Automating retirement advice
John Atherton & Andy Dunbar

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

Customers need 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 (£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
Industrialisation drives efficiency

**Standardise**
Limit option set, avoid be-spoking

**Specialise**
Assembly line to increase productivity

**Automate**
Focus on labour-intensive tasks

**Dislocate**
Remove need to physically co-locate

-Cars
"Any colour so long as it's black…"

Factory line
Robotics Quality-assurance
Global production: parts, assembly, distribution

Key assumption this is possible
Deconstruct processes more granularly
Fact-find Para-planning Transaction Quality-assurance
Digital or telephony

Advice

Institute and Faculty of Actuaries
Memory game (find something to write with)

<table>
<thead>
<tr>
<th>Bed</th>
<th>Doze</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>Slumber</td>
</tr>
<tr>
<td>Awake</td>
<td>Snore</td>
</tr>
<tr>
<td>Tired</td>
<td>Nap</td>
</tr>
<tr>
<td>Dream</td>
<td>Peace</td>
</tr>
<tr>
<td>Wake</td>
<td>Yawn</td>
</tr>
<tr>
<td>Snooze</td>
<td>Drowsy</td>
</tr>
<tr>
<td>Blanket</td>
<td></td>
</tr>
</tbody>
</table>

Do you remember?

Bed
Blanket
Sleep

Humans not widgets

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
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 vs savings, inheritance)

**Present Bias**
Over-weighting immediate payoffs (e.g. caravan)

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
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…

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?
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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**Discovery meeting**
**Fact-find**
**Letters of authority**
**Para-planning**
**Advice meeting**
**Suitability letter**
**Transaction**

**Digital**

**Human**

**Digital**

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Modelling – Anything new?
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

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
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
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?

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?
Sense Checking – An Example

Single male customer

<table>
<thead>
<tr>
<th>58 years old</th>
<th>£25k salary</th>
<th>£500k house</th>
</tr>
</thead>
<tbody>
<tr>
<td>£500k pension</td>
<td>£150k savings</td>
<td>No debt</td>
</tr>
<tr>
<td>High expenses</td>
<td>Expensive car</td>
<td>Swiss watch</td>
</tr>
</tbody>
</table>

- 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?

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?
Utilising Data Analysis

Data Analytic – Flow

Diagnostic Analytics

Engage → Convert → Complete → Monitor

Predictive Analytics
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

The Future
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

The Role of the Actuary
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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