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POWERING THE FUTURE OF BUSINESS:

Why cloud solutions are vital in the race towards digital transformation

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This report serves as a quick guide on cloud infrastructures, maturity, and adoption rates. It addresses the most common challenges companies face in maintaining and improving cloud services, as well as the benefits gained from migrating. We will look at **Amazon Web Services**, the leading provider of enterprise cloud technology, to learn how companies utilize intelligent cloud solutions.

In the past decade, cloud computing has evolved from ground-breaking, new technology to the lifeblood of most enterprises. Cloud storage powers the day-to-day work that keeps companies and teams running. As a product development and digital strategy company whose core mission is to help companies innovate, Wizeline is at the helm of digital transformation trends—from AI, data analysis, platform migration, and more. While the cloud has become a ubiquitous part of both business and culture, many businesses have been slow to adopt.

This report dives into the challenges that block businesses from moving from traditional data center infrastructure towards cloud solutions. Businesses considering the change will find that migrating is a crucial step in reaching the next frontier in their respective industries.

Defining the Cloud

Not all clouds are created equal. The growth of cloud computing is segmented by public, private, or hybrid cloud use.

Private cloud

A private cloud, commonly referred to as an enterprise cloud, resides on a company's intranet or hosted data center where all of the data is protected behind a firewall[1]. It is usually managed through internal resources. Private cloud adoption can be a great option for companies who already have expensive data centers because they can use their existing infrastructure.

The drawback of a private cloud is that all management, maintenance, and updating of data centers is the company's responsibility. Private clouds are somewhat controversial because the very purpose of cloud computing is to save an organization from building and managing internal computing infrastructure. A company can lower its costs while receiving services and applications that are on par, if not better, than what they can execute internally.

Why have a private cloud? Not all organizations can give up control to third-party vendors. Proponents of private cloud use would argue there are still significant benefits to private clouds in the sense that a private cloud is a way to centralize large installations of IT infrastructure, without exposing company data to a third-party.

Public cloud

Public cloud is what people most commonly refer to when they say "cloud computing."[2] The main differentiator between public and private clouds is that a business is not responsible for any of the management of a public cloud solution. Companies store data in the provider's data center, and the provider is responsible for the management and maintenance of the data center.

A public cloud is appealing to many companies because it reduces lead times in testing and deploying new products. However, many companies feel security is a concern with a public cloud. Although companies cannot control the security of a public cloud, a company's data remains separate from that of others, and security breaches are rare.

Resources can be scaled to meet demand with pay-as-you-go pricing, and it is a low-cost option for deploying applications.

Hybrid cloud

A hybrid cloud integrates in-house IT infrastructure with other products and services to meet a business's specific and unique needs.[3] A company that uses a private cloud infrastructure might rely on a public cloud solution for backing up data and files.
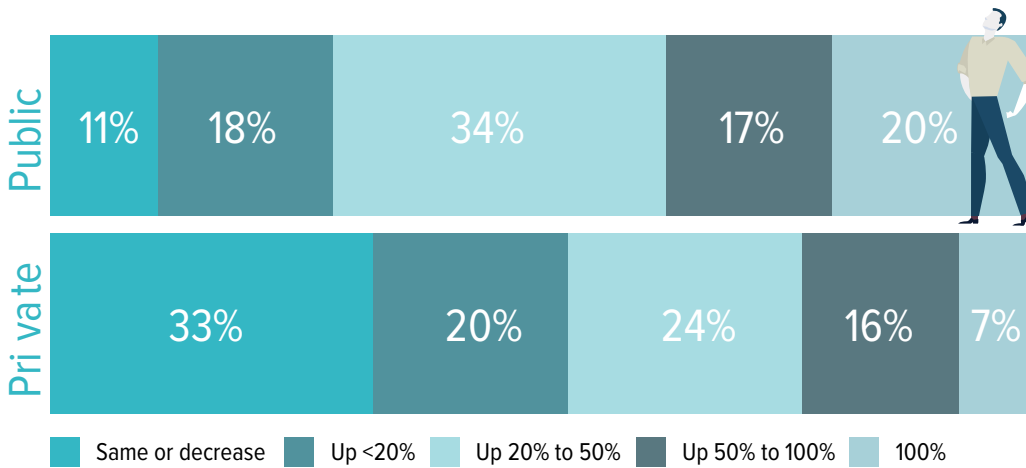
What are most businesses using?

More enterprises are prioritizing public cloud in 2018. They see public cloud as their top priority, up from 29 percent in 2017 to 38 percent in 2018. Hybrid cloud has decreased as a top priority, declining from 50 percent in 2017 to 45 percent in 2018. Only 8 percent of enterprises are focusing on building a private cloud.[4]

1   What is Private Cloud? - Definition from Techopedia. (n.d.). Retrieved from https://www.techopedia.com/definition/13677/private-cloud
2   What is Public Cloud? - Definition from Techopedia. (n.d.). Retrieved from https://www.techopedia.com/definition/26735/public-cloud
3   What is a Hybrid Cloud? - Definition from Techopedia. (n.d.). Retrieved from https://www.techopedia.com/definition/15570/hybrid-cloud
4   RightScale 2018 State of the Cloud Report™(Rep.). (n.d.). Retrieved https://assets.rightscale.com/uploads/pdfs/RightScale-2018-State-of-the-Cloud-Report.pdf

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Public vs. Private Cloud Growth for Enterprises

Public

| 11% | 18% | 34% | 17% | 20% |

Private

| 33% | 20% | 24% | 16% | 7% |

Legend: Same or decrease | Up <20% | Up 20% to 50% | Up 50% to 100% | 100%

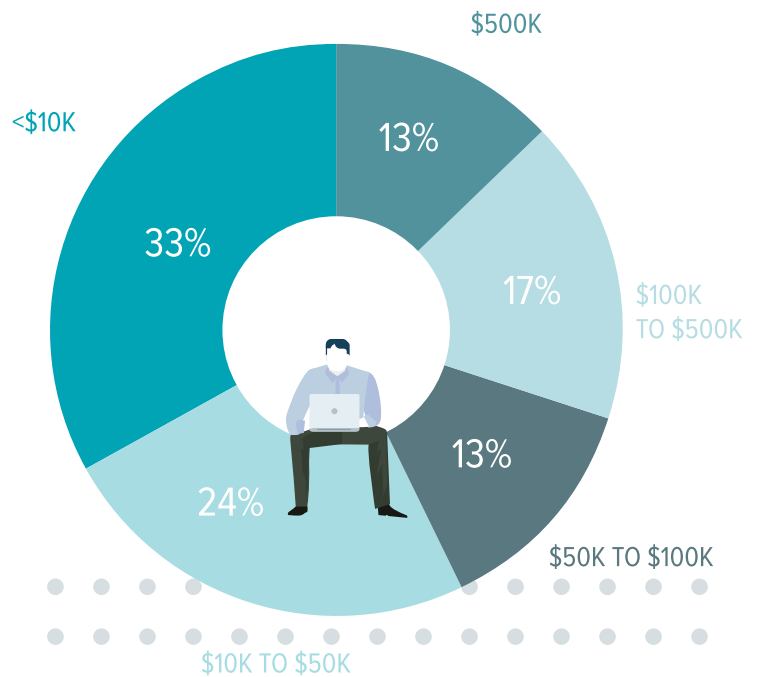Source: RightScale 2018 State of the Cloud Report

The Growth of Cloud Storage

In its annual State of the Cloud report, RightScale found enterprise cloud spend to be significant and experiencing rapid growth.

- 26 percent of enterprises spend more than $6 million on public cloud annually
- 52 percent spend more than $1.2 million annually
- 20 percent of enterprises plan to more than double public cloud spend in 2018
- 71 percent plan to grow public cloud spend more than 20 percent this year
- 23 percent will increase private cloud use by more than 50 percent in 2018.

Companies are using public cloud services and rapidly increasing their investment. 20 percent of enterprises will more than double their public cloud spend in 2018, while 71 percent will increase spend at least 20 percent. Smaller organizations (SMBs) plan to grow their public cloud use. 17 percent of SMBs will more than double their public cloud spend next year, and 62 percent will increase spend at least 20 percent.[5]
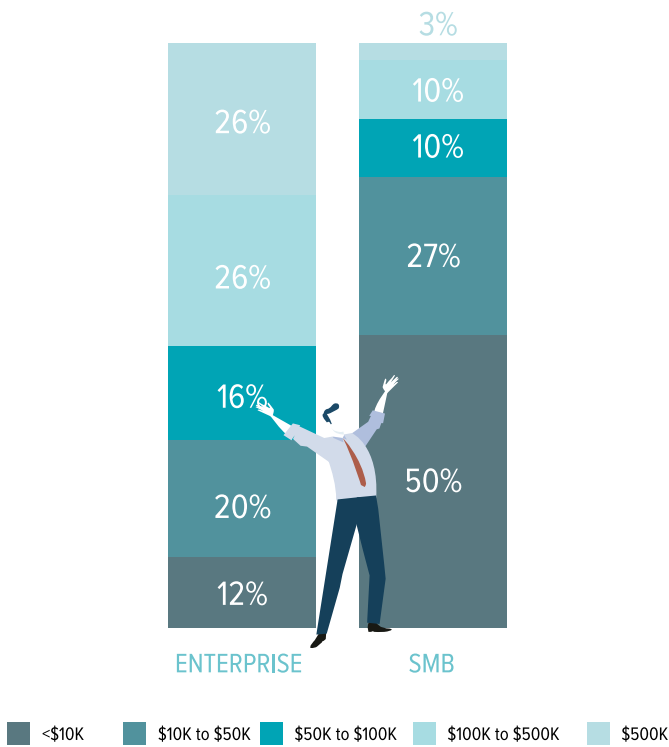
Monthly Public Cloud Spend

$500K 13%
<$10K 33%
$100K TO $500K 17%
$50K TO $100K 13%
$10K TO $50K 24%

Source: RightScale 2018 State of the Cloud Report

5   RightScale 2018 State of the Cloud Report™(Rep.). (n.d.)

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Monthly Cloud Spend by Company Size

ENTERPRISE | SMB

Legend: <$10K | $10K to $50K | $50K to $100K | $100K to $500K | $500K
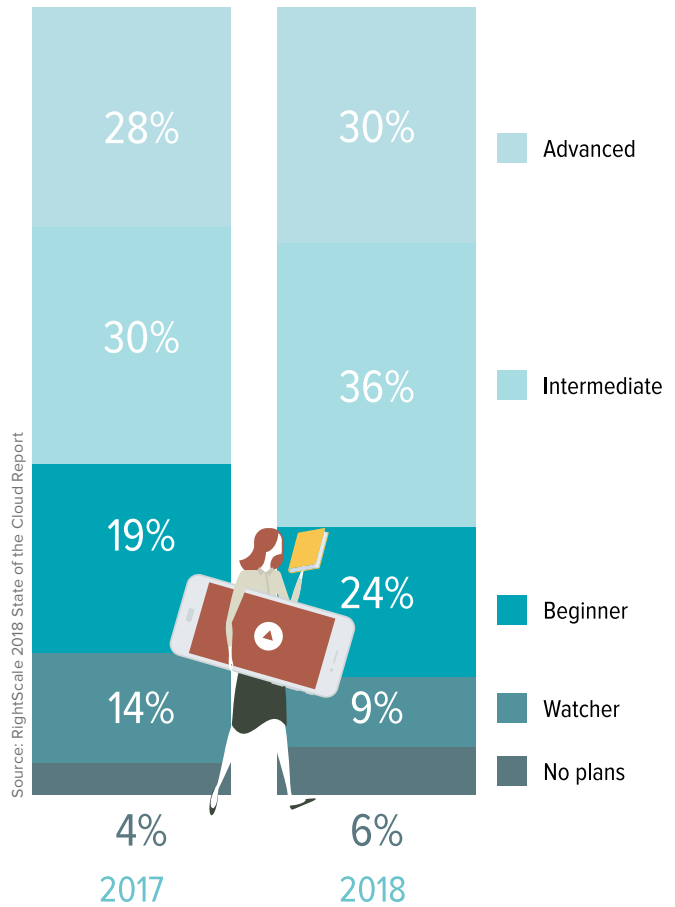
Source: RightScale 2018 State of the Cloud Report

Cloud Maturity of Enterprises

Source: RightScale 2018 State of the Cloud Report

Advanced / Intermediate / Beginner / Watcher / No plans

2017 | 2018

Cloud Maturity

How cloud solutions are adopted, implemented, and used depends largely on the organization's cloud maturity level. RightScale's report segments companies by four different stages of cloud adoption.

Watchers - Companies that are developing cloud strategies but have not transitioned applications into the cloud. Businesses in this group want to evaluate the available cloud options and determine which applications to implement in the cloud.

Beginners - Companies that are new to cloud computing and are working on proofs-of-concept or initial cloud projects. This group wants to gain experience with cloud solutions to be able to scope future projects.

Intermediate - Companies that have multiple projects or applications in the cloud. They are focused on improving and expanding their use of cloud resources.

Advanced - Companies that are using cloud infrastructure heavily. Businesses in this group are looking to optimize cloud costs and operations.

With 36 percent of respondents, the Intermediate group is the largest in 2018. Many companies in the Watchers and Beginners stages evolved to Intermediate, up from 30 percent in 2017. As illustrated in the following section, an organization's cloud challenges and initiatives vary depending on its maturity level.

Challenges to Overcome

For many companies in 2018, cloud infrastructure is a vital part of business operations. However, it is necessary to understand why some organizations have not made the transition, or have not made a more substantial investment.
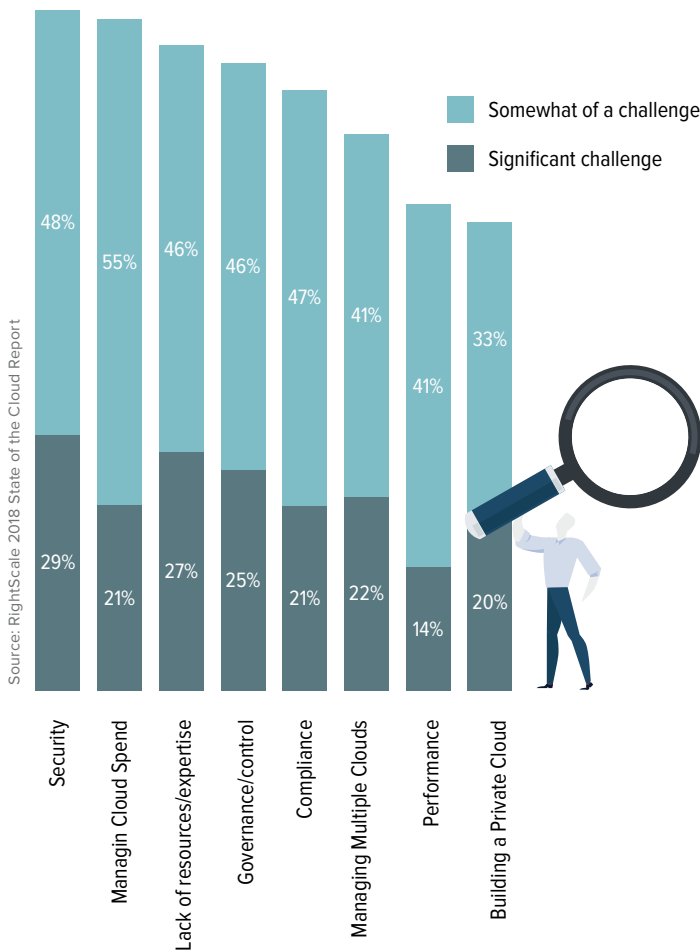
The underlying reason companies are slow to move

Wizeline often works with companies that are at the beginning of their digital transformation journey. The challenge of any digital strategy consultant is getting clients to see digital investment as more than just the cost of business. It requires a shift in perspective to thinking about digital spend as a growth strategy; as a move that will positively impact all aspects of the business. Companies that have not moved to the cloud have not done so because company leadership does not understand the core business value of migrating. Often, *no one* in the organization understands the core business value, and lack of understanding makes it difficult to prioritize.

The core business value in moving to the cloud is giving focus and agility to the business. Moving to the cloud enables companies to eliminate functions that have become unnecessary.

Cloud Challenges

Source: RightScale 2018 State of the Cloud Report

| | Somewhat of a challenge |
| Significant challenge |

Security	48% / 29%
Managin Cloud Spend	55% / 21%
Lack of resources/expertise	46% / 27%
Governance/control	46% / 25%
Compliance	47% / 21%
Managing Multiple Clouds	41% / 22%
Performance	41% / 14%
Building a Private Cloud	33% / 20%

For companies that do migrate operations and applications to the cloud, cost and security are the most commonly cited challenges.

77 percent of respondents cited security as a challenge, while 29 percent see it as a significant challenge.

76 percent of respondents said managing the cost of their cloud solutions was a top challenge, while 21 percent see it as a significant challenge.

While security is the most significant issue among cloud beginners, cost becomes the more significant challenge as companies grow and move into the intermediate and advanced stages. Enterprises tend to cite more obstacles than SMBs due to the scope of their internal operations.

Top 5 Challenges Change with Cloud Maturity

Place	Begginner	Intermediate	Advanced
#1	Security (85%)	Managing Costs (80%)	Managing Costs (77%)
#2	Lack of resources/ Expertise (82%)	Security (78%)	Security (77%)
#3	Managing Costs (80%)	Lack of resources/ Expertise (78%)	Compliance (73%)
#4	Governance/ Control (75%)	Governance/ Control (76%)	Governance/ Control (70%)
#5	Compliance (74%)	Compliance (69%)	Lack of resources/ Expertise (67%)

Optimizing cloud costs

Why is cloud spend such a challenge? In part, because cloud users underestimate the amount of wasted cloud spend. RightScale respondents estimate 30 percent waste, while RightScale measured actual waste at 35 percent.

How do companies generate waste? After all, the advantage of migrating to pay-as-you-go services is that companies can avoid having to estimate resources and spend precisely. However, with a pay-as-you-go model, companies pay for cloud services 24 hours a day, seven days a week. If a business only utilizes cloud services during its business hours, it is going to see the additional 128 hours of the week as significant wasted spend.

Organizations also tend to benefit from significant savings when they migrate initially from legacy (physical) infrastructure to cloud services. These initial savings can hinder companies from thinking about optimizing cloud costs from the start. For businesses still experimenting with cloud, cost optimization comes later.

RightScale reports that optimizing cloud costs is the top initiative across all cloud users in 2018, increasing to 58 percent from 53 percent in 2017.[6] The number of companies focused on optimizing spend is even higher among intermediate and advanced cloud users. Other top initiatives include moving more workloads to the cloud, better financial reporting, and automated policies for governance.

Despite an increased focus on cloud cost management, only a minority of companies have implemented automated policies to optimize cloud costs, such as shutting down unused workloads or selecting lower-cost cloud providers.

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6   RightScale 2018 State of the Cloud Report™(Rep.). (n.d.).

Top 2018 Initiatives by Cloud Maturity

Place	Begginner	Intermediate	Advanced
#1	Move more workloads to cloud (49%)	Optimizing existing cloud use/cost savings (65%)	Optimizing existing cloud use/cost savings (69%)
#2	Optimizing existing cloud use/cost savings (46%)	Move more workloads to cloud (61%)	Implement automated policies (53%)
#3	Implement a cloud first strategy (39%)	Better financial reporting (49%)	Better financial reporting (52%)
#4	Better financial reporting (38%)	Implement automated policies (47%)	Move more workloads to cloud (51%)
#5	Implement automated policies (74%)	Implement a cloud first strategy (45%)	Expand use of containers (50%)

Source: RightScale 2018 State of the Cloud Report

Benefits for Businesses

How do the benefits outweigh the costs?

Turn capital expense into a variable expense. Companies can pay for the computing resources they consume, instead of investing in physical data centers and servers.

Economies of scale. Companies can achieve a lower variable cost than they would on their own. By aggregating thousands of customers' usage in the cloud, providers such as Amazon Web Services can achieve higher economies of scale, which translates into lower pay-as-you-go prices.

Avoid guessing capacity. Companies can stop estimating infrastructure capacity needs. When forced to make a capacity decision before deploying applications, they end up sitting on (expensive) idle resources or dealing with limited capacity. Organizations can access as much or as little as they need with cloud computing, and scale up and down as required relatively quickly.

Increase speed and agility. In a cloud computing environment, new IT resources are a click away. Companies can reduce the time it takes to make those resources available to developers from weeks to just minutes. The cost and time it takes to experiment and develop decreases significantly, enabling teams to be agile.

Kill data centers. Companies are free to focus on the business, not the infrastructure. Cloud computing enables companies to focus on the customer experience, instead of racking, stacking, and powering servers.

Go global, fast. Companies can deploy applications in multiple regions around the world almost instantly. This freedom enables lower latency and a better experience for customers, and at minimal cost.

First impressions matter

A survey of 1,160 SMB IT leaders by McKinsey discovered that once a company decides to try cloud technology, the benefits lead the organization to feel more comfortable migrating subsequent applications to the cloud. More than 80 percent of SMBs that adopt at least one cloud solution become multiple adopters.[7] Providers should take note that while a successful initial adoption demands more careful customer preparation, it can make all the difference.

Powering Business Outcomes

As the leader in enterprise cloud software, Amazon Web Services (AWS), provides business value to companies in innovative ways. Some of the most influential companies in the world employ AWS to power their business operations. At one point these companies had legacy operations that they determined would be better served by enterprise cloud infrastructure.

Real world applications of Amazon Web Services

Atlassian

Atlassian is an enterprise-software company that project managers, software developers, and content managers use to work more effectively in teams. Its primary application is an issue-tracking solution called JIRA. Atlassian has more than 1,800 employees serving more than 68,000 customers and millions of users.

Challenge

Atlassian adds more customers every day and consequently needed an easy way to scale JIRA, which was growing by 15,000 support tickets every month. Atlassian previously hosted this site in a data center, which made it near impossible to scale. For example, the support.atlassian.com instance was hosted on a single on-premises server, which the company needed to take down for maintenance frequently. The company needed a solution that would ensure high availability for JIRA. "This is a mission-critical application, and the number of customers potentially impacted by downtime is huge," says Neal Riley,

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principal solutions engineer for Atlassian.[8] The organization could no longer rely on the resiliency and disaster-recovery capabilities of its data center.

Atlassian created JIRA Data Center, a new enterprise version of the application, to move into a more scalable environment. This new JIRA Data Center required shared storage so the individual application nodes could have a shared source of truth for profile information, plug-ins, and attachments.

Solution

AWS offered automatic scaling and reliability. The company migrated JIRA Data Center to the AWS Cloud, running all application nodes on Amazon Elastic Compute Cloud. After evaluating several options for JIRA shared storage on AWS, Atlassian chose to use Amazon Elastic File System to support attachments and log-application files for support.atlassian.com. "Amazon EFS gives us an easy way to scale our customer-facing instances of JIRA, so our teams can more quickly jump on support cases," says Brad Bressler, technical account manager for Atlassian.[9]

Atlassian created an AWS CloudFormation template for deploying JIRA Data Center on AWS, and also takes advantage of Amazon CloudWatch to monitor and optimize JIRA. Using Amazon EFS, Atlassian customers now run an enterprise version of JIRA in the cloud.

Outcomes

Atlassian tested Amazon EFS internally before using it as a shared file system for JIRA Data Center. During testing, the company discovered the technology was simple to set up and enabled consistent throughput and capacity that stayed within the threshold.

Atlassian can better manage JIRA in the cloud and can focus its efforts on enhancing applications instead. "By moving to the AWS Cloud, our company has been able to focus more on what we do well: providing great services to our customers," says Bressler. "Instead of having to spend time on managing the back-end application stack, we can really step up our game and better support our tens of thousands of global customers."[10]

Dow Jones

Dow Jones & Company is a global provider of news and business information, delivering content to consumers and organizations via newspapers, websites, mobile apps, video, newsletters, magazines, proprietary databases, conferences, and radio. It employs nearly 2,000 journalists in more than 50 countries. Dow Jones owns The Wall Street Journal, Barron's, MarketWatch, and DJX, its flagship news and analytics platform. It publishes in 13 languages and distributes content in 28 languages, combining technology with news and data to support business decision making.

Challenge

Investors use Dow Jones to learn about what's happening in financial markets throughout the world. The company relies on cutting-edge technology to keep its customers as up to date as possible on the latest news.

In Asia, about 12.8 million people use WSJ.com, which generates approximately 90 million page views each month.[11] When the lease on its Asian data center ran out in early 2013, Dow Jones needed an alternative that would allow its developers to focus more on revenue-generating applications, instead of on data center maintenance.

Dow Jones also wanted to reduce latency for its Asia-based customers—and it wanted to avoid delays in acquiring and configuring hardware.

Solution

Dow Jones leveraged AWS to improve time to market for its products. "Our applications were dependent on a particular database version," Orban says, "and a lot of redirect logic was done on a hardware load balancer. All of the non-AWS software we use work on Amazon Elastic Compute Cloud (Amazon EC2), making it possible to lift and shift, and work on optimizing the environment down the road."[12]

Dow Jones also uses AWS Elastic Load Balancing, Amazon CloudWatch, AWS Identity and Access Management, and Amazon Virtual Private Cloud to power its breadth of applications and offerings.

Outcomes

Dow Jones is now running all its Asia traffic through AWS. The organization is now able to build more products and spend less time running a data center. Overall product development velocity has increased by at least 30 percent.

The company also realized cost savings of 25 percent, more than $40,000 per year, over the cost of leasing a data center. The savings will continue each year that they use AWS. Most importantly, it has given the organization the freedom to be more agile.

The culture shift and cloud migration are allowing Dow Jones to take more risks.

"Designing for high availability in one's discrete data center is hard—it leads to very complex designs and heavy processes, which tends to make people risk-averse. Using AWS makes

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8   Atlassian Case Study - Amazon Web Services (AWS). (n.d.). Retrieved from https://aws.amazon.com/solutions/case-studies/atlassian/
9   Atlassian Case Study - Amazon Web Services (AWS).
10   Atlassian Case Study - Amazon Web Services (AWS).
11   Dow Jones Case Study – Amazon Web Services (AWS). (n.d.). Retrieved from https://aws.amazon.com/solutions/case-studies/dow-jones/
12   Dow Jones Case Study – Amazon Web Services (AWS).

it much simpler to design for availability. It's also a relief to not be preoccupied with capacity concerns, which are nearly impossible to predict for new products."[13]

Wizeline partners with Amazon

Wizeline partnered with Amazon to build a demo Alexa Skill called "WizeBank" for financial services. WizeBank uses Alexa's conversation technology to demonstrate how it could be used to effortlessly address urgent customer inquiries, cut down on the number of basic inquiries, and provide a better customer experience.

Financial services have historically been among the most resistant industries to embrace digital transformation, but as customers seek to interact with banks on their terms, these institutions have shifted to meet demand. The WizeBank Alexa Skill could handle general inquiries, such as checking a balance, setting up a travel alert, or looking up investment history. It could also report a lost or stolen wallet and check for fraud.

The partnership between Wizeline and AWS will continue to focus on providing end-to-end development support and consulting services for businesses that need solutions for migrating legacy systems to the cloud and launching new digital products.

Wizeline has a global client base, with a substantial presence in Mexico. Wizeline aims to be an agile development resource for the LATAM market, delivering scalable data and mobile applications on top of AWS infrastructure.

"As technology continues to lead our world, Latin American businesses recognize the need to tackle exciting and audacious digital transformation projects. By partnering with AWS, we can offer scalable infrastructure trusted by everyone, from startups to Fortune 500 businesses, while providing expertise in agile product development," said Bismarck Lepe, founder and CEO of Wizeline.

Takeaways

Wizeline has found that businesses are growing increasingly more comfortable with cloud storage and have seen the benefits to outweigh the risks, evidenced by increasing annual investment.

Most industries and companies are under pressure to innovate their digital products rapidly, and cloud services like AWS speed up the time to market.

Wizeline and AWS both believe that companies should focus their energy on their core business, rather than trying to build cloud or software solutions from scratch.

By leaning on experts, companies are free to focus on providing innovation and cutting-edge experiences for their customers.

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13   Dow Jones Case Study – Amazon Web Services (AWS).

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About Wizeline

Wizeline is a global product development company that helps clients solve their biggest challenges with design and technology. Headquartered in San Francisco, Wizeline is committed to collaboration without borders by sharing Silicon Valley innovation with the rest of the world. The company has offices throughout Mexico, Vietnam, Australia, and the U.S. For more information, please visit www.wizeline.com/consulting

About Amazon Web Services

For over 12 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud platform. AWS offers over 125 fully featured services for compute, storage, databases, networking, analytics, machine learning and artificial intelligence (AI), Internet of Things(IoT), mobile, security, hybrid, virtual and augmented reality (VR and AR), media, and application development, deployment, and management from 55 Availability Zones (AZs) within 18 geographic regions and one Local Region around the world, spanning the U.S., Australia, Brazil, Canada, China, France, Germany, India, Ireland, Japan, Korea, Singapore, and the UK. AWS services are trusted by millions of active customers around the world—including the fastest-growing startups, largest enterprises, and leading government agencies—to power their infrastructure, make them more agile, and lower costs. To learn more about AWS, visit https://aws.amazon.com