# A nudge suite for mid-term financial savings.

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February 2020

# Executive Summary

A nudge suite designed to facilitate mid-term savings behaviour.

Interventions prompted via mobile phone to anticipate, remind and encourage around two key monthly debit opportunities. Implementation and goals are calibrated to the saver's circumstances.

Service design is optimised across a number of psychological models including the cognitive behavioural approach and behavioural economics.

The in-market presence of a nudge suite for study behaviours demonstrates the commercial potential for a financial services product along similar lines.

This is a niche product, however it is also an opportunity for visibility as a proof point of good conduct to the broader community.

# Savings Mechanic

Delivered over a yearly cycle.

Activated around monthly goals; you receive two fixed tent-pole messages via mobile phone - a first opportunity to reach the target and a top-up opportunity. Each action you carry out will be responded to, ideally with encouragement.

Scattered around these fixed moments will be other messaging; further opportunities and reminders.

In November, the saver is prompted with the total amount of their savings.

They are invited to continue into the next year, an offer made more enticing by the program's two month break over the Christmas period.

9:41

Hi Adrian, you can access $2,578

This month your target is $1,530

Do it

Change it     Snooze
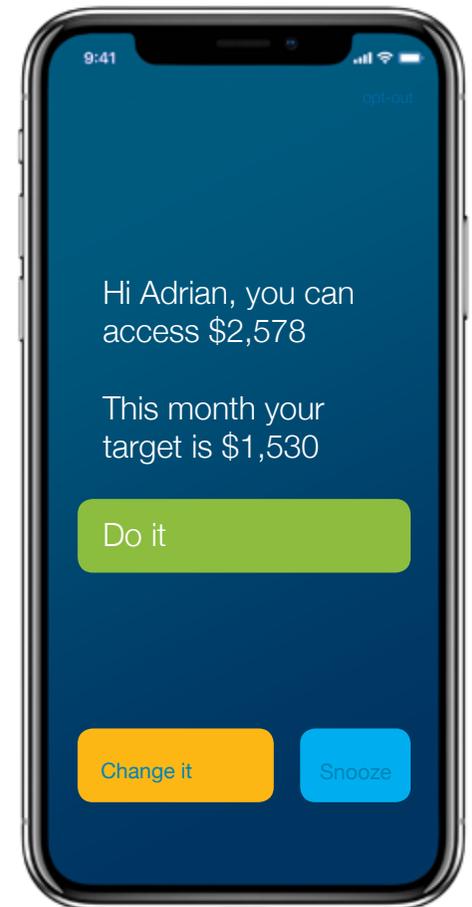
# Primary Behavioural Drivers

## Implementation Intentions

It's easier to set a goal than it is to reach it.

The implementation intention has been identified as a key factor for goal attainment - moments during the savings continuum that can be assisted by an intervention.

By optimising these interventions behaviourally, we can help overcome some of the significant hurdles in reaching a goal.

## Goal Setting

Setting higher goals can lead to higher performance.
But a goal set too high will likely result in disengagement.

A goal range will allow us to better manage expectations.

The upper bound will be framed as the stretch goal,
and the lower bound within easy reach of the participant.

**Implementation intentions.
Strong effects for simple plans.**

When people encounter problems in translating their goals into actions (e.g. failing to get started, becoming distracted or falling into bad habits), they may strategically call on automatic processes in an attempt to secure goal attainment. This can be achieved by plans in the form of implementation intentions that link anticipated critical situations to goal-directed responses. (*"Whenever situation x arises, I will initiate the goal-directed response y."*). Implementation intentions delegate the control of the goal-directed responses to anticipated situational cues, which (when actually encountered) elicit these responses automatically. A program of research demonstrates that implementation intentions further the attainment of goals, and reveal the underlying process.

Gollwitzer, P.; The American Psychologist 54 (1999), 7. pp 493-503. Cited by 5036.

# Supplementary Behavioural Drivers

## Cognitive Behavioural

The cognitive behavioural approach is a model of therapy that lays out the maladaptive behaviour and underlying triggers to the individual, then works with the individual through pathways that can assist overcoming these triggers.

With years of efficacy demonstrated in a clinical mental-health context, the cognitive behavioural approach can be applied for milder behavioural change - such as inherent biases - and informs the overall architecture of this nudge suite.

## Behavioural Economics

Daniel Kahneman's System 1 and 2 theory of automatic and conscious processing encapsulates a diverse set of biases, defaults and differentials describing consumer decision-making and behaviour. These components, generally identified under the term behavioural economics, can be influenced directly via nudging - small interventions that guide the individual away from automatically-driven undesired outcomes and towards the desired.

**Loss Aversion**
A differential that suggests our emotional experience of financial loss can be twice the magnitude as that of a commensurately-sized gain. We can look to this general principle and apply this understanding within our nudge suite.

A method of mitigating the perception of failure to meet goals that leads to disengagement.

**Sunk Cost**
Nominally described as a fallacy, this bias suggests our resistance to desired behaviours sits in proportion to the cognitive investment made in repeated undesired behaviours. This resistance can also be leveraged from an investment in desired behaviours.

Within our nudge suite, this would be used most directly when the individual presents disengagment.

## Conscientiousness

The Five-Factor Model of Personality takes a relatively holisitic approach to its mapping, and comprises dimensions of extraversion, agreeableness, neuroticism, openness-to-experience and conscientiousness.

## Locus of Control

An external locus suggests the individual attributes outside factors to their behaviour, an internal locus attributes that from within. We want to keep our language and UX directed towards an internal locus.

## Operant Conditioning

A variation of classical conditional, using an instrumental approach. Informs our nudge suite mostly in determining when to use regular or irregular scheduling for our interventions.

# The conversational style

Talk across to them, not down at them.
Simple language, not too try-hard.

No logos, no callouts.
They will already know who it's from and what it's about.

And how important it is to them.

No extraneous information is presented, a live total and a single target figure. The accumulated savings figure will not appear until the month's debit opportunites are completed - keeping the focus only on the monthly target for as long as possible.
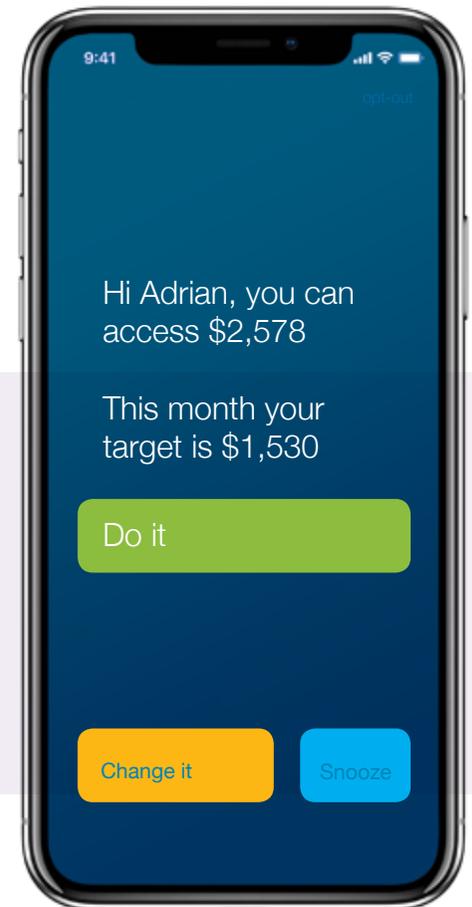
Simple architecture shown of button hierarchy. Primary green button sits just below the text, orange will always sit bottom left and will be the option to change the default.

Target figures are not highlighted to stand out, framing the language graphically as conversational as possible.

The whole screen engages the phone upon unlocking.

Snooze will always appear bottom right. Engaging this button will lead to a bit of patience, then a world of challenge.

Opt-out sits ghosted in top right corner and is present at every interface. Saver will have been notified of its location at induction.

9:41 opt-out

Hi Adrian, you can access $2,578

This month your target is $1,530

Do it

Change it          Snooze

# Attentuated Induction

A long introduction to the program.

A week or two of thought-prompts taking you through what a typical next year could entail. Then we help you set the goal range and show you what to expect in our messaging.

We need to make the saver value their participation in the program, so the investment in time and cognitive effort should build a hedge against opting out.

The relatively complex process also acts as a filter;
if they're not able to engage at the level set by this induction, then this program is not for them.
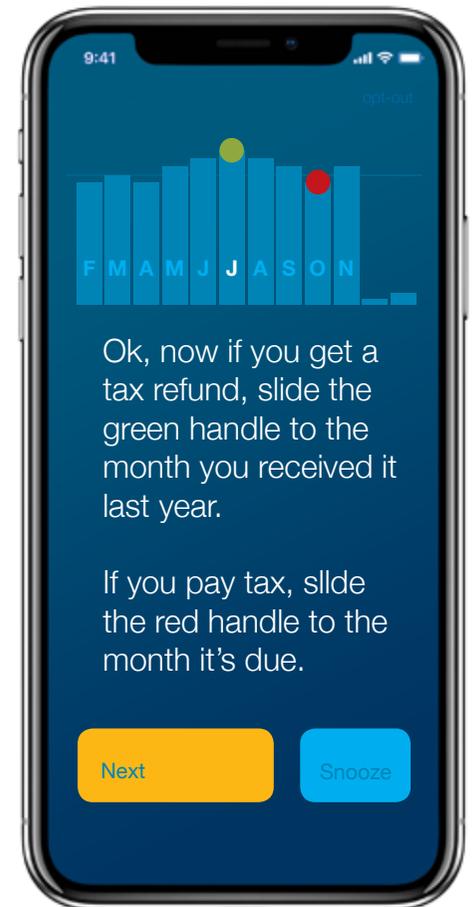
# Goal Setting

Set a range, not a specific number.

We ask for an absolute possible amount that could saved over twelve months, then take them through to a more realistic number via the expected and unexpected life experiences that might happen to them in any given year.

These two figures give us the upper and lower bounds of their goal range.

Throughout the program, the only target presented in the interface is calculated on the absolute figure - our stretch goal.

The lower bound amount is never shown, but we use that to be positive and encouraging with any transfer made over that minimum figure.

We move into negative territory only when the lower bound is breached. And if this under-performance becomes habitual, we will intervene to reconsider their involvement in the program.

9:41

Bummer.
The fridge just crapped out.

Take $750 off yesterday's total.

OK    Snooze
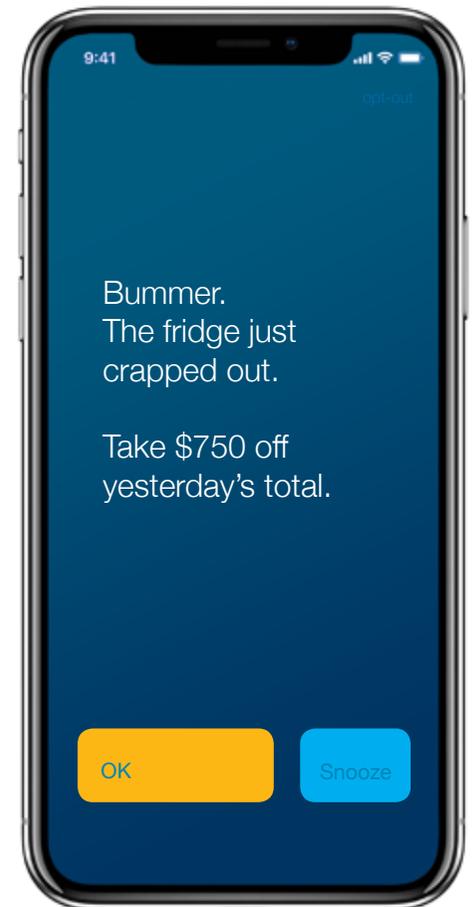
# Key Prompt

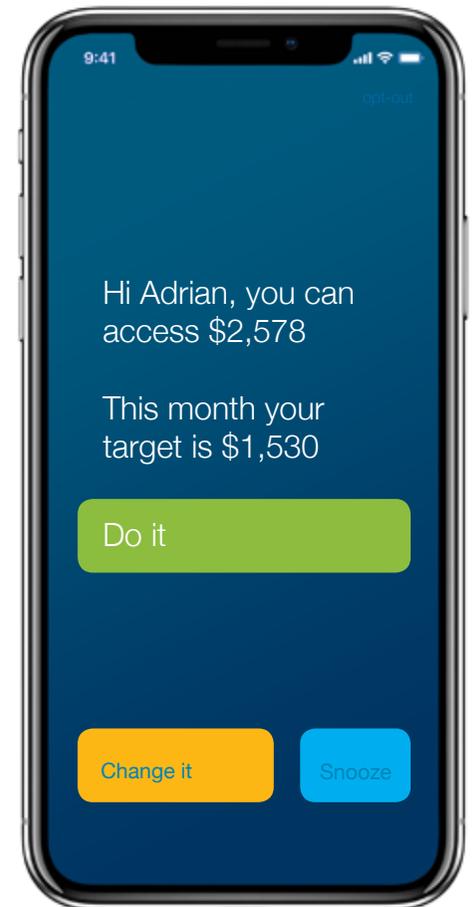The most important message of the month's cycle.

Received at a time of day you've told us
is best for you to make this decision.

On the day after you got paid.

Close your eyes and just press the big green button.

Most will probably change the amount instead.

Good.

# Followup Prompt

Two weeks later you get the opportunity to
top-up against your monthly target.

And that's it.

No magic, no coercion.

As they've already been told,
they have to do all the hard stuff.

We're just helping them
by make a significant decision easier.

Hi Adrian, you can
access $1,254

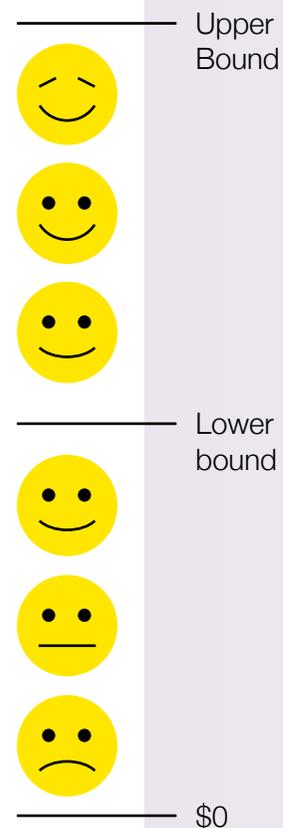$838 to reach this
month's target.

Do it

Change it    Snooze
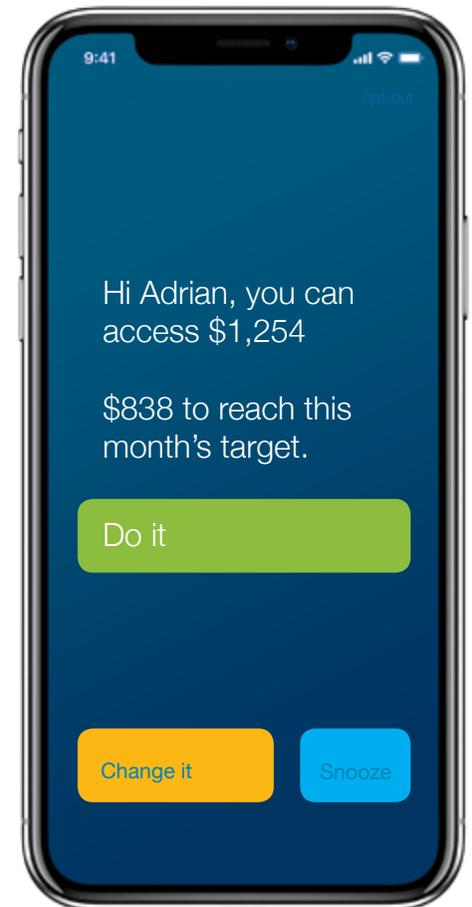
# Feedback

And we're doing our best to help.

We'll be positive as often as possible.

Even when they're not doing
as well as maybe they should be.

Because really, we're encouraging savings,
not so much saving a specific amount.

So long as an ongoing commitment
is being made, the amount itself
is relatively moot.

And we'll help them recognise that.

Upper
Bound

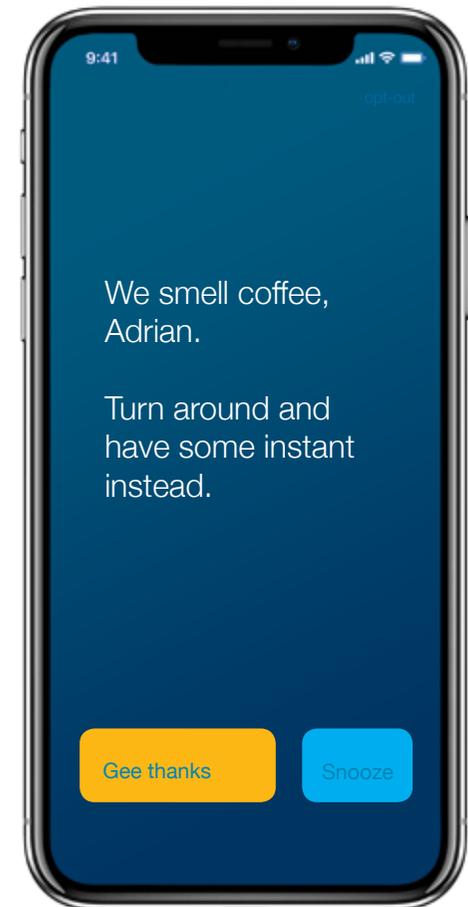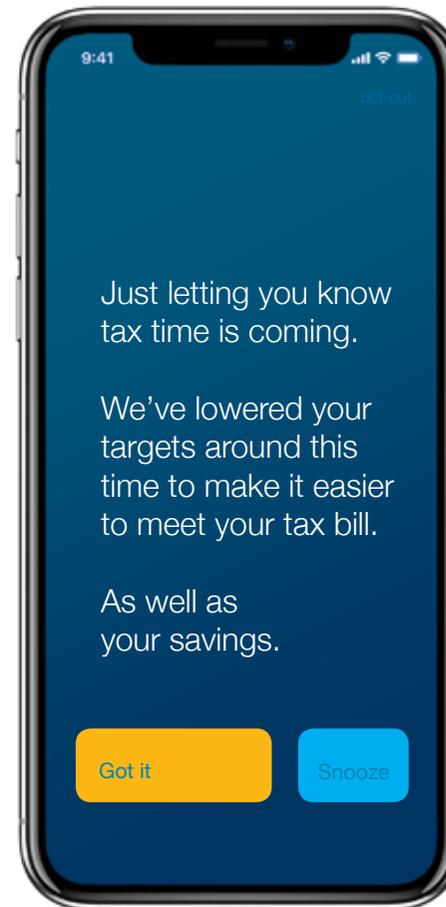Lower
bound

$0

9:41

Congrats Adrian.
You put away
$1,235 this month!

You've saved
$4,564 so far
this year.

Keep at it.

Yay for me          Snooze
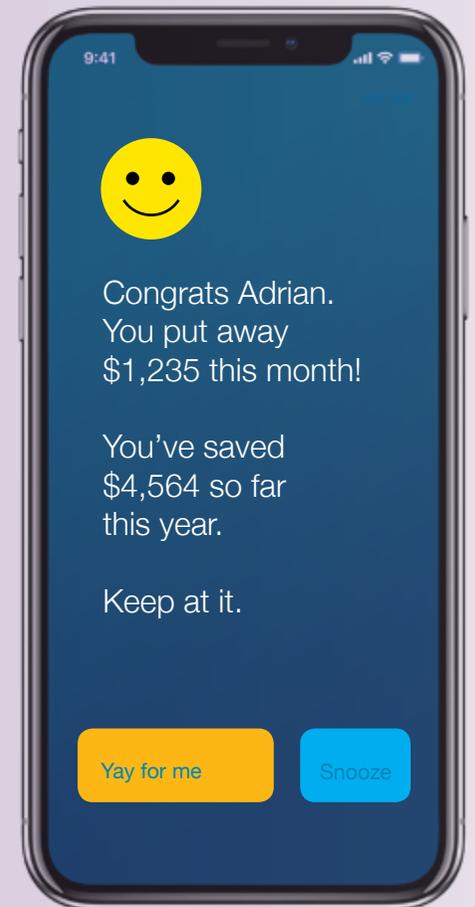
# Random Encounters

This screen needs to resonate
with importance.

We should therefore not squander our
cognitive capital with trite messaging.

Reminders sent occasionally and
sporadically, tailored to the saver and
relevant to the moment received.

Perhaps short bursts of high-frequency
activity, going deeper into gamification
to spur engagement.

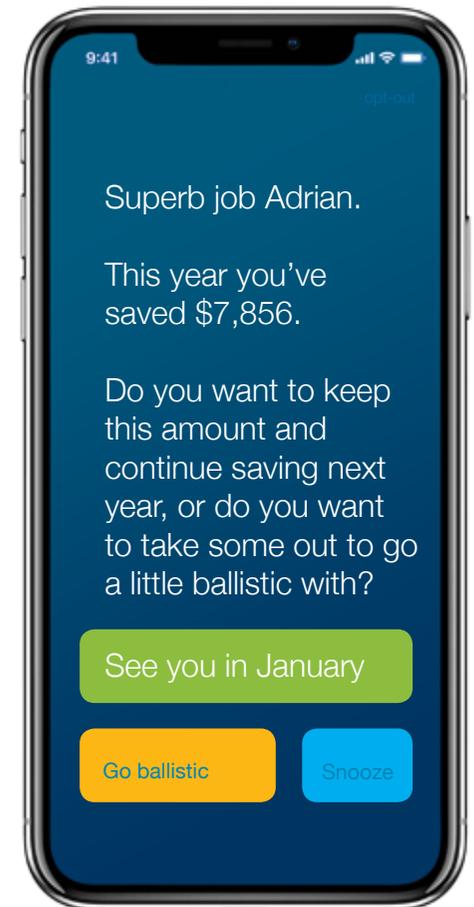Absolutely nothing that dilutes or
compromises our primacy.



9:41                           opt-out

Just letting you know
tax time is coming.

We've lowered your
targets around this
time to make it easier
to meet your tax bill.

As well as
your savings.

Got it          Snooze



9:41                           opt-out

We smell coffee,
Adrian.

Turn around and
have some instant
instead.

Gee thanks      Snooze

# November that year.

You really think we're going to let them go completely ballistic?

We will use the subsquent interfacing to guide them along two lines;

Not spending all of their savings.

And continuing the program into the next cycle.



9:41

Superb job Adrian.

This year you've saved $7,856.

Do you want to keep this amount and continue saving next year, or do you want to take some out to go a little ballistic with?

See you in January

Go ballistic

Snooze

# A reward

With sufficient numbers we can introduce
a social component to the program -
partly a reward for effort
and partly a debrief on their behaviours.

Like a magic show.
Hosted by Gustav Kuhn.

Using the social component
to reiterate aspects of the
behavioural change methodology
should also inject some freshness
into the product, hopefully
encouraging further engagement
into the next year's savings cycle.

This is about transparency.

About surprise sometimes.

But deception never.



**EXPERIENCING THE IMPOSSIBLE**

The Science of Magic

In Experiencing the Impossible, Gustav Kuhn examines the psychological processes that underpin our experience of magic. Kuhn, a psychologist and a magician, reveals the intriguing—and often unsettling—insights into the human mind that the scientific study of magic provides.

GUSTAV KUHN

# Overview of the Mechanic
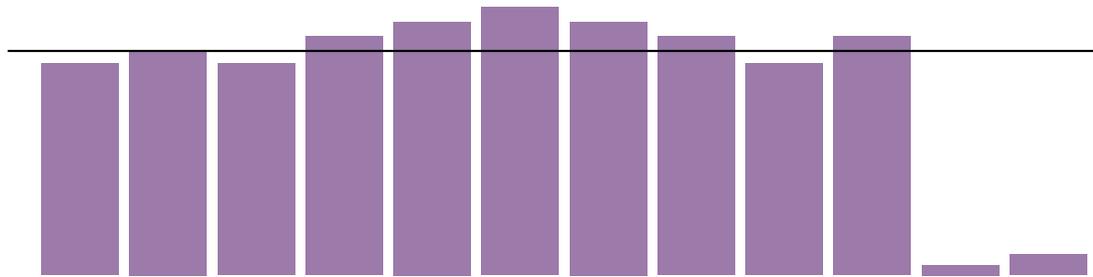


**Macro**

A yearly cycle with task compressed into 10 monthly segments allowing two months break around Christmas.

Mild variance in monthly target amounts determined by ebb and flow of financial year; i.e. tax time.

**Micro**

Two key prompts a month with one or two reminders. Occasional bursts of high frequency activity.

Mostly constrained to: meet target, catch-up, exceed, snooze and opt-out.

Frictionless key debit moments

Positive encouragement bias

Focused on goal setting

Providing implementation pathways

Linguistics at a granular level

Gamification to sustain interest

Experiential potential for social component

# The Yearning

The Barefoot Investor taps into a deep
societal desire for financial prudence.

He doesn't promise untold riches,
his analogue nudges and homilies help
people do the best with what they've got.

In a landscape where stagnant incomes
and the gig economy can feed anxiety.

His millions of readers comprise an
enormous potential pool of people who
want to save money rather than spend it.

# Human Centred

The Five-Factor Model of Personality is a stable predictor of behaviour, and the trait we're looking for is conscientiousness.

HR has used this modelling for employees, sometimes in proprietary form (NEO PI-R, HEXACO), but you may not have equivalent psychometric profiling of your customers.

However, we can look to the data for consumer habits.

And identify those who might save more than they spend.

The paper to the right describes the use of trait-optimised messaging via screen channels demonstrating greater efficacy to actual purchase. We can tailor our messaging specifically towards the conscientiousness trait to draw in the desired individuals to the program.

This is, of course, low hanging fruit.

But these people will form the core of the nudge suite, after which we can repurpose the mechanic to other dominant personality characteristics.

**Psychological targeting as an effective approach to digital mass persuasion**

Recent research shows that people's psychological characteristics can be accurately predicted from their digital footprints, such as their Facebook Likes or Tweets. Capitalizing on this form of psychological assessment from digital footprints, we test the effects of psychological persuasion on people's actual behavior in an ecologically valid setting. In three field experiments that reached over 3.5 million individuals with psychologically tailored advertising, we find that matching the content of persuasive appeals to individuals' psychological characteristics significantly altered their behavior as measured by clicks and purchases. Persuasive appeals that were matched to people's extraversion or openness-to-experience level resulted in up to 40% more clicks and up to 50% more purchases than their mismatching or unpersonalized counterparts. Our findings suggest that the application of psychological targeting makes it possible to influence the behavior of large groups of people by tailoring persuasive appeals to the psychological needs of the target audiences.

# Loyalty

For some this will become a learned behaviour.

Others will fall back into their old ways.

For others again, this can be a pathway
to owning their first home.

After a year or two of successful saving via this
product, we ask them if they want to save for a
home deposit using a specifically-designed
nudge suite.

This will be a harder financial ask,
but with a more tangible goal.

Plus, completion to our expectations
will lead to preferential rates and conditions
when taking out a mortgage with us.

Leveraging the far-distance for stickiness
in this middle-distance process.

## Open Data

The incoming open data provisions shed light on
another possible market entry-point; something that
actively uses a person's individual data for better
financial management.

Access to this personal data will spur interest within
a segment of the market for a product that can be
directly informed by these metrics

This interest will be met with a paucity of options
in-market to address this opportunity.

Our format allows for an augmented induction with
tools that process that raw data into key inputs for
a nudge suite - savings, cashflow management,
small business...

Not only will this be another opportunity for
stickiness within your own customer base,
it will also act as a magnet outside of it.

# Feasibility

The UK Behavioural Insights Team specialises in pro-social nudging.

Established as an adjunct to the Cameron government, it now spans six offices globally with employee ownership and is the most prominent of its type.

BIT is tasked with helping shape public policy via behavioural economics, and provides small nudges to Gov/NGO clients - simple word and sentence changes in comms such as rates payments and energy savings.

Since 2013, BIT has amassed hundreds of these small nudges, with efficacy proven via RCT testing and a large number repeat-replicated.

BIT is now commercialising composite nudge tools.

They market *Applied*, a task-specific recruitment process for minimising bias. It has private sector clients such a Hlilton Hotels and Group M, and is funded by venture capital.

They also have a product for individual users; *Promptable*.

*BIT has now run hundreds of trials and "reached the point where it's no longer a matter of supposition, as it was in 2010".*

*"We can now say with a high degree of confidence these models give you best policy,"*

Interview with David Halpern, founder and chair of the UK Behavioural Insights Team.

**The 'nudge unit': the experts that became a prime UK export.**
The Guardian, 10 Sep 2018

# The Model

*Promptable* is a series of nudges to help people with their study habits.
A set of simple SMS and email prompts over the duration of a semester.

The BIT has taken their hundreds of individual text-based studies,
and combined them into a more complex behavioural ecosystem.

This is, in effect, a bare-bones nudge suite.

Its foundational study scored 7-8% higher.
It cost them £5 per student to operationalise.

**Increasing attendance and attainment among adult students in the UK: Evidence from a field experiment**

In a large-scale field experiment, we use text message reminders to increase student attendance and attainment with UK government-sponsored literacy and numeracy programs for adults. High dropout rates present a major challenge in this context - in our data, approximately 25% of students stop attending within the first ten weeks. However, we find that our text intervention has a large and persistent effects on student attendance as well as literacy and numeracy performance on exams. Text meassges lead to a 4% increase in average attendance relative to the control group in the initial weeks after imnplemenetation. Using data from the full academic year, we find that these effects persist, showing a 7% increase over the full trial period, and 8% point increase in the likelihood of passing exams.

Raj Chande, Michael Luca, Michael Sanders, Xian-Zhi Soon, Oana Borcan, Netta Barak-Corren, Elizabeth Linos, Elspeth Kirkman and Sean Robinson.
April 20th, 2017



A: Full text schedule for study period by week

Figure 1: Examples of intervention texts by aim of text

Figure 4: Distribution of Attendance Rates
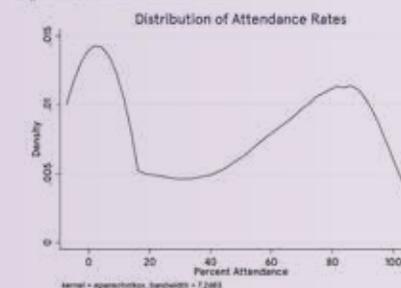
Figure 5: Distribution of Attendance Rates, by Treatment Condition

# In conclusion

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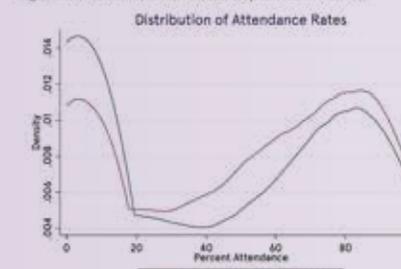
There is a wide gulf between attending a class
and committing a large amount of money.

Nevertheless, a nudge suite along these lines seems inevitable.

Whether or not it takes the form as outlined in this document,
this mechanism provides a credible first step in that direction.