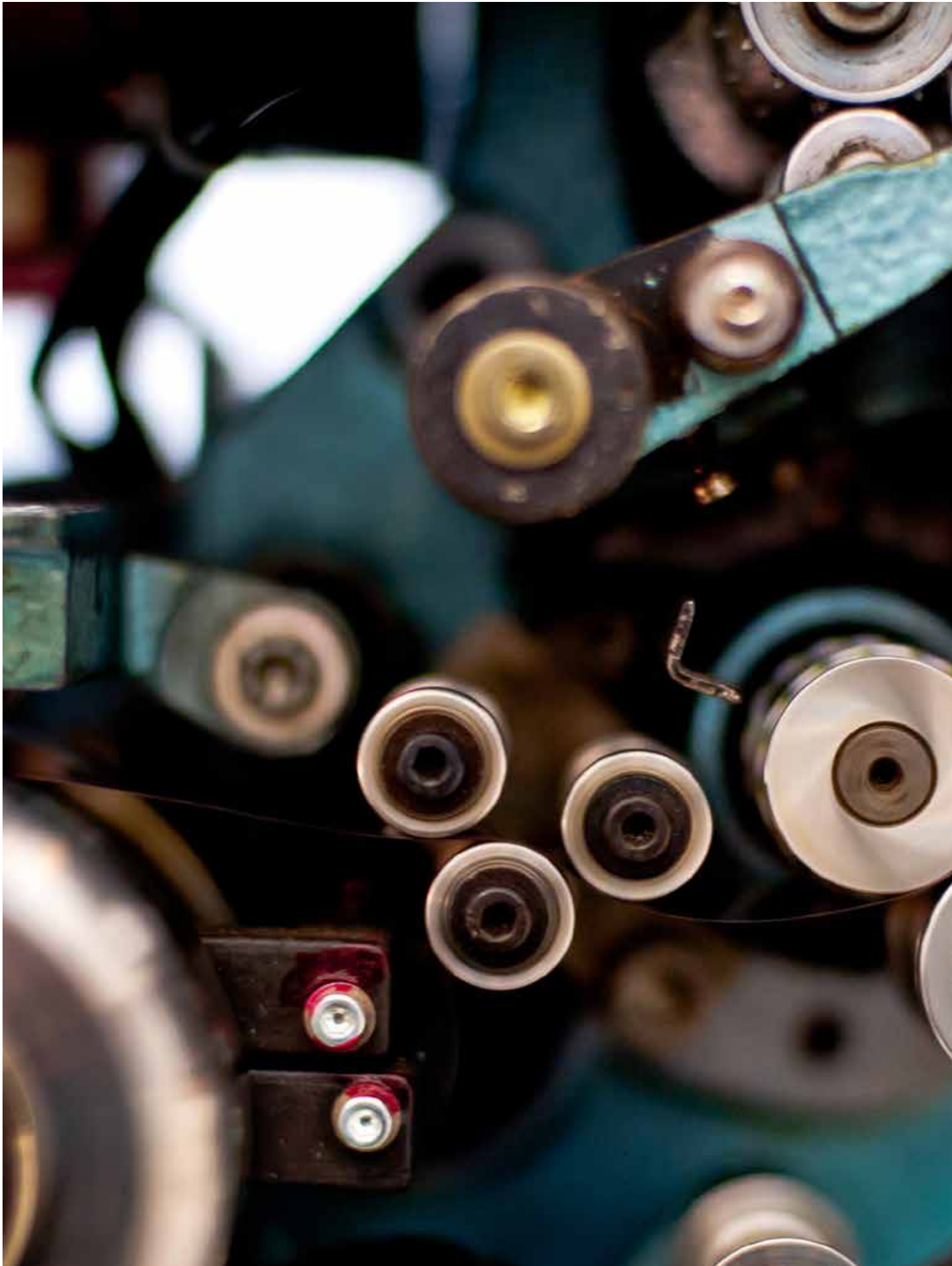


Thinking Ahead Institute

DC: the movie

It's a Wonderful Life, or Oliver Twist?





DC: the movie

It's a Wonderful Life, or Oliver Twist?

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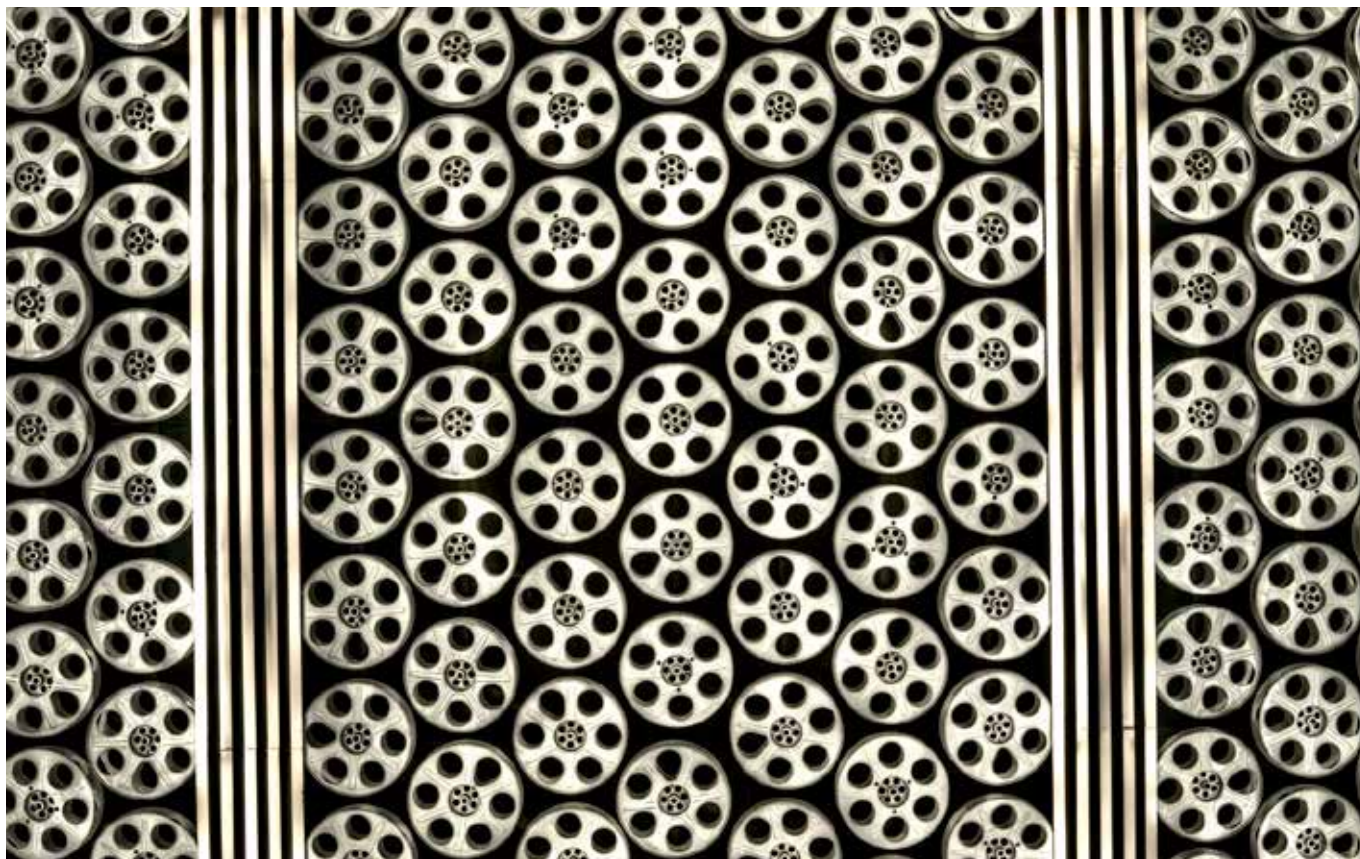
DC working group

This document has been written by the Thinking Ahead Group 2.0 (Tim Hodgson) following the research and discussion conducted by the Thinking Ahead Institute's working group on enhancing defined contribution practice (the DC working group). The author is extremely grateful to the members of the working group for their input and guidance but stresses that the author alone is responsible for any errors of omission or commission in this paper.

While the key objective of the group is to present to Thinking Ahead Institute members best practice principles for DC plans and how these could be more widely adopted, a secondary objective is to positively influence the investment industry outside the membership. We hope this paper serves both purposes.

The members of this working group are as follows:

- Brnic van Wyk, QSuper (Australia)
- Ciaran Barr, RPMI Railpen (UK)
- Jaco van der Walt, FirstRand Group (South Africa)
- Jordi Jofra, Pensions Caixa 30 (Spain)
- Mark Fawcett, NEST (UK)
- Paul Herbert, Willis Towers Watson (UK)



The summary of the summary

This paper – written in the format of a movie script – puts the end saver at the heart of the defined contribution pension story.


At present, the DC system is primarily a savings and investment structure, designed to take an individual only up to retirement.

The journey continues long after retirement, as the savings need to last for literally a life time.

This paper is about managing the whole of a member's journey and contains a number of important messages:

- DC *pensions* (as opposed to DC savings plans) are a form of social contract
- Understanding the true goal (income in retirement) is foundational and currently under-emphasised
- DC is an intertemporal risk management exercise – where the size and the mix of the different risks changes through the journey – calling for better-developed risk management strategies.

This has implications for every stage of how DC plans are run, potentially changing the approach to everything from contributions to investment to measurement to insurance to drawdowns.



“This is not just a big investment fund.
We’re entering into a social contract”

Alice, mastertrust CEO (fictional)

The movie trailer

With a nod to *Sliding Doors* (1998), *DC: the movie* contrasts alternative futures for Todd – a comfortable retirement or poverty.

Todd is an ordinary guy; an everyman (scene 1). Alice is the CEO of a DC mastertrust / multiple employer plan (scene 2). The context is a defined contribution system currently focused only on building up a pot of capital at the point of retirement – a purpose Alice rejects as not fit for purpose; she comes to the realisation that people like Todd need the system to provide a sustainable stream of income throughout a potentially long retirement – a DC version 2.0 (scene 3).

Alice's approach reverses the perspective from one that doesn't look beyond the next contribution or the next year's investment return to one that thinks right to left – start with the retirement goals and work back to present actions. Todd will face many risks in trying to meet these goals: insufficient contributions; low investment returns; erosion of purchasing power; the cost of converting assets to income; outliving income; and Todd's own unexpected income needs (e.g. healthcare). Providing post-retirement cashflows is an intertemporal risk management exercise – where the size and the mix of the different risks changes as Todd ages (scene 4).

Alice finds that switching the objective from maximising assets to providing a lifetime of income has implications for pretty much every part of her organisation. Her CIO in particular must work through a multitude of questions (scene 5).

Alice sets to work. She creates a set of risk management strategies which she refers to as the "4 Is": invest, insure, influence and ignore (scene 6).

Ending #1; Todd is not in a good place, and DC 1.0 has not worked well for him (scene 7).

We flash back to the pivotal board meeting, where Alice succeeds in persuading her somewhat reluctant board to back her plans to reinvent the mastertrust and pursue DC 2.0 wholeheartedly. There are yet more hard, and open questions to tackle, such as the appropriate degree of paternalism, the nature of the social contract, and whether the mastertrust is aiming to make the average member better off, or protect the worst off members (scene 8).

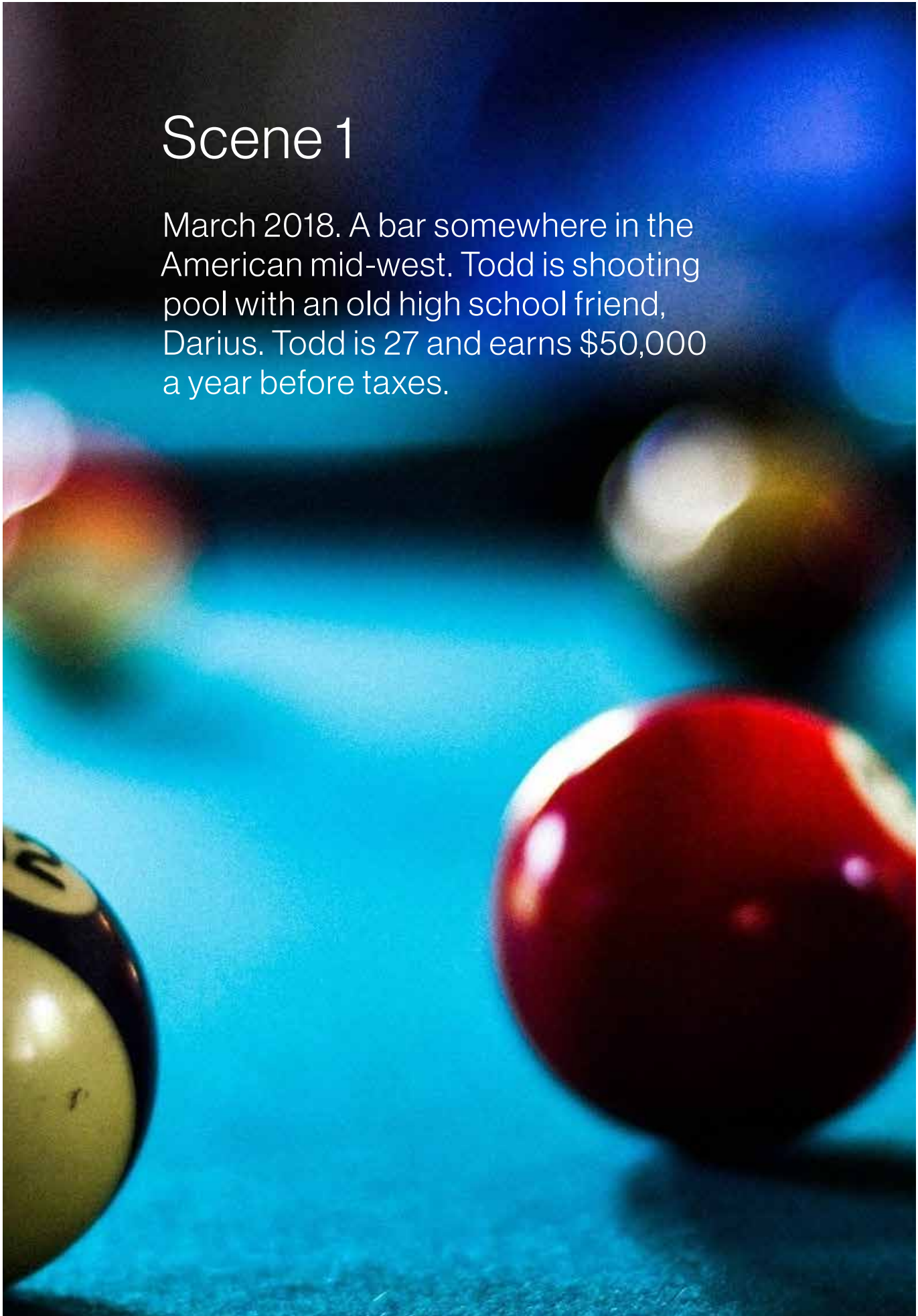
Ending #2; DC 2.0 has worked well for Todd and the ending is happy... (scene 9).

Movie ends.

Deleted scene – Fahad is director of pensions for a large corporate. Not only must he deal with a legacy DB fund, but he must also decide what is best for his growing DC membership. Should he run the DC plan internally? Or outsource to Alice's mastertrust?

Scene 1

March 2018. A bar somewhere in the American mid-west. Todd is shooting pool with an old high school friend, Darius. Todd is 27 and earns \$50,000 a year before taxes.



Darius:

“C’mon Todd, play your shot. You know I’m gonna take your money. No fancy vacation for you this year, no new car either.”

[Todd shrugs, laughs]

Todd:

“I earn plenty. I’ll be getting a new ride this year and a good vacation too, don’t you worry about that.”



[Darius’s expression darkens]

Darius:

“Don’t you ever think ahead? You need to save, too. I’m saving for a house you know, and even started a 401(k)¹ last year. Don’t get left behind is all I’m saying.”



[Todd throws back his head and laughs. As his head tilts back, he catches sight of the TV on the wall. A reporter is talking about pensioner poverty. Some retirees regret not setting more money aside for retirement, others blame poor investment returns. All of them complain that income is not keeping up with inflation. A few, older pensioners say they have exhausted their pensions and are relying on foodbanks and handouts from charities, families and friends. Todd watches for a minute or so, then turns back to the table and downs his drink]



¹ Defined contribution pension plan



Scene 2

March 2018. Somewhere in western Europe. Alice is 39 and CEO of a DC mastertrust.² It's late. Alice is at home, her phone in her hand.

[Talking to a friend animatedly]

“You won't believe the jigsaw I've got to put together. The thing is, if I get it wrong, thousands of people in dozens of pension schemes will spend their dotage eating canned food and warming their hands in their ovens. It's a huge responsibility.

The way things are set up now, there is a real risk that my members won't get what they want in life. I don't mean just when they retire, but deep into old age too. The worst thing is, I don't even know what they want. And even if I did, what would I do about it?

I need to put the kettle on.”



² A multiple employer plan (or open MEP) in US-speak.

Scene 3

[Opening credits roll, narrator speaks]

“Welcome to the sequel of Thinking Ahead Institute’s 2017 paper, “Proposing a stronger DC purpose”. In that paper we suggested that the majority of DC plans aim simply to maximise members’ money at the point of retirement. **A better objective, we argued, would be to deliver a sustainable stream of cashflows to members in retirement, right through to end of life,** and build in some flexibility along the way – an inter-temporal risk management exercise.

We call this better way DC 2.0. What DC 2.0 definitely is not, is an exercise in maximising capital at the point of retirement.

This movie, through Todd and Alice, will show how the DC 2.0 journey might be managed. It will also hint at DC 3.0 – but that’s a story fit for a sequel³.

Let’s find out....”

[Fades to black]

³ DC 3.0 will consider individual circumstances, including assets and debts held outside DC plans. DC plans may currently think 3.0 a step too far, but if they don’t at least acknowledge it, they could take their DC 2.0 build down a dead-end.

Scene 4

Todd's story

Todd doesn't know it, but he is on a journey. If that journey goes well, he will cruise serenely down the financial highway towards the setting sun of retirement and security. But, the journey could just as easily go badly, and be very uncomfortable. By accident of birth, Todd will have to navigate the 401(k) system with its particular design quirks.⁴ He has exactly the same level of financial expertise as everyone else in his town and so he's unlikely to always make the right choices to ensure a serene journey. And where others make choices on his behalf, these will not always be the right ones.

We know he earns \$50,000 a year and we assume he will earn the same, in real terms, for the rest of his working life. Todd is typical in that he has some debt, and wants to buy a home and have a family at some point.

***“If that journey goes well,
he will cruise serenely
down the financial
highway towards the
setting sun of retirement
and security”***

⁴ This is not a derogatory statement. If Todd were Australian or South African he would simply face a different set of design peculiarities.



Scene 4 continues

Figure 1 – Todd's DC journey

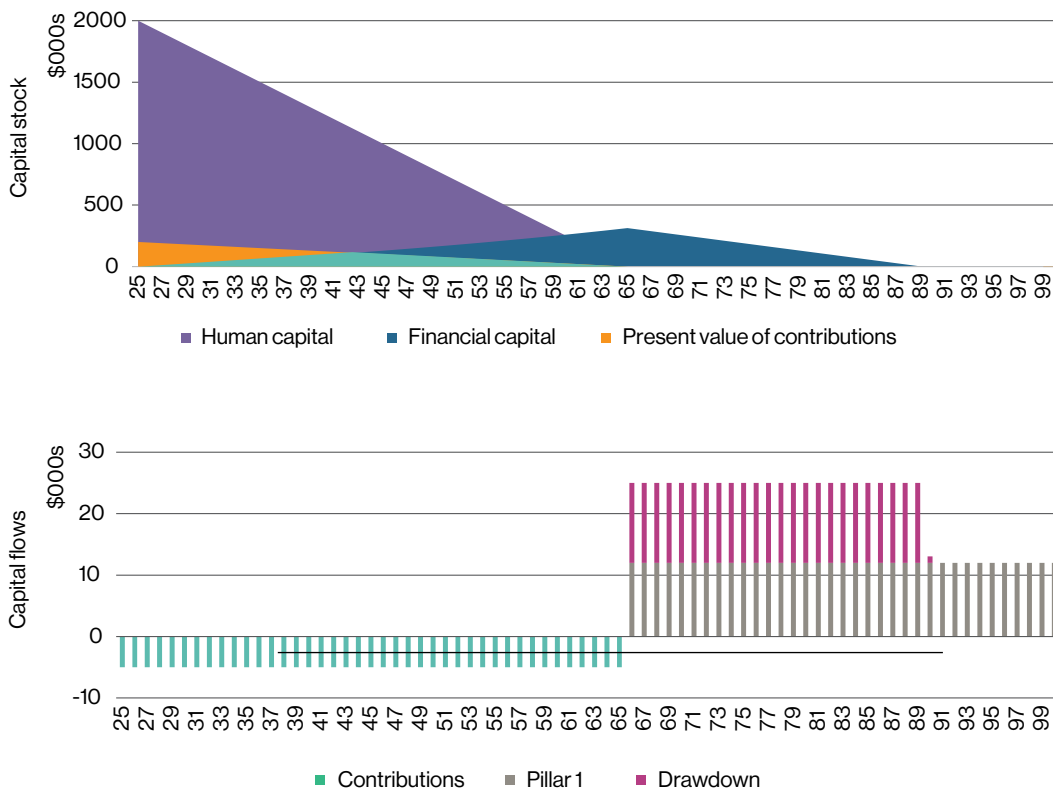


Figure 1 above illustrates his journey. In his early working life, Todd appears to have more than enough human capital for a comfortable DC outcome. However, **most of these future earnings are already ear-marked for living expenses and raising a family.** A better picture of Todd's DC "firepower" is given by the present value of contributions. These contributions drive the accumulation of financial capital, and the financial capital is converted into retirement income that supplements any old-age benefits the state provides (pillar 1). Darius would therefore be able to give Todd some straightforward, sound advice:

- **If you don't contribute into a retirement plan, there will be no retirement income coming out of it**
- **The earlier Todd starts contributing the better** – even if that feels like a big sacrifice of current spending power
- Contributing consistently also helps – i.e. don't take contribution breaks and don't withdraw pre-retirement
- Higher investment returns are better than lower returns – but the sequence of returns matters materially.



The power of thinking right to left

Most investors (and people in general) think left to right. That is, they start by focusing on immediate issues and then try to work out how to get from here to a goal. Jim Champy, author of “Re-engineering the Corporation: A Manifesto for Business Revolution”, argues that people should be more granular in defining their long-term goals and think backwards from the goals to what they need to do today to move towards them. Right to left thinking encourages investors to think strategically about long-term end goals, long-term liabilities and obligations, and any comparative advantages they can exploit to achieve the goals. With right to left thinking, DC is about sufficient incomes for retirement, instead of peer-relative activities in the short-term. A long-term risk management approach starting from the right recognises failure to achieve mission as the ultimate risk.

Surely it makes more sense to work from right to left – starting with the goal and working backwards. Working back to front is more complex and time-consuming, but since we’re talking about the financial security of Todd and his (future) family, it’s probably worth the effort.





Todd's options – and the risks he faces

So, what might Todd's retirement goals be? We can segment them into three, slightly simplistic, outcomes:

1. **Basic/subsistence**
In most developed economies, the pillar 1 (state) system provides a level of retirement income. Whether this level allows for subsistence, particularly for non-home-owners, can be debated in each case. Low DC contributions from members will provide little more than a top-up, or a small one-off lump sum
2. **Comfortable**
Sufficient, persistent contributions can provide an additional, affordable level of income. Risk needs to be continually managed to target both a minimum level of income with certainty (above subsistence) and investment growth
3. **Discretionary**
Excess contributions can be used to target higher returns. Discretionary retirement goals could include, for instance, provision for bequests and gifts to the family.

Ideally, Todd would aim to cover off all three options, but that depends on him being willing and able to do so and, to some extent, on luck (the timing of his birth and the sequence of investment returns over his lifetime, his health, job security etc). The shape of retirement cashflows can be varied almost infinitely, but our illustrative suggestion for Todd's cashflow goals is shown in figure 2 opposite:

The illustration includes a discretionary \$50,000 bequest to give away on his 85th birthday (his life expectancy), and we have acknowledged the 'risk' that he lives to a ripe old age by suggesting the purchase of a (deferred) annuity. The chart stops at age 100 but, in reality, will stop when Todd does.

However, a nice, neat projected cashflow chart conceals the fact that Todd's journey – and those of millions like him – is punctuated with potential bumps in the road. Figure 3 shows the risks Todd will face. Some he can control, some he can influence, while others are out of his control.

Figure 2 – Todd’s retirement goals (‘objective function’)

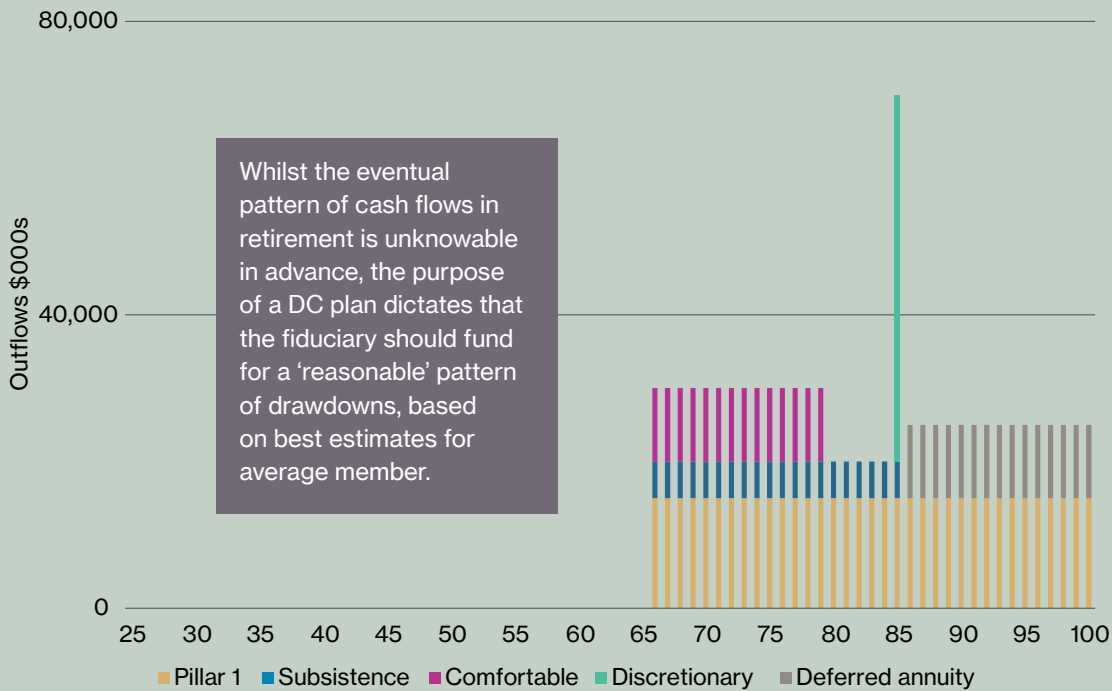


Figure 3 – Risks relevant to achievement of the objective function

Insufficient contribution

- Consistent with optimising whole-of-life money weighted return across all of member’s assets

Insufficient growth

- Encompass the size of, and pattern of, returns (the latter is sequencing risk)

Erosion of purchasing power of income

- Influenced by inflation over the remaining lifetime

Cost of converting accumulated funds into (real) income

- Influenced by nominal interest rates at point of conversion, over the period of conversion

Outliving income

- Longer life is a blessing, but expensive. Longevity risk requires a form of insurance

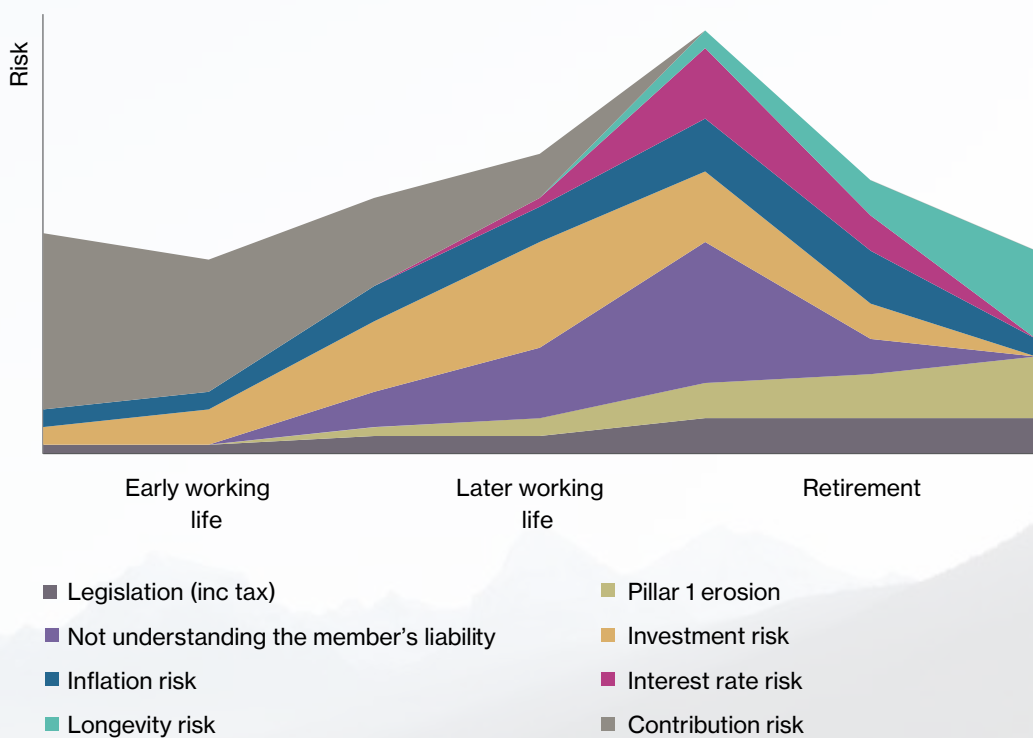
Idiosyncratic income needs

- Individual circumstances can interrupt retirement planning, such as health care costs

“The 27-year-old Todd has little, if any, idea of the risks that lie all around and ahead of him.”

As we have noted, obtaining the desired cashflows over a lifetime is an inter-temporal risk management problem. **Todd, with help from his DC provider, must manage his way through risk exposures which are different in type and size over his lifetime**, and which vary in terms of cost to mitigate, or the reward offered, through time.

Figure 4 – Changing level, and consumption, of risk over member’s life (illustration only)



The risks shown in figure 4 left differ in nature and size at different points in Todd's lifetime. Each risk has the potential to jeopardise – to a greater or lesser extent – the overall outcome for Todd in retirement.

He cannot realistically address the shaded risks at the bottom of the chart. Legislation and tax can change at any time, for reasons that may have little to do with optimal pension structures and much to do with prevailing political thought.

Likewise, little can be done about the ongoing erosion of the pillar 1 pension. The likelihood in developed countries is that the state pension will be worth less in real terms at retirement than it is now. And Todd may well receive it much later than he currently believes.

Todd may also not realise that investment risk, particularly in his early working life, is not the sole risk he faces. It is not even the largest risk, material though it is.

In fact, **the biggest risk in the early years relates to contribution levels.** A graduate such as Todd, just a few years into his career, is focused on enjoying his new-found wealth and, perhaps, putting money by for a deposit on a home. Would he remove money from this equation and accept he will not see it for 50 years? Alice (scene 2) told him as often as she can through the pension scheme newsletter, that if you don't contribute adequately now, you miss out on 50 years of compounding investment returns. By the time Todd is 35, contribution risk has fallen, but it is still his biggest risk.

Investment risk particularly is important in the years immediately preceding retirement, as that is when the asset size is greatest and when sequencing risk is becoming most significant⁵. In these years, derisking should be the focus. While derisking in the DB space is well understood, in the DC space it is, at best, done via a form of asset allocation glidepath – but certainly not in relation

to an individual's cashflow goals. Even as Todd's awareness of his financial situation and his mortality grows, he still has little concept of what derisking (or sequencing risk) means, let alone how to manage it.

Todd has, if possible, even less concept of inflation risk. Although the 27-year-old Todd has zero financial assets, he has an enormous future liability (assuming he wants to retire, rather than work until he drops). He is therefore exposed from day one to the full force of inflation risk. Thankfully he also has an unseen asset – his human capital – and we can reasonably assume Todd's earnings will rise with inflation, providing a partial hedge.

The biggest risk in the immediate pre-retirement period is that Todd's DC provider does not understand his liabilities. To some extent, this is natural: Todd may not know what he wants or expects from retirement until just before (or even after) folding away his work laptop for the last time. Or, he may know at one stage, but then change his mind. And change it again later.

He might, for instance, decide that \$15,000 a year is enough to live on at age 50, but realise at age 60 he needs \$20,000. He may become seriously ill and have a reduced life expectancy and therefore want every cent he can get the moment he retires. Great investment choices over his working life can all be negated by a huge event right at the finishing line.

Likewise, interest rate risk – shorthand for **how much it costs to convert accumulated wealth into income – only really becomes obvious later in working life.**

The older Todd gets, the greater his chances of living beyond the average life expectancy. Consequently, **as the size of other risks starts to diminish, so longevity risk starts to accelerate.** Few people of working age can look as far as retirement and plan for it in a clear-eyed way, let alone properly plan for living into their late 90s.

⁵ Sequencing risk peaks at the point of retirement – when cashflow turns negative. At this point negative asset returns cease being opportunities to exploit mean reversion ("buy the dips") and instead become permanent losses.

Scene 5

Alice's story

[Alice is still on the phone]

“Can I handle all the risks members face? Can I realistically deal with any of them?”

[She says goodbye to her friend, starts to design a diagram on her laptop to help her consider the risks]

[Alice thinks]

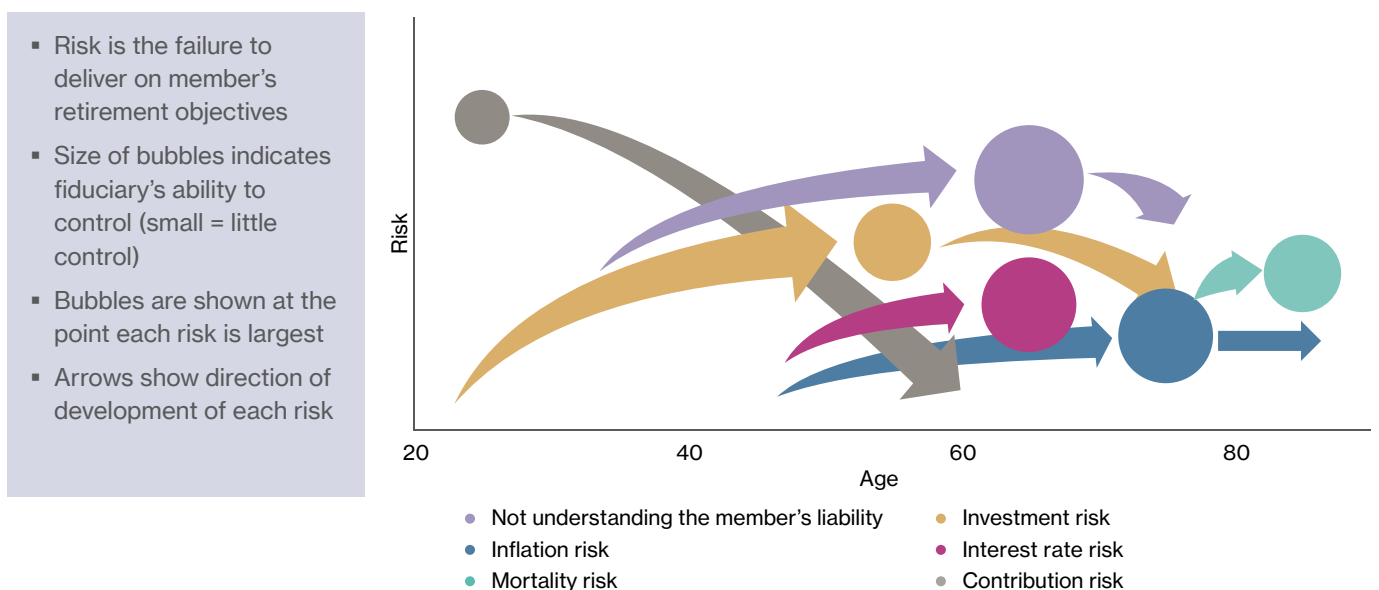
“I know the contribution risk is massive for members, but there's only so much I can do about it, only so many emails, Tweets and newsletters I can send. It does console me though that I can do something about understanding members' liabilities. Before and around retirement, I can help them make some pretty big changes to their portfolios.”



[Alice stands up, hit by a revelation]

“Our DC approach has to change! The current glidepath, which aims to maximise investment returns at age 65, is just not fit for purpose. We can't just discharge members, as if from a hospital ward, tell them to keep taking the pills and wash our hands of them. We are more than just a savings and investment vehicle. We have got to try to help members to meet their retirement goals for the rest of their lives. We need to reinvent DC ... we need a version 2.0!⁶. It won't be easy meeting the individual needs of thousands of individuals and it will cause some internal strife, particularly as the CIO realises her team is not at the centre of things any more. But it's our duty to try!”

Figure 5 – Evolving risks and fiduciaries' ability to manage them



⁶ Alice is not, of course, the first person to arrive at this terminology. Others have independently used the same expression: such as Ezra, Collie and Smith's "The Retirement Plan Solution; The Reinvention of Defined Contribution".

DC 2.0 should aim to fund a series of defined cashflows, even though this may create a mismatch to what is actually required at retirement

A more sophisticated approach would see the funding plan adapted in light of information we collect from members - eg if a member tells us he/she wants to take cash at retirement

We could create a "rainy day" or ad hoc account to meet unforeseeable, chunky cashflows

We need to be more granular in setting investment risk and the length of time for which member's financial capital will be exposed to this risk. This will be a function of several factors, including the wealth of our members and the level of contributions

We need to decide whether we want to focus on optimising outcomes for the average member or the worst-off member

We should probably highlight to members that pillar 1 is not risk free - it's likely to provide less and less of the cashflows required...

... but this does not affect our obligation to hammer home the message to members that contributions in their early years are incredibly important

... however, to be completely transparent, we should also probably acknowledge that regulatory and tax changes in years to come may impair expected DC outcomes...

Is DC 3.0 just a dream? It would mean customising each member's cashflow based on the creation of an individualised profile

Alice considers what this revelation might mean in practice.

As Alice thinks it through, she realises that this one change of focus has implications for just about every part of the mastertrust's operations.

She jots down a long "to do" list, with contributions firmly at the top. But something is bugging her: didn't somebody once claim that contributions only account for 10% of retirement income? If she's going to be make contributions the top priority, she'd better make sure she knows where that came from.

The origin turns out to be something called the 10/30/60 rule. This rule is based on analysis⁷ that shows, under certain assumptions, that "contributions may represent as little as 10c of each \$1 eventually paid out. What is more, of the 90c represented by investment returns, roughly two thirds (60c) is earned after retirement." She gets ready to dispute the assumptions ("that return assumption looks too high... and what about the effects of inflation...and..."⁸) but stops when she sees the article conclude that: "It would be wrong to conclude that the 10/30/60 rule means that the contribution rate is not important in a DC plan. Indeed, without contributions, there can be no investment return."

"That's it!" she exclaims to the empty room, "The 10/30/60 rule is not about the importance of contributions at all. Without contributions, it'd be a 0/0/0 rule. It's about the importance of investment returns. And we'll get to those in due course."

For **Alice, this implies a major push to increase contributions**, entailing the corralling of resources and creative input. Might I even need an outside marketing company or advertising agency to help me? wonders Alice.

In fact, **communication is going to be key to DC 2.0**, Alice thinks. If DC 2.0 is going to work, let alone DC 3.0, it's got to be a joint undertaking between the plan and its members. If members are disengaged, there's only so much we can do for them.

Alice will also need to have a potentially vexed meeting with her CIO. Bearing in mind the importance of post-retirement returns, but also the risk of permanent loss of capital, the CIO will have to think carefully about the use of growth assets in this phase. Alice prepares a number of questions to discuss with her CIO:

1. **How might exposure to growth assets be prolonged into retirement?** The more return we can get for members the better; but taking risk when they are cashflow-negative is a terrible thing. They'll probably have to talk about the meaning of "performance". It should have less connection with matching investment benchmarks and more focus on sequencing risks and the risk of permanent loss of capital.
2. **How might schemes control for 'Japan risk'?** Alice is aware the investment team have a strong belief in mean reversion for markets (they bounce back after a fall), and have done well for members by sticking to this belief in the past. However, as a good fiduciary, Alice particularly worries about exposing members to the risk of really terrible outcomes, such as a prolonged period of depressed market values, as seen in Japan. Alice will leave it up to the CIO to come up with some ideas.
3. DC2.0 implies a longer investment horizon post retirement. **How might DC schemes better realise the long-term premium?** Alice saw some interesting research from the Thinking Ahead Institute in 2017 claiming that there was a sizeable return premium for being a long-term investor⁹. She will ask her CIO to look at it.
4. **Should we adopt a dual-portfolio approach?** Again, Alice has been reading more on this subject. The principles stretch back to Tinbergen (for a given number of policy objectives we need the same number of policy levers) and Tobin (fund separation theorem), but are now being applied to DC by the likes of Robert Merton and Lionel Martinelli.¹⁰ The concept implies that for the two member objectives – security and growth – they should be running separate portfolios that respectively hedge cashflows and seek performance (see figure 6). However, Alice would like her CIO's views both on the theory, and on the practicality.

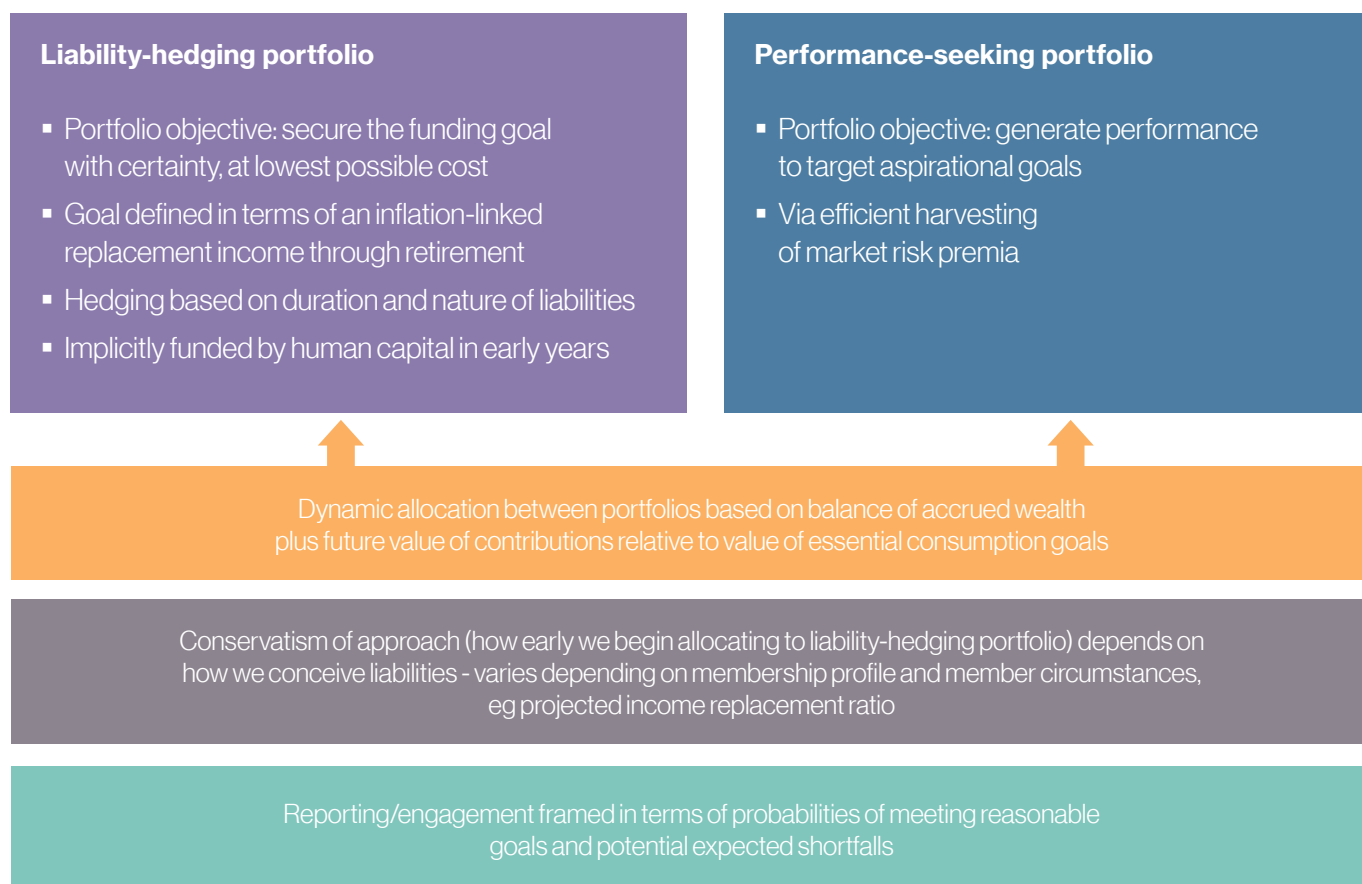
⁷ M. Smith and B. Collie (2008). "The 10/30/60 rule" Russell Investments.

⁸ The assumptions have been disputed in, for example, <https://cuffelinks.com.au/10-30-60-no-longer-rule/> which concludes that, under different assumptions, a roughly equal three-way split would be more appropriate.

⁹ Thinking Ahead Institute. "The search for a long-term premium", May 2017.

¹⁰ See, for example, Tinbergen, J. (1956) "Economic Policy: Principles and design." Amsterdam; Tobin, J. (1958) "Liquidity Preference as Behavior Towards Risk." Review of Economic Studies; Martinelli, L. and V. Milhau (2017) "Mass Customization versus Mass Production in Retirement Investment Management: Addressing a 'Tough Engineering Problem'" EDHEC-Risk Institute.

Figure 6 – The dual portfolio approach



Other points for discussion with the CIO include **how and when to convert wealth into income. How will they deal with inflation risk – or won't they?** And the longevity problem - Alice will probably put that in the “too hard” basket for now.

Customisation of portfolios is a bigger challenge still: Alice can't get to DC 3.0 in one go, as she would like, by establishing the full preferences of each member and responding to them. She just doesn't have the resources or capabilities. Perhaps, in a few years, technology will have advanced sufficiently to enable this. For the moment, however, DC 2.0 is within reach if she divides members into cohorts based on groups of preferences. It isn't perfect and she knows she doesn't have enough information about each

individual to be confident she will place them in the correct cohort – but she has to start somewhere. Doing nothing is not an option.

Last and not least, **Alice wonders what these and other changes may mean for her career.** With most of the world operating DC 1.0, if DC 2.0 has teething problems or worse, implodes, her company, her peers, the regulator and the media are unlikely to be sympathetic.

But Alice being Alice, she doesn't ponder this question for long. DC 1.0 isn't fit-for-purpose and if she is to genuinely help thousands of people to live more prosperously, it has to change.



Scene 6

Alice gets to work

[Speeded-up scenes show Alice in a whirl of meetings and working until late in the evening at home]

Narrator:

“With time, and the help of others, Alice creates blueprints for strategies to tackle the key risks members face (interest rate, mortality, inflation, uncertain consumption, insufficient contributions). She calls these strategies the “4 Is”: invest, insure, influence and ignore.” (see figure 7)

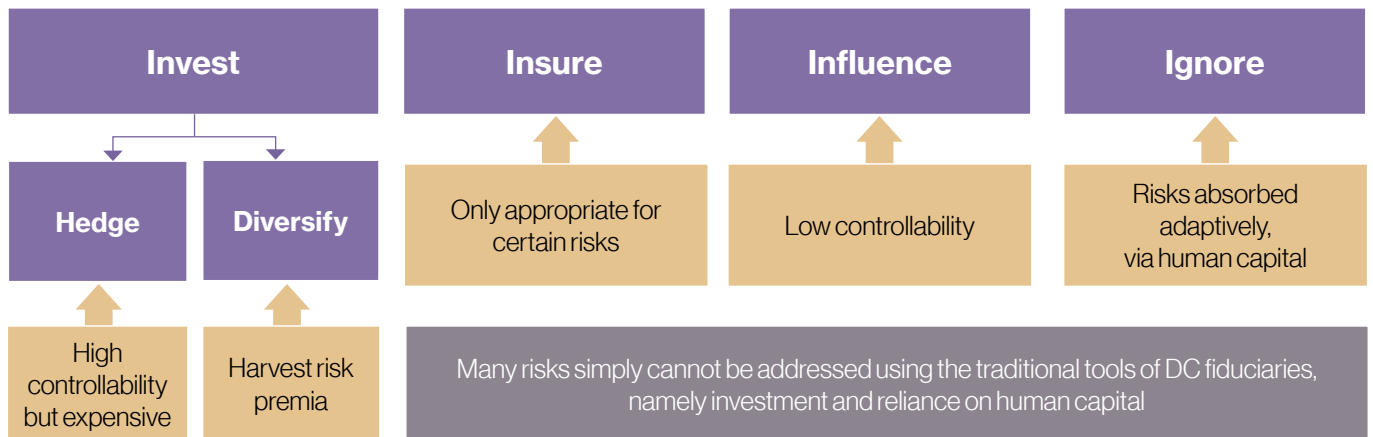


Strategy 1: invest

Alice is a convert to the dual-portfolio approach. The hedging portfolio could tackle interest rate risk by creating an immunised high-quality bond portfolio, dependent on affordability of course. When the costs of hedging are high, the return-seeking portfolio could reduce the risk of capital value drawdown relative to interest rates by, for example, risk factor diversification.

Mortality risk cannot be hedged through investment, but limiting drawdowns from the return-seeking portfolio in early retirement would help. Inflation risk can be hedged by real bonds, depending, again, on their affordability. The return-seeking portfolio can invest in real assets with inflation-linked cashflows, although liquidity must be considered here.

Figure 7 – Risk management strategies



Strategy 2: insure

Annuities are currently the obvious insurance choice, clearly addressing mortality risk, but also interest rate risk and – depending on the type purchased – inflation risk. But is there a better way? Traditional forms of annuity are dependent on affordability at the time bought, and suffer from perceptions of poor value when a member dies early. Alice makes notes to investigate staggering or phasing annuities; to explore whether any insurance companies are willing to re-visit annuity design; and to explore self-insurance through pooling the mortality risks of her members.

Insurance is also available for specific life events – such as medical cover – which can help an individual with future consumption but is hardly a total solution for uncertain consumption profiles.

Strategy 3: influence

The concept of influence is to inform (or influence) members about the risks involved in investment strategies and the reasons why these risks are assumed. The link between communication and member action is likely to be weak, but anything is better than nothing.

For interest rates, the scheme could establish member ‘permission’ to manage this risk by, for example, reporting on projected incomes in retirement (not lump sums at retirement). For mortality risk, the plan could steer members towards post-retirement options with longevity protection. For inflation risk, members could be provided with illustrations of potential erosion of fixed income. To help manage uncertain consumption profile, plans could steer members towards post-retirement solutions with designated contingency accounts. And to encourage contributions, the plan would communicate with members, in particular illustrating the impact of sufficient, persistent contributions.

Strategy 4: ignore

By “ignore”, Alice has in mind adaptive features that mitigate the impacts of risk. For instance, a member can ignore interest rate risk during their working life (albeit to an ever-decreasing extent) as the price at they will convert capital to income is far off. Locking in income early could be the correct thing to do (in hindsight), but carries the opportunity cost of missing out on investment growth. Mortality risk is partially hedged by pillar one provision, while inflation risk is mitigated in earlier working life by increases in salary (human capital). Members can adapt consumption as the level of affordable future income changes. Finally, to solve the conundrum of insufficient contributions members can back-end load their contributions – subject to affordability.

The inter-temporal risk-management challenge is multi-faceted – all risks and their evolving nature need to be considered holistically. This demands a radical re-thinking of how the DC risk budget is allocated.

However, the management of many of these risks, Alice acknowledges, involves trade-offs. She adds the obvious trade-offs to the summary she has created (figure 8).

Narrator:
“And thus did DC 2.0 take shape, and took hold not just in Alice’s schemes but, in time, across the DC pensions universe.”

In other words, **the inter-temporal risk-management challenge is multi-faceted – all risks and their evolving nature need to be considered holistically. This demands a radical re-thinking of how the DC risk budget is allocated.**

Figure 8 – Risk management options

Risk	Strategies					Trade-offs
	Invest (hedge)	Invest (diversify)	Insure	Influence	Ignore	
Interest rates	✓✓	✓	✓	✓	? (opportunity cost)	Allocation to growth assets is compromised - affordability reduces
Mortality risk	✗	✗	✓✓	✓	✓ (pillar 1)	Consumption scaled back to provide for later life longevity protection
Inflation risk	✓✓	✓	✓	✓	Earlier: ✓ Later: ✗	Allocation to growth assets may be compromised
Uncertain consumption	✗	✗	? (some life events)	✓	? (member adapts)	Large drawdowns raise risk of poor outcome
Insufficient contributions	✗	? (raise returns)	✗	✓	? (back-end load)	Investment returns missed

Scene 7

March 2065

[Ending #1 – Oliver Twist version]



[Todd is in the bar, hunched over his drink. Darius enters, sees Todd and shuffles over to him]

Darius:

“Todd? Todd! I haven’t seen you in decades. Wow, you still come here?”

Todd:

“Sure, why not?”

Darius:

“So how’s life been treating you all these years?”

Todd [unenthusiastically]:

“Yeah good. Money always tight though.”

Darius:

“Not so many new cars and expensive vacations now huh?”

Todd:

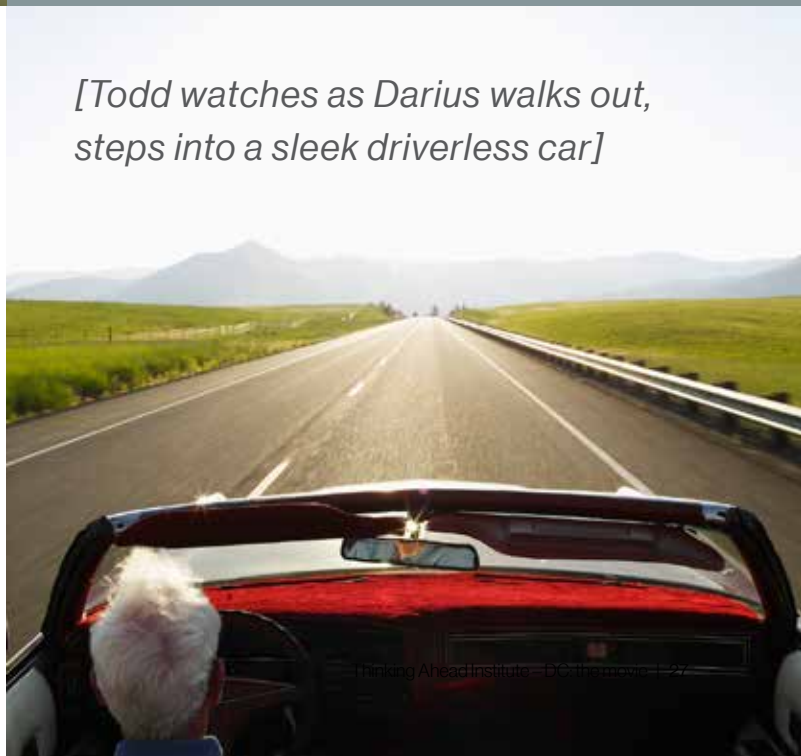
“Not really. And I wish I had something to give the grandkids to help set them up, you know. But it’s hard enough managing day to day.”

[Darius shrugs, imperceptibly shakes his head]

Darius:

“Well good to see you, good luck Todd.”

[Todd watches as Darius walks out, steps into a sleek driverless car]





Scene 8

March 2065

[The 86-year old Alice is at home. She looks satisfied. She smiles as she thinks back to a board meeting way back in 2019 which was to make her a leading light in pensions]

Alice:

“My central argument to you, my board, is that **DC 1.0 should be consigned to the dustbin of history.**”

DC 1.0’s objective is to maximise a member’s capital value at retirement. This objective has many flaws:

- Investment risk dominates
- There is a distinct break between accumulation to retirement within the scheme and discretionary drawdown post-retirement
- The investment strategy reduces exposure to growth assets and switches into bonds and cash as member approaches retirement thus limiting members’ longer-term exposures to growth assets
- The attempt to control volatility of capital value in the approach to retirement creates a potential mismatch between assets and liabilities.”

“Frankly, we are more likely to lose the assets at point of retirement if we don’t have a market-leading solution for the retirement phase.

Only by going beyond DC 1.0 can we improve member outcomes.

Instead of the current investment strategy of diversified growth exposure, phasing into a combination of cash and bonds as member nears retirement, we could invest with an awareness of a member’s funding level progression, a dynamic function of financial capital, human capital and the liability profile. **This is akin to following a funding level glide path.**

Then there’s the transition to drawdown. At the moment, the DC journey, as far as our involvement is concerned, stops at retirement. Members are then left to decide how to deploy financial capital to meet their consumption needs. We could instead offer **a fully integrated post-retirement solution, which systematically converts financial capital into income.** While the member is not obligated to follow this path, a well-conceived solution that takes account of a member’s funding level will be suitable for most.”



“The success metrics should change. They are currently expressed in terms of investment returns relative to a target of CPI+ and relative to a peer group of other funds. We could **re-define them in terms of the likelihood of members achieving retirement objectives.**”

Finally, communication with members can be so much more relevant. We currently report on time-weighted returns and members’ projected lump sums at retirement. We could **communicate instead in terms of progress towards the funding objective.**

But even these changes are not a complete fix. After all, no member looks like a stylised profile: the typical DC plan has partial information on a member’s circumstances; only has access to part of the member’s assets; and typically is only involved in part of the member’s journey. We must start to plan for the day when we can move to DC 3.0.

This may sound radical, but I see a parallel with funding for defined benefit (DB) liability cashflows. This means funding income-generating capacity and benchmarking relative to target income in retirement. It means full integration between accumulation and drawdown, allowance for idiosyncratic patterns of income drawdown and **focus on whole-of-life money-weighted return.**”



Board member [angrily]:
“You’re trying to re-create a DB fund here. Your strategy of concentrating on future cashflows rather than on growing assets is DB in disguise. It won’t work.”

Alice [remaining calm]:
“DB and DC essentially have the same objective, so I would argue that **well-developed techniques from DB can be re-purposed for DC.** The key is to have a clearly-defined cashflow profile for each member or cohort, and a goal-based approach to achieve targeted cashflows.

Contributions will remain largely fixed (as a proportion of salary), **so when investment outcomes vary – as they will – that will mean that the level of income we can provide will change.** It is therefore very much NOT like DB. But we would be positioning ourselves to be more helpful for members – by providing them with what they need.”

[Board members look at her doubtfully]

Alice:
“Think of it this way. **This is not just a big investment fund. We’re entering into a social contract.**”

[The mood starts to change]

“DB plans failed, arguably because fiduciaries and sponsors abused the social capital that facilitated inter-generational risk transfer. Having been burnt by the experience of DB, there is now insufficient social capital to allow the inter-generational risk transfer needed to smooth returns and pool risks in DC.

Take the Dutch system where there is an implicit social contract for risk sharing between members and employers and across generations of members. Members were willing to accept the curtailment of inflation-indexing following poor market returns.”

Board member:

“This whole thing is starting to look a bit paternalistic. Why would we do any of this? We make money by delivering better performance and better client service than our competitors. Social contracts and post-retirement income just don’t factor into our success.”

Alice:

“With respect, paternalism is pretty much a given these days. Among asset owners and asset managers, 75% believe that DC fiduciaries should act paternalistically on behalf of members. **We are paid to be experts in these areas, so pushing decisions on to ill-equipped members could be**

seen as a dereliction of duty. Look at these poll results of asset owners and managers:

There are harder questions here – and we should agree where ownership of them lies: with you, the board, with me as CEO; or jointly between us?”

Board member [warily]:

“Go on.”

Alice:

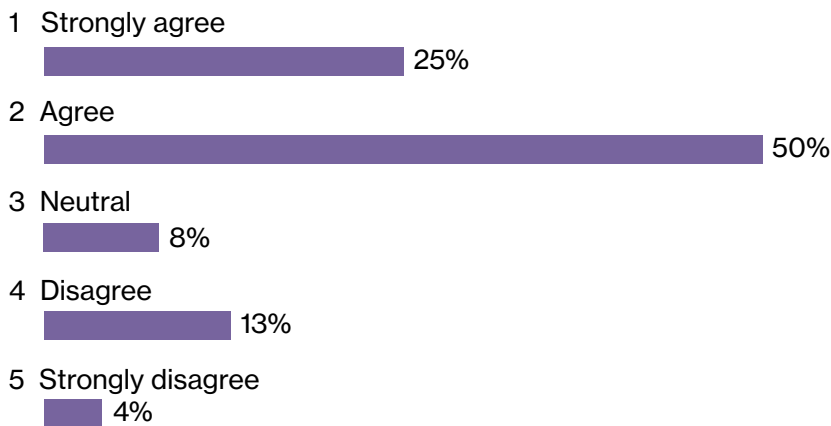
“Number 1, **is the primary DC fiduciary duty to the majority of members, or to the worst-case member?** How will society and history – not to mention politicians and regulators - judge us if we leave the worst-placed members behind?”

“Number 2, **how should we communicate different outcomes to different generations of members?**


It may be increasingly unacceptable that different members experience different outcomes. We know that DB’s inter-generational risk-sharing was both its strength and, later, its weakness. No-one these days is going to give the next generation something they believe is their right. People will say their parents managed fine on less, their children can too.

My big point is that **there is not enough social capital to allow inter-generational smoothing, or risk transfer, in DC.**”

Figure 9 – DC fiduciaries should actively manage the risk of member mission failure on behalf of the member (paternalism)



Source: Thinking Ahead Institute London roundtable, 9 November 2017 | 24 responses



We need to think, we need to be brave, we need to communicate. It's up to us, no-one else is going to do it....”

[Alice pauses, looks around the table]

Alice:

“And now I have a question for you, my board. Assuming you agree with my vision for the future, how are you going to support me and hold me to account, as we try to meet difficult objectives? We may not get this right. Equally, if we are to get close to getting this right, you must push me, and hold both me and my team to account. We will need to take risks, so we will need your protection too. It will be a tough act to pull off.

Let me put it another way: we have established that the objective is to generate a stream of retirement cashflows and that we should be paternalistic in

how we go about it. But we have also agreed that we are contribution takers and that the level of cash we generate from these contribution streams will vary through time. The affordability of replicating a fully-indexed, guaranteed DB pension with a 67% replacement ratio is a concern – it requires a contribution rate of around 40%, probably higher. No one is going to pay that in DC. So the inevitable variation in income levels will be around a lower average.

We need to think, we need to be brave, we need to communicate. It's up to us, no-one else is going to do it....”

[Fades to black]

An underwater photograph of a young child swimming in a pool. The child is smiling and has their arms outstretched. The water is clear and blue, with light filtering through from above. The pool's tiled edge is visible in the background.

Scene 9

March 2065:

Todd's alternative ending

[Camera pans around Todd's garden. A butler serves drinks to his family and friends. He laughs as he plays with his great-grandchildren in his swimming pool. Upbeat music plays. Fades to black.]

THE END

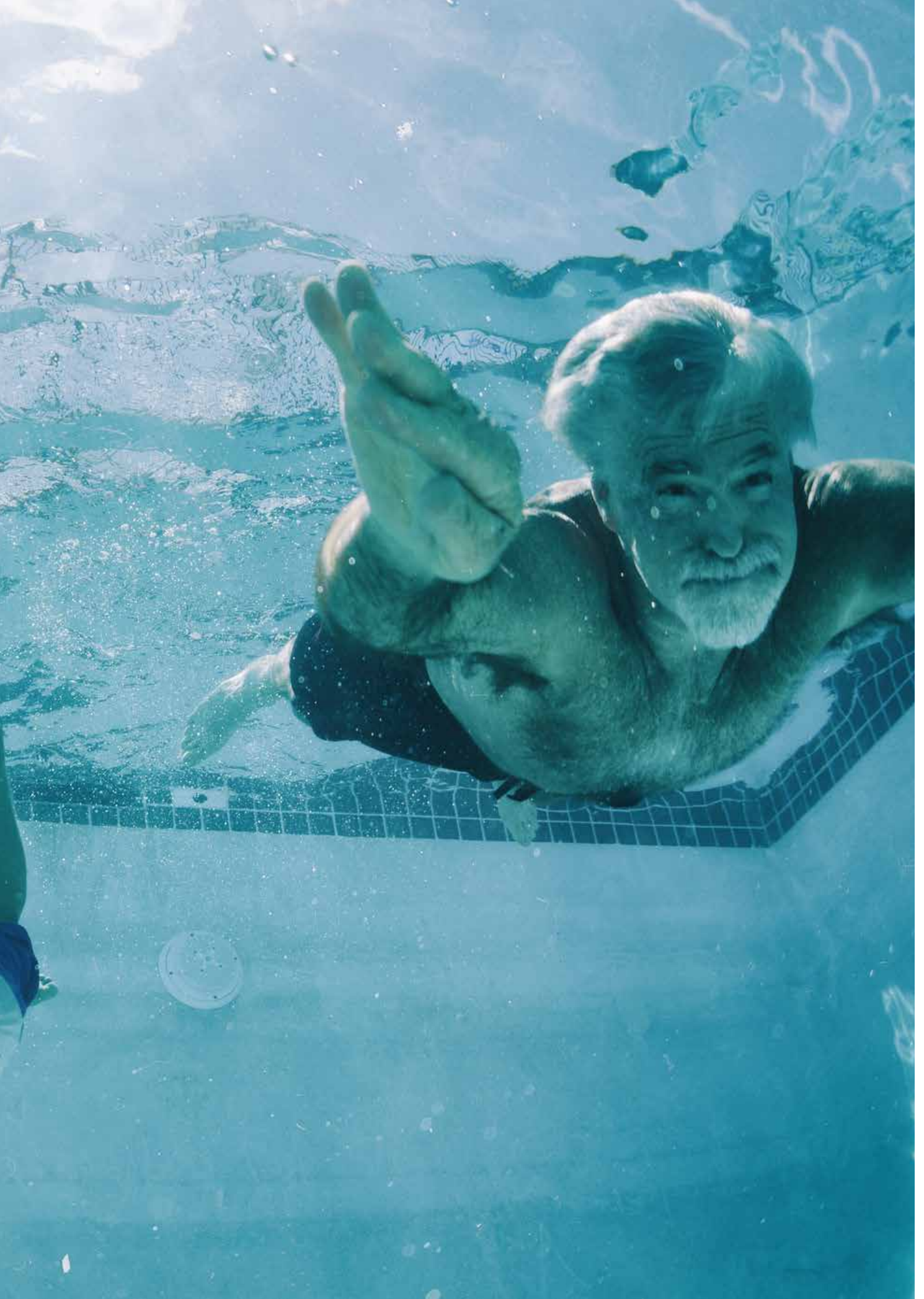
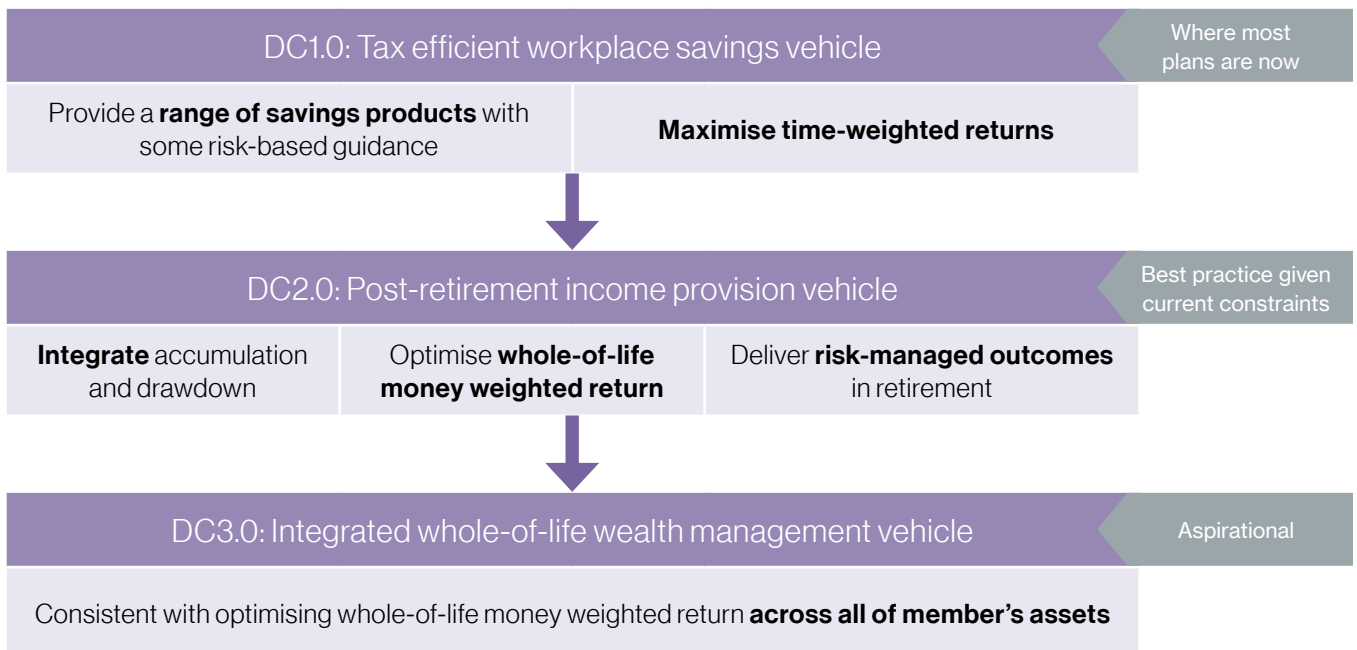




Figure 10 – Levels of ambition for a DC plan





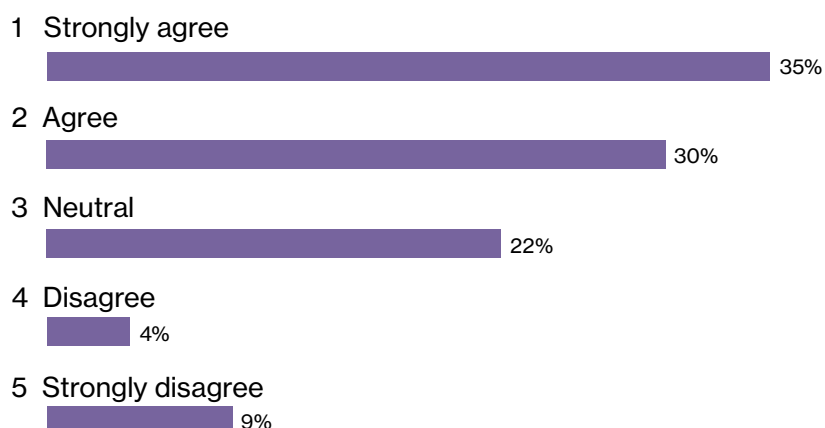
The paper inspires him. He decides he must, at minimum, be aiming for DC 2.0. But in order to aim at DC 2.0, things need to change. A key change is an improvement in the management of the risks that relate to retirement cashflows. He decides he must be able to give members access to superior financial knowledge, the ability to pool risks and harvest economies of scale, and exploit economies of scope.

Fahad can clearly make the current plan better if he switches resource from DB to DC – he can target the investment effort at the right goals for a start. Thinking about insurance and longevity risk would be a whole new project, but maybe he could find like-minded plans to

collaborate with. As for the whole-of-life angle, he will need to go to executive management – and they may need to go to the board – as on the face of it, there is little incentive for the corporate to care once someone has left employment. But doing the right thing would be compatible with the corporate culture. The alternative is to roll the DC plan into a mastertrust (Alice's?) and say goodbye to his valued colleagues. Clearly the mastertrust has better economies of scale and scope. Tough decisions have to be made.

He decides to commission a small-scale poll among pension professionals to help with his decision. The responses are shown in figure 11, below.

Figure 11 – Multi-employer pension delivery organisations (PDOs) are better than single-employer-sponsored DC plans



Source: Thinking Ahead Institute London roundtable, 9 November 2017 | 23 responses

At a gut level, he doesn't like what his instincts and the poll are telling him - not because he can't see the logic, but because he is human and his colleagues matter to him. But the mastertrust solution makes sense. It does have the considerable advantage of aligning member and sponsor interests. He jots down his thoughts on alignment:

- How should my DC plan be structured to maximise the chance of achieving its purpose?
- Arguably NOT as a single employer plan, where the trust that holds members' assets is closely linked to the sponsor:
 - The plan is likely to be viewed by the corporate as a vehicle for members to accumulate wealth up to the point of retirement
 - There is limited incentive for corporate to take responsibility for members' decisions (and their repercussions) at the point of retirement (and especially even after leaving workforce) – which may negatively inform the structuring of the plan
 - Members are encouraged to take assets out at retirement, leading to discontinuity and difficulty in integrating accumulation and drawdown
- A bespoke, independent retirement vehicle has a better chance of meeting the purpose:

- The sole mission is to manage the delivery of satisfactory retirement and post-retirement outcomes for members
- An umbrella or mastertrust structure (which is cleanly separated from employers) is more able to deliver an integrated (whole-of-life) offering.

On the other hand, would a mastertrust care as deeply about member outcomes? Alice cares a lot, but maybe not all chief executives of mastertrusts do. Nevertheless, a mastertrust might be Fahad's only shot of graduating to DC 3.0, which is pretty much unthinkable in a plan with a single corporate sponsor.

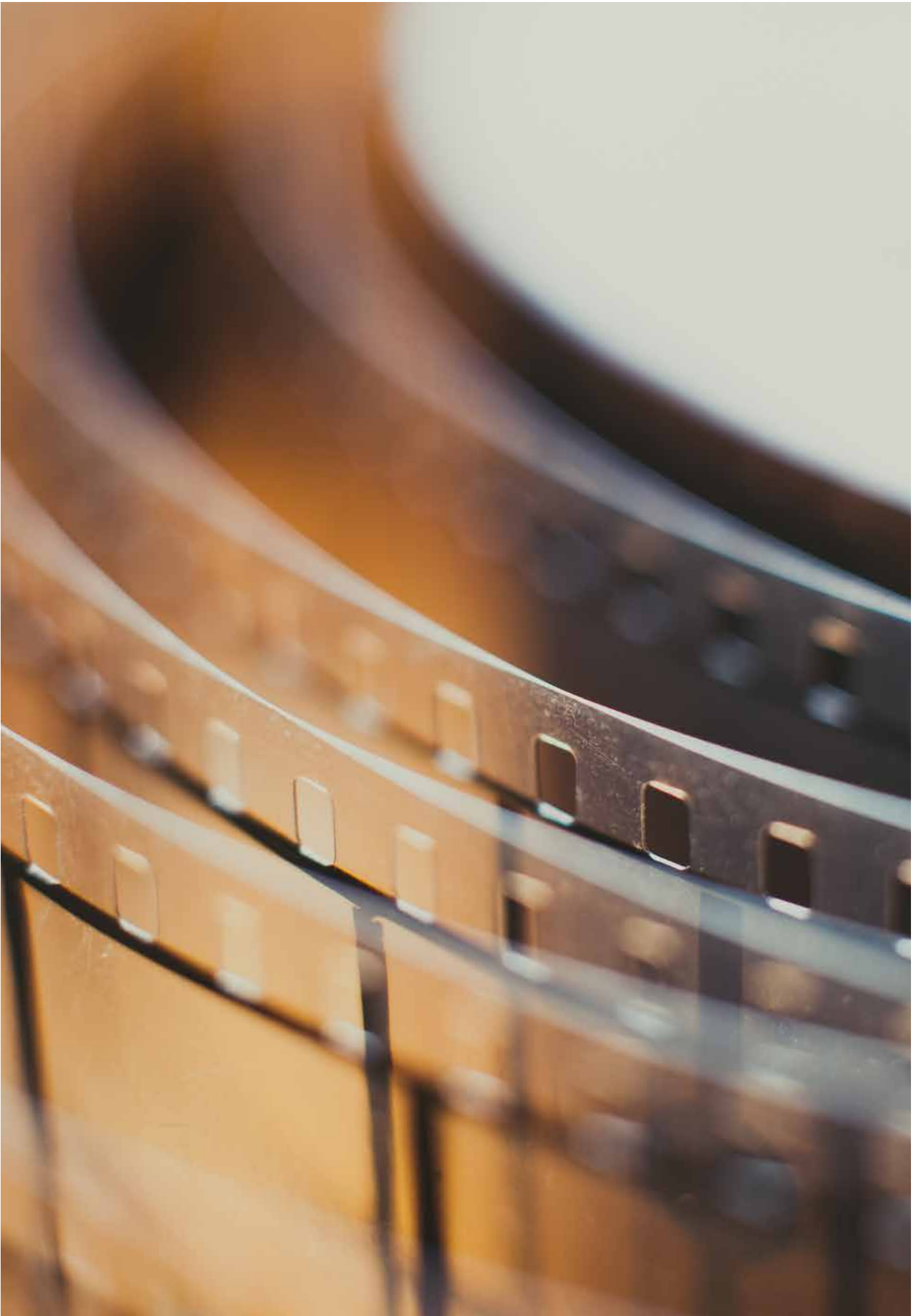
Only DC 3.0 is what he would call "delivering on purpose". It is the only model which can lead to a lifetime savings, investment, drawdown and insurance vehicle. He puts together a tickbox matrix, which brings home to him the desirability of DC 3.0 (figure 12, below).

I'd give my eye tooth to get that bottom row full of ticks, he thinks. But is it possible with my size of DC fund?

[Fahad scratches his scalp. Fades to black]

Figure 12 – Delivering on purpose - a lifetime savings, investment, drawdown and insurance vehicle

	Holistic personal balance sheet	Pension vehicle effective for				
		Savings	Investment	Drawdown	Insurance	Lifetime
DC1.0 Tax efficient workplace savings vehicle	X	✓	✓X	X	X	X
DC2.0 Post-retirement income provision vehicle	X	✓	✓	✓	?	?
DC3.0 Integrated whole-of-life wealth management vehicle	✓	✓	✓	✓	✓	✓



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The Thinking Ahead Institute

The Thinking Ahead Institute aims to:

- Build on the belief in the value and power of thought leadership to create positive change in the investment industry
- Find and connect people from all corners of the investment world and harnesses their ideas
- Work to bring those ideas to life for the benefit of the end saver.

At the Institute we identify tomorrow's problems and look for investment solutions, which, we strive to achieve through:

- A dynamic and collaborative research agenda that encourages strong member participation through dedicated working groups
- A global programme of events including seminars and key topic meetings, webinars and social events
- One-to-one meetings between Institute member organisations and senior representatives of the Thinking Ahead Group.

The solutions we collectively develop fall into three overlapping areas:

- Better investment strategies
- Better organisational effectiveness
- Enhanced societal legitimacy.

This framework guides the Institute research agenda and the desired output of each research project. The Thinking Ahead Group acts as the Institute's full-time executive. The Institute has a governance board comprising both Institute members and Thinking Ahead Group representatives.

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