

Smarter
Workflows
with Natural
Language
Processing

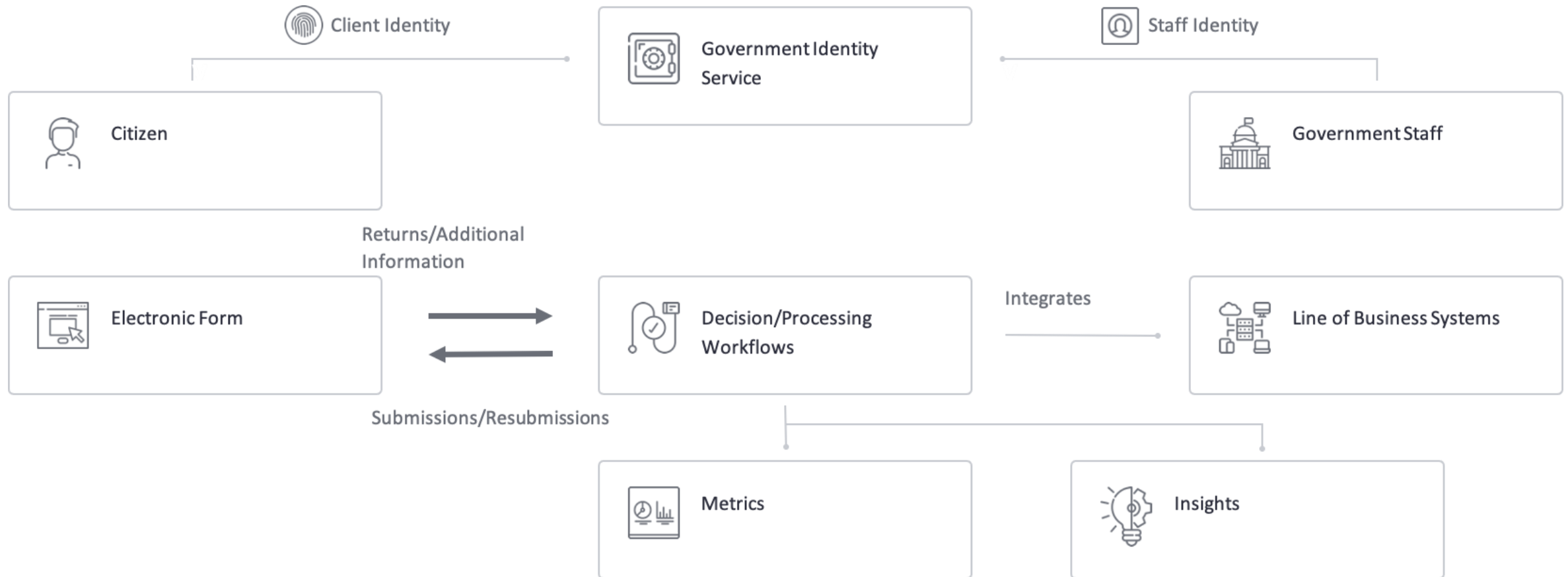


formsflow.ai



Why we built this open source framework ?

A familiar digital government need around the world



Being in a government town, we could not resist building it!

formsflow.ai - Integrated forms, workflows and analytics framework

Forms

- Modern and Lightweight
- Easy to use
- Intuitive form designer for business users



Workflow/BPM

- BPMN/DMN Compliant
- Fully-featured
- Drag-n-drop process design



Identity Management

- Federated identity
- OIDC, OAuth 2.0



Analytics

- Lightweight
- OIDC support
- Supports a variety of data sources



DevOps

- Docker, Docker-compose
- OpenShift templates

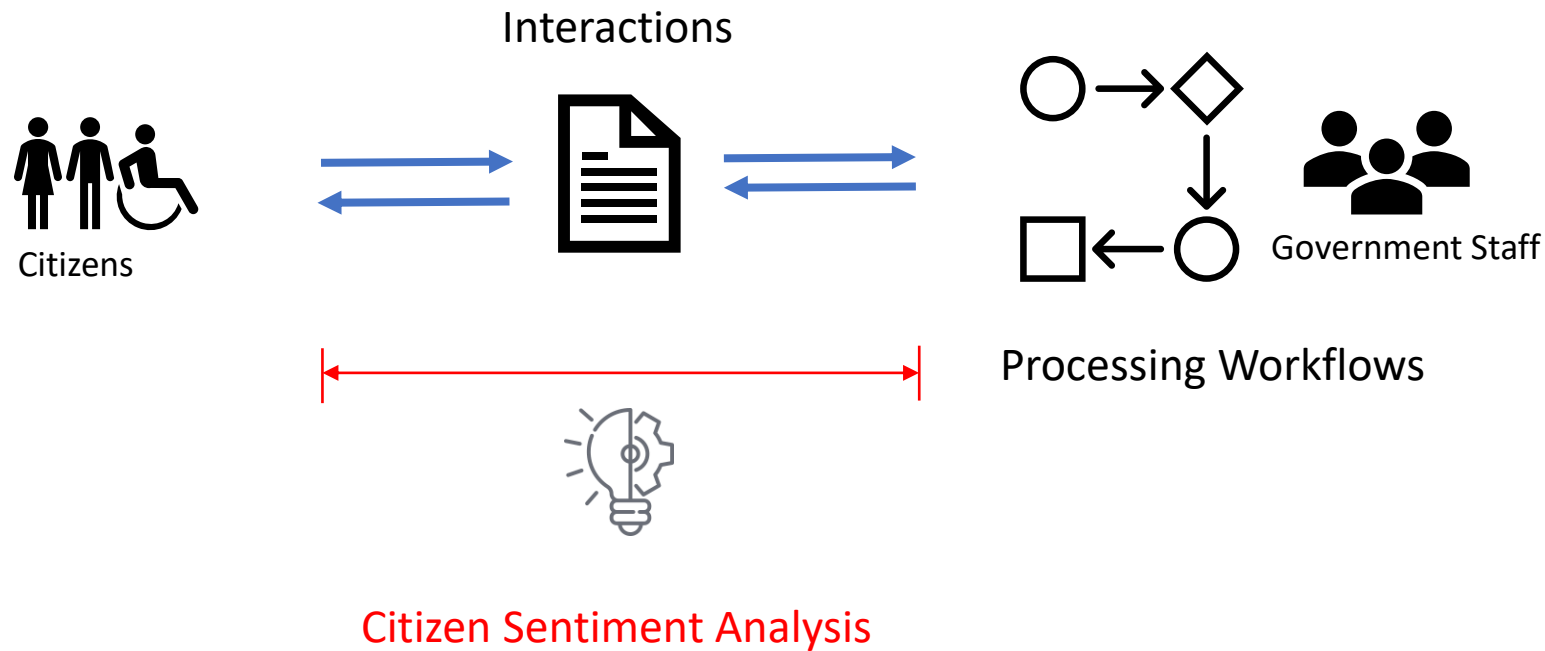


Progressive Web App

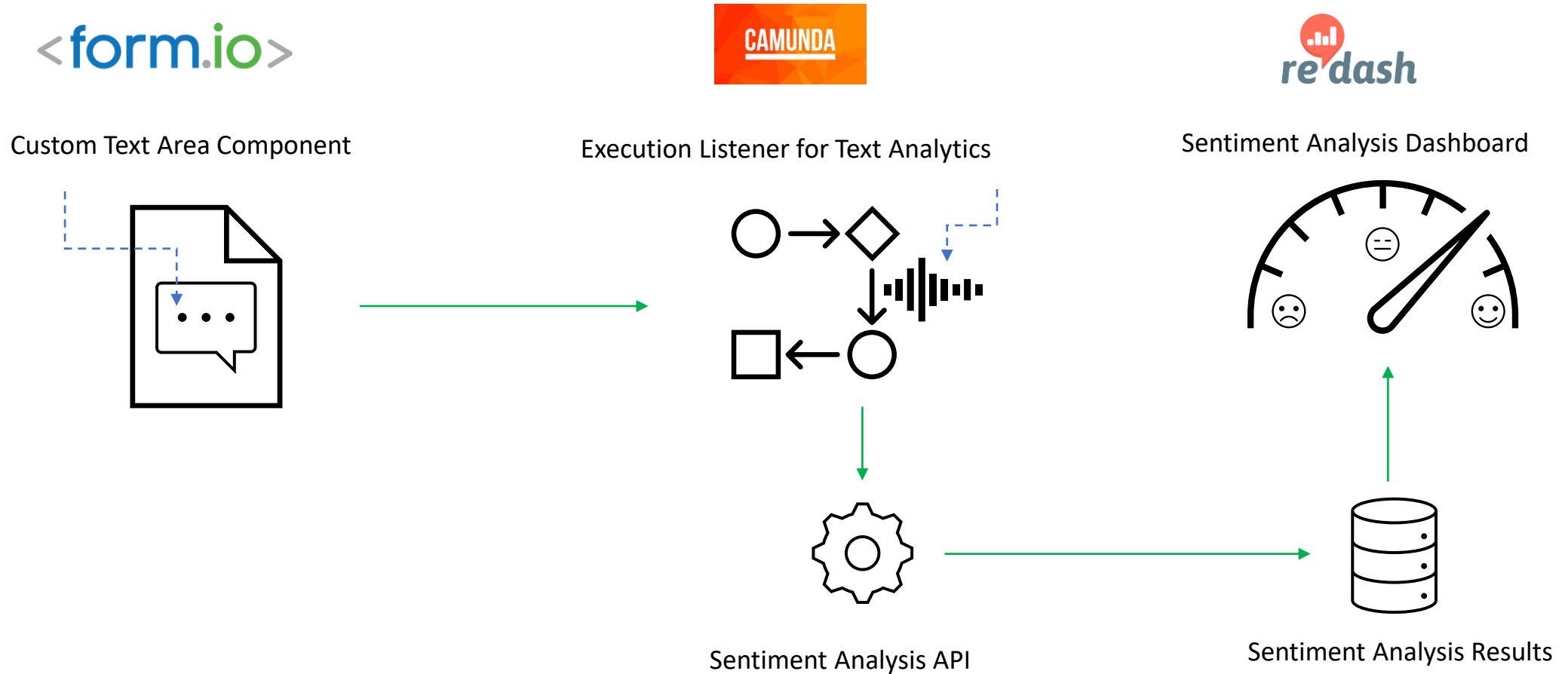
- React Progressive Web App
- Postgres for metadata
- Python/Flask APIs



How do we enable BPM workflows to trigger Sentiment Analysis based on Citizen – Staff interactions?



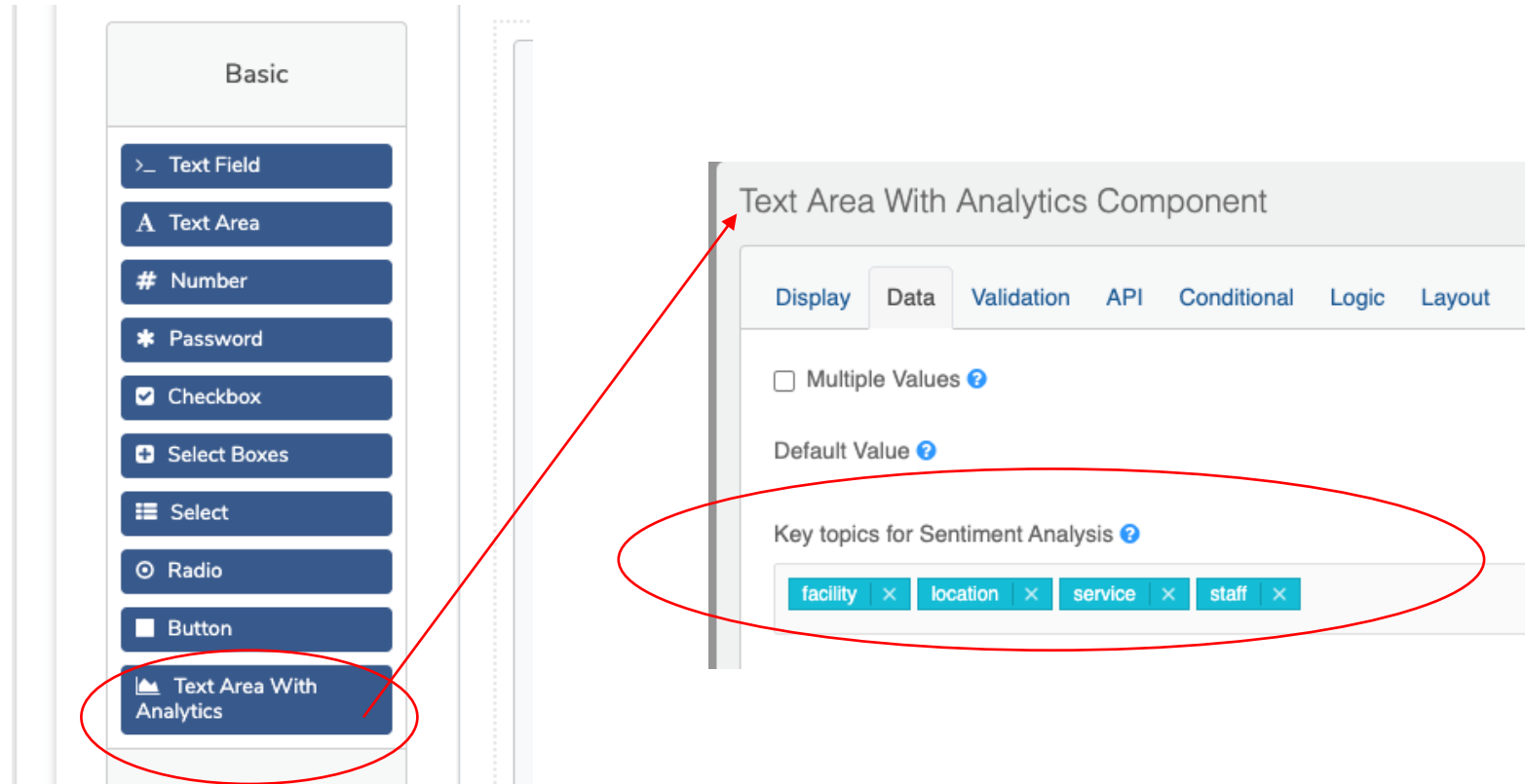
Solution Approach



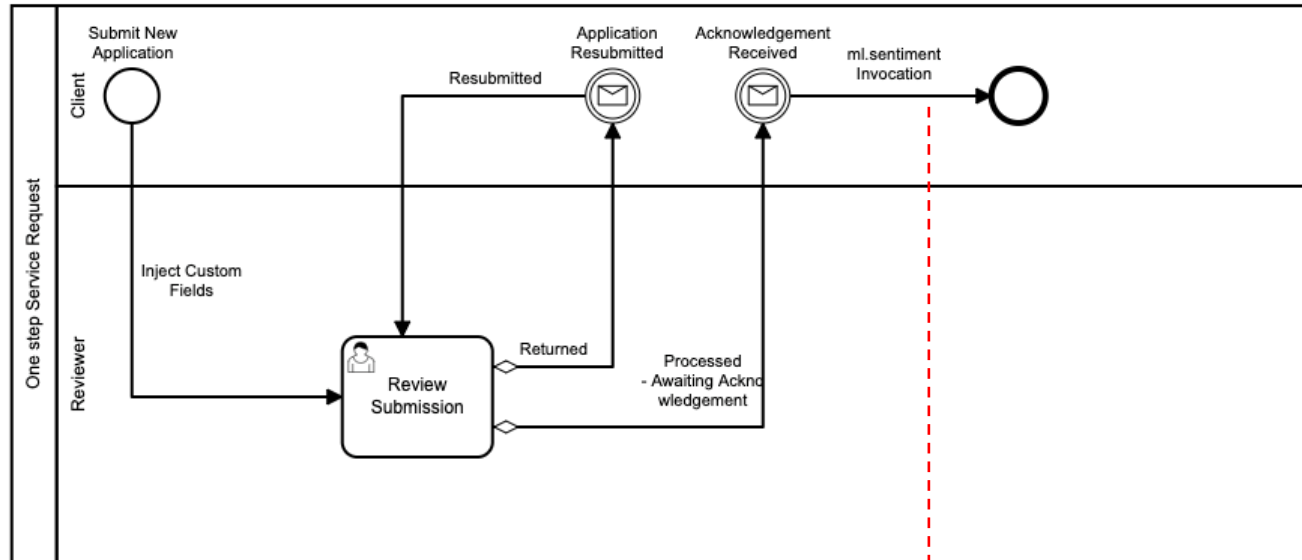
Sentiment Analysis – Use Case Example

1. Citizen submits a FOI (Freedom of Information) request either online or at a walk-in facility
2. A Staff user picks up the request and asks for additional information if necessary
3. Citizen provides additional information requested
4. Staff provides the information that the Citizen is looking for
5. Citizen provides feedback on the service which completes the workflow and triggers sentiment analysis

Custom form.io component for use by form designer



Leveraging Execution Listener on Camunda



General Listeners Extensions

Listeners

Execution Listener

- take : Script
- take : Java Class
- take : Java Class

Execution Listener

Event Type

take

Listener Type

Java Class

Java Class

org.camunda.bpm.extension.hooks.delegates.FormTextAnalysisDelegate

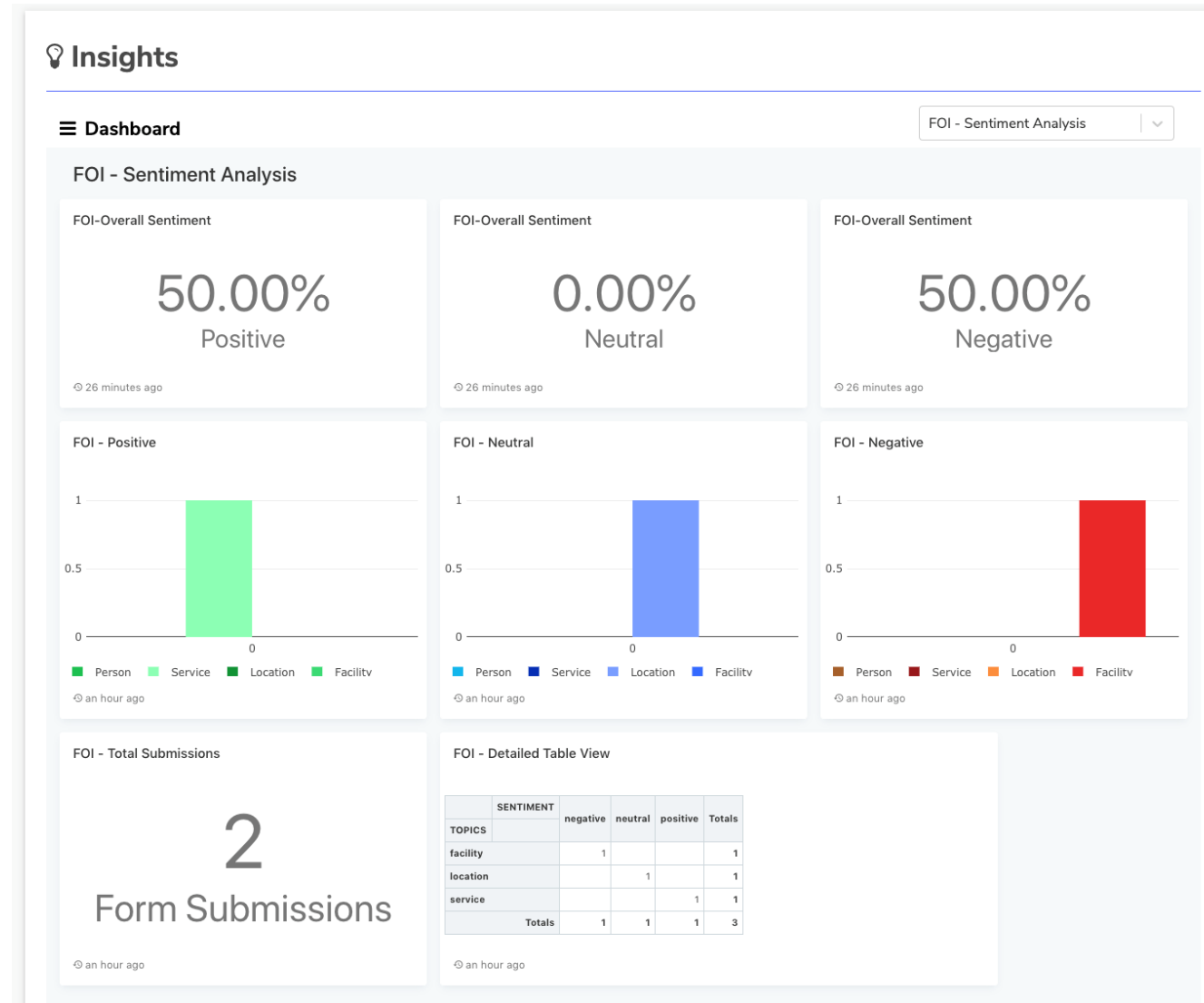
Sentiment Analysis API

- Returns sentiment of each topic in the model
- Topics used in the FOI example are – Staff, Service, Facility and Location
- Built using Python leveraging spacy library and NLTK's Vader library
- Results captured in a MongoDB collection for visualization using Redash

```
{
  "topics": [
    "facility",
    "location",
    "service",
    "staff"
  ],
  "text": "great .. i got what i need. excellent service. location is convenient too"
}
```

```
{
  "sentiment": {
    "service": "positive",
    "location": "neutral"
  },
  "overall_sentiment": "positive"
}
```

Visualizing Sentiment Analytics using Redash





Demo

CAMUNDA
CON
2020.2

Questions?

