Palantir Foundry | Data-Driven Decisions for Customer Operations & Asset Health

Deploying Palantir at National Grid

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Overview

National Grid is a leading utilities company, delivering electricity and gas to over 22 million customers in the US alone. In the Northeastern US, National Grid manages tens of thousands of miles of electricity and gas transmission in order to service those customers. There are two main areas where data can be used more effectively in direct support of National Grid's mission: Customer Operations and Asset Health.

In this proposal, we will share ideas for two proofs of concepts on top of Palantir Foundry. The proposal related to Customer Operations has been scoped with the business, while the Asset Health proposal is currently generic and need further scoping to make it National Grid specific. The proofs of concept can be run concurrently or individually, at National Grid's discretion. Our hope is that the time-bound trials will give National Grid a window into what Foundry can do to promote the efficiency of individual business units as well as the connectedness of National Grid as a whole.

Customer Operations

Scope – Collections Improvement

The COVID epidemic has resulted in an increase in the overall customer debt balance. National Grid seeks a more customized outreach to its customers given their account status, one that yields an improved collection performance. In this proof of concept, we seek to improve collections performance through more targeted customer outreach. Specifically, we aim to:

- Reduce time-to-collection / increase number of customers paying their bills on time
- Increase collection rates
- Improve campaign cycle-times & costs

We will look to measure success through a number of key metrics such as:

- Shift in customers from higher arrear tiers to lower tiers
- Increased enrollment in (and adherence to) deferred payment arrangements
- Total up/down $ of aggregate arrear balance

We intend to focus on a few keys decisions that can affect the metrics:

- Customized outreach campaigns: what outreach campaigns to launch in what jurisdictions targeting what customer segments to achieve the greatest lift in collections
- Boost enrollment in key programs: offer optimal program to customers to reduce payment churn (eg Auto-Dial Campaign)

The data, logic, and applications developed during the proof of concept should serve as the foundation for future iterations on this problem as well as a springboard for adjacent use cases. Adjacent areas could involve connections to the grid operations (such as proactive notifications around outages) or other key strategic initiatives at National Grid.

Data – Collections Improvement

Palantir will work with National Grid to access data required for the proof of concept.

Data	Priority	Location	RP	Description
Enrollment Program	High			Understand which customers are currently enrolled in different programs
Customer Data	High	Salesforce		Understand customer base
Payment History, Credit Collection, Account Balance, & Arrears	High			Understand historical payment patterns and current account standing
Regulatory Restrictions				Understand restrictions related to customer outreach and collections
Customer Risk Category		Data Warehouse		Understand customers who are at risk of defaulting

Timeline – Collections Improvement

The timeline of the engagement begins with a Pre-Work period followed by the Implementation Period for achieving the project objectives

Pre-Work

A pre-work phase will precede the formal initiation of the implementation. During this phase we will address four key areas:

- Technical Requirements: Finalize approval for data connections, software deployment, authentication, etc.
- Data Scoping & Access: Work with National Grid to specify key data sources required for the implementation; receive access approval from data owners; register the data in the Foundry Platform.
- Kickoff Planning: Create tactical plans for implementation kickoff, National Grid executive sponsorship and Steering Committee set up, first weeks of engagement.

Addressing each of these areas, particularly having key datasets available in advance of implementation kick-off, is vital to project success.

Implementation Month 1

Building the Data Foundation for the Customer Process Team

- Ingest & integrate data sources to create initial version of ontology objects such as Customer, Campaign, Program, Payment, Credit, etc.
- Iterate on data model and presentation layer with business and technical users within National Grid.
- Training on the Foundry Platform for business and technical users on data access, ingestion, integration, and analysis
- Begin development of Customer Segmentation workflow and associated risk/propensity models

Implementation Month 2

Iterating of Customer Segmentation for Customized Customer Outreach

- Iterate on Customer Segmentation workflow and associated risk/propensity models
- Define success metrics for outreach campaigns and design attribution method
- Solicit feedback on model from business users and domain experts
- Design experiments for targeted customer outreach

Implementation Month 3

Running Customer Activation Experiments and Monitoring Impact

- Run campaign with targeted objective and specific cohort(s) of customers identified through model-driven analytics and/or expert-driven segmentation
- Monitor impact of campaigns initiated through Foundry

Future State – Cutomer Operations

Assuming a successful proof of concept with demonstrated impact, there are many avenues to expand the impact that Foundry can have for National Grid, including:

- Expanding customer outreach initiatives to include more than just payment activation. Other workflows could include outage notification or other strategic initiatives that involve customer engagement
- Expanding into Customer Service to empower Customer Service representatives with data and to identify systematic issues that can be proactively managed to reduce case load
- Expanding into Asset Reliability workflows, especially as it relates to part reliability, preventative maintenance, and maintenance scheduling

Asset Health

The payment collections scope came out of meetings with the Customer Process teams. Scoping work has not begun for Asset Health. But given the importance of asset health to National Grid's business and Palantir's experience in this area, we have provided a generic proposal for work we could do together in asset health. Final scope should be refined based on further sessions with the business.

Scope — Asset Health

In order to improve asset health and reliability, Palantir proposes three steps:

1. Create a "digital twin" of the grid, providing visibility into the current status, past failures, and planned actions for all parts of the grid, as well as a reliable picture of the customers that rely on specifics assets
2. Provide operational tooling that enable end users to
    1. Prioritize specific maintenance items based on asset health
    2. Set up proactive alerts for behavior that might trigger action
    3. Fix data quality issues that may prevent effective action from being taken (eg mis-mapped customers to assets)
3. Establish a learning loop to assess the efficacy of past actions and inform future actions or prioritization

Data – Asset Health

More scoping is needed to determine the specific data sources but potential data sources are:

Data	Priority	Location	RP	Description
Grid Map	TBD			Geospatial data to map out where assets are
Sensor Data	TBD			Read sensor data from assets
Outage Data	TBD			Understand past outages and root causes
Work Management	TBD			Understand work orders, current projects, past maintenance activity and schedules
Customers	TBD			Understand which customers map to which assets

Timeline — Asset Health

Implementation Month 1- Data Integration & Ontology

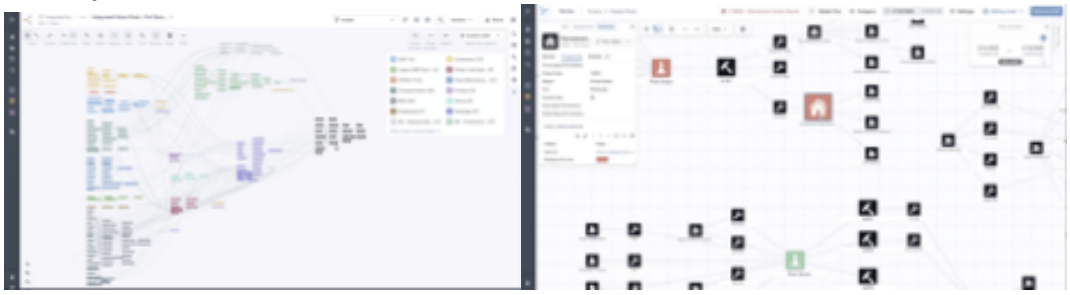
Utilities have a wide variety of disparate data, coming from sources like outage tracking systems, customer databases, GIS, ERP systems like SAP, and more. In Foundry, we would set up syncs to these source systems to ingest the data in a secure and resilient way. Once in Foundry, cleaning and transformation steps can be applied. The cadence of updates will be determined by source system and business need– this can range from hourly syncs to near real time streaming.

We would then model the data into familiar concepts like customers, service points, circuits, transformers, outages, line sensors, work orders and more. These objects can be easily accessed and explored through Object Explorer. Key metrics like transformer overload and failure rate can be calculated on top of the relevant objects.

For this proof of concept focused on asset health we would build a digital representation of the grid, identifying the key assets and their relationships. For asset health, we would want to initially model the following concepts and their relationships:

- Customers (e.g. Service Points, Customer Accounts, etc.)
- Geospatial Information System (GIS) Assets (e.g. Poles, Conductors, Transformers, Fuses, Circuits, etc.)
- Sensors (e.g. Line Sensors, SCADA sensors, Smart Meters, etc.)
- Work Management (e.g. work orders, notifications, work in progress etc.)
- Outages (e.g. outage tracking system, asset failure records, etc.)

We'd work closely with Data SMEs and business end users to validate the data within Foundry.



Implementation Month 2: Model-Guided Decisions

With this unified data asset, it then become easy to leverage Foundry's analytical suite to develop models for asset failure risk, customer to asset misassignment models and anticipate failure based on sensor data. There are a range of tools to aid in the curation of this logic– from code workbooks for statistical model builders to point-and-click rules engines. Foundry can also integrate with and orchestrate models that may already exist in different environments

The models can then inform specific workflows that can be easily configured in Foundry. For an asset health project we could target workflows like:

- Identify and correct mis-assignment of customer to transformer in order to promote better data quality across the grid
- Track and improve effectiveness of asset replacement programs
- Improve the efficiency and efficacy of asset failure investigations by automatically visualizing key risk indicators (corrosion zone, no. of past outages) and generate risk scores

In month 2, we will work closely with users to iterate on the models and workflows to support their existing decision-making processes.

Implementation Month 3: Operationalizing Workflows

In month 3, Palantir will work closely with business end users to start to operationalize results. Depending on the scope, this may manifest differently. But the idea is to get workflows built within Foundry to solve real business problems.

Future Development — Asset Health

Over time, we anticipate that the ontology and models developed for this initial use case can become a building blocks for other data driven workflows across National Grid, creating a more connected company.

Drive Operational Excellence

Improve grid & asset management by developing a "Digital Twin" - an integrated digital ecosystem representing key assets, flows, and processes, and integrate operational decision making.

Democratize & Govern Information through a Centralized Platform

Unlock value by providing a centralized platform and set of applications surfacing raw & curated data - accessible to all - in a governed, secure, and transparent environment.

Connect Business Silos & Enable Continuous Learning

Through Foundry, client teams can collaborate across the value chain and measure the impact of their decisions through "scenario planning" not only on their business but on connected areas – from Asset Maintenance to Projects and Planning to Supply Chain

Meetings and Governance

Joint Team Approach

The joint team of National Grid's Technical and Business users with Palantir Forward Deployed Engineers and Deployment Strategists will work towards achieving the aforementioned goals. National Grid will bring expertise in the underlying data, prioritization of business questions to investigate, and design of required workflows. Palantir will help bootstrap the usage of the platform while simultaneously training National Grid users to operate increasingly independently on the platform.

Regular Touchpoints (Daily/Weekly or as needed)

Palantir's project team will hold regular check-ins with National Grid's users and representatives to ensure rapid feedback and iteration within the Foundry Platform. These meetings may take numerous forms—including working or training sessions, project updates, sprint planning, or informal reviews of progress, risks, and findings. Typically, participants from the client include business users, technical users, and Business and/or Technical leads.

Steering Committee Meetings (Monthly or as needed)

Palantir's project team and National Grid users will present formal progress updates to a Steering Committee comprised of Palantir and National Grid stakeholders. The Committee shall jointly govern the Foundry implementation, prioritize objectives, review progress, and remove roadblocks. Customer participants should include the Executive Sponsor, Business and Technical Leads, and other relevant participants.

Key Roles

Both Palantir and National Grid should provide dedicated resources toward the use and development within the Foundry Platform. The below are estimates for the initial resource requirements. As the solution is developed, further usage should be expected.

National Grid

Role	Responsibilities	NG POC
Executive Sponsor	- Provides sponsorship for Palantir across the organization - Provides regular guidance and feedback at Monthly Steering Committees - Partners on long-term strategy and planning	Tech: Andi Karaboutis Customer: Kelly Carney Asset: TBD
Project Lead	- Primary point of contact for Palantir team - Provides regular feedback; validate that results are accurate and in line with needs - Secures access to teams and resources necessary for implementation and training - Arranges key meetings such as monthly Steering Committees - Provides logistics for the team e.g. workspace, internet access	Tech: Charles Zentay Customer: Alex Kanashiro Asset: TBD
Data SMEs	-Discuss data documentation, business parameters, data model, data provenance, and current applications of the data -Requirements tend to be upfront as knowledge gets institutionalized in Foundry	Customer: Vishal Patel, Moon Fong Tsui Asset: TBD
Business End Users	-Iterate with Palantir implementation team on workflows -Describe current workflows, pain points, desires -Provide feedback to support ongoing development -Involvement tends to be quickly bi-directional as business should quickly derive value from the software	TBD
Data Scientists	-Iterate on models alongside Palantir team	TBD

Palantir

Role	Responsibilities	Palantir POC
Project Lead	-Primary point of contact for pilot success -Ensures team is aligned against key outcomes -Communicates goals, needs, and wins to Executive Sponsor and other internal stakeholders	TBD
Engineers	-Integrates data into environment -Implements and deploys workflows -Configures the software	TBD
Data Scientist (optional)	- Partners with customer‘s data experts to deploy data science techniques effectively in the Foundry Platform	TBD

Technical Requirements

There are six steps to complete signing up to Foundry.

1. **Select your region:** choose the region for your Foundry platform.
2. **Select your domain:** Palantir can either generate a domain for you, or we can have Foundry accessible through a subdomain with your chosen customer domain.
3. **Configure Data Connector:** configure either the on-premise or cloud Data Connector to connect Foundry to your sources.
4. **Set-up Single Sign-on:** confirm attributes and send your organization’s SSO identity provider metadata for easy access to Foundry from your existing SAML system.
5. **Share your network’s egress IPs:** we will whitelist access to Foundry to these IPs.
6. **Fulfill any security assessments or SaaS vendor evaluation forms:** assessments your organization requires to host data in the Foundry environment.

About Palantir Foundry

Palantir Technologies is a software company headquartered in Palo Alto, with major offices in New York, Washington, D.C., London, and Paris. Palantir partners with the world's leading enterprises to deploy its Foundry platform to maximize its use of data to create a Connected Company, in which:

- There is complete, and near real-time understanding and visibility into information
- Decision-makers are presented with cross-discipline information to understand the ideal opportunities and trade-offs across previously siloed business verticals
- Business decision-makers rapidly model and analyze trade-offs and scenarios to understand how shifting one decision influences others
- Decisions are captured with the available context for future evaluation enabling an organization to learn and improve its logic and objective functions over time.

Additional information is available at https://www.palantir.com