



Secure Cloud Transformation:

# A Roadmap for US Capital Market Firms to Deliver Superior ROI



# Introduction

Capital market firms are realizing that remaining on legacy systems is far riskier than shifting to cloud platforms. Thus, cloud adoption has become one of the top priorities of leaders across capital markets value chain – buy-side, market infrastructure, and sell-side. Our recent Wipro FullStride Cloud Services survey<sup>a</sup> revealed that over three-fourths of respondents representing global capital market firms are at an advanced level of cloud maturity.

The US is leading the cloud adoption movement globally. On average, US-based capital market firms are spending \$58 million annually on cloud versus \$41 million globally<sup>a</sup>. Support from the CEO office plays a critical role in driving this momentum. Thirty-three percent of CEOs of US capital market firms are directly involved in developing and implementing cloud strategy versus 24% globally<sup>a</sup>.

## Not all firms are progressing alike

We assessed the cloud maturity of US capital market firms using three criteria<sup>b</sup> and categorized them into beginners (bottom 32%), intermediates (middle 49%), and leaders (top 19%). Figure 1 depicts how the value derived from the cloud program differs for these three categories of firms. It also highlights their underlying value drivers (i.e., typical characteristics of their cloud program), as discussed below.

**Beginners** are hesitant to move away from legacy systems. Business unit heads make decisions about cloud adoption in silos based on how well cloud fits into their respective business strategies.

These firms use cloud for only 10% of their applications which cater to back-office activities like finance and reporting. Over the next two years, cloud adoption among beginners is likely to remain in a status quo. The most common factors holding them back include funding, security risks, and compatibility issues associated with the migration process.

Although organizations in this category have typically set conservative targets for ROI on their cloud program (4-8%), none have been able to exceed their targets after three years of implementation.

**Intermediates** are following a tactical approach and adopting cloud at a functional level, typically driven by their CFO and CTO. These firms use cloud for back-office processes and middle-office processes such as fund accounting, and portfolio management.

Intermediates generally have moderate cloud adoption programs, running around 40% of their applications on cloud and are likely to reach 50% mark over the next two years.

These firms have set moderate targets for ROI on their cloud program (11-16%), 35% of them have been able to exceed their targets after three years of cloud implementation.

**Leaders** are following an enterprise-wide strategic approach to cloud adoption, focusing on middle-back- and front-office applications, including client advisory, trade, and order management.

Leaders tend to have rigorous cloud adoption programs, running more than 50% of their applications on cloud and are likely to cross the 70% mark over the next two years.

Cloud leaders have set aggressive targets for ROI on their cloud program (21-33%), more than 60% have been able to exceed their targets after three years of cloud implementation.

<sup>a</sup> Wipro FullStride Cloud Services Survey: Thoughtlab conducted a survey for Wipro from June 2021 to July 2021 to analyze current and future patterns of enterprise-level cloud adoption. Respondents included 1,300 global executives associated with organizations across industries and with annual revenue from \$500 million to \$20 billion or more.

<sup>b</sup> Three criteria – (1) a company's progress implementing cloud-based data centers, migrating and modernizing core processes, and adopting cloud-native applications; (2) the percentage of total applications operating in the cloud; and (3) the number of advanced technologies.

As capital market firms mature in cloud adoption from a beginner to a leader, they get better at its implementation and can reap higher value from their cloud programs.






Characteristics of Cloud Program	Beginner	Intermediate	Leader
 <b>Person Responsible</b>	Business Unit Head	CFO / CTO	COO / CEO
 <b>Focus Areas</b>	Back Office	Middle and Back Office	Front, Middle and Back Office
 <b>% of Apps on Cloud (current vs. next 2 years)</b>	10% vs. 10%	39% vs. 50%	53% vs. 71%
 <b>ROI Targets</b>	4%-8%	11%-16%	21%-33%
 <b>ROI Exceeded Target</b>	0%	35%	63%

Figure 1: Characteristics of cloud program by relative cloud maturity of the firm



# Leaders are looking way beyond the cost benefits of cloud

Cloud leaders recognize that cost reduction is just the tip of the iceberg. The real benefits of cloud adoption lie beneath the surface as cloud offers significant opportunities to drive growth and streamline operations. Below are key examples of cloud benefits in the context of capital markets.

## Driving growth



### Innovating new business models

Wealth managers are leveraging cloud to adopt human-led, digitally enabled hybrid advisory business models. This has enabled them to cater to the untapped mass affluent segment, which accounts for ~39% of global wealth<sup>1</sup>.



### Driving growth from API economy while accelerating time to market

Capital market firms are using cloud to seamlessly publish their APIs and consume 3<sup>rd</sup> party APIs. This helps them leverage growth opportunities of API economy and accelerate time to market as they just need to focus on product development rather than dealing with integration issues.



### Scaling business

Capital market firms across the value chain are utilizing Infrastructure as a Service (IaaS) to expand their business without making significant capex as required with legacy systems. Further, cloud offers agility and flexibility to scale IT infrastructure as per business requirements and choose an optimal suite of software applications.

## Streamlining operations



### Empowering decision making

Wealth managers are using cloud to deploy an enterprise-wide data platform, accompanied with an analytics engine. The engine helps C-suite executives, finance and sales teams, and financial advisors to objectively make key business decisions backed by data and insights.



### Driving employee productivity and experience

Investment banks are using cloud-based automation tools to conduct research, screen and profile potential targets and help investment bankers focus on client relationships, resulting in significant improvement in their productivity.



### Enhancing risk management and compliance

Capital market firms across the value chain are using cloud-based enterprise risk management and compliance tools. These tools use advanced artificial intelligence (AI) and machine learning (ML) algorithms to pre-empt and mitigate potential risks and non-compliant business activities, thereby enhancing operational resilience of the organization.

## Driving growth

### Reaching new clients

Discount broker dealers are leveraging cloud to offer zero-commission trading and attract retail investors. This is evident from the significant increase in share of retail investors in US equity markets from ~16% in 2019 to ~23% in 2021<sup>2</sup>.

### Increasing retention rate and wallet share of existing clients

Wealth managers are using cloud to improve their client journey, right from onboarding to investment strategy, portfolio management to reporting. This helps them improve retention rate of clients and increase their wallet share from a given client.

## Streamlining operations

### Strengthening business continuity

Given the increasing impact of climate change (US suffered losses worth \$95 billion from weather and climate associated business disruptions in 2020, more than double the 40-year average<sup>3</sup>), capital market firms are using cloud-based recovery systems, as virtual servers can be migrated faster and at a lower cost than conventional systems.

### Driving sustainability across operational footprints

Capital market firms across the value chain are leveraging cloud to deliver on their sustainability commitments. On average, cloud migration reduces energy consumption by 65% and carbon emissions<sup>4</sup> by 84%.



# Key challenges beginners and intermediates are facing in cloud adoption

Beginners and intermediates are leveraging cloud only for a fraction of their workload with focus on non-core processes such as finance, sales, and reporting. They are still using legacy systems for most of their core processes, including trading, risk management and post-trade processing. Our survey identified the key impediments to enterprise-wide cloud adoption by beginners and intermediates, as highlighted in figure 2.

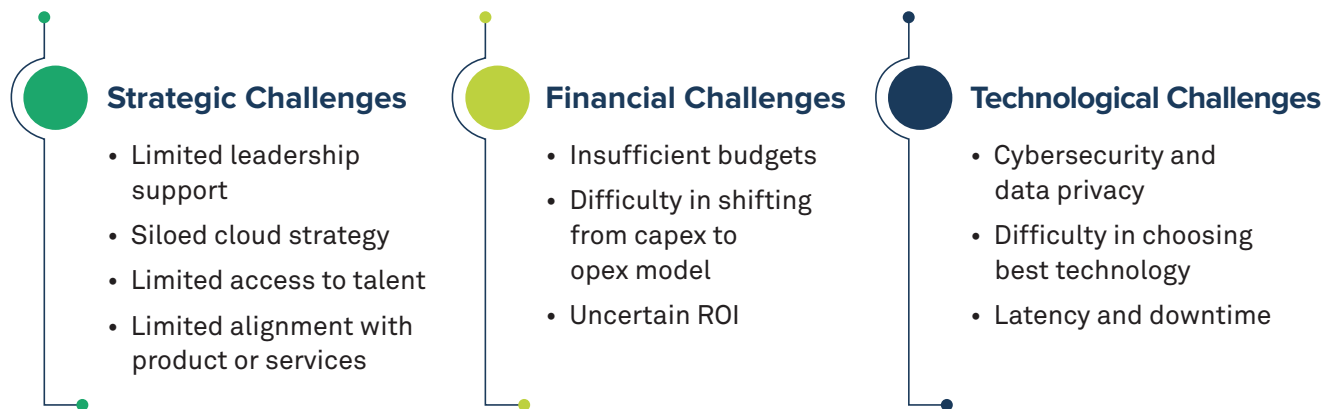


Figure 2: Key challenges beginners & intermediates are facing

## Strategic challenges

**Limited support from the leadership:** The leadership at many capital market firms still consider cloud adoption as a tactical IT program, not a growth lever. While CTOs and CIOs play a key role in cloud implementation, CEOs and COOs are not actively involved in the development of cloud strategy.

This leads to misalignment between business strategy and cloud strategy, resulting in a sub-optimal cloud adoption program.

**Siloed cloud strategy:** Unlike Leaders, Beginners and Intermediates do not have an integrated enterprise-wide cloud strategy in place. Instead, the IT heads of different business units implement cloud in silos – a sub-optimal approach.

Consider a capital market firm where wealth management and private banking businesses have implemented cloud separately across discrete applications. Because these businesses are complementary, lack of an integrated approach will lead to lower ROI from the overall cloud implementation program.

**Limited access to talent with cloud skills:** A successful cloud program requires pro-actively building a cadre with strong capabilities in cloud-native application development.

The leadership at Beginner and Intermediate organizations is often reluctant to invest in upskilling their existing talent and/or hiring new talent before undertaking a cloud transformation. This creates a bottleneck for enterprise-wide cloud adoption programs.

**Limited alignment with business products or services:** Beginners and Intermediates sub-optimally align their cloud adoption team, typically by applications and data. These teams are responsible for securely undertaking the migration process and often have limited alignment with the value to the business. This restricts the scope of the cloud program as a cost reduction lever.

Ideally, a cloud adoption team should be closely aligned with business products or service offerings. For instance, if a wealth management firm is undertaking cloud transformation, the cloud adoption team should be engaged in defining, developing, delivering, and operating various wealth management services. With this approach, the cloud team becomes a critical business partner and a key driver of innovation.

## Financial challenges

**Insufficient budgets:** In the aftermath of the 2008 financial crisis, capital market firms invested heavily in legacy risk management systems. While these systems have generally provided value for these firms thus far, senior leadership is unwilling to invest in another large-scale transformation program.

**Difficulty in shifting from capex model to opex model:** Amidst evolving regulations and increasing demands of customers, capital market firms across the value chain are witnessing strong pressure on their operating margins. If they implement cloud, capital expenditure, which typically depreciates with legacy systems, will be accounted for as an operational expense, further hitting their operating margins. C-suite executives at beginner and intermediate organizations are therefore hesitant about shifting from capex to opex models.

**Uncertain ROI:** As cloud is often implemented in conjunction with other technologies, an accurate measurement of cloud ROI requires tracking a holistic set of KPIs, covering various growth and operational use cases of cloud. Unlike Leaders, Beginners and Intermediates consider a narrow scope of cloud use cases and KPIs, typically limited to cost savings. This makes it difficult to estimate ROI of the cloud program.

## Technological challenges

**Concerns about cybersecurity and data privacy:** Capital market firms, especially asset servicers and broker dealers, are custodians of critical client data. They need to ensure that data storage and processing is compliant with regulations. Amid increase in remote working, the global BFSI sector, including US capital markets, witnessed a 40x increase in cyber-attacks from February 2020 to April 2021<sup>5</sup>.

This is compelling the leadership at capital market firms to re-examine their decision to migrate to the cloud as there are still concerns about the visibility, control, and storage of data.

**Difficulty in choosing the best technology to be used in conjunction with cloud:** Beginners and Intermediates face a competency gap vis-a-vis cloud-native application development. They also lack knowledge about how technologies such as AI, robotic process automation (RPA), and data management warehousing can be used in conjunction with each use case of cloud to optimally reap its benefits.

This indirectly weakens the business case for cloud implementation, as the technology team lacks a clear roadmap to drive the ROI after cloud adoption.

**Performance challenges around latency and downtime:** Capital market firms, especially broker dealers, exchanges, and financial data providers, need highly available systems as they work on real-time market data to execute buy or sell orders. Potential downtime or latency in connectivity can impact price discovery, leading to serious business disruption.

Most cloud service providers offer average publisher-to-subscriber latencies of about 100 milliseconds<sup>6</sup>, which is relatively high from a market-data perspective and can be an impediment to cloud adoption.

# Six steps to drive ROI of the cloud transformation program

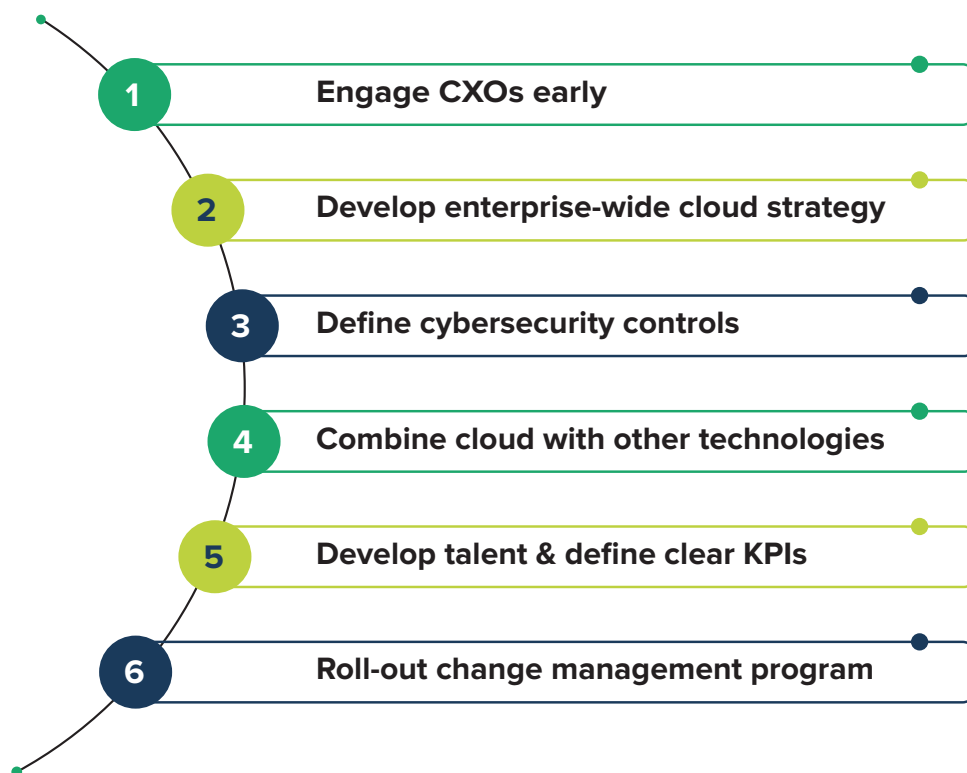


Figure 3: Six steps to maximize ROI of cloud transformation program

We have identified six best practices capital market firms can adopt to maximize the ROI of their cloud transformation programs, as highlighted in figure 3. Beginners and Intermediates can follow these steps to address the key challenges they face in their cloud adoption journey.

**1 Engage senior leadership early to lead cloud initiatives:** It is imperative to onboard CEOs and COOs early in the cloud adoption program. This ensures that the cloud strategy is aligned with business strategy and cloud adoption program gets support from the leadership, in terms of both resource and budget allocations.

To achieve a high ROI, in the 21%-33% range, C-level executives need to drive cloud initiatives and play an active role in their implementation.

**2 Pro-actively develop an enterprise-wide cloud strategy:** A tactical approach, with a function-level or business-unit-level cloud strategy, does not deliver optimal results. The true benefits of cloud can only be reaped when an integrated cloud strategy is developed and executed at an enterprise level.

In the case of an M&A deal, cloud strategy must be an integral part of post-merger integration strategy so the cost of cloud transformation can be capitalized. Further, an effective cloud strategy can help accelerate IT delivery and reduce IT costs by 30%. But one needs to consider the size of the transaction and cloud maturity of both target and acquirer. For instance, if an acquirer with a mature cloud program acquires a large target at a nascent stage of cloud adoption, the acquiring organization may consider a phased approach of directly migrating and integrating target's systems to its cloud platform.

Lastly, leaders at capital market firms must ensure that their cloud strategy is tailored to leverage specialized use cases of cloud for a given business. For instance, the cloud strategy for a wealth manager would be different from that for an exchange.



- 3 Establish robust cybersecurity controls:** During the cloud migration process, business-critical data and applications are vulnerable to cyber-attacks. Our [blog on cybersecurity](#) describes key assets across the capital market value chain that are typically targeted by cybercriminals. The blog also highlights that over-allocation of high-risk permissions on the cloud is a key driver of cyber risk.

Leaders at capital market firms must design and implement a holistic cybersecurity framework to protect, detect, respond to, and recover from cyber threats. Using a mix of private cloud and public cloud environments, capital market leaders can reduce the risk of exposing business-critical data and applications to cyber breaches.

- 4 Combine cloud with other technologies to amplify outcomes:** Combining cloud with complementary technologies can significantly enhance the ROI of the cloud-adoption program. Technologies such as AI, data lake, the internet of things (IoT), grid computing, RPA, workflow automation, and open-source data integration can help make cloud platforms more intelligent and interconnected.

Choosing the right technology mix depends on the business model and specific use cases of the cloud. For instance, a wealth manager may choose RPA to automate document processing, while an exchange may opt for a data lake to efficiently manage and analyze huge volumes of data.

- 5 Develop cloud capabilities and define clear KPIs to measure the impact:** Though technology is a key enabler, it is people who drive the real value from the cloud program. Before embarking on the cloud implementation journey, it is imperative to build a cadre of people with specialized skills in cloud native application development.

To deliver value from the cloud, capital market firms must define clear KPIs. These KPIs can be quantitative (incremental revenues, cost reduction, time savings) as well as qualitative (customer satisfaction, employee experience, brand perception). It is important to track, monitor, and report these KPIs to leadership on a regular basis. This helps determine best practices and identify red flags early on.

- 6 Roll out a change-management program:** A cloud-transformation program typically involves numerous changes in the way employees and clients interact with the systems. For instance, cloud implementation changes the way wealth advisors guide their clients on investment strategies because it gives them access to more data and tools to analyze market trends across diverse industries. From a client's perspective, cloud enables investors to access and rebalance their portfolios faster.

To ensure a smooth transition to the cloud environment, cloud transformation leaders must have a robust change-management program in place. The program must involve key stakeholders and communicate relevant updates to clients and employees in a consistent and timely fashion.



# Wipro's perspective

## Cloud will be a key enabler of T+1 settlement regime in the US capital markets

US Capital market firms are operating in a dynamic business environment with evolving regulations. To comply with SEC guidelines, capital market firms moved from T+3 to T+2 settlement cycles in 2017. But it wasn't the end of the story; as per the latest recommendations, they need to prepare for T+1 regime by Q1/ Q2 2024, and may need to embrace T+0 settlements soon.

In this context, industry associations including SIFMA<sup>a</sup>, ICI<sup>b</sup>, and post-trade market infrastructure provider DTCC<sup>c</sup> are running a pilot program to achieve T+1 settlements. A T+1 regime will not only accelerate securities settlement time; it will also reduce the counter-party risk, thereby enhancing traders' liquidity.

Once the project goes live, its successful adoption will need market participants to modernize their legacy systems and seamlessly collaborate to drive efficiency across the trading value chain. Cloud will be a key enabler in driving collaboration and efficiency across processes critical to achieve T+1 and eventually T+0 securities settlements in the following ways:

### Cloud will enable efficient affirmation and confirmation:

To comply with T+1 regime, trading participants including asset managers, broker-dealers, and custodians will need to complete the affirmation/confirmation of trade by 9 pm of the trade day.

Cloud will play a key role in driving seamless collaboration between trading participants and automating communication of allocations and matching of trades, thereby facilitating timely affirmation/confirmation of the trade.

### Cloud will help to reduce settlement errors:

In T+1 regime, trading participants will have 24 hours to remediate possible trade settlement errors or failures against the current time span of 48 hours.

Cloud will play a key role in improving the trade accuracy by increasing system throughput and automating standard settlement instructions, thereby reducing settlement failure risk and help achieving straight through processing.

It is high time for beginners and intermediates to expedite their cloud adoption programs. Leaders need to ensure that their cloud strategies are closely aligned with evolving trade settlement regimes.

<sup>a</sup> SIFMA - Securities industry and financial markets association

<sup>b</sup> ICI - Investment company institute

<sup>c</sup> DTCC - Depository trust and clearing corporation



## References:

1. Global Wealth Report, Credit Suisse, 2021
2. “Stock-market gamification unlikely to end soon or draw new rules”, Bloomberg, February 2021
3. “2020 U.S. billion-dollar weather and climate disasters in historical context”, National Oceanic and Atmospheric Administration (NOAA), September 2021
4. “How the Cloud aims to help companies become carbon-neutral”, Forbes, June 2021
5. “Work from home fueling cyber-attacks”, Reuters, July 2021
6. Accessing Real-Time Market Data in the Cloud, Solace, April 2022

## About the authors:

### Suzanne Dann

Senior Vice President,  
North America Capital  
Markets and Insurance

### Michael Barrett

Consulting Partner,  
Capital Markets

### Venkat Bharadwaj

Cloud Practice Sales Head,  
Capital Markets & Insurance

## Contributions:

### Pradeep Agarwal

Capital Markets Insights Leader -  
Wipro Insights, and M&A Leader -  
Global BFSI Domain & Consulting

### Agam Sehgal

Assistant Manager,  
Wipro Insights -  
Securities & Capital Markets





## Ambitions Realized.

### Methodology:

Insights shared in this report are based on a survey conducted for Wipro in June and July 2021 by ThoughtLab to analyze current and future patterns of enterprise-level cloud adoption. Respondents included 1,300 executives at organizations with annual revenue from \$500 million to \$20 billion or more. They are located in six countries (Australia, France, Germany, Switzerland, UK and US), and come from 11 industries (banking, capital markets, consumer packaged goods, healthcare providers, insurance, life sciences, manufacturing, oil and gas, retail, transportation, and utilities). All respondents are responsible for or play a key role in their organization's cloud computing strategy and implementation. Additional insights come from responses to open-ended questions. To calculate cloud maturity, we analyzed three criteria: (1) a company's progress implementing cloud-based data centers, migrating and modernizing core processes, and adopting cloud-native applications; (2) the percentage of total applications operating in the cloud; and (3) the number of advanced technologies used in conjunction with the cloud. Based on those criteria, we classified the top 19% of respondents as cloud "leaders," the middle 49% as "intermediate users," and the other 32% as "beginners."

Please visit [wipro.com/cloud](http://wipro.com/cloud) to learn more about Wipro FullStride Cloud Services



**Wipro Limited**  
Doddakannelli  
Sarjapur Road  
Bengaluru – 560 035  
India

Tel: +91 (80) 2844 0011  
Fax: +91 (80) 2844 0256  
**wipro.com**

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading technology services and consulting company focused on building innovative solutions that address clients' most complex digital transformation needs. Leveraging our holistic portfolio of capabilities in consulting, design, engineering, and operations, we help clients realize their boldest ambitions

and build future-ready, sustainable businesses. With over 240,000 employees and business partners across 66 countries, we deliver on the promise of helping our customers, colleagues, and communities thrive in an ever-changing world.

For more information, please write to us at [info@wipro.com](mailto:info@wipro.com)