MODERNIZING ENERGY EFFICIENCY THROUGH DIGITALIZATION

HARNESSING NEW BUSINESS MODELS THROUGH DIGITALIZATION – START WITH CUSTOMERS!

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THE ENERGY CLOUD
TOWARD A CLEAN, DECENTRALIZED, INTELLIGENT & MOBILE ENERGY SYSTEM

PAST: Traditional Power Grid
Central, One-Way Power System

TODAY: The Energy Cloud
Distributed, Cleaner, Two-Way Power Flows

Market Demand
Technology Innovation
Policy & Regulation

…. Accelerated by digitalization, and re-shape the energy efficiency

Source: Navigant
It starts with the customer, customer needs, and value propositions.

Then the solutions (products & services) can be ideated and developed to meet the needs and deliver value.

Finally, business models, technologies, and infrastructure should be layered on top.

Source: Navigant
Consumer expectations are evolving in the Energy Cloud – the new four C’s. These are relevant for customers of all types, including residential, C&I, and governments.

### Choice
Greater customer choice and demand for more energy options, including clean and renewable energy.

### Control
More customers want control of their energy usage and spend, better transparency, and improved reliability & resiliency.

### Convenience
Hassle free customer experience and more personalized and digital options.

### Cost
Customers are increasingly cost-sensitive and look for ways to optimize their total energy costs.

**Source:** Navigant
CUSTOMER INNOVATION EXAMPLE 1: OHIO STATE UNIVERSITY & ENGIE ENERGY-AS-A-SERVICE

Ohio State University EaaS:

- Comprehensive, end-to-end solution that can meet the OSU’s total energy needs on a long-term basis
- Access to low cost of capital through a partnership with investment partner Axium
- Intimate understanding of OSU’s energy strategy and long term objectives, as well as energy systems and infrastructure of individual campuses and users
- Includes multiple energy services including energy audits, participation in academic lectures
- **ENGIE to pay OSU $1.1 billion** for right to manage and operate OSU campus energy infrastructure and usage in exchange for an **annual fee of $45 MM over 50 years**
CUSTOMER INNOVATION EXAMPLE 2: CASH BACK MODEL - OHMCONNECT

• California Public Utilities Commission pilot program for a Demand Response Auction Mechanism (DRAM): allows for third parties to offer demand response services to users and trade the savings in the market.

• Business model: Free service that notifies users during peak electricity consumption hours, keeping the peaker plants off (fossil, expensive) and pay back the energy savings (cash and reward), through automated Services with Smart Thermostat.

• Saved 900 MWh, rewarded $8.5 Millions, for 500,000 users.

• Available in Texas, California, Toronto, on going deployment.

PG&E, SDG&E, and SCE in California, Toronto Hydro in Toronto, and through Smart Meter Texas accounts in Texas.
CUSTOMER INNOVATION EXAMPLE 3: DRIFT—A CUSTOMER-CENTRIC ENERGY SOURCING PLATFORM PROVIDER

“If utilities don’t plan the transition to the digital future, someone else will do it for them.”

– a Utility Executive

- **Power industry disruptor** – hybrid between an ESCO and a DER manager
- **Cheap** - drift doesn’t take a margin on its energy sales, but [charges a fixed fee of $1/week](https://joindrift.com/) for residential customers and a bit more for commercial customers
- **Have choice, no contract** - consumers use a dashboard to choose whether to prioritize cheap or low-carbon energy sources, and they're able to terminate their relationship with Drift at a moment's notice
- **Automated and seamless** - everything is automated, digital, and transparent making the switch and ongoing interactions effortless for their consumers
- **Scalable** – currently operates in NYC, but has business models that identify pricing opportunities built for the entire state and 16 additional states

Source: https://joindrift.com/
CUSTOMER INNOVATION EXAMPLE 4: SUBSCRIPTION MODEL

The “subscription economy” is growing exponentially

For energy, this means creating a platform to offer fixed energy billing along with additional services (a la Netflix)

- Fixed bill, that doesn’t vary with usage, with no true up
- Customized
- Layering of additional services

- Visibility and simplicity for customers
- Energy savings
- Additional revenue for energy suppliers

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Investors Business Daily, December 2019
CUSTOMER INNOVATION EXAMPLE 4: SUBSCRIPTION EXAMPLE

Energy + Smart Devices.
One subscription.

Pay one flat monthly supply price for clean energy & a smarter home.

100% clean energy

Smart device packs
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RELEVANT THOUGHT LEADERSHIP

Business Value through Disruptive Energy Platforms

State & Future of the Power Industry

Energy Cloud Playbook

Defining the Digital Future of Utilities