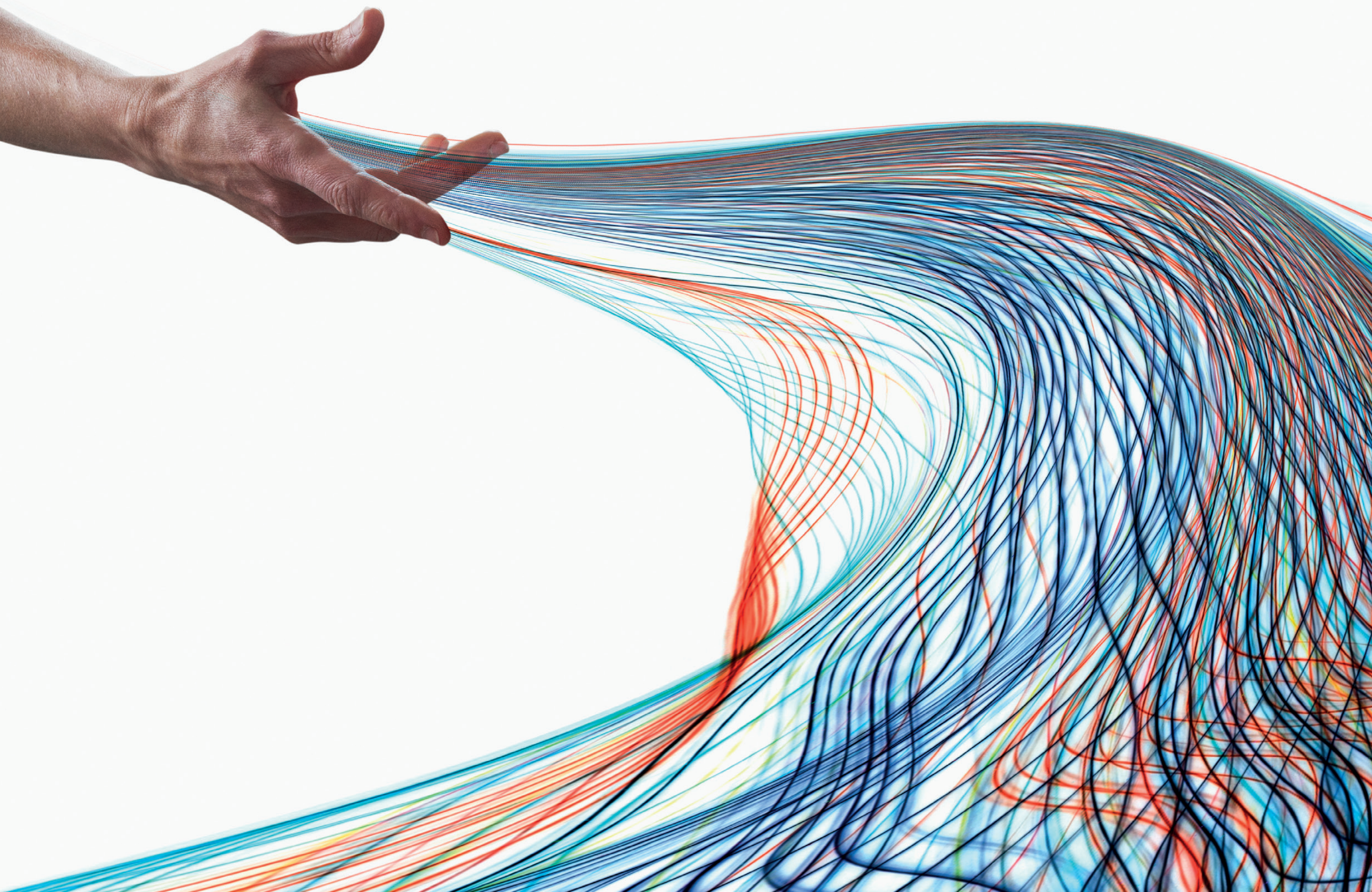
Digitisation of asset and wealth management:
promise and pitfalls



Foreword

Technology has revolutionised industries all over the world in the past years and the asset and wealth management industry is no exception. In order to assess the evolution since our first research done four years ago, we have once again joined forces with CREATE-Research to perform a follow-up analysis. The study conducted by Prof. Amin Rajan bases on an extensive global survey that uncovers an illuminating stock-take on the state of digital transformation in the industry.

Similar to other industries, customers in financial services are awaiting not only better outcomes but also delightful and meaningful experiences. At the same time, regulatory scrutiny, turbulent economies, changing demographics and traditional business model erosion demand of asset and wealth management decision-makers to find new approaches that reinvent sustainable value creation processes.

In this context, the evaluation of results highlights the benefits of digitisation while providing a comprehensive overview on the adoption state among cross-country institutions.

Dassault Systèmes possesses more than three decades of digitisation know-how enabling companies at the forefront in highly regulated industries such as life sciences, aviation and automotive. Our purpose-built financial services industry solutions, based on the 3DEXPERIENCE platform, accelerate the progress to achieve efficiencies, reduce regulatory compliance costs as well as attain sustainable customer-centric innovation.

Prof. Rajan and I are delighted to present you the results with this report. We hope that these insights will serve you well during your journey in the era of digitisation.

Guillaume Dufour
VP, Financial and Business Services
Dassault Systèmes

Survey participants by geography and size of AuM

Andorra	France	Japan	South Korea
Australia	Germany	Liechtenstein	Spain
Belgium	Ghana	Luxembourg	Sweden
Brazil	Greece	Netherlands	Switzerland
Bulgaria	Hong Kong	New Zealand	Thailand
Canada	Hungary	Nigeria	UK
China	Iceland	Norway	USA
Czech Republic	India	Russia	
Denmark	Ireland	Singapore	
Finland	Italy	South Africa	
AuM ($US trillion) 32.0			

Introduction

The asset and wealth management industries are in the midst of a transformation unlike any that we have seen before, owing to a self-reinforcing chain reaction that has accelerated since the 2008 crisis.

Its key drivers are mounting regulation, the rise of the Millennials as an investor group, fee pressures and the growing social acceptance of digital technology. Together they are changing the competitive landscape and putting clients at the heart of everything that we do.

In particular, technology is permeating most activities in our front, middle and back offices. It is moving centre stage in terms of how we engage with our clients, how we invest their money and how we deliver value to them.

At the same time, there has been too much hype about it, with little regard for some of the challenges that need to be overcome, as we advance into the digital future. Having the technology is one thing, getting the best out of it is quite another. Legacy systems and legacy thinking can often slow things down.

Hence, this report is timely. It focuses on the reality of digital innovations on the ground. It provides a scorecard on where asset and wealth managers stand in the adoption cycle. It narrates the experiences of the early adopters. It highlights the approaches they have used to generate tangible benefits.

Most of all, it underlines the role of business leaders in crafting a strategic vision for their companies and creating a cultural climate that facilitates the adoption of agile business models in keeping with the digital age. The key insight is that the current transition is as much about mindset shifts as about bright business ideas and shiny new gizmos. More than ever, leadership makes all the difference.

As a regular independent writer on asset and wealth management over the past two decades, Amin Rajan has delivered another thought-provoking report on where our industries are heading in the digital age and how we can embrace the change that benefits our clients, shareholders and employees. This global survey report should attract widespread attention because of its balanced approach and sombre analysis.

Martin Gilbert
CEO
Aberdeen Asset Management

Acknowledgements

"*Computers are incredibly fast, accurate and stupid; humans are incredibly slow, inaccurate and brilliant. Together they are powerful beyond imagination.*"
Albert Einstein

> *This report turns the spotlight on the digitisation of the global asset and wealth management industries. It is the first of its type to provide a scorecard on the current state of the implementation cycle.*

This insight is as relevant today as it was at the dawn of the computer age. The current digital revolution is permeating every industry. New ways of thinking are emerging alongside new ways of working.

I am deeply grateful to 458 asset and wealth managers across the world who participated in our survey. I am struck by their candour and desire to discuss the challenges around the implementation of this latest wave of revolutionary technologies.

My grateful thanks also go to Dassault Systèmes for supporting the publication of this report without influencing its findings in any way. This arms-length relationship has enabled us to present an impartial assessment.

I would especially like to thank Rachel Smith and Anurag Wakhlu at Dassault Systèmes for their excellent support throughout the course of this project.

I have much appreciated the excellent support towards the survey from Yuri Bender and Elisa Trovato at *Professional Wealth Management*.

Finally, I would like to thank Lisa Terrett for co-ordinating the survey and running the interview programme, and to Dr Elizabeth Goodhew for her excellent editorial support.

After all the help I have had, if there are any errors and omissions in this report, I'm solely responsible.

Amin Rajan
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1. Executive summary

Introduction and aims

2016 ushered in an age of techno-utopianism when a computer algorithm called *AlphaGo* made history.

It beat the 18-time world champion of *Go*, a fiendishly complicated ancient Chinese board game – with an astonishing 10^{170} possible moves – more than the total number of atoms in the entire universe.

It provides stunning evidence of the leap from the traditional algorithms that carry out routine instructions to the era of cognitive computing: systems that work and learn like human brains as they crunch vast amounts of structured and unstructured data.

No wonder commentators have been questioning lately whether we have reached the point of technological 'singularity', when computers outsmart humans. Only time will tell. For now, these advances mark the third industrial revolution since 1750.

The first one sparked a large-scale migration from agriculture to manufacturing; the second from manufacturing to services. The current one is encouraging migration to nimbler business models in all industries, with the emergence of digitisation as the new '*heartland technology*'.

Financial services have been especially amenable to it, since all their products and processes are information intensive in the extreme. Banks were the first to embark on the digital journey, using one or more of the innovations identified in Box 1.1.

Asset managers and wealth managers have followed suit in their separate ways. Lately, much has been written about the revolutionary potential of digital technology with respect to these two classes of money managers worldwide. But there is little information available on the actual practices on the ground. The rhetoric of technology has run ahead of reality. It's time for a stock take.

Hence, this survey report addresses five issues:

- what structural forces will be driving the pace of digitisation in asset and wealth management?
- what is the current state of adoption of the identified digital innovations?
- how is the interplay of diverse sets of forces pulling the adoption rate in opposite directions?
- what will be the extent of the resulting industry disruption?
- how can individual managers survive and thrive in a new landscape far removed from the old certainties?

These questions were pursued in a global survey of asset and wealth managers. A cross-section of 458 managers (including most of the world's largest asset managers and private banks) from 37 fund jurisdictions participated in our survey, with total AuM of $32 trillion (details of the countries are shown on page 2).

The survey was followed up by structured interviews with senior executives in 50 organisations to gain deeper insights and nuances around the numbers.

Box 1.1 The emerging digital innovations

New digital platforms: that can reconfigure the producer-distributor-client relationship

Robotic process automation: software tools that automate traditional labour-intensive processes

Cognitive technology and machine learning: new capabilities that facilitate alpha generation

Application programming interfaces: generating new business via mobile apps and the cloud

Robo advisors: rely on algorithms that disintermediate fund distributors and facilitate D2C business

Blockchain: a distributed ledger that disintermediates payments and settlements

Big data: availability of data with vastly enhanced volume, velocity and variety

Social media: social networking to help increase brand exposure and broaden customer reach

Machines can do things previously unimaginable.

An interview quote

> *The implementation of cognitive computing will be incremental.*
>
> *But its impact will be monumental.*
>
> *An interview quote*

The rest of this section summarises our key findings and conclusions. More detailed results are presented in the sections that follow. Results in Sections 2, 5 and 6 combine asset and wealth management, since the issues covered are common to both of them. In contrast, results in Sections 3 and 4 cover them separately to highlight the key differences between them on their digital journey.

Key findings and conclusions

1. The structural drivers behind digitisation have the momentum of a supertanker

a. Changing investment landscape

The 2008 crisis marked a watershed. It ushered in a prolonged balance sheet recession in the West and extraordinary monetary easing by central banks to tackle it.

In turn, these have been eroding the bedrock of active investing – long defined by concepts such as fair value, time premium, risk premium, mean reversion and diversification.

Investment returns have become a monetary phenomenon – influenced far more by the regular largesse of central banks than by corporate earnings in the real economy.

Ultra loose monetary policies have borrowed against future returns by artificially inflating asset values. Nearly 90% of active managers have struggled to meet their benchmarks over the past two years.

Moreover, near-zero interest rates have worsened the deficits of defined benefits (DB) pension plans worldwide and accelerated their closures in favour of defined contribution (DC) plans. Ageing demographics have shifted investors' focus from returns maximisation to risk minimisation among mass market investors.

b. Key drivers

As shown in Section 2 of the report, these investment-related changes have emerged alongside three secular parallel developments (Figure 2.1):

- over-regulation of money management (cited by 60% of survey respondents)
- rise of new digital tools (52%)
- rise of Millennials as a distinct investor group (41%).

Together, they will be reinforcing the key recent structural trends in money management over the rest of this decade (Figure 2.2 on p.15). These include:

- rising pressure on fees, charges and costs (cited by 77% of survey respondents)
- rising share of passive funds (60%)
- a rising new generation of end-investors (44%)
- rising demand for blockbuster products (42%)
- rising share of total investible assets held by mass market investors (33%).

The regulatory overdrive has affected various areas of business conduct. Its central thrust, however, has been directed at investor protection. For example, the UK regulator, the Financial Conduct Authority, is not only demanding full transparency around fees and charges; it is also advocating passive funds for less-informed investors while imposing extra fiduciary obligations on money managers.

c. Rise of digitisation

Today, digitisation extends well beyond just adding new digital channels for marketing or customer engagement. It embraces the entire continuum from electronic artefacts and processes at one end; through the upgrading of legacy systems, connecting silos and delivering new services; to the current realm of big data, advanced analytics and artificial intelligence at the other end.

Finally, that scope extends beyond a firm and covers its supply chain within the wider ecosystem that also includes customers, governments and regulators.

Hence, the emergence of digital innovations is timely in view of their potential to save costs, simplify product offerings, provide online guidance, meet fiduciary standards and provide self-service tools, as we shall see at the end of this section.

Some of the innovations – like robo advisors and client digital platforms – hold special appeal for the new generation of digitally savvy investors demanding more immediacy, connectivity and ubiquity – especially Millennials (born between 1982 and 2004).

With the post-War Baby boomers heading for retirement, Millennials are also expected to be the largest employee group in most Western societies over the next 15 years.

They also stand to receive the biggest inheritance ever from the richest generation in history (the Baby Boomers): estimated at $15 trillion in the US and $12 trillion in Europe.

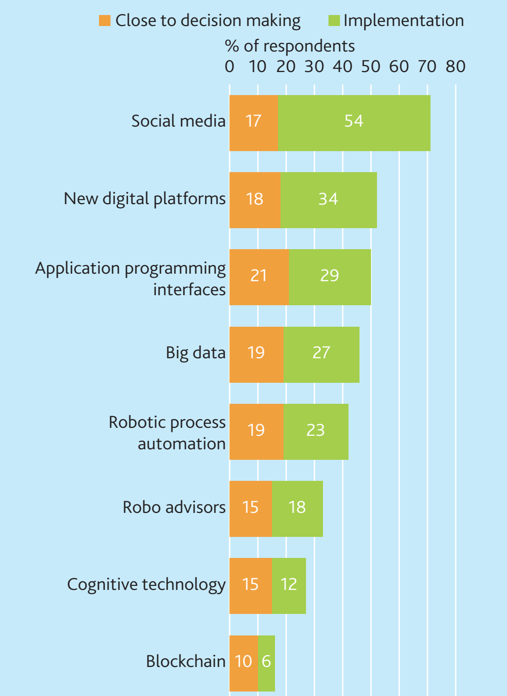
2. Implementation of digitisation so far has been a matter of small steps, not giant leaps

a. Asset managers

There is ample recognition among asset managers that, as central banks rewind their policies, the current level of profitability will be unsustainable: all the more so in the light of the structural trends identified above. The search for cost-effective organic growth has intensified, turning the spotlight on digitisation – but not without hesitation.

Implementation so far has been a matter of more haste less speed (Figure 1.1). Whereas 54% of asset managers have adopted social media, only 6% have adopted blockchain, most of whom are subsidiaries of large banks that are part of the global consortiums developing the new generation of blockchain.

Figure 1.1 With respect to each of the eight key digital innovations below, in which stage is your asset management business currently?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Overall, implementation has relied on going after the low-hanging fruit, like social media, which involve least change to the existing business models. Notably, as Section 3 shows, at least one in every two respondents is still at the '*awareness raising*' stage that precedes '*close to decision making*' and '*implementation*' in the traditional adoption cycle. This applies specially to four innovations with transformational potential in the front, middle and back offices:

- cognitive computing that can enhance alpha generation capabilities and new types of investing that blend active and passive strategies
- robo advisors that can transform the distribution landscape by attracting the new group of under-served self-directed investors
- robotic process automation that can automate all routine manual operations like custody, trade settlement and fund accounting
- blockchain that can disintermediate trading, payments and settlements in real time and at a fraction of the cost.

Indeed, asset managers' current hesitation about digitisation reflects a deeply ingrained skepticism about anything not tried and tested by time or events.

After all, they are custodians of other people's money. Switching to new ways of doing business requires evidence that they will work better than the old.

Prime-mover advantage in business models is not something that the asset industry is renowned for, as we shall soon see.

54%
of asset managers cite social media as the main area of implementation

34%
cite new digital platforms

b. Wealth managers

Wealth managers (covering private banks and independent financial advisors) differ from asset managers in three respects.

To start with, their client base is narrowly focused on wealthy high net worth individuals, whereas asset managers serve long-term institutional investors as well as mass market retail investors. Furthermore, wealth managers offer services that extend beyond investing, and include one-stop-shop, holistic financial planning (including lifestyle needs, philanthropic aspirations and estate planning), whereas asset managers are focused on investing. Finally, advice is the lifeblood of the wealth business, whereas asset managers are currently mostly disintermediated by fund distributors and pension consultants.

> *The creed of alphas will remain very much alive.*
>
> *It will create a new human-machine interface.*
>
> *An interview quote*

56%
of wealth managers cite new digital platforms as the main area of implementation

44%
cite robotic process automation

If it ain't broke, don't fix it.

An interview quote

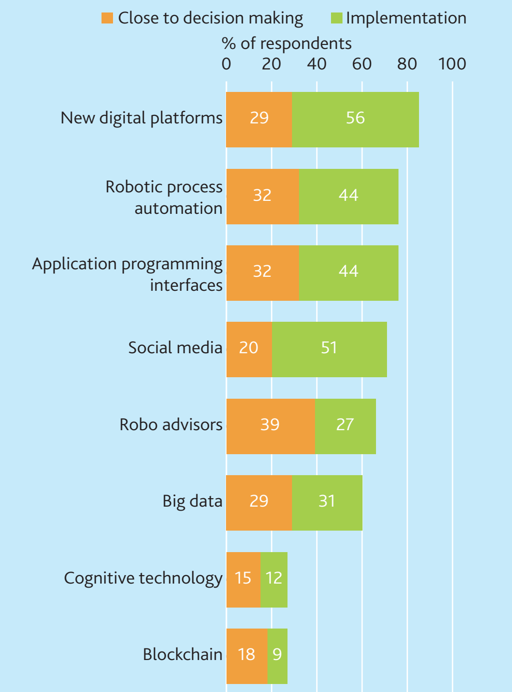
In turn, these differences explain why wealth managers are ahead in the adoption cycle of virtually all digital innovations (Figure 1.2). Notably, more of them are also at the '*close to decision-making stage*' than asset managers, most of whom are still at the '*awareness raising stage*' for all innovations save social media.

Of all the eight innovations, digital platforms have had the most widespread adoption (cited by 56% of respondents). Their pre-eminence so far rests on the conventional wisdom in wealth management: investment performance attracts assets, service quality retains it.

The primacy of client experience

That means segmenting clients by their goals and risk tolerances and designing a service proposition that is aligned to them and, taking it a step further, delights them. The implied customisation is achieved by adopting a wide range of standards that accommodate a variety of client needs – along a new human-machine interface. The self-directed clients will be turning to robo advice. The majority, however, will continue to prefer a bricks-and-mortar presence and a human touch. The most likely scenario envisages hybrid services that blend computerised investment with human help.

Figure 1.2 With respect to each of the eight key digital innovations below, in which stage is your wealth management business currently?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Robo advisors will unquestionably be raising the bar for their human counterparts.

Finally, the biggest change in the wealth management value chain is likely to centre on *client experience* – a new concept born of online shopping and facilitated by vehicle-agnostic operating platforms accessed at any time from any place – all in simple language that is at once engaging and informative.

The concept blends personalisation, convenience, instant access to documents, instant information processing, portfolio reviews, investment insights, self-service tools, real-time dashboards and networking with other clients.

3. The cautious approach to digitisation is dictated by fear of the unknown

Science discovers, technology executes and humans conform. This old dictum is only valid in money management if the timeframe is left out. The question is not 'if' but 'when'.

In real life, businesses are influenced by a complex amalgam of factors, some *moderating* the pace of implementation, others *accelerating* it. The end result depends upon their relative strengths.

a. Moderators

In money management, two sets of factors have been identified as moderators for the rest of this decade.

The first one relates to digital innovations themselves. Many of them are far more opaque than a hand-coded system. For example, cognitive systems need to be given the ability to truly learn for themselves, if they are to discover new actionable insights. On the other hand, the resulting flexibility means that these self-learning systems are a dark black box. Nobody knows how and why their advanced algorithms do what they do. Until ways are found to make them more transparent to their creators and accountable to their users, progress will be a matter of small steps, not giant leaps.

Another technology-related constraint is cyber security. Cognitive programmes that predict and assess threats and design appropriate defences have long been in operation. Yet 80% of companies worldwide were reportedly exposed to cyber attacks in 2014.

As Section 5 shows, the second set of moderators cover legacy cultures, day-to-day pressures and costs, as cited by at least one in every three survey respondents (Figure 5.1 on p.25):

- legacy IT systems (74%)
- innovator's dilemma (63%)
- day-to-day pressures on top executives (48%)
- inadequate forward spend on digital skills (38%)
- regulatory issues that slow things down (35%)
- high investment cost of innovations (33%)
- high investment cost of change management (32%).

Business (and IT) as usual

Taking them in turn, legacy cultures prevail widely due to two factors.

First, the prevailing IT infrastructure is ill-suited to new innovations. In good times, money managers did not take advantage and upgrade their IT systems: there was no evident need. The dominant attitude was 'it works, give or take'. After all, consistently high profit margins were the norm.

Second, high margins also lay at the heart of the innovator's dilemma: why disrupt your current model if your bottom line has been so healthy? Market downturns in the past have rarely been seen as a burning platform, since recoveries have been as predictable as the dawn after the darkest moment. Instead, the core pre-occupation has been talent retention. Indeed, organisational stability has been seen as one of the key differentiators when dealing with other people's money.

Moving on to day-to-day pressures and costs, the structural changes described earlier have diverted top management's attention from long-term growth to short-term survival. The urgent has often got in the way of the important.

The tenure rate of top executives has reportedly been falling, as the bar has been continually rising. Regulatory creep has not helped; nor have the costs of digital innovations and their associated change management.

Accordingly, senior executives need tangible evidence of the benefits of digitisation before committing to big projects.

History shows that IT projects can often over-run their budgets and timelines. There have been too many false starts, even at the vendor end. Some of the innovations – especially blockchain, cognitive computing and robotic process automation – are still perceived as a leap in the dark, notwithstanding their enormous potential. Besides, regulators, too, are behind the curve.

b. Accelerators

History shows that moderators typically dominate the implementation cycle in its early phase. Anything with no long track record is typically frowned upon. Over time, however, accelerators gain the ascendancy, as early adopters gain an edge and change the competitive dynamics. The key challenge is to walk the fine line between stability and change.

Accordingly, as shown in Section 5, five factors are likely to accelerate the pace of digital innovations, as the decade progresses (Figure 5.2 on p.27):

- growing cost pressures (cited by 74%)
- fees & charges becoming a major differentiator (54%)
- the rise of passive funds (48%)
- the market entry of fintechs and internet giants (48%)
- growing social acceptance of digital innovation (47%).

These developments are anticipated against the background of an unusual phenomenon: asset and wealth managers are shifting in the current bull market from being price-makers to price-takers, as the remorseless rise of passives continues to drive down fees and charges; a phenomenon associated with bear markets in the past. End-investors are not only becoming overly demanding about returns and fees, they are also increasingly becoming self-directed: ready, willing and confident to use online platforms.

A new dawn beckons: asset and wealth management may well suffer the same curse as the music industry: winner takes all. A choice overload created by proliferating digital platforms will be turning investors towards advice algorithms. These, in turn, will be increasingly skewing investors' choices towards the biggest hits and the most powerful platforms.

It is healthy in the sense that end-clients will be willing to vote with their feet in search of decent returns. It is unhealthy in that they may be merely chasing the next rainbow, unless their financial literacy improves dramatically.

> *Digitisation is not our first choice, or our last choice; it's our only choice.*
>
> *An interview quote*

19%
of asset managers expect full disruption

31%
of wealth managers expect full disruption

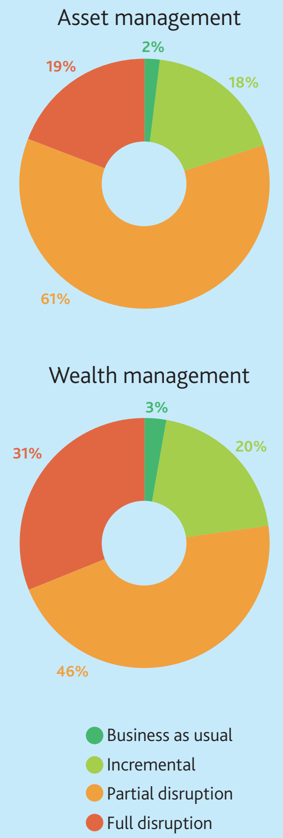
4. Partial disruption is the most likely scenario over the next ten years

a. Scale of disruption

After a headlong expansion over the past 20 years, the asset and wealth management industries are transitioning to maturity phase. But the problem with living through a historic shift is that it is hard to spot at the time. Inevitably, a tug of war is evident in many asset and wealth management houses.

Some want to protect the existing revenue streams via incremental changes while others want to create a new future via disruptive changes; defined here as either creating a new market that didn't exist before or offering a lower-end alternative to the existing product, or both.

Figure 1.3 Taking a ten-year view, which one of the following scenarios summarises your view of the impact of digitisation on asset and wealth management?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Currently, the incrementalists have the upper hand but they are in no doubt that, over time, the evolving structural dynamics of their industry will mean that business-as-usual is the least likely scenario, taking a ten-year view (Figure 1.3). Only 2% of asset managers and 3% of wealth managers think it will happen.

Slow and steady wins the race?

At the same time, the moderators discussed above – some deeply embedded in the DNA of the business – are not expected to be overwhelmed by the identified accelerators any time soon across the patch. Variable geometry is likely to be the most likely outcome.

Two aspects of the survey results are noteworthy. First, full disruption is likely in wealth rather than asset management (31% vs 19%). Second, in contrast, partial disruption is more likely in asset than wealth management (61% vs 46%). Their relative differences in direct exposure to end-client will be the key contributory factor.

More than anything, client behaviours will drive digitisation over time. Asset and wealth management will increasingly evolve from being supply led to demand led.

> *The curse of winner-takes-all is ever present with search engines. Algos rarely nudge end-investors towards anything off the radar.*
>
> *An interview quote*

b. External threats

There is no doubt that mega indexers and large wealth managers will continue to attract the lion's share of the new money in motion. Some are developing their proprietary robo platforms. Others are forming alliances with fledgling robo advisors. Their competitors will need to respond in order to survive, at a time when the internet giants are beginning to show an interest in money management.

Three scenarios are likely (Figure 1.4):

- *barbarians at the gate*: this envisages the external disruptors carving out niches at the commoditised end of the market
- *the empire strikes back*: this envisages asset and wealth managers adopting digitisation in much the same way as most flag carriers, who emulated the low-cost airlines by segmenting their client base and having different propositions for each segment
- *peaceful co-existence*: this envisages alliances between the external disruptors and the incumbents, blending investment expertise with technology knowhow.

As always, the numbers are indicative of current thinking, not definitive about outcomes. They show that survey respondents are divided. More asset managers subscribe to the third scenario and more wealth managers to the second one.

For both groups, the least likely outcome is barbarians at the gate, in the belief that investors will remain wary of trusting their money to a digital platform that lacks investment DNA and the associated brand. Money managers know more about technology than external disruptors know about money management – for now.

One thing is for sure: asset and wealth management are set to decouple from a stable past and re-anchor to a disruptive future. The only unknown is the timing.

5. Easing the transition to a digital future needs a culture of leadership

a. Walking a fine line

Overall, currently the enthusiasm for digitisation is less than overwhelming (Figure 1.5).

On the plus side, survey respondents believe that digitisation will potentially deliver a number of benefits to clients: better value for money, better engagement and lower fees and charges. It will also deliver benefits to asset and wealth managers: higher efficiencies in the back office, fewer staff and changes in the skills sets of staff.

On the minus side, our survey respondents fear accelerated competition and industrialisation. Notably, the majority do not fear a de-skilling in the craft of investing. However, opinions about profitability remain divided: 46% believe that it will be reduced by digitisation, 40% think otherwise.

Early adopters of digitisation, however, hold that there is nothing inherent in it that guarantees outcomes. It is about navigating through the fog to invent a new future, far removed from old connections and causality. Without a clear business strategy and a group of far-sighted people committed to deliver it, no digital tool can make much difference – no matter how sophisticated.

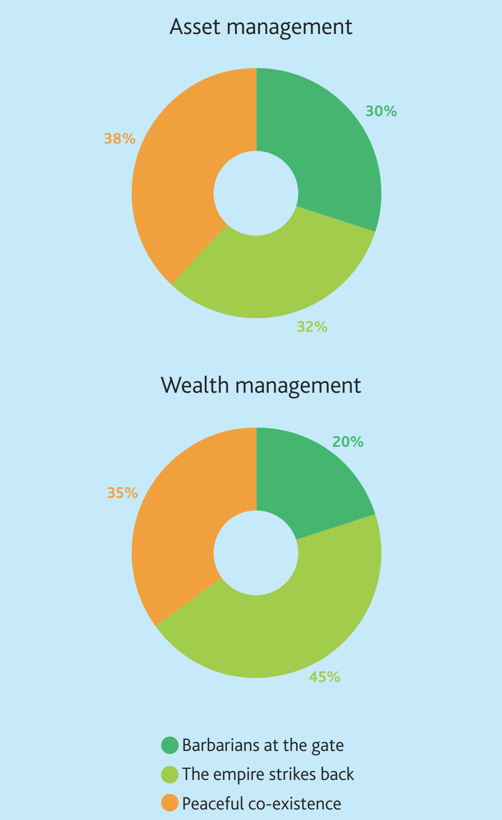
b. Leadership makes all the difference

If the asset and wealth management industries are at an inflection point, where the future promises to be different from the past, then strategic change is about mindset shifts. Success is as much about new ways of thinking as about new ways of working. The key is to create a culture of leadership that is conducive to the successful management of change.

Among early adopters, such a culture has enjoined top executives to adopt a leadership style that is stronger on deeds than words. Its core emphasis is on setting business vision and goals, along with a clear list of actions, timelines, accountabilities and incentives. The associated process has favoured consensus building at the early ideas generation stage and a hard-nosed approach at the implementation phase.

In order to get buy-in, the resulting strategic narrative is crafted so as to answer the most frequently asked questions by the movers and shakers inside the business. It seeks to depersonalise issues that are often overblown in the people-oriented industries *par excellence*, like asset and wealth management.

Figure 1.4 Taking a ten-year view, which one of the following scenarios summarises your view of the competitive landscape in asset and wealth management?



Source: CREATE-Research/Dassault Systèmes Survey 2017

30%
of asset managers expect 'barbarians at the gate'

45%
of wealth managers expect 'the empire to strike back'

Digitisation is as much about leadership as about technology.

An interview quote

71%
expect better engagement with end-investors

70%
expect higher efficiencies in back office activities

The green shoots of benefits are evident.

An interview quote

6. A pronounced network effect is one of the key benefits

Given their high skills intensity, asset and wealth management are people-based, fixed cost businesses that are hard to leverage except in a rising market.

However, digitisation is inventing a new future, far removed from old connections and causality, by creating a win-win situation for money managers and their clients alike.

Among the early adopters, it is delivering operating leverage through the so-called *network effect*: when a product or service is perceived to be more valuable as ever more people use it. This concept underpins the phenomenal success of today's online titans.

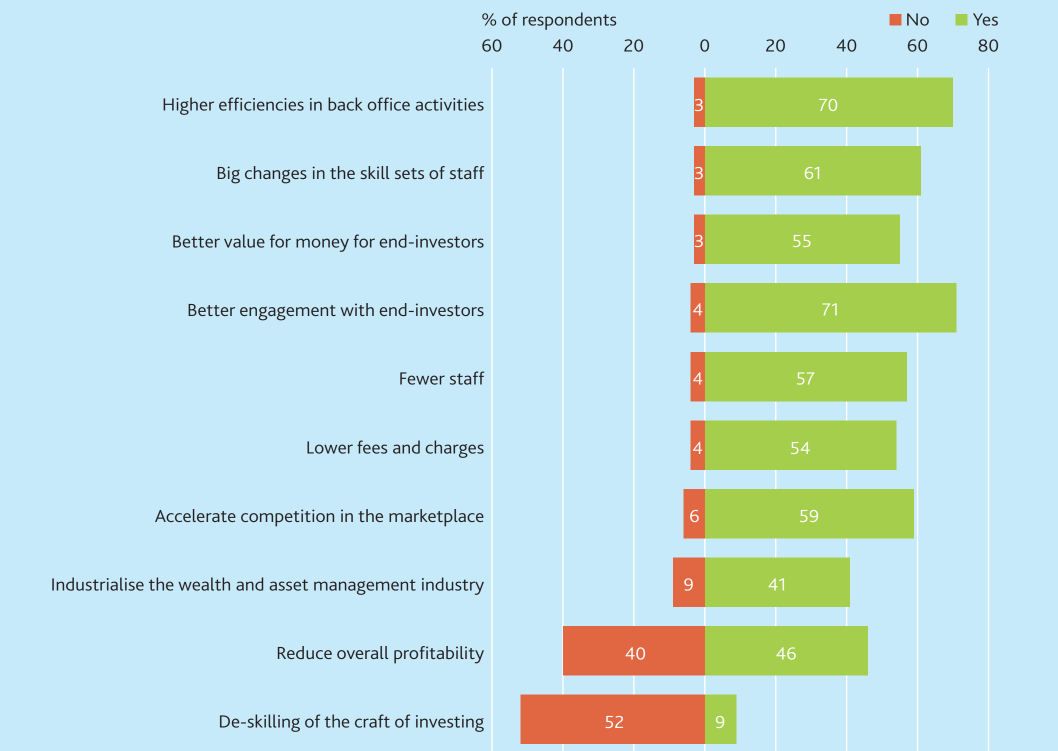
The economics of the business is being transformed via two avenues. First, by providing end-clients access to other fund buyers or comparison websites, on top of DIY tools and educational support. Second, by creating new capabilities for alpha generation and cost savings.

Thus far, the early adopters report the following benefits:

- *Stronger market position* by becoming more relevant in societies where digitisation is gaining traction in general and positioning with respect to tomorrow's clients
- *New client segments* by seeking to meet the unmet needs of client segments not covered by the existing distribution channels
- *Better client experience* that improves client loyalty as well as the prospects for up-selling and cross-selling
- *Improved alpha generation capabilities* by enhancing the people-machine interface when identifying price anomalies in financial markets
- *Higher efficiencies* by automating routine labour-intensive operations and improving the connectivity between various functional silos
- *Faster time to market* by improving the product development process and the governance around product suitability
- *Improved regulatory compliance* by onboarding new regulations within the existing risk and compliance reporting frameworks.

The asset and wealth management industries are at the dawn of a new transformation, more far reaching than anything experienced before.

Figure 1.5 What will be the overall impact of digital innovations over time?



Source: CREATE-Research/Dassault Systèmes Survey 2017

2. Structural drivers:

How are the dynamics of the business unfolding?

A defining moment

The 2008 crisis marked a turning point in the investment landscape. Like a tsunami, it wiped out some $15 trillion in asset values, hitting every asset class, every market, every geography and every client segment.

Since then, two developments have dominated financial markets: the onset of a balance sheet recession and the start of quantitative easing programmes by central banks.

Taking them in turn, global debt reached an all-time high of $147 trillion in 2008. The subsequent efforts to reduce it via economic growth, the reform of public finances and outright austerity have proved ineffective – especially in the Eurozone and Japan. Indebted nations have been caught in a vicious cycle of rising debt, misallocation of capital and sub-par growth.

In order to reverse this process, central banks embarked on an ambitious programme of bond purchase and zero-bound interest rates. As an unintended consequence, valuations of all asset classes have been artificially inflated to the point where investment returns have become a monetary phenomenon – influenced far more by the regular largesse of central banks, than by corporate earnings from the real economy.

The bedrock of investing – long defined by concepts such as fair value, time premium, risk premium, mean reversion and diversification – has been progressively eroding. No wonder active management has had a torrid time. With one single large buyer, bond markets, too, have ceased to function normally.

Ultra-low discount rates have played havoc with plan deficits in all pension markets. Closures of DB plans have accelerated, both for new and existing members. Fees and charges have come to be seen as a major component of overall returns, taking a toll on active management.

Over the period 2008-2016, the share of active core strategies in the global investible universe fell from 86% to 76%, while that of passive funds (including ETFs) increased from 14% to 24%. As markets have become deeper and more liquid – especially in the US – they have become ever harder to beat. These developments have, in turn, generated other indirect effects.

Key drivers

The key one is regulatory overdrive. Its central thrust is aimed at delivering better value for money to the end-investor. In Europe alone, some ten measures have been or are being implemented in areas as diverse as anti-money laundering, know your customer, counterterrorist financing and conduct risk. Three measures are already having a big impact: the retail distribution review (UK), the new fiduciary standard (US) and MiFiD II (Europe).

Together, they are changing the fee structure from commission based to advice based. They are also demanding full transparency around the total expense ratios and product suitability. Above all, they are changing the role of the fund intermediary, from a distant vendor to a trusted fiduciary.

Burdened by a more meritocratic fee structure and extra fiduciary responsibilities, fund intermediaries are recommending low-cost investment options like indexed funds. The large intermediaries are also promoting their own low-cost, in-house products in order to retain the lion's share of the wallet.

These are some of the factors identified as driving structural change over the rest of this decade. (Figure 2.1). Over-regulation tops the list, cited by 60% of our survey respondents. Rightly or otherwise, regulators believe that asset and wealth management have been riddled with conflicts of interest that conspire against the financial wellbeing of end-clients. In the 2008 crisis, as millions of investors lost billions of dollars, trust was the main casualty. The Madoff scandal provided the most vivid example of abuses inherent in the system. Regulators were forced to *up the ante*.

Three other drivers have been identified by at least two out of every five respondents.

> *A three-way chain reaction between regulation, technology and demographics lies at the heart of a new transformation.*
>
> *An interview quote*

60%
cite over-regulation

77%
cite rising pressure on fees and charges

Dominant drivers

The first is the rise of artificial intelligence (cited by 52%). By combining big data and machine learning, artificial intelligence is becoming ever smarter at recognising patterns, weighing probabilities, making predictions and using natural language to understand and answer questions. As we shall see in Sections 3 and 4, they have the potential to reduce costs, improve client experience, enhance investment returns and build trust.

The second structural driver is the rise of the Millennials (cited by 41%). This is the generation born between 1982 and 2004. With ageing demographics, ever more pension plans are entering the run-off phase. For example, in Europe, 30% of plans are in negative cash flow territory: more money paid out in retirement benefits than received as member contributions.

As a result, Millennials are likely to emerge as the biggest investor group over the next 15 years on two counts: they will be the largest employee group in most Western societies; and they also stand to receive the biggest inheritance from the richest generation in human history – the post-war Baby Boomers. The potential inter-generational transfer of wealth is estimated at some $15 trillion in the US and $12 trillion in Europe.

The third notable structural driver is the shift in the control of the value chain from product providers to product distributors (cited by 40%). Regulatory changes have been promoting disintermediation. However, as we shall see in Sections 3 and 4, asset and wealth managers are seeking to reverse the trend by engaging in direct selling, via proprietary robo-lite platforms.

Finally, whereas macro factors like global economic outlook, rise of protectionism and monetary action by central banks will continue to affect the asset and wealth industries, their structural influence will be mostly mediated by the drivers highlighted above.

Key trends

In the light of the identified drivers, our survey went on to identify which of the recent trends will be reinforced over the rest of this decade (Figure 2.2).

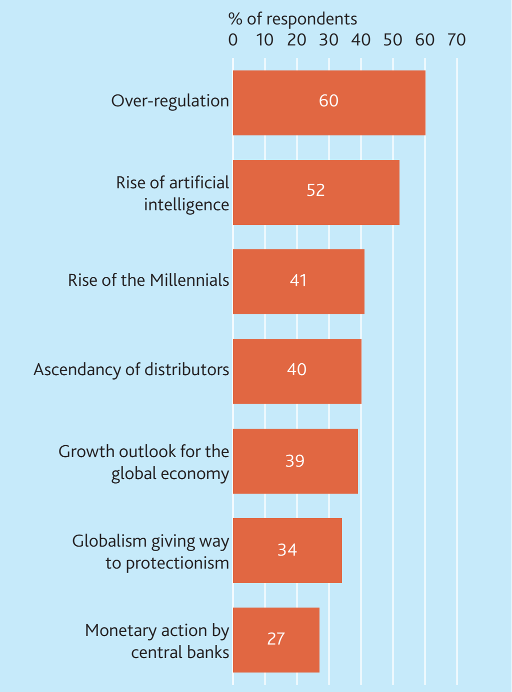
Five trends were identified by at least one in every three respondents:

- rising pressure on fees, charges and costs (77%)
- rising share of passive funds (60%)
- a rising new generation of end-investors (44%)
- rising demand for blockbuster products (42%)
- rising share of total investible assets held by mass market investors (33%).

Across Europe, regulators are looking at the 'active share' of funds to ascertain whether they justify the fees charged.

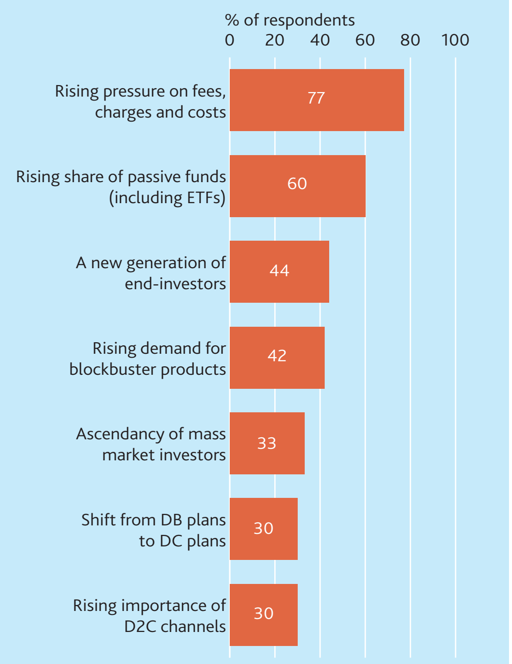
An interview quote

Figure 2.1 What factors will drive structural changes in global asset and wealth management over the next 3 years?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Figure 2.2 Which of the following recent trends will be reinforced by the identified structural drivers in global asset and wealth management over the next 3 years?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Europe-wide, regulators are cracking down on asset managers who charge active fees for closet tracking.

There are two reasons. First, ultra loose monetary policies have borrowed against future returns. The dream combination of high returns and low volatility is over. Second, nearly 90% of active managers have not met their benchmarks over the past two years. Ever more pension plans are now doing in-house investing.

Fees and charges are now perceived as a key source of outperformance, when compounded over time.

The long prevailing 'heads-I-win-tails-you-lose' fee structure, based on a fixed percentage of assets under management, has proved untenable in today's low return/high volatility environment. It is akin to an 'option' in which the upside is uncapped but the downside is limited to base fee. *Ad valorem* fees also encourage asset gathering, with no penalty for underperformance. Where performance fees exist, reportedly they are poorly structured.

Jurisdictions such as The Netherlands, Switzerland and the UK have introduced a transparency regime for pension cost reporting, which has enabled pension plans to exercise greater pressure on service providers, particularly in areas like private equity and hedge funds, where the traditional 2-20 model is under attack. Additionally, new fee models are being introduced – e.g. performance-based fees with or without high watermarks.

More fundamentally, investors want to see a reduction in base fees, since over 80% of their assets continue to rely on the old-style fixed fee linked to assets under management.

Passive Millennials?

This largely explains the rise of passive funds. Investors also want to see a reduction in the layers of fees charged in every transaction by the financial advisor, the due diligence team, the wholesaler and the asset manager. The transparent unbundling of fees forced by regulators is making clients become ever more aware of the cumulative drag on performance as all the players in the value chain clip the ticket.

These inter-related developments are coinciding with the rise of a new generation of investors – the Millennials. Being digitally savvy and well versed in the art of online shopping, they need simplicity in products, immediacy in the processes around them, connectivity via varied digital devices and ubiquity that allows them access anytime and anywhere.

Personalisation of risk

The emergence of this class of end-investors has coincided with the personalisation of risk. In all OECD countries, governments are looking to reduce the cost of long-term retirement benefits. Employers, too, are de-risking their balance sheets by shedding uncontrollable liabilities related to final-salary pensions. Risk is being personalised: individuals are enjoined to bear the brunt of all the risks in retirement planning as part of the structural solutions that are hastening the demise of DB plans and promoting the rise of DC plans. The share of investible assets held by mass market investors is set to grow.

However, there is a downside. Implicit in this trend is the model of 'employee as a planner' or a proactively engaged individual, capable of accessing the right information and making fully informed decisions about his/her financial future. But reality suggests otherwise.

Many mass market investors are known to be quick to invest in top-performing funds as ranked by Morningstar and are just as fast to offload when performance falters. Herding, market timing and chasing yesterday's winners remain common traits.

The demand for blockbuster products remains unabated, while financial literacy receives low priority ranking. It is feared that the asset and wealth industry may well suffer the same curse as the music industry: winner takes all.

Technology can potentially offer too many choices and instantly relieve investors of the need to make them.

> *The number of funds achieving top quartile returns over a rolling three-year period has fallen to just 0.8%.*
>
> *An interview quote*

3. Digital adoption cycle:

Where are the asset managers?

54%
cite social media

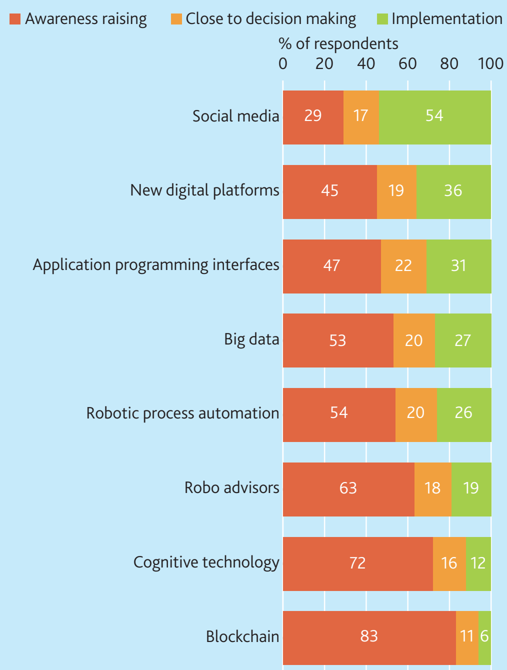
36%
cite new digital platforms

Current state of play

As commercial enterprises, asset managers have enjoyed one unique advantage: hitherto, they have consistently raked up profit margins well north of 30% while deploying zero capital of their shareholders. Lately, however, this profit base has increasingly come under attack: as much as 87% of its growth in the period 2009–2016 has been attributed to the market's artificial rise, fuelled by central banks' ultra-loose monetary policies. The organic component has been declining.

There is ample recognition among asset managers that, as central banks rewind their policies, the current level of profitability will be unsustainable: all the more so, in the light of the structural trends identified in Section 2. The search for cost-effective organic growth has intensified, turning the spotlight on digitisation – but not without hesitation.

Figure 3.1 With respect to each of the eight key digital innovations below, in which stage is your business currently?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Asset managers are caught in the cross-hair of forces over which they have no control. Adapting to the new reality means cannibalising our businesses.

The best you can do is to be a fast follower.

An interview quote

As we shall see in Section 5, their hesitation is influenced by various conflicting forces, some favouring technology, others opposing it. For example, the search for new assets is accelerating the pace of adoption on the one hand, while legacy systems and legacy thinking are slowing it down on the other. The vast majority are forced to do a delicate balancing act as a matter of more haste less speed.

Getting social with media

Accordingly, implementation has involved small steps rather than giant leaps (Figure 3.1). It is also about going after the low-hanging fruit, like social media. It involves least change to the existing business models; while still deliberating over transformational innovations such as big data, robotic process automation, robo advisors, cognitive computing and blockchain.

Whereas 54% of the survey respondents have adopted social media, only 6% have adopted blockchain, most of whom are subsidiaries of the large banks that are part of the global consortiums developing the new generation of blockchain.

At corporate level, social media has been largely used to promote company brand, which is becoming an important element in attracting new business with the rising importance of mass market investors as the key source of new money. Portfolio managers are also tapping into Twitter as a treasure trove of investment insights that go into constructing 'mood' indices, as markets become more efficient. Product developers too are tapping into all social media platforms to incorporate investor thinking via informal focus groups. At the same time, there is widespread recognition that social media also carry the risk of conveying 'alternative facts' with a high 'noise' component.

Rise of digital platforms

Two other more widely adopted tools are digital platforms (implemented by 36%) and application programming interfaces (31%).

The former reconfigure the traditional producer-distributor-client relationship. Not only do they facilitate the availability of portfolio information in real time, they also facilitate portfolio simulations and investor education via mobile phone. The system also analyses website traffic, the stickiness of certain pages and comments on social media. Over time, they are expected to drive growth in the D2C channel.

Application programming interfaces, on the other hand, enable asset managers to leverage their existing IT assets to generate new business via mobile apps and the cloud.

At the other end of the spectrum in Figure 3.1, progress is relatively slow. Not only do they require big investment in technology, they also call for radical changes in existing business models. For example, robotic process automation seeks to automate almost all manual routine operations. But to ensure business continuity in the transitional phase, the old systems have to run in parallel with the new.

Similarly, big data (implemented by 27%) and cognitive technology (12%) have the potential to improve alpha generation in general and factor investing in particular. But it takes time to develop the necessary human-machine interface, especially since cognitive computing has yet to evolve to a stage where it can 'explain' the logic behind its analysis and predictions, and discuss them interactively with humans.

The robos are coming

Finally, both robo advisors and blockchain are truly revolutionary in their design. But implementation will be drawn out.

Only large asset managers have the resources to run a robo platform as part of their strategy to dominate their distribution network. Over the rest of this decade, the rest will continue to rely on external distributors – be they fund buyers or pension consultants.

Stand-alone robo advisors, on the other hand, have yet to develop a notable brand and a significant asset base. Many are discovering the importance of human contacts and changing their offerings accordingly. Their growth will take off as and when Millennial investors gather a critical mass of assets.

One factor augurs well for their growth, especially in the US: the ringing public endorsement from Thomas E. Perez, the US Labour Secretary, in 2015. He acknowledged that digital advice platforms do, after all, perform the necessary fiduciary role for investors with smaller balances under the Investment Company Act 1940. They are increasingly perceived as promoting the policy objective of expanding access to retirement advice to an expanding segment of under-served and under-saved citizens.

Moving on to blockchain, as a distributed ledger that disintermediates accounts settlement. It requires a clear ownership and control structure, without creating a natural monopoly. Its governance and regulatory framework are slow in evolving. It is not as yet clear what role global regulators should play in overseeing a secure ledger for all activities related to securities trading and settlement.

The new black box

Such a cautious approach to digitisation implicit in the data presented in Figure 3.1 is dictated, first and foremost, by a fear of the unknown.

Even to a computer scientist, some of the tools covered in this section are far more opaque than a hand-coded system. The reason is that computers need to be given the ability to truly learn for themselves, if they are to discover new knowledge.

In the process, machine learning is a dark black box. Nobody knows how its advanced algorithms do what they do.

The history of algorithm-based high frequency trading remains a salutary reminder of how badly things can go wrong, as illustrated by two of many noteworthy 'flash crashes' in this decade that severely shook investor confidence.

On 6 May 2010, the Dow Jones Industrial Average had a 998-point plunge, followed by an immediate bounce back. Interpreting the fall as a 'risk-off' signal, numerous stop-loss mechanisms were falsely activated.

Then on 15 October 2014, the yield on the benchmark 10-year US Treasury note plunged from 2.02% to 1.86%, then quickly bounced back to where it started. Such an event is supposed to happen only once in every 3 billion years, according to the investment experts.

Cyber security

Finally, cyber security remains another major concern. Cognitive cyber analytics has long been in operation, predicting and assessing threats, and devising defences. Yet, 80% of companies worldwide were reportedly subject to cyber attacks in 2014, costing them $400 billion, not to mention the resulting reputational damage.

Never before have humans created machines that operate in ways their builders do not understand.

An interview quote

77%
cite data analytics

61%
cite global custody

The dominant tendency, therefore, is to create a few incubators that facilitate piecemeal progress helped by the granularity of technology. At the surface level, this sounds like inertia and complacency. But at the coal-face, it's a matter of balancing stability and change.

Key areas of impact

As part of that long journey, asset managers have identified the areas that are especially amenable to digital innovation in front, middle and back offices. Virtually every activity in the investment value chain is open to digital disruption to varying degrees, as shown in Figure 3.2. Rather than comment on each of the line items in the figure, here we focus on three areas with transformational potential.

a. Front office: a trifurcation

The current seemingly black and white debate on active vs passive investing misses out the potential role of technology in blurring their boundaries, while giving rise to a third way of investing, powered by technology.

Under the surface, there is now one trend that has the unstoppable momentum of a supertanker.

Rise of factor investing

Its key driver is the recent advances in artificial intelligence covering big data and machine learning. They have given so-called generic factor investing a shot in the arm: a systematic rules-based style of investing, hitherto mainly used by quant managers for nearly three decades.

Under it, asset classes can be broken down into factors that explain their risk, return and correlation. Factor investing has gained traction after traditional diversification became unhinged during the 2008-9 market meltdown, when it was most needed. In hindsight, it did not allow for the fact that seemingly diverse asset classes can have common risk factors – and hence high correlation – that nullify the benefits of any diversification based purely on asset classes.

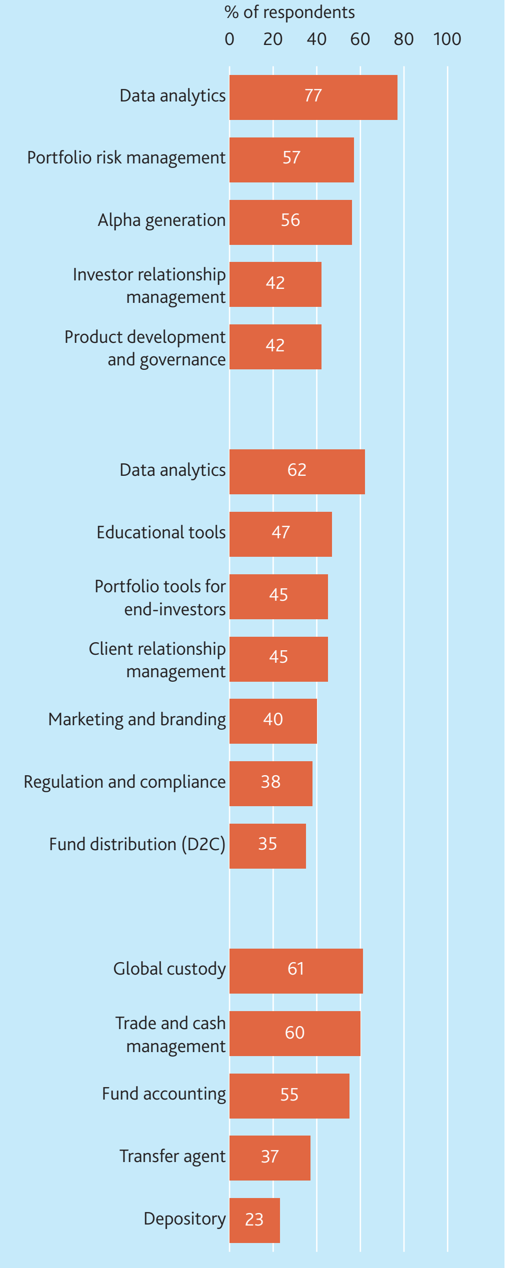
Since then, the rise of smart beta strategies marks a major departure, as investors have sought to remodel their portfolios by allocating assets to risk factors like value, size, momentum, market, low volatility, term and credit. They target alpha returns at beta risk and near-beta charges. Research studies show that a high contribution to today's market-beating returns comes from a simple systematic exposure – conscious or unconscious – to these or other factors.

Artificial intelligence will industrialise the art of alpha generation and benefit those managers who have the necessary technology, scale and reach.

An interview quote

Smart beta is part of generic factor investing that sits in between traditional actives and passives with clear overlaps at each end. Although rules-based, factor investing requires human input as well. It crunches large volumes of data to establish inter-relationships between the chosen factors, their risks and their returns. This is where recent advances in artificial intelligence are set to be game changers.

Figure 3.2 Which activities in the investment value chain are especially amenable to the newly emerging digital innovations?



Source: CREATE-Research/Dassault Systèmes Survey 2017

The term 'big data' is not new. What is new is its velocity, variety and volume. Reportedly, 90% of all the data in existence today has been created in the past five years. Equally significant is the supporting role of machine learning.

Every new dataset is used to reappraise the old relationships in the light of new information created daily. Behavioural biases are distinguished from structural anomalies, reason from emotion, and signal from noise. Thus, the underlying quant models are being constantly bombarded with new investible information and actionable insights. Factor investing is duly coming of age and causing a trifurcation in the asset industry.

Slowdown in pure passives?

First, the rise in pure passive investing, based on traditional cap-weighted indices, will slow down, as ever more investors are enticed by the prospect of earning cheap alpha returns at near-beta fees. Lately, the traditional passives have disrupted the traditional actives. Now the disrupters face the prospect of being disrupted themselves by the new hybrid.

Second, factor investing will not dumb down the craft of investing. The creed of alphas will remain very much alive. It will create a new human-machine interface. Portfolio managers will still need to make judgment calls on which factors to select and which data to apply; and also when to unweight, down-weight, redefine or switch off a factor. After all, factors can become over-valued as they attract new money. They are also exposed to capacity constraints above a certain level of assets. Factor investing is not a panacea, just a different way of blending passives and actives.

Third, the term alpha will be refined to come in two versions: the 'commoditised' one will refer to market-beating returns that are increasingly targeted by factor investing; and the 'informational' version, which will refer to an absolute return benchmark that relies solely on managerial skills and proprietary research resources.

In a typical portfolio, these two versions will compete alongside traditional cap-weighted indices, as factor investing spreads from pension plans to mass market investors.

b. Middle office: robo advisor-lite

Low-cost airlines are a good example of a disruptive innovation that has propelled the latest wave of growth in global air travel by targeting the client segments that have hitherto remained under-served at a price they can afford.

Asset management faces a similar prospect with new platforms that enhance the connectivity between managers and their end-clients. Their ultimate aim is to permit convenience buying as well as relationship building via enhanced transparency around costs and benefits – akin to what the current generation of robo advisors do.

For asset managers, these platforms adopt data-driven approaches to deliver the right product and stay competitive by understanding clients' risk tolerances and long-term goals via deeper conversations. They also assist product development by deploying predictive analytics and big data that deliver actionable insights.

Additionally, content-rich websites, social media and mobile apps have become critical to attract market investors. These tools offer a clear cost and transparency advantage over traditional distribution channels, while enhancing client experience.

Affordable automated advice

Specifically, a new generation of digital-based DIY tools seek to enable end-investors to engage directly in a variety of activities in the investment value chain: e.g. needs analysis, portfolio construction, periodic rebalancing and performance monitoring via user-friendly dashboards.

In a parallel track, the rise of passive investing and multi-asset class funds will also be enabling product simplification that appeals to a new generation of clients with well-honed digital instincts.

Together, these drivers aim to attract under-served client segments at the outset at an affordable price.

Currently, 10,000 Americans and 14,000 Europeans retire everyday. Over the next five years, 75% of global retail assets – estimated at nearly $25 trillion – will be held by retirees or near-retirees. Much of it is expected to end up in low-cost commoditised options that target regular income and low volatility. In this context, digital tools will be acquiring special significance.

> *In future, multi-asset funds will be packaged and customised at the point of sale.*
>
> *An interview quote*

> *Back office is the most fertile area for automation and is already seeing the biggest changes.*
>
> *An interview quote*

Digital benefits for DIY clients

First, they offer transparency around the four things that matter most to investors: the risks they are taking, the returns they can expect, the compound erosion of their portfolios due to open and hidden charges and the scalability of their chosen strategies.

Hence, there is a better basis for relationship building than is currently the case, where the vast majority of clients are prone to herding, which often promises dreams but delivers nightmares.

Second, the needs analysis and embedded advice in portfolio construction will nudge investors towards prudent planning via rising financial literacy and self-confidence.

As such, investors stand a better chance of buying what they understand and understanding what they buy.

As risk is increasingly personalised, the new tools have the potential to reduce those time-honoured behavioural biases that make clients do things that are contrary to their own best interests.

Finally, the proverbial marriage of technology and ETFs might well be made in heaven. It combines transformational tools with the fastest growing investment product.

Currently, in Europe at least, one of the key blockers is the regulatory ambiguity between 'advice' and 'guidance'.

A series of mis-selling scandals after the 2008 crisis forced money managers to refrain from offering automated portfolio management based on guidance, with all the necessary health warnings duly spelt out. They also fear systemic risks arising when a programme error is repeated without being noticed until the end-investor reports it.

c. Back office: process automation

For long, computers performed jobs that humans did badly – like doing precise calculations and storing vast amount of information. Now they are taking on tasks that humans have long been good at: creative thinking, problem solving and intuitive sensing. Nowhere is this more evident than in back office activities that have been traditionally outsourced to third party asset servicers.

They are already deploying robots in areas as diverse as global custody, trade and cash management, and fund accounting. They go beyond number crunching and perform tasks as varied as the collection of structured and unstructured data, their validation, their analysis, their reconciliation and their transmission to different stakeholders.

Disruption by tech's bleeding edge

In the process, by 'talking' to a battery of computers, they also perform higher order tasks such as delivering predictive analytics that blend complex forecasting methods with learning by doing, and flag operational risks and untoward activities in the cyberspace. Above all, they are far less prone to errors than humans – and reportedly cost much less as well.

In contrast, two other back office innovations are slow in materialising for reasons cited earlier in this section: cognitive technology and blockchain. That does not detract from the fact that each carries enormous potential to change the face of the back office.

Cognitive technology – with its emphasis on natural language processing, speech recognition and computer vision – is also set to automate tasks that have hitherto relied on humans, such as evaluating options and making decisions.

Similarly, being a device for creating trust, Blockchain can offer a public ledger that everyone can inspect, that no single user controls and that is secure to authorised users.

Blockchain falls into two categories: 'permissioned', which is open only to approved users, and 'permissionless', which is open to the public, like bitcoin, the crypto currency. For asset managers, however, it is difficult to use permissionless blockchain that no single user controls. This is because of the recent regulation in three areas: know your customers, anti money laundering and counter terrorist financing.

Large swathes of activities in the back office are ripe for automation. Physical spreadsheets and weighty manuals may be history before long.

4. Digital adoption cycle:

Where are the wealth managers?

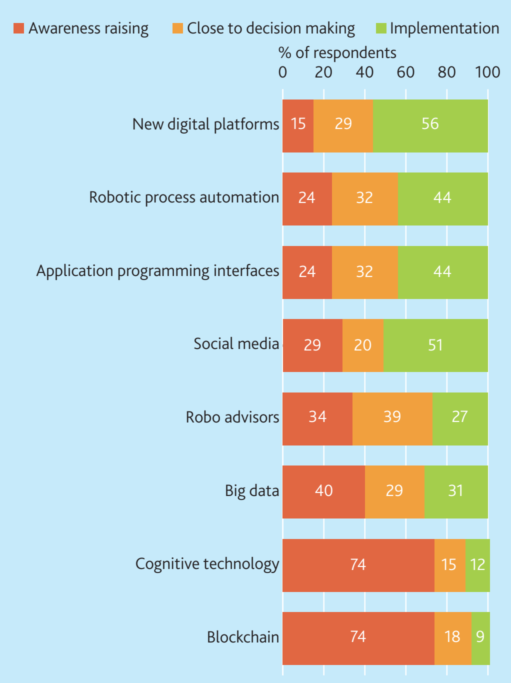
Current state of play

Between the peak in October 2007 and the trough in November 2008, global stock market losses totaled $21k for every individual in the developed world and three times as much for wealthy individuals.

Unsurprisingly, wealthy investors have become ultra-demanding, pursuing a multiplicity of goals, such as uncorrelated absolute returns, capital conservation, inflation protection and regular income. Before then, high returns in themselves were the overarching goal, in the belief that they could accommodate other goals. Now there is a clear shift from return maximisation to risk minimisation.

But that is not all. Wealthy investors have been just as demanding about fees and charges, with clear separation of alpha and beta. Latterly, around 65% of them expect to manage their wealth digitally, according to proprietary polls carried out by some private banks. This is unsurprising: large IFAs have been successfully running execution-only digital platforms for over a decade for their wealthy clients.

Figure 4.1 With respect to each of the eight key digital innovations below, in which stage is your business currently?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Thus, wealth managers are ahead of asset managers in the adoption cycle in virtually all digital innovations, as shown by the comparison of Figures 3.1 (on page 17) and 4.1. Not only are wealth managers' adoption rates higher than asset managers', but more of them are also at the decision-making stage than asset managers, most of whom are still at the awareness raising stage for all innovations save social media.

These differences apart, it is worth stressing that many of the issues around implementation highlighted in Section 3 apply equally to wealth managers. For example, blockchain has suffered a major setback in both industries when, in 2016, hackers stole $60 billion in digital currency linked to the Enterprise Ethereum Alliance of banks, tech giants and oil majors.

Client focus and experience

For now, the central thrust of the digitisation strategy in wealth management is based on the old dictum: *investment performance attracts assets, service quality retains it*. That means segmenting clients by their goals and risk tolerances and designing a service proposition that is aligned to them. Three guiding principles are used in the process.

First, 'get inside the mind of the client' to understand what his/her key needs, expectations and worries are. Second, give clients 'as much as they want or as little as they want', duly recognising that they also like a choice in the service level. Third, ensure that 'our success depends on their success'. Clients like a win-win proposition.

The implied customisation is achieved by adopting a wide range of standards that accommodate a variety of client needs. Customisation is also creating a new spectrum of human–machine interfaces.

56%
cite new digital platforms

44%
cite robotic process automation

Tax software did not displace tax specialists; nor will advice software completely displace people.

An interview quote

71%
cite data analytics

71%
cite portfolio risk management

Some clients are becoming increasingly self-directed in making investment decisions. They are seeking better online service and greater choice via multi-channels. For them, robo advisor platforms are offering low fees, attractive self-assessment tools, rapid enrolment and widespread facility for portfolio rebalancing.

The majority of clients, however, will continue to prefer a bricks and mortar presence, offering a human touch. Robo advisor is set to democratise wealth management, but it will remain a gradual process.

Augmented intelligence

Over the next five years, wealth managers will offer hybrid services that pair computerised investment advice with human help. They want to give this option to prospective clients who want more hand-holding as well as to existing clients whose needs become more complex as they age and prosper.

Over time, client experience will become a key differentiator and a key area of change.

An interview quote

Be that as it may, this dual approach does raise challenges when it comes to determining the fee differential between robo advisors and human advisors. To be competitive, the fees for the robo platform have to be in line with the prevailing market rates. But they also need to be high enough to encourage clients to use human advisors from time to time. Additionally, wealth managers have to ensure that human advisors offer a clear value add over the machine advice to justify higher fees. Robo advisors will be unquestionably raising the bar for their human counterparts.

Key areas of impact

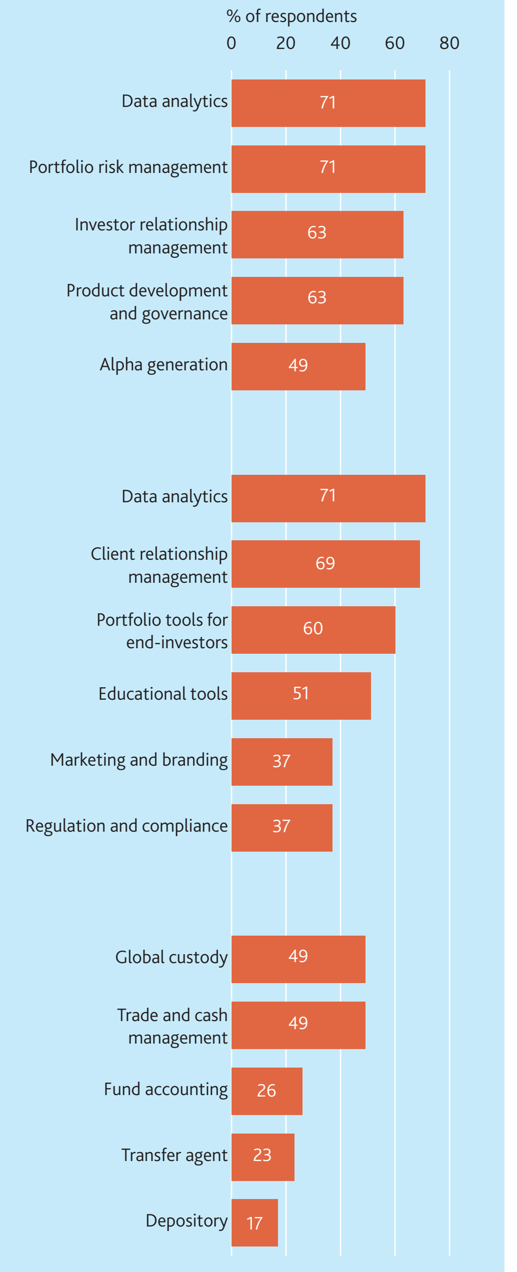
Figure 4.2 identifies the areas in the wealth management value chain that are most amenable to digital innovations. Much of the analysis under a similar heading in Section 3 applies here equally. Three areas of difference are worth highlighting, though.

First, in the front office, alpha generation ranks low on the list of wealth managers. This is because many of them do not engage directly in investing, relying on external managers or open architecture.

Second, in the middle office, almost all activities rank higher in the list of wealth managers. This reflects a key feature: wealth management is a relationship business *par excellence*.

Finally, in the back office, wealth managers score marginally lower than asset managers in all activities. This is because of a high degree of outsourcing, in some cases, and limited scope for automation in a relationship-based business, on the other.

Figure 4.2 Which activities in the investment value chain are especially amenable to the newly emerging digital innovations?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Client at the centre of universe

Far and away, the biggest change in the wealth management value chain is likely to centre on client experience.

This has to be customised, natural, seamless, intuitive and user friendly – all based on interactive tools and mobile capability. All these will be deployed in a client-friendly manner to deliver portfolio management as well as transactional banking, account integration, investment insights and client-to-client social media connectivity.

A number of private banks are shifting up a gear and moving towards this model, often termed 'Buyer 2.0', where clients are hungry for insights, yet still able to cover many of their investment needs in their own time without any need for human help.

Over time, such a platform will incorporate cognitive computing and big data to give an edge by virtue of being able to go beyond top-down and bottom-up analysis to weigh factors, probability and 'what if' scenarios that might not occur to a seasoned portfolio manager. A new dawn beckons.

The aim will be to obtain more accurate predictions, better decisions and more sophisticated machine insights, thereby sounding another death knell to the traditional 'HIPPO' principle – relying on the highest-paid person's opinion rather than on rigorous forward-looking data analysis – which has long underpinned the star culture prevailing in many wealth managers.

> *The new human-machine interface will create its own version of star culture.*
>
> *An interview quote*

5. A battle of wills:

Why is it all simple but not easy?

74%
cite legacy IT systems

63%
cite innovator's dilemma

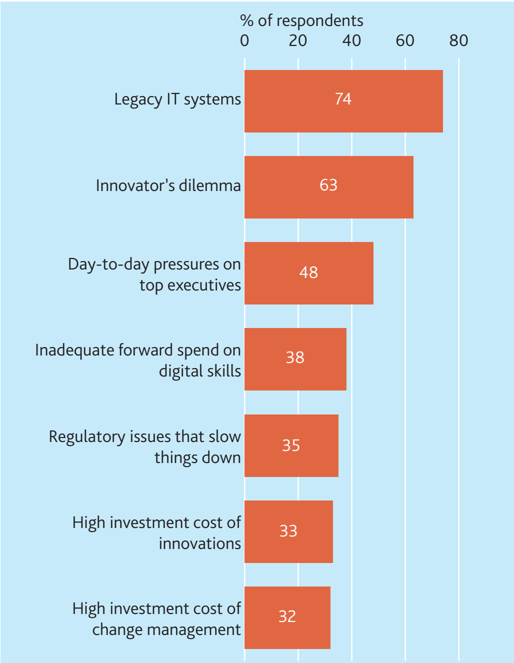
Past vs future

In real life, businesses are influenced by a complex amalgam of factors, some moderating the pace of implementation, others accelerating it. The end result depends upon their relative strengths.

Typically, it is the *moderators* who dominate the implementation cycle in its early phase. Anything not backed by a sound track-record has long been frowned upon in the asset and wealth management industries where margins have historically been unusually high and appetite for change correspondingly low.

Over time, however, accelerators gain the ascendancy as early innovators break the mould, making the *status quo* untenable. History is full of the stories of companies who ignored the winds of change and paid a heavy price. The most high-profile recent examples include Kodak Eastman, Digital Equipment Corporation, Nokia and Xerox.

Figure 5.1 Which of the following factors will moderate the pace of implementation of digital innovations in the investment value chain over the rest of this decade?



Source: CREATE-Research/Dassault Systèmes Survey 2017

Change management is hard when there is no burning platform. Market recoveries have always bailed us out.

An interview quote

In money management, such brutal burn has been rare, but there has been churn aplenty, especially in asset management. Some of it has been due to consolidation and some due to business Darwinism.

After a headlong expansion over the past 20 years, these industries are transitioning to maturity phase. But the problem with living through a historic shift is that it is hard to spot at the time. Inevitably, a tug of war is evident in many asset and wealth management houses.

Some want to protect the existing revenue streams via incremental changes while others want to create a new future via disruptive changes. Currently, the former have the upper hand but they are in no doubt that, over time, the evolving structural dynamics of their industry will make at least some disruption inevitable. It is more a matter of 'when', not 'if'. Before then, money managers have to walk the fine line between stability and change.

The rest of this section highlights the opposing forces uncovered by our survey.

The moderators

By their very nature, the digital innovations covered by this report are transformational. They are also a double-edged sword: certain pain in the short term and unpredictable gain in the long term. Numerous pain points have been identified in our survey that will serve to moderate the pace of adoption over the rest of this decade. They arise from factors that fall into three inter-related clusters (Figure 5.1): legacy culture, day-to-day pressures and costs.

Taking them in turn, the two most widely reported moderators are likely to be: legacy IT systems (cited by 74% of the respondents) and the innovator's dilemma (63%).

The piecemeal nature of IT projects in the past has resulted in systems of different chronological ages with little potential for integration. Operating models based on their proliferation are common, as are manual operations in many areas in the front, middle and back office.

To innovate or not to innovate?

One reason is the innovator's dilemma: why disrupt your current model if your profit margins are in rude health. After all, the argument goes, markets are always cyclical and self-correcting: strategies go in and out of fashion. It is unwise to project the here-and-now into the future. The core preoccupation, above all else, has been talent retention.

That apart, it is not easy to go on meeting the rising expectations of shareholders in the short term while diverting corporate resources towards a wholesale upgrade of the systems. This challenge is all the more acute with the current generation of staff compensation models which require steady growth in the asset base – in good times and in bad.

Moving on to the second cluster, the structural trends identified in Section 2 – especially cost and fee pressures, the rise of passives and growing industry consolidation – have diverted management attention from long-term growth to short-term survival. As a result, senior executives have become pre-occupied with the day-to-day running of the business (cited by 48% of the respondents), while there has been inadequate forward spend on digital skills (38%) and regulatory issues have been slowing things down (35%).

In particular, the day-to-day pressures on senior management have been all the more intense, at a time when investment returns remain driven more by politics than economics due to central bank action. When business leaders are always fighting yesterday's problems, it is hard to get on the front foot and envision a new future. It was always challenging to craft a strategic vision in a highly cyclical industry – a task now rendered even harder by the artificial inflation of asset prices.

History shows that IT projects can often over-run their budgets and timelines. There have been too many false starts, even at the vendor end. Some of the innovations – especially blockchain, cognitive computing and robotic process automation are still perceived as a leap in the dark, notwithstanding their enormous potential. Their transition from 'nice to have' to 'must have' will remain more a matter of small steps than giant leaps.

Change management

The final cluster relates to two distinct sets of costs: the cost of innovations (cited by 33% of the respondents) and the cost of associated change management (32%). These numbers are understated, since only those asset and wealth managers who have got beyond the '*awareness raising*' stage have developed a detailed understanding of costs. In their view, the cost of technology is well exceeded by the cost of change management coming in its wake.

To start with, restructuring the workforce can be costly, as traditional skill sets are replaced by digital ones, which are already scarce on account of their rising demand worldwide. Furthermore, a whole new oversight infrastructure has to be created to provide the necessary checks and balances on new innovations. Finally, old systems have to run in tandem with new ones in the transitional phase.

The above analysis applies equally to asset and wealth managers, except in two respects: legacy systems and regulatory issues are likely to be more widely felt in wealth management, with the innovator's dilemma more likely in asset management. However, in both cases, progress is likely to be faster in areas that enhance client interaction than in alpha generation or back office automation.

The accelerators

"*BlackRock chooses wires over wizards to pick stocks*" ran a headline in The New York Times back in March 2017. On the same day, Bloomberg reported that the legendary John Paulson, who made billions from the sub prime crisis, was slashing bonuses at his hedge fund after a dismal 2016.

"*The change in the economics of the investment management business is pretty profound*", warned Bill McNabb, CEO of Vanguard, speaking at an event at Wharton's annual conference on Financial Decision and Asset Markets in April 2017. Such headlines are commonplace. They underline the new reality.

When asked to identify the factors that will accelerate the pace of implementation of digital innovations, survey respondents identified eight factors (Figure 5.2). They fall into three interconnected clusters, once again.

> *What we fear most is 'boiling frog' syndrome in which the unsuspecting creature delights in the comforts of the warming water.*
>
> An interview quote

Costs and fee pressures

The first one relates to financial pressures emanating from three sources: growing cost pressures driving the need for automation (cited by 74% of the respondents); fees and charges becoming a major differentiator (54%); and the rise of passive funds (48%).

74%
cite growing cost pressures

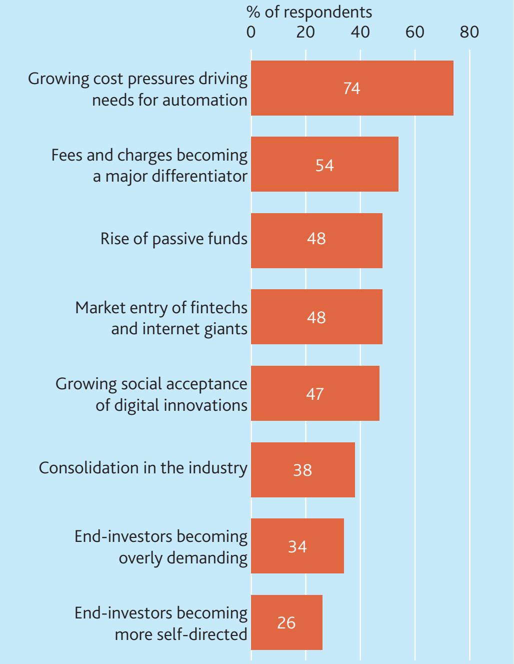
54%
cite fees and charges

Regulatory overdrive has been driving up costs, as has the scarcity of talent that can deliver alpha on a consistent basis or develop productive relationships with end-clients. On the other hand, the relentless rise of passives has been driving down fees, a phenomenon historically associated with bear markets.

The second cluster relates to changing customer needs, arising from three sources: the growing social acceptance of digital innovations (47%); end-investors becoming more demanding about investment returns and client experience (34%); and end-investors becoming more self-directed (26%).

The internet and mobile phones have been consistently singled out as two of the top five innovations since the second World War. They have altered the way people learn, work, manage, invest and behave in the developed world in general and the key fund jurisdictions in particular. Businesses that are unable to adapt to this new reality will be left out in the cold.

Figure 5.2 Which of the following factors will accelerate the pace of implementation of digital innovations in the investment value chain over the rest of this decade?



Source: CREATE-Research/Dassault Systèmes Survey 2017

> *Amazon has proved that there is no limit to product widening and product deepening with technological superiority and strategic alliances.*
>
> *An interview quote*

External disruption: three scenarios

The third and final cluster relates to competitive dynamics, influenced by two developments: market entry of fintechs and internet giants (48%) and consolidation in asset and wealth management (38%).

As mentioned in Section 2, as market competition and cost pressures have intensified, consolidation has continued apace. There is no doubt that the mega indexers and large wealth managers will continue to attract the lion's share of the new money in motion. And their competitors will need to develop distinct capabilities in order to survive.

For them, there are three plausible scenarios:

- *barbarians at the gate*: this envisages that the disrupters will take the fight to the incumbents' front doors by carving out a special niche at the commoditised end of the market especially amenable to DIY digital tools. Unencumbered by either legacy systems or legacy thinking, they are likely to be especially successful in blending automation with passive investing to shape investor behaviours.
- *the empire strikes back*: this envisages asset and wealth managers adopting digitisation for a part of their business, in much the same way as most flag carriers have emulated the low-cost airlines by segmenting their client base. In the face of rising competition and fee compression, the incumbents will recalibrate their business models to meet the unmet needs. Necessity will be the mother of invention.
- *peaceful co-existence*: this envisages that, as the money management pie continues to grow worldwide, diversity will characterise the prevailing business models. Within that diversity, competition and co-operation will prevail. If the newcomers are especially successful, they are likely to seek new alliances with incumbents to ramp up their businesses or risk getting taken over by them. 'If you can't beat them, join them' will be the main theme.

The data on these scenarios have been presented in Figure 1.4 (in Section 1, p.12) . The first scenario is probable but less likely. Unlike cars or computers, investment products do not have replicable outcomes and a definable shelf life, irrespective of external environment. Investors will be wary of trusting their money to an organisation that lacks investment DNA and the associated brand.

Similarly, the second scenario is more likely in wealth management than asset management, where the time-honoured innovator's dilemma is felt more widely. The problem is compounded by legacy systems that also nurture legacy thinking.

In contrast, the third scenario is the more likely in asset management than wealth management. It allows each side to bring unique capabilities to the table. Money managers will bring better risk instincts, while the newcomers will bring technology knowhow. A partnership can, over time, transform the prevailing legacy cultures.

Investing is a bet on an unknown future. Its success requires a deep understanding of risk and its dynamic nature. At the same time, digital tools can automate many low value added activities and free up management time to pursue other strategic opportunities.

Creating a new future

"*The best way to predict the future is to invent it*," said Alan Kay, originator of the Windows operating system that sparked the revolution in mass computing.

He held that the future is there to be shaped and re-shaped. In the technological age, nothing is predetermined. Digitisation is not the 'be all and end all' – just an enabler in the delivery of business strategy. Without a clear strategy and a group of far-sighted people committed to deliver it, no digital tool can make much difference – no matter how sophisticated.

During our interviews with money managers who have been *early adopters* of digitisation, one imperative stood out above all else. If their industries are at an inflection point now, where the future begins to become different from the past, then strategic change is as much about *mindset shifts* as about bright business ideas or shiny new gizmos.

The shifts they identified are summarised in Figure 5.3. There is nothing inherent in digitisation that guarantees results. These depend entirely upon *how* it is used. Success requires new ways of thinking as much as new ways of working. Designing a new business model for a new age is one thing, implementing it quite another.

There are no shortcuts to any place worth going.

An interview quote

Figure 5.3 What kind of mindset shifts are required?

From		To
Maximising corporate interests	>	Maximising client well being
Client remoteness	>	Client connectivity
Technology as a support device	>	Technology as a strategic tool
Risk aversion	>	Calculated risk taking and learning from mistakes
Legacy fee structure	>	Value-for-money fee structure
Arms-length leadership	>	Visionary leadership
Committee culture	>	Personal accountability
Working in silos	>	More networking, more team working
Strategy based on hit-and-run approach	>	Strategy as an emerging tool

Source: CREATE-Research/Dassault Systèmes Survey 2017

After all, the history of IT projects is littered with failures. One of the key reasons has been the failure to link IT with corporate vision and strategy. At the technical level, there are lots of 'dos' and 'don'ts' about such projects, which were beyond the scope of our survey.

All that our survey has tried to do is to gain insights into what the early adopters of digitisation are doing to create a cultural climate that facilitates the successful management of change and enhances the success rate.

Depersonalising the issues

Money managers who are leapfrogging their competitors on the digital journey have relied on an unusual degree of common sense to achieve the identified mindset shifts.

To start with, their top executives have adopted a leadership style that: is stronger on deeds than words; blends a light touch with intensive communication; displays creative dissatisfaction with the *status quo*; challenges complacency; and gives open, honest, real-time feedback.

Beyond that, top executives have also adopted a strategic framework that enjoins them to have a regular forum for key individuals at all management levels to debate new ideas and subject them to a reality check by tapping into the collective '*memory*' of the business.

In the digital age, leadership is not a one-person show.

An interview quote

This analysis, in turn, is used to generate business vision and goals, along with a clear list of actions; duly allowing for the opportunism arising from upward feedback on the unfolding reality on the ground. Discussion on digitisation is closely linked with the corporate vision at this early stage, in order to underline its strategic importance.

Resources are then allocated for the core activities. Performance metrics are set, individual accountabilities identified, incentives agreed, outcomes monitored and corrective actions taken, when necessary. Thus, strategy is a journey: mobilising the collective expertise and handling untoward events en route.

Savvy execution is the new silver bullet

The main thrust of this framework is consistent with: the craft nature of the investment business; the disciplines needed to run it in good times and bad; and, above all, the personal and professional traits of star performers.

It favours consensus building at the early ideas generation stage and a hard-nosed approach at the subsequent implementation stage.

Most importantly, it also promotes behaviours that are self-regulatory yet entrepreneurial, as early adopters have sought a clear differentiation via what they believe are five key drivers of success in this digital age:

- a strategic credible vision for the business
- investment in digital infrastructure
- scalable business model
- forward spend on digital skills
- brand development and leverage.

Creating a culture of leadership

Based on the experience of the early adopters, it is imperative to gain differentiation in the holy trinity of innovation, strategy and leadership.

It requires a high degree of infrastructure flexibility to improve the economics of mass customisation. As investors' appetites for a variety of strategies have grown, the speed-to-market has to accelerate; alongside the evolution of a single centralised operating platform, with tools for analytics, risk control, valuation and processing. This is where business leadership kicks in.

In the last decade, it was widely confused with the buzz of the investment function, not least because most chief executives were former portfolio managers. Sound-bite leadership was all too common. Now, leaders have to *up the ante*, think strategically, be first among equals, motivate staff and deliver results – they certainly have their jobs cut out for them.

These imperatives go well beyond the craft of investment and involve understanding: how markets work; what digital age clients want; how the dynamics of asset gathering operate in different client segments is changing; how new instruments underpin tomorrow's quality products; and, above all, how to inspire trust and motivate the movers and shakers in the business.

Crafting a new narrative

In the evolving environment of flexibility and accountability, this sounds like mission impossible. But it is happening among the early adopters of digitisation by crafting a clear strategic narrative that addresses the seven most frequently asked questions during periods of change management (Figure 5.4).

The first three questions aim to provide clear 'guiding stars' that staff are enjoined to follow. These do not usually cause many problems; indeed, clarity is welcomed. The remaining four questions are about the 'nuts and bolts' of staff behaviours. They depend upon influencing their perceptions about the strategy and its emotional buy-in.

Past experience shows that, at the design stage, strategy creates a warm glow. But when the rubber hits the road, there is a tendency to confuse pace with progress, activities with actions, and effort with outcomes. A system of agreed KPIs provide the necessary reality checks. Regular reviews are essential too. Few business plans travel in a straight line.

One abiding lesson from the experience of early adopters confirms two common sense truisms: that key staff should be singing from the same hymn sheet; and that the strategy has a clear narrative that is widely understood and internalised inside the business.

After all, asset and wealth management is a people business, first and foremost. It thrives on talent. Such people like to be led, not managed. They have a high sense of individualism and self-worth. They relish autonomy and space. They are not moved by empty rhetoric.

Top executives among early adopters have adopted a style of leadership that works well in a talent-based business. It involves:

- being acutely aware of industry dynamics
- promoting creative teamwork by walking the talk
- anticipating problems
- asking catalytic questions via tact and diplomacy
- listening and reflecting
- providing open honest feedback
- challenging complacency and the *status quo*.

The suggested approach empowers people, but also asks a lot of them *quid pro quo* and incentivises them accordingly.

Figure 5.4 What are the most frequently asked questions in change management?

Source: CREATE-Research/Dassault Systèmes Survey 2017

> *Changing behaviours is foremost a matter of changing people's hearts and minds. It requires clear motivation, time and persistence. It also requires a different style of leadership.*
>
> An interview quote

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