July 24, 2020

# Pillars of Municipal Innovation

City of Syracuse: Adria Finch and Autumn Beaudoin Syracuse University's X-Lab: Joseph Boskovski



# Agenda part 1...

Learning & Lecture

- Syracuse Stories
- Three Pillars with Examples
  - Behavioral Science
  - Human Centered Design
  - Evaluation
- Q&A

# ...part 2

- Activity Introduction
- Group Discussion Round 1
  - Behavioral Science
  - Human Centered Design
  - Evaluation
- Share-out
- Group Discussion Take 2
- Closing

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# Syracuse Stories

**Problem:** Commercial Permit applications were taking too long to review.

Understanding the problem: It was ~two weeks after drop-off until any review occured

Solution: Create a permit intake process where they are reviewed upon drop off

Innovations: Permit intake process, Project registration form, Permit intake meetings

New Problem: Applicants weren't showing up for their intake meeting

Solution 2: Doctor's office model

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### Pillars of Innovation

**Behavioral Science** 

We have automatic and effortful mental processes

Loss aversion causes us to be risk averse and risk seeking Frames can clarify and confuse reality

Social connections and information can cause us to cooperate or defect Human-Centered Design

What is the lived experience of who you are designing for?

How does what you're building allow them to achieve their goal?

What do the end-users say about your prototype?

Evaluation

Baseline the issue

Measure the impact

Tell the story

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Active decision cohort Standard enrollment cohort



■Active decision cohort ■ Standard enrollment cohort

### **Behavioral Science**

8 quarterly emails to 300k student loan borrowers

Nudging them to view FICO score

Does viewing affect overconfidence?

Your Quarterly FICO<sup>®</sup> Score is Available!

View Your Score »

As a free benefit of your loan, you can view your FICO<sup>®</sup> Score by logging in to your Sallie Mae account.<sup>1</sup>

FICO<sup>®</sup> Scores are the most widely used credit scores in lending decisions. Viewing your score can help you understand your credit risk and effectively manage your financial health. When you **log in**, you'll also see the key factor(s) affecting your FICO<sup>®</sup> Score.

Learn more at SallieMae.com/FICO

Thank you for being a Sallie Mae customer!

**View Your Score** »



**Useful Resources** 

Understanding Credit Handbook

Tips for improving your FICO<sup>®</sup> Score

Receive your credit report from three major bureaus at annualcreditreport.com

Learn more about the Smart Option Student Loan®







Bhargava, Saurabh, and Dayanand Manoli. "Psychological frictions and the incomplete take-up of social benefits: Evidence from an IRS field experiment." American Economic Review 105, no. 11 (2015): 3489-3529.



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**Behavioral Science** 

1

1

You have been paired with two people who played the Dictator Game. One, E, divide /hile

18



Allcott, Hunt. "Social norms and energy conservation." Journal of public Economics 95, no. 9-10 (2011): 1082-1095.

#### Social connections and **Behavioral Science** information can cause us to cooperate or defect **Overall 2% reduction** Energy Conservation (Increase in kWh Saved per \$1 Spent) Social-Norms Nudge 27.3 (Allcott, 2011) Health-Linked Usage Information 0.050 Nudge (Asensio & Delmas, 2015) **Billing-Information Nudge** Negligible (Asensio & Delmas, 2015) **Electricity Bill Discounts** 3.41 (Ito, 2015) Incentives and Education 14.0 (Arimura et al., 2012)

Benartzi, Shlomo, John Beshears, Katherine L. Milkman, Cass R. Sunstein, Richard H. Thaler, Maya Shankar, Will Tucker-Ray, William J. Congdon, and Steven Galing. "Should governments invest more in nudging?." Psychological science 28, no. 8 (2017): 1041-1055.



Alsan, Marcella, Owen Garrick, and Grant Graziani. "Does diversity matter for health? Experimental evidence from Oakland." American Economic Review 109, no. 12 (2019): 4071-4111.



Alsan, Marcella, Owen Garrick, and Grant Graziani. "Does diversity matter for health? Experimental evidence from Oakland." American Economic Review 109, no. 12 (2019): 4071-4111.

**Behavioral Science** 

A person has bought two \$80 tickets to the theater. When she arrives at the theater, she opens her wallet and discovers that the tickets are missing. Will she buy two more tickets to see the play?

**Behavioral Science** 

A person goes to the theater, intending to buy two tickets that cost \$80 each. She arrives at the theater, opens her wallet, and discovers to her dismay that the \$160 with which she was going to make the purchase is missing. She could use her credit card. Will she buy the tickets?

**Behavioral Science** 

Frames can clarify and confuse reality

Scenario A: 46% say yes

Scenario B: 88% say yes

Mental accounting and sunk cost fallacy

### **Behavioral Science**

Makes the costs of FTA more salient to overcome present bias.

Aids people to think ahead and overcome potential barriers (or costs) to showing up to court.

Helpful reminder: go to court Mon Jun 03 9:30AM. We'll text to help you remember. [Show up to avoid an arrest warrant.] Reply STOP to end texts. www.mysummons.nyc

You have court on Mon Jun 03 at 346 Broadway Manhattan. [What time should you leave to get there by 9:30AM? Any other arrangements to make? Write out your plan.]



### **Behavioral Science**

[Since you missed court on Jun 03 (ID##########), a warrant was issued.] [You won't be arrested for it if you clear it at 346 Broadway Manhattan.] www.mysummons.nyc

#### Sent when a warrant is triggered by an FTA

1 Notifies of the serious consequence that has occurred.

2 Encourages action to resolve the open warrant.







**Behavioral Science** 

You are faced with the following pair of concurrent decisions:

(i) choose between

- A. sure gain of \$240
- B. 25% chance to gain \$1,000 and 75% chance to gain nothing

(ii) and choose between

C. sure loss of \$750

D. 75% chance to lose \$1,000 and 25% chance to lose nothing

We have automatic and

effortful mental processes

**Behavioral Science** 

3 in 4 people choose AD:

**Behavioral Science** 

Minority norm: "9 out of 10 pay their tax on time. You are currently in the very small minority of people who have not paid us yet."

Gain: "Paying tax means we all gain from vital public services like the NHS, roads, and schools."

Loss: "Not paying tax means we all lose out on vital public services like the NHS, roads, and schools."

Hallsworth, Michael, John A. List, Robert D. Metcalfe, and Ivo Vlaev. "The behavioralist as tax collector: Using natural field experiments to enhance tax compliance." Journal of Public Economics 148 (2017): 14-31.



Hallsworth, Michael, John A. List, Robert D. Metcalfe, and Ivo Vlaev. "The behavioralist as tax collector: Using natural field experiments to enhance tax compliance." Journal of Public Economics 148 (2017): 14-31.

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Measure the impact

Tell the story

Human-Centered Design



# Human-Centered Design

### Human-Centered

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# Human-Centered Design

### Human-Centered

**End-Users Drive Decisions** 

Design		
### Human-Centered Design

### Human-Centered

**End-Users Drive Decisions** 

What is the lived experience of using this public service? What is the user's goal?

Design		

### Human-Centered Design

### Human-Centered

**End-Users Drive Decisions** 

What is the lived experience of using this public service? What is the user's goal?

Consider: psychology, limitations, human flaws, history of trauma, local culture, current mindset etc.

Design	

### Human-Centered Design

### Human-Centered

End-Users Drive Decisions

What is the lived experience of using this public service? What is the user's goal?

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# Design

Human-Centered	Design
End-Users Drive Decisions	Usability
What is the lived experience of using this public service? What is the user's goal?	
Consider: psychology, limitations, human flaws, history of trauma, local culture, current mindset etc.	

Human-Centered	Design
End-Users Drive Decisions	Usability
What is the lived experience of using this public service? What is the user's goal?	What does the environment give to, or "afford", the human as options?
Consider: psychology, limitations, human flaws, history of trauma, local culture, current mindset etc.	

Human-Centered	Design
End-Users Drive Decisions	Usability
What is the lived experience of using this public service? What is the user's goal?	What does the environment give to, or "afford", the human as options?
Consider: psychology, limitations, human flaws, history of trauma, local culture, current mindset etc.	Ex. when you leave your reusable grocery bag on the doorknob

Human-Centered	Design	
End-Users Drive Decisions	Usability	Iteration
What is the lived experience of using this public service? What is the user's goal?	What does the environment give to, or "afford", the human as options?	
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Human-Centered	Design	
End-Users Drive Decisions	Usability	Iteration
What is the lived experience of using this public service? What is the user's goal?	What does the environment give to, or "afford", the human as options?	Prototype
Consider: psychology, limitations, human flaws, history of trauma, local culture, current mindset etc.	Ex. when you leave your reusable grocery bag on the doorknob	

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Consider: psychology, limitations, human flaws, history of trauma, local culture, current mindset etc.	Ex. when you leave your reusable grocery bag on the doorknob	Test

Human-Centered	Design	
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# Human-Centered Design

### Design Human-Centered Usability Iteration **End-Users Drive Decisions** What is the lived experience of What does the environment give Prototype using this public service? What to, or "afford", the human as is the user's goal? options? Consider: psychology, Learn Test limitations, human flaws, history Ex. when you leave your of trauma, local culture, current reusable grocery bag on the mindset etc. doorknob



# Human-Centered DesignDesign & EquityImagine what it's like to use<br/>this service or interact with<br/>this policyImagine what it's like to use<br/>this service or interact with<br/>this policyImagine what it's like to use<br/>this service or interact with<br/>this policyImagine what it's like to use<br/>this service or interact with<br/>this policyImagine what it's like to use<br/>this service or interact with<br/>this policyImagine what it's like to use<br/>this service or interact with<br/>this policyImagine what it's like to use<br/>this the to use<br/>this policyImagine what it's like to use<br/>this the to use<br/>this policyImagine what it's like to use<br/>this the to use<br/>this the to use<br/>this policyImagine what it's like to use<br/>this the to use<br/>this policyImagine what it's like to use<br/>this the to use<br/>this policyImagine what it's like to use<br/>this the to use<br/>this the to use<br/>this the to use<br/>this policyImagine what it's like to use<br/>this the to use<br/>the use of the to use<br/>the to use<br/>the use of the u

# Human-Centered Design

### **Example Time**

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Trauma Response Team



# Human-Centered Design

### Example Time



Trauma Response Team







Example Time



### Human-Centered Design **Example Time Human-Centered** Design Usability Iteration End-Users Drive Decisions What is the lived experience What does the environment give Prototype of interacting with this public to, or "afford", the human as service? options? Repeat • Consider: psychology, Learn Test limitations, human flaws, history Ex. when you leave your of trauma, local culture, current reusable grocery bag on the mindset etc. doorknob

Human-Centere	d Design	Example Time
level	level 2	level 3
Empathize	Ask	Facilitate
Imagine what it's like to use this service or interact with this policy	Interview folks who inte with it and ask what shou improved	eract Let the users build it by working <i>with</i> them instead of <i>for</i> them



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# Evaluation

### **Baseline the issue**

What can you measure?

- Look at steps of the process
- Identify outputs
- Identify outcomes
- Conduct a data audit

# Evaluation

### **Baseline the issue**

What can you measure?

- Look at steps of the process
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Counting is hard!

- Is there a data infrastructure in place?
  - $\circ$  If not, build one
- You can count in different ways:
  - Total
  - $\circ$  Mean
  - Median
  - $\circ$  By type
  - By geography
  - Percentage

# **Data Based Innovation**

Measure the impact

Measure the impact

- Identify metrics
- Set targets
- Identify cadence to review

# **Data Based Innovation**

### Measure the impact

Measure the impact

- Identify metrics
- Set targets
- Identify cadence to review

### Additional Measurement of Impact

- T: Time
- E: Errors
- A: Amount
- M: Money
- Total

### **Data Based Innovation**

### Tell the story

Iteration

- Evaluation is not for punishment
- Permission to fail
- Learn from what went wrong
- Ideate again
- Measure again
- Share when things don't work

Where to share the story

- Media
- Newsletter
- Staff meeting
- Employee recognition
- Email to mayor/leadership with employee owners copied

### **Data Based Innovation**

### Water Sensors

### Targets

- Decrease the average cost per water main repair within the sensor network by 30% from \$7,000 to \$4,900 within three years
- Decrease the annual number of breaks within the sensor network by 50% from an average of 8 per year to an average of 4 per year within three years

### Next Steps

- Water: Continue to pilot sensors
- I-Team: Research additional companies: Metrotech, WaterStart



### **Pillars of Innovation**

Human-Centered Design

SUMMARY/Tied to Adria's example

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Data Innovation

Count!

Word of caution: counting makes people nervous.

In order to determine success you need to measure.

Even the way you count can be iterated upon!

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### **BREAK-TIME**

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- Group Discussion Take 2 (potential to take out)
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# Activity

Problem 1: We need to cite more health and safety issues in homes

**Explanation:** Code inspectors are only citing the issues that are complained about.

Problem 2: We need to standardize what we are citing

**Explanation:** Each problem in a house can be cited multiple ways. For example, you could cite poor ventilation with three different NYS codes. We weren't able to get a sense about the most common type of violation because things were cited inconsistently.
## What are some things you could measure?

Select your metric

### Favorite Ways to Measure

- Reduce variance from 10% to 5%
- Fill 95% of pothole complaints within 48 hours
- Increase compliance from 20% to 30%
- Achieve 90% satisfaction from constituents
- Increase the median (or mean) calls to CityLine from 50 to 100 per day.
- 500 people will participate.

Set your target

	Metric	Pilot Inspectors 2016	Pilot Inspectors 2017
	Total number of complaints opened	32	92
General Information	Average number of complaints by inspector	16	46
Territories	Total number of complaints opened by inspector	5	85
	Percentage of complaints opened by inspector	16%	95%
Block by Block	Alock by Block Percentage of identified properties with cases opened (as of 11/21/2017)		5
Building Blocks	Number of cases identified on priority block		47%
Meet Your Inspector	Number of cases opened by MYI interactions		4
Health and Safety Priorities	Average number of Health and Safety Violations per week	8	8
	Percentage of Health and Safety Violations that reach compliance within 30 days		
Customer Service	Number of people who complete survey		0
Property Owner Outreach	Total number of inspector meetings and phone calls per month	34	<b>19</b> 5
	Average number of inspector communications per month	17	98
	Percentage of cases that reach compliance after a property owner was contacted		
	Percentage of complaints that have been closed	97%	50%
Compliance	Percentage of complaints that have been closed within 90 days of being opened	81%	
Displacement	Number of households displaced for unfit homes		

# Key Result: Ninety-five percent of permits and zoning approvals will be issued on-time

Overall percent of permits approved on-time during the last 30 days: **71% On-time (42 out of 59)** Total permits issued through March 9:

2019: 378

2020: 474

<b>Residential renovation permits</b> : <i>Building permits issued within 2 weeks</i> Permits issued on-time in the 30-day period ending March 9: <b>16 out of 18</b>	89% On-Time	
<b>Commerical renovation permits</b> : Building permits issued within 6 weeks Permits issued on-time in the 30-day period ending March 9: <b>5 out of 11</b>	45% On-Time	
<b>New residential permits</b> : <i>Building permits issued within 4 weeks</i> Permits issued on-time in the 30-day period ending March 9: <b>1 out of 1</b>	100% On-Time	



Percentage Change in Calls from 2019 to 2020 by Block Calls are for the 30-day Period Ending March 9



Key Result	June 24	July 1
Implement the City government reopening plan on time.	Next week: Engineering, Finance, Water, Personnel, Audit Construction Dependent: Mayor's Office, City Payment Center	Next week: IT, NBD, DPW, Law, Planning, Zoning, Parks Playing catch up on carpentry.
Ensure that PPE is available for 110% of employees in the office by the start of each phase.	Need employee counts from Phase A, B, C	Need employee counts from Phase A, C, D
Spend 10% less each month an the same time period the previous year.	<b>April 1 - May 30: 9.1% decrease</b> June target \$14.1 M - June to date \$2.5 M This may change b/c some accounts may be removed	<b>April 1 - May 30: 9.0% decrease</b> June target \$14.1 M - June to date \$11.4 M This may change b/c some accounts may be removed
Sell \$3 million of City owned property.	<b>2 of 12 steps completed</b> Next steps: List of properties - due 6/29 Next meeting July 13	<b>3 of 12 steps completed</b> Next steps: Develop recommendations a. properties b. process SLDC on track for mid-July Offering of Memorandum release Next meeting July 6
Twenty-five people will attend the MWBE small business workshops	Marketing and sign-ups were delayed, so we don't anticipate hitting the target number of participants in June. We expect more for the July meeting.	Changing dates and focusing on marketing

# Prototype Time!

# Data Review

- How often will the data be updated?
- Who will review?
  - How frequently will each person review?
- How are the reviews structured?
  - Individually or a group?
  - Everyone gets data ahead of time or look at it at the same time?
  - Who presents the data?
- Does the data get shared with people external to the project?
  - Who?
  - When?

**Develop Review Plan** 

### Share Out