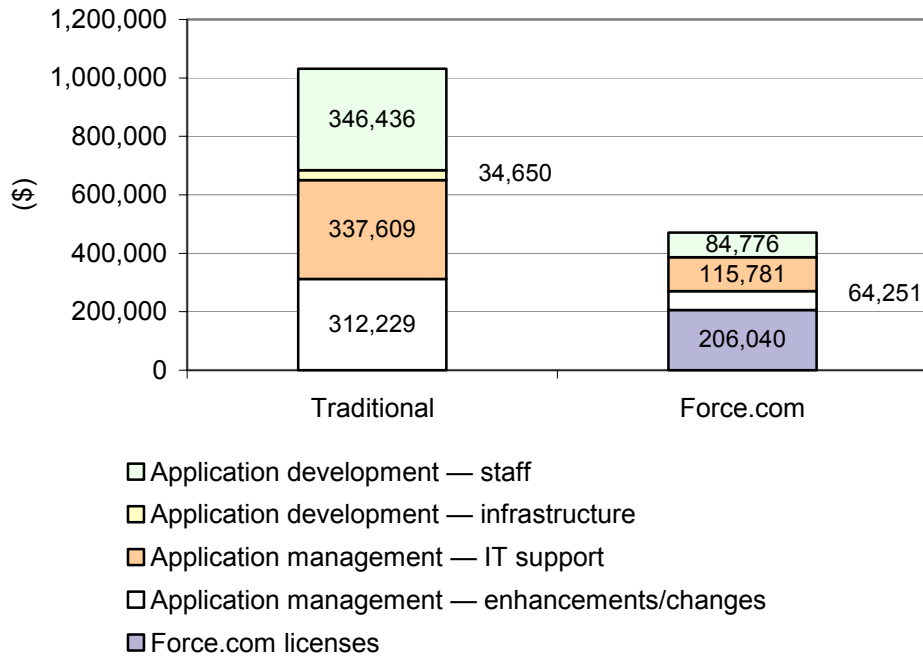
As with initial deployment, enhancements, regular maintenance and management require less IT staff attention. Users in the study found they could upgrade the applications in one-seventh the time and so they performed enhancements twice as frequently. Even with double the pace of innovation, overall time spent on enhancements fell by 75% and annual management time dropped by 72%. Overall, post-deployment staff savings accounted for more than \$1 million (35%) of overall savings.

Three-Year Total Cost per Application

Combining the initial development costs with the annual costs over three years, we can see that the companies in this study using Force.com PaaS were able to reduce the total costs of their custom application development and management by 54% compared to building the applications in-house using the traditional approach. Over a three-year period, they were able to save a total of \$560,000 per application.

FIGURE 3

Three-Year TCO Analysis per Application



Source: IDC, 2009

Business Benefits

Time is money. The ability to generate custom applications in nine weeks had a significant revenue impact resulting in an additional \$3.9 million in annual revenue. IDC converts this revenue to operating income by allocating 90% of the revenue to the costs to generate the revenue. In this case \$390,000 in additional operating income is added to the costs savings from lowering the costs to develop, deploy, enhance and manage the applications generating the revenue. Companies saw the time-is-money benefit in five ways:

1. *Resource allocation.* A communications company was able to move resources from building applications to delivering the products to customers, increasing their revenue by tens of millions.
2. *Time to market.* By delivering an application in time for peak season, a manufacturer to the building industry was able to increase sales by hundreds of thousands.
3. *High customer satisfaction.* One company increased sales by 5% by delivering a high level of responsiveness to its customers, reducing churn and maintaining profit margins.

4. *Agility*. The ability to move quickly on an opportunity increased one company's yield by 6%.
5. *New revenue*. One company was able to create 24 new products and resultant new sources of revenue.

Force.com customers we surveyed described delivering more business function, with more operating income benefit at less overall cost in both development time and deployment. Based on average development times, deployment costs and business benefits experienced we constructed a view that compares the different business value results that accrue with Force.com and traditional development methods.

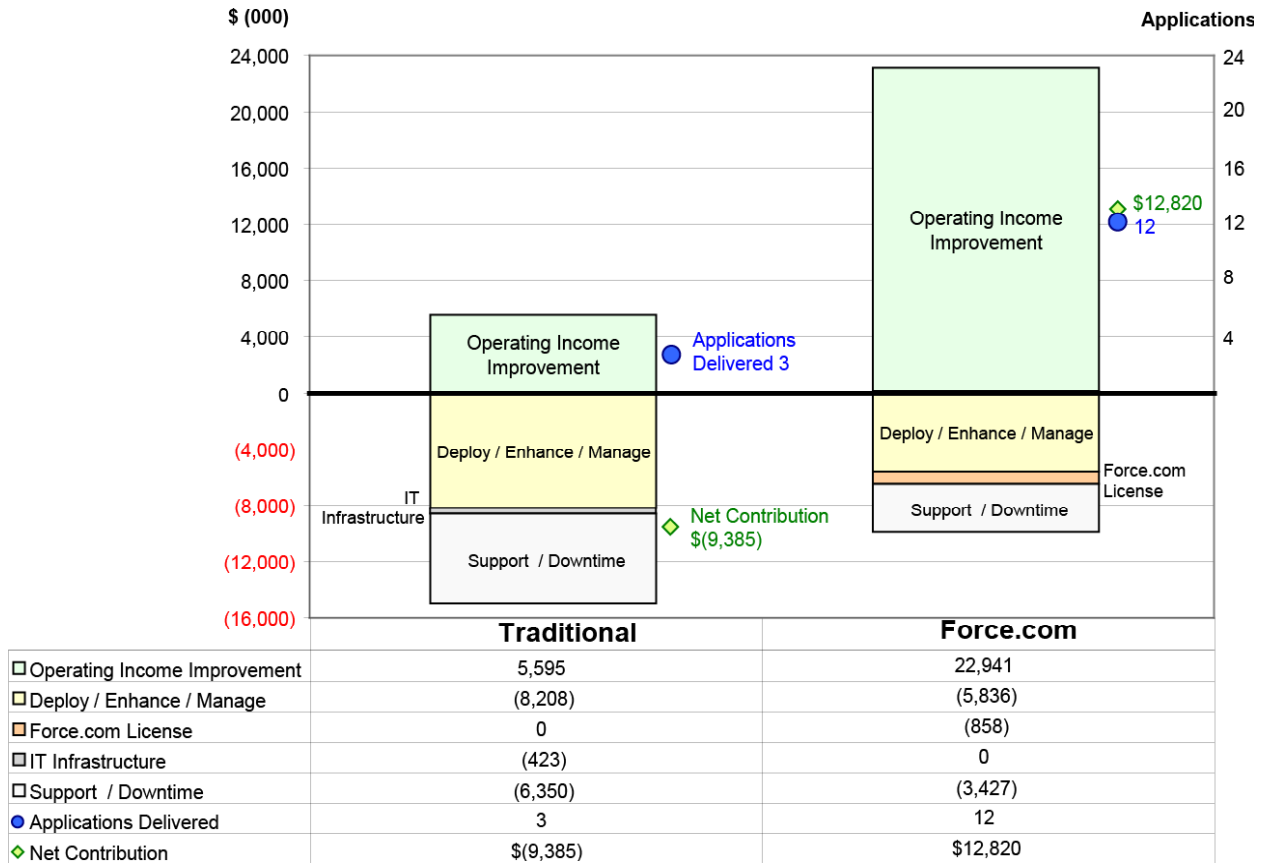
One means of demonstrating the relative business benefits for each involves comparing the results of investing approximately \$1 million in application development (effectively three developers working for two years) in each approach.

Figure 4 illustrates the results. As indicated, using the development investment (\$1 million) with Force.com results in 12 delivered applications, an operating income improvement of almost \$23 million and costs of approximately \$10 million. By contrast, using the \$1 million dollar investment for traditional development methods results in only three applications (75% less) and consequently less operating income impact (only \$5.6 million) and more cost for those fewer applications. In this scenario Force.com delivered four times as many applications and resultant business value at less than half the cost.

FIGURE 4

Relative Business Value of \$1M Application Development Investment
(3 Developers for Two Years) -
Force.com versus Traditional Methods

Relative Business Value of \$1M Investment in Application Development (3 FTEs; 2 Years)
Force.com vs. Traditional Development



Source: IDC Business Value, 2009

ROI Analysis

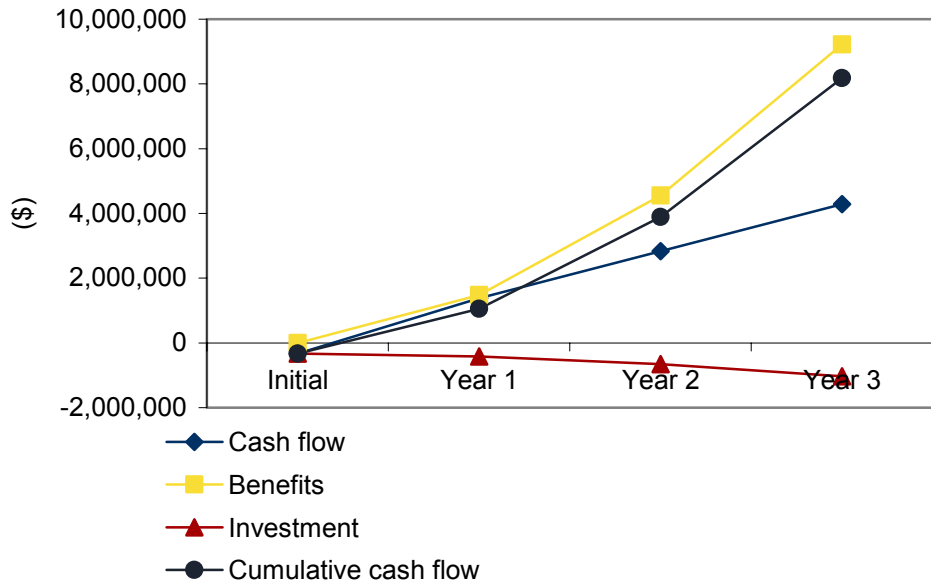
Overall, the companies invested an average of more than \$1 million (\$244,000 per application) over three years in the Force.com platform. Unlike most IT investments, where the initial investment accounts for 50-70% of the total investment, only 27% of the investment is made initially before the customer starts to see the benefits.

For customers, cost savings and revenue benefits averaged more than \$3.1 million annually. IDC accounts for the opportunity costs realized by not having invested the initial amount in some other instrument yielding a 12% return. This results in a net present value for the three-year benefits of \$6.2 million (\$633,000 per application) (see Figure 4).

Based on the total benefits, the payback period from deploying Force.com averaged 2.8 months for the companies surveyed, yielding an average return on investment of 721%.

FIGURE 5

Cash Flow Analysis



Source: IDC, 2009

CHALLENGES AND OPPORTUNITIES

This ROI study shows compelling evidence that the development, deployment, and management of custom applications on Force.com is fast and cost-effective. These benefits stem directly from Force.com's multitenant architecture, which simplifies and streamlines application development for a wide variety of application development tasks. There is no doubt that the polymorphic application development framework of Force.com provides a more highly abstracted development environment, which in turn allows more application development through configuration rather than coding. This means far less code, which cuts development time and cost – as clearly shown in the ROI analysis. More configuration of underlying Force.com components also means less opportunity to introduce defects, which once again speeds application development but more importantly drives higher application quality.

A multitenant architecture does increase the design complexity of the underlying Force.com component model. While this design complexity is transparent to customers and end users, it does have several implications for Force.com users.

One of these implications is that salesforce.com will need to source additional components rather than gaining step-function increases in functionality afforded to other vendors through partnering or acquisitions. While Force.com does provide an API that allows customers to integrate Force.com with other external applications, products, and environments, the compelling benefits of Force.com are not transferable to these external products. Consequently, customers who need the Force.com platform to internally support capabilities in areas such as business rule management, extensible object-oriented programming, many aspects of lifecycle management, and transaction processing will need to wait for salesforce.com to address these component development tasks.

Another implication of Force.com's multitenant architecture is that salesforce.com must carefully manage application resource utilization to maintain high levels of application availability and performance. Consequently, this means internal Force.com safeguards such as Apex governor limits, Apex script execution limits, and trigger batch size limits. While most of these limits are designed to identify runaway applications, this suggests that Force.com may not be the ideal environment for high-performance or resource-intensive applications.

This discussion points out the tradeoffs that must be made based on architecture. Salesforce.com has to date focused the Force.com platform on support for a wide variety of general-purpose business applications. This makes good sense as a starting point for the Force.com component model so that it is relevant and attractive to a significant portion of the developer community. We would expect salesforce.com to continue enhancing Force.com in ways that extend the platform to address more demanding application development needs. From discussions with salesforce.com, we know this to be the case; however the phased nature of these enhancements means that salesforce.com customers or prospects with specific needs should closely evaluate the Force.com product roadmap.

CONCLUSIONS

How the IT industry develops applications, whether in corporate IT organizations or the myriad of professional developer shops worldwide, is changing. The rise of Cloud computing provides numerous strategic and tactical benefits, and for developers, the low cost and instant browser-based access to very high-quality compute resources, storage resources, application logic, and development and deployment environments is driving a transformation in how IT shops will allocate resources, and how they will approach common IT tasks, including custom application development, deployment, and maintenance. The result is that Cloud-savvy IT organizations are seeing renewed innovation and creating true business value, with a measurable cost-benefit.

Cloud-based PaaS platforms provide an early success story for how Cloud can transform a significant and common business process. For the firms interviewed by IDC, their ability to generate custom applications in 8-10 weeks – as opposed to a far lengthier several-month cycle -- had a significant positive impact in four key areas: resource allocation, time to market, high customer satisfaction, and business agility. IDC believes that from the smallest 5-person firms to the largest IT organizations,

Cloud-based PaaS platforms provide an early success story for how Cloud can transform a significant and common business process.

PaaS can potentially transform and democratize how applications are conceived of and created, because:

- ☒ Even very small firms can have access to world-class infrastructure and tools.
- ☒ These firms have a forecastable outlay for building a new business (or running an established one), based on an "all-in" infrastructure and applications pricing structure.
- ☒ They can write code once for multiple platforms and form factors.
- ☒ They can gain access to professional developer support tools and a Web-based community of peers with similar goals.
- ☒ The financial threshold for creating, distributing, selling, and updating applications is far lower, which should drive innovation from single developers writing the hottest new application, to IT organizations needing time-to-value measured in weeks, not months or years.

IDC BUSINESS VALUE METHODOLOGY

This methodology is based on gathering data from current users of the technology as the foundation for the model through interviews. Based on these interviews, IDC performs a three-step process to calculate the ROI and payback period:

1. Measure the savings from reduced operations costs (consolidation of hardware and software, avoided staff hired), increased operations efficiency, increased revenue, and improved end-user productivity.
2. Ascertain the investment made in deploying the solution and the associated training and support costs.
3. Project the costs and savings over a three-year period and calculate the ROI and payback for the deployed solution.

IDC uses the net present value (NPV) of the savings over three years in calculating the ROI and payback period for the deployment. The NPV of the savings is determined by subtracting the discounted three-year investments from the discounted three-year benefits. IDC uses a 12% discount factor to allow for the missed opportunity cost that could have been realized using that capital.

IDC uses the following assumptions in its calculations:

- ☒ To quantify savings from IT efficiency, IDC multiplies time values by burdened salary (salary + 28% for benefits and overhead).
- ☒ Because the full benefits of the solution are not available during the deployment period, IDC prorates the benefits on a monthly basis and subtracts the appropriate amount for the deployment time from the first-year savings.

Defining Application

Comparing applications development times requires that we measure the level of an application's business function. Industry measures for applications, such as the many variations of traditional IFPUG "Function Points", delineate an application's: data functions (internal and external), transaction functions (inquiries, inputs, outputs) and more. "Web Object Points", designed to measure web application function, adds items such as the number of graphic files, building blocks, and purchased components, etc.. No standard measure dominates. We define for purposes of this paper, an "Application" as the average business functional level for all applications surveyed in the study. Based on limited profiling of the applications in the research we have hypothesized, for purposes of comparison, that an "Application", in our definition, roughly rates 300 standard IFPUG Function Points or 150 Web Object Points.

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