



26th Annual Information Technology Competition

Data Analytics Case Study

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Background Information:

The Itty-Bitty Electric Company (IBEC) provides electric service to a large service territory in Southern California. A significant portion of that territory is in what are called High Fire Risk Areas (HFRA). While always priding themselves on the reliability of their system, the recent increase in environmental events including fires has caused a negative impact on their reliability metrics such as SAIDI and SAIFI. They have also received criticism of the effectiveness of their PSPS program.

Problem Statement:

To address the issues with system reliability IBEC is focused on system hardening activities and improved vegetation management. Determining where to focus these activities requires an analytic capability that does not currently exist at IBEC. Addressing the issues with the PSPS program requires similar analytic capabilities. IBEC is also interested in improving their situational awareness during outages to improve response and reduce the duration of the outages.

While IBEC has internal data such as a model of their grid network, an asset database and historical outage data they believe that external data such as SAWTI as well as other sources could be utilized in conjunction with the introduction of current data analytic techniques such as artificial intelligence and machine learning.

Request for Proposals:

IBEC is requesting project proposals from consulting teams skilled in data analytics, artificial intelligence, machine learning, predictive analytics, business intelligence visualization and data engineering. The data analytics lead will review all proposals and rank the consulting teams based on the strength of their proposals and oral presentations/interviews.

The proposals should describe the ideas, strategies, and recommendations for how IBEC can address the issues in the problem statement. This should include recommendations on available external data sources that would prove of value in the data analytics and situational awareness.

It is recommended that each proposal submitted contain at a minimum the following sections:

Background Observations:

The consultants' interpretation and understanding of IBEC's problem (problem statement) and proposed assignment. Identify any special issues the consulting team believes the proposed assignment should address as well as any potential risks and business impacts each potential risk would cause. Additionally, please identify and address all data concerns – missing, confounding, misleading, etc. and specify any assumptions made.

Scope and Objectives:

What actions should IBEC take that will result in the highest added business value? What is the associated work required to take these actions? Why is one path more desirable than the others identified?

Proposed Implementation Plan:

What is the proposed plan to act on your findings? What steps must be taken first to begin the plan? Are there any steps/actions that require the participation of the agencies external to IBEC? What external data sources should IBEC consider for use. What analytic technologies and methods would be appropriate. Provide a high-level outline of the implementation plan steps (not too much detail) which will be completed by IBEC's personnel and the consultants together to achieve the identified end results.

Proposed Consulting Team:

Present the consultants to be assigned, identify their roles in the project and provide information on their past experiences as it relates to completing the consulting assignment.

Benefits to Itty-Bitty Electric Company:

What business benefits (value) will IBEC receive in exchange for the fee spent on these initial data insights as well as the proposed follow up plan?

Oral Presentation and Interview:

The Director of Transmission and Distribution (T&D) and CTO for IBEC have expressed a desire to sit in on the oral presentations. As these individuals are already very busy, the consulting teams will be given 20 minutes to deliver their presentations. This presentation will be followed by 10 minutes of questions from the stakeholders directed at the consulting team. For the Consultant Selection Committee to properly understand and evaluate your proposal and team, it will be very important for the entire presentation to be completed within 20 minutes, and each member must contribute to the presentation.

Submission of Proposals:

It is the policy of IBEC to accept proposals in the electronic form only (Adobe Acrobat .pdf format). Consulting teams are responsible for ensuring their responses are received by IBEC by the date and time indicated below. Completed responses shall be emailed to hallie.huang@calpolymissa.org and consulting teams will receive an email confirming successful receipt.

Important Dates:

Prospective consulting teams should be aware of the following important dates. Failure to complete submissions or attendance at these dates will result in disqualification from being considered for final ranking:

- April 2, 2022 – Proposals in electronic form due by 6pm PDT

- April 8, 2022 – Powerpoint presentation due 6pm PDT
- April 9, 2022 – Oral presentation and Interview to IBEC

IBEC is looking forward to receiving your proposals and attending your oral presentation and interview.