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## Automating retirement advice

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**The customer problem**  
**Humans not widgets**  
**A modelling problem?**  
**The role of actuaries**

Expertise  
Sponsorship  
Thought leadership  
Progress  
Community  
Sessional Meetings  
Education  
Working parties  
Volunteering  
Research  
Shaping the future  
Networking  
Professional support  
Enterprise and risk  
Learned society  
Opportunity  
International profile  
Journals  
Supporting

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## Financial advice – a cottage industry

“The practices of advisers today in giving advice are the same as they were 20 years ago.”

*Michael Wall – Regional MD London, 1825*



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## Customers need advice at retirement

Customer demand for advice at retirement

- Flexibility and choice post-pension freedoms
- Risk of costly mistakes

Limited advice capacity in the market

- Industry dominated by manual processes which limit scale
- Very low ability to invest to industrialise processes
- Unaffordable for many (c£3k+ upfront)

Weak digital advice landscape, so far

- Generally accumulation focussed
- Informed choice, not advice
- Retirement advice limited, journeys lack engagement

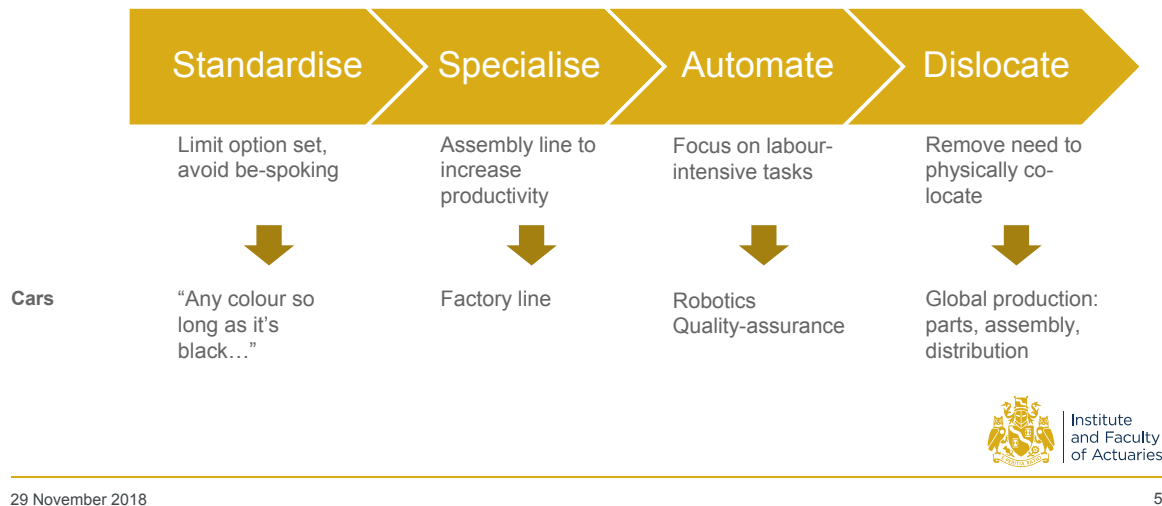
**Challenge to drive capacity and reduce cost**



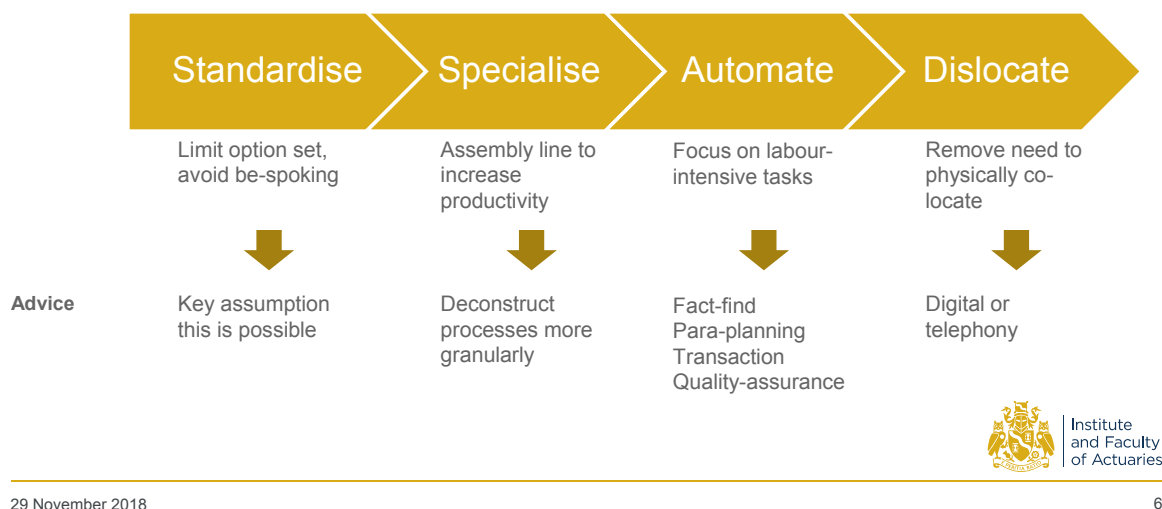
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## Industrialisation drives efficiency



## Industrialisation drives efficiency



## Memory game (find something to write with)

Bed

Rest

Awake

Tired

Dream

Wake

Snooze

Blanket

Doze

Slumber

Snore

Nap

Peace

Yawn

Drowsy



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## Do you remember?

Bed

Blanket

Sleep



*% of people who  
falsely  
remember*

Source: Roediger, H. & McDermott, K., (1995), 'Creating False Memories: Remembering Words Not Presented in Lists', *Journal of Experimental Psychology: Learning, Memory, and Cognition*, Vol. 21, No. 4, pp. 803-814.



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## Humans not widgets

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### This is a surprisingly difficult problem

Behavioural biases

Advice is high friction

Retirement solutions  
are complex

Regulatory environment  
evolved for face-to-face

Traditionally, the adviser compensates for these



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## Humans come with behavioural bias built-in



### Choice-overload

Decision making compromised with too much information

As actuaries, can we judge the right level?



### Over-confidence

Think they know more than they do (e.g. unrealistic downsizing)

How do we manage user disappointment?



### Mental accounting

Treat money differently because of its origin (e.g. pensions v savings, inheritance)



### Present Bias

Over-weighting immediate payoffs (e.g. caravan)



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## Motivating through friction

### Digital is different

### Making it easy (and look easy)

- Remove unnecessary steps (e.g. pre-populate what we know)
- Defer harder steps where possible (e.g. attitude to risk, terms of business etc)
- Treat attention as a scarce resource
  - Curse of knowledge
  - Remove visual clutter

### Value exchange

- Showing the solution as it develops

The screenshot shows a complex financial planning form. It includes sections for 'Current Assets / Liabilities', 'Source of Accumulated Wealth', and 'Additional Information / Changes to Circumstances'. The form is divided into multiple columns and rows, with various input fields and checkboxes. The 'Current Assets / Liabilities' section includes a table with columns for 'Client A', 'Client B', 'Total', and 'Total'. The 'Source of Accumulated Wealth' section includes checkboxes for 'Savings', 'Pensions', 'Sale of Business', 'Policy Claims / Maturity', 'Gifts', 'Dividend Settlement', 'Sale of Property', 'Savings', 'Compensation Award', 'Policy Claims / Maturity', 'Gifts', 'Dividend Settlement', 'Sale of Property', 'Savings', and 'Other provide details below'. The 'Additional Information / Changes to Circumstances' section includes a large text area for 'Please provide details of any previous and/or anticipated use above'.



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## Managing cognitive load

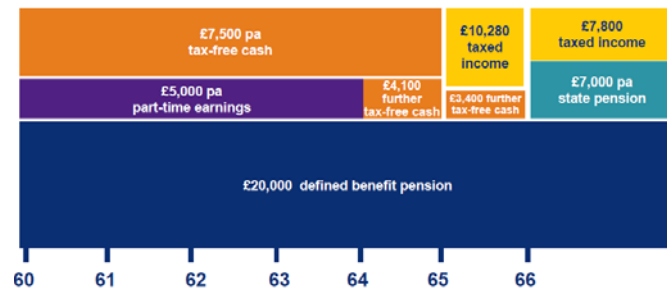
### Retirement advice is highly complex

- Interaction between pensions, savings, other incomes
- Annuity v drawdown

### Key principles

- Story telling – smaller steps, just-in-time
- Manage working memory
- Summarise and repeat

Test, test, test...



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## Advice rules have evolved for face to face

Supporting the client  
through the fact-find

- When is this “leading the witness”?

Advice v guidance  
perimeter

- Value exchange => show the “solution” as it develops
- When does this become advice?

Experience & knowledge

- How to ensure client has “the necessary experience and knowledge in order to understand the risks”?

Vulnerability

- How to assess digitally?



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## Digital first or digital only?

### Machines good at:

- Hard sums - quickly
- Drawing pictures, interactivity
- Following procedures

### Humans good at:

- Sense-checking
- Explaining and assessing comprehension (& vulnerability)
- Creating rapport, encouraging & motivating



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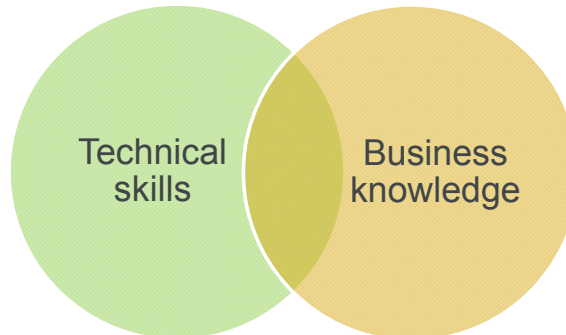
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## Modelling – Anything new?

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## Modelling – Do actuaries have the skills?



### Know what you are trying to model

- Do you have the right skillset?
- Advisers aren't normally good modellers and modellers don't usually know anything about giving financial advice



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## Modelling – The Adviser's Craft



### Know what you are trying to model

- The adviser's craft – Is the process well defined and complete before automation?
- Advice is often run as a bespoke service



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## Modelling – The rules remain the same

Modelling needs to keep the significant features of real life and simplify everything else:

### Know the key drivers

- Focus on the big things
- Here – tax / source of income, time horizon, fund choice, fees

### Know your simplifications

- Approximate where necessary, check simplifications are not material
- Here – time steps, mortality

### Know when the model breaks down

- Fail out when answers are wrong
- Warnings when answers look odd



### Model Risk Policy

- Do you have one? Do you apply it here?



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## Back to Humans

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## Data Input by Humans

### Customer don't know what they have

- Data collection was always difficult pre-automation – but fees were high and processes very manual
- We could repeat that process (or in short term at least)
- Some processes will translate (e.g. where did you work?)
- We are driving efficiency through industrialisation – so need a new process
- Education likely to play a big role



### Customer don't know what they want

- Does the customer understand what they want?
- We are experts and need to help
- Are you in the customer's world, helping them in their own mind set?



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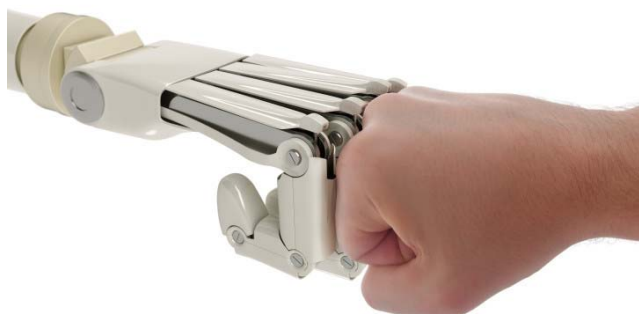
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## Sense Checking Data Inputs

### This is hard!!

Human are really good at sense checking data. How do you do it when you remove the humans?



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## Sense Checking – An Example

### Single male customer

58 years old	£25k salary	£500k house
£500k pension	£150k savings	No debt
High expenses	Expensive car	Swiss watch

- Assets and lifestyle look too big relative to salary!

### Human adviser would have a conversation?

- Divorce?
- Partially retired, previously had much bigger salary?
- Inheritance?
- Lottery win?



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## Sense Checking Data Inputs by Machine

Understand all relevant data relationships

- There are many data relationships (salary, assets, DB pensions, house value, mortgage value)
- Noting – events like divorce or spouse's death can throw them out

Simple benchmarks

- Population data and research may be relevant to set benchmarks

Hard & soft limits

- How do you replicate "that doesn't feel right?"
- Need to decide how limits should be applied in an online environment
- Hard fail-outs or "are you sure?"

Do humans continue to play a role?



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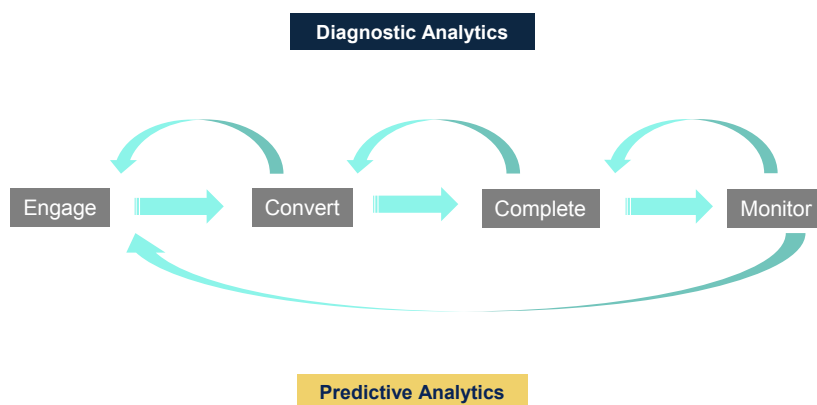


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## Utilising Data Analysis

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### Data Analytic – Flow



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## Data Analytics

Automation should improve the accessibility and quality of data. How does that help?

### Accessible Data

- Access to the right data is crucial
- New data feeds and data storage are probably required

### Predicting Behaviour & Problems

- Guess and learn
- Test with 'real' people as you develop
- Keep analysing what real customers do when live
- Constantly re-cycling learns
- AI or 'human intelligence'?

### Example

- Analyse customer data to select most likely to take up offer and complete



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## The Future

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## The Future – More Automation?

### More data accessible real-time

- Pensions dashboard – and beyond
- Open Banking
- Voice recognition

### Acceptability of online by next generation

- Engagement online likely to increase with passage of time
- Speed, cost / competition and convenience will become more dominant
- May hit the point where people prefer and trust online more



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## The Role of the Actuary

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## The Actuary of the Future

### Core Modelling Skillset

- A financial model is at the heart of digital advice
- Traditional modelling techniques apply

### Data Science

- Data analysis is key to controls and predictive models

### Behavioural Finance

- Can actuaries own this space?

### Building Business Knowledge

- Few actuaries have the necessary business knowledge to give personal financial advice
- But we are good learners!



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# Questions

# Comments

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