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AMAZON WEB SERVICES

React Faster and Anticipate Change

Uncover New Insights with your Data in the Cloud

A Guide and Assessment for Small and Medium-sized Businesses

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Introduction

What you'll learn

This eBook is intended to help decision-makers in small and medium-sized businesses understand how the cloud can help you unlock the potential of becoming a data-driven organization. Put your data to work to make more informed decisions, improve efficiencies, respond faster, and uncover opportunities.

You'll learn:

- Why businesses of all sizes can benefit from better use of their data to gain insights.
- How the cloud can help overcome common data challenges and accelerate transformation.
- How to evaluate whether your business would benefit from a modern cloud-based analytics strategy.
- What to look for in a cloud service provider.

CHAPTER 1:

Limitations of Do-it-yourself Data

Data has become a competitive advantage, helping businesses anticipate and react to change. Processing large volumes of data to identify unique insights used to be considered the domain of large companies with considerable resources and technology investments. With access to better insights, small and medium-sized organizations are also able to anticipate market trends, improve operations, identify new customers, and increase sales.

Gartner defines analytics and business intelligence (ABI) as the applications, infrastructure, tools, and best practices that enable access to and analysis of information to improve and optimize decisions and performance.[1] Properly deployed, analytics can deliver real-time insights to help organizations achieve business goals including, anticipating market trends, improving operations, and identifying new customers.

It's challenging to make data "analytics-ready," often requiring more time, resources, and technical knowledge than you have available. With data in multiple formats and locations, costs quickly add up and expertise becomes a limiting factor, forcing businesses to fall back on spreadsheets and disconnected databases.

1. Gartner, **"Gartner Information Technology Glossary."**

The five V's of Big Data:

1. **Volume:** The amount of data that exists
2. **Velocity:** How quickly data flows
3. **Variety:** The diversity of data types and sources
4. **Veracity:** The quality and accuracy of the data
5. **Value:** What can be gained by turning data into insights

Disconnected data is often called a data silo—stored data that can be accessed by one group but is isolated from others in the same organization. Data silos keep sales data from being accessible to marketing, for example. Data silos can be caused by an inability to link data coming from different sources, like cloud services and information stored in purpose-built company applications. Silos cause multiple operational problems:

- The data needed for a given workload may be split across multiple silos and is inaccessible.
- The silo where the data lives may not meet the performance requirements for a given workload.
- The silos may require different management, security, and authorization approaches, increasing operational cost and risk.
- Silos are not equipped to support the exponential growth of event data like log files, click stream data, and machine generated data.

Further, analytics requires significant storage and compute power, and that upfront investment can be hard to justify, slowing progress. As a result, organizations tend to get stuck with an ad hoc approach, limiting the usefulness of the information they can glean. It's not surprising that some businesses fall back on guesswork.

Using old or incomplete data can translate to missing big opportunities. It can also contribute to inefficient customer strategies and ineffective marketing campaigns. According to IDC, organizations with siloed data often don't have the ability to:

- Respond in the moment to new information or predict future results
- Synthesize diverse internal and external data sources into actionable information
- Get visibility into end-to-end business processes and unified customer data for a 360-degree view

CHAPTER 2:

Modern Data Architectures

By breaking down data silos, you open the door to empowering capabilities that transform data into usable insights. The best data strategies enable you to store any amount of data, at low cost, and in open, standards-based data formats. IDC defines several elements of a modern data architecture:

- **Data warehouses** in the cloud opportunistically consolidate data and provide a framework for basic analytics and reporting. Data warehouses are often purpose-built for a specific type of data and provide immediate performance, scale, and cost advantages over siloed data.
- **Data lakes** in the cloud bring together data in various silos from internal and external sources and data in various formats (structured or unstructured) to further enhance the quality of the of information gathered and increase the relevance and repeatability of the analysis.
- **Integrated data platforms** in the cloud consolidate and leverage all data sources to enable predictive analytics through artificial intelligence (AI) and machine learning (ML) algorithms, fully capitalizing on all of the business benefits of data-based decision making.

The process of collecting, cleaning, and consolidating data is just the beginning. Businesses need a data strategy that enables them to put their vast amounts of data to work to make better, more informed decisions, respond faster to the unexpected, predict what's to come, improve efficiencies, and uncover new opportunities. There are three elements to building out a modern data strategy:

1. **Modernize** your data infrastructure to be scalable and secure, including database provisioning, patching, configuration, and backups. Organizations running on-premises data stores or self-managing in the cloud have considerable overhead for management tasks such as database provisioning, patching, configuration, and backups. The right cloud provider can automate and scale to meet your needs reliably and securely.
2. **Unify** to make decisions more quickly by putting your data to work with secure and well-governed access that will scale and grow as business needs change. You can connect diverse data sources and locations, including your data lake, data warehouse, and all of the purpose-built data stores into a coherent system that is secure and well governed.
3. **Innovate** to create new experiences and reimagine old processes to generate entirely new revenue opportunities, make better and faster decisions, or improve operational efficiencies. Access advanced machine learning and artificial intelligence services for builders of all levels of expertise.

A modern data architecture will allow you to connect your data into a coherent and cohesive whole. You will be able to optimize for performance and cost, achieve unified data access, security and governance, and use the latest analytics technologies.

CHAPTER 3:

Accelerating Actionable Insights with The Cloud

One of the most attractive advantages of the cloud for small and medium-sized businesses is that it provides access to the same technologies and capabilities relied upon by larger competitors. The cloud was the number one IT priority in 2021 for companies with fewer than 1,000 employees, according to TechAisle.[2] And companies that subscribe to cloud services, on average, say they save 31 percent using the cloud compared to running infrastructure on-site themselves.[3]

Data has become a competitive advantage, helping businesses anticipate and react to change. With the cloud, capturing, storing, and analyzing all of your data is more achievable, more affordable, and more effective than ever. You can ramp up and scale quickly and securely, getting business users access to the insights they need.

The cloud can help your business modernize, unify, and innovate, so you can:

- **Increase efficiency.** Get access to broad infrastructure options, including data lakes and purpose-built data stores. Simplify data access across platforms and reduce time spent configuring drivers and managing database connections.
- **Unify business intelligence.** Make use of all of your data with secure access and governance. Build insight-driven reports and dashboards across business intelligence tools. Enable your customers through embedded analytics.
- **Reimagine your business.** Built in machine learning and access to the latest AI technologies helps transform shared data into trends and insights that allow you to make better decisions more quickly and pivot as business needs change.

2. TechAisle, **"2021 Top 10 SMB - Business Issues, IT Priorities, IT Challenges,"** 2021.
3. AWS, **"Accelerating your AWS Journey,"** 2021.

Small and medium-sized businesses may believe their data isn't "ready" or that a large investment is required. You don't have to build a team of experts on analytics infrastructure, make a large investment in hardware and software, or figure out how to link disparate data on your own. The cloud makes analytics:

- **Accessible:** Data users with various skill levels can readily access the right data to power application development and business insights.
- **Actionable:** Algorithms and machine learning systematically analyze your data quickly for timely and useful insights.
- **Affordable:** Expenses are predictable so you can reduce the runaway costs of scaling infrastructure as data continues to grow.

A cloud-based approach provides an affordable way to access the very latest tools to unlock your analytics strategy. Using the cloud takes the complexity and cost out of building a modern data architecture and opens new possibilities to empower business users with access to fresh, relevant insights.

CHAPTER 4:

Assessment: How Will Cloud-based Analytics Transform Your Business?

Every business has data generated from supplier, partner, and customer interactions that are stored and used in some way to help inform decisions. The purpose of analytics is to shape disparate data into a framework for intelligent decision making to drive the kind of competitive differentiation that can be transformational.

Starting an assessment with infrastructure requirements or concerns about the condition of your data is not uncommon, but the best test of the impact a cloud analytics strategy can have on your business is to assess how it could help fulfill your business objectives. In the below assessment, check off which factors are impacting your business to help assess whether moving to cloud-based analytics is right for you:

- ☐ We often get surprised by changes in the market and would like to be able to react faster.
- ☐ Operational costs are increasing but it is difficult to pinpoint where we could improve.
- ☐ We need an easy way to build reports or consolidated dashboards to share with management.
- ☐ We have to rely on outdated information for forecasts and other strategic activities.
- ☐ Internal users are asking for different views of the data that are time consuming to deliver or can't be done currently.
- ☐ We don't have a way to easily connect to data that resides in different sources and in different formats.
- ☐ We can't easily share data because of limitations in managing data access permissions.
- ☐ Users complain about the time it takes to run queries and they aren't able to self-serve.
- ☐ We don't feel comfortable relying on the data we can access to predict market changes or anticipate business needs.

If you checked any of the above, building analytics in the cloud could help you improve key business outcomes and enhance the value business users extract from your data.

CHAPTER 5:

Start Anywhere and Go Anywhere with Amazon Web Services (AWS)

Moving to the cloud can help you get answers quickly instead of spending time building infrastructure and configuring analytics services to work together. Working with an experienced cloud provider is an important part of a successful deployment.

Businesses of any size can benefit from AWS with cloud storage, compute, and network infrastructure that meets the specific needs of analytic workloads. AWS services provide a fully integrated analytics stack and a mature set of analytics tools optimized for performance and cost. An IDC Study of AWS Data Lakes, Analytics and ML services, sampled AWS customers and found that on average, they reduced total cost of operations by 48 percent, IT infrastructure by 42 percent, reduced time to run queries by 79 percent, and increased the number of queries by 37 percent.[4]

AWS services help you modernize, unify, and innovate with:

- Access to the latest data architectures. AWS provides the broadest selection of analytics services from data movement, data storage, data lakes, big data analytics, log analytics, and streaming analytics. AWS purpose-built services are designed to provide the best price-performance, scalability, and lowest cost.

4. IDC & AWS, **"The Business Value of AWS Data Lakes, Analytics and ML Services,"** 2020.

- Integration that accelerates time to insight. AWS has native integration between all the layers of the analytics stack enabling you to quickly analyze data using any approach. We manage the underlying infrastructure so you can focus solely on your application.
- Affordable performance. AWS offers a self-tuning system that delivers consistently fast results from gigabytes to petabytes of data, and from a few users to thousands. Resizing can be managed by AWS, and there is no limit to how often, or by how much, a cluster can scale.
- Comprehensive platform for predictive analytics. AWS offers a comprehensive platform of predictive and ML-powered analytics, so you don't have to build the expertise in house. Artificial intelligence technologies can help you uncover hidden insights and trends in your data, identify key drivers, and forecast business metrics. Business users can see root causes, improve forecast accuracy, evaluate risks, and make better-informed decisions.

AWS right-sizes the approach to help you meet you where you are in your analytics journey. You can start anywhere and go anywhere with AWS, which offers businesses of your size:

Infrastructure built for analytics. AWS cloud infrastructure is designed to scale storage resources to meet fluctuating needs with maximum durability, protect your data, and avoid the manual and time-consuming tasks of setting up data warehouses or data lakes. Infrastructure built for analytics means that loading data from diverse sources, monitoring these data flows, setting up partitions, turning on encryption and managing keys, re-organizing data into columnar format, and granting and auditing access can be done in days not months. And once deployed, you can run and scale analytics in seconds not minutes.

Built-in reliability and resiliency: With AWS, customers are able to achieve a 69 percent reduction in unplanned downtime,[5] and our extensive investment in global availability zones and redundant networks, storage, and compute help ensure that you always have access to your critical data and applications. In addition, we bring experience and frameworks to ensure business continuity, including dedicated teams and partners who can provide on-demand expertise and support.

5. Nucleus Research & AWS, **"Guidebook: Understanding the Value of Migrating from On-Premises to AWS for Application Security and Performance,"** June 2020.

Capacity and scalability that grows as you need it: AWS automatically adjusts cloud capacity to meet demand, while only charging for what you use, ensuring you have the space to grow without paying for more than you need. We constantly monitor activity to balance loads, scaling compute power and storage up or down to meet fluctuations in demand and reduce unnecessary costs, ensuring you always have enough capacity and visibility into what you are spending.

Support through best-in-class programs and partners: AWS provides the broadest and deepest set of managed services for data lakes and analytics, along with the largest partner community to help you build virtually any data and analytics application in the cloud. AWS Data and Analytics Competency Partners have demonstrated success in helping small and medium-sized businesses evaluate and use the tools and best practices for collecting, storing, governing, and analyzing data.

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Take Your First Step

Our **Gain Insights Program** is specifically designed to provide you with a vision for how the cloud and AWS services can help you achieve business outcomes through analytics. Live workshops focus on working backwards from your specific business objectives, then designing a solution and crafting an implementation plan grounded in a measurable business case.

Comprehensive demos of data visualizations and dashboards, and easy-to-use migration services are additional ways you can assess, design, and enable your analytics framework. AWS can also help connect you with a partner suited to your needs that can implement your plans and ensure a smooth and rapid ramp.

Fast moving markets make the availability of current, real-time data the only way to stay competitive. Analytics can help you make better informed decisions and accelerate your business. Data-driven insights can drive reduced operational costs, improve the effectiveness of marketing, increase competitiveness, and get you to your goals faster. No matter the condition of your data, where you are currently storing it, or how few people you have to administer it, the cloud can help you turn that data into rich insights. AWS solutions are designed to simplify your transformation and help you collect, consolidate, and clean your data so you can start identifying patterns and predicting outcomes to get ahead of the competition.

Contact us today for a free and fast assessment of your data analytics options.

Learn more about how you can turn your data into insights.