Atul Thatte  
Director of Advanced Business Analytics at TXU Energy

Atul's team is responsible for enterprise advanced analytics, ML & AI, supporting the Residential & Mass Markets portfolio and generating measurable incremental value through the application of prescriptive analytics and AI/ML principles and techniques. As a member of the broader Strategy, Pricing and Analytics function within the retail business arm of Vistra, Atul is responsible for the entire advanced analytics lifecycle, from thought leadership on advanced analytics to execution and integration into business processes.

Prior to TXU Energy, Atul led Advanced Analytics efforts related to the FiOS suite of products at Verizon. His combined tenure at Verizon and now at TXU Energy accounts for more than a decade and half of advanced analytics experience optimizing business outcomes in subscription-based businesses.

Atul is also an Adjunct Faculty in the MS (Advanced Analytics) program at Oklahoma State University.
Leveraging Advanced Analytics to Optimize Customer Experience

at TXU Energy
Electricity is a competitive market in 18 states
Vistra Energy is one of the largest retail energy companies in the states open to competition.
Vistra Energy serves ~3 million customers across the largest competitive states in the U.S.

2.9 million retail customers across Texas, Illinois, Ohio, Massachusetts, and Pennsylvania

Approximately 41,000 MW generation capacity enough to power 20 million homes

Combined premier retail and wholesale brands

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Retail Offices

- Irving, TX
- Collinsville, IL
- Cincinnati, OH
- Houston, TX

Total Employees

Approx. 5,400

Committed to our customers, our communities, and to operating our plants safely, reliably, and in accordance with environmental standards.
Texas is one of the most dynamic markets in the world

**Has the 10th largest economy in the world**

- Ranked 12th globally in terms of energy consumption
- Over 1000 people move to Texas every day
- 40+ energy providers with 300+ plans for each zip code

**The largest wind farm production in the country**

- Over 3 million Texans make a choice of energy provider each year
- Covers 10 distinct climactic regions

**1 in 12 Americans lives in Texas**
The retail energy marketplace in Texas is crowded

Market leaders

~65% Mkt Share

“Attackers”

~35% Mkt Share
As a market leader, TXU Energy offers innovative, customer-focused products and services.

**Innovative Offer Sets**
- Month-to-Month
- Fixed
- Index
- Solar
- Wind
- Time of Use (Free Nights®)
- Pay-as-you-go

**Individualized Interactions**
- Social Media
- Email
- Text
- Natural Language IVR
- Live Agent
- Chat
- MyAccount

**Mobile First Technologies**
- Usage
- Alerts
- Device Management
Data capabilities are built around solving the four V’s of data challenges

**Volume**

- 600 TBs (2014-2018 Database Growth)
- 50 Billion Web Clickstreams
- 4 Billion Customer Segment Snapshots
- 3 Billion Annual Record Growth

**Variety**

- Online Activities
- Unstructured Data
- Social Media
- Weather

**Velocity**

- 15 Minute Meter Reads
- Weather Channel
- 1.5 Million Customers

**Veracity**

- More Data Cleansing
Technology and analytics capabilities support a customer-focused strategy

Technology

- Strategic investment in a tiered data platform to manage the four Vs
- Enable real-time analytics and support key business processes

Capabilities

- Identify customer behavior patterns and key trigger events
- Leverage analytics at every stage of the customer lifecycle

Outcomes

- Enhance the customer experience and reduce customer churn
- Improve customer satisfaction and optimize value of customer portfolio
Analytics capabilities are built directly into the technology workflow

Data Sources
- CUSTOMER
- PRODUCT
- BILLING
- METER
- AGENT NOTES
- WEATHER
- TXU.COM
- ORDERS
- FINANCIAL
- PAYMENTS
- IVR
- VOICE
- ERCOT

Technology Platform
- AWS
- Hadoop
- SAS
- SAP HANA
- Salesforce
- Tableau

Business Applications
- TXU.com
- Dashboards
Technology roadmap positions TXU Energy as an analytics-driven market leader

Descriptive Analytics
- Dynamic dashboards
- Alerts and controls

Predictive Analytics
- Customer Forecast
- Load Forecast
- Customer Churn

Prescriptive Analytics
- Charge-Off Risk
- Customer Frustration

Integrated Analytics
- Personalized Offers

High Performance
- SAP HANA
- SAS EM & HP

Cloud
- AWS

2015

2016

2017

2018

2019+

Data Marts & Visualization
- Oracle Tableau

Automated Analytics
- Omni-channel integration
- Credit risk optimization

Big Data
- Hadoop
- SAS

CRM Integration
- Salesforce

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Customers are activated by trigger events

- Moving
- End of contract
- Word of mouth
- Sales contact
- Unexpected high bills
CASE STUDY 1: PERSONALIZED PRODUCTS
TXU Energy works with movers new to Texas to match them with the best electricity plan for them
We create products that provide unique features and benefits for our customers.
“Free Nights & Solar Days” is our most popular time-of-use product

Free Nights & Solar Days

Texas Homes with Solar Rooftop Installations

TXU Customers enjoying Free Nights & Solar Days

Upton 2 Solar Power Plant

West Texas
Customers with high nighttime usage receive the most benefit

Hourly Usage for a Single Customer
(each line represents one day)
“Free Nights” products are not right for everyone!
We track customers to identify those who might not be on the best plan for their usage habits.
CASE STUDY 2:
PERSONAL SAVINGS TIPS
Daily usage data lets us build detailed customer profiles

Daily Usage Timeline

Customer Profile

Fixed Usage  Cold Sensitivity  Heat Sensitivity  Weekend Usage

Daily Usage vs. Temperature
Profiles will let us track energy use over time, and detect anomalies.
We use our best-in-class digital platforms to communicate directly with our customers.

**MY ENERGY DASHBOARD**

- Compare Your Bills
- Usage Graph
- Usage Breakdown

**MOBILE APP**

- Touch ID
- Split Payments
- Usage Breakdown

**BEST IN CLASS**

**FIRST IN TEXAS**

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Advanced Analytics for CX Optimization
This view highlights the value vs. difficulty spectrum.

Useful for a basic understanding of the four stages.

The linear, unidirectional view of value vs. difficulty might be misleading.

We recommend a CX optimizing view of analytics.

Each stage complements the other.

Emphasis on co-dependence and iterative refinement.

Provides a unified opportunity view of value & difficulty/cost.
The Analytics Lifecycle: From Goals To Results

**Thought process**
- What has past taught us?
- What’s happening & why?
- What will happen?
- What to do about it?
- Did it work?

**Planning**
- Performance baseline
- Events & triggers
- Hypotheses & predictions
- Strategies & Tactics
- Incremental Improvement & Refinement

**Implementation**
- Objectives & Data
- Features
  - Experiments
  - Predictive analytics/ML/AI
  - Prescriptive analytics & RI
  - Simulation
  - Visualization
  - Variance analysis
- Tools
  - SAS
  - Hadoop
  - HANA
  - SAS EM
  - Tableau
  - Excel
  - SAS EM
  - SAS HPA
  - PyTorch
  - SAS OR
  - Tableau
Thank you!

Contact Information
atul.thatte@txu.com

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