

# What Asset Owners Did Next

Thinking Ahead and Future Fund Peer Group Study  
Closing Report. March 2025

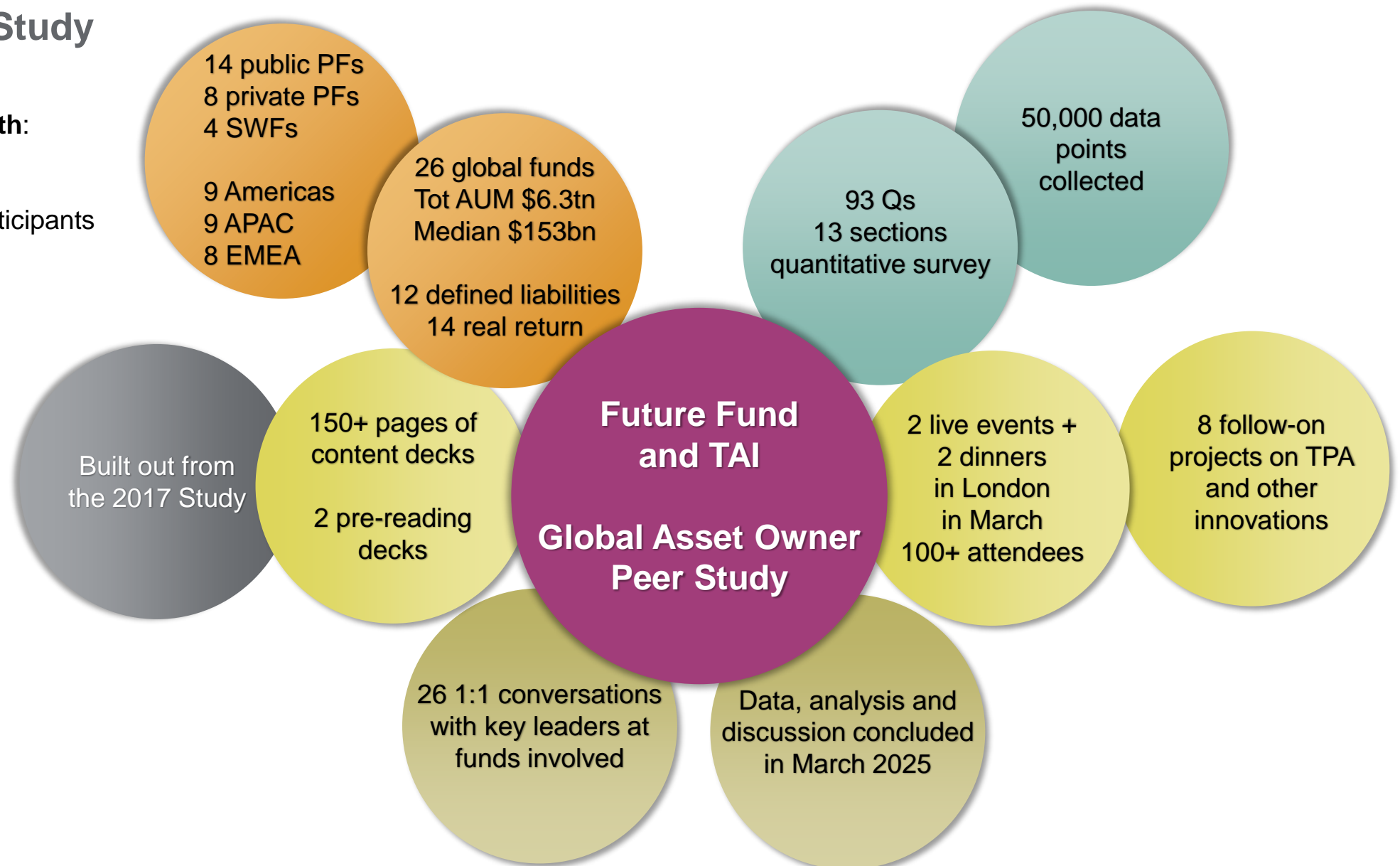




# About the Peer Study

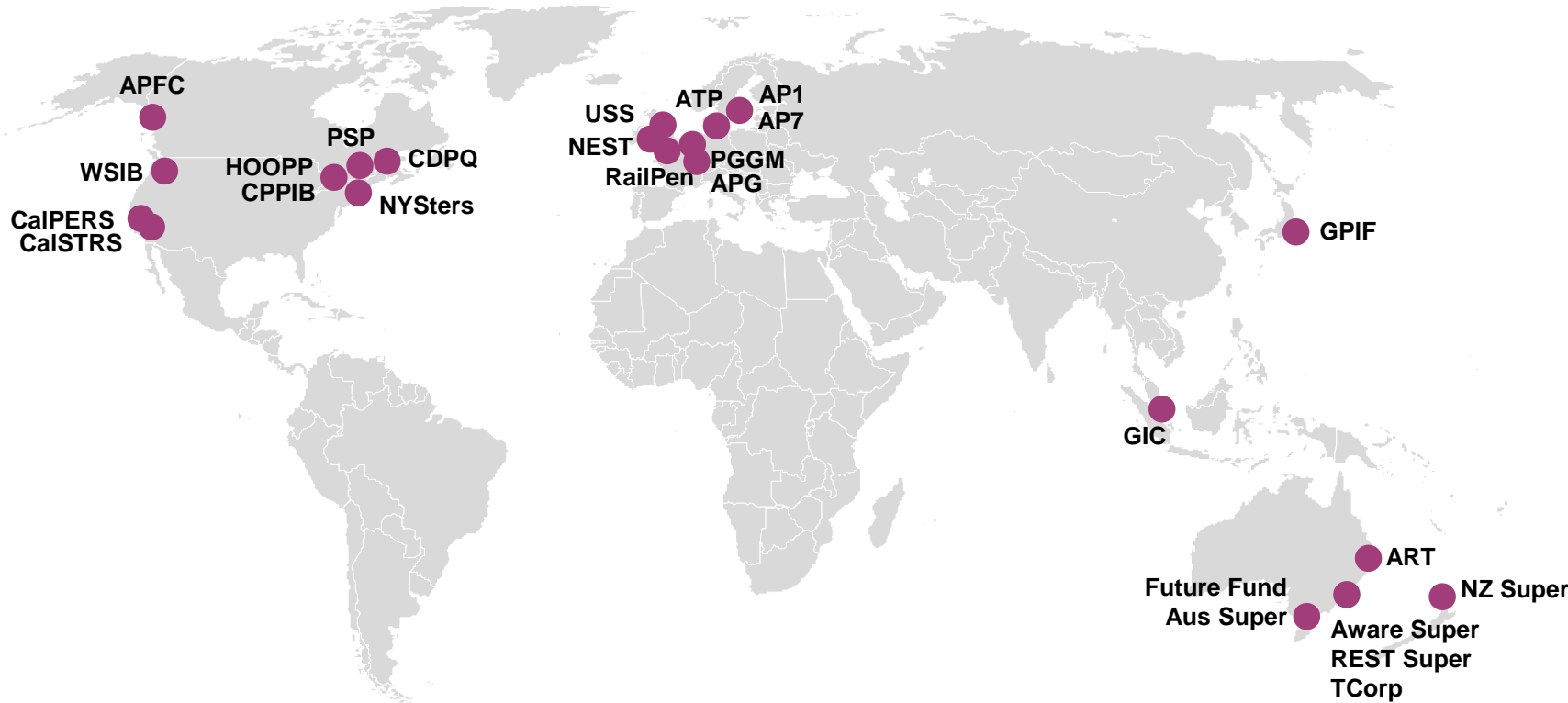
## Dedicated [webpage](#) with:

- Key resources
- Insights
- 6 interviews with participants



# Peer Study Funds

We are enormously grateful to these 26 participating organisations



- APG (Netherlands)
- Alaska Permanent Fund Corporation (US)
- AP Fonden 1 (Sweden)
- AP Fonden 7 (Sweden)
- Australian Retirement Trust (Australia)\*
- ATP (Denmark)\*
- Australian Super (Australia)
- Aware Super (Australia)
- California Public Employees' Retirement System (US)\*
- California State Teachers Retirement System (US)\*
- Caisse de dépôt et placement du Québec (Canada)
- Canada Pension Plan Investments (Canada)\*
- Future Fund (Australia)\*
- Gov of Singapore Investment Corporation (Singapore)\*
- Government Pension Investment Fund (Japan)\*
- Healthcare of Ontario Pension Plan (Canada)
- National Employment Savings Trust (UK)
- New York State Teachers' Retirement System (US)
- NZ Super Fund (New Zealand)\*
- PGGM (Netherlands)\*
- Public Sector Pension Investment Board (Canada)\*
- Railways Pension (UK)\*
- Retail Employees Superannuation Trust (Australia)
- TCorp (Australia)
- Universities Superannuation Scheme (UK)
- Washington State Investment Board\* (US)

|                    |                |
|--------------------|----------------|
| <b>Total AUM</b>   | <b>\$6.3tn</b> |
| <b>Average AUM</b> | <b>\$243bn</b> |

\*In the 2017 study (n = 15)

Unless indicated otherwise, all charts in this report are based on a full sample size of n = 26

## Why this report?

**What Asset Owners Did Next** summarises the findings of a unique study and survey of 26 leading asset owners conducted in 2024. This is a successor to [Smart Leadership, Sound Followership](#), published by Thinking Ahead Institute in 2017. It compares and contrasts the perspectives and practices of these leading asset owners (the AOs) and also compares their current practices with the 2017 versions of themselves.

This report is borne of a unique collaborative effort between AOs. Its baseline is formed from a study in which AOs all responded to the same questions. Next the study's findings were synthesized into a small number of critical topics. **These topics were debated at length at the Study Symposium.** The outputs of the debate were finally parsed further with a deep-dive into AO individual actions and motivations, through one-to-one conversations.

The quality of the insights in this report is in no small part due to the support of so many CEOs and CIOs to provide data and narrative (comprising ~ 180 data points) and to offer their time for the 1-2-1 conversations and for the subsequent peer symposium where these leaders produced breakthroughs like the TPA, Alts-Plus, 3D investing and Risk 2.0 propositions discussed later.

The resulting report is structured as a series of **infographics and narratives** which sets out best practice. And all of this developed from the valuable shared IP and lived experience of the world's top AOs.

**Organisational alpha** came out of the discussions. The concept was widely discussed and also applied in several follow-on benchmarking studies of individual organisations – notably at Future Fund and New Zealand Super. This has been a Thinking Ahead idea for some time that we can unpack performance edge by understanding the factors producing the portfolio's value-add in the organisational features like governance, culture, talent and technology.

As in 2017, **we worked with Future Fund**, an insightful partner in our quest to explore and identify the competitive edges of leading AOs. The 26 funds in the peer group were selected for their strong governance, significant size, and thoughtful international perspectives. Together the group represents over \$6tn of extremely influential capital, which is enormously important to the futures of people and planet. **The final reporting in March 2025 came at a time of peak uncertainty in the world (dis)order.**

# Top topic areas

This is the table of contents for the Report

1

## It takes a system to manage a system

Complexity

Beliefs and thinking ahead

Systems thinking

Systemic risk

Total Portfolio Approach

TPA and performance

TPA and innovation

Overseas offices

*The AOs are organisations in transition. TPA on fresh legs is catalytic to better investing and performance and the new alts, sustainability and business models. ~ see TPA 2.0 in the best-bits model*

2

## The soft stuff is the hard stuff

Governance and culture

Rem and alignment

Rem and performance

Staffing

T-shaped people, teams & organisations

Costs

Portfolio management

Technology and AI

*The AOs are powering up collaboration. The co-opetition model is working well, witness the best-bits model, co-investing and the rise of systemic stewardship ~ see Governance 2.0 in best-bits model*

3

## What gets measured gets managed

The HI x AI stack

Technology spending

Scorecards

Dashboards

Sustainable investing

3D investing

Stewardship

Net zero investing

*AOs face big problems with uncertainty but see relief through the HI x AI stack. Mindsets need to be shifted and data needs to be parsed to fill these gaps. ~ see Risk 2.0 in best-bits model*

## In a nutshell

Asset owners have strengthened all aspects of their organisations since our 2017 report. Further progress will not be easy: AOs are, in their own words, buckling under peak busy conditions in which business as usual (BAU) is more complex than ever and business beyond usual (BBU) is not getting enough bandwidth. **To deal with complexity and spend more time on BBU, clarity and simplification are at a premium.**

Asset owners will need to further advance their systems thinking to build resilience and a pathway through rocky terrain. The quality of their people and technology, and how these two vital strands are integrated, will form the bedrock of this pathway.

In all probability, the road ahead will also require streamlining of the investment model using total portfolio thinking and getting to grips with a Risk 2.0 world in which climate and geopolitical issues are ascendant and **risk must be assessed wider, softer, longer**. The upside in producing this more accurate view of risk is substantial. 'Investment management is the management of risks not the management of returns' as Benjamin Graham put it.

The Risk 2.0 proposition is that **uncertainty in investment risk has reached peak levels requiring fresh thinking.**

A key output of the work that TAI has conducted with AOs, is that self-awareness and understanding of peers and competitors has been central to many organisations' successful evolution to date. **This report is designed to reside at the nexus of both internal awareness and external understanding.**

Based on the peer group study, the symposium and subsequent analysis, we posit that AO competitive edge can be maintained through focus on three key areas :

- **It takes a system to manage a system**
- **The soft stuff is the hard stuff**
- **What gets measured gets managed**

This report is designed to provide practical ideas to succeeding in these three critical areas through becoming better joined-up and deepening their organisational alpha.

At the time of writing, we are undergoing substantial change in the world order. The AOs face a wider ecosystem with increasing **dissonance and disorder**. While the AOs have much **congruence** in their thinking they too have **conflicts** to address in an increasingly contested world.

# 1. It takes a system to manage a system



# (1) It takes a system to manage a system

An overwhelming 88% of AO peers believe that systemic risks – such as climate change and geopolitical tensions – will increase over the next 5-10 years.

All the peers present at the TAI symposium thought that systemic risks are seriously under-estimated and needed urgent attention. The peers emphasized the need for a risk management evolution which broadens, deepens and lengthens current scope.

In an investment landscape marked by heightened risk and uncertainty, strong beliefs and critical thinking are central to risk management evolution.

Beliefs address identity and purpose – essential to drown out the noise and retain focus.

The power of critical thinking can be bolstered by a systems approach which leads to well-justified beliefs and associated investment propositions that are aligned, accurate, actionable and embedded.

## **Systems thinking is about...**

- Connecting dots – holism – seeing wholes as inter-connected not isolated parts
- Mapping overlaps – adjacencies – factoring in other systems of interest, both inner and outer
- Recognising patterns – zooming in and out to see moving patterns not static pictures
- Understanding change – emergence with new elements, connections, and functions replacing old ones
- Socialising change – leadership seeking to resolve issues through a collective not individual effort

## **Systems thinking asks you to...**

- Complicate to understand, simplify to act
- Fuse inner traits (soft stuff) with outer states (world landscapes)
- See the system from multiple angles, lenses and time-frames
- Think ahead by anticipating and influencing change



# Fighting fires leaves little time for the strategic issues

“We're realistic... we're fast followers at the moment in lots of different areas”

## THE STORY SO FAR

AO strategic focus shifts surprisingly often and by a surprising amount each time. Currently, the five most prominent issues for AOs are, in this order: complexity and workload, attracting and retaining staff, governance, finding alpha, and sustainability.

While managing complexity is currently very much the number one concern of the 26 asset owners, cited by 73% of them, in 2017 complexity didn't feature highly at all, with poor market returns the chief concern at that time.

With returns from stocks (with the S&P 500 as proxy) surging by over 200% in the interim, market performance worries have been replaced by other issues. The principal concern today is that the Business-as-usual tasks have become significantly more complex and time-consuming.

We define BAU tasks as *regular* work and inter-actions that are increasingly complex and time-consuming. Business-beyond-usual (BBU) refers to *strategic* thinking and action and how we assess and respond to changes in the external environment.

## WHAT HAPPENS NEXT

AOs are hamstrung by the complexity of internal transformation. At the same time, their need to innovate quickly and accurately to respond to BBU has become critical.

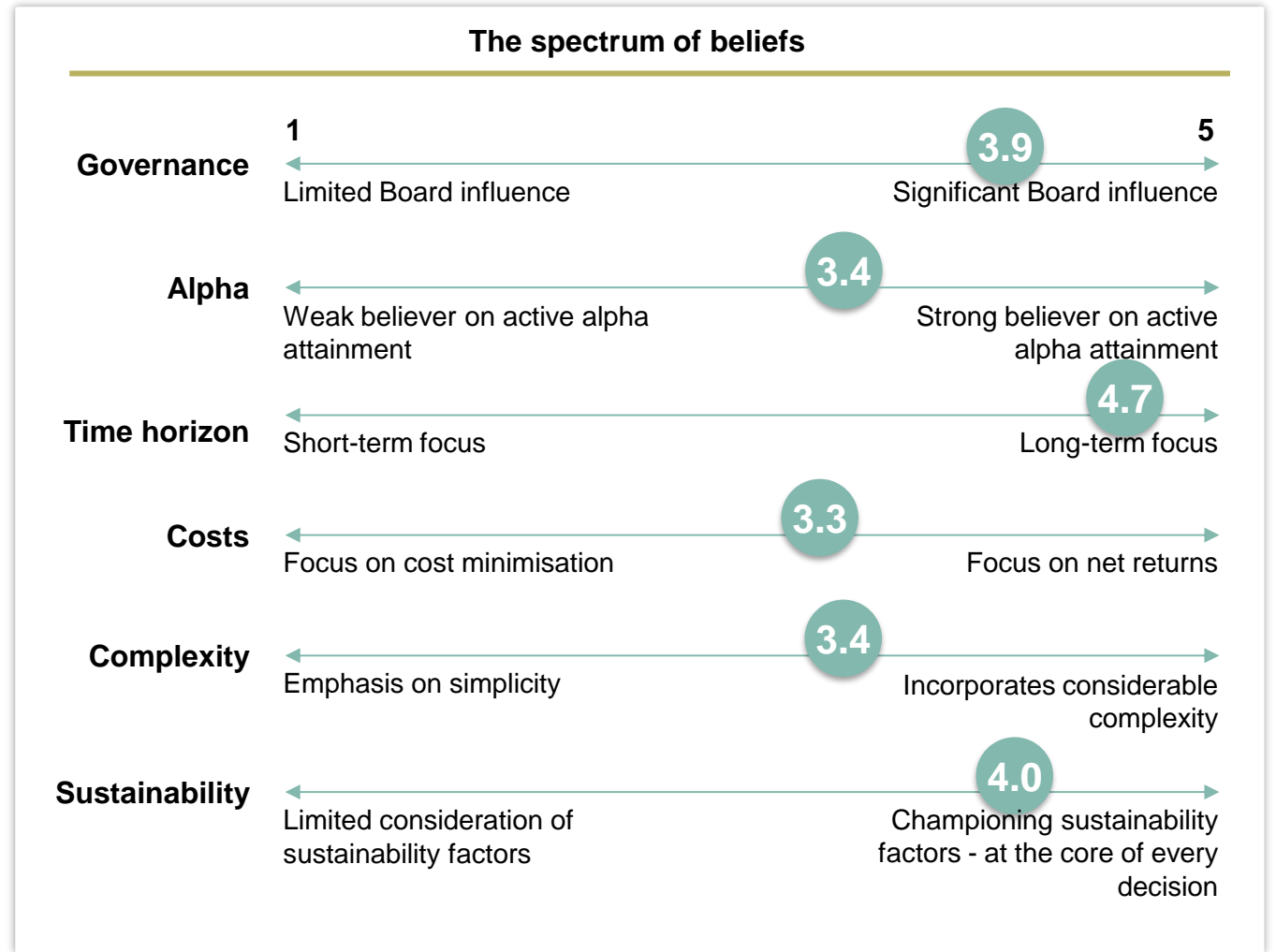
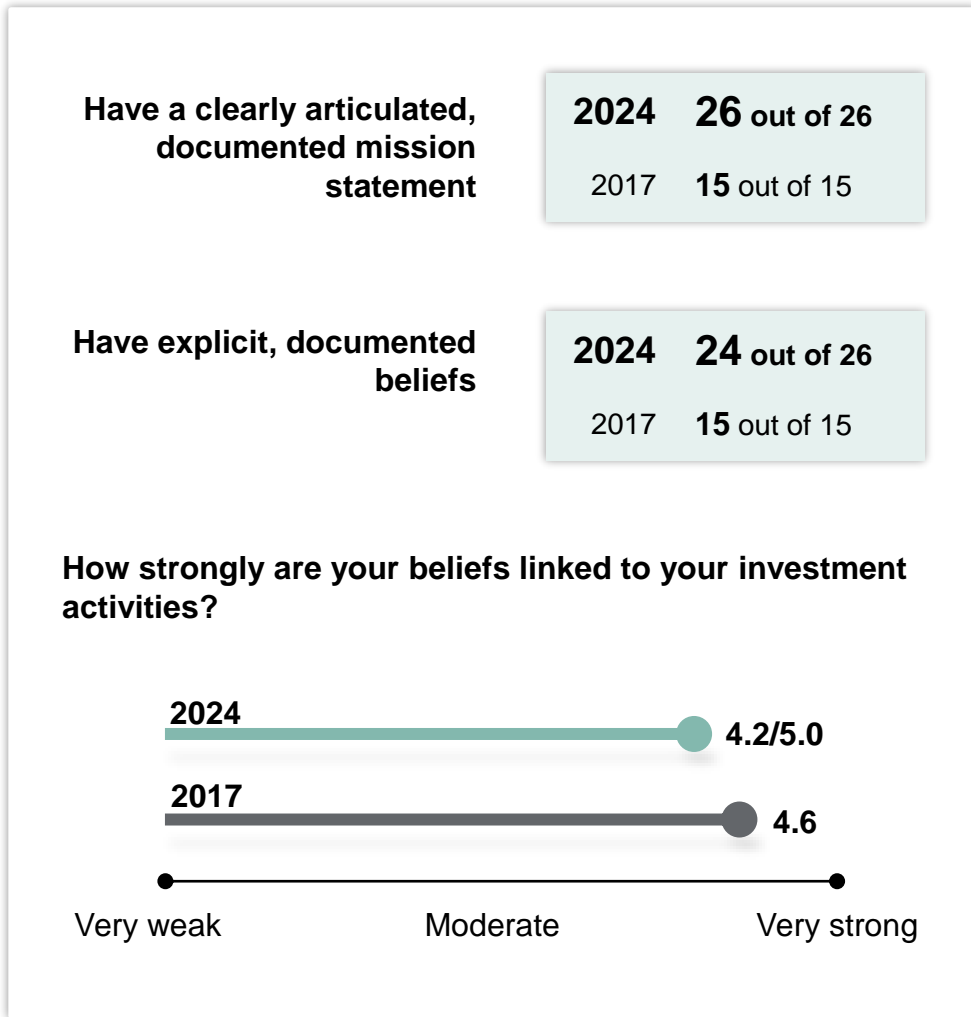
Peers have been largely undertaking incremental change which, important as it is, is insufficient to deal with internal complexity and outside change facing the organisation. Effective change management is less about enhanced change apparatus and more about developing and embedding cultural evolution. This includes creating stronger evidence-based methods to support the reasons for change and better clarity on “from-to” objectives.

It is clear funds need their strategies for dealing with complexity. These are several (we discuss these strategies more fully later):

- Resilience
- Scorecards
- Systems thinking and change mindset
- T-shaped teams providing breadth in skills
- Technology designed to simplify complex processes

# Asset owners think ahead and are pragmatic

Asset owners reveal strong governance, long-term investment, and sustainability with strategic clarity of mission and beliefs



# Everyone needs something to believe in

*“A well-placed micro-behaviour magnified many times is sometimes better than one single leader”*

## THE STORY SO FAR

A tried and tested way to cut through complexity and make workloads more manageable, is to develop beliefs – high level principles that draw you back to the key focus when workloads are stretched beyond breaking point.

AOs generally recognise that strong beliefs underlie good governance. Some 24 of the 26 asset owners say beliefs – perhaps better described as “beliefs, values and propositions” – are a critical piece of process scaffolding to advance and elevate discussions. Alignment of beliefs to investment activity is ranked at a healthy 4.2 out of 5. Respectable, but a little lower than in 2017 – evidence of room to improve.

Strong beliefs embed considerable IP and thereby support better decisions and save time in decision-making by not relitigating previously-settled issues.

## WHAT HAPPENS NEXT

Better beliefs are generally ones that have more accuracy, alignment and action orientation.

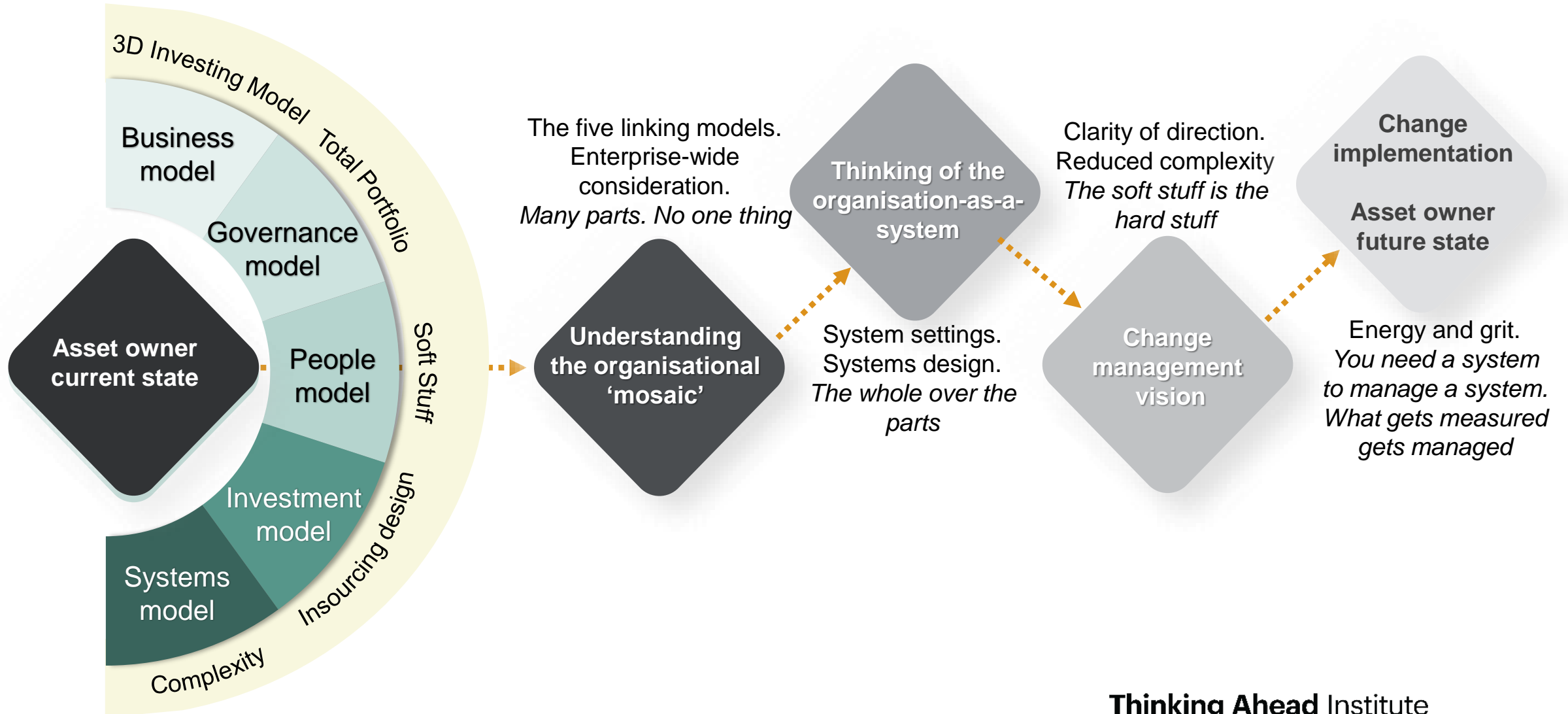
Good practice includes:

- Linking beliefs to more evidence-based and science-based analysis
- Linking beliefs to investment “edge” and strategy....
- ...but linking beliefs more broadly than just to investment
- Embedding beliefs within teams and at a granular level
- Making beliefs more ‘edgy’ – ones that carry more investment conviction and differentiate organisations more
- Checking-in on beliefs at a productive cadence – every two years works best – to update and check their usage

In a current phase of breathtaking change, updating beliefs and the merits of horizon scanning have become really important.

# Summary of systems thinking – assessing and enhancing organisational alpha

Organisational alpha = the superpowers of people and process that add the value



# Further thoughts on systems thinking

*“The lazy alligator always wins. Being busy doesn’t always create better returns”*

## THE STORY SO FAR

Systems thinking is another part of the remedy for growing complexity. It is based on the idea that a system is not the sum of its parts, but the product of their interactions. Systems thinking is a set of synergistic analytic skills used to improve capabilities in identifying and understanding systems and predicting behaviours.

Systems thinking takes account of all relevant moving parts (uncontroversial), examining all the connections (trickier) and aligning the multiple forces affecting organisations in their progress on mission (very tricky).

This combinatorial power is a big ask in three respects. First, it requires integrative thinking – adapting to inevitable trade-offs between opposing points and building creative combinations that work better than siloed answers. Second, the difficulty in applying systems thinking to connect dots, spot patterns, and socialise solutions. Third, in using systems leadership to see problems as shared challenges and approaching them holistically to produce co-operative solutions.

## WHAT HAPPENS NEXT

The peers expressed alarm that events progress faster than organisations with trillions of dollars of assets can react. They are highly aware that kneejerk responses that are not fully-formed will not advance their cause. More measured responses, principally deepening their systems thinking, are more likely to add value.

To adapt and advance their systems thinking, CEOs and CIOs are working on cultivating infacing-savviness – such as authenticity, self-awareness, critical thinking, visionary insight, and emotional intelligence. Outfacing agility includes acting as ambassadors, authoritative voices, collaborators, diplomats, and experts.

The use of systems leadership models helps to recontextualise problems as shared problems. Leaders with skin in the game are more committed to look for solutions.

In terms of sustainability, systems-level investing can help integrate the three dimensions of risk, return and impact. This approach is gaining traction. We can expect more to follow.

# Geopolitics and climate change at the head of systemic risk surge in the next 10y

This area seems to represent an industry gap in best practices. These risks have not been fully integrated into the investment process in the current Risk 1.0 Model. We suggest below the necessary steps towards a Risk 2.0 Model.

**Risk 1.0** assumes systemic risks fall into normal market risk and volatility and so largely ignores them

**Risk 2.0** applies wider, softer, longer thinking to deal with multiple risk sources and risk measures

**Wider**

- Integrating systemic risk into our risk practices
- Allowing for regime changes like the equity-bond correlation flip; including making resilience part of the system

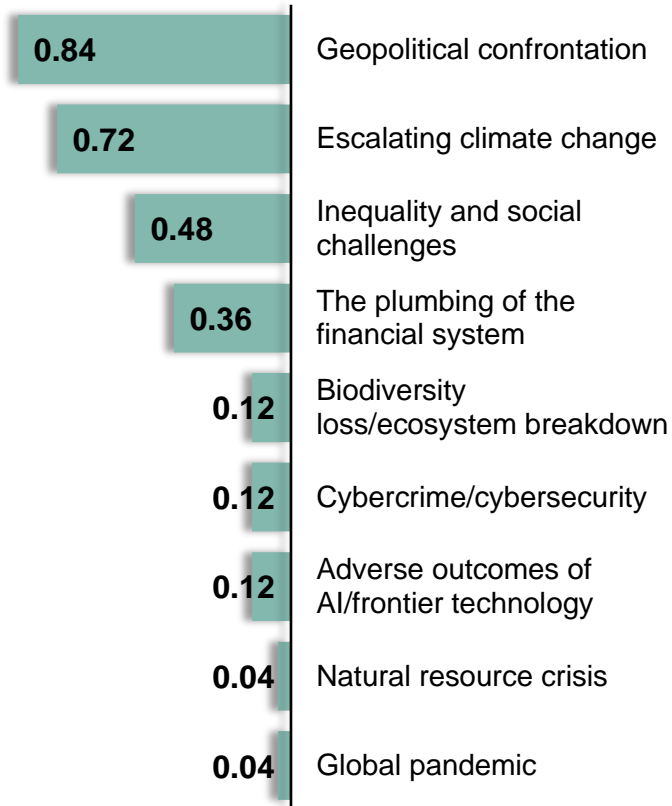
**Softer**

- Allowing for uncertainty, fallibility and reflexivity in investing
- Integrating soft data and qualitative methods into risk practices; including assessing risk appetite systematically

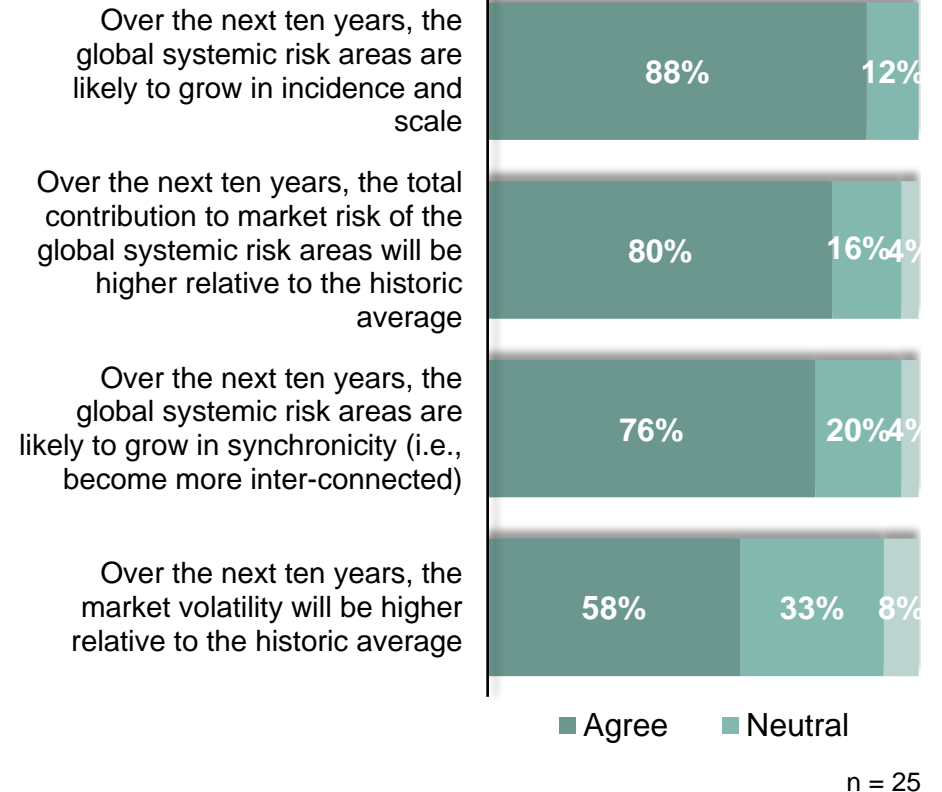
**Longer**

- Introducing a realistic term structure to risk to address longer-term risk; enabling the optimisation of risk-through-time
- Integrating private market exposures into the total portfolio framework

### Top 3 sources of global systemic risk



### Views on systemic risk trajectories



# Navigating a Risk 2.0 world

*“The perils of systemic risk and the challenges of regime change make this a compelling time to adapt and make the shifts from the physics envy of Risk 1.0 to the wider, softer, longer version in a Risk 2.0 model”*

## THE STORY SO FAR

Investors face a future that may differ significantly from the past and probably won't be as kind – in investment terms.

Systemic risks are different from market risks, being uncertain, pervasive, inter-connected and non-linear. These risks need special attention, they cannot be solved by maths.

Climate and geopolitics are viewed as the top risks in a Risk 2.0 world, with 88% of asset owners believing that systemic risk will grow and proliferate over the next 10 years. In other words, very few of the world's most influential investors believe systemic risks will reduce over the medium or long term or that they can walk up to these long-term risks when they happen.

Pricing these risks requires more critical thought than pricing, say, corporate governance risk. For climate risk, for example, there is little past data, long timeframes for scenarios to play out, tipping points, high co-dependencies and massive model uncertainty. The pattern of latent risks emerging in a steady stream of bad news is a resonant one in which 'the dog doesn't bark'.

Systemic risk is pervasive (undiversifiable and unhedgeable); inter-connected (complex reinforcing loops that can domino); and non-linear (growing, potentially spiky, even runaway).

## WHAT HAPPENS NEXT

In a Risk 2.0 world, a relaxation of BAU's vice-like grip on AOs is required. A strong focus on BAU may increase efficiency but it is ultimately costly because it under-values resilience.

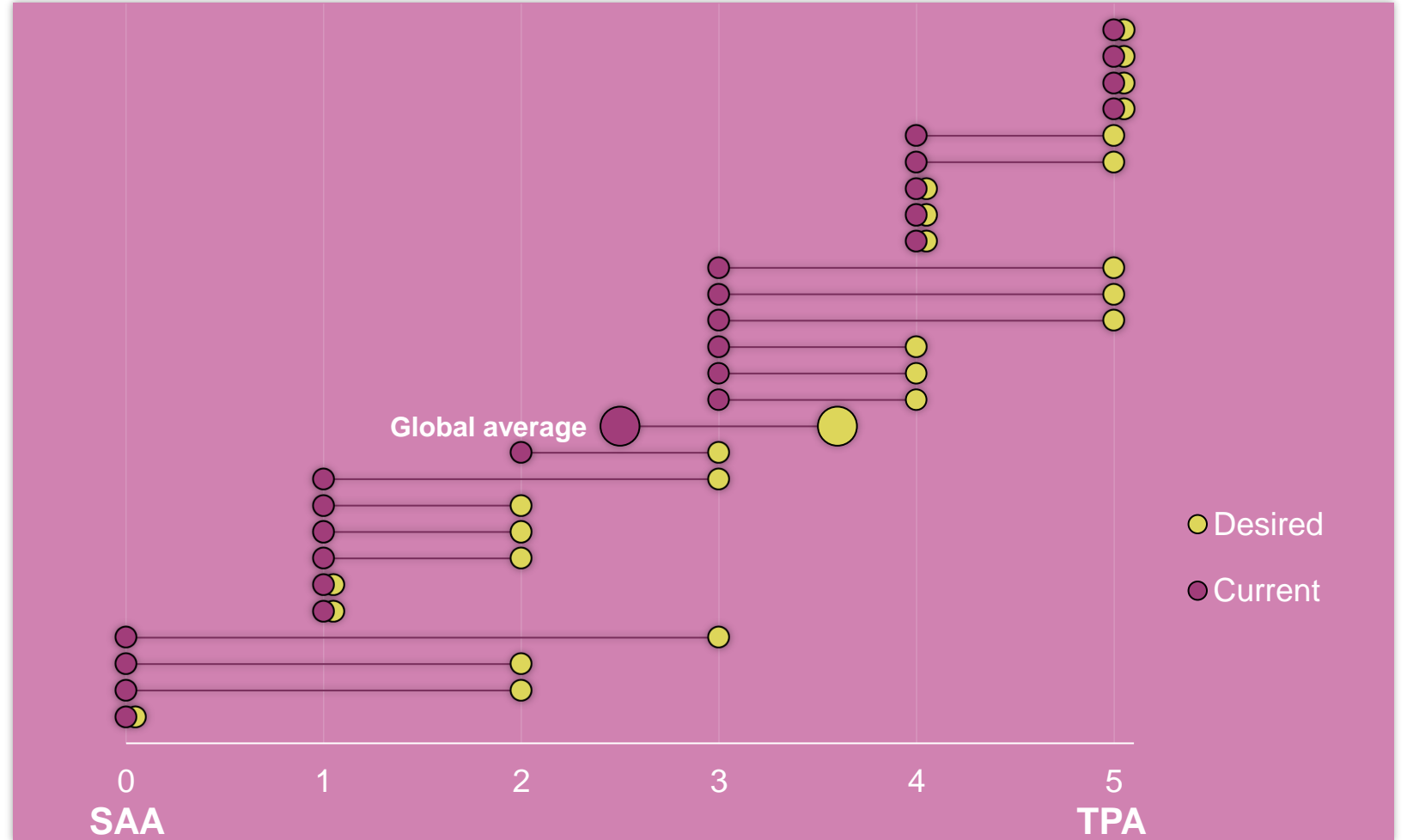
The successful shift of AOs towards BBU activities hinges on self-awareness, informed by peers and competitors through formal and informal groupings.

BBU is the elephant in the AO room or, to put it more conventionally, a gap in the risk system. The **Risk 2.0 Model** demands wider, deeper, longer analysis – as described on the prior page – to integrate it into the investment process and thus bolster systemic resilience and risk mitigation. Building more resilience includes more agile organisational design, better culture and stronger risk frameworks – combined with a systems-thinking total portfolio approach.

# TPA scores across the 26 organisations

The organisations are widely dispersed on this feature

- TPA will be defined in different ways having both technical, governance and cultural elements. Our definition is as follows:
- *TPA is developing the best quality portfolio for the particular fund goals adopting best ideas, dynamic management and a holistic approach*
- *SAA is creating a policy benchmark suited to the longer-term fund goals and allocating to asset class portfolios that are sized to align with the benchmark*
- Each dot-to-dot plot is one peer fund plotted from its current TPA score to its desired future TPA in the next five years. 10 funds expect to stay still, 16 expect to move in the TPA direction. The group average is currently at 2.5 and has a desired position of 3.6



# TPA: time to take the red pill?

*“We waste too much time on benchmarks”*

## THE STORY SO FAR

The peer study finds that the number of funds deploying SAA has fallen to half the 2017 level. The trend to TPA is continuing: 35% of AOs have adopted TPA, and 54% are moving in the TPA direction. The issue is not settled however: the spread of take-up of different models (SAA, TPA and hybrid) is unusually wide for a system design feature of this significance.

SAA is essentially a legacy structure. It basically solved a governance problem, but it didn't solve the investment problem.

TPA develops the best quality portfolio for the All goals, adopting best ideas and a holistic approach. In TPA, every investment competes for capital based on meeting fund goals. AOs see the benefits of TPA as a more dynamic portfolio and more “joined-upness”, which are both useful in a fast-moving and complex environment.

All the peers recognised the value of TPA to provide more flexibility and accuracy in increasingly tricky VUCA conditions.

## WHAT HAPPENS NEXT

AOs recognise that investment optimising (TPA) beats governance satisficing (SAA). The application of SAA has resulted in a lop-sided management effort – principally on a narrow form of alpha where value add is limited.

AOs are keenly aware, however, that TPA doesn't come easy. Where SAA is “comfy” governance but inefficient investing, TPA is efficient investing but “stretchy” governance.

SAA is losing the argument but has not yet lost the war. The difficulty is that moving to TPA is not a plug and play process, it requires transformational change and a lot of organisational energy to ensure the joined-upness necessary.

The transition is adapted versions of governance model, investment model, risk model and sustainability model. That is essentially a four-pillar construction project. But in a Risk 2.0 world, there may be little choice but to bite the bullet. The discomfort of doing so is surely less than the pain of not.

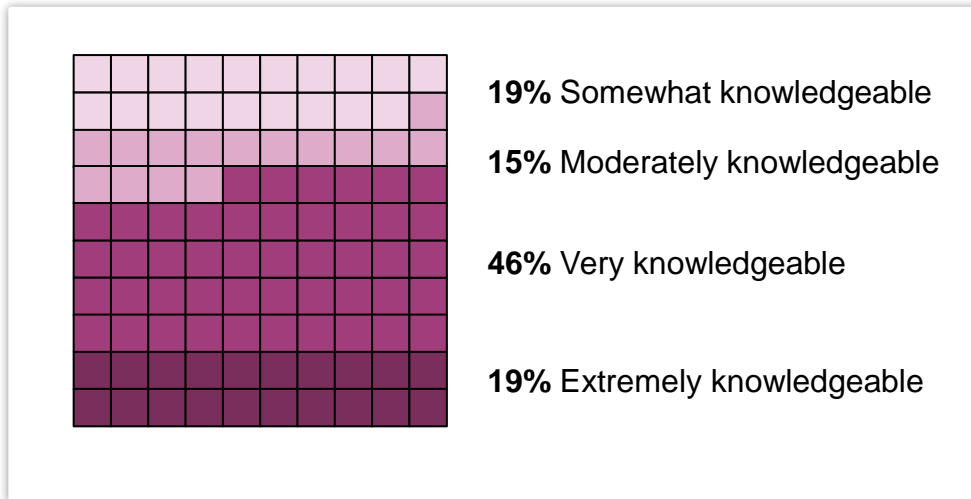
# TPA Model – Peer Study conclusions

Many peer funds now share strong governance, total portfolio thinking, and high alts allocations with alts out-performance

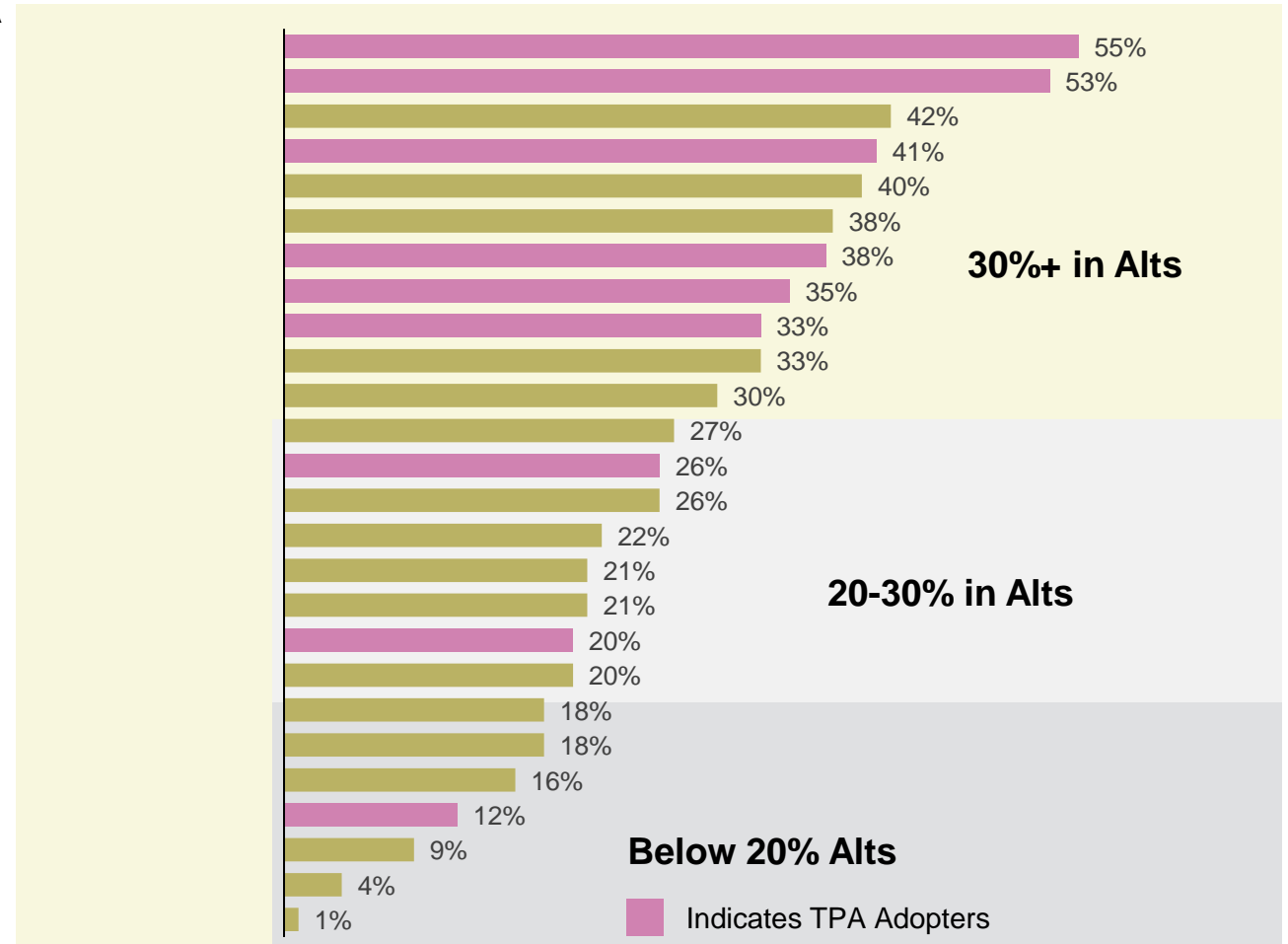
## Peer Study narrative and data

- A ten-year performance difference between the group doing TPA and the group doing SAA of 1.3% pa (but with data issues);
- A going forward estimate of 0.5% to 1.75% pa in that difference (but with low provenance in reliability)
- Increasing awareness of TPA, among most peers (as below)
- Correlations between governance, TPA, alts allocation and performance with influence from (stronger) governance to TPA adoption to (higher) alts to (higher) performance (see opposite)

### Knowledge among peers about TPA



## 26 peer funds ordered by their alts proportion (Source: Global SWFs)



# A bravura performance – by the brave few

*“Our principal measure of success is our total return”*

## THE STORY SO FAR

The peer study adds to the evidence of TPA’s potential to add value. TPA-adopter organisations outperformed the SAA organisations over the last 10 years by a very substantial 1.3% a year. The test may be crude, but it does appear that TPA can be considered a significant performance factor.

And the modelling suggests that the likely gain going forward would lie between 0.5% and 1.75% per annum. This is based on observed levels of skill and modelling of the two approaches assuming like-for-like in capabilities.

TPA adopters have outperformed for a number of reasons, but particularly through increased allocations to private assets.

Other material TPA success components are better governance and greater internalisation of investment activities. In most situations the creation of value from TPA has depended on meeting governance, behavioural and cultural challenges more than mastering technical issues.

## WHAT HAPPENS NEXT

A critical challenge in TPA is to effectively devolve decision-making while ensuring focus on the overall fund objective. While certain delegations may reside with a single person (typically the CIO), there is a need to empower and distribute leadership right across the fund.

We observe that professionals are mostly positive about the roles they play in TPA but with common frictions as to how pay is fixed.

Organisational design in TPA funds is important here. This must reflect a more dynamic investment set-up with a larger ask of the CIO. Some have been successful with splitting the CIO function into two roles – a top-down perspective with actuarial skillset/risk mindset; and a bottom-up perspective with more asset management/ portfolio management/ people management skillset.

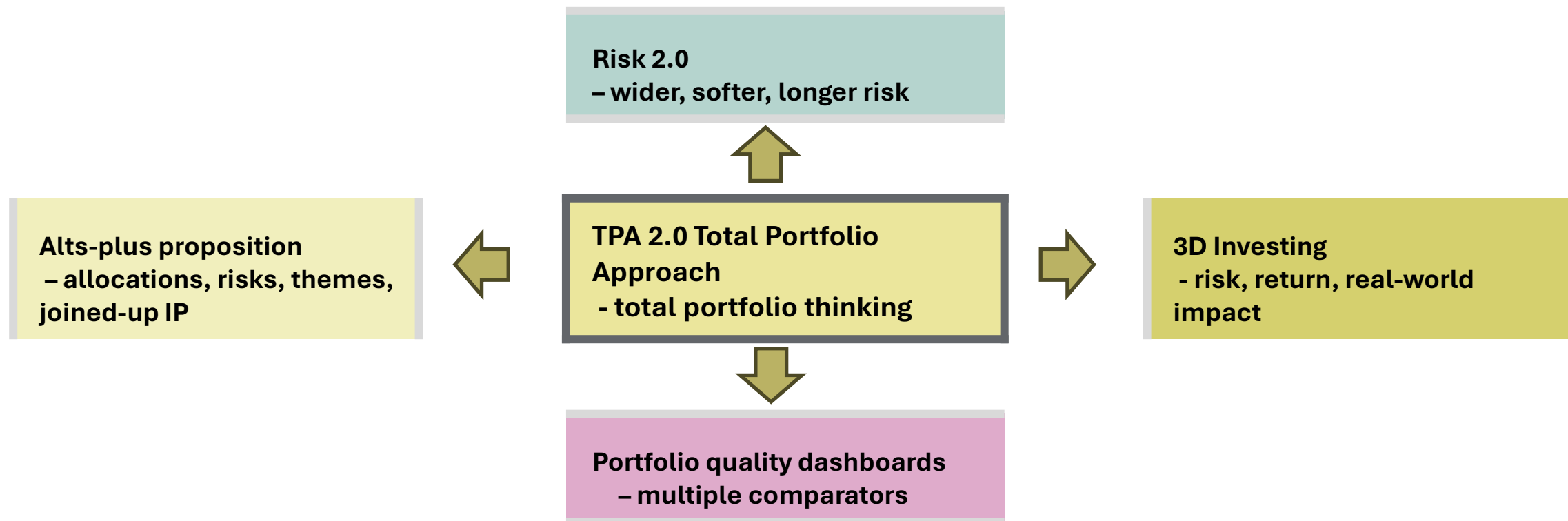
The roles of chief fiduciary officer and head of total portfolio management are also evident at many TPA funds, each sharing in the critical leadership function.

# TPA is a significant enabler to the four main innovations that global peers are working on

The Peer Study generated this Model of what the Peers considered their stronger innovations in Org-Alpha\*.

Total Portfolio Approach in a number of cases led a trail to the other four areas

*\*Org-Alpha – the alpha enabling the portfolio alpha from people and process, reflecting structural endowments and developed advantages*



# TPA is at the source of most fresh thinking and innovation

*“TPA showed up in many areas we were not expecting – it helped our culture and our technology”*

## THE STORY SO FAR

Innovations by asset owners have not been frequent. We can think back over four significant ones in the last thirty years or so: mean variance optimisation; lifecycle and target date funds; ALM and risk budgeting; smart beta. And we should add TPA to the list as an innovation that emerged fully at the end of this generation.

Is this evidence of an industry that has done well with innovation or the opposite? Most informed participants on the investment ecosystem would say this conveyor belt of innovation has not been at all rapid.

In most situations in the investment industry the transition to these new ideas has been complicated. First, innovations come without a clear track record. Second, there are these governance, behavioural and cultural challenges to take on. Third, incentives to adopt positive change are weak in ‘comfy’ arrangements.

The industry likes to point to past successes rather than future gains that may not materialise. These factors make the status quo stronger and the hurdles for successful change higher.

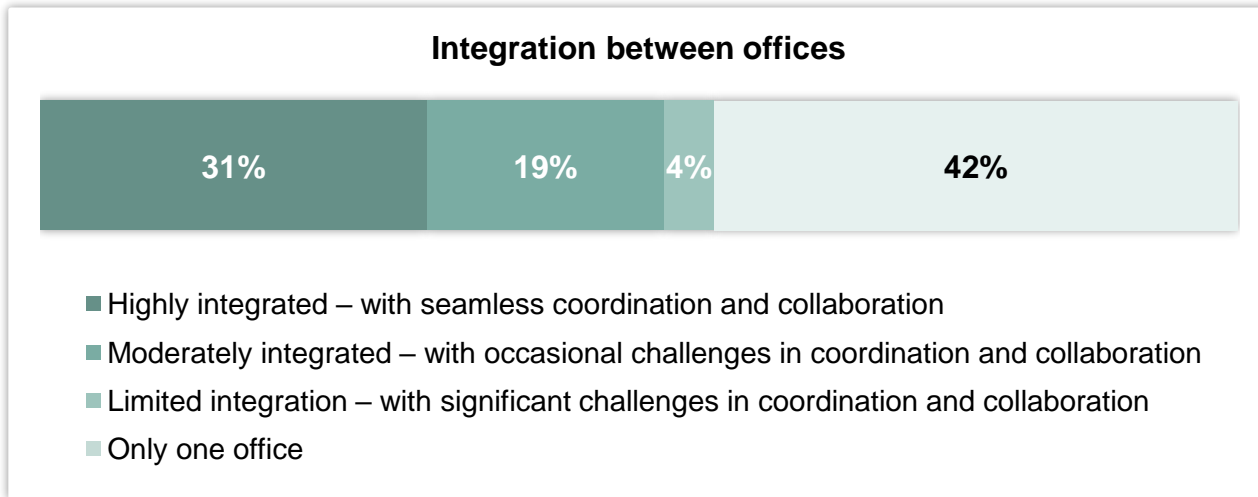
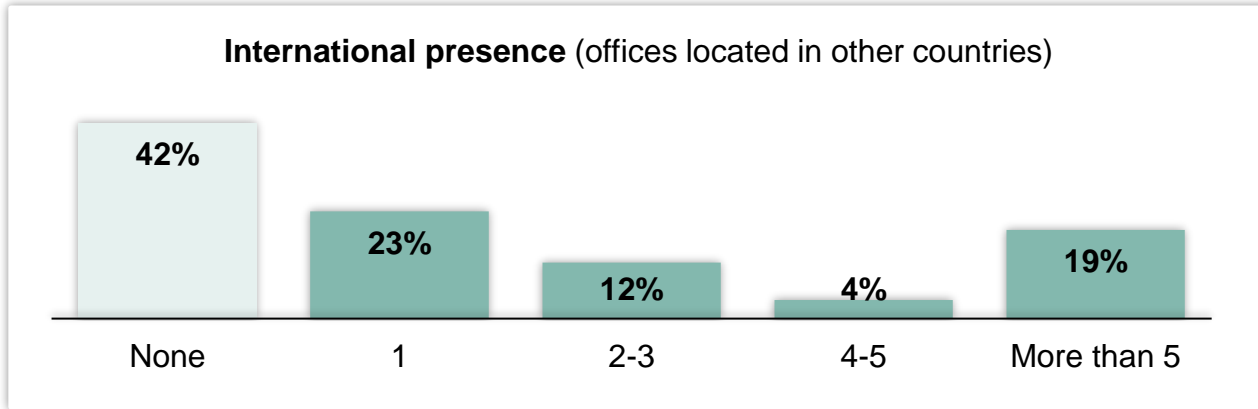
## WHAT HAPPENS NEXT

The total portfolio approach opens the door to four incipient innovations that have not been easy to deliver in an SAA world.

- **Risk 2.0 (*risk assessed wider, softer, longer*)** is a crucial component of successful TPA, it would be much less influential with the SAA configuration
- **Alts-plus (*alignments of alts in IP, risk factors and themes*)** has started to emerge in TPA funds. Whereas SAA has limited the impacts of alts with its inbuilt backward looking bias
- **3D investing (*optimising risk, return and real-world impact*)** requires a flexible coming together of top-down and bottom-up investing and stewardship – and has found more opportunity to carry this forward under the TPA framework
- **Portfolio quality dashboards (*calibrating progress and prospects through a balanced scorecard*)** are critical for arrangements that define success through multiple comparators in the way that the TPA framework does.

# Over half have an international presence with moderate to high integration between offices

Investment opportunities and talent are primary drivers for international expansion



# Long distance alpha

*“We have built very strong relationships – particularly with private market managers around the globe, including a pretty strong capability in co-investment”*

## THE STORY SO FAR

On-the-ground internal IP in private markets provides a strong investment edge, so the search for attractive assets and relevant talent requires boots on the ground. Many AOs have international presence, primarily to access new investment opportunities and find new talent. A fifth have five international offices or more, and those that have international presence have reasonably strong integration between their international offices and their home office.

Boots on the ground are particularly valuable for private asset strategies. This ties up with the increased focus on alternatives where AOs are still trying to establish a competitive edge. We found a handful of AOs have evolved into an Alts-plus model with the centrepiece as the optimal “co-opetition” design through a combination of internal and external IP. In the alts area it is not ‘either’, it’s ‘and’.

## WHAT HAPPENS NEXT

The Alts-plus model is aiming for optimal joined-upness in three areas: internal and external IP, total portfolio risk exposures and strategic themes. Not that easy, not currently done well.

The model has evolved well beyond the single alts bucket and tends to be expressed via multiple alternative asset classes (private equity, private credit, real estate, infrastructure, real assets and liquid alts/hedge funds is an increasingly common design of bucketing). All this requires considerable internal governance to manage them all. This talent is best sourced through strong joint IP. The continued expansion and integration of international offices helps establish this valuable relationship capital. The growing number of big AOs with London presence is telling.

Challenges of this model include higher costs, cultural alignment, joined-up risk exposures, and co-investing models. Governance, once more, is at a premium.

## 2. The soft stuff is the hard stuff



## (2) The soft stuff is the hard stuff

*“The soft stuff can be superpowers, but only with increasing sources of energy”*

The research which underpins this report examined alpha from two perspectives: the portfolio (how it is constructed to add value) and the organisation (how the organisation is able to add value in creating the portfolio). One critical success factor stands out: people. The synergy of talented individuals working in a synergistic system was generally regarded by peers as the key to unlocking organisational and portfolio alpha.

We call this the soft stuff. Improve the soft stuff and AOs get closer to optimising organisational adaptability and resilience. Soft stuff success simplifies processes, reduces complexity and increases organisational alpha.

The org-alpha is all about how the asset owner becomes better joined-up through a mosaic of governance, culture, leadership, talent and technology; purpose and strategy.

Among the superpowers, culture is the easiest source of blame, the hardest to change, the most critical for success

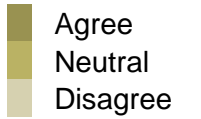
### The Superpowers

- Organisations are living systems driven by seven ‘superpowers’ that influence actions and deliver outcomes
- These disparate forces have greater influence when combined and aligned
- The importance in applying systems thinking and systems leadership to these forces

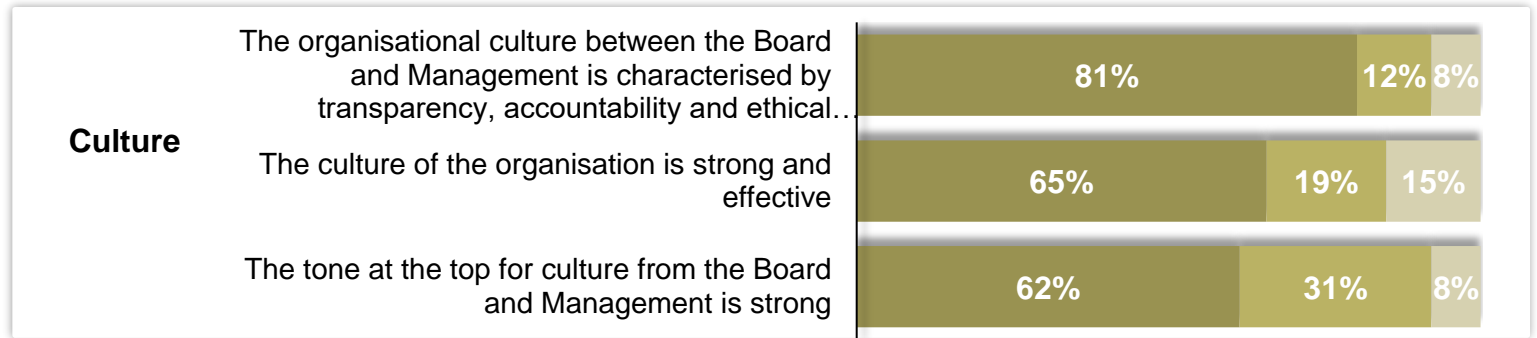
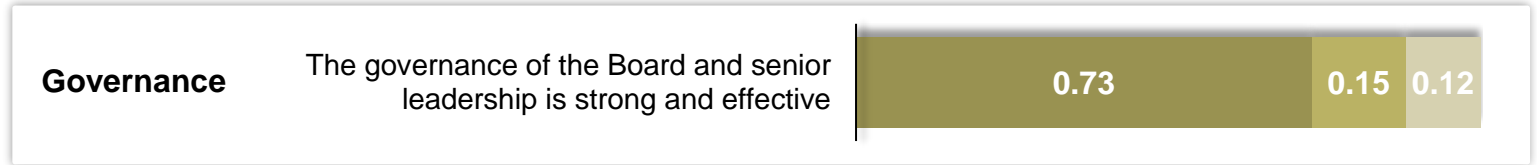


# Strong board and management dynamics in governance and culture

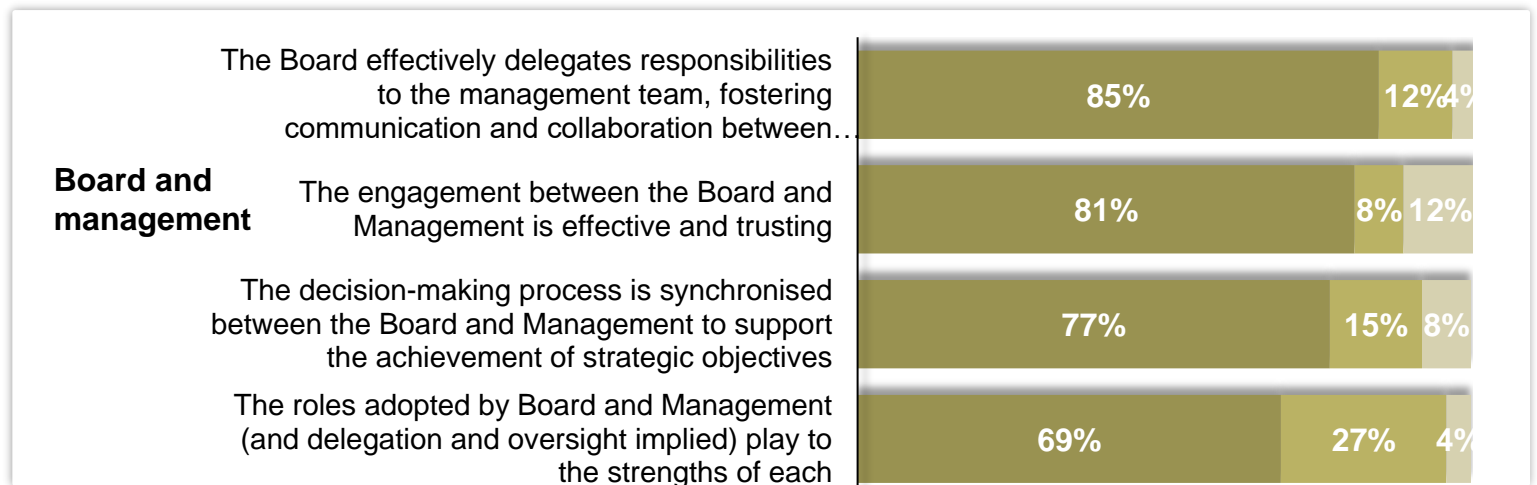
Both governance and culture need to evolve and re-set



| Governance 2.0            |   |
|---------------------------|---|
| <b>Strategic</b>          | <ul style="list-style-type: none"> <li>Board is strategy-savvy</li> <li>Management is investment-smart</li> <li>Roles are joined-up</li> </ul>                |
| <b>Scientific System</b>  | <ul style="list-style-type: none"> <li>Understanding of the system – elements, inter-connections &amp; functions, motivations</li> </ul>                      |
| <b>Superteams</b>         | <ul style="list-style-type: none"> <li>Operating excellence – scaffolding, coordinating, aligning, socialising</li> <li>Diversity and T-shapedness</li> </ul> |
| <b>Speed-adaptability</b> | <ul style="list-style-type: none"> <li>Decisions at fast pace and cadence with nimbleness to change quickly</li> </ul>  |



| Culture 2.0               |   |
|---------------------------|---|
| <b>Strategy</b>           | <ul style="list-style-type: none"> <li>Culture catalyses strategic edge</li> </ul>                                  |
| <b>Scientific-Systems</b> | <ul style="list-style-type: none"> <li>Culture driving better inner and outer world understanding</li> </ul>        |
| <b>Superteams</b>         | <ul style="list-style-type: none"> <li>Cultural excellence in inclusion, communications, openness, trust</li> </ul> |
| <b>Speed-adaptability</b> | <ul style="list-style-type: none"> <li>Culture that drives speed and adaptability</li> </ul>                        |



# Closing the governance and culture gap

*“The capacity to achieve a well-functioning investment model without good governance, talent and culture is a big stretch”*

## THE STORY SO FAR

We might expect governance at the world’s top AOs to be above average. Nearly three-quarters of AOs in the study stated that the governance measures employed by their boards and senior executives are both strong and effective. But, in discussion funds concede the place to move to a Governance 2.0 evolved state.

It is notable that a third of peers do *not* believe the culture of their organisation to be strong and effective. In addition, more than a third say the board and management are not necessarily successful at setting culture from the top. This is a challenge given that culture is a superpower for helping organisations meet their goals, and the superglue to prevent them from coming unstuck.

To what can we attribute this culture gap? Perhaps asset owner culture has matured more slowly than at asset managers due to the influences of the asset owner boards that have issues with domain knowledge, speed of process and culture. This suggests the need for an evolved Governance 2.0 that embeds evolved culture supporting speed, alignment, role clarity and stakeholder-smart content.

## WHAT HAPPENS NEXT

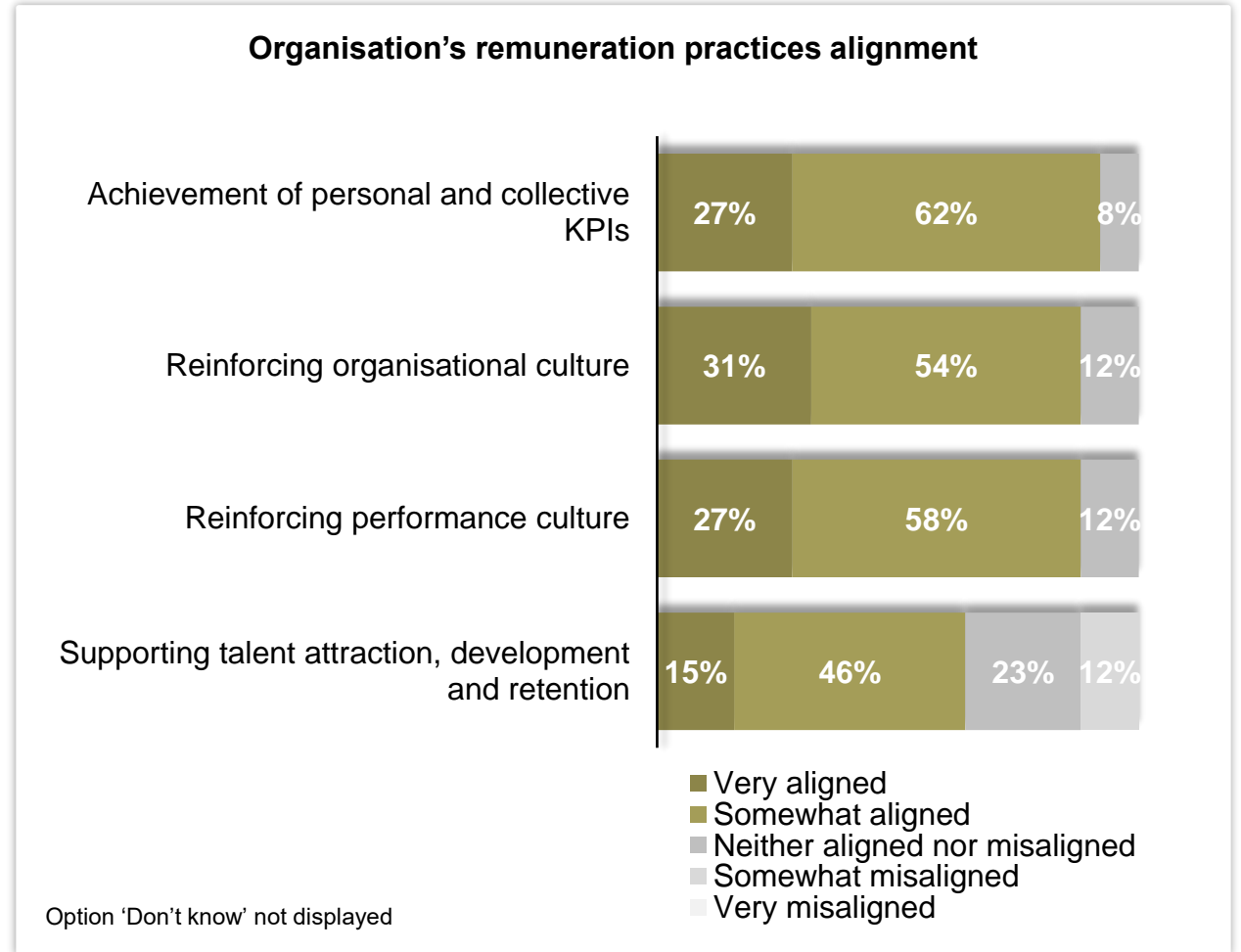
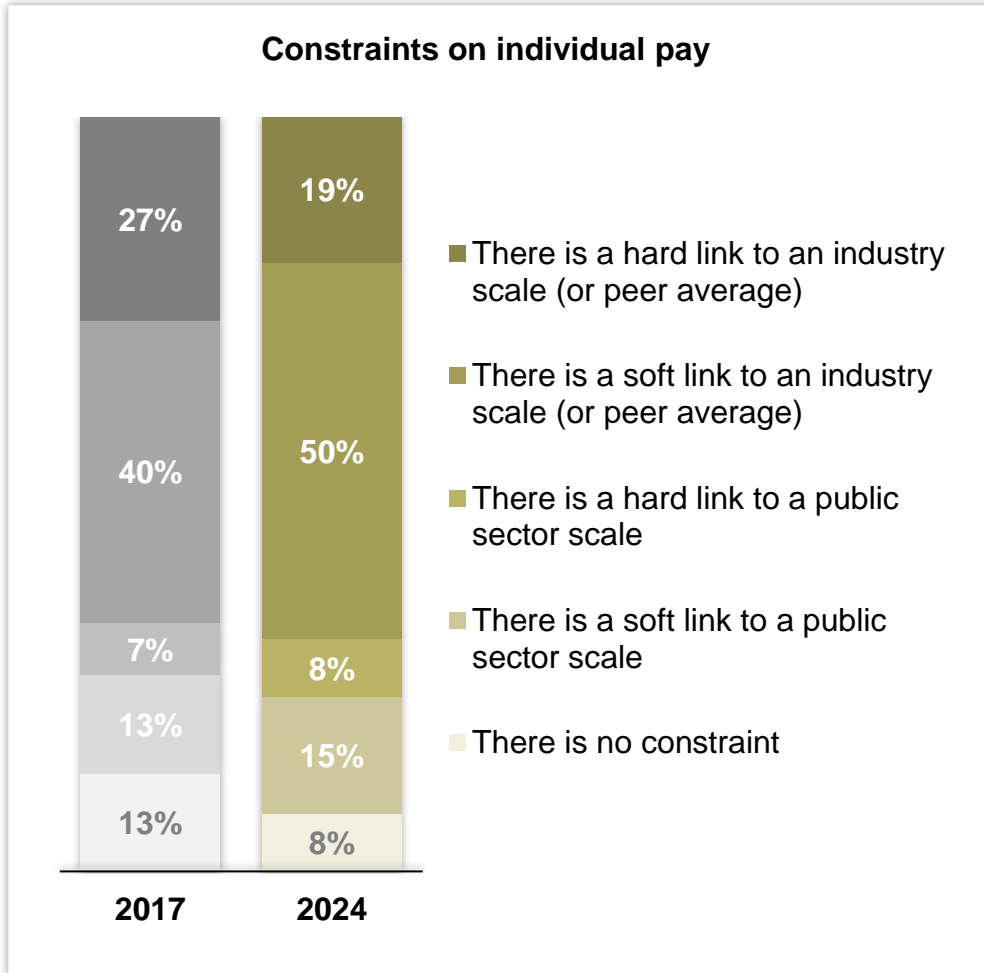
Leading investment organisations are setting their business strategies with greater reference to cultures that are highly-principled, more humanistic and have higher levels of empowerment and personal responsibility. The result of this cultural journey will be a boost to employee engagement, and that should mean better and faster decision-making.

Asset owners all have dependencies on third-party agents, like asset managers, which tend to have strong cultures that can help or hinder the results of delegations. Culturally-aligned providers can make good strategic partners.

Cultural improvement requires strong leaders who are conversant with the power of culture to unlock the benefits of collaboration and compromise, especially in leadership roles. Additionally, they will need thick skins and perseverance to defend the positives of strong organisational culture, which is not easy in an investment industry that obsesses so much about the data. And they also see merit in the Governance 2.0 model that embeds interactions and collaborations across levels and scales – in a word it’s polycentric.

# Remuneration – constraints and alignment

Industry scale influences pay, with remuneration tied to KPIs and organisational culture



# Pay links to culture and links to value

*“Shed the wrong talent short-term, and you spend the long-term cleaning up issues across the organisation”*

## THE STORY SO FAR

How asset owners attract, develop, and deploy their professionals to achieve hard-won “organisational alpha” is a combination of people, processes, and capital. Culture and pay sit above and lie below all these factors.

AOs have attached more constraints to individual pay than was the case in 2017. There are still strong links to industry or peer averages, but these links are moving away from hard links and towards soft links. This suggests there is deliberate inbuilt flexibility which may facilitate links with organisational culture.

Indeed, 85% of peers say that remuneration is designed to align with reinforcing organisational culture and 85% say it aligns with reinforcement of performance culture.

## WHAT HAPPENS NEXT

Principles for remuneration strategy going forward include reinforcing culture through feedback loops and aligning remuneration with stakeholder preferences and constraints.

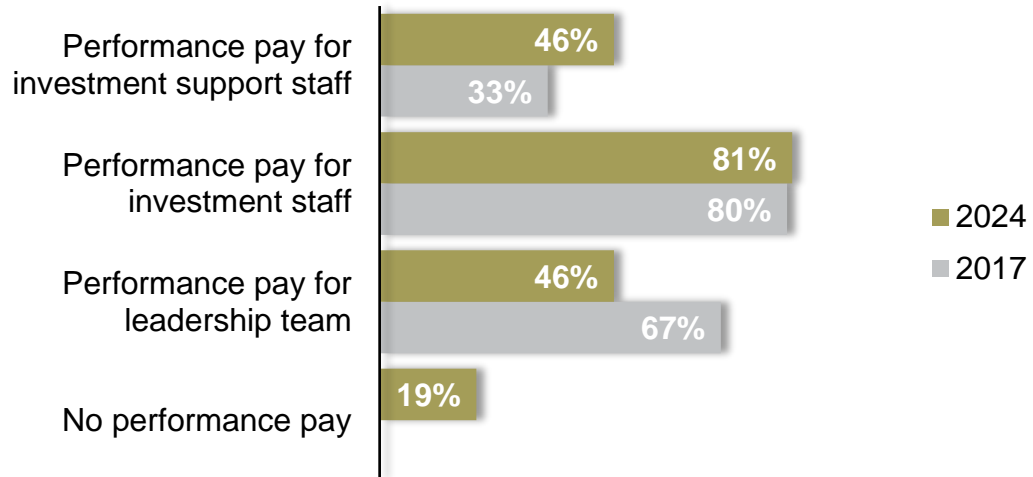
Executing on these principles requires overcoming a number of challenges. These include:

- The perfect is the enemy of the good in designing and implementing remuneration models
- There is high path dependency with remuneration outcomes – it is hard to anticipate the path
- Performance “noise” and slow-to-emerge feedback are complications
- Remuneration is a hard-to-settle issue – no scientific approach is possible and there is a weak data set
- There is a critical need to review regularly and commit board governance budget to remuneration
- Compensation runs the risk of being a culture-detractor unless board-exec tension and siloes are avoided.

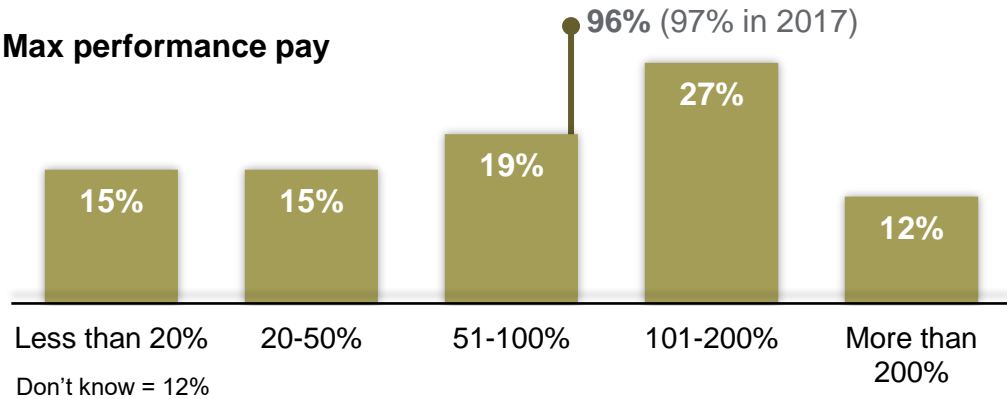
# Remuneration – majority of staff receive performance-based pay

Critical to balance intrinsic and extrinsic rewards for a sustainable EVP

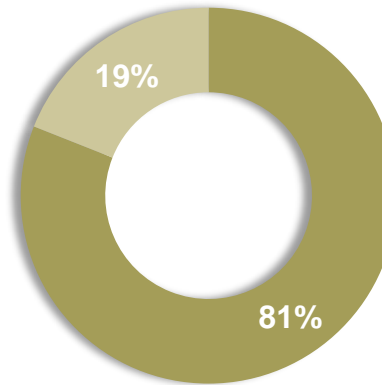
## Performance pay (variable pay including STI and LTI incentives)



## Max performance pay



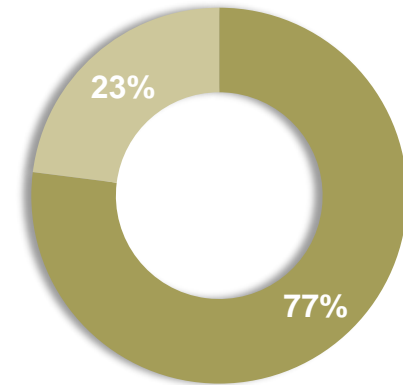
## Do you reward staff for fund performance?



■ Yes ■ No

**2017**  
Yes, n = 14/15

## Do you reward staff for non-financial performance?



■ Yes ■ No

**2017**  
Yes, n = 14/15

# How to make pay perform

*“It’s always about the people isn’t it? Retaining staff is critical”*

## THE STORY SO FAR

Most AO staff now receive some variable pay for performance and this is tied, in general, to both financial and non-financial achievements and milestones. The percentage of support staff receiving performance pay has gone up from 33% in 2017 to 46% in 2024, reflecting the desire of AOs to better align non-investment staff with overall mission goals.

The inter-play of variable compensation, objectives, motivations and teamwork represents a key design feature which many organisations are developing in synchronised form. The experience of some TPA exponents is that melding compensation implementation and performance attribution can become problematic. So the issue benefits from systems thinking that expands the framing of the challenges.

## WHAT HAPPENS NEXT

Asking teams to take a whole of fund perspective requires a change in mindset. Stronger performance management and measurement systems will be part of the shift.

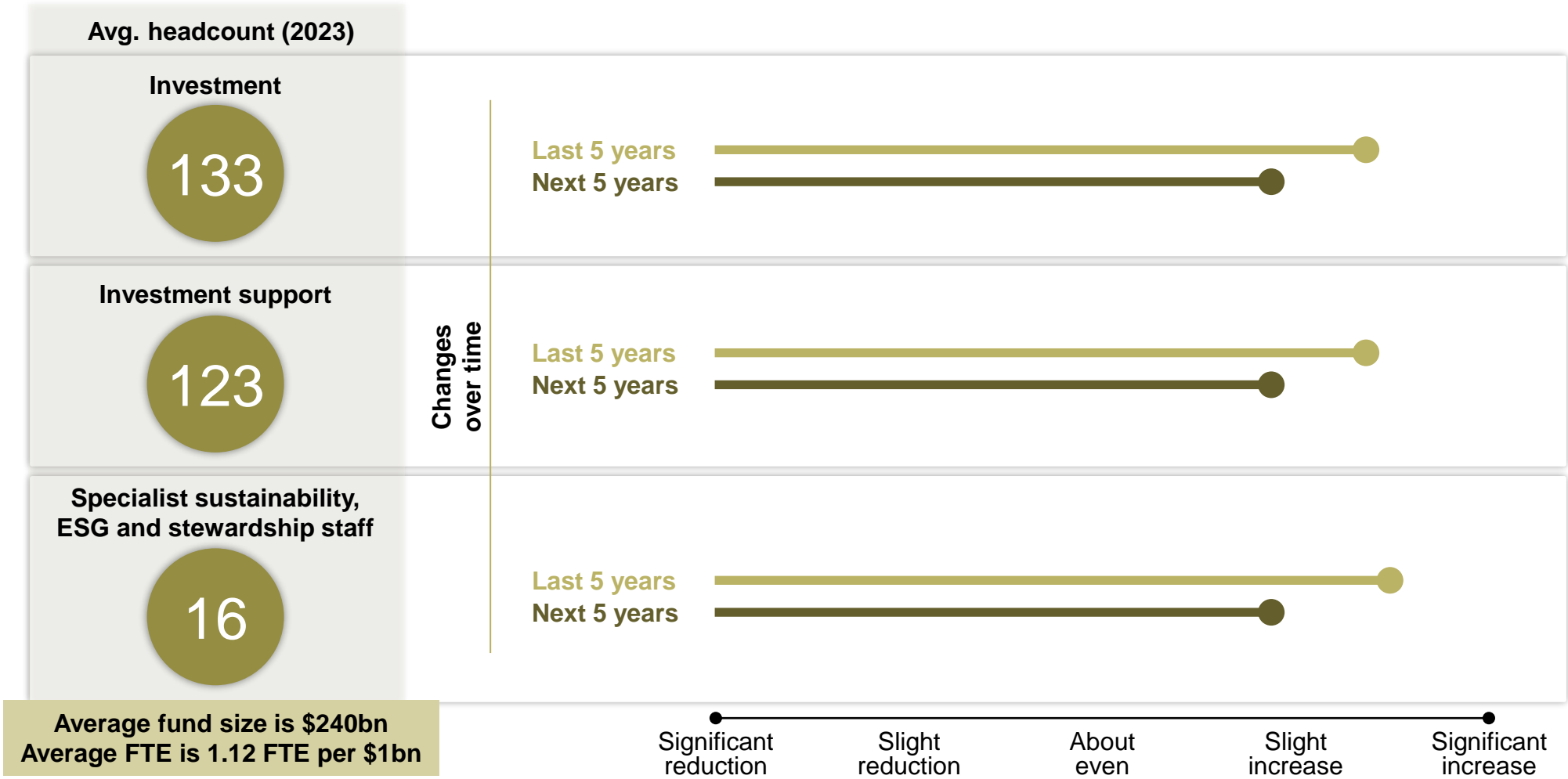
Comp will stay stubbornly clunky but significantly impactful. But changes are always likely. Comp is a governance sink-hole which will continue to swallow substantial board time.

The likely direction of (compensation) travel of AOs:

- More flexibility in remuneration design, involving more judgement and subjectivity
- Moving towards a balance in variable compensation in terms of its size, the use of objective vs subjective data and team vs individual performance-related pay.
- Less volatility of outcome being designed into arrangements
- More balance between remuneration linked to investment performance and to wider goals
- A shift in balance between absolute and relative performance
- Designing sufficient reward for BBU, where performance outcomes are not apparent in the short term (and perhaps not in the medium term)
- More progress for the big asset owners prepared to pay close to asset manager rates

# Staffing – sustainability specialists drive moderate headcount growth over next five years

Asset owner headcount growth averages around 3-5% per annum



## Headcount: more than a number

*“We deliberately try and add diversity...we don't assume that's necessarily going to come from a passport”*

### THE STORY SO FAR

Sizes of AO teams have grown at a steady pace in the last five years. All functions have hired to deal with increasing workflows, with sustainability and stewardship hires expanding particularly rapidly. Most organisations report that hiring hasn't kept pace with workload. That is one aspect about the increasing wish to address complexity with a system.

### WHAT HAPPENS NEXT

Expansion of teams is projected by the peers to grow at a more moderate pace in the next five years with technology being cited as the balancing act. One task of AOs is to seek greater value from their existing people, particularly if they want to refocus human intelligence from BAU to BBU. Machines will help, but are far from the entirety of the solution. As Pablo Picasso said: “They (machines) are useless. They can only give you answers.” In other words, they cannot frame the necessary questions. Humans are capable of recognising the limits of their intelligence and coming up with sensible strategies in the absence of complete knowledge about the future. That's why we diversify portfolios.

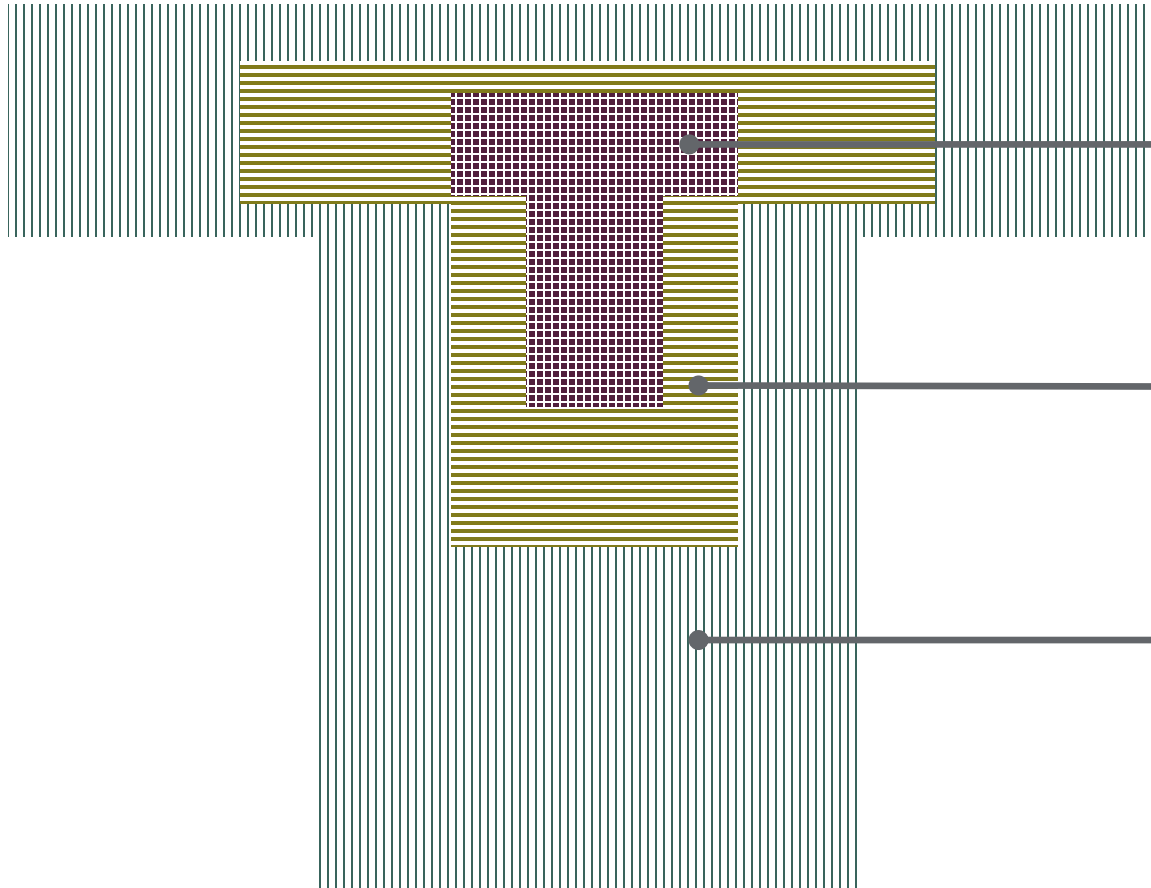
How can peers get more output from a fixed amount of human capital? This probably requires purpose-driven motivation and a fertile breeding ground for a range of new skills. In other words, people and teams must deepen their understanding of the value chain and its relationship to org-alpha and connect their roles to the purpose and strategy of the organisation.

We are all influenced by both intrinsic and extrinsic motivations. Intrinsic describes something that is inherently interesting or rewarding, while extrinsic leads to some separable positive outcome such as high pay or avoidance of punishment. While extrinsic motivation is important, being driven by self is also a vital ingredient in achieving positive long-term results.

Intrinsic motivation is likely to include: interesting and enjoyable work; helping clients; and helping to do something meaningful with societal purpose. The asset owners have jobs that give them the warm feeling of 'making a difference'. In a world that to many looks 'in trouble' the employer brand in asset owners is set to rise.

# Building capability through T-shaped people, teams and organisational design

*Achieving joined-up results through hyper-connectedness*



## The three levels of T-shapedness in the organisation

- At the people-level, T-shaped professionals have a combination of deep domain skills and wide connections skills which add together the benefits of specialist and generalist skills
- At the team-level, in more specialised areas like technology, teams need connectors that speak fluently across the disciplines and bring more cognitive diversity into the team
- At the organisation-level, having a dual operating model that combines hierarchical (vertical) functions with networked (horizontal) functions enables the organisation to integrate its thinking and actions

# Let's throw some (T) shapes

*"We all do better when we all do better together"*

## THE STORY SO FAR

To combat VUCA – volatility, uncertainty, complexity and ambiguity, AOs have sought people with vision, understanding, collaboration and adaptability.

"T-shaped" people are needed for an organisation to integrate its thinking and culture across disciplines. People who understand the systems in which they operate enable success at the organisation level. Particularly when they network well. 'All of us are smarter than any one of us'.

## WHAT HAPPENS NEXT

AOs continue to improve joined-upness by creating effective combinations within and across teams and providers, reducing siloes in the organisation and developing stronger shared values.

Execution of the work model is honed, particularly by hybrid design and superteams principles. All peer funds are using hybrid working of one sort or another..

*Hybrid design* is the effectiveness of the mix between in-office and virtual working. *Superteams* exhibit extensive best practice features in their teamwork with strong cultural alignment, speedy and adaptable governance and cognitive diversity.

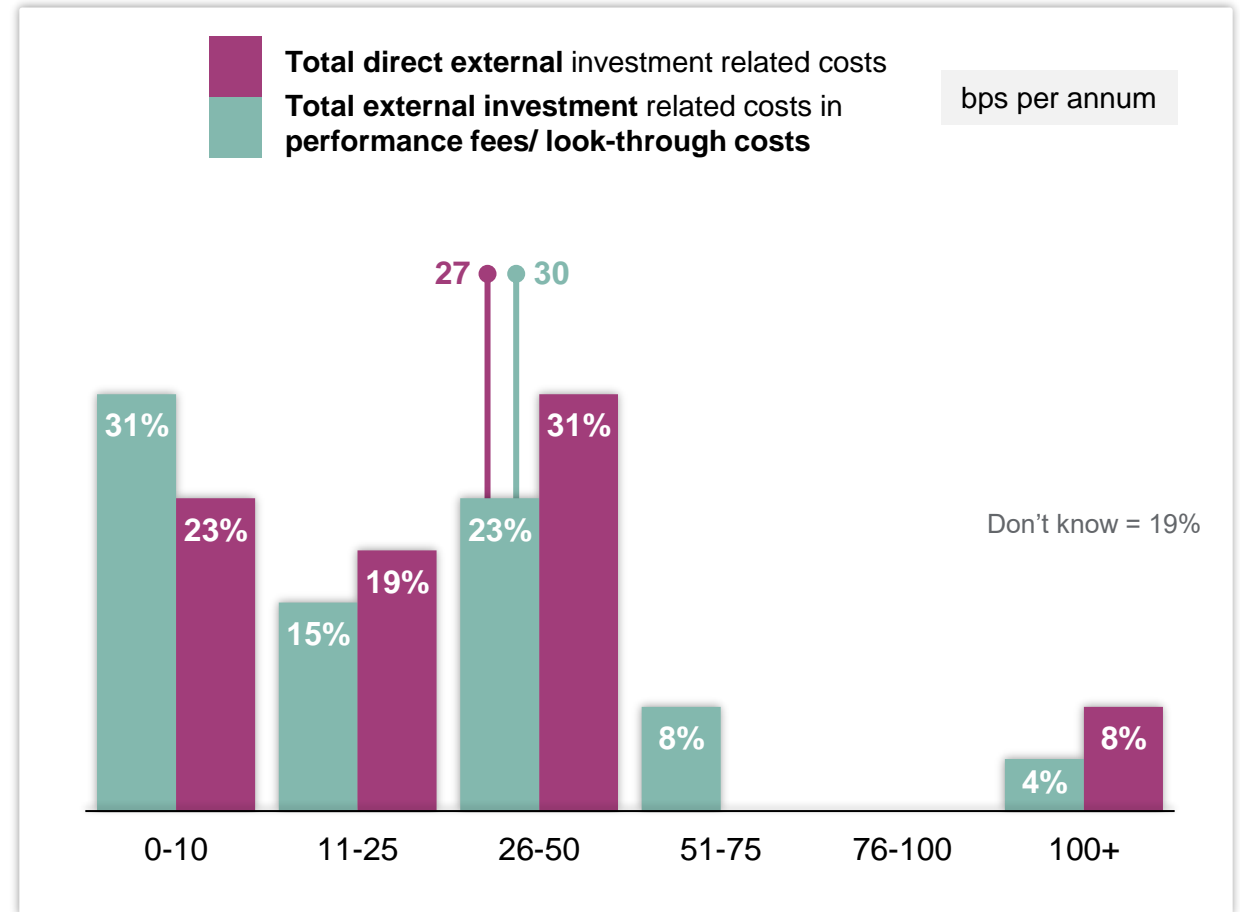
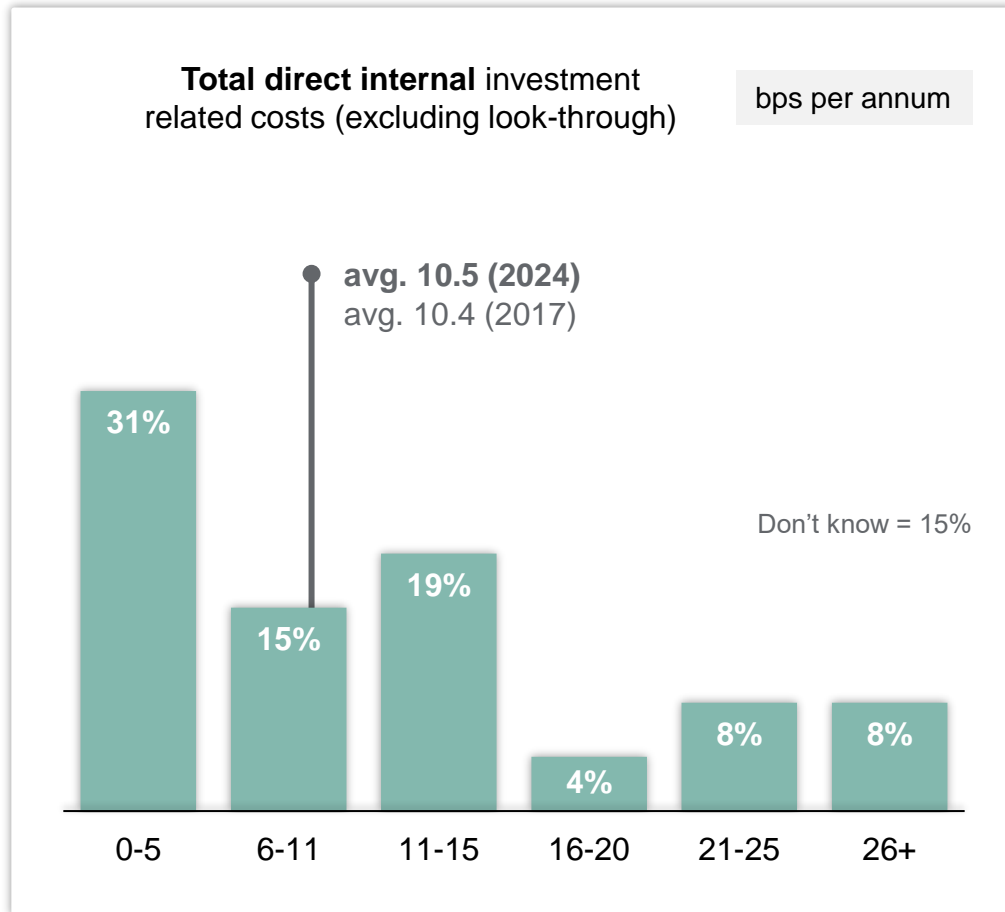
The move towards becoming learning organisations gathers pace, by developing a learning and development culture and platform, balancing the "give and get" to align individual and organisational motivations and actions.

There is a reflexive relationship between individual purpose-driven motivations and the motivations of a collective team – individual purpose is validated by a strong team culture that is built through the sum of individual purposes that drive towards a common goal.

Effective aggregation requires a careful awareness of social dynamics – perceptiveness by leadership and group members are foundational. All this implies that AO staff will not just be T-shaped technically, they will also need to be T-shaped emotionally.

# Investment management costs (bps pa)

Costs are complex to summarise. But the rough average is 10bp (internal) +30bp (external) + 30bp (external carry)



# The surprising disparity in AO investment costs

*“We still have a relatively small staff, we have to rely a lot on external managers”*

## THE STORY SO FAR

AO internal investment costs have changed little since the 2017 study, staying close to an average of 10.5bp internal costs, with external costs 27bps a year and performance-related costs 30bps.

Comparisons between 2017 and 2024 are not like-for-like but some data is clear enough and indicates marked differences in the cost structures of the peers. For instance, a third of AOs have direct internal investment costs of just 0-5bps.

Many AOs have tried to take a holistic approach in focusing on net returns, but mixing costs that are certain with returns that are not makes the net return concept iffy.

## WHAT HAPPENS NEXT?

Ballpark figures for the insourcing of separate asset classes is 60% for bonds, 45% for equities and 30% for alternatives. Currently, 50% of AOs largely insource equity management.

No AO insources its allocation to alternatives – but as we point out in the Alts-plus proposition the joint IP needs something of a balance. Given the gradual move towards total portfolio thinking, we might expect these proportions to change over the coming years with the hiring and developing of more alternative expertise.

This could have a push-pull effect on portfolio costs. On the one hand, a shift towards more alternative assets requires more expertise and produces a more expensive allocation process. A range of alternative strategies requires a well-designed line-up of skills and resources, cultural alignment, joined-up risk exposures, co-investing models and integrated costs. Greater insourcing of some or all of these activities might well offset costs over time.

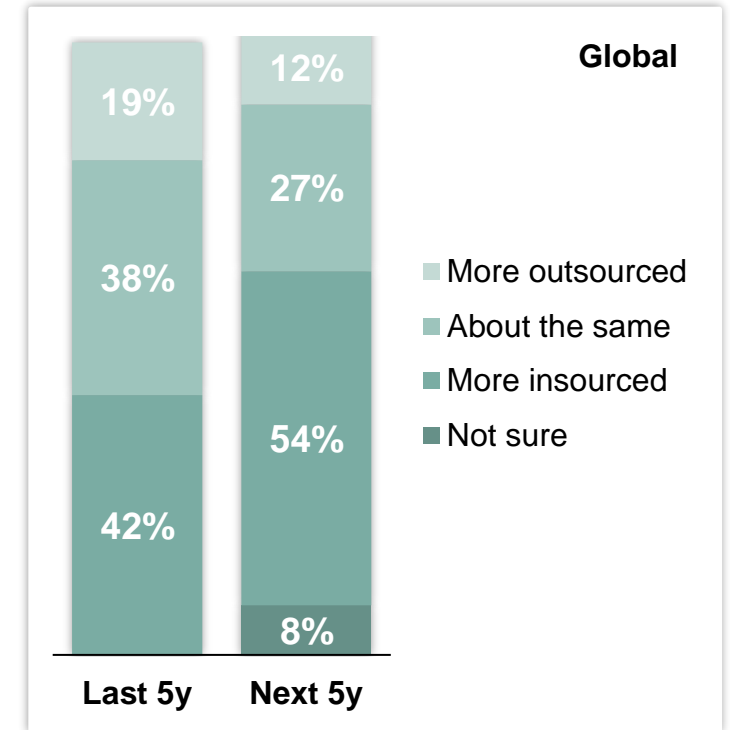
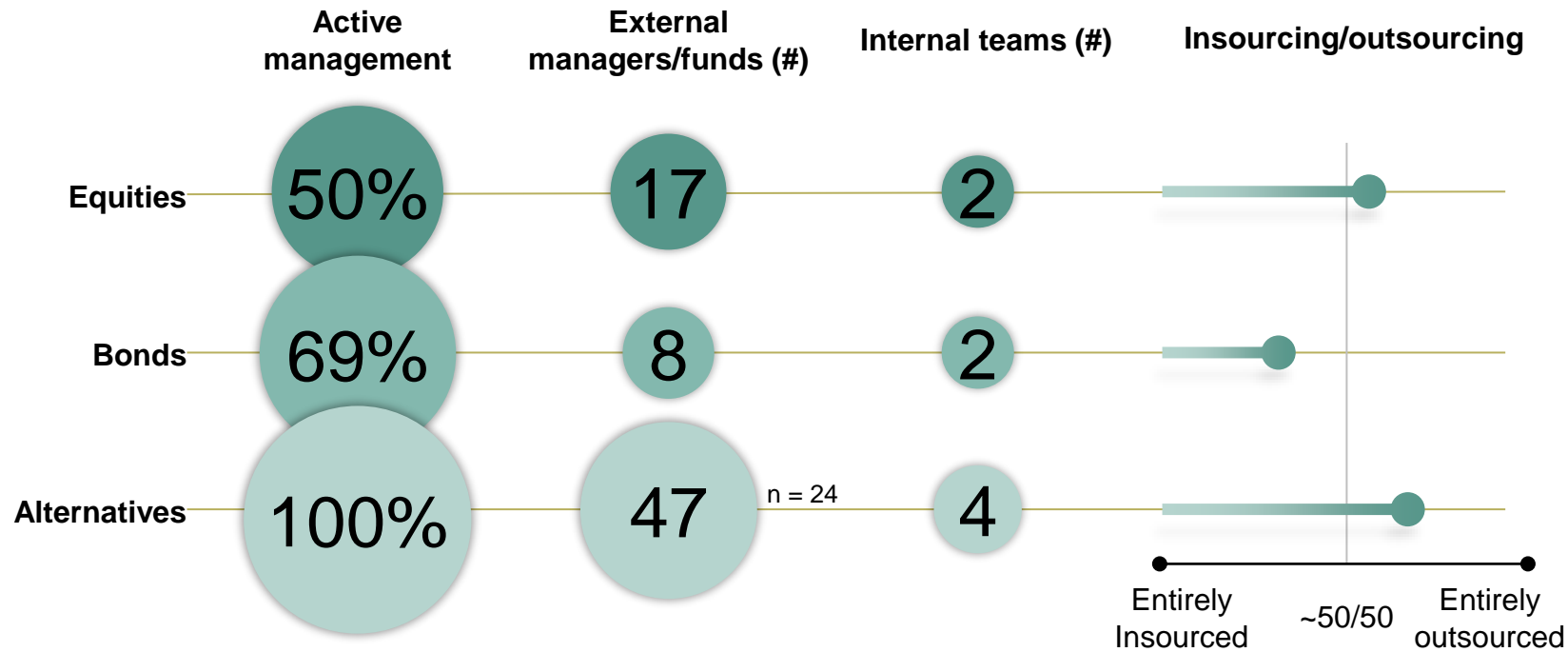
For such an expensive industry (take a look at the asset manager margins) it feels like AOs should be playing a stronger hand when it comes to fees and costs, with more forensic accounting playing a part.

# Key components of portfolio management

It takes a system to manage a system. The peer average is around 30% passive and rising; and 45% insourced and rising.

- The in-outsourcing strategy is a critical system design feature
- Insourcing has grown and is expected to continue to grow
- But all models have a place for outsourced expertise, including strategic partnerships, subject to a clear value proposition

- Outsourced mandates must adapt to the TPA configuration in which joining up is critical, and strategic relationships add value
- **The system for this in private asset mandates involves a highly specialised joined-up mix of LP & GP skill, relationship & role**



The majority of the data presented in this slide pertains to weighted averages

# Are you in or are you out?

*"I'm not sure that the outsourcing paradigm is the right one going forward – it's important to rethink"*

## THE STORY SO FAR

The principal asset owner model of multiple external managers has been under pressure for many years amid a steady shift to internalisation to control costs and to better match investment strategies to both financial and non-financial targets.

Net performance has improved through additions to internal teams. Studies have shown the benefit of internal teams.

But this is not to negate the value of carefully selected asset managers: well-managed outsourced mandates with tight controls can add alpha, particularly where internal teams lack expertise. But critically the internal teams must have the skills to manage this line-up and reduce the agency effects.

## WHAT HAPPENS NEXT

Internalisation is an extension of the search for better governance, so necessarily gathers pace. More than half of the peers will insource more assets in the next five years. Just 12% say they will outsource more. The direction of travel is unmistakable.

However, it is too simplistic to suggest there is an optimal size of the AO team, given that contexts vary so widely. In tackling private design, in particular, it should be considered that the GP model is not well balanced – there are external segments that are self-absorbed, not overly client-focused, and working with inflated fee models. The agency issues suggest the need for strong and substantial internal skills to deal with the hazard.

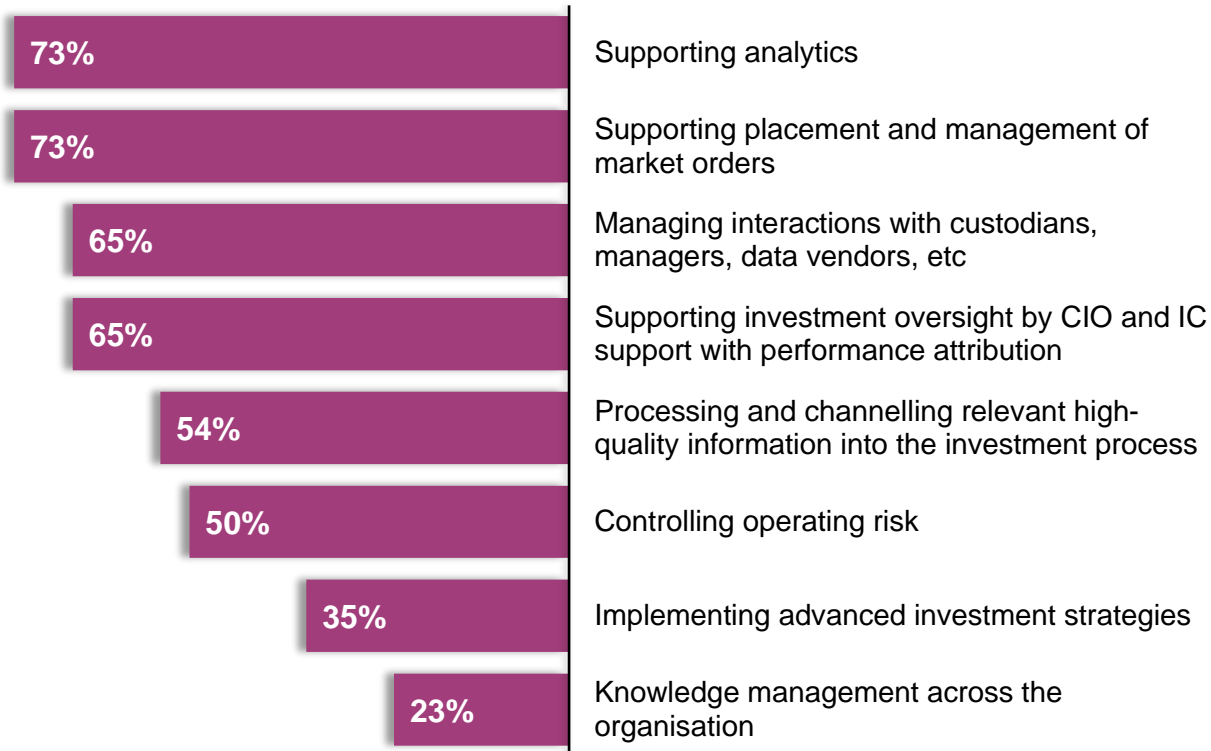
Overall, while scale and control generally improve during internalisation, as the model matures AOs should be aware of growing cultural and governance problems with joined-upness, team alignments, total portfolio co-ordination. There seem to be a 'sweet spot' after which the organisation adds people on a diminishing returns basis. Where is that sweet spot? That's the billion-dollar question.

Maybe you can see it when it arrives with challenges to co-ordination, communications and capacity to change, with culture slipping as well. All these can be consequences of the supertanker losing its agility.

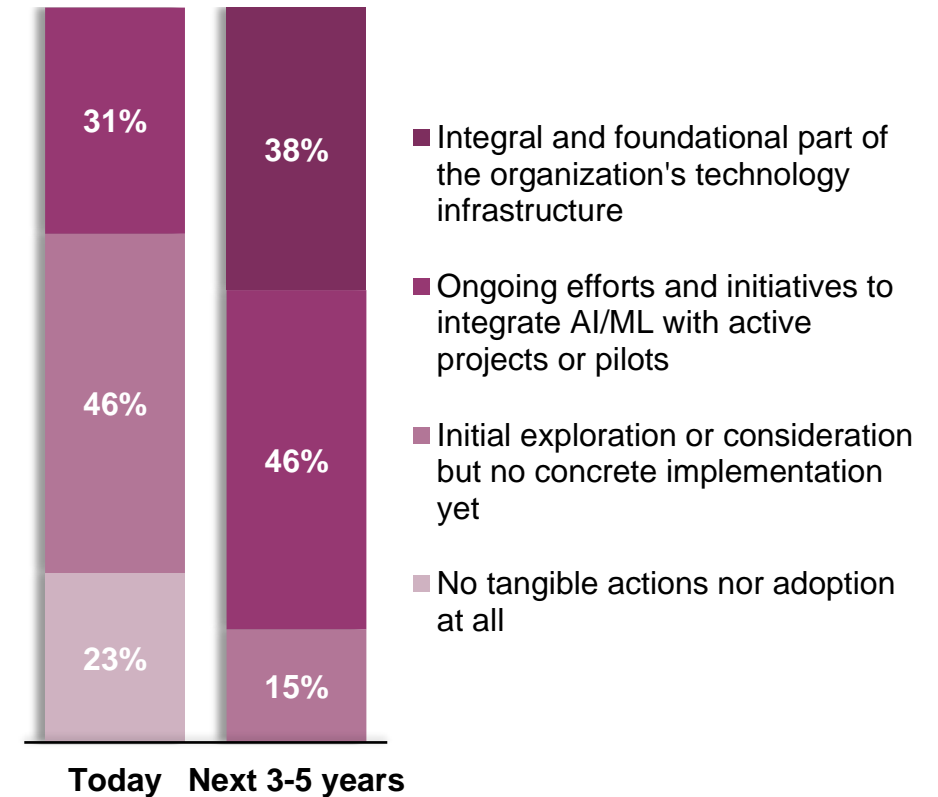
# All-round impact of technology and AI adoption accelerating

Peers increasingly focused on a stronger data platform and more joined-up technology system

## Areas most supported by the organisation's technology system



## Adoption and use of AI/ML as a portfolio analysis and management tool



# AI not yet in control of the vehicle

*“Technology is beginning to change, but we are not sure where we are going”*

## THE STORY SO FAR

Technology now plays a significant role in many AO operations. Most notably in analytics, and in placing and managing market orders, but also in managing interactions with third parties and supporting investment oversight such as in performance attribution. To some extent, it helps in parsing information for the investment process and to control risk.

No AO organisation has yet made AI integral to its technology infrastructure, although nearly a third have created initiatives to integrate AI into their future infrastructure. The others are either at the research stage or are so far no more than considering the potential benefits of AI.

But consider that the peer study, the base component of this report, was undertaken in early 2024, and a lot has happened in the field of AI since then.

## WHAT HAPPENS NEXT

Over the next three to five years, some 84% of AOs say AI will either be an integral component of their organisation’s technology infrastructure or they will develop projects that will lead them there. All AOs will have some plan in place to integrate AI.

An early step is likely to be the integration of AI more deeply into back-office workflows. It can play a greater role in managing and distributing knowledge across the organisation. Further integration could span multiple uses, including generative AI-powered enterprise search to probe large amounts of unstructured information from reports, news articles and company meetings with analysts. Certainly, AOs will expect their external asset managers to be AI natives.

Later applications include AI for portfolio construction, with AI-driven models incorporating macroeconomic indicators and investor risk tolerance to rebalance some portfolios automatically. Expect more AI-assisted automated trading algorithms too, whereby AI moves beyond predefined algorithms and creates trading strategies dynamically in real-time, adjusted to changing market conditions.

### 3. What gets measured gets managed



### 3. What gets measured gets managed

#### MEASUREMENT NARRATIVE

Measurement is a pivotal component in clarifying mission and reducing complexity. The question is what do we measure and how? We need joined-upness in our measurements – measuring individual parts and not the whole does not help reduce complexity or clarify the mission.

In particular, we must tackle elements which are not easy to measure, but which have considerable impact on the mission. One of these elements is “the soft stuff” – for example culture. Another is climate impact – for example average global temperature at future intervals.

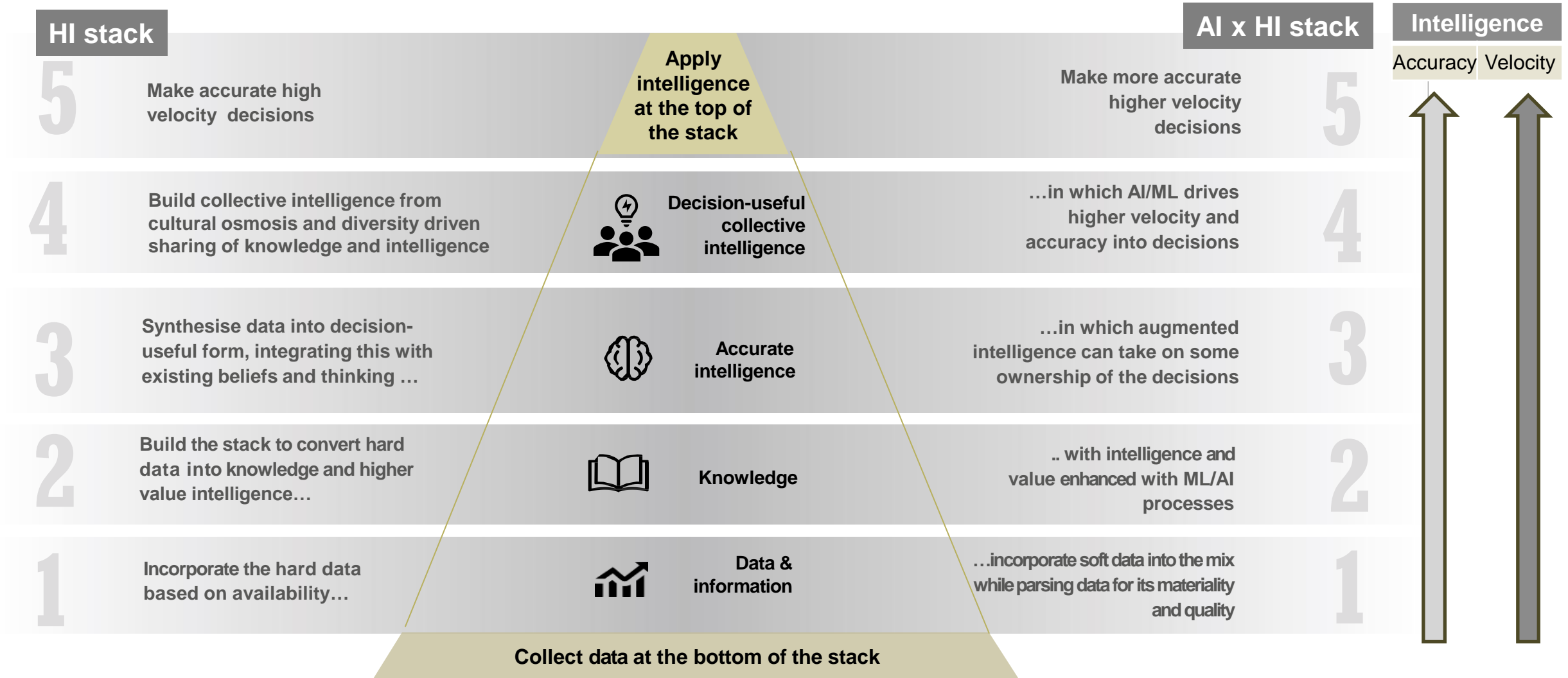
We should also consider the distortions that can be introduced by inappropriate incentives driven by contentious measures.

#### MEASUREMENT PRINCIPLES

- Most measurement and data quality should be gauged through a combination of materiality (is the measure relevant) and provenance (is the measure reliable)
- The costs and benefits of data quality need to be assessed on joined-up terms by adopting a complete picture of its materiality in the context of the value chain
- Most data users evaluate measurement too narrowly – they often over-emphasise the simple facets of data quality like objectivity, accuracy and timeliness
- They do not usually sufficiently consider the full data quality in the context of the natural scarcity of good quality data in complex systems where simple causality is not present
- The ultimate test of measurements will be related to the depth of inferences that can be made from them and the connected judgements that can be applied to them.

# All data and its analysis and associated decision-making exists within an intelligence stack

And the HI x AI combination can raise the accuracy and velocity of that intelligence. And produce net simplification.



# HI vs AI – it's not a competition

*"We use AI fairly deeply but narrowly"*

## THE STORY SO FAR

Before AI, the HI (Human Intelligence) process rewarded the learning organisation with an edge in its accuracy and velocity of intelligence (the speed and quality of conversion of basic data & information into its decision-useful form). This better state for making decisions reflected commitments to share information and knowledge inclusively and trustingly within T-shaped cognitively diverse teams. Adding AI to the mix extends the advantage.

AI so far is developing best as a complement – rather than a rival – to HI. AI is being asked to take on repetitive, routine tasks, process data, and offer insights based on anomalies it unearths. This allows humans to focus on tasks that require creativity, empathy, situational fluency and complex decision-making.

AI currently relies on humans for context and ethical decision-making. Humans can teach AI, correct it, and set objectives for AI tasks, ensuring they align with human values and goals.

The power of AI to parse data from a relatively disordered state into a state of decision-usefulness is a very promising application.

## WHAT HAPPENS NEXT

While AI provides predictive models based on data, as things stand humans are needed to make final decisions, especially decisions that require understanding of values beyond numbers.

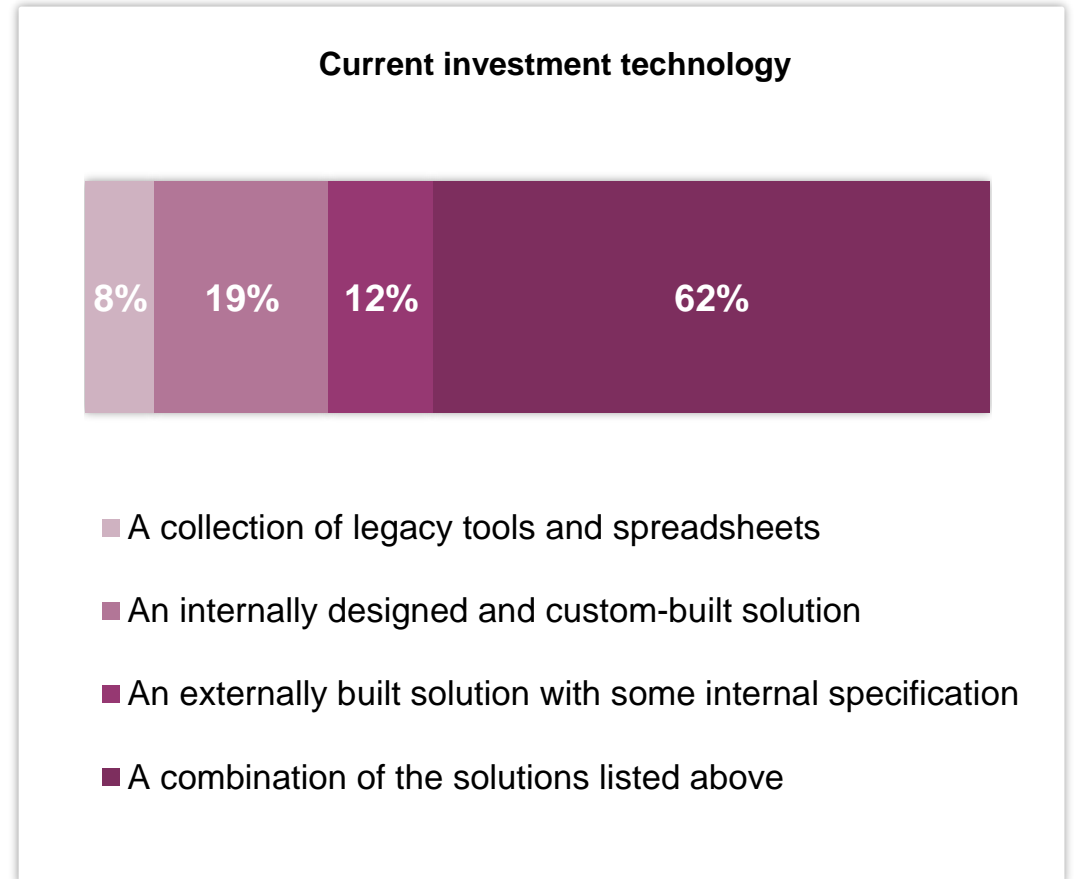
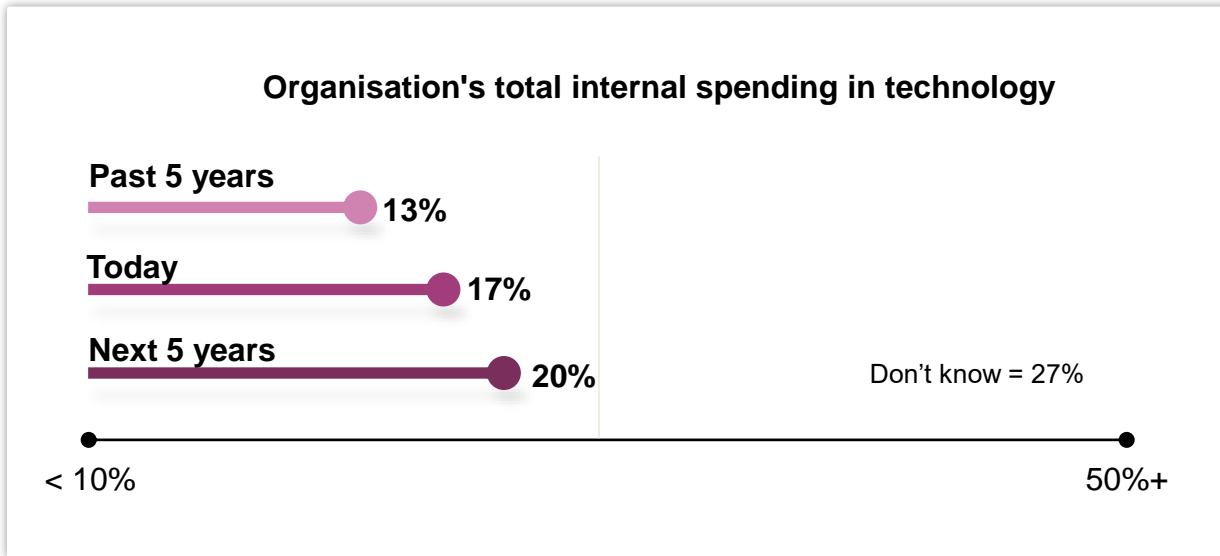
However, it is possible that a reasoning AI model will soon be able research a market, build an investment thesis, and take action on it, perhaps changing asset allocation albeit with a human's guidance and approval.

It is conceivable that AI relatively soon becomes a BAU item for AOs, so routinely will it be used across a range of tasks. The BBU perspective is that AI is not the only emerging tech game in town. In particular, quantum computing, once a distant prospect, may actually be just around the corner providing more accurate simulations to better manage risk and investment strategies.

How does the quickening pace of technology power affect AO staffing. Teams are likely to be smaller and more top heavy. The skills required by team members will evolve, with more tech and AI experts working alongside investment professionals.

# Funds boost tech spending, leveraging blend of legacy, internal, and external solutions

Technology spend growing but at levels less than the asset managers



### Asset manager AI data (Source BCG)

72% think that GenAI will have a significant or transformative impact on their organization within the next three to five years

66% have made GenAI a strategic priority for their business

75% are actively dedicating capital and human resources for GenAI deployment in the short term,

29% committing a significant portion of their innovation budget

# When your gadgets cost more than your rent

*“We're never going to be a tech-enabled leading-edge business... but we need to make sure that it isn't a hurdle to what we need to do”*

## THE STORY SO FAR

Technology spending may not actually be higher than your rent, but it is certainly eating into budgets. Technology investment as a proportion of overall internal spending has averaged 13% over the past five years. That has risen to 17% today and will rise to a considerable 20% over the next five years. But this is still a far smaller commitment relative to that of asset management firms.

Most AOs have developed a matrix of internally-built and externally-designed technology solutions. A small number rely on legacy tools and spreadsheets.

## WHAT HAPPENS NEXT

AI as a disruptive force in the investment industry has surpassed expectations and may continue to do so. In response AOs are left to determine how to effectively harness AI solutions at scale without prior models to guide them. Investors may find that AI solutions require a robust data posture for both internal and external data along with strong governance and controls.

The key may be to focus on practicality and avoid hype. AOs that begin implementation on too many use cases without adequate prioritization of risks, tangible returns, regulatory suitability, and ease of implementation may not achieve optimal results.






When exploring AI projects with broad scope, AO leaders will conduct an organisation-wide risk management program to identify potential governance and control risks. Risk assessments may require revisiting to navigate the evolution of knowns and unknowns in AI technology. Providing AI models with accurate and impartial data should mitigate risks and may be able to help support sustainability data in its stretch for materiality and better provenance.

Another component of effective scaling includes an intentional integration of Gen AI use cases, possibly by building a Gen AI platform to support multiple projects. Such a platform can integrate Gen AI into legacy operational transformation efforts.

# Scorecard principles – Management by System ahead of Management by Objectives

Another case of needing a system (way of doing things) to manage a system (a collection of elements inter-acting purposely)

Scorecards look back and dashboards look forward

|  |   |   |   |  |
|--|---|---|---|--|
|  <h2>Framework</h2> <ul style="list-style-type: none"><li>Start with a strong <u>framework</u> which sees things in systems terms</li><li>Consider <u>enablers</u>, <u>intermediate goals</u> and <u>ultimate outcomes</u></li><li>Use engagement and mutual interests to add collective energy</li></ul> |  <h2>Goals</h2> <ul style="list-style-type: none"><li>'SMART goals' are <i>specific, measurable, achievable, realistic and time-bound</i></li><li>But they should also be <i>systemic, multiple, agile, reflexive and transparent</i></li><li>The need to assess <u>materiality &amp; provenance</u>, <u>relevance &amp; reliability</u></li></ul> |  |  <h2>Check-ins</h2> <ul style="list-style-type: none"><li>Frequent <u>check-ins</u> help feedback, accountability, motivations and agility</li><li>Apply clear <u>accountability</u> for desired outcomes with incentives attached</li><li>But use the measurement sparingly in comp and rewards by reflecting on the whole system</li></ul> |  <h2>Dashboards</h2> <ul style="list-style-type: none"><li>Measure progress via <u>multiple comparators</u></li><li>Measure progress in a mix of soft and hard measures, and inputs and outputs</li><li>Blend them together</li><li>Avoid biases, use scaffolding</li></ul> |
|--|---|---|---|--|

### Management by Objectives (MBO)

- Defining and conveying SMART organizational goals to achieve each objective.
- Agree on specific performance goals that advance towards objectives and develop plans to reach them.
- Aligning team and individual employee objectives with enterprise-wide goals and applying accountabilities

### Management by System (MBS)

- The same. But goals are SMART squared. And wider framework is used with multiple goals and comparators
- The same. But with continuous evaluation and improvement of the process. And emphasis on the velocity of collective intelligence
- The same. But with emphasis on performance of the system which regulates how accountability is applied

# Collecting hard evidence of the soft stuff

*“The challenge I have is...how can we assess the quality of our processes, the quality of that return we generate?”*

## THE STORY SO FAR

Using scorecards and dashboards is now considered best practice by some AOs. Balanced scorecards aggregate critical data on recent accomplishments and establish levels of success against progress milestones. In particular, the use of multiple comparators is considered superior to the targeting of a single benchmark. The critical use case of scorecards is strategic: oversight, management accountability and remuneration.

Dashboards bring together critical data on present operating conditions, status and effectiveness. Their critical use case is to inform tactical and strategic decisions.

## WHAT HAPPENS NEXT

Scorecards will increasingly help AOs measure progress against goals, enabling them to set new strategy and tactics to deal with both BAU and BBU scenarios. The design and implementation of balanced scorecards require further refinement.

A balanced scorecard is best designed as adaptive and agile to reflect progress, changing systems, revised strategy and goals. It must deliver decision-useful data, and a sophisticated balanced scorecard should measure how we add value for different stakeholders.

Key strands for further development of a balanced scorecard could include: measuring systemic risks that go beyond individual assets; measuring outcomes of system level engagement; defining measurement metrics outside environmental considerations (eg biodiversity, inequality, geopolitics).

The use of balanced scorecards to mark progress and support decisions had total support in the peer discussions. Their use is likely to become much more widely adopted to provide a more holistic approach to measuring organisational alpha and performance outcomes.

# Case study: use of portfolio quality dashboard

Illustration of scorecard comparing SAA version vs TPA version

|                    | Dimension            | Metric                         | SAA     | TPA     | SAA illustration   | TPA illustration                            |
|--------------------|----------------------|--------------------------------|---------|---------|--|---|
| Prime factors      | Return               | Expected return vs cash (% pa) | 3.0%    | 4.6%    | The SAA Model is based principally on these 5 factors<br>↓ | The TPA Model is based on more factors<br>↓ |
|                    | Risk                 | Volatility (% pa)              | 7.5%    | 7.3%    |  |   |
|                    | Efficiency           | Sharpe ratio                   | 0.40    | 0.63    |  |   |
|                    | Relative risk        | SAA/TPA relative risk          | 1% - 3% | 3% - 5% |  |   |
|                    | Low cost             | MER                            | 0.23%   | 0.34%   |  |   |
| Ancillary factors  | Sustainability       | ESG risk exposure (/100)       | 33      | 23      |  |   |
|                    | Climate              | Implied Temperature Rise       | 2.8°C   | 2.5°C   |  |   |
|                    | Flexibility          | % daily liquid                 | 10%     | 26%     |  |   |
|                    | Access to skill      | % contribution from skill      | 6%      | 31%     |  |   |
|                    | Governance           | Oversight complexity           | 4/5     | 3/5     |  |   |
| Resilience factors | Diversity            | Equity beta                    | 0.63    | 0.37    |  |   |
|                    | Tail risk            | Expected tail risk (% TCE)     | 26%     | 18%     |  |   |
|                    | Systemic risk factor | Systemic tail risk – 10Y % TCE | x       | x       |  |   |
|                    | Climate risk factor  | Climate tail risk – 10Y % TCE  | x       | x       |  |   |
|                    | Systems-stewardship  | Systems-stewardship spend (%)  | x       | x       |  |   |

Source: WTW and TAI

# How a balanced scorecard produces...well...scores

*“We absolutely have to make a return. If the world's doing poorly, it's going to be hard to isolate and make a return”*

## THE STORY SO FAR

Scorecards are an intuitive way to present the relative strength of one approach against another, such as TPA vs SAA. The scorecard shown presents the prime factors for each approach (TPA and SAA) and breaks these down into different dimensions. Each of these dimensions is then measured and a comparison made between each approach. The process is then repeated for ancillary factors and resilience factors.

Soft measures have to be measured by more approximate figures. This can sometimes be quantified or sometimes it will be a qualitative assessment (like a RAG analysis classifying a subject as red-amber-green).

The resulting graphic provides a clear and easy-to-interpret visual representation of the strengths and weaknesses of each approach, which can serve as the basis for transformational change. The clearly-delineated comparisons and visual representation can also help to communicate strategy to relevant stakeholders.

## WHAT HAPPENS NEXT

AOs feel increasingly pressured with high expectations for transparency, accountability, sustainability and performance – scorecards can enhance all these areas.

Using a balanced scorecard such as the one above, AOs can reduce benchmark focus on outperformance vs reference portfolios. The scorecard can be used as evidence to enhance the alignment of investment committee and the executive.

It can help introduce a multi-faceted view of risk through an assessment of key risk indicators (KRIs). AOs can also improve accountability for achieving various goals using this type of scorecard.

Scorecards can be used more widely across the AO organisation to measure more of “the soft stuff” such as governance, which is emphasized in TPA.

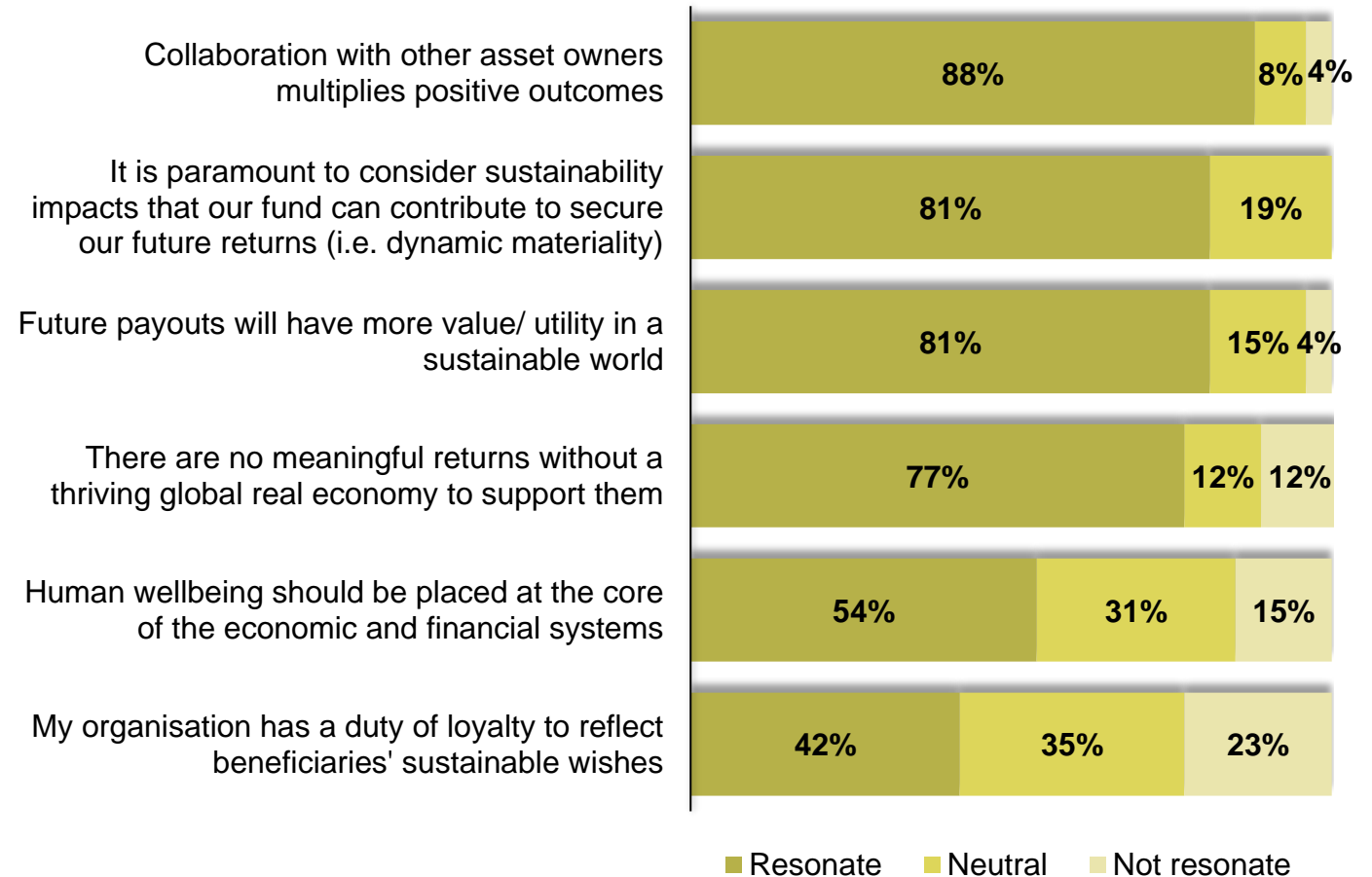
# Sustainability is key to future returns; different views on duty of loyalty

Fiduciary duty likely to be a highly influential factor in asset owner policies going forward

## Sustainability in a maturity spectrum

1. ESG is a financially material factor requiring integrated ESG and stewardship (single materiality)
2. Investing for sustainability impacts (IFSI) can be instrumental to better financial outcomes (double materiality)
3. Investing for sustainability impacts can reduce systemic risks and improve financial outcomes (dynamic materiality)
4. Investing for sustainability impacts (IFSI) can improve the utility of benefits (dynamic materiality)
5. Investing can be framed with dual motivations combining financial and non-financial factors
6. Investing can involve issues where numerical framing is not possible where narrative is critical

## Approach to responsible and sustainable investment



# Without a sustainable future, long-run returns do not exist

*“We're radical without going too fast – we're not in the divest everything now camp”*

## THE STORY SO FAR

The sustainable finance narrative is premised on “the returns we need can only come from a system that works”. The acceptance that ESG factors are financially material has developed gradually, but has now come full cycle. Many investors currently see ESG as simply another tool in the toolkit for producing better results over time. That is, ESG has become an alpha-rich, investment factor.

Some 81% of peers say ESG factors will have an impact on future returns. And a similar proportion say future returns will have more value/utility under sustainable scenarios. Collaboration on ESG is important to nearly all AOs, with many adhering to one or more groupings set up under industry, national or supranational umbrellas, to devise and promote effective ESG practices.

## WHAT HAPPENS NEXT

The next phase elevates sustainability over ESG. The term sustainability is preferred by the peer funds, given it gives more weight to longer-term issues and inter-generational equity.

However, fiduciary duty for sustainability activities will be scrutinised as never before. Regional differences on ESG have always existed. But differences have become more apparent with the emergence of the highly-politicised versions in some regions, with the short-term result being that the ESG movement has been weakened. The “best interests” of beneficiaries is interpreted as “best financial interests” in many jurisdictions.

The United Nations Environment Programme Finance Initiative (UNEPFI) concludes that “failing to consider all long-term investment value drivers, including ESG issues, is a failure of fiduciary duty”. Nevertheless, there are many instances of funds being driven to resist this premise.

The peer group is very largely positive about sustainability. However, of the organisations that have not made net-zero commitments, the majority said they didn't believe net-zero could be reconciled with fiduciary duty. We can see fiduciary duty remaining a blocker.

# Universal ownership/ 3D investing

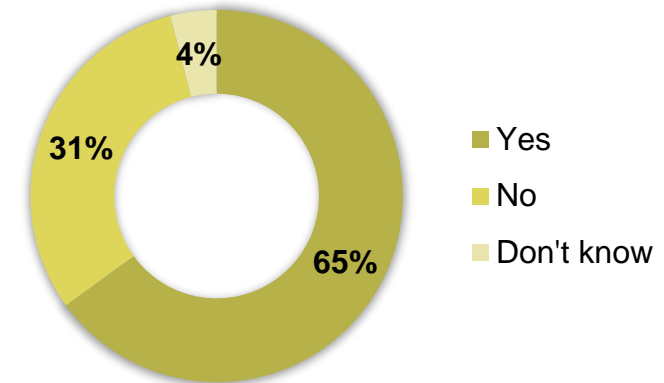
This is a growing feature of large fund thinking

- A universal owner (UO) / universal investor is an asset owner that
  - is large-scale, long-term and leadership-minded
  - that invests in an impact-minded way
  - to improve long-term inter-generational outcomes
  - through a total portfolio strategy managing portfolio externalities

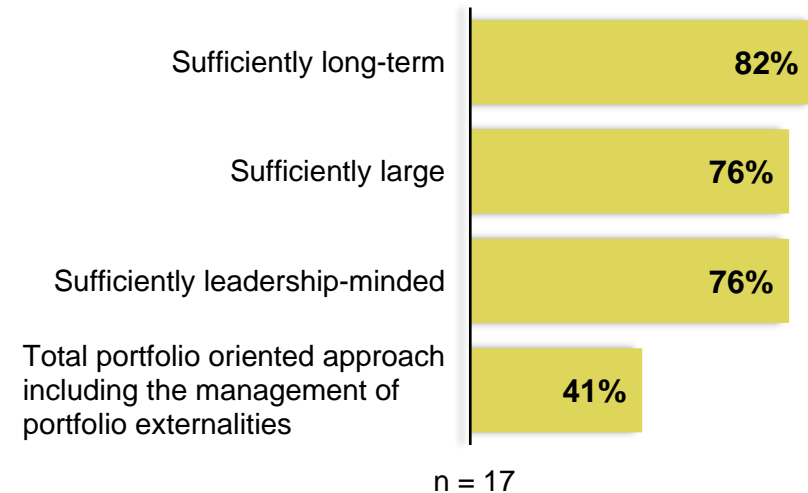
- The proportion that considers itself a universal owner group has grown considerably
- But the group differs in the interpretation of universal ownership and intentionality\* and commitment to sustainability impact
- There are large overlaps with the 69% of organisations that have made net zero pledges

\* *Intentionality is when investors have a theory of change that demonstrates how their investments will create social and/or environmental impact alongside financial returns*

## Consider themselves to be a UO



## And why



# What kind of universal owner are you?

*“I think the challenge when you're a universal owner and you're everywhere, is you have to focus”*

## THE STORY SO FAR

Some two-thirds of AOs see themselves as fully-fledged universal owners. This is an outstandingly important data point. In 2017 there were no such signs in the leadership positions then.

Their reasons for thinking this way differ but tend to share three elements: their long-term outlook; the size of their assets; and their leadership-mindset.

Universal owners are defined as large, long-term holders of the entire market and economy. As such they own a significant slice of the risk of corporate externalities. To deal with this, many UOs employ allocation and stewardship strategies aimed at reducing their systemic risk exposures and growing the positive real-world impact of their portfolios long-term.

Universal ownership widens the framing of the investment mandate and introduces a critical systemic intervention. Net zero investing is the most significant example of this.

Universal ownership is very similar to the 3D investing model which aims to integrate risk, return and real-world impacts. This is carried out by investing that reduces externalities, engages across all asset classes, and carries out systemic stewardship.

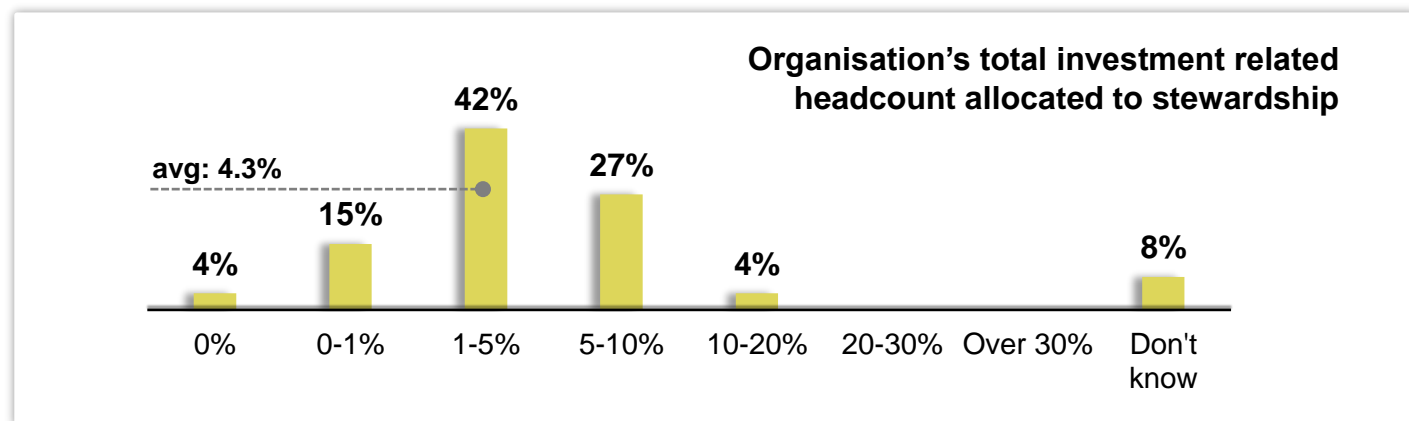
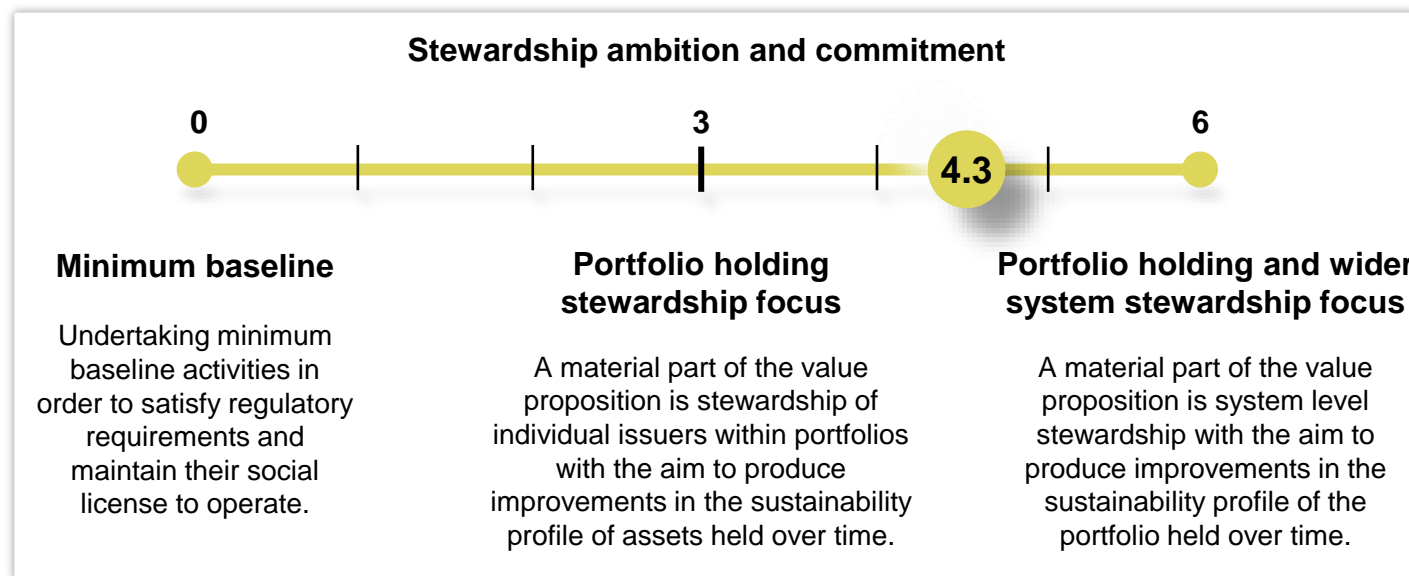
## WHAT HAPPENS NEXT

3D investing will increasingly be driven on the premise that “the returns we need can only come from a well-functioning system, and we, alongside others, can contribute to its success.” There are more investors attracted to the idea of building better beta, via significant active ownership and public policy engagement.

The universal owner and multi-stakeholder mindsets call for collaboration and partnership in our industry among AOs. Many of the systemic challenges are better addressed through collective action. This represents a big challenge to build new resourcing, strategies and actions to take on a collective action mind-set.

# Stewardship – peer funds have ramped up their commitment but based on limited resourcing

Measurement of the stewardship area is problematic



## Key findings from the Global Stewardship Resourcing Survey

|   | Asset managers  | Asset owners    |
|---|-----------------|-----------------|
| 1) Average stewardship ambition for our sample (0-6 scale, 3 is the median point)   | 4.5             | 3.9             |
| 2) Stewardship resources over total investment resources  | 7% <sup>a</sup> | 7% <sup>b</sup> |
| 3) Percentages of total stewardship resources used for  |                 |                 |
| ▪ Engagement  | 45%             | 40%             |
| ▪ Voting  | 20%             | 15%             |
| ▪ Stewardship reporting   | 18%             | 22%             |
| ▪ ESG data/metrics  | 15%             | 22%             |
| ▪ Others <sup>c</sup>   | 2%              | 1%              |
| 4) Percentages of total stewardship resources allocated to collaborative activities <sup>d</sup>                                  | 17%             | 18%             |
| 5) Proportion of organisations where seniority of the stewardship team is in line with, or senior to, the general investment team |                 | 80%             |

a) Stewardship cost as a percentage of total frontline and mid-office investment costs, represented by the median figure

b) Stewardship cost (internal only) as a percentage of total internal frontline and mid-office investment costs (excluding external asset manager fees), represented by the median figure

c) The "other" category, submitted by participants, included training, related research, client communications and regulatory related issues

d) Average resources allocated to collaborative activities as a percentage of total stewardship activities

# What kind of steward are you?

*“I don’t find the stewardship proposition that easy to cope with because it’s so squishy to measure”*

## THE STORY SO FAR

The average cost of the *stewardship of capital* undertaken by asset owners and asset managers is somewhere around 4% to 7% of total investment spend (according to data from the Peer Study and also data from the [TAI-PRI stewardship study](#)). The remaining 93% to 96% of cost is involved with *allocation of capital* areas. That’s a very big difference.

One of the reasons for the difference is about measurement. We calculate the alpha from allocation of capital to two decimal places but the value added by stewardship is very clearly a ‘soft measure’. That is, it has limited objectivity, accuracy or timeliness. It may be material and relevant but it is not that reliable. The cost figures are highly approximate too. These are instances where data does not have good provenance but what it lacks in reliability it may offset with its relevance. Some ballpark figures matter.

But overall weak measurement makes it difficult to commit to a strategy with greater resourcing. What gets measured gets managed. What isn’t easy to measure loses attention.

## WHAT HAPPENS NEXT

There are several transitions happening into the future: the energy transition, the investment transition and the fiduciary transition. The pathway to successful journeys is tricky.

The investment transition involves rebalancing the focus on allocating successfully to include the exercise of ownership influences to better align business models with AO interests.

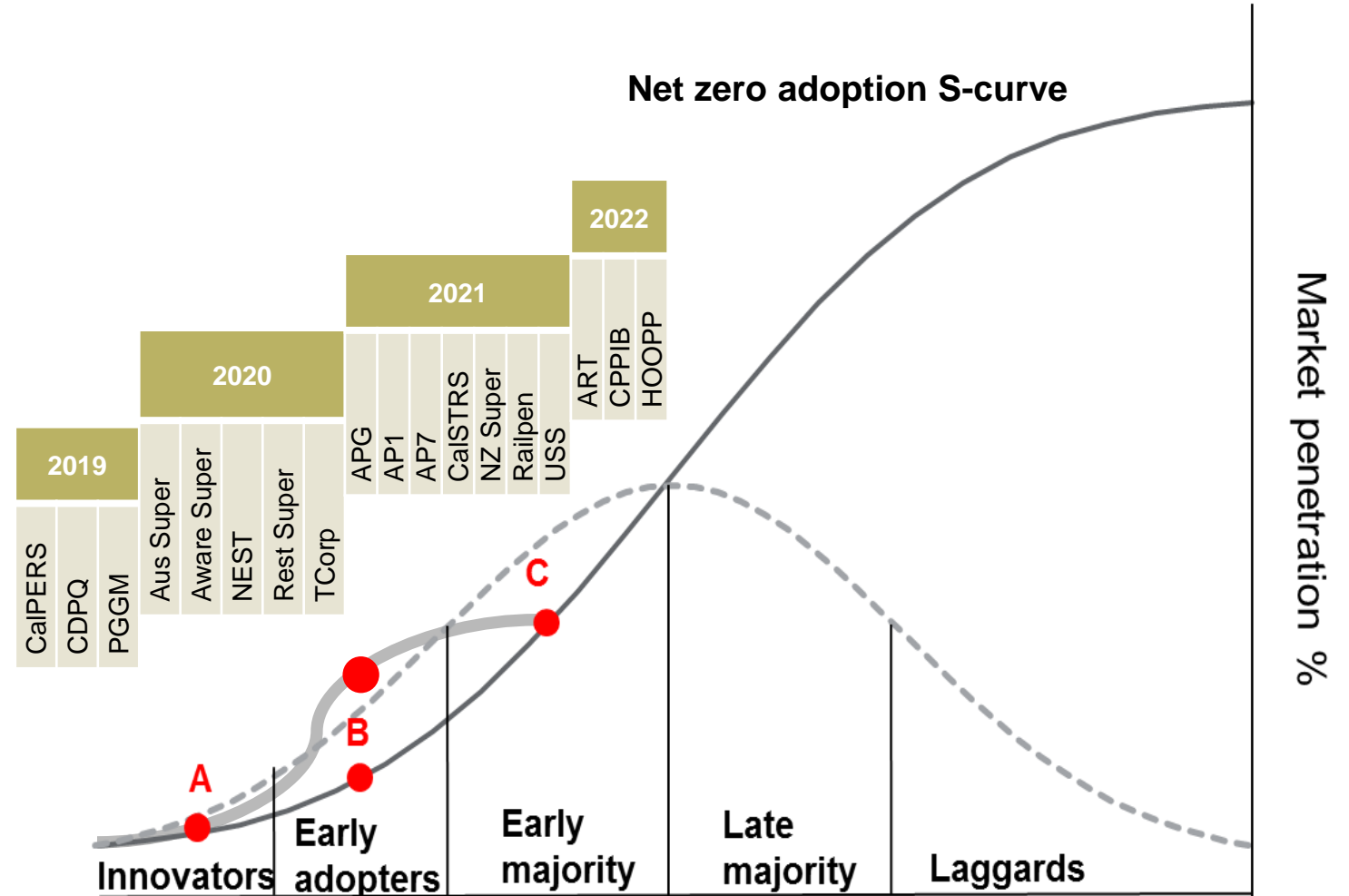
The maxim that applies here is the returns we need will only come from a system that works; the benefits we pay are worth more in a world worth living in. AOs can work on these propositions to support this systemic influence through stewardship.

And getting better command over the data helps the story and the theory come to life. Measurement gives a subject respect. The evidence in the data will never be top quality, but it should improve over time and support more conviction as a result.

# The evolution of net zero investing

Regulatory support for emissions reporting rather than net zero

- The S-curve is used to describe the usual shape of innovation growth
- Investment industry innovation maturity splices the faster moving physical technologies (like fintech and AI) with the slower moving social technologies (like governance)
- AO net zero adoption (thick grey line) moved extremely quickly in the run-up to COP26 in 2021 (A → B) but has then slackened (B → C) with the challenge in finding the political capital and governance budget needed to implement it
- 18 peer funds out of 26 have made net zero commitments with movement peaking in 2021



# Net zero – from nought to fifty in no time

*“Outsourcing large parts of the stewardship work is not something that I really believe in”*

## THE STORY SO FAR

Some 18 of the 26 peer AOs have made net-zero commitments. The net-zero investment target has progressed from a standing start in 2019 to a state six years later that is emergent, but not yet fully formed at AO organisations. In the [TAI AO100](#) – the top 100 AOs by size – the net zero count is 50 out of 100.

Net zero is approached from a portfolio-wide perspective, but with each asset class treated separately. It cannot be ignored that consolidating the treatment of each asset class is extremely messy. And time-consuming.

## WHAT HAPPENS NEXT

A climate change transition plan is not easy to accomplish with the appropriate rigour. It is considerably more than simply divesting carbon from the portfolio – this after all does not necessarily remove carbon from the atmosphere. Net zero requires asset owner policy positions and a shift in the mindset of the asset owner and asset manager agents along the investment supply chain. It calls for more from the strategic partnership relationship.

It also calls for more from stewardship. The peer funds with that low headcount allocated to stewardship all saw the gain for the system in growing this function. And these funds are rightly reluctant to be free riders.

AOs seem set on a constructive pathway towards net zero. But it will be rocky terrain and we are entering a tougher environment with these big challenges involved:

- Taking into account wider stakeholder orientation – *net zero has societal support, at least presently*
- Taking more responsibility through stewardship on top of sustainable capital allocation – *stewardship has a prime role in net zero*
- Not simply accepting the systemic risks but positively affecting them – *climate risk is in the top two of systemic risks*
- Integrating risk, return and real-world impacts into investment strategies – *influencing climate has real-world impact*
- Adopting a mindset of systems thinking – *which is necessary to address net zero investing*

## 4. What's the answer?



# So what's the answer?

*"We focus on getting the big decisions right and building the competence to continue to deliver"*

## THE ROCKY ROAD

Asset owners have a rocky road ahead and should prepare for a bumpier ride by building more resilience into their organisation – thinking ahead, more agile organisational design, better culture and stronger risk frameworks will all play their part.

The systems framing helped the peers and the authors of this study with a shift to **think and act wider, softer, longer**.

**That was necessary to achieve more accuracy with the sense-making our industry needs.** The word 'accuracy' gets used in sports conveying two things – excellence in conception and execution of a play – that works in our AO context too.

But the prevailing investment landscape makes this accuracy more difficult. The rise of higher uncertainty in the investment ecosystem makes the fact-based and probability-based components of the sense-making weaker than the uncertainty-based elements.

As we write geopolitical fractures in previous norms are producing a world order with increasing dissonance and disorder.

These outside factors confront the AO industry that has done well with its congruence (AOs show high alignment and co-operation) but is increasingly drawn into conflicts with stakeholders. So, with respect to the contentious issues – like sustainability, national interest investing and security concerns – there is no one size fits all. We might even see some de-globalisation ahead.

## THE ANSWER

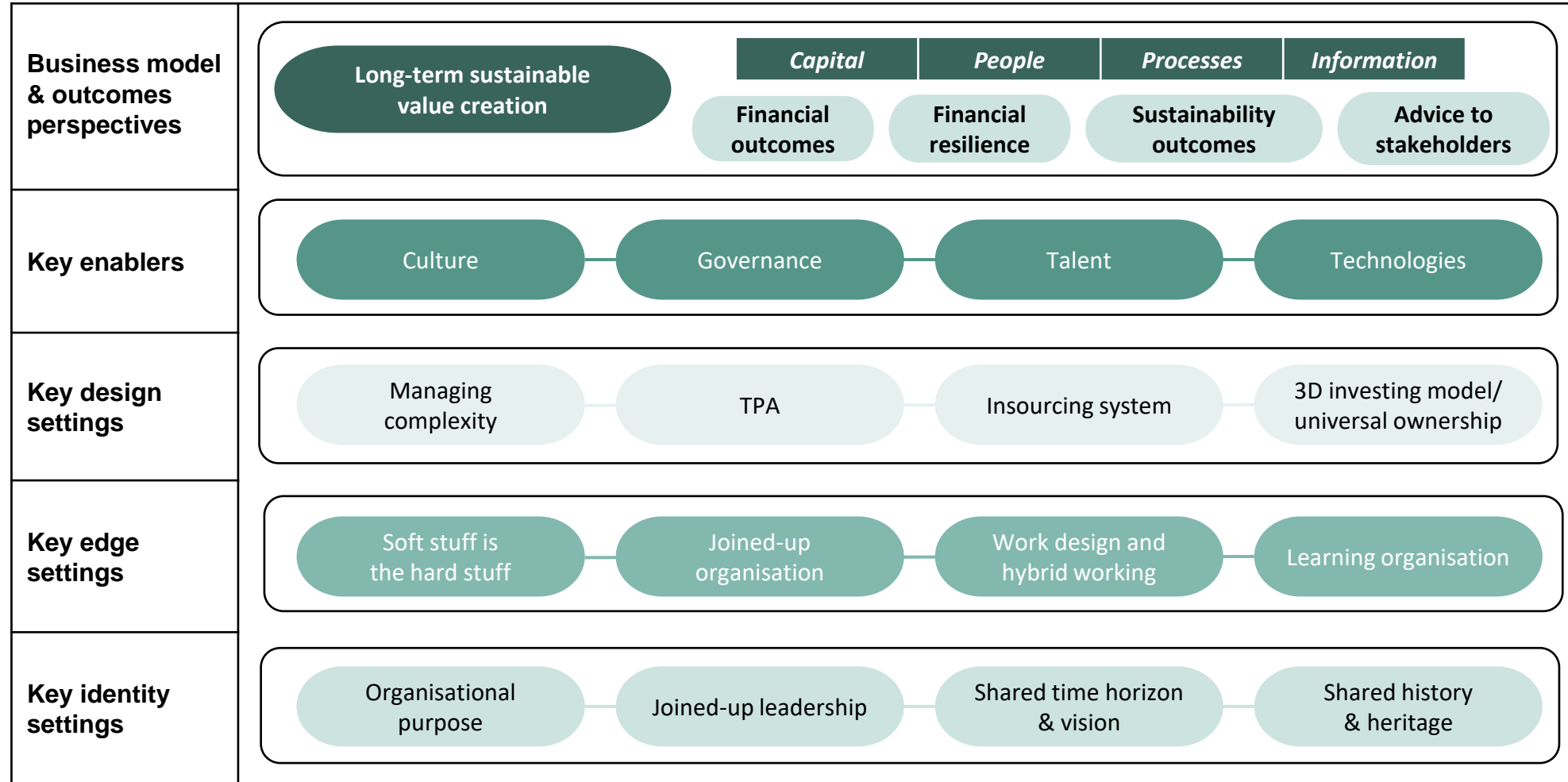
**So what's the answer?** It probably lies at the intersection of

- **Innovative culture and capabilities** (producing more resilience and adaptiveness)
- **Stronger organisational practice** (particularly change programs)
- **Better resourcing** (more time focused on BBU, less time focused on BAU).
- Oh. With a lot of **grit** mixed in. This is tough stuff.

But, hey, the AOs of the world are uniquely smart and strong-valued. They have it in them to win this challenge

# The organisational grid

These are the top-down factors that matter in the asset owner business model and the organisational alpha



\* Organisational alpha is the shorthand for the level of skill generating value added through people and process

# Closing with three tools to help your sure-footedness over the rocky road

*“Our industry is in a Red Queen race. We have to run twice as fast to stay still.”*

## THE GRID

The grid is a top-down representation of how AOs might organise themselves and the key components of this evolved organisation.

The governance challenge is aligning management in its understanding, incentives, decisions, accountabilities and reporting to these realities which are not fixed and move increasingly quickly. It responds well to ‘integrated thinking’ across a range of factors. We often refer to this area as ‘joined-upness’.

The **organisational grid** tries to identify this range of factors.

Yes, it’s got a lot on it. That’s the point.

## THE BEST BITS MODEL

Thinking Ahead is always looking for ‘WISDOM’. **What I Should Do On Monday** is everyone’s ask of us.

This Peer Study went deep into many areas (complicate to understand) but it has produced one clear artefact to progress (simplify to act) - **the Best Bits Model**.

The central tile is the TPA one. But in our view equally important is the Risk 2.0 tile. And all of them are relevant to the future.

### **What should I do on Monday?**

Thinking Ahead has a view on this: Start an initiative to discover the forces behind these tiles and martialling some of those forces for the next leg of the journey.

## ORGANISATIONAL IDENTITY MODEL

Identity is crucial. What makes a person unique? What makes an organisation unique? Asset owners have a particular operating space and boundaries in managing other people’s money affordably, securely, sustainably and systemically. That’s what they exist to do.

The multiple elements that capture the next level of detail here mixes three big picture headings – **purpose, mission and vision** with a number of slightly smaller contributors like stakeholders and values. And in truly differentiating asset owners there are two big markers: **worldview beliefs** and **shared history and heritage**. What needs doing here? In next steps, be very sure-footed with your identity.

# The Peer Study Best-Bits Model

The Peer Study generated this Model of what the Peers considered their stronger propositions in Org-Alpha. TPA acts as a gateway to most of the ideas with its central position.

*Org-Alpha – the alpha enabling the portfolio alpha from people and process, reflecting structural endowments and developed advantages*

| Thinking Ahead Peer Study 'Best-Bits-Model' taken from the 26 Peers strongest propositions for success in future |   |   |  |
|--|---|---|--|
|  | Canada model best bits  | Total portfolio thinking best bits                                    | P2P (People-2-People) best bits                                      |
| Governance   | #1. Governance 2.0/fiduciary duty<br>– Canada model, systems-savvy    | #2. Risk 2.0<br>– risk assessed wider, softer, longer                 | #3. Soft stuff<br>– culture, governance, talent, HI x AI             |
| Investment   | #4. Alts-plus proposition<br>– allocations, risks, IP, resourcing     | #5. TPA 2.0 Total Portfolio Approach<br>- goals, governance, outcomes | #6. 3D Investing<br>- risk, return, real-world impact                |
| Operating  | #7. Org design & internalisation<br>– mixing insourcing & outsourcing | #8. Portfolio quality dashboards<br>– multiple comparators/RAGs       | #9. Beliefs and propositions<br>– aligning values, beliefs, thinking |

# The Peer Study takeaways on the key identity features of peer funds

Identity as a key differentiator particularly in purpose, vision, worldview and heritage

## KEY ASSET OWNER IDENTITY SETTINGS

### A. Organisational purpose.

How the purpose is motivating and helps with connections and alignment  
1-6 opposite.

### B. Shared time horizon & vision.

How the organisation works to a particular time horizon – preferably longer term – that is motivating and value-accretive  
7-9 opposite

### C. Joined-up thinking/ worldview.

How leadership and the organisation share a vision of the world and their organisation that is accurate, aligned and actioned through the purpose and strategy  
7-9 opposite.

### D. Shared history and heritage.

How the organisation's history is respected and informs behaviours and strategies in a way that motivates and helps connections and alignment  
10 opposite

## ELEMENTS OF IDENTITY

|     |   |                 |
|-----|---|-----------------|
| 1.  | <b>Purpose and value</b>   What central purpose(s) we serve and what we see as the value that our organisation exists to create.  | <b>VISION</b>   |
| 2.  | <b>Mission and vision</b>   Why we exist in all its facets and what we want to be.  |                 |
| 3.  | <b>Stakeholders</b>   What is the domain, priorities and boundaries of our reach and influence.   |                 |
| 4.  | <b>Values</b>   What we believe in and how we will likely behave as a result.   | <b>CULTURE</b>  |
| 5.  | <b>Culture</b>   How does our organization actually think and behave, how does leadership behave.   |                 |
| 6.  | <b>Talent and governance</b>   What are the principal human and social capital resources we depend on – board, internal team, external partners   |                 |
| 7.  | <b>Investment beliefs</b>   What do we believe about the investment landscape and our comparative advantage to inform strategy.   | <b>STRATEGY</b> |
| 8.  | <b>Organisational beliefs</b>   What do we believe about our organisational context (stakeholders, mission, endowments etc.) to inform our strategy   |                 |
| 9.  | <b>Strategy</b>   What is our competitive game plan – thinking ahead, employing our beliefs, reflecting uncertainty, our innovations and initiatives, addressing business-as-usual, building capabilities, creating value.  |                 |
| 10. | <b>Heritage</b>   What is the legacy of past leaders' words and deeds and prior lived experience of the organisation that carries through into the present in artefacts and identity, what the history means for the future | <b>HISTORY</b>  |

# Appendix



**Peer Study infographic summary**



**Acknowledgements**



**Limitations of reliance**

# Peer Study highlights

|   |   |  |
|---|---|--|
| <p><b>26 very big asset owners</b><br/> <b>Median size \$153B</b><br/> <b>Total assets \$6.3T</b></p> <p><i>Increasing maturity and global footprint</i></p>                    | <p><b>58% (15/26)</b> have an international presence (33% in 2017)</p> <p>6 have 1 international office – mostly London<br/>         5 have 2-4 – mostly London, New York,....<br/>         4 have 5 or more – all have regional hubs</p> | <p><b>73%</b> say managing complexity is top concern</p> <p><b>88%</b> agree systemic risks will grow in incidence and size</p>  |
| <p><b>Median headcount 1.3 FTE/ \$Bn</b></p> <p>Average FTEs of group<br/>         133 Investment Staff<br/>         123 Support Staff<br/>         16 Sustainability Staff</p> | <p>Shift towards <b>more insourcing</b> in investment management</p> <p><b>42%</b> more insourced in the last 5y<br/> <b>54%</b> expect more insourcing in the next 5y</p>  | <p>TPA-funds had <b>1.3%pa</b> performance edge over <b>SAA-adopters</b> over 10 years</p> <p>TPA-adoption up from <b>2.1/5 (2017)</b> to <b>2.5/5</b> is set to increase further in the next 5y</p> <p><i>What gets measured gets managed</i></p> |

**88%** have a D&I strategy  
**81%** have D&I part of manager DD

38% see AI/ML as a crucial part of future strategy  
 46% have challenges being joined-up on technology  
 27% have made significant increases to their technology share-of-spend in the last five years

*The soft stuff is the hard stuff*

Growth in **Alternatives** by about 3% in the last 5 years with average total now **25-30%**

Growth in **co-investing** and other LP-GP 'systems' for best access to Alts mandates

*You need a system to manage a system*

|   |  |   |
|---|--|---|
| <p><b>Asset Owner AuM</b><br/>         ↑<br/> <b>Performance</b><br/>         ↑↓↑</p> | <p><b>International offices</b> ↑<br/> <b>London offices</b> ↑</p>           | <p><b>Complexity</b><br/>         ↑↑↑<br/> <b>Systemic Risk</b><br/>         ↑↑</p> |
| <p><b>Staffing per \$</b><br/>         ↑↓<br/> <b>Sustainability Staff</b> ↑</p>      | <p><b>Insourcing</b> ↑<br/> <b>Insourcing future direction</b> ↑</p>         | <p><b>TPA Model</b> ↑↑<br/> <b>New Risk Model</b><br/>         ↑↓</p>               |
| <p><b>Tech Spend</b> ↑<br/> <b>Culture effectiveness</b> ↑↓</p>                       | <p><b>Alternative Assets</b><br/>         ↑↑<br/> <b>Co-investing</b> ↑↑</p> | <p><b>Sustainability</b> ↑<br/> <b>Net Zero Investing</b><br/>         ↑↑</p>       |

# Acknowledgements

26



CONVERSATIONS

*Thank you peer funds for those 1-2-1s*

50,000



DATA POINTS

*Thank you Andrea Calosi*

70



PAGES OF CONTENT

*Thank you Thinking Ahead  
for a great team effort.*

1



PARTNER

*Thank you Future Fund*

200+



EVENT PARTICIPANTS

*Thank you for the great ideas exchange*

4



BREAKTHROUGH IDEAS

*TPA+Governance+Risk 2.0, 3D investing,  
Alts-Plus. Scorecards. But time will tell...*

# Limitations of reliance and contact details

## Limitations of reliance – Thinking Ahead Group 2.0

This document has been written by members of the Thinking Ahead Group 2.0. Their role is to identify and develop new investment thinking and opportunities not naturally covered under mainstream research. They seek to encourage new ways of seeing the investment environment in ways that add value to our clients.

The contents of individual documents are therefore more likely to be the opinions of the respective authors rather than representing the formal view of the firm.

## Limitations of reliance – WTW

WTW has prepared this material for general information purposes only and it should not be considered a substitute for specific professional advice. In particular, its contents are not intended by WTW to be construed as the provision of investment, legal, accounting, tax or other professional advice or recommendations of any kind, or to form the basis of any decision to do or to refrain from doing anything. As such, this material should not be relied upon for investment or other financial decisions and no such decisions should be taken on the basis of its contents without seeking specific advice.

This material is based on information available to WTW at the date of this material and takes no account of subsequent developments after that date. In preparing this material we have relied upon data supplied to us by third parties. Whilst reasonable care has been taken to gauge the reliability of this data, we provide no guarantee as to the accuracy or completeness of this data and WTW and its affiliates and their respective directors, officers and employees accept no responsibility and will not be liable for any errors or misrepresentations in the data made by any third party.

This material may not be reproduced or distributed to any other party, whether in whole or in part, without WTW's prior written permission, except as may be required by law. In the absence of our express written agreement to the contrary, WTW and its affiliates and their respective directors, officers and employees accept no responsibility and will not be liable for any consequences howsoever arising from any use of or reliance on this material or the opinions we have expressed.

## Contact Details

Roger Urwin | [roger.urwin@wtwco.com](mailto:roger.urwin@wtwco.com)

