Benefits Abound When Moving Analytics to the Cloud

MicroStrategy
Benefits Abound When Moving Analytics to the Cloud

3 Priorities for Cloud-Based Development and Analytics

5 Extract the Full Operational Value of Cloud Computing

7 Maximize TCO Benefits of Moving to the Cloud

9 Conclusion

Contributor: Matt Gillespie is a technology writer based in Chicago. He can be found at www.linkedin.com/in/mgillespie1.
Benefits Abound When Moving Analytics to the Cloud

Priorities for Cloud-Based Development and Analytics

Analytics in the cloud democratize the ability of developers and non-technical business users alike to put ever-expanding data universes to work. While every company’s requirements are unique, a relatively small set of common factors can provide a valuable starting point for the planning process.

As cloud environments have matured, their performance, stability, and security have become recognized as appropriate for business-critical usages such as enterprise analytics. General availability of expertise has grown, global build-out has come to offer full geographic reach, and analytics platforms have emerged to help customers implement the full power of the cloud, even for regulated and other special workloads.

Building a Platform to Grow On

The cloud-based analytics platform that an organization puts in place not only represents a significant investment but also holds the potential to empower both management and rank-and-file employees. Choosing the right platform is fundamental to getting the full value out of that investment, creating the basis for a sound environment that enables actionable business intelligence and improved decision making. Getting the foundation right is a requirement for building solid analytics mechanisms for the long term. That makes careful planning essential.

Planning Factors for Cloud-Based Enterprise Analytics

When an organization starts planning an enterprise analytics platform for the cloud, the first order of business should be to identify the features and capabilities that are most important for its specific implementation. Planners should target cloud-native features and capabilities that take maximum advantage of the agility, cost, and other benefits offered by cloud computing.

When choosing a platform to support immediate requirements, it is also vital to consider needs in adjacent technical or business areas such as mobile productivity in addition to analytics, as well extensibility for the future.

While the specific list of factors (and the associated details) will vary from company to company, customers report a common set of considerations. The priorities described in the remainder of this section should typically be front-of-mind in the decision-making process.

Ease and Speed of Deployment

How quickly and easily an enterprise environment can be deployed to the cloud is vital. To provide a high-quality
user experience, solutions should be deployable and usable by non-technical business users quickly and easily, without requiring a specialized skill set and without requiring them to download, configure, or install anything.

At the same time, platforms should integrate with tools, APIs, and SDKs to provide the full range of capabilities needed by developers and other advanced users. Automation of key capabilities should streamline and accelerate deployment and provisioning to maximize business value.

Robust, Centralized Administration

IT departments must have robust management over the environment from a single location, ensuring that it optimally meets business needs and conforms to the organization’s standards. The tools they use to handle these tasks should be at once intuitive and powerful, to provide a combination of efficiency and control.

Administrators and other concerned parties should have key information at their fingertips for each cloud environment in use. This information must include functional and business details about usage and cost, as well as technical data such as IP addresses, instance sizes, and available admin tools. To help optimize operational efficiency, automation should be supported for key administrative tasks such as starting, stopping, and resizing instances, as well as usage tracking such as how many users log in, when they log in, and how often a given report is run.

Flexibility for Data Connectivity and Migration

The analytics platform must readily connect to data sources of every description, whether that data is structured or unstructured, and wherever it resides: whether in cloud-based or on-premises systems (or a combination of both). This requirement is equally true for importing static data sets into memory or connecting to live data sources. Moreover, the platform must be able to smoothly bring in multiple data sources simultaneously, combining, preparing, and transforming them as business needs dictate.

Inevitably, data requirements will shift. Over time, organizations will need to accommodate new data sources and new capabilities for data connectivity and migration. Current and potential factors may include integration with any number of factors, such as data warehouses or extract/transform/load (ETL) processes. The cloud platform chosen must adapt easily and effectively to these requirements, allowing the flexibility to take on emerging business challenges.

Failover and Disaster Recovery

As cloud-based analytics platforms become business-critical, it is vital that they offer enterprise-class high performance and reliability to protect the processes that depend on them. System durability and continuous operation for high availability must be architected into the solution, including mechanisms for automated failover and recovery in the event of hardware or software failures.

In addition to providing robust mechanisms to protect the production environment, the cloud platform chosen must integrate smoothly with enterprise measures for business continuity. These include, for example, data-backup solutions, as well as existing and planned disaster-recovery initiatives.
Robust Scalability

Growing data sets are a reality that businesses must accommodate, and effective handling of the expanding universes of data their analytics operate on is the key to turning this challenge into an opportunity. Therefore, the ability to smoothly scale cloud environments up as needed is essential to generate robust analytics, actionable business intelligence, and informed business decisions.

Processes should be established that allow the environment to be resized on a pre-scheduled basis at any time, either horizontally (number of instances) or vertically (size of instances). By scaling the cloud environment up and down as needed, transparently to the workloads running on them, the environment can support transient and long-term changes on demand, without the need to pay for idle resources.

High Performance and Reliability

To ensure a high-quality user experience, performance and reliability are key. All queries—even large, ad hoc ones—must return results quickly, regardless of their size and complexity, the time of day, or demands placed on the environment by other users. SLAs should be developed to ensure that these demands can be met reliably under all circumstances. Reporting of key performance indicators based on performance and reliability should be easily available, including the ability to monitor them anywhere, anytime using mobile applications.

Starting from the Baseline Value Proposition

Most business decision makers use the word “agility” in explaining their motivations for moving to the cloud. Indeed, the ability to deploy systems in a matter of minutes compared to weeks or months is central to the core value proposition of cloud computing. Elastic systems provide capacity on demand, while external experts maintain the infrastructure, meaning that it is not necessary to hire experts to maintain SLAs and security.

At the same time, capturing this value requires customers to put centralized management in place and use it to meet their strategic requirements. Some guidance to establishing those requirements is given here.

Streamlining Operations Using Cloud Resources

To drive the full value of cloud-based development and analytics, organizations must put mechanisms and procedures into place that maximize their investment.
Organizations should consider whether certain workloads with particularly high demands or importance to the business should be able to reserve unique access to dedicated resources to ensure maximum performance. Workloads should also be deployed across multiple availability zones so that in the event of a failure, other resources can take over transparently until the failed system comes back online, without interruption for end users.

**Seamless Upgrades**

Managing patches and upgrades effectively is vital to maintaining a software environment with the latest features and capabilities, as well as meeting requirements for reliability, stability, and security. Mechanisms must be put in place to implement patches and upgrades in a straightforward way, without undue demands on personnel or interference with day-to-day operations.

The organization’s approach to software upgrades should avoid the necessity to invest extensive time and resources or to coordinate a variety of experts. Where possible, implementers should consider the potential for a seamless upgrade path from a platform provider that pre-certifies sets of software enhancements and delivers them as scheduled “one-click” releases, complete with enterprise support, testing, and verification.

**Data Protection**

Given that data is the lifeblood of modern businesses, it is vital to ensure data security to the greatest extent possible, while also allowing analytics to operate on the full range of internal, external, and partner data. Therefore, organizational security postures must be extended to the cloud environment, and every organization should consider keeping its data in a single-tenant environment so it can be isolated from others.

Services such as security groups, route tables, and Network Address Translation (NAT) gateways should be implemented to protect data in the cloud environment. User access to specific data should be governed by techniques such as role-based authentication, single sign-on, and Lightweight Directory Access Protocol (LDAP). Support for advanced techniques such as password-less authentication and digital badges is also desirable, even as a future-proofing measure if such techniques have not yet been implemented.

In addition, more sophisticated security measures should be used as needed for especially sensitive information. Where necessary, platform providers should be consulted to help put in place and monitor the most robust, multi-level security possible. In particular, such measures may be required for compliance with regulatory frameworks such as Service Organization Control (SOC) 1 and 2, Health Insurance Portability and Accountability Act (HIPAA), Payment Card Industry (PCI), and Privacy Shield requirements.
Benefits Abound When Moving Analytics to the Cloud

Maximize TCO Benefits of Moving to the Cloud

Common best practices can help businesses of all types reap the most cost savings possible from cloud-based deployments. At the same time, these considerations also position organizations for smooth transition during the move to the cloud computing and streamlined operations thereafter.

Architects and decision makers typically start the discussion of cloud cost savings with the desire to eliminate capital expense (CapEx) in the data center. Without question, that shift from a large upfront investment to a more “pay-as-you-go” model is compelling, but it’s only part of the story.

The more complex question is how to reduce overall operating expense (OpEx) to the organization as a whole. A multi-faceted approach is needed to design a solution for the cloud that can deliver total cost of ownership (TCO) benefits.

The TCO Case for Cloud-Based Analytics

Transitioning the cost of an analytics platform from CapEx to OpEx can be attractive from a budgetary standpoint, reducing financial investment and risk, simplifying the process of getting approvals, and taking the sting out of a large one-time investment. In addition, the elasticity of the cloud model eliminates the need to buy idle equipment to accommodate usage spikes (or to pay for capacity you may never need). Organizations can build on those baseline TCO advantages with the fine-tuning measures described here.

Optimize TCO for an Analytics Solution in the Cloud

Adopting a few general guidelines and adapting them to their individual needs can help customers build on the inherent value of running analytics in the cloud. The suggestions covered in this section provide a point of departure.

Overcome Common Cost Challenges

Too often, organizations are held back by limitations in deploying and managing enterprise-scale cloud analytics that, while daunting, can be overcome if they are foreseen and planned for. Deployment can be complex, consuming large amounts of IT resources. A robust cloud-management platform can reduce setup and configuration times from days or weeks to minutes, dramatically improving time to value and allowing IT to focus on core, high-value tasks.

Once cloud-based analytics are in place, platform-management tools should be used to their full advantage to reduce ongoing costs. For example, centralized management can help avoid the inefficiencies that would
be associated with operating and maintaining multiple redundant tools. Other, related cost efficiencies that organizations should pursue with their cloud platform include optimizing the scale of the environment to avoid paying for unneeded resources, as well as automating system upgrades and maintenance tasks.

Empower Business Users

Today’s businesses place a premium on speed, and the ability of business users to put new processes or capabilities in place without involving IT can add significant value. “Self-serve” mechanisms can eliminate roadblocks and boost productivity by allowing non-technical users to create dashboards and reports without having to write code or get help from IT. That empowerment can accelerate the pace of business innovation and improve the user experience, while at the same time reducing the cost of turning data into actionable results.

Organizations seeking to take full advantage of self-service IT in their cloud-based analytics should investigate the ability of their cloud-management platform to provide end-to-end business intelligence functionality. In addition, they should place a premium on the ability of those platforms to automate distribution of personalized reports, documents, and dashboards throughout the enterprise. Making those resources available to everyone who needs them increases the value of the information.

Provide Specialized Mechanisms for IT

At the same time that it’s important to give business users the ability to meet their own requirements, it’s also necessary to recognize that more technical users have separate needs that may be more complex. Therefore, best practices include providing mechanisms for IT and other technical users to perform advanced tasks as efficiently as possible.

For example, administrators should be empowered with visual platform tools to streamline processes such as creating, deploying, and managing cloud environments. In addition, those users should have the flexibility to tailor the environment further using scripts, code, APIs, and SDKs. In particular, those measures should be usable at the platform level as well as at the cloud-environment level.

Where possible, this range of capabilities should rely on the cloud-management platform itself, rather than a patchwork of external tools. This approach helps maintain a simple, stable environment based on standardized processes, which contributes further to efficiency and saves on TCO. Organizations that find they lack key functionality that IT needs should consider implementing a cloud management platform that can address those shortcomings.

Automate Migration to the Cloud

Many organizations that currently operate on-premises analytics infrastructure hesitate to move those systems to the cloud because of migration complexity and cost. Cloud-management platforms should be considered against this set of concerns. Specifically, the availability of a streamlined means to import existing environments from the on-premises data center to the cloud should be a decision factor.

Ideally, the cloud platform should be able to copy an existing environment to a single backup file and then seamlessly import and deploy a duplicate environment to the cloud, all as a single operation. That level of automation relieves the organization from the need to manually move objects one by one or to stand up additional instances for the purposes of migration. Choosing a cloud-management platform that provides such functionality can save substantial time and money.
Benefits Abound When Moving Analytics to the Cloud

**Conclusion**

Businesses charting their course for enterprise cloud will find MicroStrategy on Amazon Web Services (AWS) to be a comprehensive approach that supports their full range of requirements. Augmenting the industry-leading AWS cloud service, MicroStrategy provides an optimized analytics platform for streamlined deployment and control, with robust capabilities using any data source and enterprise-class performance and reliability.

The platform allows resources to be expanded and contracted to meet fluctuating demand, while also ensuring high performance and reliability at any scale. It helps provide seamless upgrades of system software, without requiring customers to dedicate internal resources to low-value tasks. It also provides a rich toolset to help establish an enterprise-class, multi-level security posture.

MicroStrategy on AWS provides customers with multiple avenues to reducing TCO and increasing organizational efficiency through a more effective platform for cloud analytics. Organizations can overcome key challenges to realizing TCO savings by accelerating deployment and safeguarding efficiency in ongoing management. They can easily affect a productive balance between empowering business users with self-serve capabilities while also giving IT the tools to support more complex requirements.

Companies can also improve business processes as a whole. MicroStrategy on AWS provides opportunities to simplify IT environments by consolidating data stores to foster better integration, standardization, and efficiency. These capabilities can help organizations overcome the TCO challenges associated with ever-growing bodies of data, while reaping the benefits of next-generation business intelligence.

Using this industry-leading, enterprise-tested functionality, MicroStrategy customers can optimize current operations and prepare for whatever the future brings.


**Contributor:** Matt Gillespie is a technology writer based in Chicago. He can be found at [www.linkedin.com/in/mgillespie1](http://www.linkedin.com/in/mgillespie1).

**LEARN MORE ABOUT MICROSTRATEGY**