Data-Driven Crisis Management in Dayton, OH

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So, what actually is AI: Artificial Intelligence?
WT* is AI?

A Buzzword

But with some strong and useful tools behind it, that could change the way we work
The capability of a machine to imitate intelligent human behaviour.

Merriam Webster
WT* is AI?
WT* is AI?
Getting on the AI-for-Government Bandwagon
What kind of data is out there and ready to be harnessed by local governments?

It’s a Big Data world
Applications of AI

“Listening” to social media for public feedback on government-relevant topics

Predicting traffic congestion and car accidents

Handling the most common types of service requests

I've been studying this area for years, and Zencity is the most robust and innovative solution I've seen.
Prof. Stephen Goldsmith, Harvard, Former Deputy Mayor of NYC
30 days in the Dayton, OH

Interactions

1,120,043
From Data Collection to Data-Driven Decisions
Unprecedented Water Outage
February 13, 2019

- 36 inch water main damaged
- Loss of 150 million gallons of drinking water
- Depressurized the system – resulting in boil advisories
Water Outage - What Happened

- The media had dubbed the event “Dayton’s Water Crisis” inciting panic from residents
- Inaccurate information was rampant
  - Media speculated that the incident could be linked to bioterrorism
- Most residents felt the City was handling the situation badly and was not transparent
We had 24,000 comments that were made during the event … that were culminated in a report by ZenCity,” Dickstein said. About 86 percent of comments were positive or neutral, compared to 14 percent that were negative, she said.

Dayton Daily News
KKK-Affiliated Group Rally
May 25, 2019

- February 22, 2019 - Montgomery County approved permit
- 9 Members showed up
- More than 350 officers assembled
- Cost roughly $650K
KKK-Affiliated Rally - What Happened

• The City continuously monitored conversations around the event from rally announcement to official rally
• The majority of the Dayton community was outraged by the group’s presence
• Residents expressed desire to counter protest the day of the event
The Zencity Solution
The Zencity Solution

Day of Rally Discourse Summary

Topics

- Cost
- Police
- Peaceful
- Mayor Whaley

Discourse %

- Cost: 25%
- Police: 15%
- Peaceful: 10%
- Mayor Whaley: 5%
Multiple Tornadoes/Water Outage
May 28, 2019

- Several tornadoes touched down in highly populated areas of Dayton and other Ohio communities
- 1000 structures damaged
- 55,000 residents without power
- Water system lost pressure which resulted in a boil advisory that lasted four days
Multiple Tornadoes - What Happened

- **Sirens** - Many residents claimed that they did not hear any sirens and expressed anger at the city for “putting them at risk”. Many believe that mobile phone alerts were not a sufficient solution and requested that the City repair the sirens (760 commenters).

- **Generators** - People wondered whether there are backup generators and many questioned how is it possible that after the recent water outage no lessons were learned (205 commenters).
Multiple Tornadoes - What Happened

- **Sewage**- People were worried about the consequences of flowing sewage into the river and feared it might destruct the ecosystem *(99 commenters)*.

- **Municipality’s Response**- People were frustrated by the lack of response and updates on social media by the municipality *(81 commenters)*.
The Zencity Solution - Tornadoes

Resident Tornado Discourse

<table>
<thead>
<tr>
<th>Topics</th>
<th># of Commenters</th>
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<tbody>
<tr>
<td>Expressing thanks to the city, aid, and volunteers</td>
<td>1857</td>
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<tr>
<td>Sirens</td>
<td>760</td>
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<tr>
<td>Generators</td>
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<tr>
<td>Municipality's Response</td>
<td>81</td>
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Mass Shooting
August 4, 2019

- Ten people were killed (including the perpetrator)
- 27 others were injured
- Police killed the gunman within 32 seconds of the first shots
- Occurred in the Oregon District (a busy, nightlife neighborhood)
Mass Shooting - What Happened

- The mass shooting in the city stirred a nationwide, fervent discussion.
- Discourse on the subject was unprecedented -
  - 1,326,631 interactions in the four days following the shooting.
- A majority of the discourse discussed national issues:
  - Second amendment
  - Immigration
  - National politics
Real-time Analysis

Praise for First Responders

Criticism of the Mayor
- 10.9%

First Responders
- 89.1%
Post-Crisis Initiatives: Permanent Memorial

Permanent Memorial Resident Feedback

<table>
<thead>
<tr>
<th>Permanent Memorial Ideas</th>
<th>Interactions</th>
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<tr>
<td>Fountain</td>
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<td>Benches</td>
<td>44</td>
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<tr>
<td>Bricks</td>
<td>21</td>
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</tbody>
</table>
Post-Crisis Initiatives: Dave Chapelle Benefit Concert

Event Comparison (8/24-8/31)

- Benefit Concert: 69,335
- Teens Killed for Trespassing: 17,142
- Stolen Cruiser Incident: 9,858
Proactive governance in the face of crisis

- Resident-centric crisis monitoring
- Better communication
  - Cross-department and resident facing
- Misinformation management
- Positive engagement and service efficacy
Thank you!
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