



---

# Behavioural Insights Unit

February 25, 2016

# Traditional economics model of decision making

- In order to decide whether
  - to get vaccinated
  - to comply with a regulation
  - to stay in school
 we conduct a cost-benefits analysis

$$\begin{aligned}
 \sigma^2 X_e &= \left(\frac{1}{n-1}\right) \left[ \sum_{i=1}^n X_i^2 - \left(\frac{1}{n}\right) \left(\sum_{i=1}^n X_i\right)^2 \right] \\
 &= \left(\frac{1}{n-1}\right) \left[ \sum_{i=1}^{n_0} X_{0i}^2 + \sum_{i=1}^{n_1} X_{1i}^2 - \left(\frac{1}{n}\right) \left(\sum_{i=1}^{n_0} X_{0i} + \sum_{i=1}^{n_1} X_{1i}\right)^2 \right] \\
 &= \left(\frac{1}{n-1}\right) \left\{ \sum_{i=1}^{n_0} X_{0i}^2 + \sum_{i=1}^{n_1} X_{1i}^2 - \left(\frac{1}{n}\right) \left[ \left(\sum_{i=1}^{n_0} X_{0i}\right)^2 + \left(\sum_{i=1}^{n_1} X_{1i}\right)^2 + \right. \right. \\
 &\quad \left. \left. 2 \sum_{i=1}^{n_0} X_{0i} \sum_{i=1}^{n_1} X_{1i} \right] \right\} \\
 &= \left(\frac{1}{n-1}\right) \left\{ \sigma^2 X_0 (n_0 - 1) + n_0 \mu^2 X_0 + \sigma^2 X_1 (n_1 - 1) + n_1 \mu^2 X_1 - \left(\frac{1}{n}\right) \right. \\
 &\quad \left. [n^2_0 \mu X_0 + n^2_1 \mu X_1 + 2n_0 n_1 \mu X_0 \mu X_1] \right\}
 \end{aligned}$$

- Assumes we have
  - awareness & memory of information
  - ability & motivation to process information
  - consistent preferences overtime
  - no problems with self-control



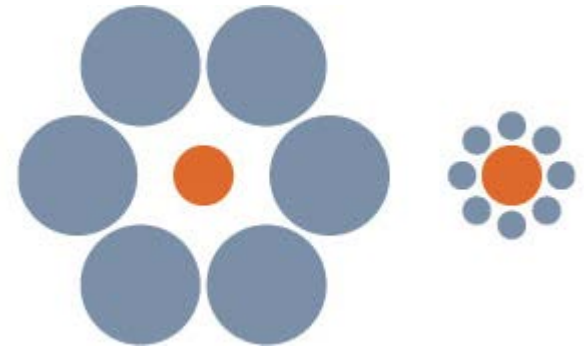
# Behavioural Economics in 3 Points

**tomorrow**  
/tə'märō/ n.

A mythical land  
where I get all  
my stuff done

## First Law of Motion

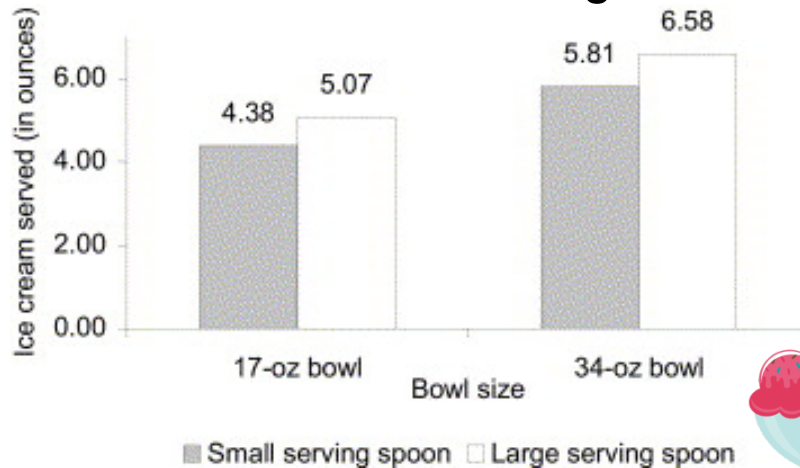
Every object in a state of motion tends to remain in that state of motion unless an external force is applied to it.



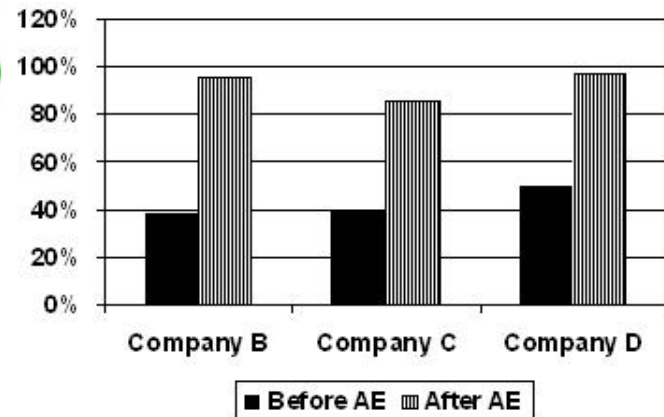
1. Procrastination often prevents people from achieving their goals
2. Habit can prevent people from adapting to changing circumstances
3. Context surrounding a decision can influence the choices people make

# What are Behavioural Insights?

- Application of social sciences to improve public policy outcomes
- Based on the recognition that information and motivation are often not enough
  - Who doesn't want to be healthier and save more?
- Small changes to choice context can help improve decision-making without constraining choice



Percent of Employees Enrolled in Matched Retirement Savings Programs

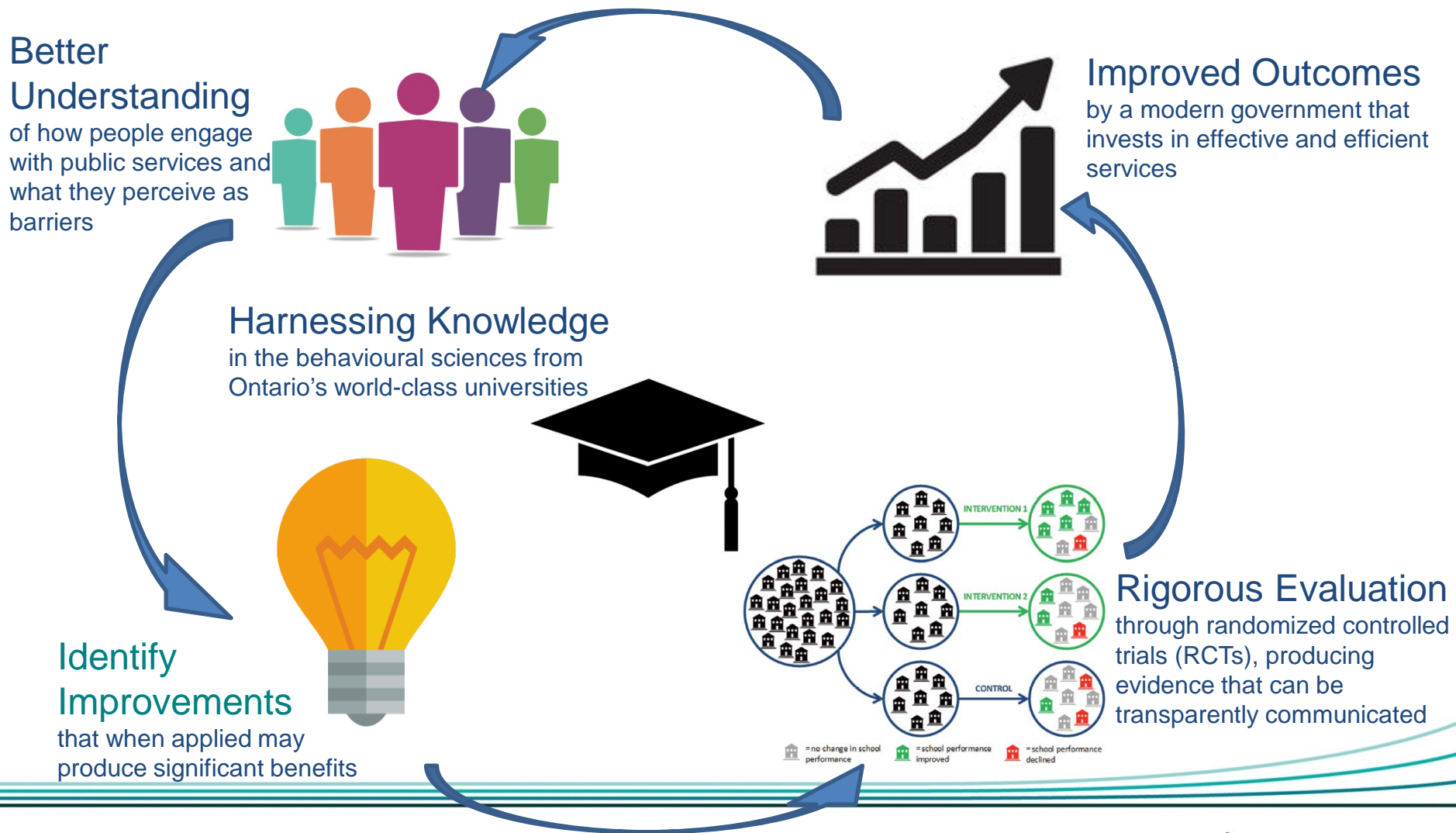


# Growing Global Adoption



**Australian Government**

# Why is Ontario's Government applying Behavioural Science Insights?



# Behavioural Insights Unit

We work with ministries and agencies to design more effective and efficient public services by incorporating our best understandings of how people use those services

## Educate

building capacity of the OPS to apply new behavioural perspectives and raising awareness of opportunities to apply behavioural science methodologies

## Expert Advice

providing program specific insight from the behavioural sciences

## Design & Evaluate

designing service touch points in light of existing behavioural science knowledge and evaluating using randomized controlled trials to generate new, Ontario specific knowledge

# **2014 Service Ontario Pilot:** Vehicle Renewal Notification Letter Intervention



# ServiceOntario Context

## ServiceOntario 2.0 Strategy Alignment

### Vision

Government made better through service excellence and innovation.

### Mission

To design and deliver excellent services and solutions for our customers and our partners and to champion service delivery transformation.



“...identify the reasons people opt for in-person service rather than use the Internet, and examine possible changes it could **make...to promote greater use of online transactions**”

Provincial Auditor's recommendation

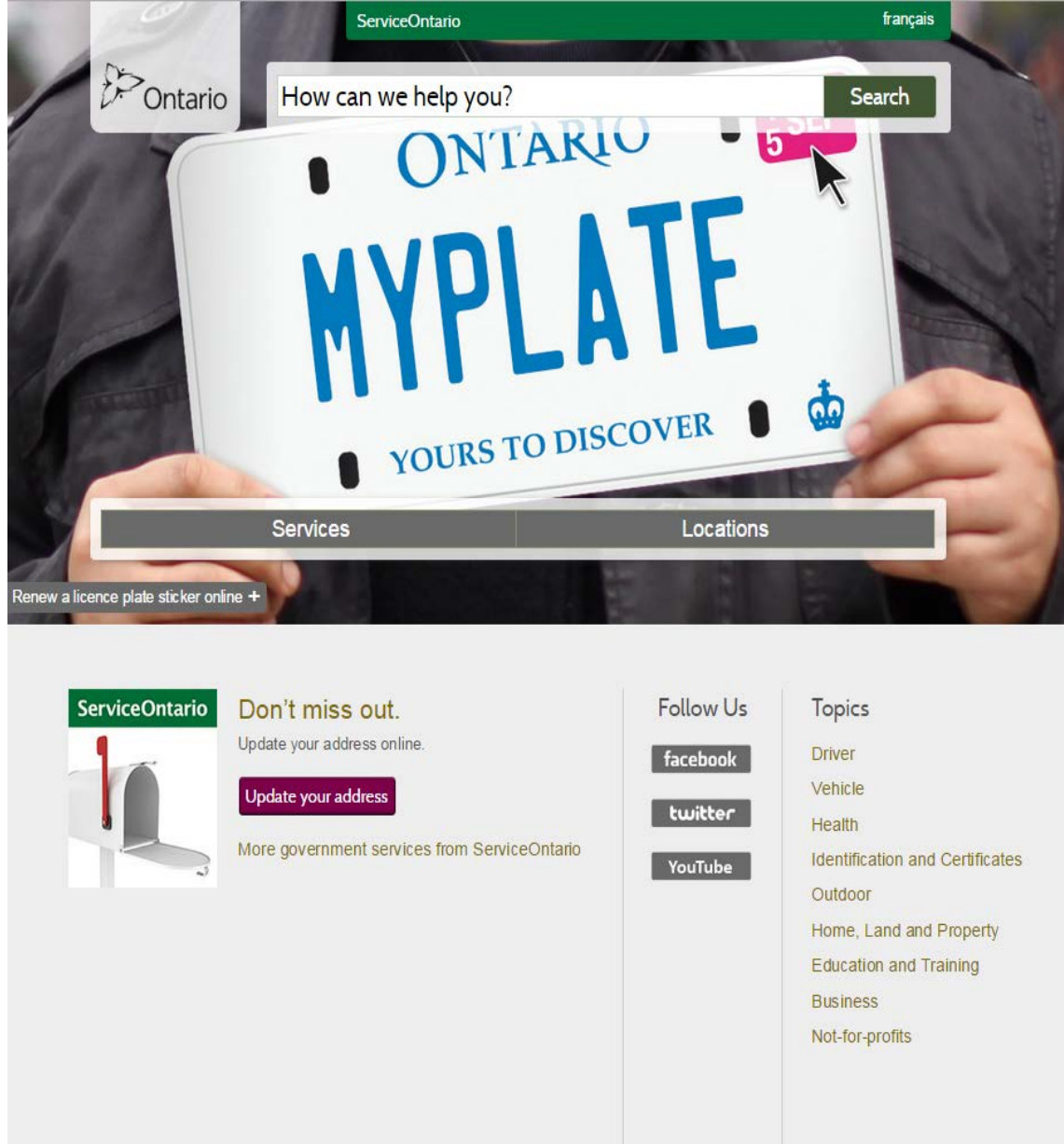
# Eservice Adoption

87% of Ontarians shop online  
84% of Ontarians report interest in government eservices

Yet four years after development only

# 10%

licence plate stickers were renewed online.



# Licence Plate Sticker Renewal Form

Vehicle owners  
are mailed this  
renewal form  
90 days prior to  
their stickers'  
expiry date.

## ServiceOntario

ServiceOntario.ca

**IMPORTANT: Fees are increasing**  
 Passenger / Light Duty : September 1, 2013  
 Bus : November 1, 2013  
 Heavy Duty Commercial : December 1, 2013  
 Farm : January 1, 2014

**IMPORTANT: Augmentation des frais**  
 Véhicules de tourisme /  
 Véhicules utilitaires léger : 1<sup>er</sup> septembre 2013  
 Autobus : 1<sup>er</sup> novembre 2013  
 Poids lourds commerciaux : 1<sup>er</sup> décembre 2013  
 Véhicules agricoles : 1<sup>er</sup> janvier 2014

**Vehicle Licence (Plate) Renewal Application**  
**Demande de renouvellement d'immatriculation (plaque) de véhicule**

Name and Mailing Address / Nom et adresse postale

HO: 1010 ...  
BRAC ...

RIN (DLN) 151270224  
NIC (NFC)

Please make changes on reverse side / Changements au verso S.V.P.

Address / Adresse

1010 ...  
P1L 1W9

PLATES EXPIRE ON 13 08 25  
DATE D'EXPIRATION DES PLAQUES

Year Month Day  
Année Mois Jour

Any prescribed fee on this form is subject to change without notice. / Les droits indiqués sur ce formulaire peuvent être modifiés sans préavis.

Plate/Plaque	V.I.N./N.I.V.	RGW/PBE (kg)	Year/Année	Make/Marque	Colour/Couleur
AKI	102359	97	CRSM	WHI	

Renewal Period / Période de renouvellement	Current Fee / Frais actuels	N.S.F./C.S.P.	Outstanding Fines / Amendes impayées	Outstanding 407 ETR Tolls / Péages de 407 ETR impayés	TOTAL
One Year / Un an	\$82.00	\$0.00	\$0.00	\$0.00	\$82.00
Two Years / Deux ans	\$164.00	\$0.00	\$0.00	\$0.00	\$164.00
Effective / Entrée en vigueur					
One Year / Un an	New Fee / Nouveaux frais				
Two Years / Deux ans					

☒ As vehicle above / Comme le véhicule ci-dessus

Name of Insurance Company and Policy Number / Nom de la compagnie d'assurance et numéro de la police

Plate/Plaque	V.I.N./N.I.V.	RGW/PBE (kg)	Year/Année	Make/Marque	Colour/Couleur

Renewal Period / Période de renouvellement	Current Fee / Frais actuels	N.S.F./C.S.P.	Outstanding Fines / Amendes impayées	Outstanding 407 ETR Tolls / Péages de 407 ETR impayés	TOTAL
One Year / Un an					
Two Years / Deux ans					
Effective / Entrée en vigueur					
One Year / Un an	New Fee / Nouveaux frais				
Two Years / Deux ans					

☒ As vehicle above / Comme le véhicule ci-dessus

Name of Insurance Company and Policy Number / Nom de la compagnie d'assurance et numéro de la police

Plate/Plaque	V.I.N./N.I.V.	RGW/PBE (kg)	Year/Année	Make/Marque	Colour/Couleur

Renewal Period / Période de renouvellement	Current Fee / Frais actuels	N.S.F./C.S.P.	Outstanding Fines / Amendes impayées	Outstanding 407 ETR Tolls / Péages de 407 ETR impayés	TOTAL
One Year / Un an					
Two Years / Deux ans					
Effective / Entrée en vigueur					
One Year / Un an	New Fee / Nouveaux frais				
Two Years / Deux ans					

☒ As vehicle above / Comme le véhicule ci-dessus

Name of Insurance Company and Policy Number / Nom de la compagnie d'assurance et numéro de la police

Office Use Only / À l'usage du bureau

Office & Op No. [ ] / [ ]

ETR Date [ ] / [ ] / [ ]

Bus Date [ ] / [ ] / [ ]

Cash ☐ Cheque ☐ Other ☐ Credit Card ☐

Permit No. [ ] / [ ] / [ ]

Permit No. [ ] / [ ] / [ ]

Permit No. [ ] / [ ] / [ ]

Permit No. [ ] / [ ] / [ ]

Under provincial legislation the penalty for making a false statement may include a fine and/or imprisonment and/or a driver's licence suspension. I am aware of my responsibility to ensure valid insurance is in force for the entire period of valid vehicle registration in order to operate the vehicle on a highway. / Selon les lois provinciales, toute fausse déclaration est passible d'amende, d'emprisonnement ou de suspension de permis de conduire. Je sais que, pour être autorisé à utiliser le véhicule sur une voie publique, je dois détenir une police d'assurance valide pendant toute la durée de l'immatriculation du véhicule.

Name (Please Print) / Nom (en lettres moulées) \_\_\_\_\_  
 Authorized Signature / Signature autorisée X \_\_\_\_\_

All outstanding fees/fines must be paid in full before renewing. Contact the municipality where the ticket was issued or 407 ETR toll-free at 1-888-407-0407.  
 Vous devez acquitter tous les droits ou toutes les amendes avant de pouvoir effectuer le renouvellement. Communiquez avec la municipalité dans laquelle la contravention a été dressée ou appelez sans frais le bureau du 407 ETR au 1 888 407-0407.

## Standard (control) Envelope

[illegible]

# Standard (control) Messaging

**ServiceOntario**

**Left it to the last minute? No problem.**

**Vous avez attendu la dernière minute? Pas de problème.**



**Click. Print. Drive.**

Print and carry your online receipt, valid for 10 days from your expiry date. It's proof you've renewed until your sticker arrives in the mail.

Visit us at  
**[ServiceOntario.ca/PlateSticker](http://ServiceOntario.ca/PlateSticker)**

**Cliquez. Imprimez. Prenez la route.**

Imprimez votre reçu électronique et gardez-le sous la main. Il est valide pendant 10 jours à partir de la date d'expiration. C'est la preuve que vous avez renouvelé votre vignette en attendant de la recevoir par la poste

Visitez  
**[ServiceOntario.ca/AutoCollant](http://ServiceOntario.ca/AutoCollant)**



# Intervention 1: Change to Envelope




- This new envelope was used in all three interventions
- Blue highlighting draws visual attention to message
- Short, simple description of benefits to renewing online

# Intervention 2:

## Benefits of Renewing Online

**ServiceOntario**

**Discover the convenience of renewing online!**  
**Découvrez la convenance du renouvellement en ligne!**

<b>Why go online?</b> <ol style="list-style-type: none"><li>1. Save travel time</li><li>2. Save waiting time</li><li>3. Renew from the comfort of your home, 24/7</li><li>4. Easy and safe – just like online banking</li><li>5. Instant confirmation and legal proof of renewal</li></ol>	<b>Pourquoi allez en ligne ?</b> <ol style="list-style-type: none"><li>1. Épargnez le temps de déplacement</li><li>2. Épargnez le délai d'attente</li><li>3. Remplacez du confort de votre maison, 24/7</li><li>4. Facile et sûr – comme banque en ligne</li><li>5. Confirmation instantanée et preuve légale de renouvellement</li></ol>
 <b>What are you waiting for? Visit us at</b> <b><a href="http://ServiceOntario.ca/RenewSticker">ServiceOntario.ca/RenewSticker</a></b>	<b>Qu'attendez-vous? Visitez</b> <b><a href="http://ServiceOntario.ca/Renouveler-la-Vignette">ServiceOntario.ca/Renouveler-la-Vignette</a></b>

- Benefits to client of renewing online in simple language
- Coloured font to draw visual attention
- Used the same envelope as in Intervention 1

# Intervention 3: Negative Consequences of not Renewing Online

**ServiceOntario**

**Don't miss out on the convenience of renewing online!**  
**Découvrez la convenance du renouvellement en ligne!**

<b>Renewing in person:</b> <ol style="list-style-type: none"><li>1. Travel to ServiceOntario centre (20 minutes)</li><li>2. Wait in line (15 minutes)</li><li>3. Talk to agent (5 minutes)</li><li>4. Travel back to home/office (20 minutes)</li></ol> <b>Total estimated time: 1 hour or more</b>	<b>Renouvellement en personne:</b> <ol style="list-style-type: none"><li>1. Voyage pour entretenir le bureau d'Ontario (20 minutes)</li><li>2. Attente dans la ligne (15 minutes)</li><li>3. Entretien à l'agent (5 minutes)</li><li>4. Voyage de nouveau à la maison/au bureau (20 minutes)</li></ol> <b>Temps total: 1 heure ou plus</b>
<b>Renewing online:</b> <b>Total estimated time: 10 minutes or less</b> in the convenience of your home, 24/7, instant, easy and safe.	<b>Renouvellement en ligne:</b> <b>Temps total: 10 minutes ou moins</b> dans la commodité de votre maison, 24/7, instant, facile et sûr.
<b>What are you waiting for? Visit us at</b> <b><a href="https://ServiceOntario.ca/RenewOnline">ServiceOntario.ca/RenewOnline</a></b>	<b>Qu'attendez-vous? Visitez</b> <b><a href="https://ServiceOntario.ca/Renouveler-en-Ligne">ServiceOntario.ca/Renouveler-en-Ligne</a></b>

**1  
4 DEC**

- Specific negative consequences of not renewing online – lost time
- Coloured font to draw visual attention
- Used the same envelope as in Intervention 1



# Timing and Measurement

- 626,212 vehicle owners were mailed notification materials during this pilot

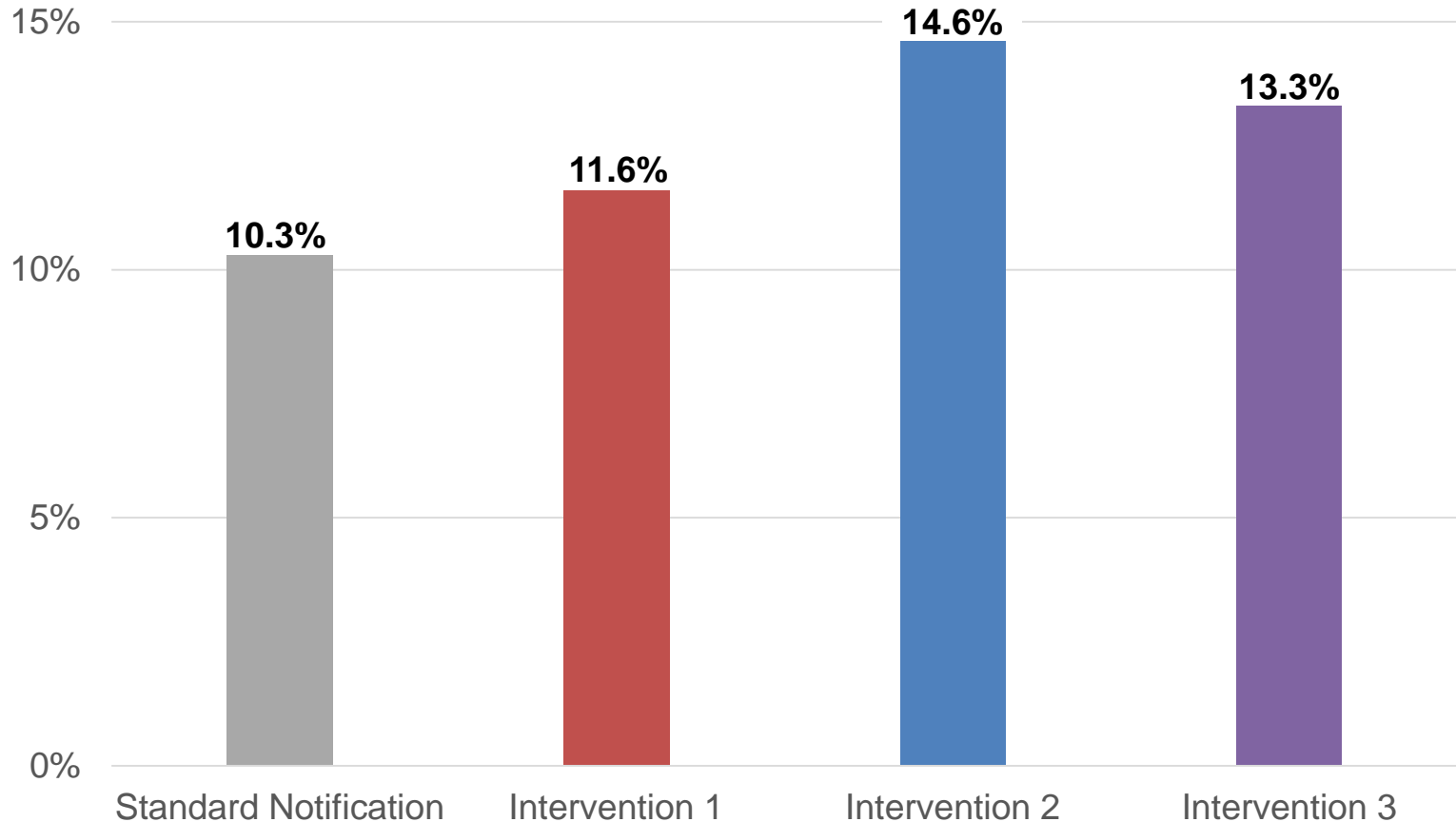
Week	Dates	Notification
1	30 Dec. – 03 Jan.	Control
2	06 Jan. – 10 Jan.	Intervention 1
3	13 Jan. – 17 Jan.	Intervention 2
4	20 Jan. – 24 Jan.	Intervention 3
5	27 Jan. – 31 Jan.	Control
6	03 Feb. – 07 Feb.	Intervention 1
7	10 Feb. – 14 Feb.	Intervention 2
8	17 Feb. – 21 Feb.	Intervention 3

- Analyses were conducted by the Behavioural Insights Unit and Behavioural Economics in Action Research Cluster at Rotman (BEAR)

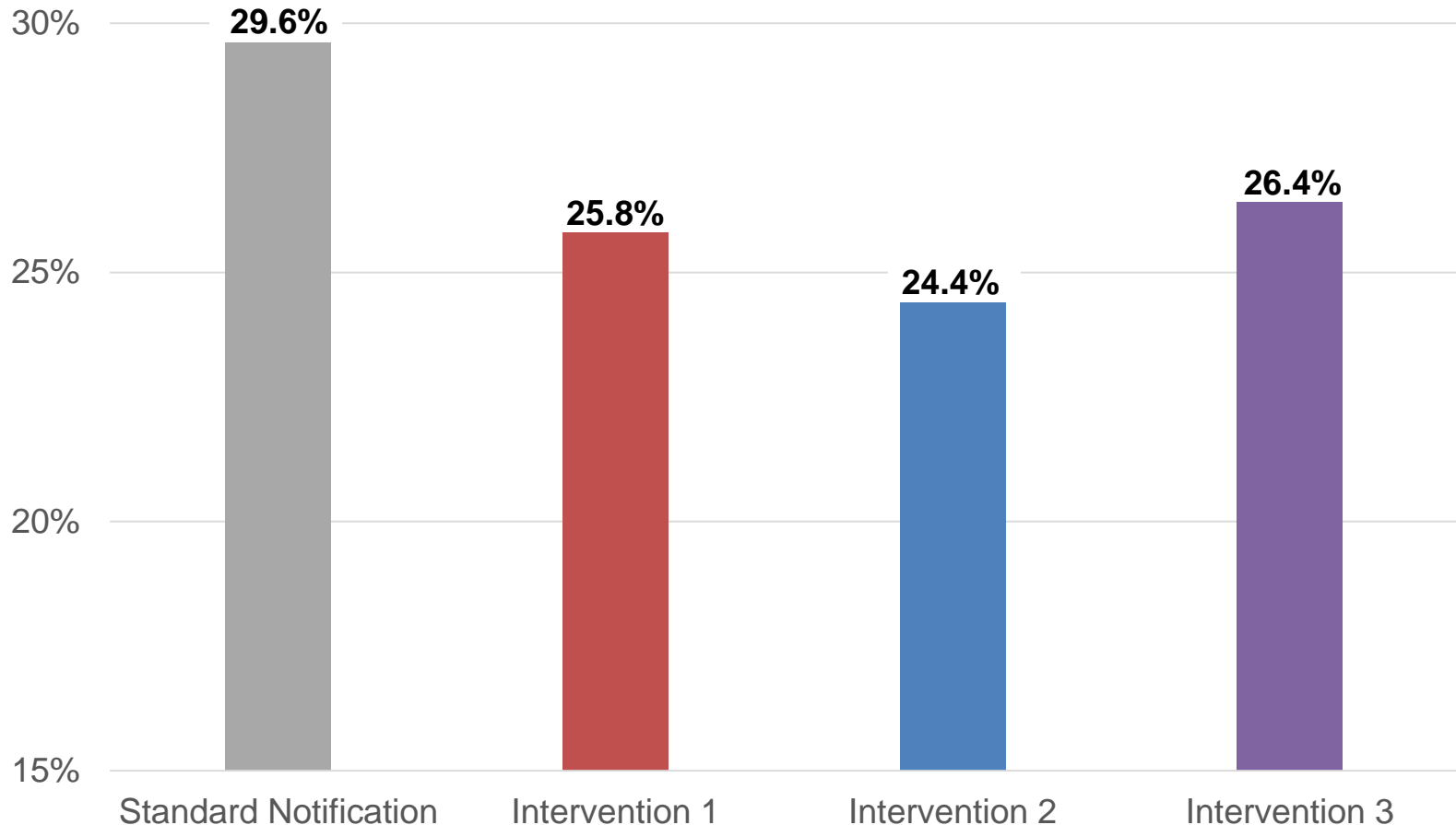
# Results

- Compared to the standard notice, all three intervention conditions significantly increased online renewals.
- In total, the pilot resulted in **13,057 more** online licence plate sticker renewals.
- Intervention 2 was the most successful and increased online renewals from 10.3%, (owners who received the standard notice), to 14.6%.
- Interventions 2 and 3 also significantly increased the number of validation stickers being renewed on time, compared to the standard notice.

# Stickers Renewed Online by Condition (%)



# Stickers Renewed (all channels) Past Renewal Date by Condition (%)



# Results



**42%**  
increase in the  
number of online  
renewals

**13,057 more**  
renewals were  
completed  
online

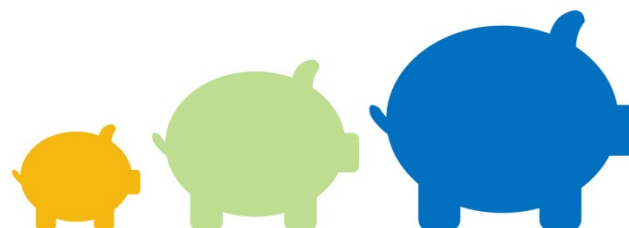


**\$1.6**  
million  
more  
in 90 days

**\$28,053 saved**  
through shift to  
online renewals



**\$612,196**  
potential savings  
annually if implemented  
province-wide

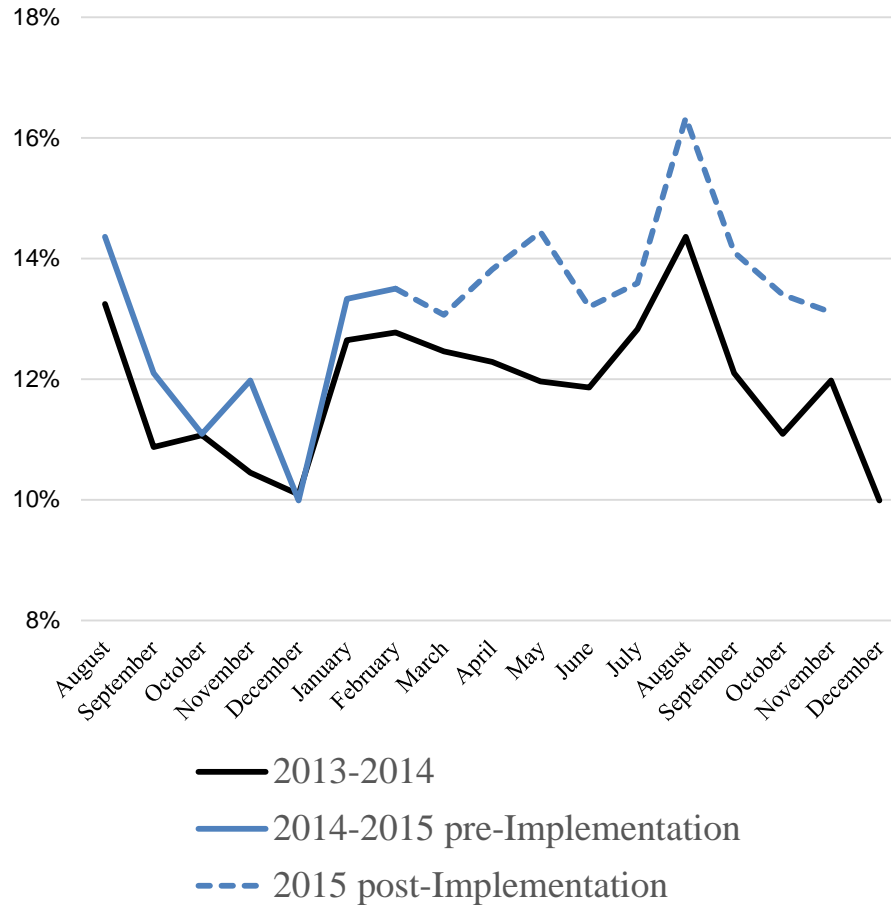


**\$0.00**  
**spent**  
to run the pilot

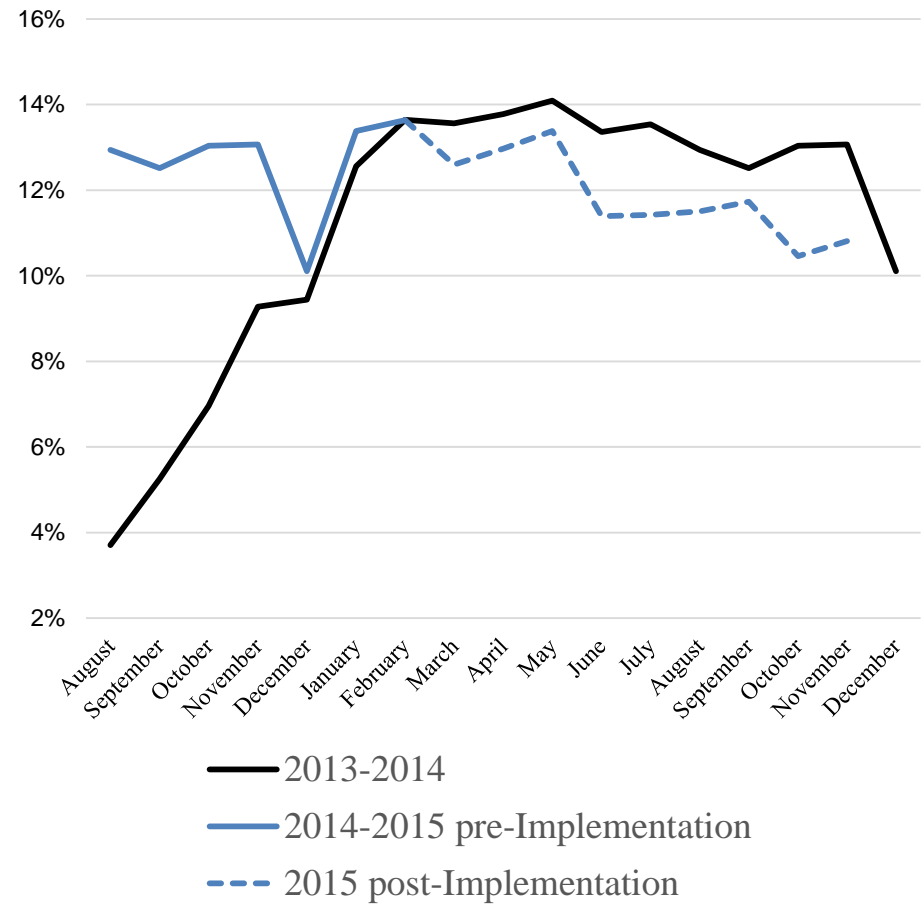
Rolling out Success

# 2015 IMPLEMENTATION

Monthly Percent of License Plate Stickers Renewed Online



Monthly Percent of Driver's Licences Renewed Online



After Implementation of new notice in Feb 2015, online uptake has increased. The same pattern is not observed in online driver's licence renewals, suggesting temporal effects are unlikely to be the cause of increased uptake.

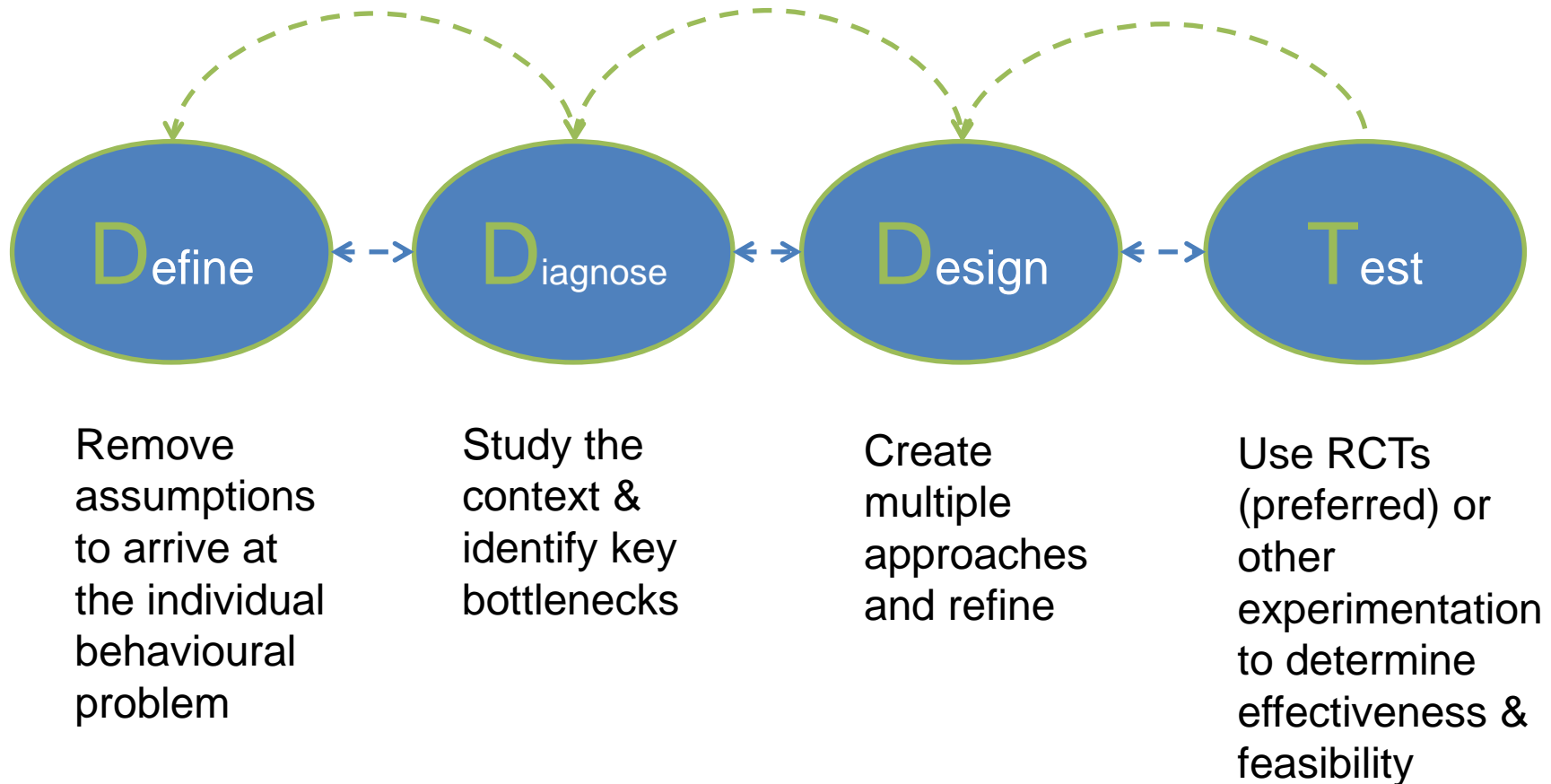


Understand Design Evaluate

# HOW WE WORK



# Behavioural Diagnosis and Design Approach



# More Information

## People

Cynthia Abel  
Manager, Behavioural Insights Unit  
Treasury Board Secretariat  
416-325-5405  
[Cynthia.Abel@ontario.ca](mailto:Cynthia.Abel@ontario.ca)

Julian House  
Research Scientist  
Treasury Board Secretariat  
416.326.2562  
[Julian.House@ontario.ca](mailto:Julian.House@ontario.ca)

Steve Burnett  
Director, Partnerships & Business  
Development  
Service Ontario  
416-325-8783  
[Steve.Burnett@ontario.ca](mailto:Steve.Burnett@ontario.ca)

## Resources

*A Practitioner's Guide to Nudging* [http://www.rotman.utoronto.ca/-/media/Images/Programs-and-Areas/behavioural\\_economics/GuidetoNudging-Rotman-Mar2013.pdf](http://www.rotman.utoronto.ca/-/media/Images/Programs-and-Areas/behavioural_economics/GuidetoNudging-Rotman-Mar2013.pdf)

*EAST: Four simple ways to apply behavioural insights* [http://www.behaviouralinsights.co.uk/wp-content/uploads/2015/07/BIT-Publication-EAST\\_FA\\_WEB.pdf](http://www.behaviouralinsights.co.uk/wp-content/uploads/2015/07/BIT-Publication-EAST_FA_WEB.pdf)

*Test, Learn, Adapt: Developing Public Policy with Randomised Controlled Trials*  
<http://www.behaviouralinsights.co.uk/sites/default/files/TLA-1906126.pdf>

Richard H. Thaler and Cass R. Sunstein (2008). *Nudge: Improving Decisions about Health, Wealth, and Happiness*.