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Technology investment strategies for financial services

MODERNIZING YOUR TECHNOLOGY INVESTMENT STRATEGY

Financial services institutions (FSIs) have increasingly defined and differentiated themselves not just by the products and services they provide to customers, but by the technology that underpins their establishments. According to a Celent report, IT Spending During COVID-19, the industry has spent over US$1 trillion on technology investments over the last four years, enabling personalized digital user experiences, open banking and application programming interface (API) frameworks, and cloud applications. While FSIs see these investments as critical to compete against newcomers, update business models, and meet shifting consumer expectations, substantiating the funding to management and boards has been historically difficult.

Moreover, an Oliver Wyman and Procensus survey done in November 2019 found that only 25 percent of investors are confident that digital transformation strategies will be effective. Limited transparency on digital transformation efforts has led to **an assumed low value-add** for investors and other stakeholders.

However, the COVID-19 pandemic has dramatically changed market conditions and forced almost all customer interactions and internal collaboration to operate through digital channels. Accelerated by the pandemic, FSIs today face two main challenges.

- Creating the business of the future by striking the right balance between the need to modernize legacy infrastructure and short-term pressures around profitability, market capitalization and investment capacity
- Fending off increasing competition from traditional and new players to the industry

Where technology was once difficult to justify, it is now essential for survival. The heightened pace of change and need to innovate, requires a faster and more judicious evaluation of technology investments to avoid draining financial resources during digital transformations. In a post-COVID-19 world, capital reallocation, portfolio risk management, and digital user engagement will be core goals to retain and grow customers. FSIs are also working to increase revenue while adjusting to ever-changing regulations and a new level of uncertainty around profitability and performance. **FSIs must reevaluate the way they invest in technology if they want to simultaneously decrease cost inefficiencies and improve business resiliency.**

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A NEW TECHNOLOGY INVESTMENT PARADIGM

To optimize their technology investments, improve customer offerings, and scale efficiency gains, leading FSIs around the globe are working closely with major technology players. Together, Oliver Wyman and Amazon Web Services (AWS) have developed a robust methodology to help FSIs evaluate, prioritize, and communicate their technology investments. **The Net Technology Investment Value (NTIV) is a comprehensive approach for measuring the business value of technology investments, factoring in profitability, productivity, operational efficiency gains, and consumer value.**

The Net Technology Investment Value **(**NTIV) approach helps FSIs make the business decisions required to realize the full value of technology investments, which is one of the five characteristics that sets successful FSIs apart, as described in Oliver Wyman's State of the Financial Services Industry 2020 report.

The COVID-19 pandemic has underscored the need for digital channels and foreshadowed the consequences of ignoring digital transformation plans. Mastering technology investments has become an essential skill for FSIs to maintain a competitive edge — "those who unlock the value will not only survive today but thrive for years to come."

SECTION 1

KEY DRIVERS SHAPING TODAY'S TECHNOLOGY INVESTMENTS

Many FSIs are reprioritizing strategic technology investments, aiming to relieve pressure on older systems, cut costs, respond to evolving customer needs, adapt to new security requirements, and maintain compliance. There are four drivers that are likely to determine the technology investment agenda.

1. Expensive legacy technology

Most FSIs suffer from the burden of legacy technology and inflexible applications that impede productivity gains. Fearful of the complexity and risks of re-platforming core systems, many companies persevere with outmoded, costly legacy Information Technology (IT). In fact, close to 70 percent of IT budgets are relegated to simply run, leaving only 30 percent to grow and transform. Firms that prioritize retiring outdated technology can reallocate budgets to invest in innovation.

FSIs need to modernize the way data, products, services, and partnerships are established. Modernizing legacy systems eliminates data silos so FSIs can analyze customers' data in real time, speed up processing, quickly deploy features, and streamline updates. New, cloud-based technologies provide FSIs with more business resiliency by lowering infrastructure and capital expenditures.

2. Evolving customer expectations

As a result of the pandemic, there was a dramatic increase in digital activities, cementing fundamental changes in the way consumers interact with FSIs. Cash transactions, for example, decreased by up to 50 percent in some European countries, and payment providers reported significant growth in contactless transactions. Customers have increased their use of mobile apps to schedule payments, access customer support, and assess new products. A seamless digital experience with personalized engagement and reporting has become today's baseline.

In response, FSIs are evaluating the best channels, systems, and features needed to most effectively meet customer expectations and achieve a return on investment (ROI).

3. New cybersecurity risks

Transitioning almost overnight to remote working environments created additional IT vulnerabilities for FSIs. With the shift to remote operations, they incurred new risks around data theft, fraud in remote authentication, application validation, and phishing via new channels.

Going forward, FSIs will need to protect against new forms of fraud and develop new flagging for breaches and data theft. Already, more than a third of FSIs have made changes to their technology infrastructure to improve the security of employees who are working remotely.

4. Changing regulatory requirements

The pandemic added new responsibilities on FSIs to collaborate with local governments on payment deferral requests, mortgage relief, and stimulus disbursements. FSIs were already logging different patterns of behaviors that would require redefinition of their risk measurement and modelling with credit risk at the top of their agenda. Industry-leading FSIs are working to derive new insights and trends from this data as it can directly link to the firm's profitability.

Regulators will likely require FSIs to more frequently and dynamically measure risk at the customer and overall institutional portfolio level, with ad-hoc, real-time risk reporting being one of the potential requirements in the near future. Hence, FSIs will also have to modernize existing risk platforms and develop new processes to manage credit risk, liquidity risk, and market risks to their portfolio.

These four drivers underscore the need for technology investment so that FSIs can stay profitable and competitive. The challenge is for FSIs to quickly and easily substantiate technology investments to deliver the business of the future, faster.

SECTION 2

BUILDING SOUND TECHNOLOGY INVESTMENT STRATEGIES

Management teams at FSIs often express disappointment at the level of benefits delivered by technology investments in major business transformations. Some innovation projects improve customer experience, but not the underlying economics of the firm. Since legacy infrastructure is only partially replaced, the overall cost to serve customers tends to increase. With end-to-end costs difficult to understand, and responsibility for delivering innovation and cost reduction fragmented across the institution, benefits that should accrue from investments are often difficult to concrete.

Hurdles that impede successful business transformation initiatives include:

- Organizational red tape that slows responses and approvals for modernization projects like moving call centers and trading boards to the cloud
- Data locked in silos cannot generate innovative insights
- Lack of alignment or inclusivity across internal areas involved in product development which delays deployment of new features

THE NET TECHNOLOGY INVESTMENT VALUE (NTIV) APPROACH

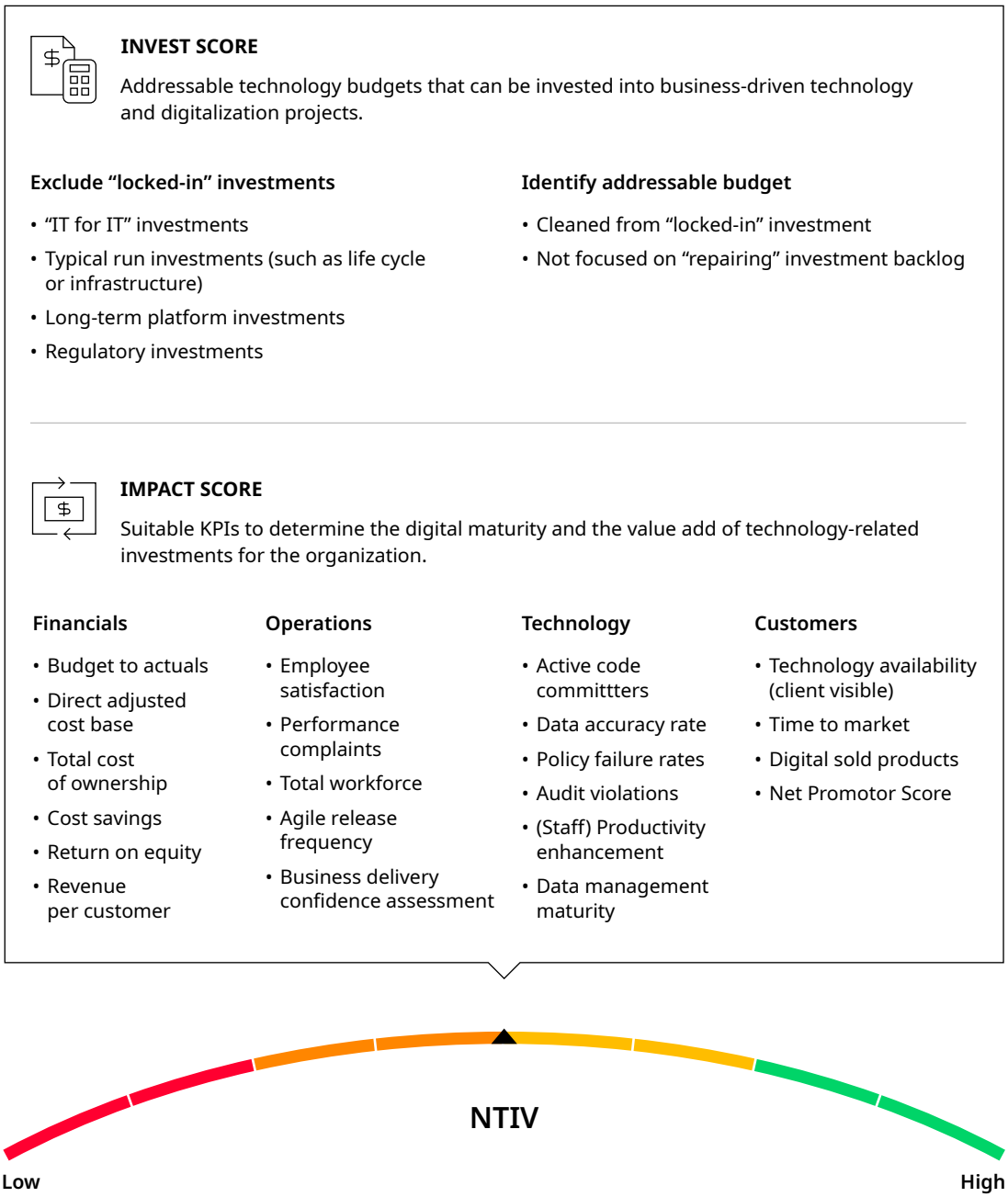
To overcome these hurdles, FSIs should rethink their technology investment strategy, starting with transparency on how technology investments translate into value for the organization and the customer. **Through the NTIV, FSIs garner a holistic understanding around the value of technology investments, so C-suites and boards can better evaluate and prioritize spending to achieve business performance.** The NTIV not only helps FSIs understand the current value generated by technology investments, but also defines changes required to improve it. Essentially, the NTIV focuses and unlocks value from two areas:

- **Invest:** Has management sufficiently invested in business-impacting technology or is most of the technology budget locked to preserve legacy systems that cannot operate in a remote world?
- **Impact:** How far is the organization in terms of its technology maturity and has management translated investments into measurable value for its stakeholders?

The output generated by the NTIV enables management to define and communicate a credible and impactful digital transformation roadmap for shareholders by visualizing how technology expenditures translate into financially relevant key performance indicators (KPIs). It also allows management to assess the opportunity costs of not investing in systems and platforms that could substantially drive business performance and differentiate the company.

The NTIV (see Exhibit 1) combines a business-focused assessment that maps and continually traces technology investments with their impact to help executives and portfolio managers navigate and prioritize future technology investments.

Exhibit 1: Rationale of Net Technology Investment Value (NTIV)



Source: Oliver Wyman and Celent research

HOW THE NTIV WORKS

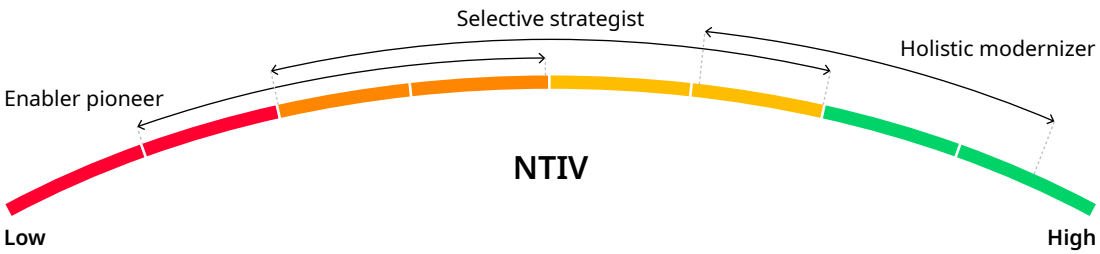
FSIs must first identify the real addressable technology budget available for investments. All costs related to "lock-in" investments as well as any investment backlog need to be clearly identified and kept out of scope. Then, a set of KPIs focused on assessing digital maturity and value-add of technology-related investments is evaluated. Finally, combining the datasets, identified investments, and KPI assessment yields the NTIV score.

FSIs should first choose one of the following archetypes that best describes their distinctive pattern in technology and appetite for change:

- **Holistic modernizer:** Institutions following this strategy invest across the board in key technology areas to boost revenue and reduce cost. They dedicate a significant proportion of their revenue to technology investments and decommissioning legacy systems. Key considerations involved here are application portfolio assessment and data consolidation plans drawn out over 24 months to modernize the larger organization. These FSIs will define open frameworks to operate shared cloud services, and adopt FinTech solutions and external data. They foster innovation across the board by retraining teams and resetting goals.
- **Selective strategist:** Some players establish their technology investment strategy in alignment with top priority business goals. The selective strategists focus on specific technology investments to drive key areas, as opposed to making across-the-board improvements. One example is "front-to-back" strategies where client experience is at the center. FSIs focused on this path will pick a part of their organization where they want to drive a large transformation and leap forward critical technology capabilities to support the attainment of these goals. These involve large re-architectures, cloud-first designs, and deep integration with specialist FinTech platforms.
- **Enabler pioneer:** Lastly, some firms focus on accelerating star enabler technologies such as API, microservices, and machine learning (ML)/artificial intelligence (AI). Usually these players tend to have lower technology investment budgets and need to carefully prioritize spend. Investments here will focus on feature-led platform changes at an architecture and data level that enable new insights and value extraction in short cycles.

The NTIV score aligns the level of investment with the archetype model.

Exhibit 2: NTIV archetypes
Net Technology Investment Value



Source: Oliver Wyman and Celent research

RESHAPE YOUR TECHNOLOGY INVESTMENT PORTFOLIO

To achieve their desired archetype and business outcomes, FSIs need to reshape short- and long- term investment priorities and analyze them in a holistic way. As FSIs reshape technology investments, unexpected market conditions such as those resulting from COVID-19, may impact business and technology needs (see Exhibit 3). This does not happen uniformly across financial services, so it's imperative that firms can quickly assess the business value of both planned and unplanned technology requirements.

In working with FSIs, AWS and Oliver Wyman have determined four main areas where firms can focus their technology investments, so they maximize business value:

1. Transform digital channels for improved user experiences

Digital customer experience is becoming a primary area of differentiation for FSIs. This requires new digital channels that enable streamlined and simplified user interactions, as well as relevant customer insights. For example, a recent focus of pioneering FSIs has been on rapid deployment of omni-channel, cloud-based contact center solutions. These are in production within months and immediately provide better experiences for their customers while reducing their operational costs (when compared to legacy systems).

2. Deploy modern applications that enable innovation and efficiencies

FSIs will need to rethink their internal and external applications. Legacy IT architectures, such as monolithic applications built with traditional integration techniques, cannot keep pace in today's digital world. Cloud-ready organizations employ agile architectures that align to business goals and seamlessly connect systems, data, and other technologies. This reduces infrastructure, allows FSIs to measure risk in real time, and fast tracks innovation by priming organizational data for AI/ML, blockchain, and Internet of Things (IoT).

Neo-bank upends traditional banking with cloud apps that deliver personalized service

A leading digital neo-bank was founded to eliminate frustrations of traditional banking such as the inability to view real-time balances. The bank decided to build a microservices- and API-based architecture in the cloud to significantly increase business agility and integrate with third-party services in just three weeks instead of 12 to 18 months. By using AWS, the bank can serve more than four million customers with only eight people on the infrastructure team and provide personalized product offerings and real-time analytics.

With modern applications, organizations can improve internal services and deliver the level of customer experience consumers crave while providing personalized product offerings.

Insurer accelerates time to value with modern development practices

One of the world's largest insurers refreshed a key platform by using AWS technology. Moving to the cloud and introducing DevOps practices enabled the company to deliver a more personalized, data-driven digital customer experience. It developed this solution in three months as opposed to 18, accelerating time-to-value by 400 percent.

Exhibit 3: Impact of COVID-19 on FSIs technology investments

Technology areas		Expected post COVID-19 investment behavior
Technology strategy and roadmap	Digital/greenfield bank	↘
	Branch engagement	↘
Offering	Digital small business	↗
	Customer experience personalization	↗
	Digital wallets	↗
	Digital onboarding	↘
	Digital payments	↗
	Digital personal financial management	↗
	Omnichannel	↗
	Digital channel enhancements	↗
	Internet of Things	→
Core platform	Core platform upgrades	↘
	Distributed ledger technology	→
Technology enablers	Advanced machine learning/data analytics	↘
	Artificial intelligence (AI) based initiatives	↘
	Open banking technology	↘
	Employee enablement	↗
Technology foundation	Cloud migration	↗
	Cyber security	↗
	Digital identification and authentication	↗
	Platform banking	→
	Shared services	↗

↗ **Accelerated investment**
Emerging trends or requirements from the pandemic. Institutions will rapidly begin exploring these technologies, some previously not on their radar.

→ **Strategic investment**
Banks have been investing and thinking about these needs prior to the pandemic. Investment will continue or strengthen.

↘ **Delayed investment**
Banks will continue to watch but may not fully embrace until full recovery.

Source: Oliver Wyman and Celent research

3. Migrate backend components to the cloud

As part of their technology strategy, FSIs need to ensure that services are digitally consumable and moving toward the cloud. Migrating legacy systems enables seamless scaling for capacity at significantly lower costs and higher efficiency, because the approach converts a historically capital expenditure to an agile operational one that can be traced to departments by consumption.

Major retail bank boosts revenue by migrating legacy infrastructure to AWS

One of the top ten US retail banks is using AWS as a central part of its technology strategy and plans to close its last datacenter by the end of 2020. The bank is experimenting with running its most critical workloads, including a core banking system, on AWS. Already, it has achieved significant revenue growth and cost reductions since beginning its cloud journey.

At the same time, complexity must be reduced by meticulously decommissioning obsolete infrastructure components that impact overall financial performance. As an example of the performance benefits that can be achieved, while the European banking industry 2019 average return on expenditure (ROE) was 7 percent, FSIs that run backend systems on the AWS Cloud are achieving between 25 and 33 percent of ROE and 100 to 250 percent growth in pre-tax profits.

A leading investment advisor leverages cloud infrastructure for on-demand scale

A US based global investment advisor with a complex and inflexible IT environment decided to modernize its monolith backend systems with a microservices, cloud-based architecture. As a result, the company saw a significant reduction in operational costs and now has a flexible infrastructure that can be scaled on demand.

Retail bank achieves 100x cost savings with cloud-based risk simulations

A leading Spanish retail bank uses AWS as an integral part of its credit-risk simulation application, developing complex algorithms to simulate diverse scenarios in order to evaluate the financial health of its customers. The bank decreased the average time-to-solution from 23 hours to 20 minutes and dramatically reduced processing while achieving costs savings of 100x, versus its on-premises platform.

4. Achieve regulatory compliance faster with cloud services

While there has been a temporary slowdown in the introduction of new reporting regimes, regulators are noticeably increasing their expectations in terms of data quality, frequency of measurement, and levels of controls to be demonstrated, driving FSIs to implement a more sustainable regulatory framework. For many FSIs, the use of cloud services might seem like a challenging shift. However, those that implement such services achieve regulatory compliance much faster with significant cost reductions.

Insurer speeds actuarial calculations with AWS grid computing

A global insurer uses AWS to perform actuarial calculations for its large multi-national customers, leveraging AWS grid computing that is more time efficient and cost effective. Calculations that used to take 10 days, now run in 10 minutes at greatly reduced costs.

While regulatory reporting regimes have taken a pause, local governments have increased pandemic-linked asks of FSIs. These are primarily to relieve and support customers in areas such as payment deferral requests, mortgage relief, and stimulus disbursement.

Industry-leading FSIs are already building these systems in the cloud and modernizing risk platforms to derive new insights and trends from this data, as it can directly link to the firm's sustainability and profitability. NTIV assesses the current impact as well as future-state features that risk and regulatory platforms require.

Bank delivers new features for risk-analysis solution in record time

A major European bank is using AWS technology for its risk-analysis solution. Since migrating to the cloud, the bank reduced costs by more than 60 percent. It also uses AWS grid computing to experiment by spinning up new environments and building new proof of concepts in real time. As a result, the bank went from 60 to 600 new modern applications in 18 months.

Working with AWS and Oliver Wyman, FSIs will choose from any, or a combination, of the four strategies outlined above to reshape their technology investment portfolio. The NTIV provides a clear set of metrics that demonstrate how these technology investments are creating the desired value for the overall business.

SECTION 3

WE'LL HELP YOU MAKE VALUABLE TECHNOLOGY INVESTMENTS

Oliver Wyman helps FSIs extract business value from technology investments by leveraging its longstanding financial services industry expertise, business strategy knowledge, and design thinking capabilities, combined with AWS Cloud best practices, proven FSI architectures, financial services customer references, and industry-leading technology services.

By jointly developing the NTIV, we're helping FSIs obtain the most business value out of their technology investments.

Throughout the three NTIV phases (see Exhibit 4), we'll guide our customers through technology transformation challenges and work with them to set optimal priorities for organizational and technology modernization. As a first step, we would look to understand more about the company's goals, priorities, customers, organizational complexity, and risk and regulation framework. Secondly, we would look to accelerate change. We would use NTIV methodology to measure the business value derived from the current technology investment portfolio and discuss potential new roadmaps to improve it. Finally, we would look at best practices which would allow organizations to capture additional business value.

By leveraging the NTIV methodology, we can monitor and track systems to trace the impact of adopted measures and ensure a holistic approach to organizational transformation. We'll work together to ensure our customers achieve long-term measures that definitively increase business value.

With the NTIV, FSIs finally have a methodology to track, prioritize, and communicate the value of technology investments. Instead of wondering if their digital roadmaps hold the answer, the NTIV can measure value in real terms to help FSIs make the crucial decisions that will enable their survival in an evolving industry.

Exhibit 4: Net Technology Investment Value (NTIV) methodology phases

1. ASSESS: STARTING POINT

Goals, priorities, and customers

- Identify relevant stakeholders/partners and available key metrics
- Understand business priorities and desired objectives post COVID-19 by case and profitability impact (such as capital requirements, resources reallocation)
- Digital and tech initiatives and COVID-19 impact to your customers

Organizational complexity

- Understand desired shape of your organization post COVID-19 (such as more remote working, less branches, more collaboration)
- Identify organizational efficiencies and overall productivity gains, such as infrastructure as code, modernization of legacy systems with focus on total cost of ownership
- Assess overall data and cloud structure

Regulation and risk mitigation

- Discuss your risk appetite, business resiliency, and cyber security challenges derived from enhanced digital economy
- Understand the key regulation that is driving the decision makers, such as the Fundamental Review of the Trading Book (FTRB), Current Expected Credit Losses (CECL), and open banking
- Assess how tech modernization can mitigate for organizational, reputational, and system/platform risks

2. ACCELERATION

Business insights via NTIV methodology

- Detailed review of the economics behind each technical investment and their business impacts
- Impact analysis of investments on internal KPIs

Review of NTIV results

- Workshop(s) with relevant stakeholders to reflect results

Cloud value benchmarking

- Determine scalable and repeatable value drivers for innovation
- Discuss systems/workloads candidates for cloud and how to better leverage value (such as agility, productivity, and go-to-market gains)

Prioritization and roadmap

- Define optimal NTIV position, desired technology roadmap, and business outcomes
- Identify and prioritize quick-win measures
- Develop dashboard to monitor progress, governance structure, and internal reporting
- Iterate results with stakeholders
- Develop a joint roadmap with relevant stakeholders

3. FINISH LINE: GET THE "VALUE"

- Establish long-term measures to increase business value and appropriate technology investments (such as AI/ML applications to increase data modernization, application modernization, new customer journeys)
- Develop a plan for cloud scalability
- Implement required change management, communication, training and certifications programs
- Ensure necessary funding for steady tech investment
- Articulate the commercial model and how to monetize it

Source: Oliver Wyman and Celent research

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Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialised expertise in strategy, operations, risk management, and organisation transformation.

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