4 WINNING STRATEGIES FOR DIGITAL TRANSFORMATION

§sas viya

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THE CLOUD IMPERATIVE FOR ANALYTICS AND AI

Advanced analytics and AI adoption continue to grow as organizations recognize the powerful role these technologies play in improving efficiency and competitive advantage. To help accelerate digital transformation and contain costs, organizations are looking for new use cases to deploy.

Moving to the cloud, with its scalability and affordability, is increasingly attractive, and adoption has accelerated sharply during the COVID-19 pandemic as organizations strive to achieve three things:

1

Operate more efficiently.

2

Rely on analytical insights and AI to help them find answers to new challenges.

3

Deliver those insights to everyone who needs them.

3

In fact, cloud is continuing its great ascent. Some reports suggest that 92% of enterprises have a multicloud strategy, and 82% are taking a hybrid approach, combining the use of both public and private clouds.[1]

In a recent report, Gartner projects that cloud will make up 14.2% of total global enterprise IT spending in 2024, up from 9.1% in 2020.[2]

Potential total annual value of AI and analytics across industries is estimated from $9.5 trillion to $15.4 trillion.[3]

RETAIL

$470.2B
SALES AND MARKETING

PUBLIC AND SOCIAL SECTOR

$60.3B

BANKING

$261B
SALES AND MARKETING

$84.3B
RISK

CONSUMER GOODS (CPG)

$4,976.7B
SUPPLY CHAIN MANAGEMENT AND MANUFACTURING

$286.6B
SALES AND MARKETING

$53.6B
PRODUCT DEVELOPMENT

However, while cloud offers some of the answers to the question of how to accelerate the transformation to an insight-driven organization, it doesn't ensure success. This requires a series of additional strategies. First, let's examine the current challenges.

1 State of the Cloud 2020 Report, Flexera, 2021.
2 The burden of technical debt caused by COVID-19, IDG, January 2021.
3 Potential total annual value of AI and analytics across industries, McKinsey & Company.

THE ANALYTICS AND AI CHALLENGE

As organizations have leaned on the IT department to navigate through the pandemic, analytics and AI have received greater attention and investment, and will continue to do so during the recovery.

Despite successes, organizations are still struggling to develop a coherent analytics and AI strategy. IT and data science leaders are still working to:

Accelerate analytics and AI adoption

During the pandemic, many analytics projects were delivered as a tactical response to solving an urgent problem. Technologies have, in many cases, been deployed in piecemeal fashion, and getting models into production is still cumbersome and slow. Moving forward, the challenge is how to support further rapid use case adoption using these investments, and accelerate the pace of operationalizing analytics.

Gain value from existing investments and processes

Even though organizations have prioritized analytics and AI, many are facing significant budget challenges. Supporting the move to remote working, dealing with the rise in cybercrime and putting data privacy measures in place have all required budget. So the challenge is how to extract more value from analytics without a whole lot more investment.

Using the cloud for analytics

So far, cloud has delivered an evolving set of benefits as an environment for deploying analytics and AI. Again, analytics and IT leaders must examine how they can drive further efficiencies and avoid compliance risk while mitigating the issue of cloud vendor lock-in.

Mitigating technical debt

During the pandemic, necessary technical debt has deepened.

Joe Pucciarelli, IDC Group Vice President and IT Executive Adviser, explained that when the pandemic struck, IT leaders were forced to make "command decisions" that increased technical debt.

We must address this debt as we move out of the grip of the pandemic. According to analysts at Gartner, **"technical debt – which is often created when speed of delivery is prioritized over implementing the most suitable tech solution – will shadow CIOs through to 2023, causing financial stress, hobbling their ability to recover and forcing cloud migrations."**[1]

IN SUMMARY

The pressure is now on IT, and data science leaders need to accelerate the adoption of analytics and AI through a cohesive strategy. Finding creative ways to extract more value from existing investments is key, especially as technical debt continues to be a major challenge.

What's possible when value is optimized?
You get incredible use cases that change lives and disrupt industries, such as Amsterdam University Medical Center (Amsterdam UMC).

Together with SAS, Amsterdam UMC is transforming how it evaluates tumor response to chemotherapy. Using AI capabilities, including automatic segmentation, doctors are able to quickly identify changes in the shape and size of tumors and better determine how a patient is reacting to treatment.

Hear from the experts
Listen to Mark Koster, Director of Strategy and Innovation at Amsterdam UMC, discuss how his organization uses AI to fuel innovations that could help solve many health care challenges.

Listen to Azam Nurmohamed, Chief Medical Information Officer at Amsterdam UMC, discuss how the rapid increase in health data can help physicians deliver optimal care with AI-powered treatment suggestions.

"There are a lot of people working with SAS® Viya® who do not have analytic or data science training. For us this is the next phase of analytics, and I see tremendous opportunities ahead."

Dr. Geert Kazemier, Professor of Surgery and Director of Surgical Oncology, Amsterdam UMC

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KEY RECOMMENDATIONS

Here are four ways the most successful organizations build analytics and AI strategies to differentiate and create resilience.

MOVE TO THE CLOUD INTELLIGENTLY

Make continuous assessment of cloud-native technology a priority.
If the investments you've made so far have not been cloud-native, you should still continuously review emerging technologies and course-correct. If you have embraced some cloud-native technologies, we advise building in regular checkpoints to evaluate what's new – the technology is constantly evolving, offering new ways to drive efficiency.

Think multicloud.
Many leading organizations adopt a hybrid cloud approach. This approach combines both private and public cloud architectures, allowing these organizations to start slow, retrain staff and make the most of what each technology can offer.

Modernize your approach.
Lift-and-shift to virtual machines has some benefit, but consider technologies that take full advantage of modern services, like containers and Kubernetes, for rapid, efficient, scalable cloud deployments.

Use managed application services (MAS).
Consider removing the burden of managing your analytics applications by working with a provider offering MAS. These services ensure the application layer is reliable and secure, and frees IT to focus on managing the IT infrastructure of the entire organization.

ASSESS YOUR CURRENT MODELOPS PROCESSES

Assess the value analytics and AI deliver.
According to McKinsey & Co., there is between $9 trillion and $15 trillion in analytics and advanced AI value that is unrealized across all industries.[1] Much of this comes down to failure to define the use case well enough and/or put models successfully into production.

Focus on the last mile.
Leading organizations strive to shorten the development cycle. Much like the DevOps approach to software development, ModelOps is an approach to model development. ModelOps facilitates continuous iterative improvements so that models can adapt quickly to changes, such as changes in customer behavior or demand, financial strategies, etc. This allows them to get to, and drive through, the last mile of development, operationalizing models quickly to create business value sooner. Cloud, with its rapid deployment and scalability, is an important enabler for ModelOps.

Sync your compute requirements with your development needs.
Different compute patterns require different resources. Some require massively parallel processing, while some demand single threads. For others, CPUs or GPUs are needed. Cloud allows you to consume a variety of resources more cost-effectively than you might otherwise. It's important to ensure that your analytics platform can support all these compute patterns without having to traverse disparate toolsets.

Create a continuous improvement process.
If you're not careful, models embedded into decision flows can deteriorate over time, negatively affecting decision making. Building a continuous improvement process using ModelOps will allow you to efficiently iterate, tune and improve models so that decisions are based on trusted results.

ENABLE A LARGER COMMUNITY TO SUPPORT DATA SCIENCE PRACTICES

Deliver analytic capabilities that continually adapt to users' needs.

Choose a solution that allows application developers and data scientists to work closely together – think APIs – so that they can respond to evolving business needs efficiently.

Deploy analytics and AI where the data is.

Consider moving compute to where the data lives for modeling (increasingly, this means the cloud). At the same time, move scoring to the end points – for example, mobile applications and operational systems – but make sure you have end-to-end visibility across those platforms.

Embrace automation and democratizing tools.

Use low-code/no-code user interfaces – a visual drag-and-drop development environment – to simplify the development and execution of models and decisions. That allows everyone, from developers to data citizens, to collaborate. For example, data scientists and business analysts can work on the same problems using the same data.

EMBRACE GOVERNANCE

Underpin analytical experimentation with control.
The more you democratize data and analytics and allow a range of users to experiment, the more important it is to put rigorous checks and balances in place. Without them, you could erode trust and slow down decision making. A unified, built-in approach to governance is best – one that aligns data use to your organization's confidentiality agreements, government regulations and industry requirements. Make it a key part of training for all levels of users to repeat regularly, not just when regulations change.

Streamline data management.
To drive analytical value, you need people to spend less time wrangling data and more time analyzing it. Look for an analytics solution that includes automated data preparation (one that uses AI to explain and assist with data transformations). That automation will make you less reliant on IT and accelerate the process of getting quality data into your models.

Build in transparency.
First, make sure you can clearly demonstrate how you're using data in analytical models and introduce auditable analytics processes. This will improve trust among users and customers whose data is being used to make decisions about them. Second, choose an analytics capability that uses natural (human) language to explain model results to users; this is especially important for users with less advanced data science skills.

Use governance to help reduce technical debt.
Moving forward, apply rigorous governance across all use cases to help reduce technical debt (technical debt is accrued when organizations take calculated shortcuts to expedite a deliverable). By standardizing processes and governing model code, regardless of the language it was written in or tool used to create it, debt can be better managed because that eliminates undocumented ad hoc processes and makes them more stable, repeatable and explainable.

CUSTOMER SUCCESS STORIES

THE NATIONAL BANK OF GREECE (NBG)

NATIONAL BANK OF GREECE

Using SAS Viya on Microsoft Azure has allowed NBG to achieve its goal of becoming a more efficient, agile and customer-centric bank.

About NBG

- **180** years of ongoing operation.
- **5.5** million retail customers.
- **378** branches and **1,487** ATMs.
- Is executing a business transformation plan to become more agile and modern while improving profitability.

SAS® Viya® use cases:

- SAS Viya is now the central analytics management platform for the bank's Business Analytics Center of Excellence (CoE).
- More efficient processing and more valuable utilization of structured and unstructured data support daily decision-making processes.

The National Bank of Greece was the first commercial bank in the country. Today, it plays a vital role in supporting the Greek economy, contributing to national development, and promoting social transformation.

However, in recent years, NBG drafted a demanding business transformation plan to become more agile and modern while improving profitability. At the same time, the bank's leaders prioritized relationships with customers to propel NBG toward becoming the bank of preference for Greek businesses and private individuals by 2022.
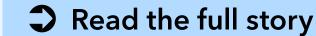
With SAS Viya, the organization is able to boost agility, speed and efficiency in the CoE's development of a new analytics infrastructure, which in turn decreases the costs and complexity of processes, including decisioning.

The benefits are:

- **Flexibility:** Running SAS Viya on Microsoft Azure provides users with immediate availability, scalability and a flexible choice of coding languages.

- **Cost efficiency:** Cloud pricing also gives the bank a clearer understanding of its total costs.

- **Collaboration:** SAS Viya allows internal stakeholders within the CoE to collaborate by more easily sharing data sets, reports and models.

- **Speed to deployment:** Self-service data mining, artificial intelligence and machine learning capabilities will enable NBG to quickly address complex business challenges.

"**The bank has set certain strategic goals, one of which includes the increase and enhancement of income sources via a customer-centric approach. A second goal pertains to the improvement of the organization's agility against global economy changes, also entailing a more sufficient management of operating expenses and processes. Therefore, investing in analytics is a strategic decision that will help NBG achieve its goals.**"

Pantelis Maraveas, Assistant General Manager of Retail Segments, Bank Analytics and Liability Products at NBG

➲ **Read the full story**

COPD FOUNDATION

COPD FOUNDATION

Natural language processing and machine learning support community outreach for COPD patients.

About COPD Foundation

- Founded in **2004.**
- **50,000** online community members.
- **320 million** people diagnosed with COPD.

SAS® Analytics and AI use cases:

- Sentiment analysis – analyzing the results of free text surveys.
- Providing targeted support and advice to patients around the world during COVID-19.

The COPD Foundation's mission is to prevent COPD, improve the lives of those affected by it and stop the progression of the disease. With nearly 50,000 community members, the foundation can gain firsthand insights from those affected by COPD, enabling it to better serve this community.

"While we have a fantastic platform to collect information, we needed to partner with someone who could help us expertly gather and analyze everything coming in so that we could understand what the data was saying and how to best respond," explained Vincent Malanga, Chief Information Officer of COPD Foundation.

The foundation chose SAS for in-house natural language processing of text data generated by survey responses on COPD360social, allowing it to explore volumes of unstructured data, identify patterns and create reports to help with community outreach and support.

"The speed at which we can analyze data with natural language processing software is unheard of in traditional research settings. What would have taken me three months to do in another setting, line by line analysis, I can do very quickly with SAS," explained Danielle Boyce, Senior Research Data Analyst at the COPD Foundation.

"SAS has world-class analytics, where it's scalable, secure, flexible and extendable. We want software to be able to conform to what we need to do in the future – like possibly integrate with open source solutions and pre-trained language models – and SAS gives us that freedom. We knew we wanted our SAS solution hosted in a cloud environment, which is why we went with an Amazon Web Services infrastructure," said Malanga.

Benefits of running SAS on AWS

In addition to ease of use, speed to deployment and lower cost,

three more benefits were key for the COPD Foundation:

- **Scalability:** When it comes to implementing an infrastructure to support software, scalability is always a key component – especially when you're looking at tremendous amounts of unstructured data.

- **Security:** Security is paramount, and AWS provides a much more robust security infrastructure than we could implement with an on-premises solution.

- **Uptime:** With the redundancy in place in the cloud environment, you have much more availability of services when they're needed, and don't have to worry as much about disaster recovery plans.

⮌ **Read the full story**

HOW CAN SAS HELP?

SAS understands the challenges you face – we've been working globally for decades to make the possibilities of analytics and AI real.

SAS has been intensifying and evolving its technology, SAS Viya, to help organizations successfully navigate through the pandemic and beyond, driving business value. Viya, and the analytical and AI capabilities it delivers, will help you create a cohesive analytics and AI ecosystem that will support all your use cases.

SAS is also continuing to expand cloud-native support for Viya running on major cloud providers. This includes Microsoft Azure – our strategic partner and the foundation of the SAS Cloud – as well as Amazon Web Services and Google Cloud. SAS Viya enables your open analytics ecosystem, accessible from unified graphical and programming interfaces, in the coding language of your choice, giving you the freedom to experiment and create.

SAS® Viya® can help you execute on your growing number of use cases in the following ways:

Reality-tested AI
Use proven AI to operationalize insights so you can find and act on hidden opportunities before the competition.

Resilience amid uncertainty
Balance costs and agility with a cloud-native platform and built-in automation that allow you to strengthen your operations.

Faster outcomes, trusted results
Massively parallel processing delivers results in seconds, not hours. Plus, built-in governance makes your decisions repeatable, explainable, transparent and trustworthy – no matter the scale of your data, users and workloads.

Empowerment for everyone
Democratize data and analytics so that everyone can make faster, better decisions. Unify disparate technologies, skill sets and processes with end-to-end capabilities powered by automated AI.

Now is the time to take stock and evaluate how cloud fits into your overall long-term analytics strategy. It can play a pivotal role in accelerating your continued digital transformation. During COVID-19, IT and analytics leaders, in particular, have had to make tough decisions about how and where to invest to get their organizations through tough times. Often this has exacerbated existing technical debt. If this continues, the costs and complexities that result will have some worrying side effects – ultimately undermining analytics-driven decisions and failing to optimize the value of analytics across the organization.

Instead, start asking these questions: What role should AI and analytics play in our transformation going forward? How can we build cohesively on the capabilities we already have? How can we make new and exciting use cases a reality – quickly – while protecting the trust we have built?

SAS Viya helps you quickly transform raw data into operational insights and make confident decisions at every moment.

➲ **Visit the SAS AI Resource Hub**

MAXIMIZE BUSINESS VALUE, MAKE BETTER DECISIONS, DELIVER TRUSTED OUTCOMES

Contact us to learn more about SAS Viya.

sas.com/viya

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