The Importance of User-Centered Design for Analytics Applications

ONCOR

About Me

- Supervisor of Custom DevOps @ Oncor
  - Advanced Analytics, Automation & AI
- Graduate of Texas A&M University

Kennedy Porter

About Oncor

- The largest electric delivery company in Texas
- Proudly serves 408 communities & 98 counties
- ~3.8M Advanced Meters and 139,00+ miles of transmission & distribution lines

We are not just a T&D company, but also a Technology Company.

Session Takeaways

01 How to use a user-centered design process for analytics applications

02 How an entrepreneurial mindset & "failing-fast" can help drive more efficient & higher-quality development

03 Overview of successfully operationalized use case and lessons learned through the adoption phase

04 Resources for user-centered design efforts & lean development

According to Gartner...

- **85%** of big data projects **fail** (Gartner, 2017)
- **87%** of data science projects never make it to production (VentureBeat, 2019)
- “Through 2022, only **20%** of analytic insights will deliver business outcomes” (Gartner, 2019)

Challenges...

Wrong Data

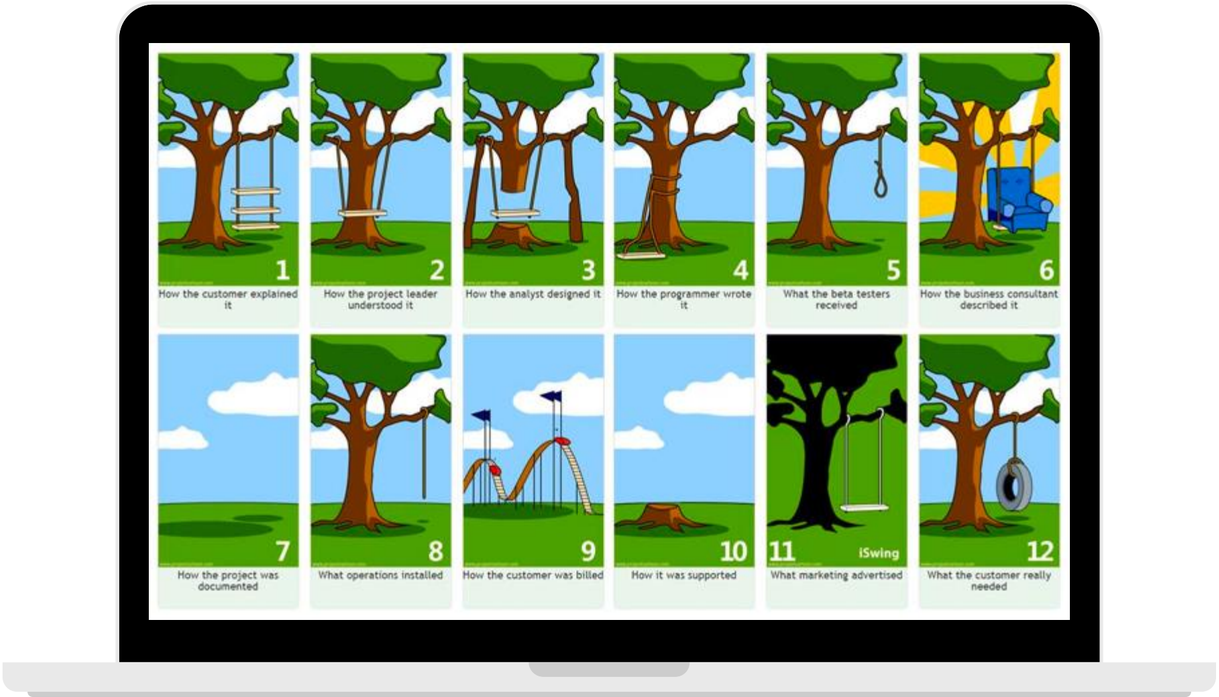
Wrong Talent

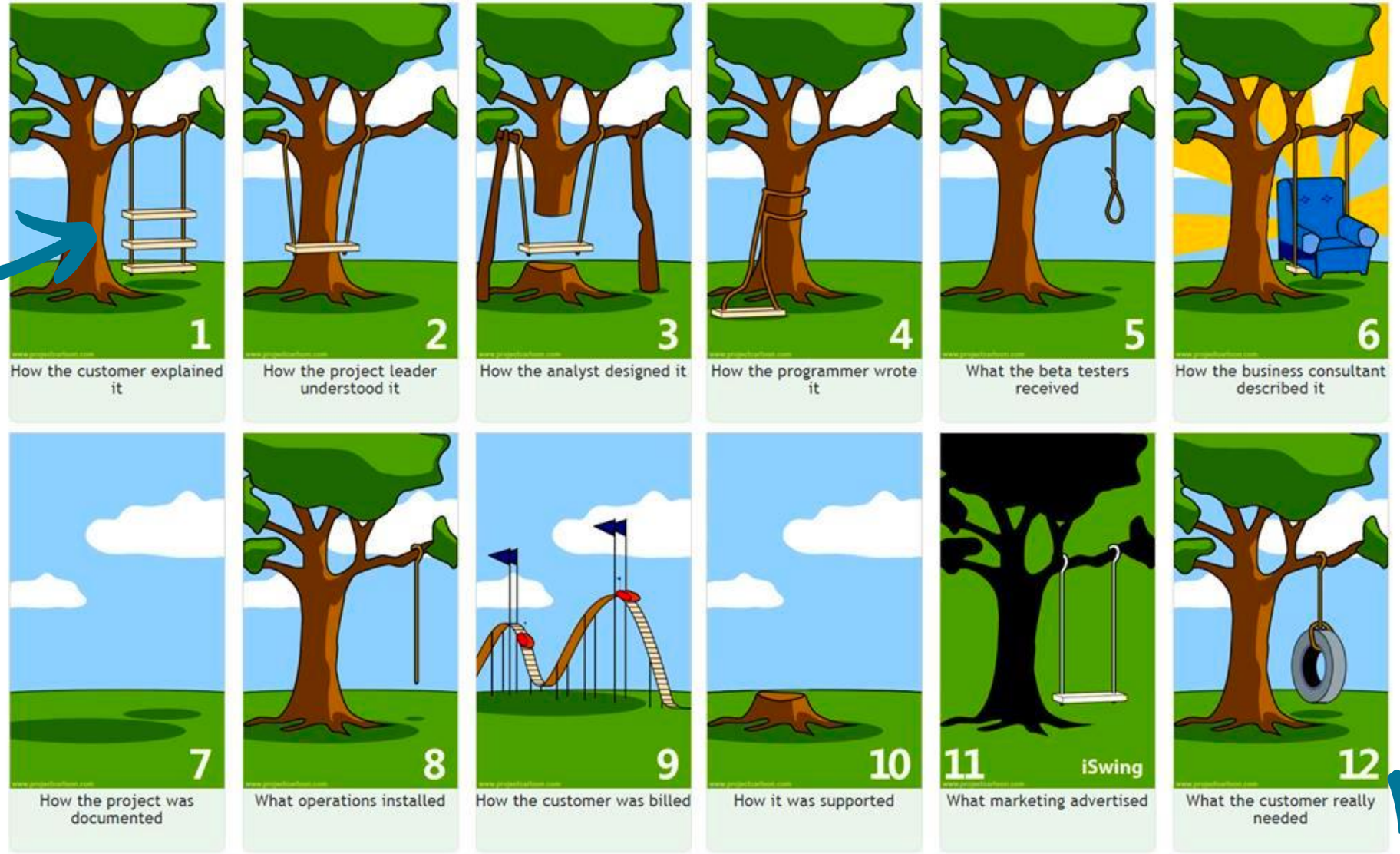
Wrong KPIs

Wrong Mindset

Wrong Problem

What Does the End User Want?




1
How the customer explained it
2
How the project leader understood it
3
How the analyst designed it
4
How the programmer wrote it
5
What the beta testers received
6
How the business consultant described it
7
How the project was documented
8
What operations installed
9
How the customer was billed
10
How it was supported
11
iSwing
What marketing advertised
12
What the customer really needed

How do we figure out what the user wants?

We are going to...

Define the customer's actual problem

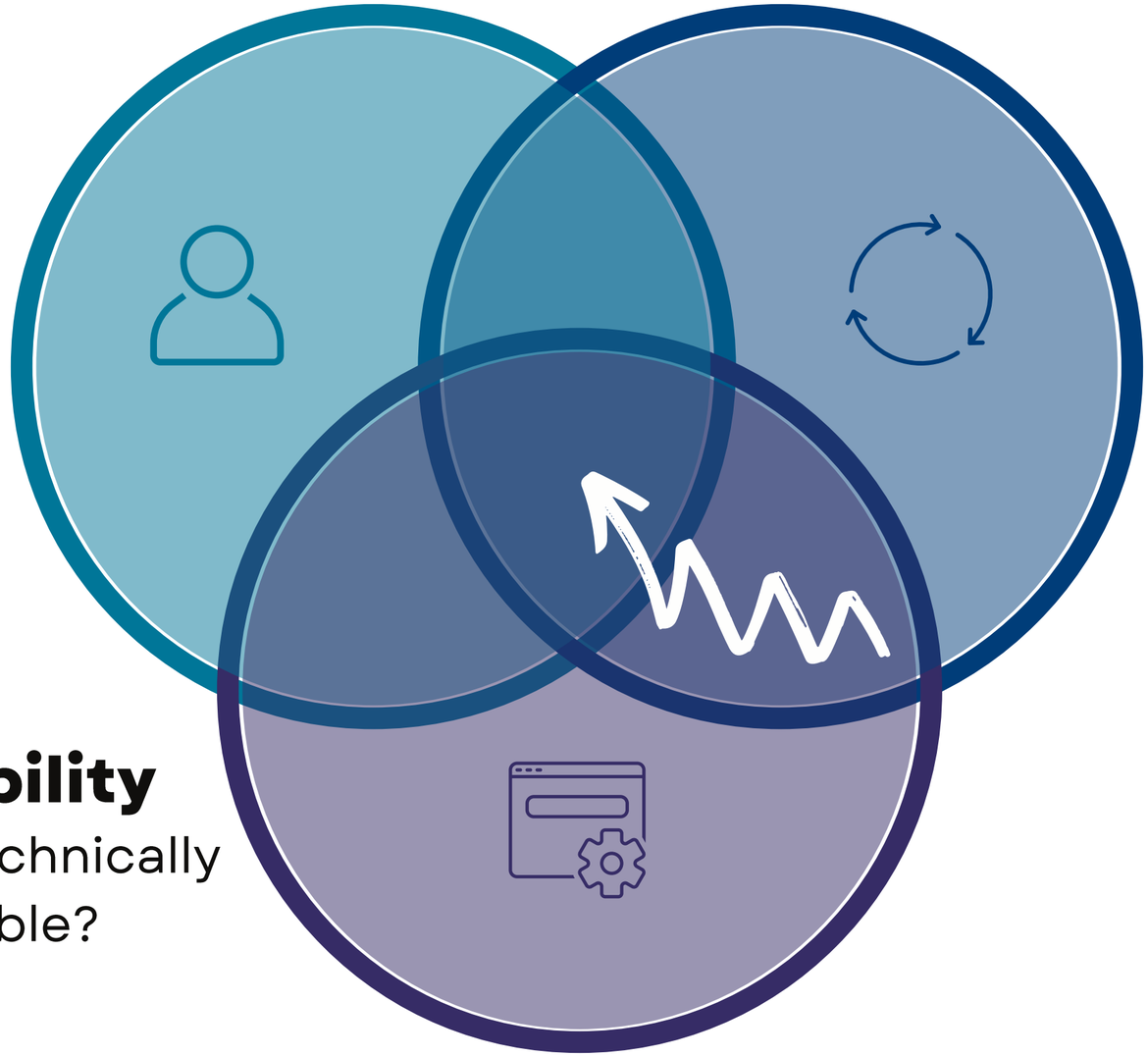
Approach the design with a lean mentality

Build with a methodolgy that requires iterative user input

Customer Problem

Design Thinking

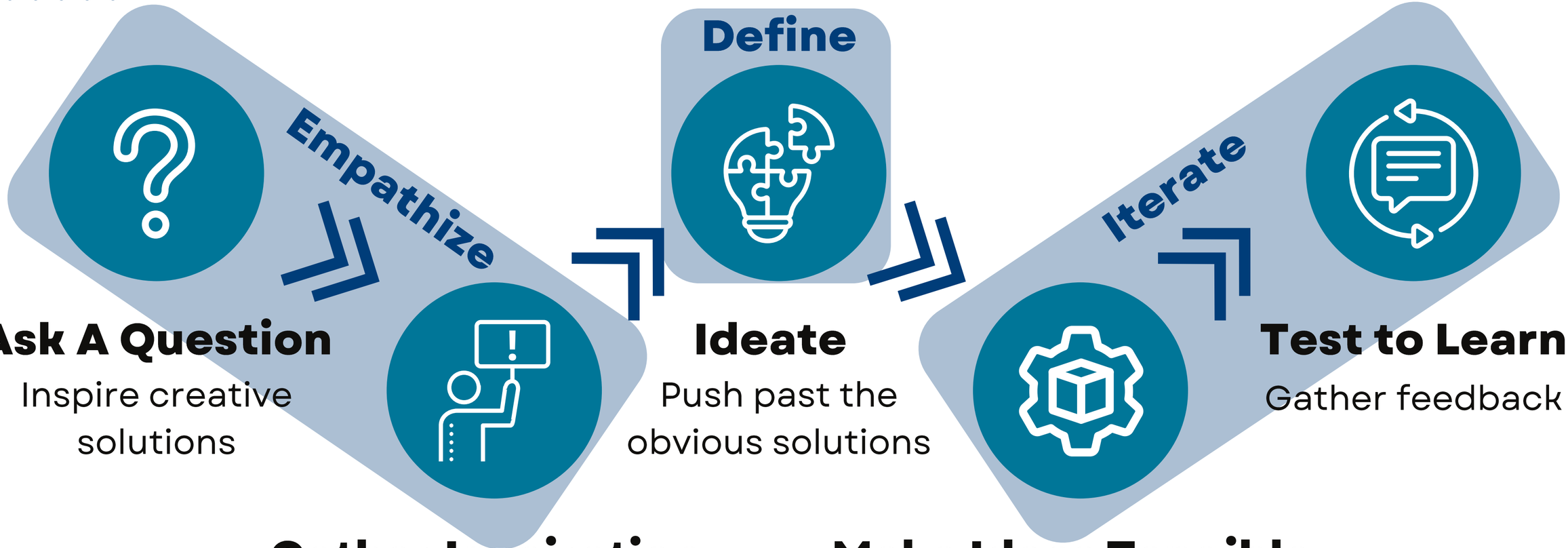
Desirability
What makes sense for the end user?



Viability
What is sustainable?

Feasibility
What is technically possible?

Design Thinking Process



Ask A Question

Inspire creative solutions

Gather Inspiration

Determine the true need

Ideate

Push past the obvious solutions

Make Ideas Tangible

Build rough prototypes

Test to Learn

Gather feedback

Customer Solution

Lean Mentality

01

Value

The customer, not the producer, defines all value.

02

Value Stream

The sum of the product's entire life-cycle from research and development through to the customer's use of the product.

03

Flow

The value stream should flow seamlessly without interruption or delay.

04

Pull

Ensuring that nothing is made before it is needed.

05

Perfection

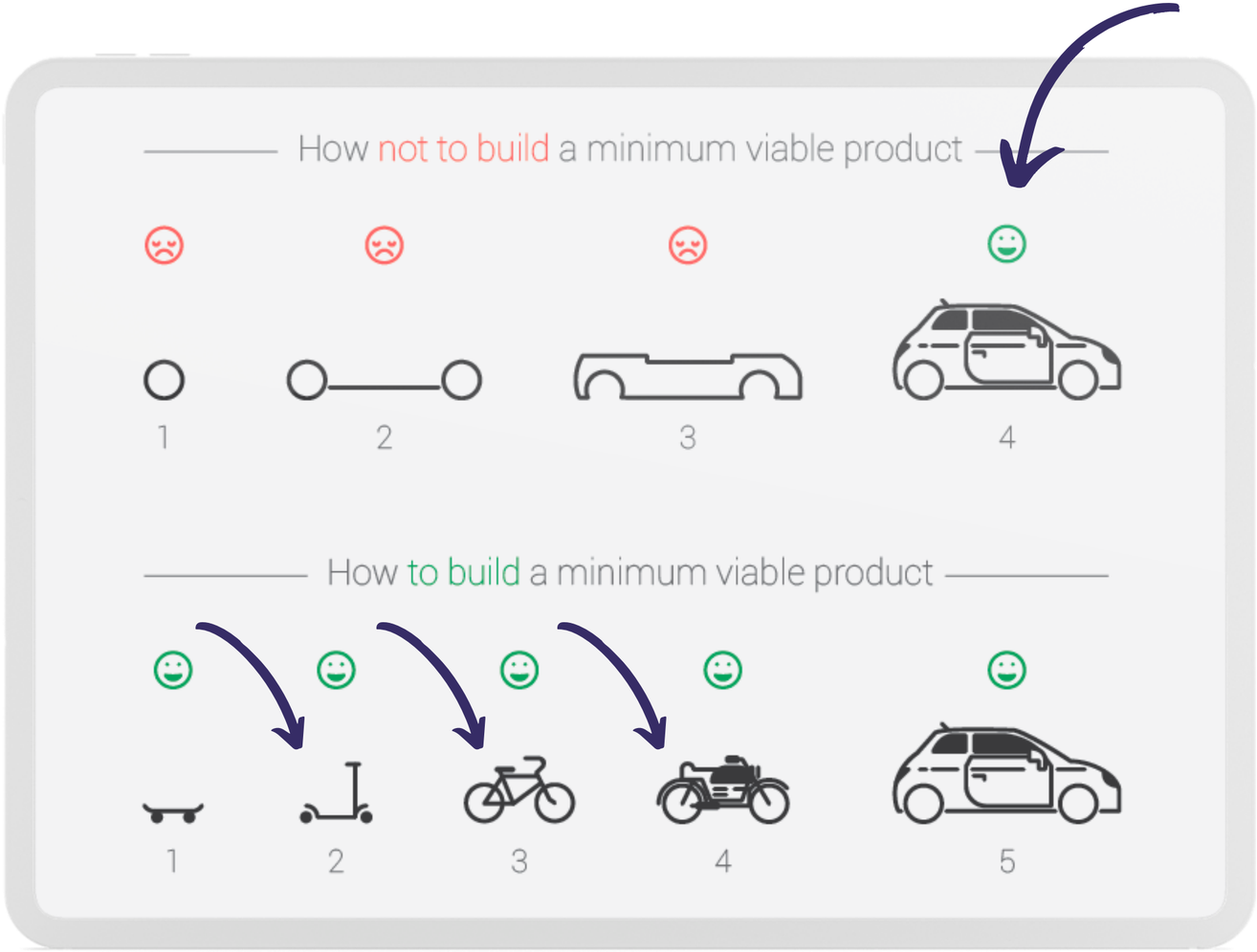
Continuous improvement & incremental changes

Minimum Viable Products

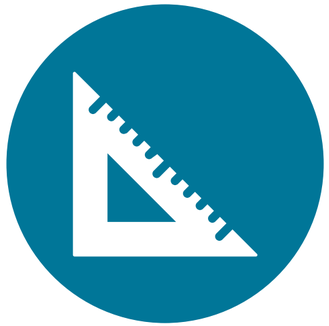
“ A Minimum Viable Product is that version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort.”

-Eric Reiss

The Lean Startup Framework



Lean Start-Up Methodology



Build

Create an MVP

Measure

Test the MVP

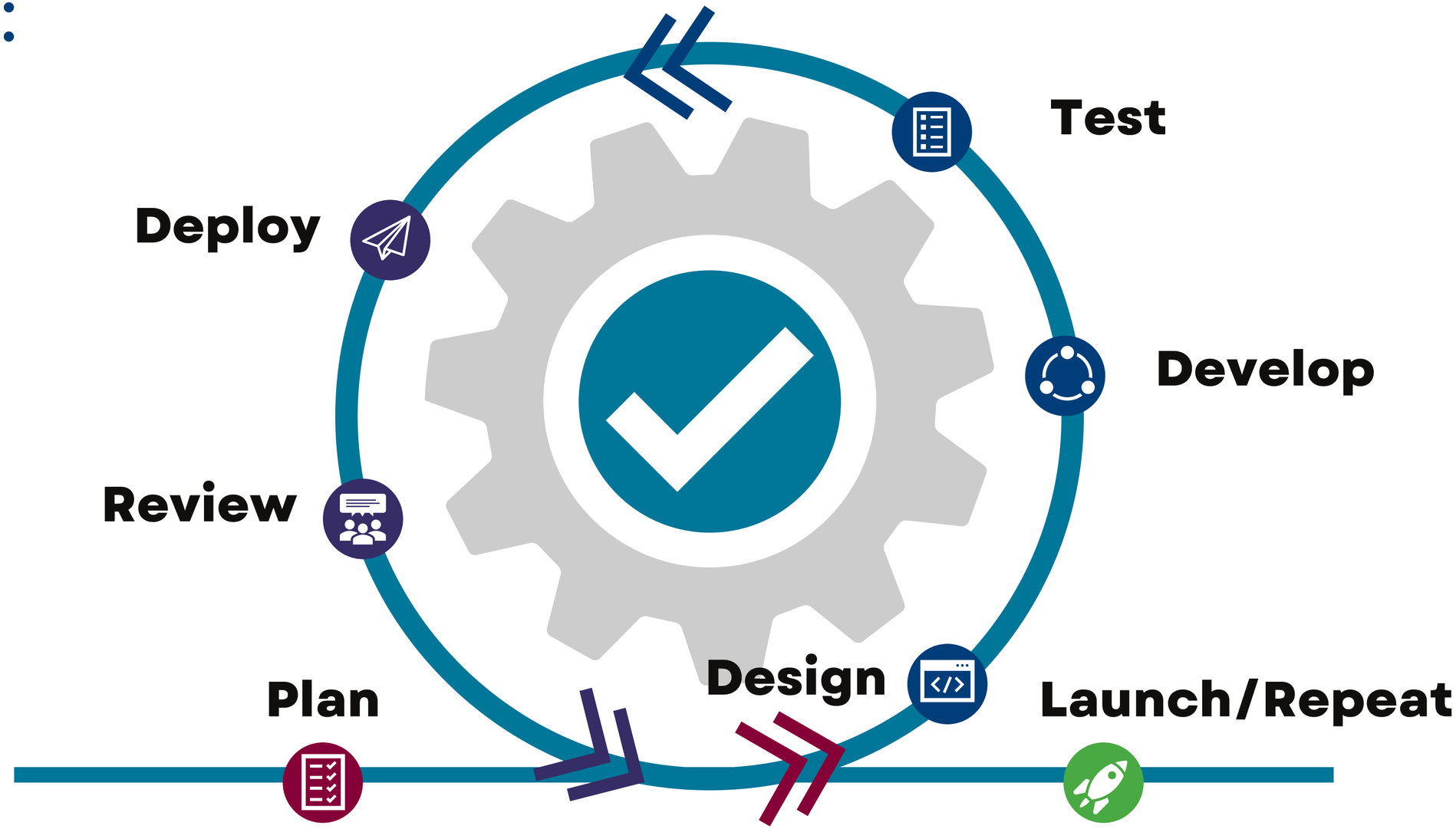
Learn

Pivot or persevere?

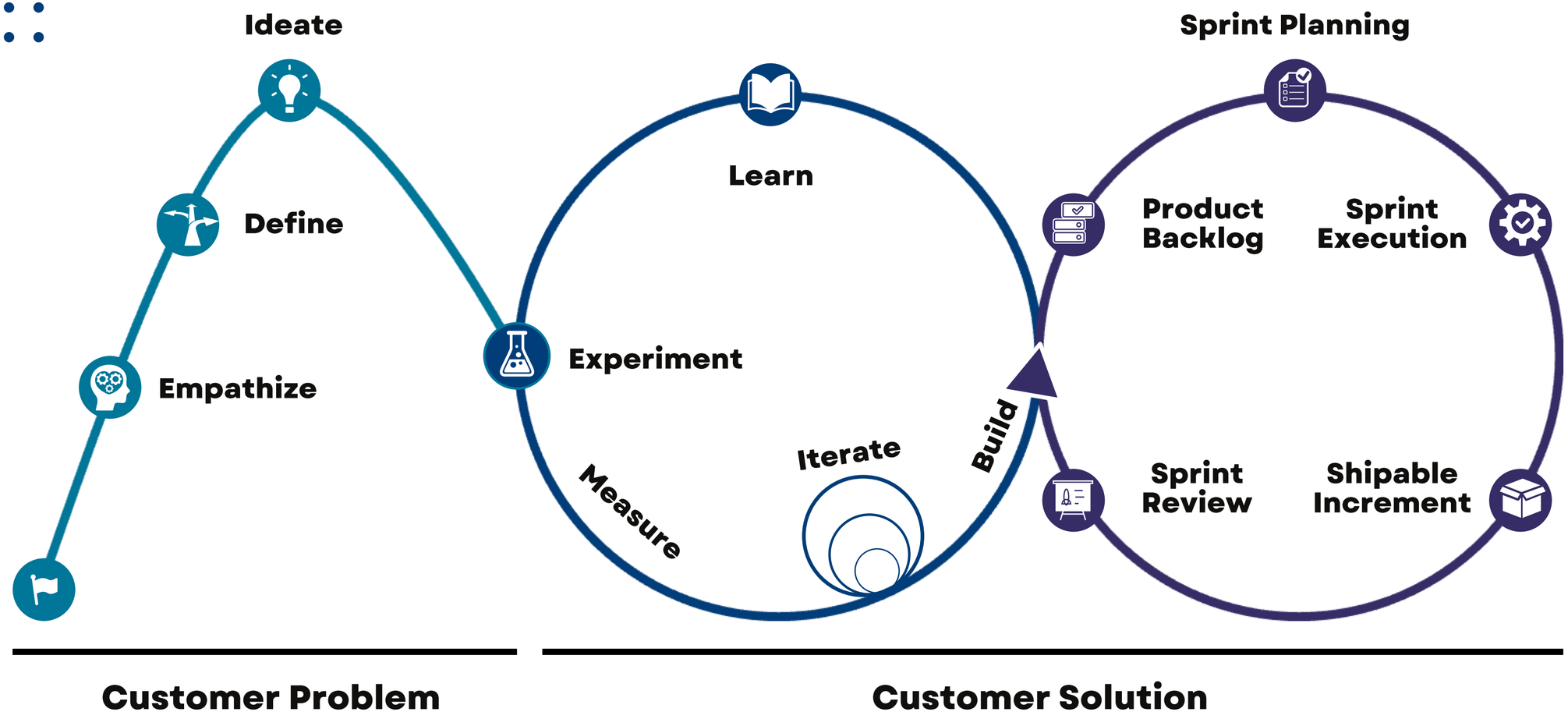
Agile Manifesto

Individuals & Interactions	over	**Processes & Tools**
Working Product	over	**Comprehensive Documentation**
Customer Collaboration	over	**Contract Negotiation**
Responding to Change	over	**Following a Plan**

Agile Methodolgy



User Centered Approach



Examples

Successful implementations:

Heat Classification

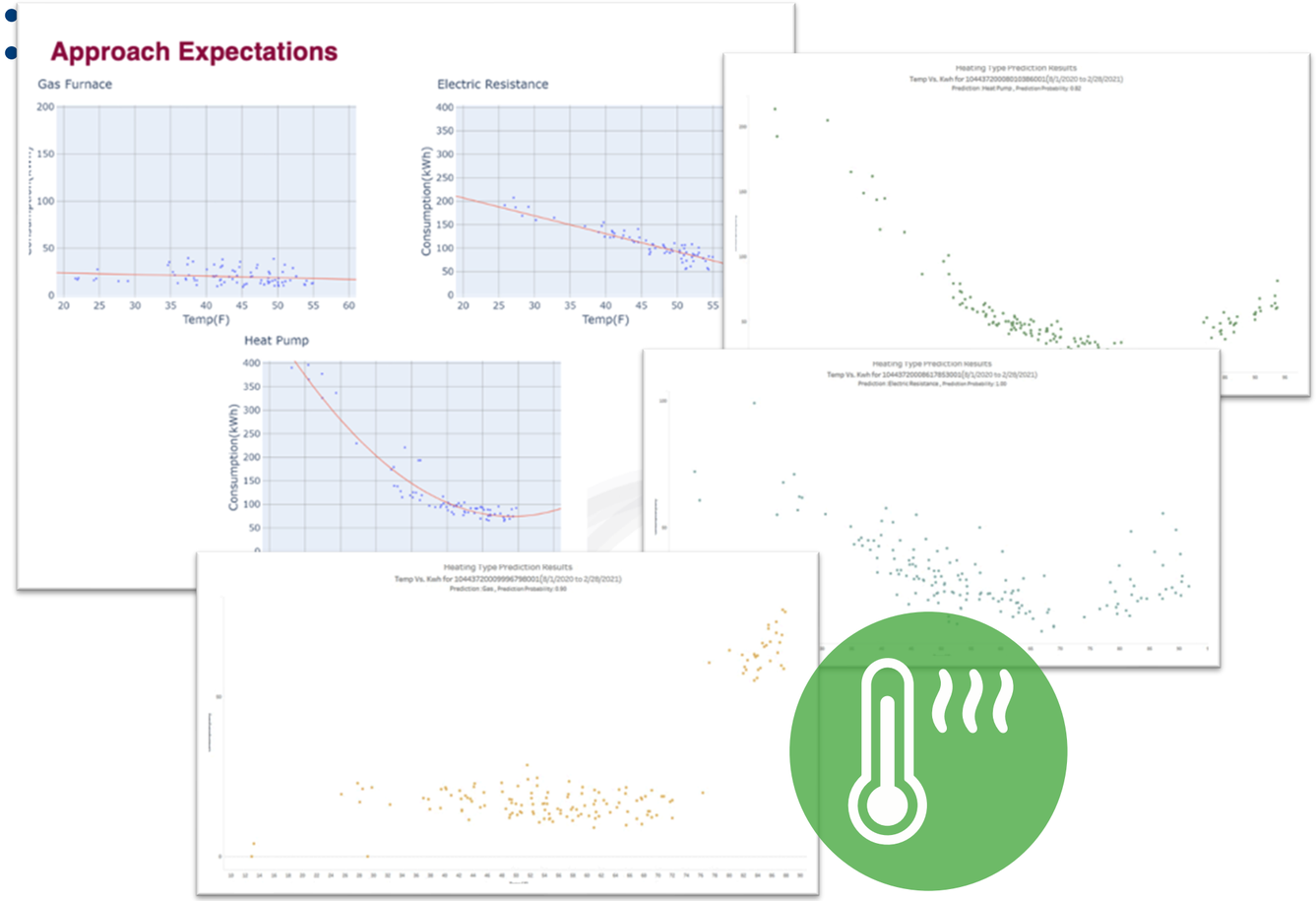
Customer 360 Predictive Usage

Grid Echo

Lessons learned:

Vegetation Management Notifications

Examples

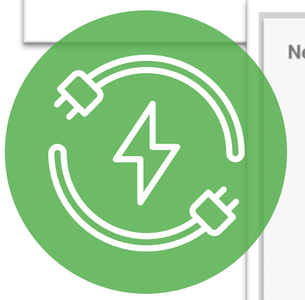

Approach Expectations
Gas Furnace
Electric Resistance
Heat Pump
Consumption(kWh)
Temp(F)

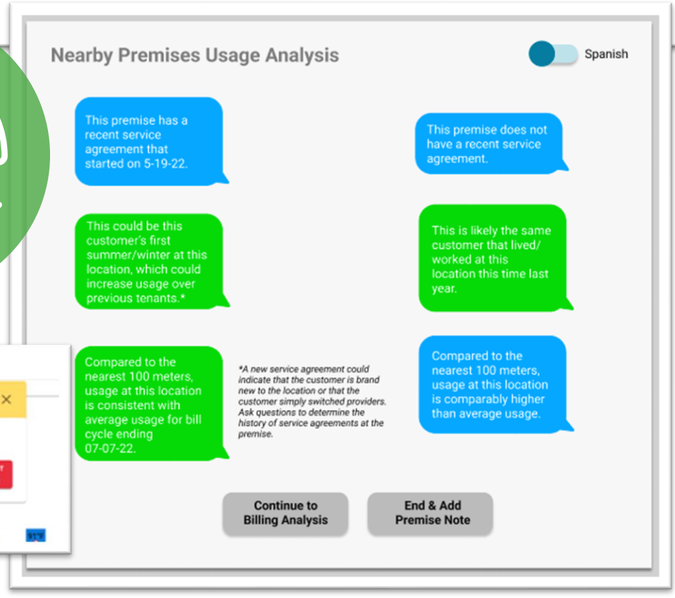
Heating Type Prediction Results

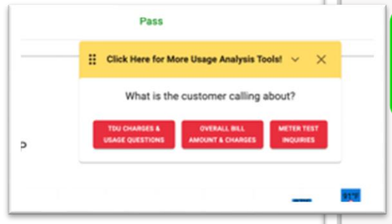
Heating Type Prediction Results

Heating Type Prediction Results

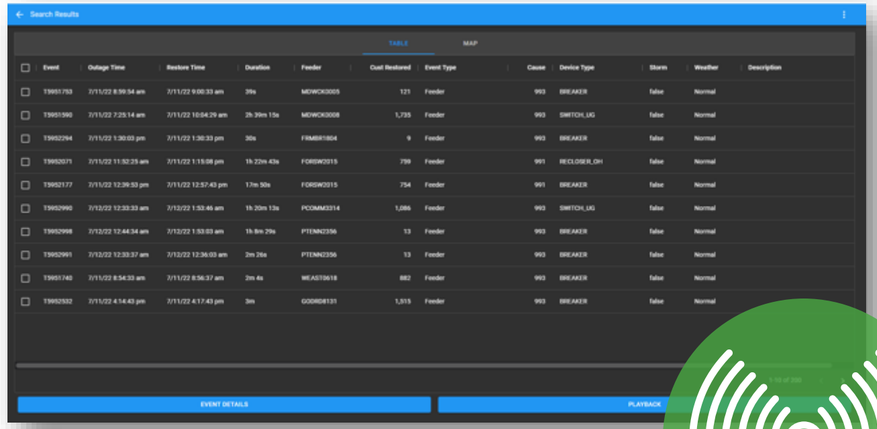

Clustered Data 0001809045
No Test
Premise increased by 88% from the bill cycle ending on 2022-05-26 to the bill cycle ending on 2022-06-27, while the average premise increased by 87%
Premise increased by 42% from the bill cycle ending on 2021-06-25 compared to the bill cycle ending on 2022-06-27, while the average premise increased by 45%
Remained steady in ranking for 1 bill cycle(s) prior to bill cycle ending on 2022-06-27
No new service agreement in past year
Premise is behaving slightly lower than average premise in the area for 60 days prior to 2022-06-27
0001809045
Cycle Median
Jul 2021
Sep 2021
Nov 2021
Jan 2022
Mar 2022
May 2022
Jul 2022

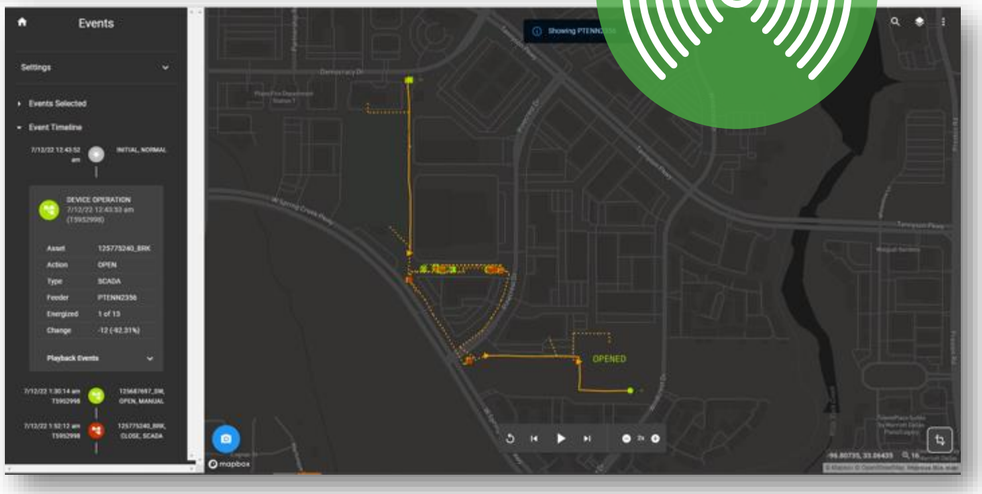


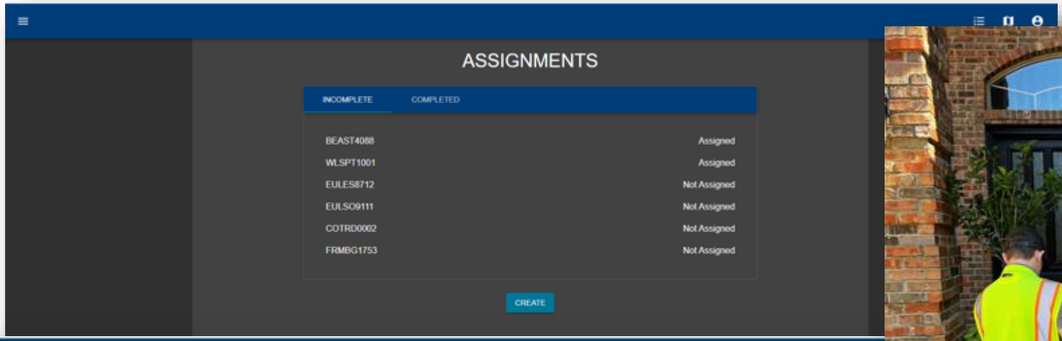

Nearby Premises Usage Analysis
Spanish
This premise has a recent service agreement that started on 5-19-22.
This premise does not have a recent service agreement.
This could be this customer's first summer/winter at this location, which could increase usage over previous tenants.*
This is likely the same customer that lived/ worked at this location this time last year.
Compared to the nearest 100 meters, usage at this location is consistent with average usage for bill cycle ending 07-07-22.
*A new service agreement could indicate that the customer is brand new to the location or that the customer simply switched providers. Ask questions to determine the history of service agreements at the premise.
Compared to the nearest 100 meters, usage at this location is comparably higher than average usage.
Continue to Billing Analysis
End & Add Premise Note

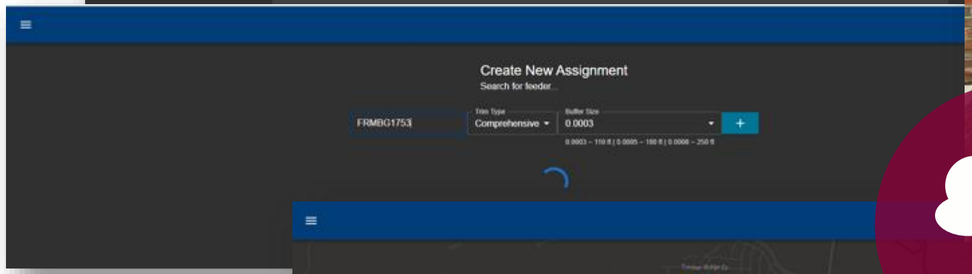

Pass
Click Here for More Usage Analysis Tools!
What is the customer calling about?
TDU CHARGES & USAGE QUESTIONS
OVERALL BILL AMOUNT & CHARGES
METER TEST INQUIRIES

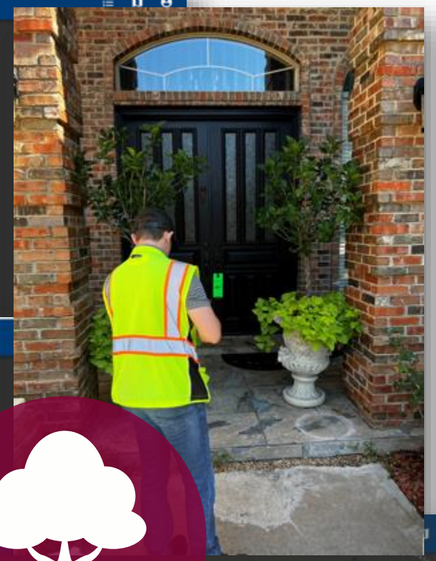
Examples

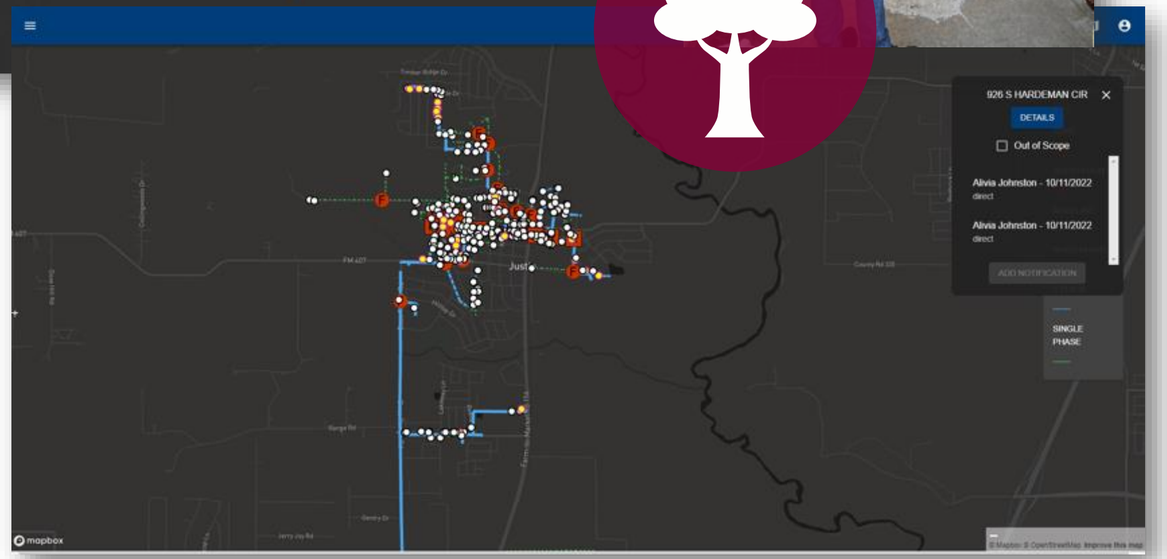

Search Results
TABLE
MAP
Event
Outage Time
Restore Time
Duration
Feeder
Cust Restored
Event Type
Cause
Device Type
Storm
Weather
Description
EVENT DETAILS
PLAYBACK


Events
Settings
Events Selected
Event Timeline
DEVICE OPERATION
OPENED
mapbox


ASSIGNMENTS
INCOMPLETE
COMPLETED
BEAST4088
Assigned
WLSPT1001
Assigned
EULES8712
Not Assigned
EULSO9111
Not Assigned
COTRD0002
Not Assigned
FRMBG1753
Not Assigned
CREATE


Create New Assignment
Search for feeder...
FRMBG1753
Tree Type
Comprehensive
Buffer Size
0.0003




926 S HARDEMAN CIR
DETAILS
Out of Scope
Alivia Johnston - 10/11/2022
direct
Alivia Johnston - 10/11/2022
direct
ADD NOTIFICATION
SINGLE PHASE
mapbox

In conclusion...

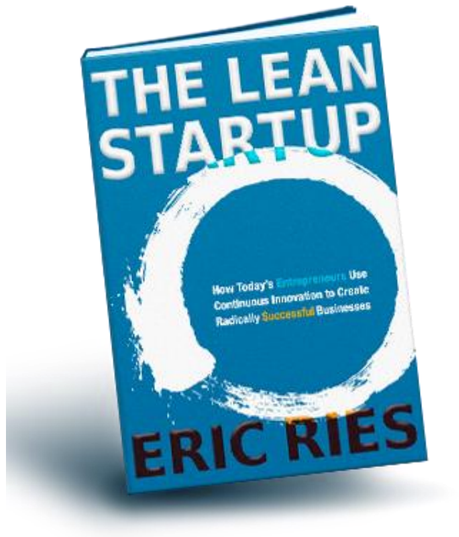
01 Utilize Design Thinking to define the true issues and pain points your customer has

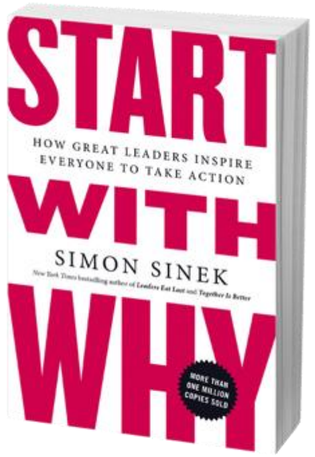
02 Integrate Lean Principles into your "solutioning" to ensure an effective and efficient build

03 Implement Agile Methodologies into your build apporach so that you are delivering a customer centric product

04 Remember: Don't be afraid to fail fast & pivot your solution!

Resources





IDEO·ORG

Design Thinking Toolkit

Scrum Alliance®

Project Management Institute®

THANKS.

Questions?

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