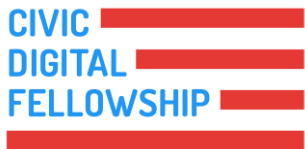


OPTIMIZING ANALYTICS PIPELINE FOR CENTRAL UTILITY PLANT

Division of Technical Resources

Advised by Alamelu Ramesh, Deputy Director



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UChicago
Computational Analysis and Public Policy

CENTRAL UTILITY PLANT (CUP)

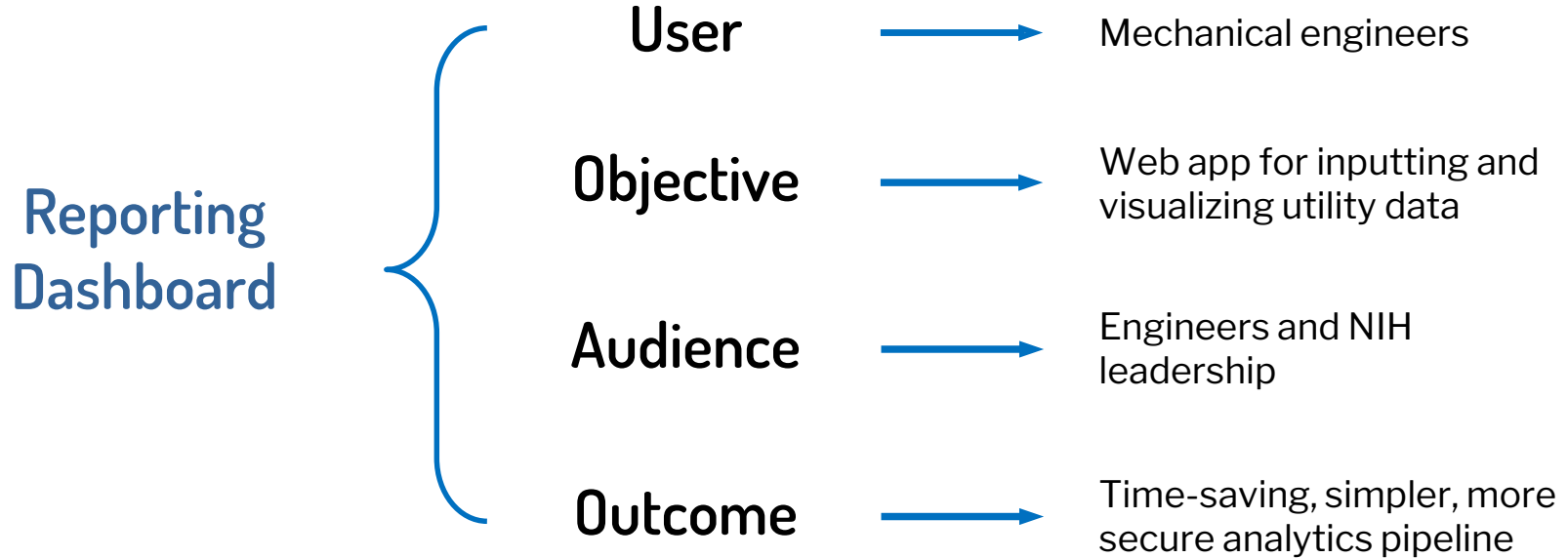
- One of the largest utility plants and lowest emission cogeneration plants in the country
- Collects 45 million data points per day from multiple sources and performs over 1 million advanced calculations
- Aiming to be one of the smartest plants in the country through a data-driven operation



IDENTIFYING NEEDS

Current		Need		Solution
Lack of backup database	.....	Historical/real-time logging	.....	Data warehouse
Single access	.....	Multi-user editing/knowledge	.....	Advanced permissions
Manual data visualization	.....	Automated reporting	.....	Centralized dashboard
Error-prone data entry	.....	Validation and correction	.....	Web app input form

SCOPE



PROCESS

- Interview potential users and receive feedback
- Design a relational database for historical energy consumption and cost
- Create backend web application

Design and markup: HTML, CSS, JavaScript

Programming and scripting: C#, Bootstrap 4 framework

Enterprise-level databases: Microsoft SQL Server



CIVIC
DIGITAL
FELLOWSHIP



IMPACT AND ROADMAP

Streamlining data entry, processing, and reporting pipeline
Positions stakeholders to unlock more value
out of data that the Central Utility Plant already records

Accessibility

\$65 million of annual energy
usage and expenditure data
backed up and aggregated

Transparency

On-demand access and
refreshed visual information
for multiple users

Analytics

Supports push for energy
cost avoidance and usage
forecasting through analysis

CONTACT

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