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WHITE PAPER

The Challenging Opportunities of Cloud Banking

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The cloud is this new dimension where many wonderful things happen, and banks can explore the most profitable opportunities. And it is time for a change! The financial industry is making its first steps into implementing cloud technology but is yet to realize its full potential. We are witnessing a new industrial revolution when the banks' drive to digitize financial products and services is greatly accelerated. And that's a good reason for the financial industry to adopt cloud technology in their strategy.

“

Cloud computing represents a turning point in banks' efforts for growth, expansion, and evolution per se. It will have far-reaching implications for financial institutions when done right. Preparations for the future cloud-first world must start now as the race for tech talent, reliable cloud partners, and net zero efforts grow tremendously.

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Momchill Zarev
CEO, Sirma Solutions

To name a few factors: scaling up or down when needed, access to unlimited flexibility, improved security, and providing the latest innovative technologies to users.

The banks of the future will be a lot more different from today. With recent emerging technologies, customers' expectations are driving the demand for a native banking experience across platforms and devices 24/7 without interruptions. Many financial institutions have embraced advanced technologies to stay relevant and competitive in their niche. The pandemic has forced many of them to review their business strategies. Many banks reduced their branch networks and invested in digital cloud

82%

of banking IT executives say they have a clear strategy for adopting cloud technology

solutions to reach and serve customers. According to surveys, 82% of banking IT executives say they have a clear strategy for adopting cloud technology [1,2]. Being the best at utilizing all cloud banking advantages is the right way to gain a competitive marketplace. This article examines how financial institutions' data and analytics are crucial and how the cloud may positively impact the banking business. We also offer best practice advice on getting the most out of your cloud strategy.

Let's jump into the cloud together and explore its untapped opportunities for banks.

Recognizing the need for cloud computing



“A journey of a thousand miles begins with a single step.” Before everything, the conversation about optimization and expansion of core banking functionalities needs to take place where the thought about cloud migration makes the most logical next step.

Modern cloud technologies are more than adding and integrating single products and services. For banks to succeed in their business transformation initiatives, they must be able to efficiently acquire and manage data and generate pertinent analytics and insights. There are comprehensive cloud solutions for the full service of banks as enterprises, the so-called cloud banking platforms that offer elastic scalability for data computing and

dynamic storage, analysis, and performance reporting. Such a modernization gives the banking users the advantage of composing their offers according to the objectives and the market demand. Improving key business metrics and driving customer satisfaction rates up requires a new digital-first mindset and embracing the evolving global digital landscape. And all starts with cloud migration. After years of resistance and using on-premise servers exclusively, bank leaders are finally considering leveraging cloud computing.

More and more IT leaders, C-suite executives, and board members in the banking industry are already contemplating this process. But can the cloud live up to its promises? Let's find out together!

Why is it essential for banks to adopt the cloud?

By exploring how other organizations use the cloud to their advantage and learning from industry professionals, we will have a broader look at potential implications in the financial industry. According to a Foundry study, 69% of companies have accelerated their cloud migration over the past 12 months expecting in the next 18 months to leap their IT infrastructure in the cloud from 41% to 63%. What cloud computing did for them is increased sustainable revenue even

69%

of companies have accelerated their cloud migration over the past 12 months

in the face of recent uncertainties.

A cloud adoption study by O'Reilly found that finance and banking are among the most proactive industries [3]. Respondents in this study who are already using the cloud have also shared their most significant concerns: managing costs (30%) and compliance (15%). Another survey by Crowe among the U.S. banking industry[4] shows the tremendous benefits of cloud usage, with 77% seeing increased scalability, followed by 75% saying that the cloud helped them remain active during disruptions by allowing them fast recovery and continuity. Something that is also well worth mentioning here is that in third place, banks have placed a lower total cost of ownership at 45%. The conclusion is that cloud computing seems an affordable alternative to on-premise infrastructure.

All this proves that three shifts need to happen for accelerated cloud migration

McKinsey report states banks pursuing development beyond nascent cloud programs must undertake critical shifts across three dimensions: strategy and management, business-domain adoption, and foundational capabilities[5]. The organization's priorities, particular needs, and the stage they have reached in its cloud journey will define the chosen dimension.

First and foremost, it is essential to note that the banking transformation will start when the core value of cloud computing builds its awareness across the financial industry about its practical implications. Changing

the mindset from viewing the cloud as a considerable expense and no current business justification to a scalable solution. Decision-makers must support cloud migration and set a strategy in place.

1

Strategy and management

From	To
Migration in pockets	Well-thought-out path to scaling
IT infrastructure cost savings	Strategic partnerships with cloud service providers
Tactical cloud procurement	IT infrastructure cost, resiliency, developer velocity, and business-acceleration benefits
IT-led transformation with limited buy-in from business	Business advocacy and understanding of benefits

Source McKinsey & Company

Second, capturing the cloud’s full potential comes with the understanding that it is the tool to unlock business opportunities by implementing future-ready technologies. Cross-functional teams must clearly outline the business value generated from cloud migration so the entire process would be oriented toward banks’ goals. Having a

step-by-step approach and migrating one business domain at a time is recommended. From there, a repeatable course can be conducted by “building a pipeline of business use cases that can be enabled in the cloud, such as advanced analytics use cases, AI-enabled process automation, and innovative customer journeys.”

2

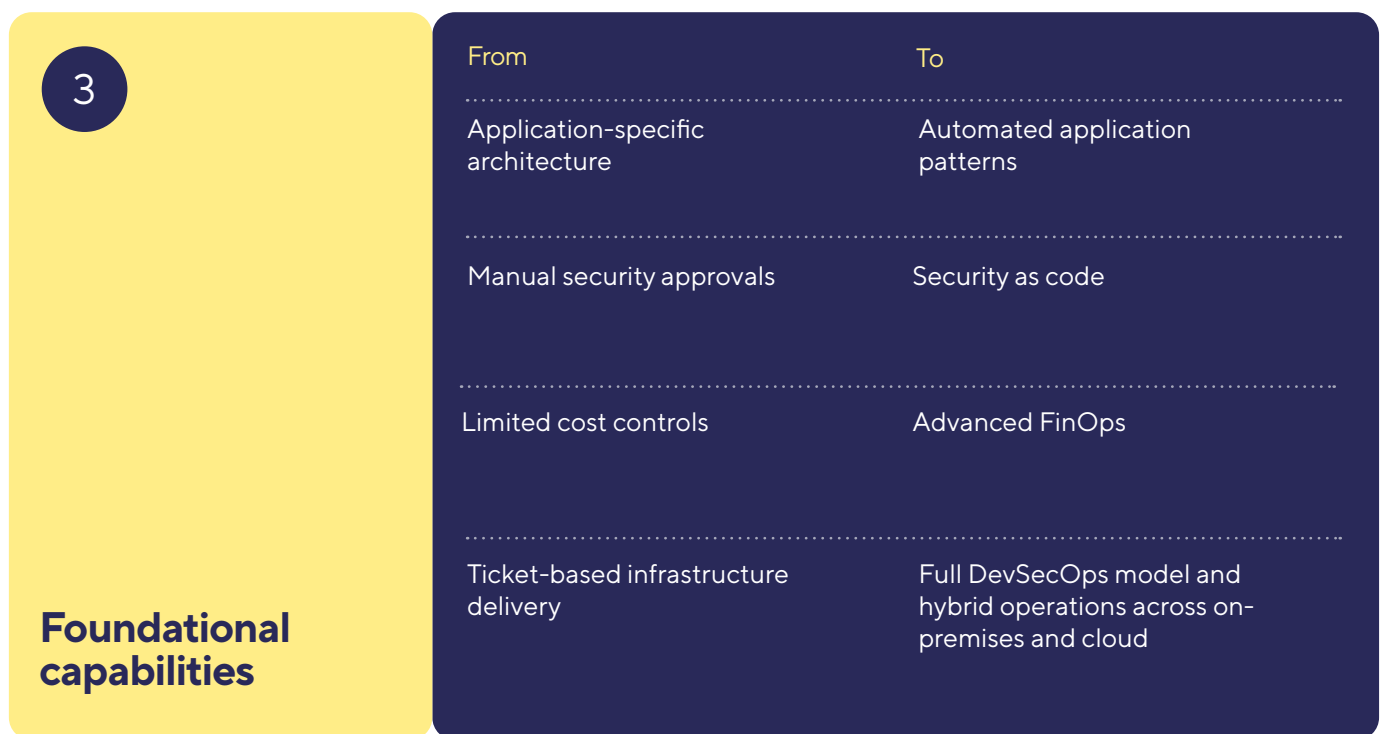
Business-domain adoption

From	To
IT Modernization	Business transformation
Lift and shift	Applications optimized for the cloud

Source McKinsey & Company

Building a solid foundation is the third pillar of a sustainable long-term cloud computing approach. Essential prerequisites need to be set in place before cloud transitioning. Investing in a robust cloud foundation means addressing the infrastructure, security, and governance processes before investing in the migration itself. If not considered beforehand, it creates an

economic reality with many operational issues directly reflected in tech debt. This situation can be easily avoided by pulling from the cloud tech stack and using infrastructure as code (IaC), as well as other tech solutions such as continuous integration/continuous delivery (CI/CD), the policy as a code (PaC), and security as a code (SaC).



Source McKinsey & Company

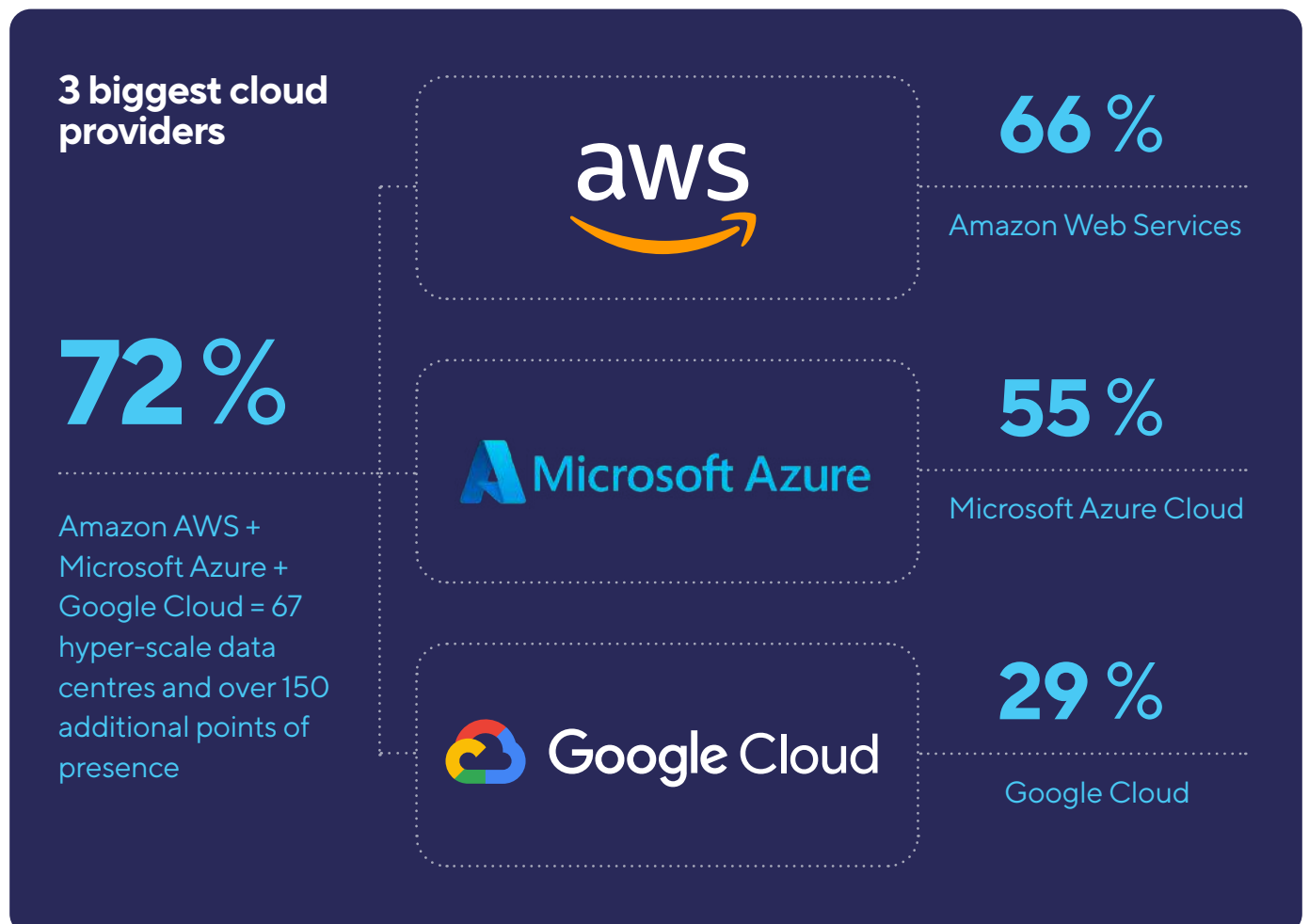
The cloud migration process is rather lengthy and complex but worthwhile. A competitive edge would be reached when planned and executed with the right strategy. Then, due to automation efforts in the cloud, a FinOps (financial operations) approach is introduced

for dynamically managing application costs in the cloud, which additionally reflects in cost adjustments in a way that the cloud spending budget is in check with the overall business strategy.

What is the state of cloud adoption in Europe, and where do banks position in it?

The cloud computing market in Europe is fast-growing and adaptive. It accommodates the needs of many industries, including banking and financial once. The three biggest cloud providers (Amazon, Microsoft, and Google) account for 72% of the European market[6]. As of 2021, Amazon AWS, Microsoft Azure, and Google Cloud combined have 67 hyper-scale data centers in Europe and over 150 additional points of presence. With plans to expand and heavily invest in keeping their market leadership on

the old continent, they will continue offering competitive cloud services. These three companies are well-known cloud providers, so the finance and banking sectors also trust them, with 66% saying they use Amazon Web Services, 55% being in Microsoft Azure cloud, and 29% have implemented Google Cloud[7]. The overlapping percentage proves another concept of cloud computing – using multiple providers, which will be discussed further in this document.



According to a 2022 research report commissioned by the European Cloud Alliance[8], companies in Scandinavia countries, as well as the Netherlands and Italy, are high adopters of the cloud, with over 60% of them using cloud computing services. A staggering 70 percent + of all companies in Finland and Sweden are in the cloud. In Estonia, Malta, and Belgium, at least half of the entities have emended cloud in their operations. Germany, Spain, Portugal, and the Czech Republic follow the list, with 31 to 49 percent of companies already using the cloud. Interestingly, this survey found that “The share of companies that have integrated cloud computing services into their business processes increases with the size of the company.” This points out the importance of cloud adoption when banking and financial companies are scaling their operations.

5%

only 5% of European banking operations are currently cloud-based, and a shy 3% are running core banking exclusively in the cloud.

Technology companies like Sirma fully understand that banks and financial institutions have more conservative views toward digitalization, including cloud computing adoption. Nevertheless, considering recent global changes and uncertainties, more board members, C-level managers, and directors are seeking consultations for transitioning into the cloud. As financial service companies and banks

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Although we see the spark coming from many companies to be in the cloud, only 5% of European banking operations are currently cloud-based, and a shy 3% are running core banking exclusively in the cloud.

now offer products and services online via their website, chatbots, mobile applications, and more, they see the potential untapped opportunities in the continued building of IT infrastructure supporting business KPIs. That said, the best way to offer digital services on a large scale, as banks and financial institutions do, is by leveraging the cloud. Cloud infrastructure is scalable, flexible, and cost-effective.



Leverage the Cloud Positives for Untapped Business Potential

What the vast majority of companies want are happy customers. And what customers need is flexibility, a fast and seamless experience, and 24/7 access to their wallets. Many financial organizations still struggle to ensure the best experience and lack the capabilities to match customers' high expectations with current offerings. We agree that some concerns may interfere with security, compliance, and cost. However, it is possible to address them even if the banks feel that overall cloud migration is mission impossible. To do so, they must evaluate the cost of such migration and embrace its advantages. Some of the most significant benefits are:

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When working on a new project implementation, we always try to fully present and argue what the business benefits of cloud migrating are. We answer every question related to application portability or compatibility or what the process of adapting to this new way of doing business entails, and how it will affect operations.

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Radostina Georgieva
Banking Software Consultant

1 

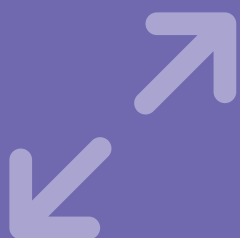
Flexibility

The enormous amounts of data created daily by banks and financial institutions need to be processed, stored (in a few different locations), analyzed, accessed, maintained, and drawn conclusions from. The positive that the cloud brings in all these casualties with silos of data is the fast and easy access to data, its AI-driven analysis, automotive risk mitigations, deep learning analysis, and of course, fully compliant regulatory reporting.

3 

Cost efficiency

Massive saving costs include new servers, storage capacity, processing power, maintenance, and IT staffing needs. More are running in the background, supporting organizations day-to-day. An integral part of doing business is optimizing costs to suit planned activities as best as possible. Saved costs on unutilized hardware, software, and maintenance services increase in the long run. This is why there is no need to build and maintain their own data centers when banks can instead use the pay-as-you-go pricing models of cloud providers.

2 

Scalability

When the business needs change, so has the IT infrastructure. In synchronized accordance with demand, the cloud will respond to any change in a split second. The quick and easy fixes of cloud needs are possible without worrying about going through the extensive process of building new servers, storage rooms, etc.

4 

Security

Heavy investments in security are expected from all finance companies. Although there is a misconception that the cloud is not secure enough. Even public cloud providers have enhanced security than most on-premises systems. The cloud environment

offers multi-layered protection against any cyber-attacks and data breaches.

5

Compliance

Robust regulatory compliance programs must be set in place and constantly work in favor of banking and financial companies. Cloud providers can quickly help banks meet every requirement, as they also adhere to these same regulations. Compliant infrastructure and services, audit trails, and monitoring tools are used for reaching the highest Standards, such as GDPR, PCI-DSS, or HIPAA.

6

Innovation

The wide world of possibilities can be unlocked by cloud adoption. Tech advancements such as conversational chatbots, more secure payment authorization via blockchain, and more will significantly impact end customers. Every bank can accelerate its operations with the latest innovative tech on the market if they move to the cloud first.

The opportunities grow exponentially as soon as banks migrate to the cloud. As soon as they realize the untapped potential lies in their mountains of data and all the possible ways it can be used – cloud computing will become a no brainer. Pretty soon after that, customers will have hyper-personalized and more native experiences, which will lead to higher satisfaction rates and user retention.



Barriers and Challenges to cloud adoption by banks and financial institutions

Our mission has been to address the obstacles that keep banks and financial institutions only peeking through the open door of opportunities for almost two decades. Cloud migration often sounds intimidating initially, as it usually comes with many challenges for the enormous industry machines of banks and financial institutions. Some barriers have been lifted for successful cloud adoption. Here are highlighted some of the main obstacles paving the journey toward the cloud:

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CIOs must choose the right cloud strategy and a reliable technology provider while being challenged to maintain the continuity and reliability of core business operations. This situation undoubtedly puts enormous pressure not only on them but also on the business lines.

”

Momchill Zarev
CEO, Sirma Solutions

1

Costs

Banks' first concern is cost control. They want to tap into the cloud cost-effectively with upfront budget estimates about moving and maintenance costs. CFOs are willing to invest in the cloud as long as it reflects in growing overall revenue and lowers the costs of business operations. And the cloud certainly offers the flexibility to capture cost efficiencies via dynamic pricing directly correlating with business needs. By doing so, granular spending control mechanisms facilitate the pay for tech. Contemplating the execution of cloud strategies sure has a lot to do with costs. Still, in the long run, costs would be reduced by AI-powered data analysis.

Experian has implemented Oracle Cloud, which reduced cost by 60%, increased performance by 40%, as well as increased reliability and resilience.

2

Security

Banks operate with enormous amounts of sensitive information and must rely on robust and enforced security measures. Keeping everything in strict confidentiality is a top priority for banks and financial institutions, and they cannot afford to risk any breaches. Selecting exemplary cloud service and deployment and operating models are critical to addressing security concerns and data protection. In the beginning process of laying the foundation of cloud migration, every security measure is thoroughly talked thru as it is not something that can be added at a later stage. Furthermore, enterprises benefit from built-in security measures in the cloud. Essential aspects of security hygiene, such as authentication, authorization, backups, and updates, look more complex in the cloud. This is why a trusted cloud partner would be a valuable part of the cloud migration process. A leading consulting company reports that "public cloud infrastructure-as-a-service (IaaS) workloads will encounter 60 percent fewer security incidents than those in traditional data centers"[10,11].

3

Regulations

Cross-border regulatory restrictions are holding many banks and financial institutions back from cloud migration. As cloud computing is also heavily regulated, it can help with the ever-evolving regulatory requirements. Compliance is indeed critically important when operating in multiple jurisdictions. The early cloud adoption stages must consider regulatory reporting on risks, liquidity, data security, anti-money laundering, fraud issues, and more. Critical data has to be held in a private environment; less vital and confidential data can be on a shared cloud, and in the public domain, non-critical info is stored.

4

Complexity

Added complexities make the road to cloud adoption slightly bumpy. But this is only when trying to deal with them all alone. Cloud providers and IT companies will make sure to make all systems cloud-ready. When used in conjunction with the migration and implementation scale, it gives a good indication of the risk that can be attributed to migrating the system in question. It is way more beneficial to organizations to accept external help from established technology providers.

5

Skillset

Banks and financial institutions point out that the lack of cloud skills, investing in training, and hiring are holding them back from the cloud. Talent is always challenging to find, but human capital is crucial for cloud migration. The process requires a skilled workforce who understands the cloud's underlying technologies. Nonetheless, talent and skills are essential building blocks of the cloud enablement process which is why many organizations invest in them. A cloud team is critical for the successful execution of the cloud transition.



What competitive advantages are banks gaining from moving to the cloud?

Among the many positives of cloud adoption, more tangible results see banks and financial institutions leveraging the cloud after some time.

1

Improving disaster recovery

The worst that could happen to any organization is its data loss; it is especially valid for banks and financial institutions. Even a small block of information has to be available and accessible at any given moment. Ensuring having business-critical information, apps, and services at all times is essential for continuity. Timely restoration after any disaster makes a difference in a cloud-based backup.

2

Consistently improving functionalities and business flow

Cross-border regulatory restrictions are holding many banks and financial institutions back from cloud migration. As cloud computing is also heavily regulated, it can help with the ever-evolving regulatory requirements. Compliance is indeed critically important when operating in multiple jurisdictions. The early cloud adoption stages must consider regulatory reporting on risks, liquidity, data security, anti-money laundering, fraud issues, and more. Critical data has to be held in a private environment; less vital and confidential data can be on a shared cloud, and in the public domain, non-critical info is stored.

Cloud computing will ultimately improve revenue generation capabilities, increase customer insights, contain costs, and deliver market relevant products quickly and efficiently while also helping monetize enterprise data assets.

3

Improved collaboration across the organization

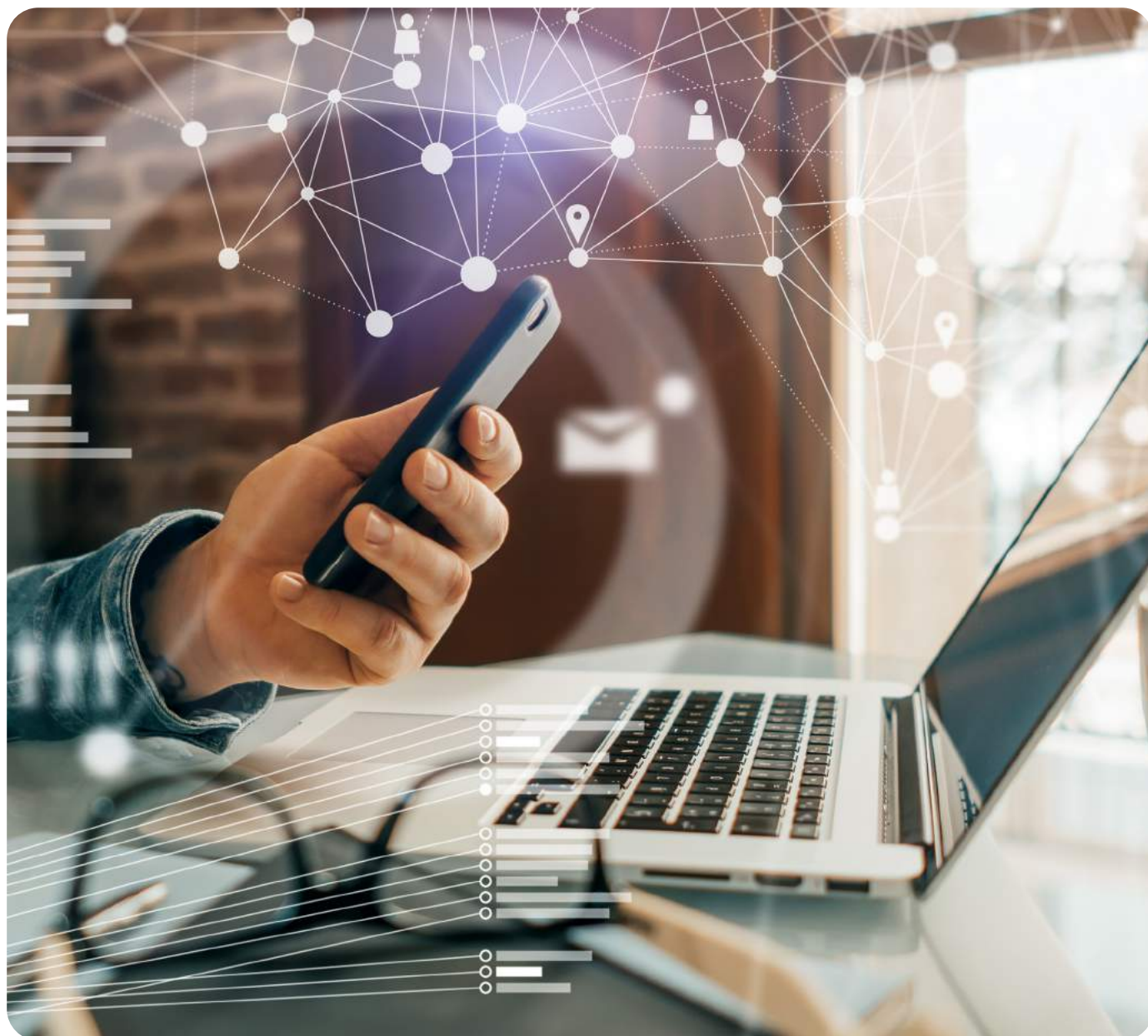
Cloud enables seamless organization workflows. Using cloud-based platforms helps teams do their job faster and more efficiently. Minimizing workloads and working hours results in the associated benefit of reduced company overhead. Banks and financial institutions implementing cloud computing see higher employee participation.

4

Better-informed decision-making process

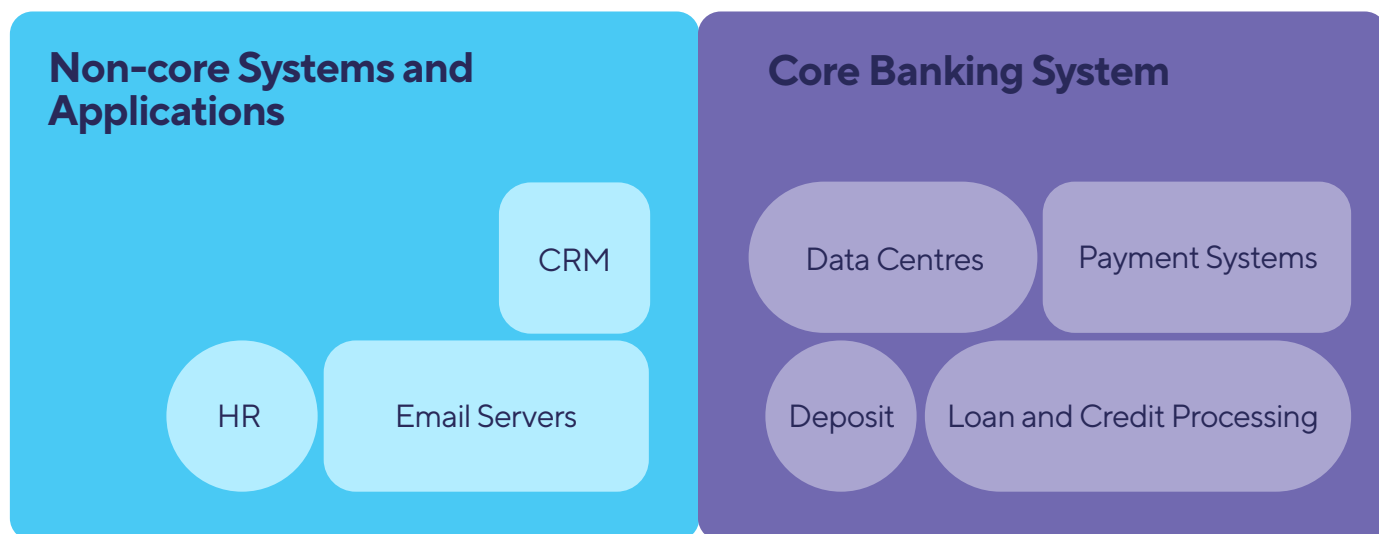
Cloud management receives automatic timely updates, which improves decision-making. Integrating business units via data-sharing mechanisms provides real time annotations, which result in quick decisions. This is especially important when dealing with clients who expect speed service delivery. The cloud has an enormous analytical value at the tip of the fingers of banks' decision-makers which helps them in automation and outcome predictions. Descriptive insights from the cloud help track business performance, data monetization process, and overall operations, guiding better-informed decisions.

Which IT applications and business services to migrate into the cloud



Every bank has its incentive to make a move to the cloud. The overall prompt is to move companies' digital assets services, databases, IT resources, and applications into the cloud. However, not all applications and business services should be migrated to the cloud, as some are more suitable than others. One of the most significant

advantages of cloud computing is the ability to reduce server and storage costs by outsourcing them to third-party vendors. Therefore, banks and financial institutions can migrate non-core systems and applications such as CRM, HR, and email servers to the cloud.



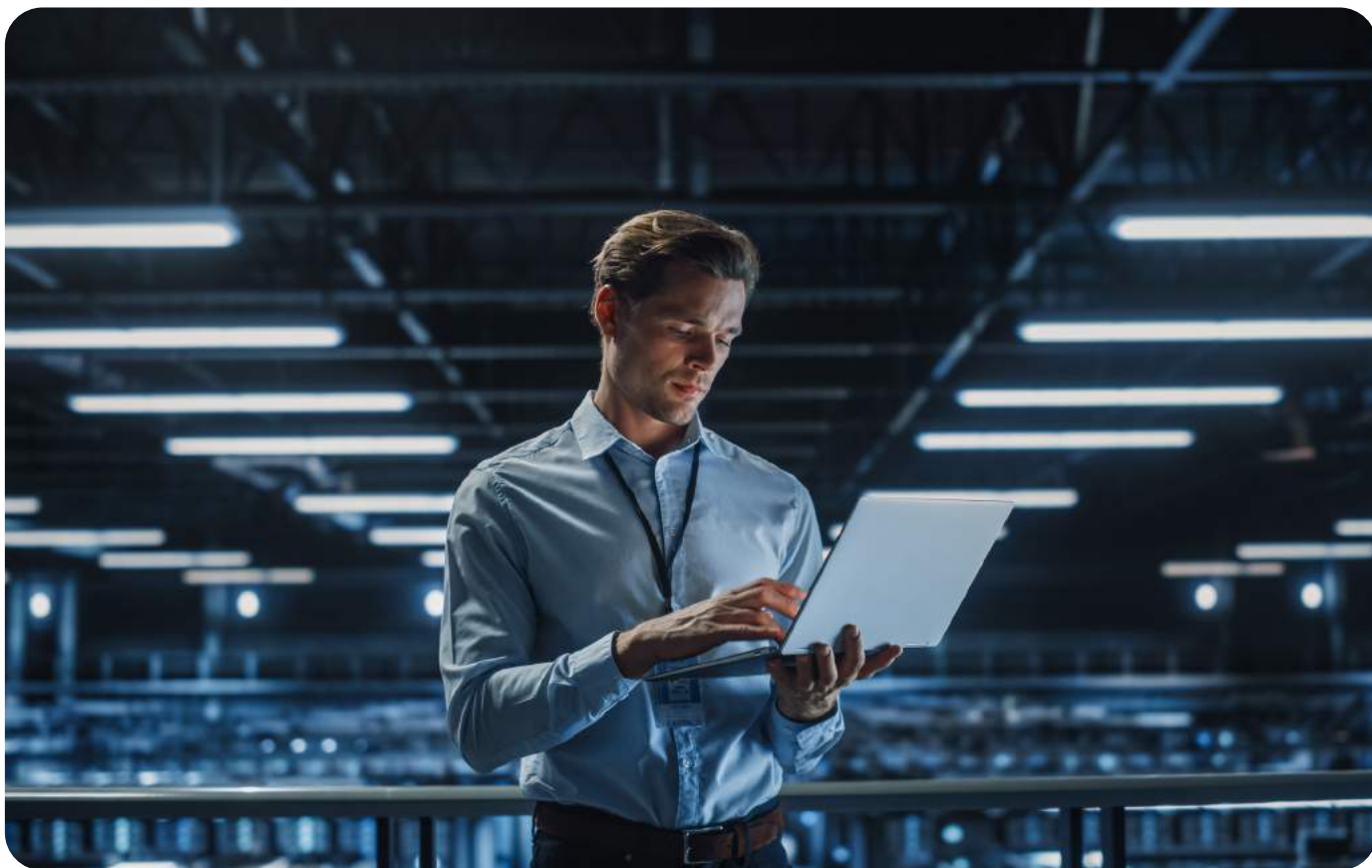
Regarding the core banking system, data centers, and payment systems, it is recommended that banks and financial institutions take a cautious approach as these systems handle sensitive and confidential information. Data security is one of the primary concerns of the banking industry, and any compromise in data confidentiality can lead to severe consequences such as loss of customer trust, regulatory penalties, and legal action. Therefore, it is essential to ensure that the cloud service provider has robust security systems, such as AI-powered fraud detection, to safeguard the data.

In addition to security, compliance is another crucial factor that banks and financial institutions should consider when migrating to the cloud. Financial services are subject to numerous regulations and guidelines, such as the General Data Protection Regulation (GDPR) and the Payment Card Industry Data Security Standard (PCI DSS), which impose strict requirements on the handling and processing of data. Therefore, ensuring that the cloud service provider complies with these regulations and can provide evidence of compliance when audited is crucial.

The decision to migrate to the cloud should be made on a case-by-case basis.

The decision to migrate to the cloud should be made on a case-by-case basis. Banks and financial institutions should consider data sensitivity, security, compliance, and cost-effectiveness before making a final decision. Some applications and business services can migrate to the cloud - e.g., non-core systems such as CRM and HR. In contrast,

due to their sensitivity, the core banking system, payment systems, and data centers should be cautiously approached. Finally, ensuring that the cloud service provider has robust security systems and compliance procedures to safeguard the data and comply with regulations is essential.



Evaluating and Mitigating Risk Factors

Banks and financial institutions cannot afford any of the risks associated with cloud migration to become a reality. This is why every risk factor needs to be addressed in a risk mitigation plan. Low- and high-risk cloud projects must be outlined and acted on accordingly.

Risks can take any shape or form, so early identification is critical. Cloud migration

professionals with many successful transitions can identify large and small vulnerabilities as early as possible. The anticipation of preparing for potential risks and disasters usually becomes a shared responsibility between the cloud provider and clients. Calculations would be made to assess all associated risks when embarking upon a cloud transformation.

The genuine process of risk management at a glance

Identify



Analyze



Evaluate



Threat



Monitor

Risk is assessed against the chosen cloud model, data type, critical systems, service types, regulatory requirements, and more. Mitigation has to become a holistic activity fully integrated across the organization. Risk-related concerns are usually addressed on three primary levels:

Organization

Some high-level elements need to be established for effective risk management. Responsibilities related to cloud risks are assigned to all involved parties so the whole cloud system remains safe. A specific risk tolerance will eventually remain, so it needs to be thoroughly communicated with everyone in the cloud ecosystem.

Business processes

As the cloud presents the opportunity for near real-time monitoring of all processes in one financial organization, a shared understanding and recognition process must be collectively developed. Not only that but also a high level of accountability related to all risk factors is what makes risk management decisions into effective cloud solutions for every bank.

Information systems

Takeaways and Conclusions

Cloud computing has become a buzzword in the banking and financial services industry due to its potential benefits, such as cost savings, scalability, flexibility, and agility. The companies that have already tapped into the cloud see many positives for their organization: from flexibility for fast and easy access to data to rapid and effortless scalability. The cloud environment ensures smooth disaster recovery and business continuity. The technology accounts for considerable cost savings and increased security, as well as reaching the highest compliance standards while being in a competitive position to accelerate internal operations with the latest innovative tech. By leveraging these opportunities, banks and financial institutions can reach their key goals and even go beyond what they thought was possible in the cloud ecosystem.

Despite the benefits, organizations still see challenges and barriers to cloud computing.

We at Sirma provide expertise to overcome obstacles and smooth the transition process. Risks in the business world are inevitable, but their avoidance is possible in collaboration with established and experienced technology partners.

To harness the ultimate potential of cloud migration, the partner who knows the struggles and potential benefits of cloud computing will take each organization through this process with a plan and a team of specialists who will be on board with the cloud strategy. Sirma helps successfully and adequately implement cloud solutions according to the bank's and financial institutions' modernization stage and their readiness to upgrade specific channels, processes, and services with digital/cloud solutions. As cloud budgets continue to increase, we stay optimistic that more financial organizations will explore technology potential.

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