Using the Nudge in Tax Compliance
Leveraging Behavioral Insights to Boost Tax Revenues
Deloitte Consulting LLP
**Agenda**

1. Introduction to Behavioral Economics & Nudges
2. Pilot Overview
3. Q&A
Nudge objectives

**Define target audience:**
Analyze internal processes to gauge which pool of tax payers will be targeted to change behavior

**Design communications:**
Create messages and letters tailored to the target audience with a different set of wording for testing effectiveness

**Outline implementation strategy and measure results:**
Once the messaging activities have been created, a definition on the process to implement the treatments, and measure its effectiveness, will be conducted
Introduction to Behavioral Economics ("Nudges")
Human judges are not merely worse than optimal regression equations; they are worse than almost any regression equation.

- Richard Nisbett and Lee Ross
A good human-centered design presupposes understanding *Humans*, not *Econs*

**Econs**

Economists assume that the **people** they study, so called **homo economicus**, or what I call Econs, are really smart. They know as much economics as the best economist. They **make perfect forecasts**, have **no self-control problems** and are complete jerks. They’ll steal your money if they can and get away with it.

— Richard Thaler

**Humans**

Most of the people I meet don’t have any of those qualities. They have **trouble balancing their checkbook** without a spreadsheet. They **eat too much and save too little**...

They’ll leave a tip at a restaurant even if they don’t plan to go back.

— Richard Thaler
The key foundational principles of behavioral economics

**People are faced with more decisions and information than we can consciously process.**
Our brains process information in two ways:
1) Using deliberate, logical thought; or
2) In an automatic fashion, without a lot of conscious thought
Most of our behavior is fast and automatic, relying on a myriad of cognitive shortcuts to reserve our deliberate processing for the most salient, non-routine, or novel situations.

**Much of our behavior is unconscious and in response to our surroundings.**
Because we rely so heavily on our automatic processing system, our actions and decisions are often conditioned by our environment – both our physical surroundings and things like advertising or elements of a task at hand, such as a form we must complete.

**Humans are social beings who care what others think and do.**
We go to lengths to match our behavior to those around us, and we act in ways to help present a positive self-image, especially when we believe others are watching.
Practical tools of behavioral insights

Considered together, these Behavioral Insights offer the perspective that much decision-making is influenced by a combination of individual, environmental, and social factors. The perspective offered by Behavioral Insights isn’t merely explanatory, but offers practical tools that can be applied to help influence behaviors by allowing us to work with, rather than against, human nature. For example:

**Individual**

Understanding that people are faced with more information than they can process underscores the importance of simplifying complex tasks, processes, and policies.

**Environmental and Design**

Drawing on the fact that much of behavior is shaped by our surroundings, prompts and cues can be built into websites and forms to guide behavior so that the desired choice is the easy choice.

**Social**

Recognizing the importance we place on our connection to others, we can motivate people to behave better by comparing their behavior to the behavior of others.
Behavioral nudging overview

So what is a Nudge?
Its a concept from behavioral science and economics that **steers people in particular direction** but that also allow them to preserve their freedom of choice and does not impose any significant material incentives.

Examples of Nudges

A **reminder** is a nudge

Also a **warning**

Examples of NOT Nudges

A **subsidy** in not a nudge

Nor is a **fine/jail** sentence

Application of Nudges

“Putting fruit at eye level counts as a nudge. Banning junk food does not.”

Impact of Nudges:

“Nudges specifically promise a “middle way”: they influence choices without coercing choice.”
Nudging is Design Thinking

Richard Thaler and Cass Sunstein, after reading “The Design of Everyday Things”, came up with the idea of designing policies for humans the same way Don Norman writes of designing things for humans.

Design **things** for humans

Design **policies** for humans

**Design considerations**

- Present bias
- Loss aversion
- Social proof
- Social physics
- Framing effects
- Status quo bias
- Mental accounting
- Cognitive load
- Pre-commitment
- Lotteries (overweighing small probabilities)
- Unit bias (“mindless eating”)
Nudges can have surprisingly large impacts to drive behavior

A color changing hand wash that drastically increased compliance among kids

- The unique **hand wash changes color** from white to green in just 10 sec the time it takes for Lifebuoy to deliver 99.9% germ protection.
- The **campaign hinged** on a series of specially-choreographed hand wash routines; **a sequence of ‘secret’ moves for kids** to pound & smash away bacteria and dirt.
- So far films have collected over 3 million views (exceeding the initial target of 500 thousand views)
And nudges can also be implemented to impact community

Copenhagen decreased litter by 46% through nudging

• In Copenhagen it is estimated that 1 in 3 individuals will occasionally litter.
• To resolve this problem, a research team placed green footprints that led to various garbage bins in the city and handed out caramels to pedestrians.
• There was a **46% decrease in caramel wrappers littering the streets when the footprints were in use.**
Tax Compliance: Recent Nudging success stories

Singapore increased voluntary payments by 3-5 percentage points by nudging businesses with a more eye catching notification.

In 2013, the Ministry of Manpower in Singapore improved its reminder letters by:

1. Simplifying the language used
2. Including a social norm message saying “96% of employers pay their levy on time”.
3. Printing the bills on pink paper typically used for debt collection.

These interventions were tested on those who did not pay their taxes on time.

There was an improvement of 3 to 5 percentage points of employers who paid their foreign domestic worker taxes on time, when they received the pink letter, compared to those who received the regular letter.

Tax Compliance: Recent Nudging success stories

In the UK, HMRS lifted voluntary payments with a single sentence added to a notification.

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Dear Sir/Madam

Please pay £999999999999.99

Our records show that your Self Assessment tax payment is overdue.

It is easy to pay. Please call the phone number above to pay by debit card, credit card, or Direct Debit. You can also pay using internet and telephone banking. For more information on when and how to pay, go to www.hmrc.gov.uk/payinghmrc.

If you don’t believe that this payment is overdue, please contact us on the number above.

If you have already paid, thank you. If not, please act now.
Tax Compliance: Recent Nudging success stories

Adding the sentence “9 out of 10 people in <your town>” boosted voluntary payments

Dear Sir/Madam

Please pay £999999999999.99

Our records show that your Self Assessment tax payment is overdue.

Nine out of ten people pay their tax on time

It is easy to pay. Please call the phone number above to pay by debit card, credit card, or Direct Debit.

You can also pay using internet and telephone banking. For more information on when and how to pay, go to www.hmrc.gov.uk/payinghmrc

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If you have already paid, thank you. If not, please act now.
Tax Compliance: Recent Nudging success stories

£210 million of unpaid tax recovered by the British Government in one year by using social norm framing

Results of the tax compliance experiment

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Control group</td>
<td>67.5%</td>
</tr>
<tr>
<td>Social norm nationally (Insight 5)</td>
<td>72.5%</td>
</tr>
<tr>
<td>Social norm in your postcode (Insights 5 and 3)</td>
<td>79.0%</td>
</tr>
<tr>
<td>Social norm in your town (Insights 5 and 3)</td>
<td>83.0%</td>
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</tbody>
</table>

Advantages:

- Easy to implement and low cost
- No extra burden on collections
- Wide acceptability and Implementation*

*No of cities have been replicating these techniques in various scenarios such as parking ticket, water sewer bill & property tax collections.

- This social nudge has increased tax compliance from **68 percent** to **83 percent** and bought in over £210 million to the UK government in a year.

- Seeing this success the British government has further undertaken other advanced nudging projects incorporation **text messaging**, attracting the **attention of a specific group** and **changing the default web-links**.

Governments are using Nudges for Tax Collection

**Insight:** Low-cost tweaks to communications can lead to higher compliance and voluntary payment rates.

Behavioral economics research shows that deploying key messages at the right moment improve compliance.

**Encouraging Compliance: Using lessons from behavioral science to increase compliance and reduce the tax gap**
- Research has shown that up to 15% of the tax gap is due to procrastinators – tax payers who can afford the tax bill but delay paying more than 30 days.
- Pioneering studies by multiple government agencies suggest actionable insights that collections departments can employ to improve compliance:
  - **Specific Wording:** phrasing tailored to nudge procrastinators can improve payment rates by 15%
  - **Messaging:** descriptive vs. injunctive messages
  - **Moral Cost Emphasis:** social norms and public good appeals
  - **Specificity:** norms framed around a specific population or group

**No-Cost Benefits: Immediate impact with virtually no marginal cost to policymakers**
- Minor adjustments to existing processes can lead to 10-15% higher payments
- No additional impact to staff – tax debtors voluntarily improve self-reporting

By leveraging behavioral insights, we can develop a more refined understanding of human behavior that will help design both lasting and cost-effective interventions to tackle tax compliance.
Pilot Project Overview
Overview of the Nudge Pilot

**Goal:** Improve voluntary collections (or online payment agreements, or reduced burden of phone calls/visits, reduce cost of collections?)

**How:** Design variations on correspondence to delinquent tax payers to drive better outcomes

**Who:** Segmentation?

**Test & Learn:** Randomly select some delinquent taxpayers to receive the existing letters and test out the new letters to assess the most effective letter – and implement changes
Potential Sample Nudges

**Social norms and Identity:** “Join the majority of Argonauts in paying your taxes”. References to local town/county to boost effectiveness. Or “You are in the small minority of Huskers who have not yet paid their taxes”

**Loss aversion:** Highlight penalties

**Online payment agreements:** Stress lower monthly cost. “With a payment agreement your cost could be as low as $xxx.xx” rather than the full amount.

**Loss-framed public good:** “Most of your tax dollars in <State> go to pay for education in schools – losing this funding can hurt kids here in <State>”.

**Simplification:**
What is being asked / what is the next step to take. Use layout and formatting to highlight the next step (go online, call this number, make a payment here).
Degrees of Nudge Power

Nudges can go from actions considered “less powerful” or more educational – appealing to a partnership style of language – where reminders or positive reinforcement messages are part of the mix. On the other hand, “More powerful” type of nudges involve the community by exposing the non-compliant tax detractors through social media or publicizing.

Less Power
- Reminders
- Messages with Social Norms
- Notification of Tax Warrant

More Power
- Using Social Media to publicly shame
- Message to the community
- Address letters to individuals
- John, your CPA code of ethics require…
- This company takes your money and does not pay to the State
- 9 out of 10 companies in your industry pay their taxes on time
Experiment: Who, When and How to Influence

A successful pilot will identify a sizable tax paying population and use the best possible levers to make a measurable impact.

Who are we trying to influence?
- Corporate sales tax and payroll tax withholding late payers
- Repeat offenders
- Small vs Large business
- In vs out of State

How do we influence behavior?
- Simplifying the complex verbiage in communication
- Social Norm Framing (e.g., bold, “boxed”)
- Use other techniques such as choice architecture, moral duty framing to increase compliance
- Vary the timing and number of correspondence messages

How do we measure impact?
- Percentage of entities that paid any part/all of overdue taxes
- Amount and percentage of overdue taxes collected after correspondence
- Average time from first correspondence to any response from entity (payment, appeal, etc.)
- Tax compliance rates for treated entities in future tax cycles

This pilot will focus on updating the process before unpaid taxes get escalated to tax warrant or 3rd party collections:

- Proposed assessment
- Demand Notice for Payment
- Tax Warrant

Potential Target Timeframe:
- 60 days
- 20 days
Test and Learn: Measuring the Impact

Effectiveness of different nudges can be scientifically measured through Randomized Control Trials (RCTs)

Potential Outcome Metrics

• Percentage of entities that paid any part of overdue taxes
• Percentage of entities that paid all overdue taxes
• Percentage of entities that paid all overdue taxes and additional penalties
• Amount and percentage of overdue taxes collected after correspondence
• Average time from first correspondence to any response from entity (payment, appeal, etc.)
• Tax compliance rates for treated entities in future tax cycles

Cumulative Percentage of Entities Paying by Day (First 30 Days) ILLUSTRATIVE
Appendix
References:

- https://behavioralpolicy.org/what-is-nudging/
- Applying behavioural insights to reduce fraud, error and debt”
  by Behavioural Insights Team, UK Cabinet Office
- http://apollonsky.me/what-is-nudging-influence-actions/#So_What_Is_A_Nudge
- https://beyondmusing.wordpress.com/2013/07/you-are-being-manipulated-have-you-noticed/
Research has shown that up to 15% of the tax gap is due to procrastinators – taxpayers who can afford the tax bill but delay payment by more than 30 days. Even minor adjustments to current processes can lead to over 15% higher payments, for businesses and individuals:

**What We Do:**

**Improve Collections**
Research has shown that up to 15% of the tax gap is due to procrastinators – taxpayers who can afford the tax bill but delay payment by more than 30 days. Even minor adjustments to current processes can lead to over 15% higher payments, for businesses and individuals:

- **Taxes Due**
- **Nudge Letters Sent**
- **Impact on Increased Payments**
  Reminder letters brought in over £9 million in a 23-day UK trial. Baltimore, Denver, Sacramento, and Houston use similar letters.

**Case Selection**
How can we better allocate scarce resources? Analytics not only empowers us to know where to look for error, but enables us to do more with less. We can organize work queues by prioritizing which cases to audit for delinquency and fraud, as well as develop tools to help case workers conduct their jobs more effectively.

<table>
<thead>
<tr>
<th>Risk Assessment</th>
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<tbody>
<tr>
<td>Risk: High</td>
</tr>
<tr>
<td>Action: Investigate case</td>
</tr>
<tr>
<td>Risk: Low</td>
</tr>
<tr>
<td>Action: Automate process</td>
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**Case Study**
According to the USDOL, improper payments cost more than $3.2 billion in Unemployment Insurance (UI) funds in 2013. Deloitte enabled New Mexico to increase voluntary self-reporting of earnings using analytics and insights from behavioral economics. The state ultimately reduced fraud by 40% – protecting eligible claimants while preventing erroneous payments and strengthening program integrity.

**How We Do It:**

**Advanced Analytics**

- **Anomaly Detection**
  flags suspicious activity by finding outliers in taxpayer behavior
- **Risk Scoring**
  identifies taxpayers with the highest risk of fraud or non-compliance
- **Cluster Analysis**
  uses demographic and geographic data to understand taxpayer behavior

**Behavioral Nudges**

- **Behavioral Correspondence**
  raised compliance rates by 4 times in a UK study conducted by the NBER
- **Social Norm Framing**
  increased payment rates by 4.7% in a UK group with a 33% compliance rate
- **Public Goods**
  and moral duty appeals brought £3 million in tax revenue in a UK study

**Experiments & Measurements**

- **A/B Testing**
  tests variations of behavioral nudges to better understand non-compliance
- **Uplift Modeling**
  directly determines the financial impact of a treatment on taxes
- **Random Control Trials**
  tests the effectiveness of different treatment streams without bias

Sources: National Bureau of Economic Research (NBER), Pew Charitable Trusts
Potential Future Opportunities for Nudging in Tax Compliance

Increased nudging effectiveness can be achieved by continuously evolving the nudges & using multiple and more effective channels

**Incorporating New Channels**
- Text Messaging
- Calls and Automated Voicemails
- Emails

**Potential Benefits:**
- In other implementations, text message based reminders have shown to boost response by 4-20%
- Email and especially text messaging are a very personalized form of communication and therefore much more effective than regular mail at getting the attention of the recipient
- The response and tracking features of messaging will help us open up a dialogue with the individual

**Using existing channels more effectively**
- Changing current nudges based on changes in population segments/feedback from previous iterations.
- Combining multiple single nudges to create a more powerful overall nudge

**Potential Benefits:**
- Combining multiple forms of communication to create a multistep strategy can lead to a higher compliance
- Understanding what’s working and what’s not would go a long way to help
Practical Tools of Behavioral Insights

Considered together, these Behavioral Insights offer the perspective that much decision-making is influenced by a combination of individual, environmental, and social factors. The perspective offered by Behavioral Insights isn’t merely explanatory, but offers practical tools that can be applied to help influence behaviors by allowing us to work with, rather than against, human nature. For example:

**Individual Factors:** Understanding that people are faced with more information than they can process underscores the importance of simplifying complex tasks, processes, and policies.

**Environmental and Design Factors:** Drawing on the fact that much of behavior is shaped by our surroundings, prompts and cues can be built into websites and forms to guide behavior so that the desired choice is the easy choice.

**Social Factors:** Recognizing the importance we place on our connection to others, we can motivate people to behave better by comparing their behavior to the behavior of others.

These practical tools can be applied in several ways:

- **Application:** Viewing current challenges and issues through a behavioral lens to identify the key factors at play and intervene on them.
- **Research:** Conducting new research to contribute to the body of knowledge about “what works”
Transparency: Where’s my pizza?

YOU GOT CONFIRMATION

You've got 30 minutes and you've got Domino's coming your way. The delivery experts at Domino's have specifically engineered the Pizza Tracker to keep you up to date on the status of your order from the moment it's prepared to the second it leaves our store for delivery. Now, you got tracking when no tracking has ever gone before.

PIZZA TRACKER

ORDER PLACED  PREP  BAKE  BOX  DELIVERY

1  2  3  4  5

YOU GOT IT IN THE OVEN - Antonio (16) put your order in the oven at 4:28 PM!

THE OVEN MITTS ARE OFF

HELP US GET BETTER

How likely are you to recommend us?
We want your ordering experience to rock. How was it?

Our goal is exceptional delivery. How was your delivery experience?

Antonio (16) custom made your order. How did everything taste?

USE THIS HANDY BOX TO EXPRESS YOUR THOUGHTS AND FEELINGS ABOUT DOMINO'S.

Thank You For Your Order

Order 26 was successfully placed. You should receive a confirmation email shortly containing your order number and the store information. If you have any questions about the order, please call the store directly at 973-443-0007.
Push the worse, nudge the rest

**Data science**
The city of New York built predictive models to deploy building inspectors to the highest-risk buildings.

**Behavioral science**
Behavioral nudge tactics could be employed to ameliorate lesser risks that don’t merit immediate physical inspections.

… similarly with health / safety inspections, tax / premium audits …
Keeping ourselves honest

**Data science**
Statistical fraud detection methods (problem: many false positives!)

**Behavioral science**
Behavioral nudge tactics premised on the psychology of (dis)honest behavior