



Addressing the Tax Gap

Leveraging Behavioral Economics to Increase Tax Compliance

August 9, 2018

Agenda

1 Introduction to Tax Compliance Analytics and Behavioral Economics

2 Nudging and Tax Compliance

3 Case Studies: State of Indiana / IRS

Introduction to Tax Compliance Analytics and Behavioral Economics

Tax Compliance Analytics Overview

The following capabilities are some possible applications of advanced analytics and behavioral economics to improve tax compliance



Behavioral Nudging

Raise voluntary compliance rates by tailoring taxpaying experience to distinct population cohorts



Taxpayer Segmentation

Use demographic and geographic data to understand taxpayer behavior



Anomaly Detection

Flag taxpayers exhibiting unusual activity

NAME	SCORE	RISK
JOH	10	5
JOH	15	5
JOH	20	5
JOH	25	5
JOH	30	5
JOH	35	5

Risk Scoring

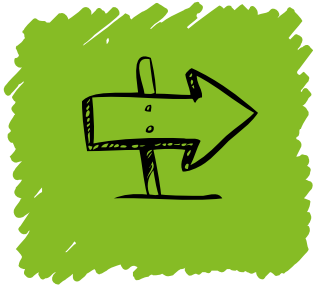
Identify taxpayers with the highest risk of fraud or non-compliance

Advantages of a Behavioral Economic-Enabled Tax Collection Process

- Uses **predictive analytics** and **behavioral insights** to reduce the tax gap by encouraging taxpayers to pay outstanding tax debt
- Encourages **voluntary payment compliance**, improving collections with **fewer internal resources** and **reducing costs** to agencies
- **Drives taxpayers to self-service channels**, reducing the workload on overburdened agency staff
- Improves the taxpayer experience by **simplifying outbound communications** and providing **more clarity** in notices
- **Reduces financial burden** on the taxpayer and provides a **better customer experience**

Nudging and Tax Compliance

Behavioral Economics ("Nudging") Overview



What is a Nudge?

A nudge is a concept from behavioral science and economics that **steers people in a particular direction** and allows them **to preserve their freedom of choice** without imposing any significant material incentives

Examples of nudges



A **reminder** is a nudge



It is also a **warning**

Examples that are NOT nudges

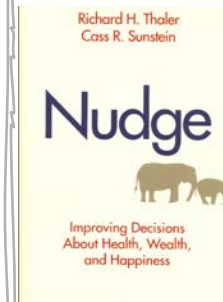
A **subsidy** is **NOT** a nudge



Neither 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."

Types of Tax Compliance Nudges



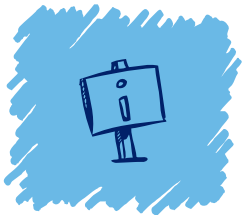
Social norms and identity: Reference peers to boost effectiveness
"You are in the small minority of taxpayers who have not yet paid their taxes."



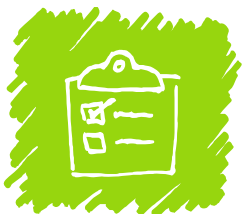
Loss aversion: Highlight financial penalties or loss of other services
"You will be subject to \$xxx.xx in interest payments."



Incremental impact: Stress lower monthly cost
"With a payment agreement, your cost could be as low as \$xxx.xx."



Loss-framed public good: Highlight societal benefits
"Your tax dollars help pay for education in schools – losing this funding takes away from students' education."



Simplification: Use layout and formatting to highlight the next step
"Go online to <https://treasury.state.gov/>", "Call (555) 555-5555 Option 1", "Make a payment here."



Tax Compliance: Recent Nudging Success Stories

Singapore increased voluntary payments by nudging employers with a more eye-catching notification

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

- Simplifying the language used in correspondence.
- Printing the letters on pink paper that is typically used for debt collection.
- Including a social norm message stating “96% of employers pay their levy on time.”

These interventions were tested on employers 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, Her Majesty's Revenue and Customs (HMRC) lifted voluntary payments with a single statement added to a notification



Source: Hallsworth, M., List, J. A. Metcalfe, R.D., & Vlaev, I. (2014). The Behavioralist as Tax Collector: Using Natural Field Experiments to Enhance Tax Compliance

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Leveraging Behavioral Economics to Increase Tax Compliance

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Tax Compliance: Recent Nudging Success Stories

Adding the statement **“Nine out of ten people pay their taxes on time”** boosted voluntary tax payments



Source: Hallsworth, M., List, J. A. Metcalfe, R.D., & Vlaev, I. (2014). The Behaviorist as Tax Collector: Using Natural Field Experiments to Enhance Tax Compliance

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Leveraging Behavioral Economics to Increase Tax Compliance

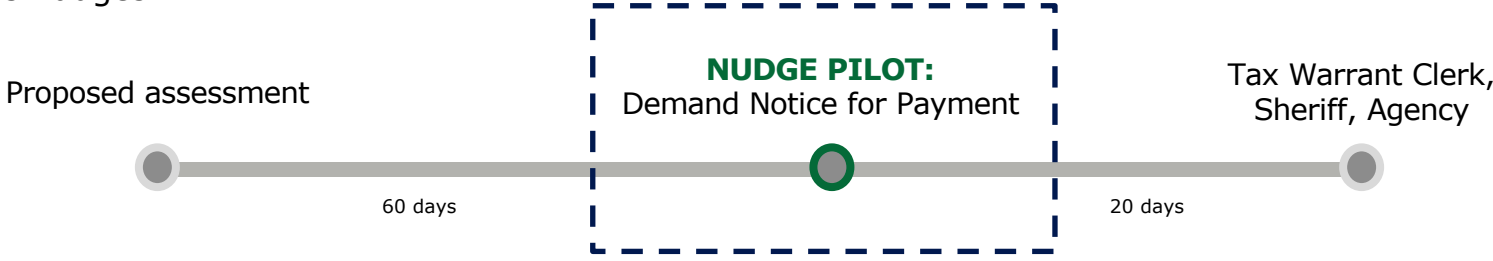
Case Study: State of Indiana

Example: Tax Compliance Nudge Pilot in Indiana DOR

Analysis of nudges on Small Business Tax Compliance Correspondence

Overview

- IN DOR engaged Deloitte to deploy a tax collection nudge pilot
- Pilot consisted of a four week development phase to determine pilot population selection criteria, draft behavioral correspondence, and map KPIs to various nudges

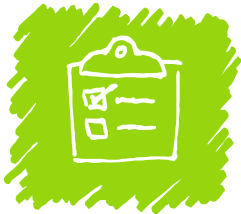


Nudge pilot consisted of **five messages randomly assigned** with **four nudge types**, segmented across "test" and "control" overdue taxpayer groups

Group 1	Group 2	Group 3	Group 4	Group 5
Control Group	Simplification	Loss Aversion	Social Norm 1	Social Norm 2
<ul style="list-style-type: none"> • Current language and form ("Business As Usual") 	<ul style="list-style-type: none"> • Reword current language in a more simplified fashion • Bold text to create assertive language 	<ul style="list-style-type: none"> • Describe penalties for failure to pay • <u>Bold and underline</u> text to draw attention to penalty 	<ul style="list-style-type: none"> • Highlight non-conformity "you are one of a very select number..." 	<ul style="list-style-type: none"> • Stress the possibility of published list of late taxpayers

Nudge Overview

Based on our behavioral science experience in tax compliance, four different nudges were tested in AR-40 messages

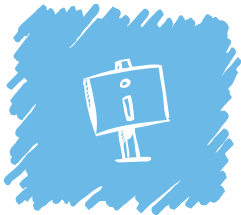


Simplification:

You have 20 days to pay \$XXX or show reasonable cause (with supporting documentation) for not paying.

This requires a response no later than May 22, 2017.

If you fail to do so, this bill will convert to a tax warrant and **will be referred for immediate collection action. You could lose your license for selling lottery tickets, alcohol, or your Retail Merchant Certificate** – the right to do business in Indiana. Please note we can recover what you owe by collecting money from your bank account or by auctioning corporate or personal property pursuant to Indiana Code 6-8, 1-8-3, -4, and -8.



Loss Aversion:

You have 20 days to pay \$XXX or show reasonable cause (with supporting documentation) for not paying.

This requires a response no later than May 22, 2017.

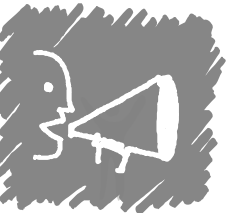
If you fail to do so, this bill will convert to a tax warrant and **will be referred for immediate collection action, which can include garnishment of wages, levying your bank account, or auctioning personal property** pursuant to Indiana Code 6-8, 1-8-3, -4, and -8.



Social norms and Identity:

Most Hoosiers pay their taxes on time. You are part of a small group of business that have not.

Please pay \$XXX over the next 20 days, or show reasonable cause (with supporting documentation) for not paying. To avoid penalties, pay no later than May 22, 2018. TO make a payment arrangement online or pay your tax bill in full, please visit: www.intaxpay.in.gov today



Social pressure:

By not paying sales tax, you are effectively taking money from your customers. Indiana law requires the department to post online the names and addresses of all businesses whose registered retail merchant certificates have expired because they did not pay. If you do not resolve this issue before May 22, 2018, your business name will be posted

Please pay \$XXX over the next 20 days, or show reasonable cause (with supporting documentation) for not paying. To avoid penalties, pay no later than May 22, 2018. TO make a payment arrangement online or pay your tax bill in full, please visit: www.intaxpay.in.gov today

Changes were only made to this section of the warrant

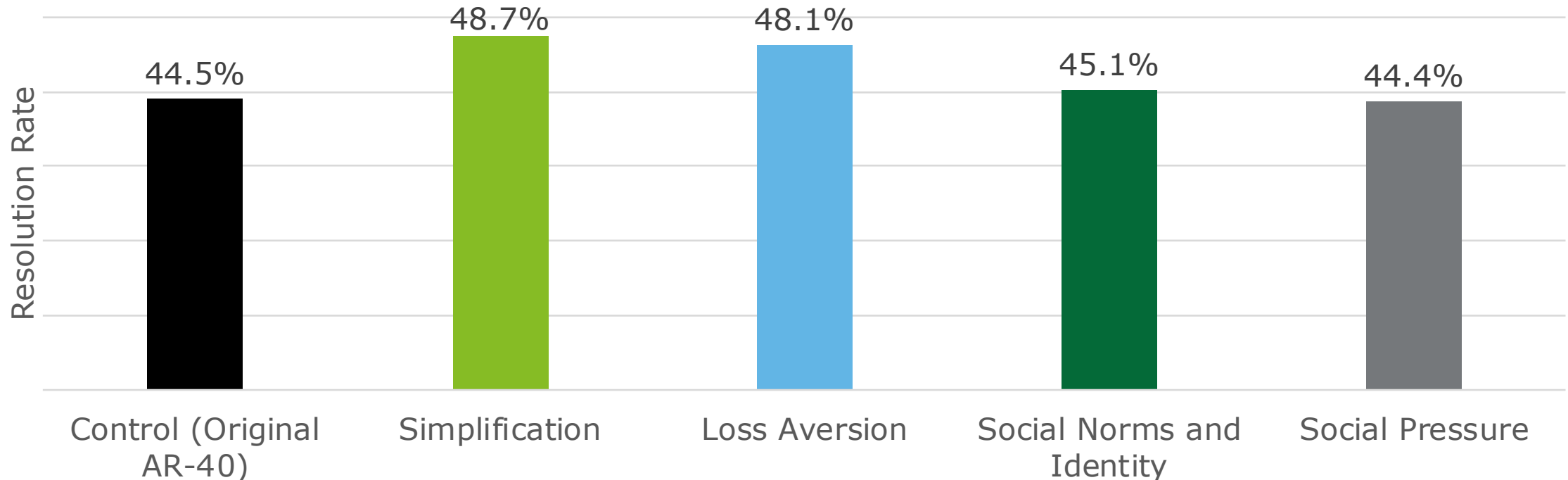
AR-40

AR-40 SF 43534 (Rev. 02/2017)	DEMAND NOTICE FOR PAYMENT INDIANA DEPARTMENT OF REVENUE												
YOU MUST RESPOND TO THIS NOTICE WITHIN TWENTY (20) DAYS FROM THE DATE THIS NOTICE WAS ISSUED. IF YOU FAIL TO RESPOND WITHIN THIS TWENTY (20) DAY PERIOD A TAX WARRANT (THIS IS NOT AN ARREST WARRANT) WILL BE ISSUED AS EARLY AS May 22, 2017 PURSUANT TO INDIANA CODE 6-8.1-8-2(b).													
REFER TO THIS NUMBER ON ANY CONTACT WITH THE DEPARTMENT	<table border="1"> <tr><td>Liability Number: 9999-99999</td></tr> <tr><td>Notice Number: 999999999</td></tr> <tr><td>Date Issued: 05/01/2017</td></tr> </table>	Liability Number: 9999-99999	Notice Number: 999999999	Date Issued: 05/01/2017									
Liability Number: 9999-99999													
Notice Number: 999999999													
Date Issued: 05/01/2017													
1700142512994 *991700142512994* XXXXX XXXXXX XXXXX XXXXXX 1367 S XXXXXXXX XXXXXXXX, XX 99999-9999	Taxpayer TID: 999999999999 - 000 Spouse TID: 999999999999 - 000 Form Number: IT-40 DLN: 17E99999999999 Account ID: 99999999 Liability Period: December 31, 2016 Tax Type: Individual Income												
IMMEDIATE ACTION REQUIRED: You must pay the amount owed or show reasonable cause (with supporting documentation) for not paying no later than May 22, 2017. If you fail to do so, this tax bill will convert to a tax warrant and will be referred for immediate collection action, which can include garnishment of wages, levying your bank account, or auctioning personal property pursuant to Indiana Code 6-8.1-8-3, -4, and -8. To prevent the filing and recording of a judgment pursuant to a warrant, please call (317) 232-2165 to discuss a payment plan or other possible remedies, to make a payment, or ask questions. To make a payment arrangement online or pay your tax bill in full, please visit: www.intaxpay.in.gov today. Thank you for your immediate attention to this matter. If you have questions or concerns, you also may visit the department's website at www.in.gov/dor/3959.htm or www.in.gov/dor/3960.htm . ***SEE REVERSE SIDE FOR IMPORTANT DETAILS AND MAILING ADDRESSES.***													
EXPLANATION OF TAX DUE FOR PERIOD ENDING December 31, 2016 <table border="1"> <tr><td>Tax Balance (Individual Income)</td><td>\$</td><td>270.00</td></tr> <tr><td>Penalty</td><td>\$</td><td>27.00</td></tr> <tr><td>Interest - Daily Amount \$0.02</td><td>\$</td><td>0.76</td></tr> <tr><td>Amount you owe - Due Date: May 22, 2017</td><td>\$</td><td>297.76</td></tr> </table>		Tax Balance (Individual Income)	\$	270.00	Penalty	\$	27.00	Interest - Daily Amount \$0.02	\$	0.76	Amount you owe - Due Date: May 22, 2017	\$	297.76
Tax Balance (Individual Income)	\$	270.00											
Penalty	\$	27.00											
Interest - Daily Amount \$0.02	\$	0.76											
Amount you owe - Due Date: May 22, 2017	\$	297.76											
Please place your Taxpayer TID number (see above) on your check (made payable to Indiana Department of Revenue) and mail with the form provided below: XXXXX XXXXXXXX Taxpayer TID: 9999999999 - 000 Liability Number: 9999-9999999 Notice Number: 9999999999													
<table border="1"> <tr><td>AMOUNT PAID \$</td></tr> </table>	AMOUNT PAID \$	<table border="1"> <tr><td>Due Date: May 22, 2017</td></tr> </table>	Due Date: May 22, 2017										
AMOUNT PAID \$													
Due Date: May 22, 2017													

Nudge Efficacy: Non-Remittance

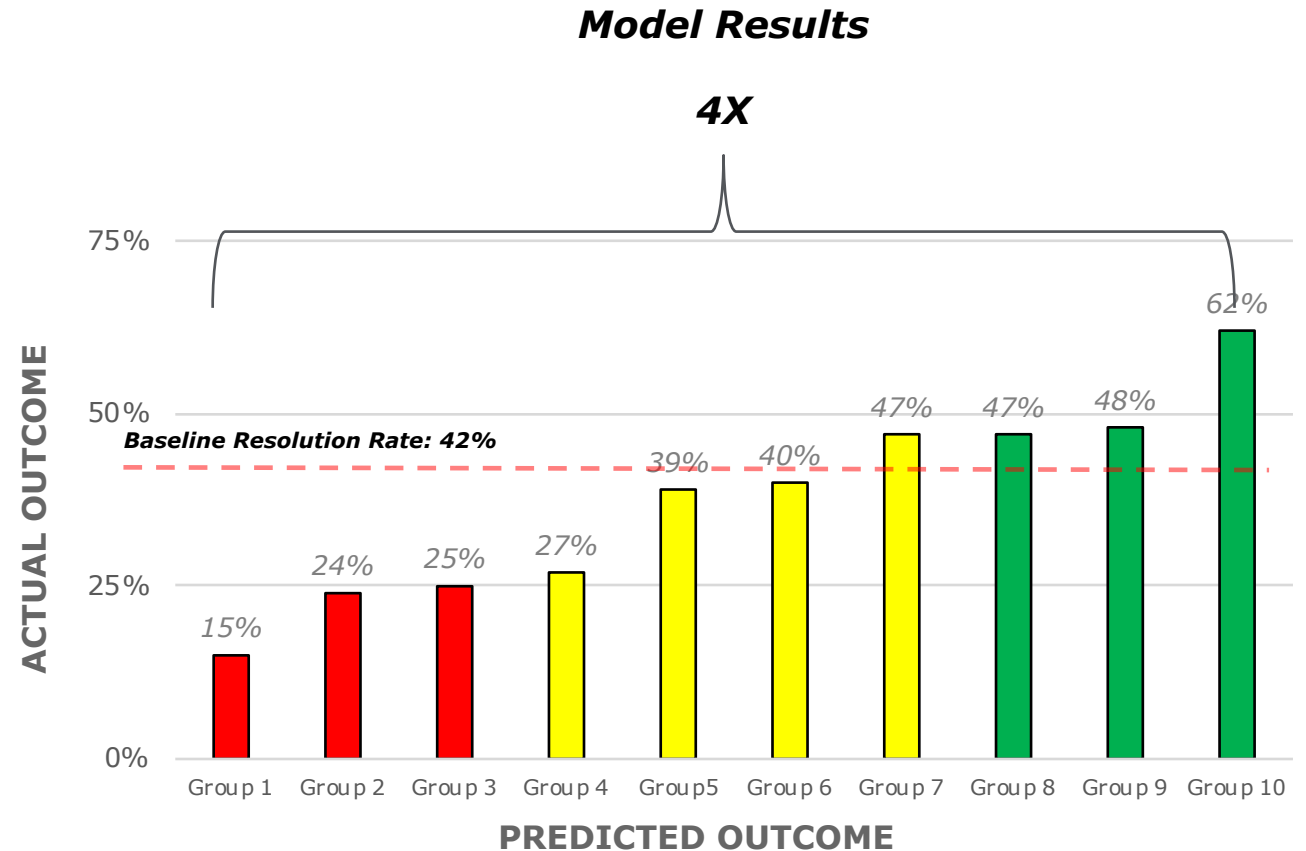
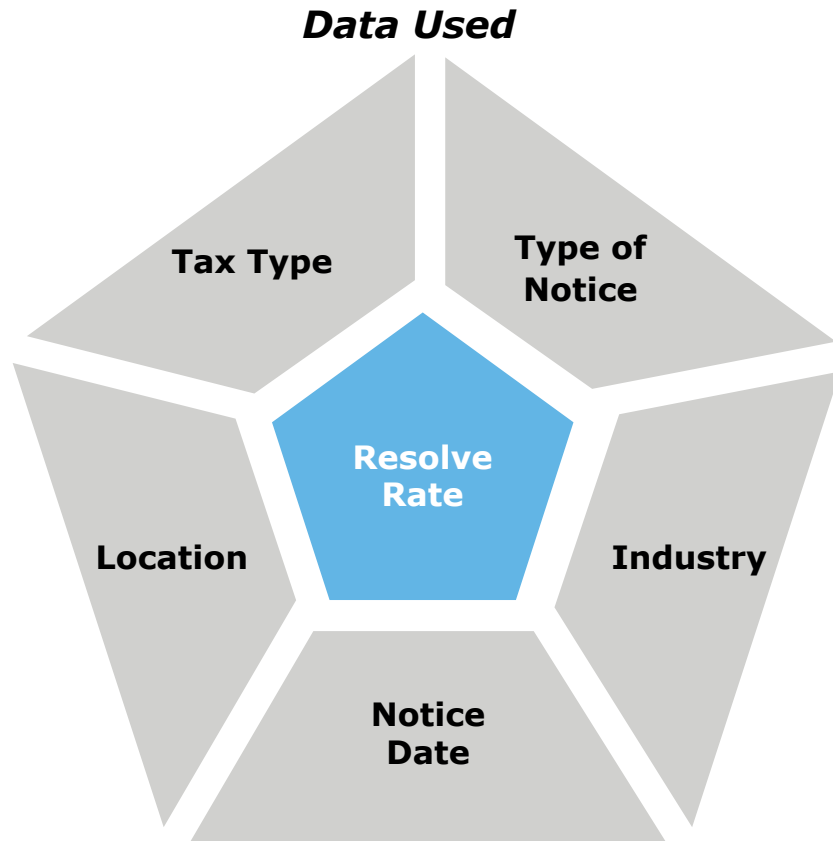
Initial experimental results indicate that nudges were more effective in soliciting higher resolution rates

Percentage of Late Payers Reporting Taxes by Nudge Type



Predicted Resolution Rates

When considering all aspects of collection data, liabilities were segmented into groups that exhibited varying degrees of predicted resolution rates to support collection triage



Liabilities in the highest predicted resolution group were 4X likely to be resolved than those in the lowest predicted resolution group

Key Findings

The analysis and review of IN DOR's tax collection nudge pilot revealed key findings

Finding #1

Behavioral nudges are effective for non-remittance/withholding ("NRM"/"WTH")

Finding #2

Compliance varies across population sub-groups (e.g., industry/location), suggesting a potential to apply statistical segmentation techniques that drive nudge application

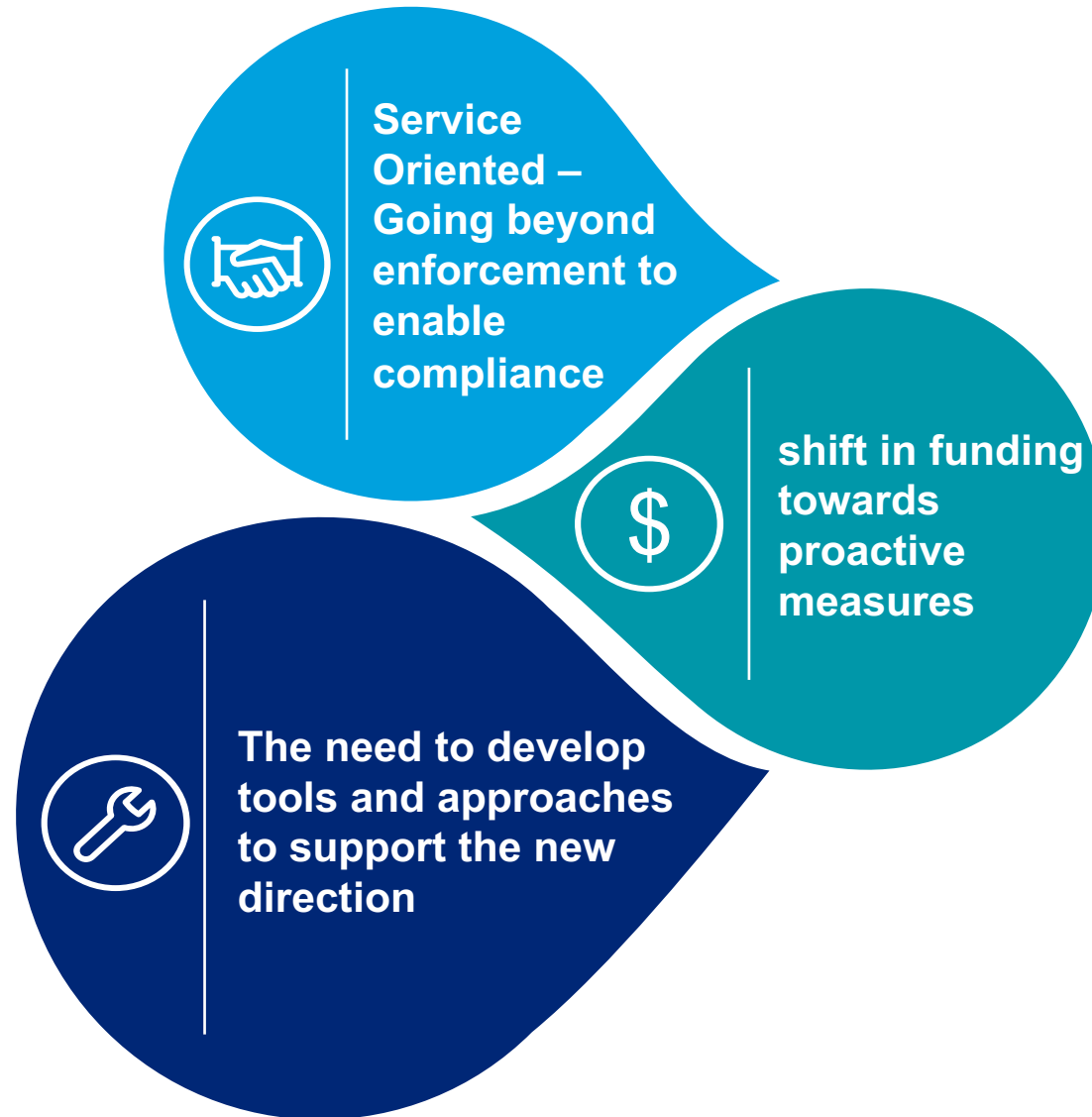
Finding #3

Preliminary predictive models identify cases that are likely to be compliant with a 70% accuracy rate

Both behavioral science (design) considerations and statistical effects (sample size) may be root causes to the lower efficacy of SAU AR-40 nudges

Case Study: Mainstreaming Behavioral Insights in the IRS

The Context at IRS



The circumstances of each organization determines where it falls along the Behavioral Insights adoption spectrum



Concentration Model

A unit of Behavioral Insights experts that consults and advises on applying BI to public policy

Diffusion Model

Behavioral Insights is diffused throughout the organization rather than expertise being housed in a central unit



1. Informing: The Behavioral Insights Toolkit

We designed the Behavioral Insights Toolkit to serve as a unified source of information for the entire agency



Toolkit sections include:



Behavioral Insights Overview – an overview of foundational concepts of Behavioral Insights, and how to use the Toolkit.



Behavioral Insights Application Framework – an organizing framework of behavioral factors and concepts that influence taxpayer behavior.



Application to Tax Administration – a guide to how Behavioral Insights can improve relevant concepts associated with tax administration.



Behavioral Insights and Organizations – an overview of how Behavioral Insights relates to organizations (as distinct from individuals).

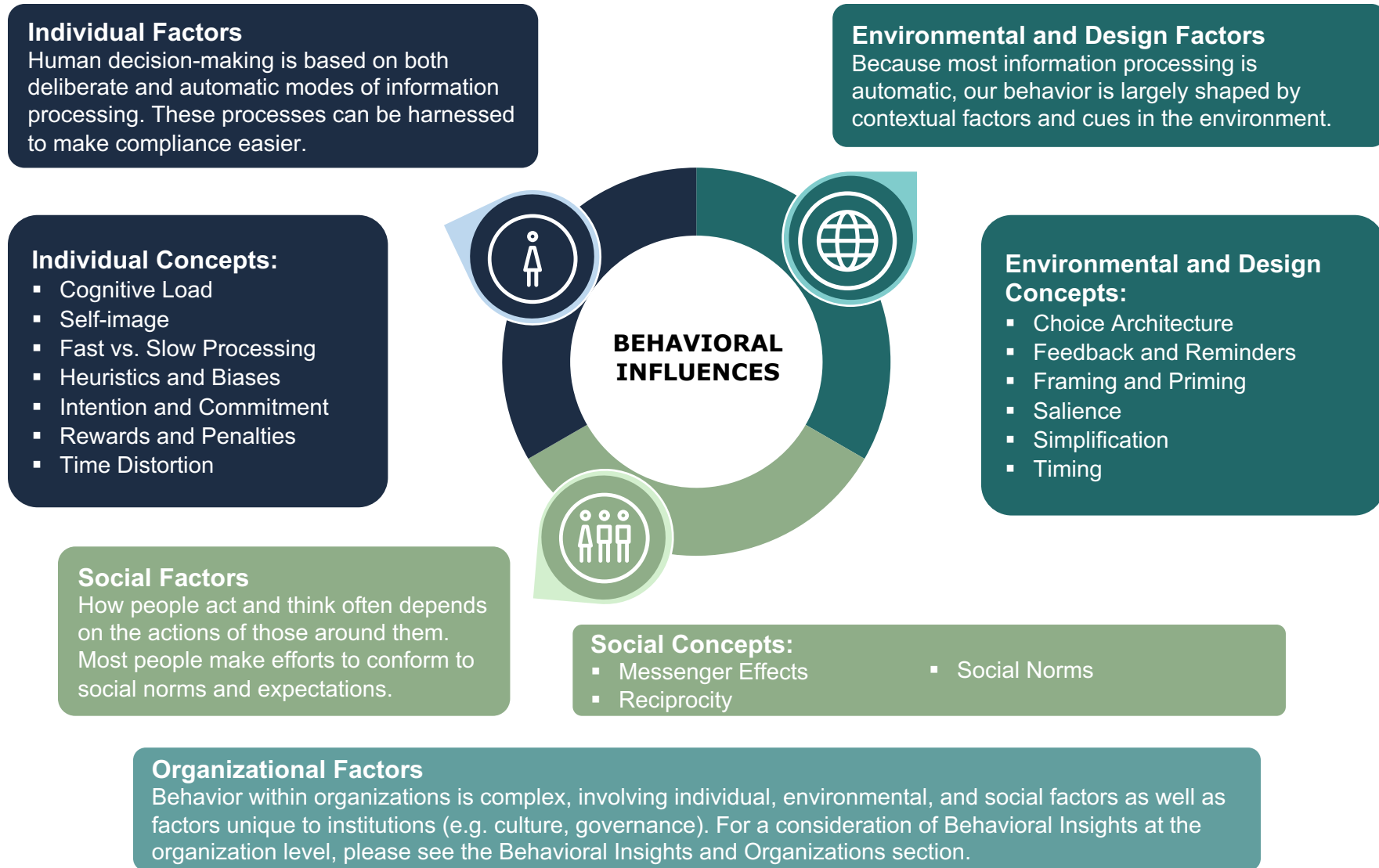


Behavioral Insights Research Guide – a process guide of methods for conducting Behavioral Insights research, and analyzing project impact.



Additional Resources – references with additional depth in the latest Behavioral Insights developments, and documentation of recent findings relevant to the IRS.

The Toolkit is organized around a framework for applying Behavioral Insights to the IRS' tax administration priorities



Simplification

Keep it simple

Sample Toolkit Page



Simplification makes tasks easier to accomplish by reducing complexity, using clear language, and making action items straightforward. Conversely, aspects of a task that make it seem more difficult, called **friction costs**, can be the reason people put off or are unable to complete a task.

How to Use

Limit, cluster, or simplify the amount of information people have to process when making decisions



Polish tax authorities simplified its tax letters, which increased the average amount paid between \$40-\$326, and increased the payment rate by 17%.

Take advantage of information already provided



When personal information was pre-populated into the Free Application for Federal Student Aid (FAFSA), college enrollment increased by 8% over a two-year period.

Shorten the number of steps necessary to complete a task



The UK's HMRC directed mail recipients to a specific form that they needed to complete instead of a webpage to get to the form, which improved tax collection rates. Every additional step increases the psychological burden of completing a task.

Simplification works well when...

- **Sub-processes of a task can be eliminated or altered.** In many cases, small changes like shortening URLs or reducing required pages to click through can result in a marked increase in effectiveness.
- **There are non-essential steps or options that can be eliminated.** For a long form, designers and requestors of information can re-examine the elements of the form to determine where the scope of information presented and/or collected can be reduced.

Be careful when...

- **Making changes without testing.** Any effort to simplify a form or process only makes sense if the end product is actually better for the person. Without conducting testing to confirm that people prefer a new, simpler option, people may find themselves equally burdened or even more confused.
- **Implementing changes in the costs associated with choice pathways.** The IRS needs to balance taxpayer rights and taxpayer compliance costs with the objectives of promoting certain desired behaviors.

Tax Applications and Impacts

- Accurate and complete forms
- Simplify outbound correspondence
- Increase response to tax notices



 Further Reading



2. Promoting: A Shared Understanding

Behavioral Insights as a culture has been shaped by several factors



Leadership Support

Leadership has given the charge to disseminate Behavioral Insights throughout the organization rather than simply creating a central Behavioral Insights unit.



Skilled Researchers

The IRS is comprised of skilled researchers who are interested in how to apply Behavioral Insights to their work. The Community of Practice offers a way to discuss their research and apply Behavioral Insights more systematically.



Appetite for Behavioral Insights

There has been an increased demand for Behavioral Insights interventions, with a recognition that Behavioral Insights is a credible and effective method of increasing taxpayer compliance.



Shared Understanding

Through tools like the Behavioral Insights Toolkit, we have continued to drive understanding and share knowledge about Behavioral Insights.

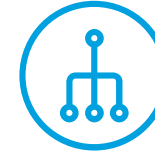
2. Engaging: Community of Practice

Our Community of Practice extends beyond the IRS

Drawing on best practices in the literature and from other Behavioral Insights subject matter experts who implement Behavioral Insights projects



IRS Community of Practice fosters knowledge sharing among internal researchers



Knowledge sharing with other agencies and peer organizations to build a knowledge base about what works



Collaboration with academic institutions and other experts to develop and test novel methods



Impact:

The IRS is applying Behavioral Insights to communications to improve outcomes



Message Testing for Different Population Segments

Control group letter

Internal Revenue Service
 ACS Support Stop 5050
 P.O. Box 219236 Stop LT16
 Kansas City, MO 64121

Notice
 Notice date 11/21/2016
 Taxpayer ID number XXX-XX-5555
 Case reference number 454520208
 To contact us Phone 1-800-829-7650
 Page 1 of 3

1
 SAM MALONE
 CHEERS, 112 BEACON STREET
 BOSTON MA 05555-5555

Your account has been assigned for enforcement action
 Please call us about your unpaid taxes

We're trying to collect unpaid taxes from you for the year(s) shown in the account summary below. Please call for your updated amount due and pay immediately. We have assigned your account for review and possible enforcement action. Enforcement action may include seizing your wages or property. It's important that we hear from you within 10 days.

What you need to do

- Pay the amount due to avoid additional penalty and interest charges. If you can't pay the amount due in full, call us at 1-800-829-7650 to discuss your options. Be ready to tell us what your monthly income and expenses are so we can help you arrange a payment plan.

Next steps

If you are unable to resolve your tax issue now, call us at 1-800-829-7650. If you don't respond, we may take steps to collect all amounts due, including applicable penalties and interest.

Penalties and loss aversion

Highlighting Urgency

Department of the Treasury
 Internal Revenue Service
 P.O. Box 219236 Stop LT16
 Kansas City, MO 64999

12
 SAM MALONE
 CHEERS, 112 BEACON STREET
 BOSTON MA 05555-5555

URGENT NOTICE – You need to take action immediately.
 Take action on your balance of \$4,134.38 by 11/22/2016 to avoid enforcement action.

Following the instructions under the "What you need to do" section **may stop** enforcement action such as:

- Seizure of your assets or wages
- Federal tax liens, which may affect your credit score
- Additional applicable penalties and interest

Please visit irs.gov/LT16C for more information.

What you need to do right now

- **Pay as much of your balance as you can now:** Visit irs.gov/payments to pay online or mail in a check or money order with the payment stub below.
- **If you can't pay in full right now:** Pay your remaining balance over time if you are current with your filing obligations. Visit irs.gov/OPA to learn more.
- **If you are currently facing financial hardship:** See the next page to learn about options available to you.

Learn more and avoid waiting on the phone by visiting irs.gov/LT16C. If you can't find what you need online, you can call the IRS at 1-800-829-3903. If you believe there is an error in this notice, and cannot resolve the disagreement with us, you may have the right to appeal. Visit irs.gov/appeals to learn more.

Continued on back ➡

Salience

Temporal Discounting

Simplification

Installment Agreements

Department of the Treasury
 Internal Revenue Service
 P.O. Box 219236 Stop LT16
 Kansas City, MO 64999

12
 SAM MALONE
 CHEERS, 112 BEACON STREET
 BOSTON MA 05555-5555

Please take action on your balance of \$4,134.38 by 11/22/2016.

- We are trying to collect unpaid balances from you for the tax periods shown on the next page.
- You may be subject to enforcement action, which may include seizing assets or wages.
- Choosing one of the options below **may stop** enforcement action on your account:

Pay your balance over time

Set up a streamlined installment agreement with a monthly payment as low as:

\$57.42 (over approximately 72 months)

- Applicable penalties and interest will continue to accrue on your balance over the life of the agreement. See next page for details.
- Larger monthly payments will decrease the time until you pay off your balance, reducing penalty and interest charges.
- You must stay current with your payments and future filings to avoid enforcement action.
- Find out about other options for paying your balance over time at irs.gov/installmentagreements.

Pay your balance in full

Make a one-time payment of:

\$4,134.38

- Paying your balance in full, if you can afford it, is your best option because:
 - It will stop all enforcement action on your account
 - Penalty and interest will stop accruing
- If you can't pay your full balance, pay what you can to avoid as much penalties and interest as possible.

Learn more and avoid waiting on the phone by visiting irs.gov/LT16C. If you can't find what you need online, you can call the IRS at 1-800-829-3903. If you believe there is an error in this notice, and cannot resolve the disagreement with us, you may have the right to appeal. Visit irs.gov/appeals to learn more.

Continued on back ➡

The IRS is applying Behavioral Insights practices from other domains to improve communication and transparency



Where's My Pizza?

Domino's Pizza Tracker lets customers know exactly **where their pizza is**, and **when to expect it**.

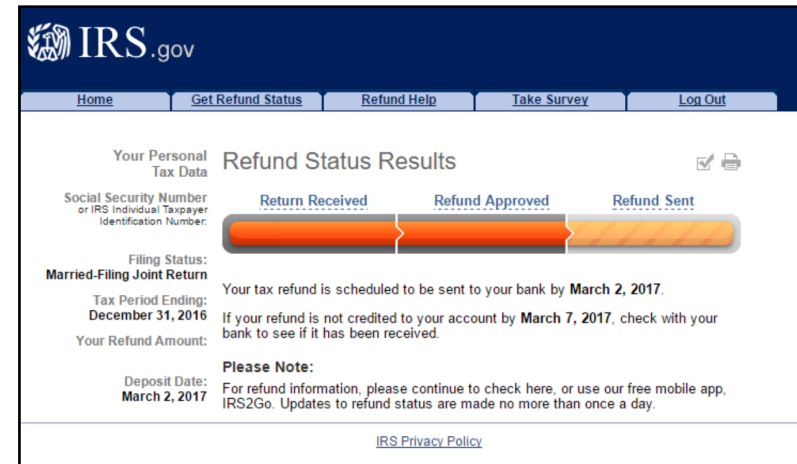


- Immediate **assurance** the order was received
- Live information about **progress**, and **estimate of completion time**



Where's My Refund?

Where's my Refund/Amended Return leverages a **status bar** to provide information to taxpayers



Transparency and Feedback

Providing information about what is happening behind the scenes builds user's trust and improves satisfaction by reducing ambiguity

Final Thoughts

Lessons for other agencies



Our diffusion model suited IRS's devolved structure



This is a fast evolving field – it makes sense to be sharing knowledge internally and externally



Tools need to be analytically robust yet accessible and compelling to a lay audience

Questions?