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Wealth Management Technology Forecast 2020-2023

A Guide for Navigating Uncharted Waters: US Edition

THOUGHT LEADERSHIP FROM A TECHNOLOGY LEADER

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It's a Whole New World for Wealth Managers

Without question, the events of 2020 threw a wrench into most wealth managers' IT plans. Solutions to support remote work became the top priority. Firms had to make sure their people could collaborate with each other from home, while also trying to maintain high standards of client service. Investors needed a lot of attention during this uncertain year. Without the benefit of travel and face-to-face meetings, wealth managers worked extra hard to calm client concerns and maintain confidence.

To gauge the impact on wealth managers' tech priorities, Celent, a leading research and industry analyst firm, conducted research focused on financial technology. The result is the enclosed report, Wealth Management Technology Forecast 2021, an insightful analysis that firms can use to evaluate their plans relative to IT investment trends. Celent expects most firms will "proceed with caution"—not retrench entirely, but focus on essential projects and defer their more ambitious ideas until the economic outlook becomes clearer.

One of the key findings in the study is that migration to the cloud is expected to accelerate, fueled by the need for full remote access to critical applications. At SS&C Advent, we were gratified to hear from so many clients that our cloud-based solutions enabled them to transition to remote work quickly and easily, and essentially conduct business as usual after a brief adjustment period. Our Black Diamond® Wealth Platform was born and built in the cloud, while our APX Suite for wealth managers can be cloud-delivered through Advent Outsourcing Services. Cloud adoption may well be decisive for a firm's future, as the report concludes that remote work will likely stay with us in some form even after the pandemic subsides.

Another interesting observation: wealth managers in the near term are likely to shift resources to tools that support client engagement. We've put a particular emphasis on this area in the past couple of years, launching the Black Diamond Client Experience portal and adding Investrack to our lineup of APX-compatible solutions. At it's core, wealth management is a relationship business, and firms that leverage technology to stay relevant in their clients' lives stand to move into 2021 in a stronger position.

Our business is built on understanding what advisors want to accomplish and delivering technology solutions that make their goals possible. We believe you will find this report helpful, and we look forward to talking with you further about your technology needs.

Karen Geiger **Steve Leivent**
Co-General Managers, SS&C Advent

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WEALTH MANAGEMENT TECHNOLOGY FORECAST 2021

A Guide for Navigating Uncharted Waters: US Edition

Awaad Aamir | Andrew Schwartz | Neil Sheehan

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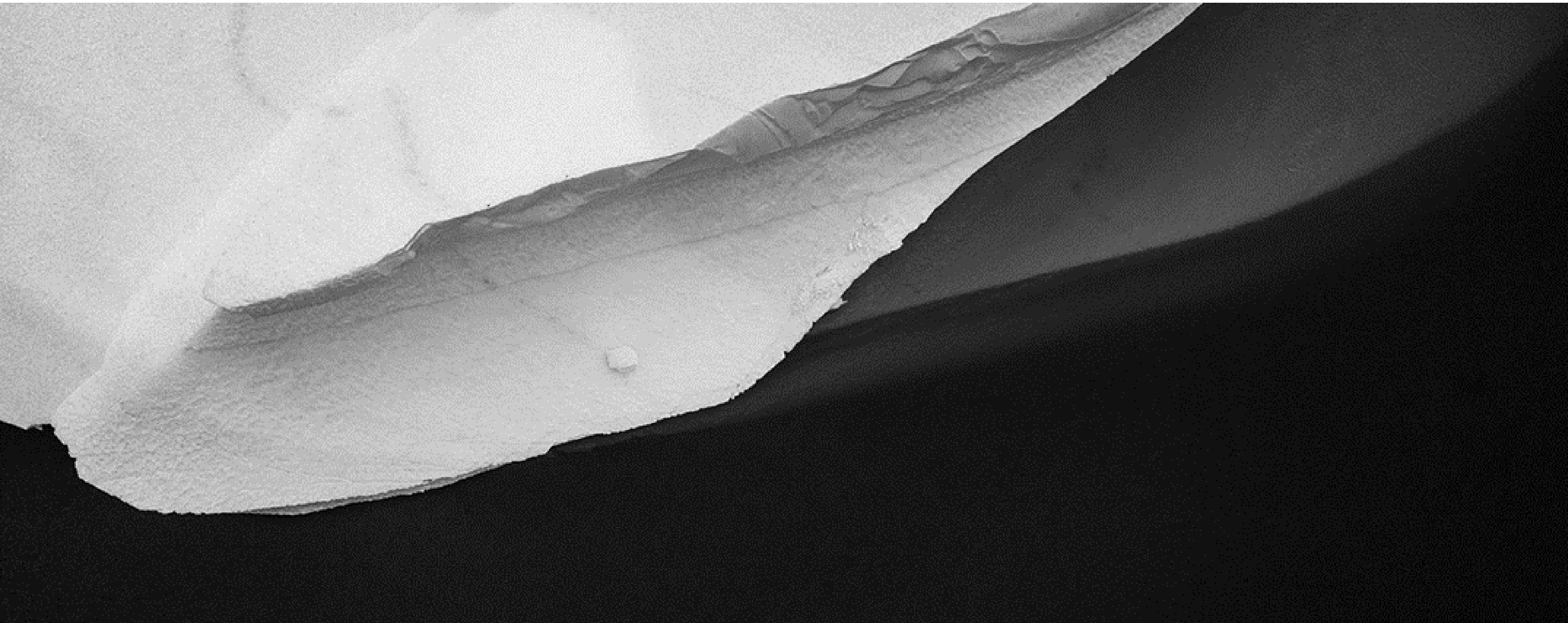


EXECUTIVE SUMMARY

- Celent provides wealth managers a framework to help guide thinking on how the pandemic will impact IT spending priorities over the next three years
- This report includes **three IT spending** scenarios, which consider the pandemic's ranges of impact on the economy. Celent attributes the highest probability to **Scenario 2: Proceeding with Caution -** *Budgets stay on hold until the uncertainty surrounding the pandemic subsides in mid–2021*
  - Our most likely scenario predicts a **3% reduction** in 2020 IT spending. We estimate overall yearly spending to be **$21.2 BN**. Following this trajectory, Celent expects 2021–2023 spending to grow with a **CAGR of 5%**
  - The report breaks spending down into four categories: firm type, technology area, system area, and new investment vs. maintenance

EXECUTIVE SUMMARY

Recommendations

Go Remote, Stay Remote

Bolster remote collaboration tools – business will continue to interact digitally

Need for Speed

Prioritize remote communication and frictionless onboarding; clients expect it

Not All Automation Is Created Equal

Exercise a healthy amount of skepticism with "AI-based" tools

Bridge the Knowledge Gap

Invest in digital capabilities that focus on investor education as a form of client retention and satisfaction

Move Forward by Going Back

Remember that back office digitization is equally, if not more, important than front and middle office digitization.

Augment Don't Automate

Front-office technology, at its most fundamental level, should be viewed as an "enabling tool" rather than a "replacement tool"

Don't Save for Savings Sake

While certain cost cutting measures may be required, firms that re-allocate resources to reinforce their core offerings and expand products and services are positioned to gain market share

METHODOLOGY

This March, Celent launched a wealth management CIO survey. The survey aimed to uncover how firms, from both a behavioral and resource allocation perspective, are reacting to today's unprecedented period of uncertainty. Celent then developed a model that integrates the survey data, macroeconomic forecasts and conclusions derived from historical precedents to project IT spending trajectory (from 2020–2023).

The objective of the ensuing analysis is to provide a framework that helps guide thinking on how the pandemic will impact wealth management IT spending priorities over the next three years.

IT Spending Trajectory and Technology Forecast

- The IT spending model is derived from Celent/Oliver Wyman proprietary data
- Celent recognizes that the United States is still in the midst of a global pandemic and it is likely there will be a variety of exogenous factors that could influence future outcomes. Accordingly, the following report contains three projections that are intended to illustrate future IT spending with a focus on what Celent believes in the most probable scenario
- In addition to Celent/Oliver Wyman's proprietary data, Celent used publicly available company revenue and segmented operating expense figures, IMF GDP projections and economic impact and recovery data of other market crashes to integrate within the spend trajectory
- Celent breaks down spending into four categories: firm type, technology area, system area, and new investment vs. maintenance – supporting definitions are provided in the appendix
- Six technology focused slides are included that highlight two trends and certain use cases supporting the technology trend. Each trend is emphasized with the impact from COVID-19, in terms of prioritization by wealth management firms

For more information and insights, please visit Celent's COVID-19 Content Page or feel free to contact the authors directly using the contact details located at the end of this report.

01

INTRODUCTION

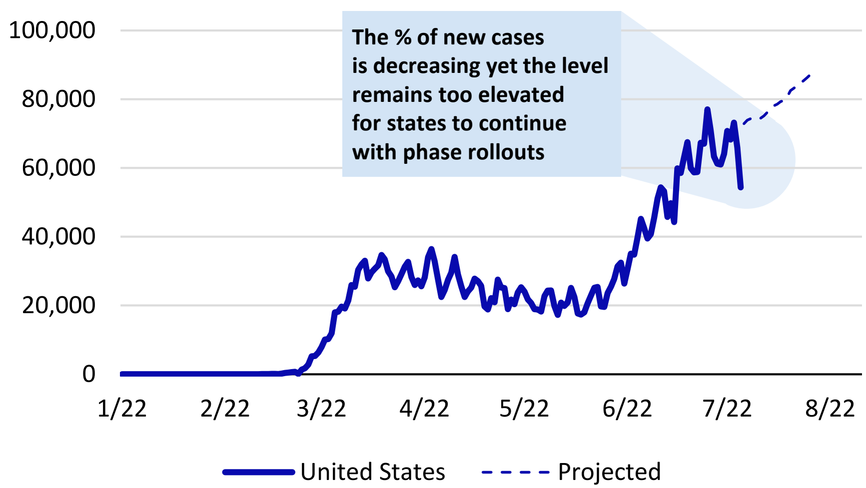
ECONOMIC OUTLOOK

COVID-19 has led to several structural headwinds that will likely dampen the economic outlook for at least 1–2 years

IMF Economic Forecast

	Forecasted GDP		Forecasted Debt: GDP	
Time period	**2020**	**2021**	**2020**	**2021**
USA	-8.0%	*4.5%*	120%	*125%*
Global	-5.2%	*5.4%*	101%	*103%*

New COVID-19 cases/day



Sources: Celent analysis, Oliver Wyman, IMF, Deutsche Bank, Moody’s, Morgan Stanley, World Bank

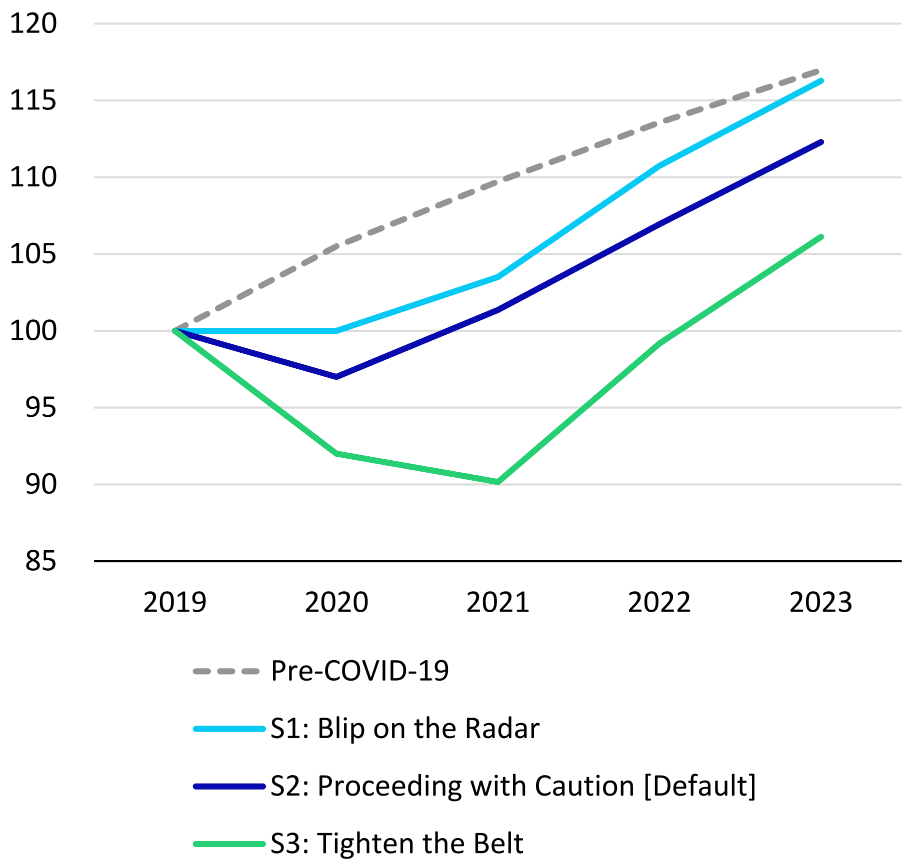
Trends and their Expected Impact

Observation	Implication
Lockdown measures have led to a decrease in output	Economic growth will be negatively impacted
COVID-19 has accelerated the trend away from globalization in favor of provincialism	Decreased cross-border trade and travel will inhibit global GDP growth
Aggressive spending to fight COVID-19 has led to record state and local debt levels	Governments may raise taxes as a means of covering the shortfall
Despite direct stimulus funding, average US household net worth dropped -5.6% (1Q20 – 2Q20)	With unemployment projected to stay in the double digits until at least 2021 and stimulus funding drying up, consumers are likely to be under even more financial pressure
The US’s uniquely high number of new COVID-19 cases will continue to be a severe economic headwind	While the number of new cases/day may decrease, pre-COVID-19 levels of economic activity will not occur unless a vaccine is developed and made widely accessible

WEALTH MANAGEMENT IT SPENDING TRAJECTORY

Scenarios for potential IT spending

IT Spending Trajectory (YoY % Change – Indexed to 100)



Scenario 1: Blip on the Radar – IT spending stays on track after initial freeze

- Budget increases are put on hold for 2020 with a shift to support work from home (WFH) measures (laptops, secured communications e.g., VPN/SD-WAN, etc.)
- As the pandemic's uncertainty fades in late 2020, firms revert back to pre-COVID-19 planned investments

Scenario 2: Proceeding with Caution – Budgets stay on hold until the uncertainty surrounding the pandemic subsides by mid-2021 [Default]

- The pandemic's affect on the economy is felt into 2021
- Decease in revenues affect planned 2020 and 2021 IT spending increases
- Non-essential projects are put on hold. Resources are shifted to support digital capabilities that focus on client engagement
- IT spending gets back on track in 2022 with minor setback in 2020 and 2021

Scenario 3: Tighten the Belt – Extended period of economic contraction

- The pandemic's economic disruption continues throughout 2021
- Wealth Management revenue decline negatively affects future IT budgets
- Resources are primarily redistributed to support core business activities
- IT spending accelerates in 2022 to support neglected initiatives

Source: Celent estimates

MARKET REACTION AND FORECAST OVERVIEW

North American WM firms are accelerating digital transformation initiatives by prioritizing proven technologies, while adjusting their business model to concentrate on survival

Remote Work Infrastructure

2020–2021

- Ensuring advisor technology can support chat/video and document sharing
- Employee and client health remains highest priority, fuelling investment in remote work
- Migrating to a remote advisory model
- Investing in secured communication and VPN connectivity

2022–2023

- Beginning the shift to a digital advice model, leveraging contact center operational approach

Technology Investments

2020–2021

- Significant investment in digital onboarding capabilities
- Investment in light-touch automation, such as RPA, OCR enabled document management, chat bots
- Greater focus on biometric authentication/Digital ID verification

2022–2023

- Automating investment analysis and risk assessment through Machine Learning-based tools
- Significant investment in workflow and process optimization through AI
- Deep focus on Cloud migration, adopting SaaS and multi-cloud solutions

Business Model Adjustments

2020–2021

- Adopting a distributed workforce model
- Clamping down on cost centers, such as vendor renewals and salary/hiring freezes

2022–2023

- Transferring operations to lower cost centers via BPO
- Explore new pricing schemes and expert-based service models
- FinTech/Robo advisor firms partner with FIs to offer broader spectrum of financial products

Source: Celent analysis

Related research: The New Work Order: Opportunities for Wealth Managers in the Age of COVID-19

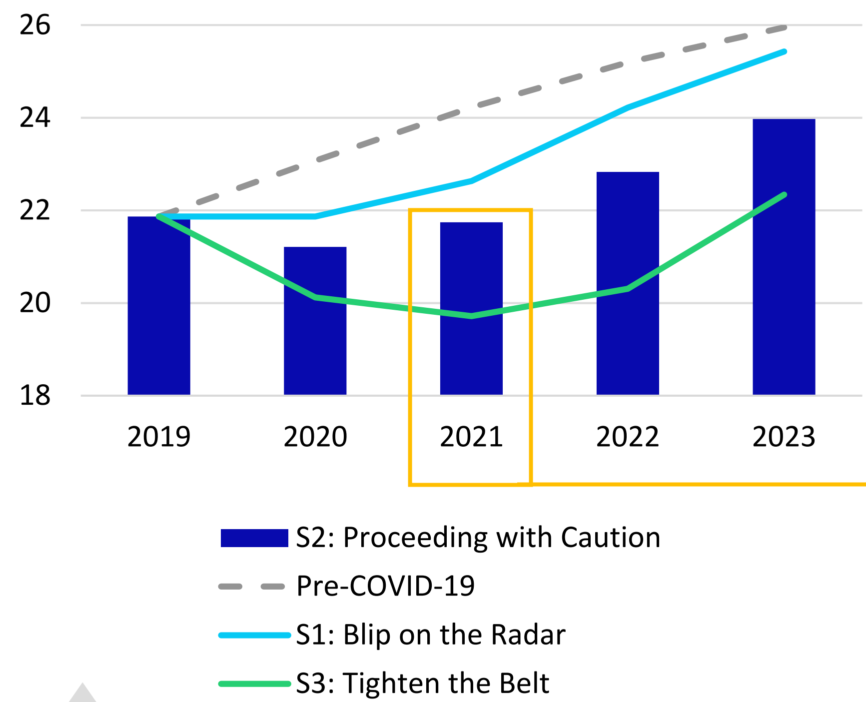
02

IT SPENDING TRAJECTORY

IT SPENDING OUTLOOK

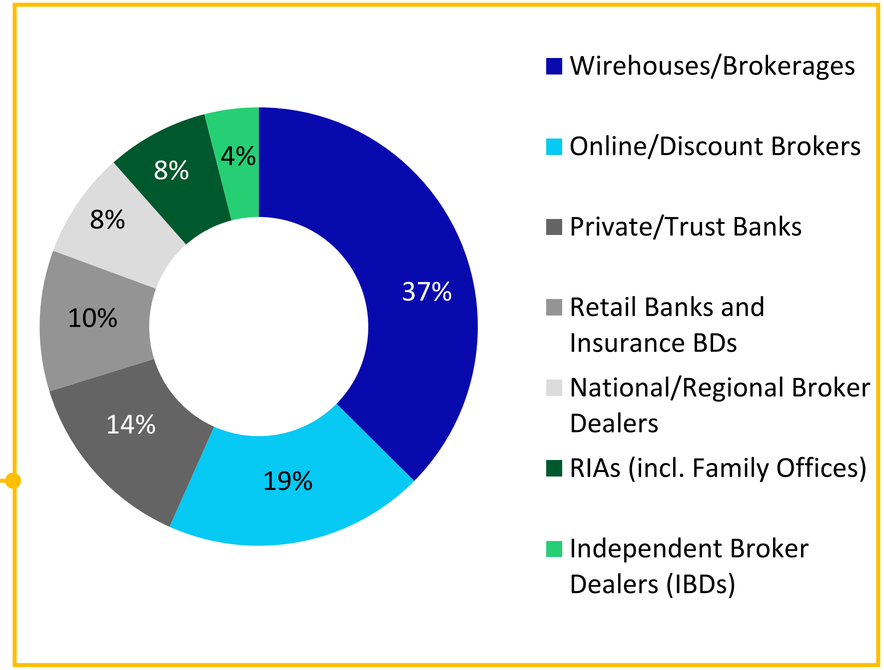
Celent holds the highest probability for Scenario 2: Proceeding with Caution - Budgets stay on hold until the uncertainty surrounding the pandemic subsides in mid–2021

US Wealth Management Overall IT Spending ($BN)



2021 IT Spending by Firm Type ($BN)

S2: Proceeding with Caution



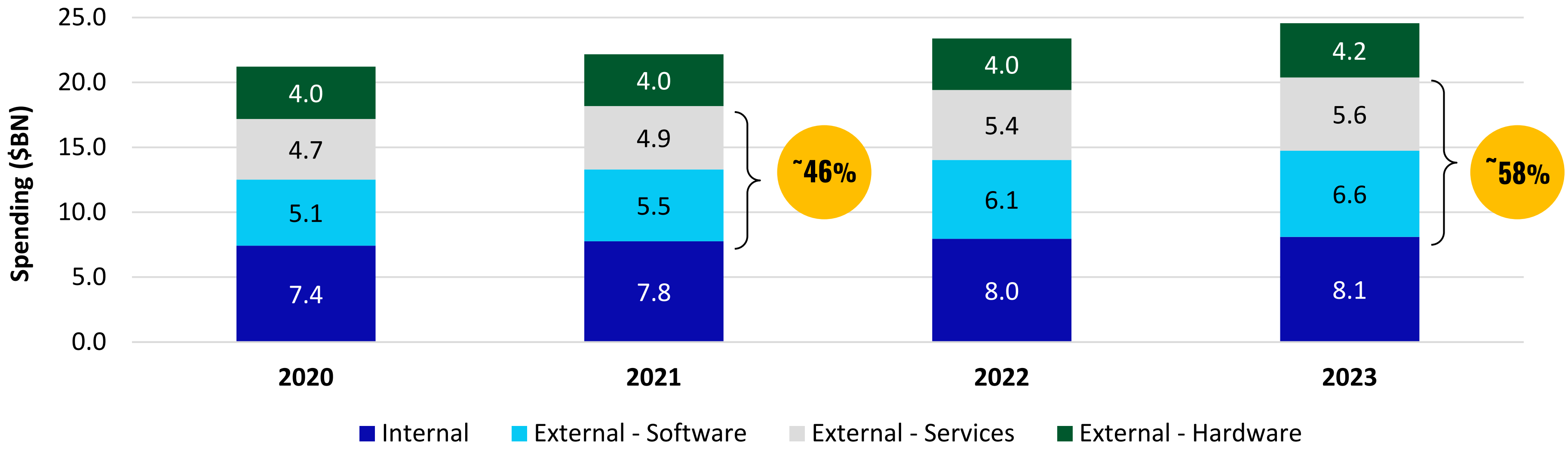
Celent predicts a 3% reduction in 2020 IT spending. We estimate overall yearly spending to be **$21.2 BN**. Following this trajectory, Celent expects 2021–2023 spending to grow with a **CAGR of 5%.**

Wirehouses hold the largest piece of the IT spending pie, at **˜37%.** Independents are witnessing increasing technology spend, with much going to external software. We project that independents will account for **17%** of overall IT spend in 2023; a **5.5%** increase from 2020.

Source: Celent estimates

SPENDING BY TECHNOLOGY AREAS

External software and services continue to be an attractive partnership, with cloud adoption improving time to market for new products and services

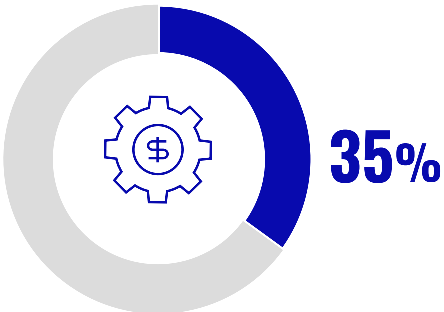


- 2020 – 2023 CAGR; Internal: 2%, External – Software: 7%, External – Services: 5%, External – Hardware: 1%
- The growth of investment to external software and services is expected to account for **58% of the total IT budget by 2023**
  - External spend that is set to increase includes digital onboarding capabilities, two-factor biometric authentication and digital ID verification, and investment in workflow and process optimization through AI and machine learning tools
- While wirehouses and larger brokers are increasing external spend, they also devote significantly more resources toward internal spend. **Cloud adoption helps drive lower allocation to external hardware**
- While the majority of IT spend stays internal, firms continue to reduce the number of legacy systems and focus on strategic initiatives improving technological capacity
- Tighter IT budgets result in increased scrutiny on project timeliness, execution and delivery

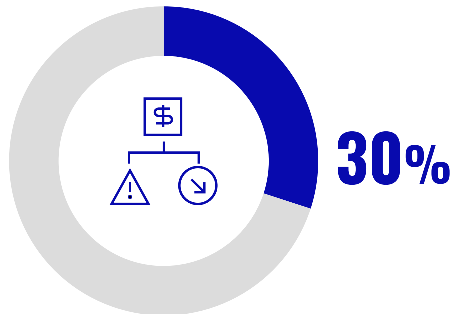
Source: Celent estimates

SPENDING BY SYSTEM AREA

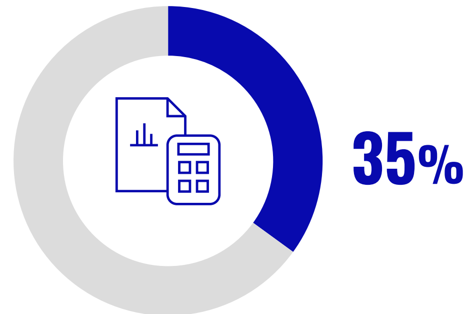
Throughout the past 5 years there has been consistent focus toward improving middle and back office functions



Front Office
Advisor-driven and other client-facing activity *(e.g., onboarding, financial planning, portfolio management/monitoring)*



Middle Office
Processes that support front-office functions *(e.g., trade processing, investment analytics, risk management, reporting)*



Back Office
Core operational functionalities with focus on accounting and workflow *(e.g., settlement, document management, accounting, compliance)*

- Firms are continuing to spend on technologies that boost advisor efficiency and enhance the user experience
- Areas of emphasis include digital client communications (e.g., chat bots for advisors and clients), financial planning software, and digital marketing and prospecting capabilities

- Over the last 5 years, Celent has observed a continuing trend towards outsourcing middle office functionalities
- Investment analytics and risk management is a top priority for many firms
- As Wealth Managers face mounting cost pressures there has been a focus on integrating external software for trade processing, and particularly reconciliation

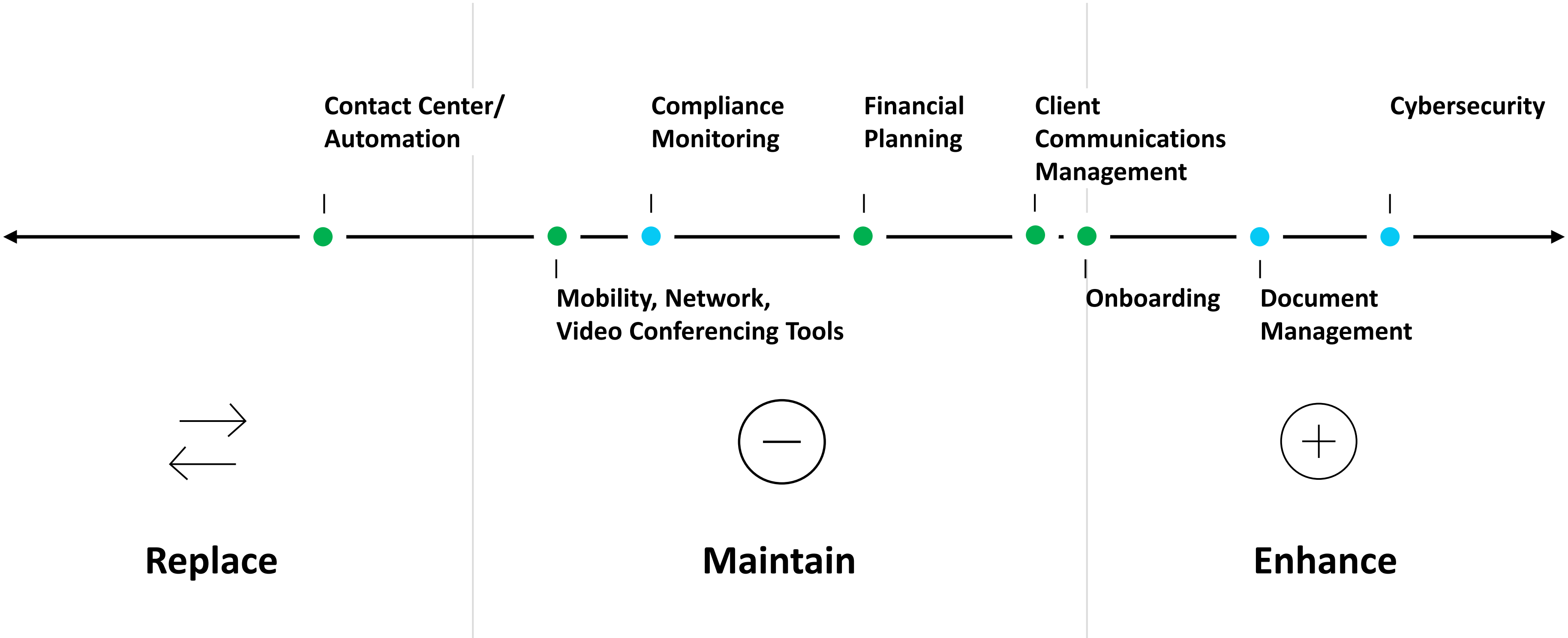
- Back Office technologies remain a significant area of investment
- With an increase in remote work, document management was ranked greatest area of future investment in Celent’s WM CIO survey
- Many firms are focused on finding ways to seamlessly integrate applications, data and channels into an omni-channel environment

Source: Celent analysis

SPENDING BY TECHNOLOGY INVESTMENT

New technology investments account for nearly $7.5 BN of overall IT spending

As remote work models take precedent during the pandemic, strengthening cybersecurity is the top priority, alongside onboarding and document management



Front Office   Middle/Back Office

Source: Celent analysis

03

CURRENT IMPLICATIONS: 2020–2021

IMMEDIATE MARKET REACTION: WEALTH MANAGERS CONCENTRATE ON SURVIVAL

As lockdowns and social distancing measures continue through 2020, wealth managers have implemented strategies designed to keep employees safe while effectively serving clients

Initial reaction	Short-term outlook
January – July 2020	August 2020 – December 2021

Initial reaction (January – July 2020)

- Ramped up control room functions including cybersecurity and internal and external communications
- Salary, hiring, internships, and travel freezes
- Improved WFH measures including VPN/SD-WAN connectivity and capacity, issuance of laptops, etc.
- Business rationalization in control room (communications), outsourcing strategy, distributed workforce, and secure collaboration

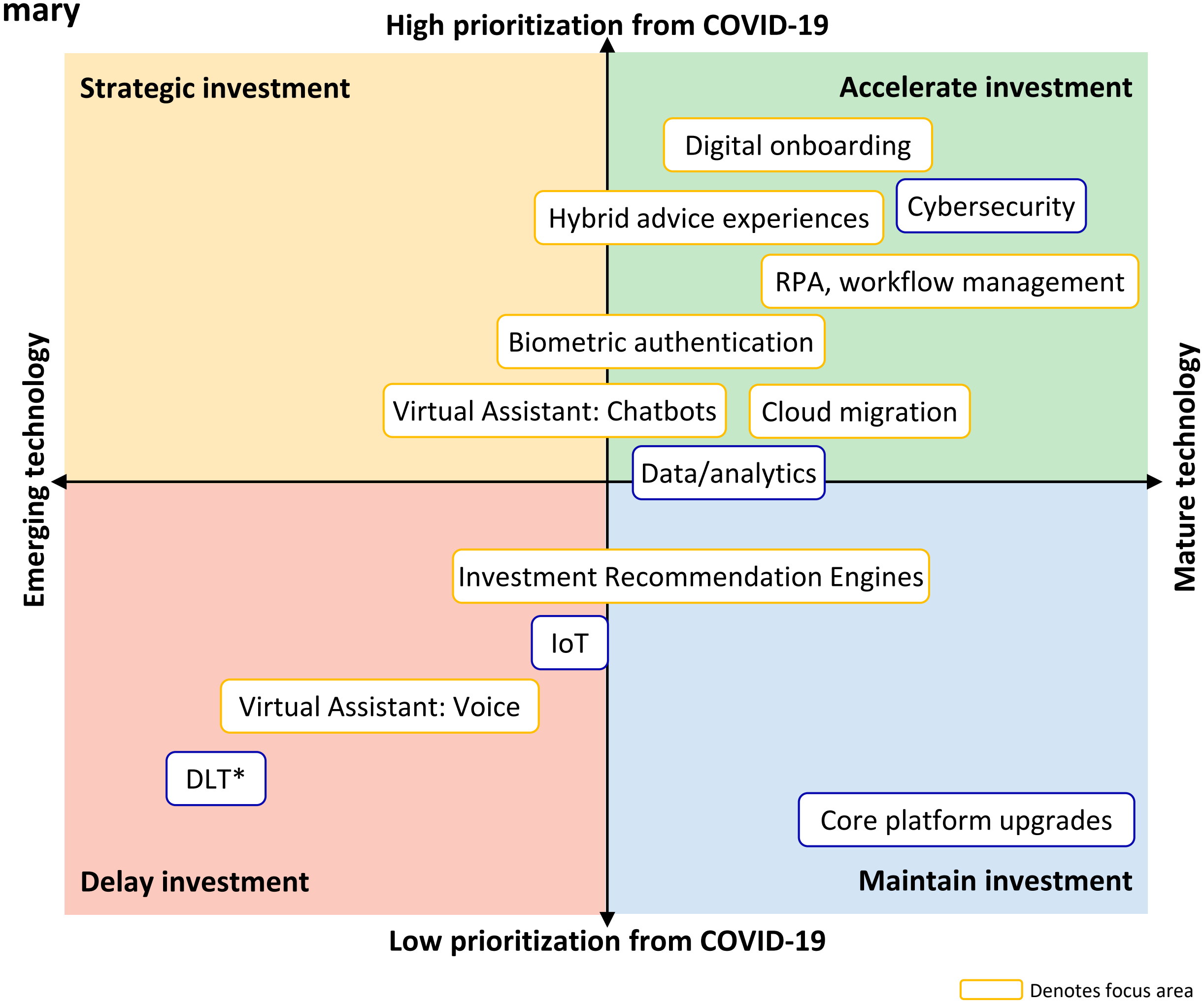
Short-term outlook (August 2020 – December 2021)

- Improve document management functions
- Increase focus on cloud migration and adopting SaaS and hybrid cloud solutions
- Continue work on building out remote advisory model and capacity
- Investment in light-touch automation such as RPA, OCR enabled document management, and chat bots
- Continue investment in workflow and process optimization through AI and machine learning
- Focus on vendor management by revisiting user licenses, data consumption and software maintenance agreements, and even the consolidation of existing relationships.
- Improve compliance functions
- Greater focus on biometric authentication and two-factor digital ID verification
- Transfer operations to lower cost centers via BPO

CURRENT TECHNOLOGY IMPLICATIONS: COVID-19 ACCELERATES DIGITAL MIGRATION

2020–2021 Technology Investment Summary

- Institutions are reconsidering investment priorities for the remainder of 2020
- Celent divides this matrix into technologies that are mature or nascent/emerging and the degree to which their prioritization is impacted by COVID-19
- We identify four major areas of shifted focus:
  - **Accelerate investment**: WM firms have been thinking about these technologies prior to the pandemic but investment will accelerate
  - **Strategic investment**: Nascent technologies have always been on the radar but requirements from the pandemic will force firms to rapidly begin exploring untested solutions
  - **Maintain investment**: These are mature technologies that demonstrate immense value, whose investments are minimally impacted by the pandemic
  - **Delay investment**: WM firms will continue to watch these nascent technologies but may not fully embrace them until full recovery



*DLT = Distributed Ledger Technology

WEALTH MANAGERS HAVE BEEN HEAVILY INVESTING IN ONBOARDING TO ENABLE REMOTE COLLABORATION AND VERIFICATION OF CLIENTS

Client Onboarding

Biometric Authentication

Trend 1: FIs are prioritizing remote client communication tools

- **Overview:** Minimization of face-to-face interactions has prompted FIs to devise innovative strategies aimed at replicating the "client-advisor" experience. Document management and digital signature capabilities help advisors efficiently transfer information
  - BBVA has developed a video chat tool that allows clients to remotely open an account. The platform confirms the client's identity and facilitates digital signature required for documents

Trend 2: Firms are employing biometric authentication capabilities for remote client ID verification

- **Overview:** In an effort to create a secure and frictionless user experience, firms have unveiled additional security measures. Passive and active liveness testing allow clients to provide and validate information remotely
  - An estimated 50% of users abandon the digital onboarding process owing to the complex nature associated with security authentication
  - 66% of clients say they prefer Biometric authentication tools over the use of traditional passwords

Denotes impact from COVID-19

No effect | Mild effect | Major effect

Credit Suisse launches completely digital onboarding process

Introduced Online Relationship Onboarding (ORO)

Video authentication, digital contract generation and electronic signature capabilities enable remote onboarding within ~15 minutes

HSBC develops frictionless doc transfer tool

Clients can securely authorize transactions and sign docs via email

NatWest introduces biometric authentication

Clients can validate identity through a selfie

Wells Fargo pilots eyeprint authentication

Makes the client sign-in process easier and more secure

BNP implements biometric authentication

Clients can validate information through image recognition

Source: Celent analysis, Finextra, Visa

Related research: Wealth Management Client Onboarding Platforms

ROBOTICS PROCESS AUTOMATION (RPA) CONTINUES TO IMPROVE WORKFLOW MANAGEMENT AND ADVISOR PRODUCTIVITY

RPA, Workflow Management

Denotes impact from COVID-19

No effect | Mild effect | Major effect

Trend 1: Firms automate processes to aid advisor productivity

- **Overview:** By capturing data (e.g., account info) and prefilling forms, RPA improves advisor productivity. RPA is frequently used in prospecting, onboarding, account opening, KYC, trade processing and support, marketing, client report generation, and chatbots
  - ROI can be significant. Many wealth managers report double (and even triple) digit returns largely due to increase in advisor productivity

Trend 2: Initiatives to improve deployment and utilization of bots

- **Overview:** Main challenges for RPA rest with oversight, maintenance and scalability of different bots deployed. A large focus of RPA deployment lies in the back office, centering on disparate legacy systems to automate manual workflows to support straight-through processing
  - While utilization rates are improving, bots are still sitting idle more than wealth managers would like

St. James's Place improves productivity*

Intellect SEEC helps reduce the review of pensions rollover cases from 2 hours to only 15 minutes by leveraging RPA for data extraction and transfer utility

Invesco improves compliance

RPA helps analyst gather compliant data for prospecting

BNY Mellon Pershing innovates RPA delivery at the benefit of advisors and administrative teams

Intelligent automation deployed to develop a self-programmable workstation. Users can "build-a-bot," and execute uninterrupted tasks. These tasks can be repeated daily at login by using an API to gather information directly from the source

Source: Celent analysis

Related research: : RPA in Wealth Management: Promise and Peril; St. James's Place: New Business Innovation

*Winner of Celent 2020 Model Wealth Manager Award for Emerging Technology

TO BETTER REMOTELY SERVE CLIENTS, WEALTH MANAGERS HAVE ACCELERATED INVESTMENT IN HYBRID ADVICE MODELS

Trend 1: Virtual advisor model is seeing swift adoption by banks

- **Overview:** Traditionally laggards, banks and wirehouses are expanding their direct-to-consumer digital advice capabilities, building their own in-house capabilities, partnering with robo start-ups, and embracing messaging platforms/WhatsApp-style instant-messaging for client-advisor communications
  - J.D. Power study finds that 36% of retail bank customers now receive advice via digital channels

Trend 2: Adoption of hybrid advice is moving up the wealth ladder

- **Overview:** Although historically, the degree of automation has correlated negatively with client wealth, the pandemic is forcing an accelerated adoption of digital services for mass affluent and HNW clients
  - 25% of HNW investors over 70 would now consider digital advice platforms

Denotes impact from COVID-19

No effect | Mild effect | Major effect

UBS	BlackRock	J.P.Morgan
UBS introduces digital advice	**BlackRock offers risk optimization**	**JP Morgan rolls out digital investing**
UBS Advice Advantage platform offers portfolio diagnostics & goal tracking via SigFig	Offers portfolio risk optimization through subsidiary, Scalable Capital	Released digital investing service, You Invest Portfolios, robo-advisor with free ETFs

investmentPOD	BNY MELLON | PERSHING	MERRILL A BANK OF AMERICA COMPANY
InvestmentPOD gains RIA support	**Pershing pushing to support HNW**	**BofA adds human advisors**
Offers digital advice platform for HNW clients, which has been garnering RIA support	Robos acquired via Jemstep partnership allow support for HNW/ mass affluent clients	Mass affluent targeted by Merrill Guided Investing via addition of human advisors

Source: Celent analysis, J.D. Power, EY

Related research: Hybrid Digital Advice: Pathway To Personalization At Scale, Digital Estate Planning: COVID Proofing your Estate

04

LOOKING AHEAD: 2022–2023

LOOKING AHEAD: THE SHIFT TO REMOTE ADVISORY MODEL

Wealth managers will reprioritize their development roadmaps in an effort to optimize their operating model and address hyper-personalized offerings in an expanded product set

Future outlook

January 2022–December 2023

Hyper-personalized offering:
Differentiation does not just come by addressing ESG and SRI needs, firms are focused on delivering a unique experience on the channel of the client's choice

New pricing schemes:
To better address client needs

Expert-based servicing models:
Best-of-class technologies to aid the advisor in servicing clients and prospects and not completing administrative tasks

Reduced technology deployment cycles:
Aided by bandwidth from 5G, adoption of the cloud and increasing use of wearables and other superlight personal communications devices

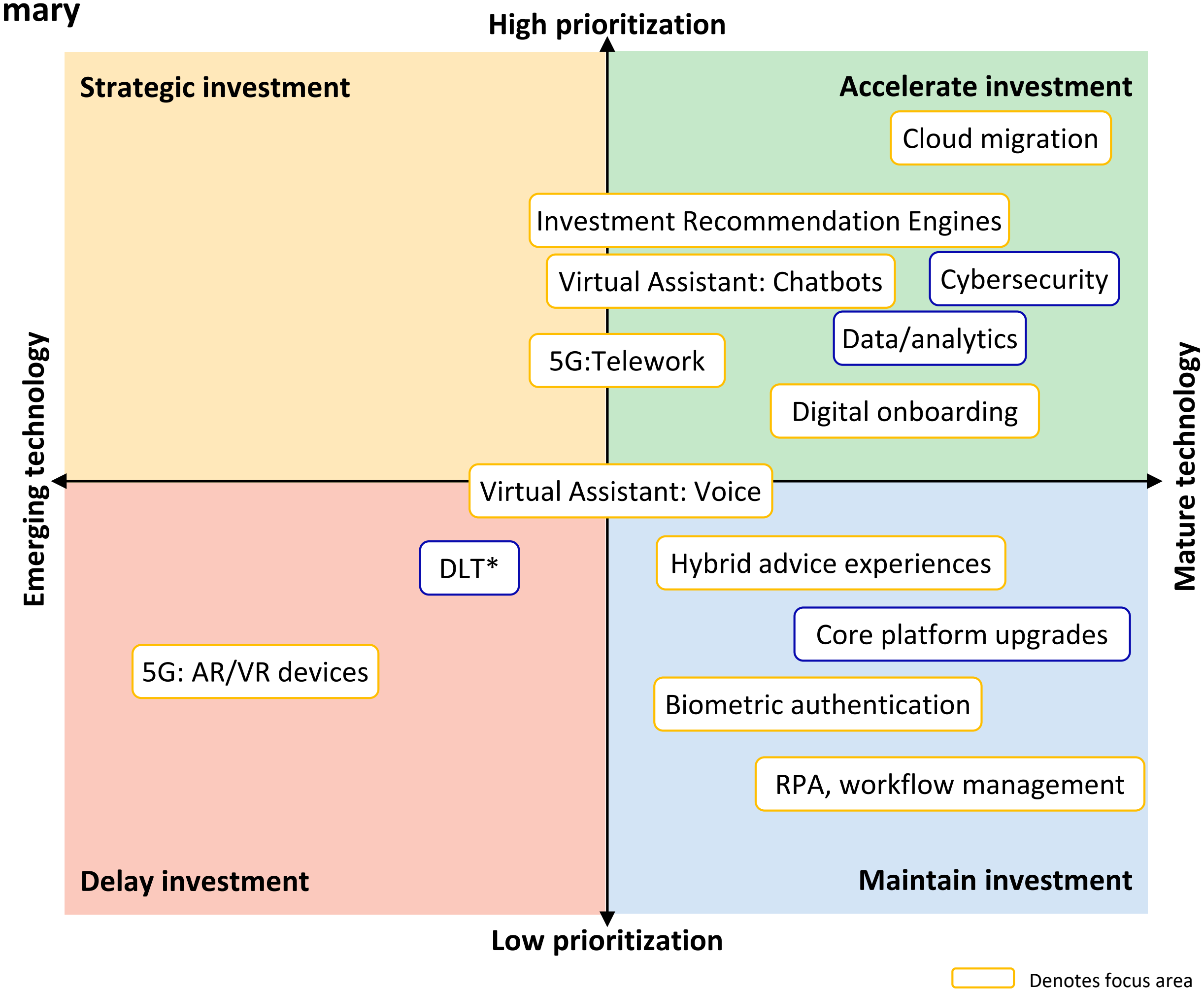
Expanded product set:
A financial wellness proposition implies an expanded product set (including credit) addressing the whole of the client balance sheet

Shift to better serve investor needs:
Cash savings, not investment management, represents the first step on the client wealth journey

FUTURE TECHNOLOGY IMPLICATIONS: AUTOMATION OF CORE SERVICES AND MIGRATION TO THE CLOUD

2022–2023 Technology Investment Summary

- Institutions will begin to realize returns from investments in digitization and automation; doubling down on mature technologies
- **Cloud migration:** Confidence in multi-cloud solutions will grow owing to stronger data privacy laws
- **Investment Recommendation engines:** More robust aggregation and understanding of client data will enable the deployment of impactful call-to-actions
- **Virtual Assistants:** WM firms increase adoption of AI-based chat tools as they become increasingly robust
- **Hybrid advice experiences, Biometric auth., RPA:** Prior accelerated investment stemming from COVID-19 will ultimately mean that WM firms will simply be maintaining these enhanced tools
- **Digital onboarding:** Continued investment will lead to deeper integration with CRM and portfolio management offerings which will augment the digital experience



*DLT = Distributed Ledger Technology

WM FIRMS WILL EXPAND UTILIZATION OF AI TO ASSIST ADVISOR DECISION-MAKING AND TO AUTOMATE PARTS OF CLIENT INTERACTION

Virtual Assistants

Investment Rec. Engines

Denotes impact from COVID-19

No effect | Mild effect | Major effect

Trend 1: Migrating low-touch services over to Virtual Assistants (VA)

- **Overview:** WM firms are beginning to migrate core service over to voice-enabled channels (e.g., smart speakers, mobile, wearables, etc.), shifting their organizational structure and contracting vendors to develop Conversational AI-related use cases
  - TD Ameritrade, Barclays, Morgan Stanley, Blackrock, JP Morgan, and Fidelity have all invested in conversational AI

TD Ameritrade AI invests for clients

Utilizes chatbots to provide basic customer support and Alexa to process client trades

Fidelity VA offers client support

Web/mobile-based virtual assistant answers FAQs, market news, & status updates

Barclays WM uses AI in the call center

AI conducts biometric voice authentication to verify client IDs at the call center

Trend 2: Automating the investment proposal process with ML

- **Overview:** WM firms are leveraging client data for predictive modelling. By utilizing next best action (NBA) and investment recommendation tools to automate significant portions of an advisor's planning activities, firms allow advisors to deliver deeply personalized client interactions while being able to maintain quality service at scale
  - Bank of America Merrill Lynch, Morgan Stanley, and US Bank have publicized the use (or intention to use) of ML technologies to bolster their commercial performance

M.S. rolls NBA to 15k advisors

Offers investment advice, operational alerts and recommend-ations on life events

U.S. Bank studies client behaviours

Predicts high-value client prospects and NBA recommendations aligned w/ preferences

BNP Paribas gives personalized offers

Utilizes Next Best Action to provide product offers based on client preferences

Source: Celent analysis

Related research: An Introduction to Voice-First Investing: Key Steps to Harnessing its Potential, The Next Best Action: Using Machine Learning to Anticipate Client needs

WEALTH MANAGERS WILL INCREASE CLOUD USAGE TO DERIVE CUTTING EDGE INSIGHTS AND FACILITATE DIGITAL EXPERIENCES

Cloud Migration

Trend 1: WM firms will accelerate toward a multi-cloud deployment architecture

- **Overview:** Larger wealth management firms are beginning to leverage a multi-cloud approach; slowly migrating from mainframe computing in exchange for optimized scalability, faster deployment and enhanced client experience
  - In Celent's WM CIO survey, "Cloud/Migration" was ranked the most common area of emerging tech investment

Trend 2: Cloud adoption will provide WM firms greater access to enhanced data analytics and AI capabilities

- **Overview:** Wealth Managers are employing existing technology stacks within cloud providers such as AWS, Azure, and Google Cloud. These tools enable frictionless deployment of AI/ ML functionalities to the front office.
  - Vanguard has been utilizing AWS's cloud integrated models that provide bespoke, data-driven analytics and portfolio recommendations

Denotes impact from COVID-19

No effect | Mild effect | Major effect

Banco Sabadell hosts infrastructure on public cloud
Partnered with IBM public cloud to modernize applications

UBS migrates data centers to Azure
Aggregates data from 25 DCs into ad hoc premise; first cloud DC in Switzerland

HSBC re-architects core platform with Google Cloud
Migrated all applications to the cloud

Robinhood leverages AWS to support growth
Allows BD to perform business analytics at scale with lean staff

RBC unveils private AI cloud
Enables transformative intelligent applications to be brought to market in record time

TD derives customer data analytics on Azure
Developed analytics app to analyze 100M daily records of data

Source: Celent analysis
Related research: COVID-19: The Impetus and Transference to Cloud

5G WILL ENABLE ACCESSIBLE AND IMMERSIVE DIGITAL CLIENT INTERACTIONS THAT MIMIC THE TRADITIONAL EXPERIENCE

5G: Telework

5G: AR/VR Devices

Trend 1: 5G will enable remote collaboration/work models, as advisors move toward a contact center work model

- **Overview:** Growing population of advisors will move away from brick-and-mortar as margins continue to tighten, 5G will help facilitate the rise of co-working spaces/pop-up offices. Advisors will have anytime, anywhere access to reliable connectivity with higher speeds, capacity, and little to no latency for client communications
  - Telework is already surging, with Verizon reporting a 75% surge due to video, voice, conference calls in March

Trend 2: Early investment in AR/VR devices will enable seamless face-to-face client interactions

- **Overview:** Big tech will introduce 5G-enabled smart glasses by 2023, a platform that will garner early F/S investment to let clients render face-to-face communications with their advisor in any environment
  - Westpac Bank, Citi Bank, Commonwealth Bank, Standard Chartered Desjardins, and Visa are experimenting with AR as a way to facilitate client education, interactive services, and employee workstations

Denotes impact from COVID-19

No effect | Mild effect | Major effect

Santander launches 5G smart network branch
Implemented 4K videoconferencing, low latency cloud storage

BBVA rolls out two 5G antennas
Improves processing speed and customer experience

SPD Develops AI-powered virtual employee
Chinese bank offers risk assessment, consulting and investment advice

Citi launched virtual workspace
Virtual workspace for in-house traders based on Microsoft HoloLens technology.

Fidelity uses VR for Empathy Training
Headset-based VR to foster empathy in the advisor

SwissQuote enables Fast Trade
Using eye-tracking to enable clients to place trades

Source: Celent analysis
Related research: First Life: Virtual Reality and the Coming of the Avatar in Wealth Management, 5G is (Almost) Here: What Wealth Managers Should Know Now, and How They Should Prepare

05

RECOMMENDATIONS

RECOMMENDATIONS (1/2)

Go Remote, Stay Remote

While we expect a gradual return to “normalcy,” remote collaboration tools are here to stay. Throughout the pandemic they have proven their worth. Business has and will continue to be conducted outside of the traditional office. It is imperative firms double-down on bolstering these technologies

Need for Speed

Successful migration toward a hybrid advice model requires swift investment in remote communication and frictionless onboarding; clients expect their WM digital experiences to meet the standards established by big tech and fintech

Not all Automation is Created Equal

Exercise a healthy amount of skepticism with “AI-based” tools – successfully operationalizing automation through RPA, virtual assistants, or investment recommendation tools can demand a significant investment of resources (and testing) to yield material ROI

Bet on Winning Horses

Be wary of increasing investment in nascent technologies that are more experimental than practical – shelving these till they’re further along the maturity lifecycle is a measured approach in times of uncertainty. This can include everything from nascent AI-based technologies to mixed reality tools

RECOMMENDATIONS (2/2)

Bridge the Knowledge Gap

Investors thirst for financial knowledge increases as volatile markets entice increased use of commission-free trading. Eliminate the knowledge gap by investing in digital capabilities that focus on investor education as a form of client retention and satisfaction

Move Forward by Going Back

Back office digitization is just as important – the seamless flow of data back and forth across the technology stack supports the deepened integration of CRM, financial planning and portfolio management tools, which in turn, enables the realization of a team-based, expert-driven servicing model aligned with client interests

Augment don't Automate

Wealth Management, is first and foremost a relationship-centric business where interpersonal interaction is key. To most clients, an advisor's core value proposition is personalized advice and attentive service. From the most fundamental perspective, firms should view Front-office technology as an "enabling tool" rather than a "replacement tool"

Don't Save for Savings Sake

Experience tells us that firms who successfully navigate a crisis are those that continue to innovate. While certain cost cutting measures may be required, firms that re-allocate those resources to innovate their core offerings and expand products and services are positioned to gain market share

RELATED CELENT RESEARCH

5G is (Almost) Here: What Wealth Managers Should Know Now, and How They Should Prepare

An Introduction to Voice-First Investing: Key Steps to Harnessing its Potential

COVID-19: The Impetus and Transference to Cloud

Digital Estate Planning: COVID Proofing your Estate

First Life: Virtual Reality and the Coming of the Avatar in Wealth Management

Hybrid Digital Advice: Pathway To Personalization At Scale

RPA in Wealth Management: Promise and Peril

St. James's Place: New Business Innovation

The Next Best Action: Using Machine Learning to Anticipate Client needs

Wealth Management Client Onboarding Platforms

Calling All AI: Automating the Contact Center Environment

The New Work Order: Opportunities for Wealth Managers in the Age of COVID-19

Embracing Fractional Shares

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HOW TO ENGAGE WITH US

Shape our agenda

Discuss your specific situation with our Analysts

Nominations are open for **Celent's 2021 Model Wealth Management Awards program!** Deadline for submissions: **October 16, 2020**

Self-guided research

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APPENDIX

FIRM TYPE DEFINITIONS

RIAs (incl. Family Offices)	Typical fee-based and led by an individual RIA, works with both institutional and HNW; many started by advisors after breaking off from wirehouses & brokerage
Independent Broker Dealers (IBDs)	Often provide access to high-level money management platforms including access to alternative vehicles and turnkey investment or savings programs designed to cater to a specific market segment; experienced advisors seeking high commission pay outs with less office and administrative support
Wirehouses/ Brokerages	Include national and regional players leading with investment management/advice; many with proprietary products; champion the advisor-as-entrepreneur model
Retail Banks and Insurance BDs	Mass Market and Mass Affluent focused with dense national branch footprints; lead with checking and consumer lending products and have large customer bases. Full-service brokerages within an insurance company, ranging from employees/career agents of the B/D to statutory employees to independent contractors who are insurance agents repositioned as advisors. Includes firms with both open and closed insurance product selections; however, non-proprietary asset management is always available
Online/ Discount Brokers	Mass Market and Mass Affluent focused; lead with self-directed, low-cost online investing. Expanding into advice-based offerings and building out thin branch networks
National/Regional Broker Dealers	National and regional investment banks with retail financial advisor forces, national B/Ds targeting clients with moderate wealth, and boutique firms with a localized presence
Private/ Trust Banks	Include nation and regional players leading with investments and wealth transfer/trust solutions for HNW individuals ($3M+); some also offer banking services; high-touch, thin network model. Extending transitional private banking to “affluent” segments; target these segments for their personal and business needs with a broad portfolio of banking, lending and investment solutions, operate thin branch networks and focus on specific sectors/geographies with a high-touch RM model

GUIDE TO CELENT'S VIEW OF IT SPENDING ACROSS SPECIFIC OUTLAYS

Category	Outlay	Definition
Internal	Internal IT	Denotes expenses associated with the internal management, analysis, development, maintenance, support, and operation of information technology. It includes all internal spending on data center operations and management of technology personnel.
External	Hardware	Hardware IT spending consists of all expenses associated with the purchase or lease of computer hardware, including servers and networking equipment and associated peripherals. This category also includes costs associated with operating systems and networking middleware.
	External software	External spending on software includes purchasing costs or licensing fees associated with third party packaged solutions, but not installation fees and costs of customization upon installation.
	External services	The services category includes all expenses associated with IT services purchased from external sources, including professional contractors, application service providers, service bureaus/outsourcers, systems facilities management, disaster recovery, and technology training. Also included in this category are fees charged by third party software application providers for installation and consulting.

SYSTEM AREA DEFINITIONS

Front Office (FO)

Advisory processes from end to end in an integrated workflow and single infrastructure

Functions	Activities
1 Client Onboarding	• Lead generation • Contact management • Investor accreditation • Asset/funds transfer • AML & KYC
2 Financial Planning	• Goal-based plan • Risk profiling • Advanced analytics • Cash flow-based plan • Asset allocation
3 Portfolio Management	• Portfolio optimization • Portfolio modelling • Rebalancing • Account restrictions • Tax considerations
4 Portfolio Monitoring	• Real time valuations • Performance calculation • Portfolio simulation

Middle Office (MO)

Supportive processes of front office functions: Investment professionals, operations, data

Services	Activities
1 Trade processing	• Commission/fee routing • Capture/order management • Asset services • Reconciliations
2 Investment analysis & risk management	• Benchmarking • Portfolio analytics • Tailored solutions • Independent analysis • Customized fact sheets
3 Reporting	• Tax/financial reporting • Performance reporting • Data aggregation • Ad hoc analysis
4 Information services	• Market statistics • Fund research • Order referential • Fund ranking

Back Office (BO)

Core operational functionalities with focus on accounting and workflow

Services	Activities
1 Settlement & Custody	• Order processing • Payments process • Recordkeeping • Safeguarding of funds • Tax-related support
2 Document management	• e-Signature • Account documentation • Document archiving • Data mapping & OCR • Document storage
3 Accounting & billing	• Portfolio accounting • Client accounting • Commissions & fees • Disbursements • Margining
4 Compliance	• Pre-trade compliance • AML & KYC • Post-trade compliance • Monitoring & surveillance

QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS

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