USCG Sector New York
Risk Management Dashboard

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Overview

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1. Background
2. Research Question

II Results
1. Methodology
2. Dashboard

III Conclusions
1. Next Steps
2. Recommendations

Background
### Current Data Quality Problem

Turning Data into Information

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<thead>
<tr>
<th>notification_datetime</th>
<th>notification_type</th>
<th>incident_type</th>
<th>incident_subtype</th>
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<tbody>
<tr>
<td>2014-08-15 01:45:00</td>
<td>Telephone call to Co...</td>
<td>Marine Safety</td>
<td>Equipment Failure</td>
<td>Engine Failure</td>
<td>Territorial waters - wi...</td>
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<td>NRC Notification</td>
<td>Marine Environment...</td>
<td>Pollution - Oil</td>
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<td>VHF/FM (Channel 16)</td>
<td>Search and Rescue</td>
<td>Disabled Vessel</td>
<td>Engine Failure</td>
<td>Inland waters (lake/...</td>
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<td>Telephone call to Co...</td>
<td>Search and Rescue</td>
<td>Person in Water (PIW)</td>
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<td>Inland waters (lake/...</td>
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Current Data Quality Problem

Turning Data into Information

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</table>
How can United States Coast Guard Sector New York incident data be displayed and analyzed more efficiently to identify trends and help quantify risk?
What is a Dashboard?

- U.S. Mentions by Location
  - Texas: 172
  - Florida: 132
  - California: 144
  - New York: 45
  - Minnesota: 20

- Executive Mentions
  - Walter White: 42%
  - Jesse Pinkman: 32%
  - Gus Fring: 65%

- Share of Voice Comparison
  - Company Name: 42%
  - Company Name: 65%
  - Company Name: 45%

- Social Media
  - 123 Links
  - 20 Share
  - 50 Mentions

- Local
  - Texas: 42%
  - Dallas: 32%
  - San Antonio: 65%
  - Houston: 10%

- Media Values
  - Television: $1,685,948
  - Radio: $597,574
  - Newspaper: $23,821

- Sentiment
  - Positive: 42%
  - Neutral: 65%
  - Negative: 45%
Importance to the USCG
and to the Homeland Security Enterprise

- USCG has massive amounts of data with inconsistencies
- Dashboards allow an indepth look into trends
- Allows for quick visualization of incident data
- Allows USCG to be data driven
- Proactive versus reactive
- Dashboard uses the Coast Guards pre-existing system to give meaning to thousands of rows of data

Methodology

Overview

- Brainstorm & Analyze
- Design
- Build
Brainstorming & Analyzing

Methodology Step 1

- Interpreted and assessed incident data
- Collectively created an initial design
- Met with Sector New York and revised with feedback
Designing
Methodology Step 2

• Dashboard Graphical Time Scales
  • Structured to present data in an informative, but non-cumbersome way

• Analysis Page
  • In order to provide the option to “drill down” into the data

• Geographic Understanding of Data
  • Give context to data through zone clustering
Building
Methodology Step 3

**Excel Files**
1. Received open source data
2. Analyzed the data

**Data Parsing**
1. Parsed the data for use in a database
2. Upload data to database

**Database**
1. Created a spatial database
2. Ran queries on the data

**Display**
1. Fed the results to graphs and maps
2. Derived statistical benefits
Dashboard

Status: Incomplete Prototype
Next Steps

Transition Dashboard
- Hand over to Sector New York

Improve Functionality
- E.g. Customizable Graphs and Maps

Improve Design
- E.g. Color Coding by Incident Type

Improve Capabilities
- Predictive Modeling
Recommendations for Sector New York

- Ensure Data Integrity
- Separate category for vessels types
- Integrate dashboard with the CGBI System
- Reduce the delay in the data reporting systems to near real time
Summer Research Institute
www.stevens.edu/SummerResearchInstitute

Questions?