Understanding the value of cloud solutions

Maximize your ROI
### Table of contents

3  Executive overview  
3  Benefit categories  
4  The HP approach to cloud service automation: a comprehensive solution  
4  Capabilities and benefits  
4  Planning and design  
4  Deployment and provisioning  
4  Assurance and metering  
5  The HP ROI approach  
5  Customer data and results  
6  European IT services provider  
8  U.S.-based IaaS provider  
10  Comparison of the two ROI studies and the key takeaways  
11  Overall summary
Executive overview

Cloud computing is a powerful new way of providing and consuming information services—one that enables businesses to access applications and infrastructure resources over the Internet on an as-needed basis via a usage-based business model. With cloud computing, organizations can significantly gain agility while reducing costs and increasing flexibility. End users consume resources as a service and pay only for the applications and services that they use. The promise of enhanced agility, lower total costs, greater scalability, and the opportunity to adopt existing IT technologies in a secure, available manner is both considerable and beneficial.

However, the very nature of cloud computing raises new IT management challenges. Organizations considering cloud have already recognized some of the significant difficulties associated with the deployment and ongoing management of cloud infrastructure and applications. The top barriers are concerns about security, transformation of their applications for the cloud, and compliance and governance.¹ If cloud services are not managed efficiently, and more to the point, not automated, cloud computing can actually add risks, delays, and costly complexities to your IT organization’s ability to provide services more efficiently and effectively—negating the overall benefits of the cloud.

HP Cloud Service Automation (CSA) enables your organization to simplify the management of your cloud infrastructure and accelerate the deployment of applications, databases, middleware, and services into your environment. With HP Cloud Service Automation, your IT organization increases efficiency, controls costs, improves time to market, and effectively lowers the risks often associated with the adoption and management of cloud solutions. This empowers your company to more easily add and adopt the new services and technologies required to drive innovation, enable technical advancement, and ensure competitive advantage. This paper provides examples of the return on investment (ROI) of an HP Cloud Service Automation solution. These specific examples, coupled with an explanation of the HP ROI approach, are intended to help business managers develop an ROI analysis that quantifies the business benefits of HP Cloud Service Automation in their environments.

Benefit categories

Cloud computing gives rise to a vision of everything delivered as a service—from computing power to business processes—a vision of an IT organization that can more resourcefully access and incorporate compute resources and deliver required services.

HP Cloud Service Automation is an integral part of HP Converged Cloud, the industry’s first hybrid delivery portfolio based on a common architecture that enables customers to build, manage, secure, and consume cloud services that span private, managed, and public clouds as well as traditional IT.

HP Cloud Service Automation, available as part of CloudSystem or as a standalone software solution, helps customers realize this vision with benefits for both lines of business and IT—quantifiable benefits such as cost reduction, risk mitigation, and faster time to value.

Agility for rapid response to changing business needs

• Automated, standardized cloud-management processes that enhance coordination, planning, and productivity
• Accelerated delivery that cuts time of deployment for business applications from months to minutes—without disrupting business processes

Cost control

• Standardized service portfolios that eliminate highly customized and rarely used services
• Automated, simplified cloud management that improves efficiency
• Increased server utilization and improved IT administrator efficiency
• A shared, heterogeneous pool of system resources deployed across distributed data centers

Risk mitigation

• Proven best practices for automated application deployment and monitoring
• Compliance enforcement and reporting to meet regulatory requirements
• Better service performance and service-level compliance
• The ability to provision systems based on service demands and security policies

¹ Survey conducted by Coleman Parkes Research on behalf of HP in February 2012
The HP approach to cloud service automation: a comprehensive solution

HP Cloud Service Automation is a software solution that helps IT organizations manage and maintain secure and available private, public, or hybrid cloud services, from infrastructure through applications. It automates key IT processes for cloud environments, resulting in a consistent approach to IT resource management, regardless of the environment.

With HP Cloud Service Automation, you can improve overall efficiency, free up resources, and lower the risks associated with the adoption and management of cloud services. This allows you to capitalize on the delivery of new cloud-based services to accelerate time to market, reduce costs by automating the deployment and management of resources in the cloud, and mitigate risks by utilizing a proven set of best practices and planning services.

Capabilities and benefits

As a key element in HP’s Converged Cloud strategy, HP Cloud Service Automation is a solution for brokering and managing private cloud, public cloud, and traditional IT services. HP Cloud Service Automation offers IT organizations increased agility and reduced cost, via a self-service portal and highly-automated lifecycle management. End-to-end unified service delivery provides a complete management environment for private and hybrid cloud. Designed with extensibility and openness in mind, HP Cloud Service Automation allows enterprises to add capabilities and easily adapt to changing business requirements while avoiding vendor lock-in.

HP Cloud Service Automation delivers advanced application and infrastructure services through an easy-to-use self-service portal and graphical service designer, providing showback and chargeback reporting, compliance, and monitoring, all through a common toolset for cloud and traditional IT management. HP Cloud Service Automation also provides a real-time configuration management system, and has an open, extensible architecture supporting heterogeneous environments.

Planning and design

- Graphical service designer provides ease of use in designing new cloud services with a drag-and-drop graphical user interface.
- Multiple service catalogs offer easy access to service definitions and features descriptions.
- Multi-tenancy secures data and controls catalog access with role-based access at log in.
- Cloud Maps offer customized catalogs of application services ready for push-button deployment.

Deployment and provisioning

- Easy to use self-service portal for subscribers to order and manage cloud services
- Application and infrastructure service provisioning in minutes rather than months
- Advanced resource utilization managing services using private or public cloud, as well as traditional IT
- Automated service delivery and comprehensive, unified service lifecycle management

Assurance and metering

- Enforce compliance with policy-based resource management
- Meet SLAs with performance and availability monitoring and management
- Usage and showback reporting for optimizing cost usage and service utilization
The HP ROI approach

The HP Software ROI approach is based on third-party validated models and on industry and customer research by leading IT consultancy IDC and by TCO consultancy Alinean, IDC’s ROI tool partner. The ROI analysis process, models, and metrics were developed by researching overall IT spending and key performance indicators (KPIs) worldwide in over 37 different industries, interviewing selected customers to determine specific realized and proven value, and directly engaging with customers to use the methodology and tools to further refine modeling and value estimates. This work resulted in a four-step ROI framework:

Step 1: Discover
A credible ROI framework must be anchored in business reality. Our framework suggests four categories of discovery to hone in on. During the initial discovery stage it is helpful to document challenges and specific problems and collect them as business value anecdotes.

Step 2: Align
The key to a successful ROI study is converting this somewhat abstract understanding of business context and business value anecdotes into a set of quantifiable value propositions—specific, business-centric statements of expected business or IT value, ideally in monetary terms.

Step 3: Model
Two types of models are crafted. The Benefits Model consists of a set of Benefit Worksheets. Each ROI-benefit scenario is a quantified value proposition representing the most granular unit of annualized business or IT value. HP has compiled a collection of ROI-benefit scenarios from our work to date that our customers find helpful in launching ROI projects. Investment Models provide HP-software-related costs as well as any incremental staffing or infrastructure costs associated with the HP solution.

Step 4: Deliver
The Benefit and Investment Models are compiled into an ROI Business Case Package that combines a methodical analysis of business requirements, technology enablers, and measurable outcomes.

A clear understanding of the business perspective helps planners arrive at a meaningful set of value propositions. Value propositions fall into two distinct categories: business value and IT value. Business value propositions describe how using HP Cloud Service Automation contributes to reduced business costs (for example, improved end-user productivity or headcount containment) or revenue protection (for example, faster delivery of customer-facing or revenue-generating applications). Similarly, an IT value proposition demonstrates how HP Cloud Service Automation contributes to IT cost reduction. This is often expressed in terms of headcount containment, reduction in costs, or deferral of infrastructure capital expenses.

A properly stated value proposition should clearly connect an IT management process with a business objective and a measurable benefit; for example, “an integrated data center automation platform providing enterprise-wide visibility reduces costs by displacing software and support costs associated with maintenance of redundant products, custom in-house developed solutions, custom integration, multi-interface training, and multi-vendor sourcing and purchasing.” Value propositions stated in this way can be transformed into ROI-benefit scenarios, the HP term for the most granular building blocks of IT or business value.

ROI-benefit scenarios provide a consistent way to quantify value propositions. Taken together, a set of these scenarios can be aggregated to represent the value of existing or planned HP Cloud Service Automation investments. The scenarios provide a consistent way to characterize value and incrementally quantify solution benefits. They can also be combined to look at higher-level ROI-benefit scenarios, such as IT service quality improvement, or visibility for decision making. The ROI result, or the total benefit to the business, can be calculated by quantifying the value and the investment associated with all of the relevant ROI-benefit scenarios. By breaking the problem down into smaller, more manageable ROI-benefit scenarios, the HP ROI approach simplifies ROI projection and removes some of the uncertainty associated with collecting and analyzing ROI data.

Customer data and results
After discovering and assessing the current environment, the next step is to align how the HP solution can strengthen both IT and business processes to reduce costs, mitigate risks, improve time to value, or increase revenue. Quantifiable benefits can be estimated using ROI-benefit scenarios that transform high-level value propositions into benefits that can be measured.

The following two real-world customer examples, which were selected from a pool of ROI scenarios for cloud computing, explain how to build ROI-benefit scenarios for HP Cloud Service Automation. The ROI model makes it possible to calculate annualized savings for three levels of projected improvement: conservative, probable, and optimistic. For the purposes of this paper the scenarios are calculated using the probable level of improvement.

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2 A business value anecdote is a brief statement of a pain point, or the observed or expected benefit of an HP solution from the user’s perspective.
European IT services provider
A Western Europe-based service provider will begin offering business applications delivered through a SaaS model to create a new revenue stream. The following table shows a profile of the company.

<table>
<thead>
<tr>
<th>European IT services provider</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>High-technology software and hardware</td>
</tr>
<tr>
<td>Primary geographic location for operations</td>
<td>Western Europe (single country)</td>
</tr>
<tr>
<td>Average annual revenue (in millions)</td>
<td>$490.0</td>
</tr>
<tr>
<td>Number of external users the IT service desk supports</td>
<td>180,000</td>
</tr>
<tr>
<td>Current server profile</td>
<td></td>
</tr>
<tr>
<td>Number of physical servers</td>
<td>Between 1,400 and 1,500</td>
</tr>
<tr>
<td>Total number of virtual servers</td>
<td>700+</td>
</tr>
<tr>
<td>Total number of virtual machines per server</td>
<td>7</td>
</tr>
<tr>
<td>Average annual growth of devices</td>
<td>6.0 percent</td>
</tr>
<tr>
<td>Current IT staff profile</td>
<td></td>
</tr>
<tr>
<td>Server operators</td>
<td>21 FTEs¹ with average burdened labor rate of $29.00</td>
</tr>
<tr>
<td>Application administrators</td>
<td>34 FTEs with average burdened labor rate of $37.00</td>
</tr>
<tr>
<td>Operations management and support</td>
<td>9 FTEs with average burdened labor rate of $21.00</td>
</tr>
</tbody>
</table>

Key business challenges
This ROI analysis is tailored for the key business challenges (pain points) identified by the IT service provider prior to the cloud project.

- Application provisioning is time consuming and labor intensive.
- Server application, configuration, and provisioning management is too labor intensive, resulting in increased incident volumes, high operator-to-server ratios, and high maintenance and compliance costs.
- Lack of real-time visibility increases the time taken to analyze and resolve events.
- Lack of flexibility in hardware deployment results in over provisioning, resulting in higher capital cost.

The need to improve time to market and agility
- Lengthy service deployment cycles lead to time-to-market delays, resulting in reduced potential revenue.

Project investment
The required three-year cumulative investment of $2,435,320 breaks down to:
- $1,113,000 in capital expenditures
- $1,322,320 in operating expenditures

Summary of quantified benefits

<table>
<thead>
<tr>
<th>European IT services provider</th>
<th>Quantified benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business impact benefits</td>
<td></td>
</tr>
<tr>
<td>• $15,284,729 in IT cost reductions</td>
<td></td>
</tr>
<tr>
<td>• $2,856,446 in business strategic advantage benefits</td>
<td></td>
</tr>
<tr>
<td>Project goals benefits</td>
<td></td>
</tr>
<tr>
<td>• Process efficiency gain $15,174,557</td>
<td></td>
</tr>
<tr>
<td>• Revenue protection $2,856,446</td>
<td></td>
</tr>
<tr>
<td>• Cost displacement $110,172</td>
<td></td>
</tr>
<tr>
<td>Top cumulative benefits</td>
<td></td>
</tr>
<tr>
<td>• Application provisioning cost avoidance $11,439,390</td>
<td></td>
</tr>
<tr>
<td>• Faster service deployment $2,856,446</td>
<td></td>
</tr>
<tr>
<td>• Event analysis and resolution cost reduction $2,239,408</td>
<td></td>
</tr>
<tr>
<td>• Server automation process efficiency $1,495,759</td>
<td></td>
</tr>
<tr>
<td>• Future server operator headcount growth avoidance $110,172</td>
<td></td>
</tr>
</tbody>
</table>

Direct (IT) and indirect (business) benefits
- $15,284,729 direct benefits
- $2,856,446 indirect benefits

¹ FTE = Full Time Equivalent
Figure 2. Initial and ongoing investment across three years

Figure 3. Benefits per category over a three-year period

- HP Software Support and Maintenance Contracts (IT)
- Additional Hardware and Software (IT)
- Ongoing Management and Support Labor (IT)
- HP Software Licensing (IT)
- Professional Services (IT)
- Implementation Labor (Internal) (IT)
- Additional Hardware and Software Maintenance and Support Contracts (IT)
- HP Support Services (IT)
- Training (IT)

The proposed HP Cloud Service Automation solution is projected to deliver the benefits shown in Figure 3 over the three-year analysis period.

Key financial metrics (ROI, NPV, IRR, payback period)

Analyzing the opportunity and applying the proposed HP Cloud Service Automation solution, the calculated cash flow and key financial metrics result in a:

- Risk-adjusted ROI of 569 percent
- ROI of 645 percent
- Net present value (NPV) savings of $12,781,231
- Internal rate of return (IRR) of 361 percent
- Payback period of 6.0 months

Summary of the European IT services provider’s ROI

This provider has opted for a cautious business expansion to cloud services without taking the risk of chasing a new customer base. At the same time they can meet expectations of the most demanding clients who are evaluating the on-demand pay-per-use model as a viable sourcing alternative to drive their IT cost down even further.

The most striking benefit turns out to be a huge cost avoidance stemming from application provisioning which over a period of three years goes beyond 11 million dollars. This can be explained by the significant improvement cloud computing brings into the process of application delivery, provisioning and monitoring. Accelerated application testing and deployment cycles, self-provisioning, and end-user monitoring all contribute to significant labor cost saving.

As a result, the direct IT benefits have accrued up to $15 million (USD) in savings over three years. Comparing that with the moderate investment in the new cloud system, it has led to a very attractive ROI result (645 percent) as well as a fast payback period of six months.
U.S.-based IaaS provider

Another documented case shows a U.S.-based service provider building a new IaaS business to serve its most mature customers. This case is much more cost sensitive than the preceding example due to the commoditized nature of IaaS services, which results in more conservative financial benefits and a longer payback period. The following table shows a simplified profile of the company.

<table>
<thead>
<tr>
<th>U.S.-based IaaS provider</th>
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<tbody>
<tr>
<td>Industry</td>
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<tr>
<td>Primary geographic location for operations</td>
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<tr>
<td>Number of external users the IT service desk supports</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current business salary profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average annual increase in salary expected (starting in year 2)</td>
</tr>
<tr>
<td>Average hours worked per full time equivalent (FTE) per year</td>
</tr>
<tr>
<td>Weeks worked per worker per year</td>
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</table>

<table>
<thead>
<tr>
<th>Current IT staff profile</th>
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</thead>
<tbody>
<tr>
<td>Server Operators</td>
</tr>
<tr>
<td>Application Administrators</td>
</tr>
<tr>
<td>Operations Management and Support</td>
</tr>
</tbody>
</table>

Key business challenges

This ROI analysis covers all the key business challenges as well as the main goals set by the company.

Reduce costs.
- Manual monitoring of servers and applications is time consuming.
- Server application, configuration, and provisioning management are too labor intensive, resulting in increased incident volumes, high operator-to-server ratios, and high maintenance and compliance costs.

Reduce business risks and improve service-level compliance
- Server security incidents materially affect business continuity and availability.

Improve time to market and agility
- Lengthy service-deployment cycles lead to time-to-market delays, resulting in reduced potential revenue.
- Inability to scale infrastructure rapidly during demand spikes results in reduced potential revenue.

Investment

The required three-year cumulative investment of $1,643,609 breaks down to:
- $900,000 in capital expenditures
- $743,609 in operating expenditures

Summary of quantified benefits

<table>
<thead>
<tr>
<th>U.S. IT services provider</th>
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<tbody>
<tr>
<td>Quantified benefits</td>
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<tr>
<td>Business impact benefits</td>
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</tr>
<tr>
<td>Direct (IT) and indirect (business) benefits</td>
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</tbody>
</table>
The HP Cloud Service Automation solution is projected to deliver the following benefits over the three year analysis period. The following diagrams show the time based view as well as benefits split per category.

**Key financial metrics (ROI, NPV, IRR, payback period)**

Analyzing the opportunity and applying the proposed HP Cloud Service Automation solution, the calculated cash flow and key financial metrics result in:

- ROI of 73 percent
- Risk-adjusted return on investment (RA ROI) of 51 percent
- Net present value (NPV) savings of $794,703
- Internal rate of return (IRR) of 42 percent
- Payback period of 19.0 months

**Summary of the U.S.-based IaaS provider’s ROI**

The business strategy of the US-based provider was to offer a basic infrastructure-as-a-service portfolio of services to existing as well as new customers. In this market several incumbent players already existed and therefore price was a critical factor to consider.

The direct IT benefits resulting from a higher utilization of the new cloud infrastructure represent a moderate impact on the cost saving side ($1.6 million dollars) accumulated over three years. Furthermore as the operations had already been heavily infrastructure-centric and well mastered by the existing staff (e.g. automation and monitoring), the net delta improvement has been relatively modest in comparison.

Altogether the lower accrued benefits and a very price sensitive revenue projection have resulted in a less attractive ROI result (73 percent) and a longer payback period (19 months) than the previous example.
Comparison of the two ROI studies and the key takeaways

As one would expect, every ROI case study is strongly context sensitive. That means that two very similar cases can show quite different financial results depending on an organization’s IT maturity which in turn is shaped by existing process efficiency, tools usage and integration. Calculating the ROI for a cloud platform deployment brings up further differences due to a variety of existing cloud models and adoption paths. That’s exactly what can be concluded in this paper when comparing the two very different outcomes in terms of total accumulated benefits, ROI, payback period, and other financial metrics listed above.

The main difference between the two cases can be found in the different cloud service models adopted by the two providers. The first one has decided to build a SaaS cloud offering giving them enough space for a value-based differentiation. Unlike the second provider who decided to focus on a price sensitive IaaS offering, the SaaS model is not yet under similar commoditization pressures and hence gives enough space for differentiation, allows for charging a premium price, and therefore offers a much faster return on investment.

The second factor impacting the ROI results is connected to the geographical differences in cloud adoption between Western Europe and the U.S., such as labor costs and skillset profiles, which are all embedded in the ROI model and are reflected in the final calculations.

One last important difference is the customer profile targeted by the two providers. While the first example opted for a safer existing client base, the other example built a cloud offering to acquire new customers. It’s clear that a risk factor plays a significant role here by creating additional pressure on the services price. Acquiring new customers is usually more expensive than keeping existing ones. In a price sensitive IaaS market, that can quickly become an additional cause for an extended payback period.

HP Cloud Service Automation comes with a set of capabilities aimed to simplify and accelerate the delivery of application-centric cloud services. While there are great benefits in the infrastructure services models as well, it is at the application level (PaaS or SaaS) where the customers will experience the highest return on investment.
Overall summary

Analyzing the ROI of a cloud project is an important step in understanding the value that the project will bring to your company. As you can see from these two examples, you can quantify the benefits of HP Cloud Service Automation systematically, using an approach and methodology that HP has designed and refined over the years, with collaboration and validation from industry analysts.

The ROI analysis of cloud projects can vary widely, depending on the circumstances, goals and cost factors. This can be seen in comparing the results of these two projects, with ROI analysis from 569 percent to 73 percent and a payback period from 6 to 19 months. This significant variance between the ROI results of these two projects tells us how important it is to create an ROI analysis for your cloud project. There is no “typical” ROI you can expect from a cloud project. The value your company will experience from a cloud project is highly dependent on your specific project’s circumstances.

HP Cloud Service Automation is the industry’s most comprehensive, unified management solution, offering infrastructure and application provisioning for private cloud, public cloud, and hybrid IT services. With HP Cloud Service Automation, you can effectively plan your private, public, or hybrid cloud environment, design and build a roadmap for deployment, automate and manage your cloud infrastructure and applications efficiently and cost-effectively, and assure that your cloud service environment is secure enough to meet business needs. With HP’s ROI analysis tools, we can help you understand the value your company can experience using HP Cloud Service Automation for your cloud solution. For more information, contact your HP sales representative today, and visit hp.com/go/CSA.