



IDC PERSPECTIVE

Digital Utility as a Service: NRGi's Experience

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EXECUTIVE SNAPSHOT

FIGURE 1

Digital Utility as a Service: NRGi's Experience

This IDC Perspective analyzes how Danish utility cooperative NRGi moved to a cloud-hosted as-a-service business platform to enhance its customers' experience, reduce cost, and lay the foundation for new digital initiatives. The key opportunity for transformation was Denmark's move to a "supplier-centric model" in the retail electricity market, which brought more transparency for consumers and more competition for utilities, by leveling the playing field and lowering entry barriers for new entrant retailers.

Key Takeaways

- The PaaS model eliminated the need for NRGi to invest in an expensive solution up front, effectively
 reducing its capex. It also made for an attractive commercial solution, with a single interface and single
 contract covering the software licenses and support, datacenter hosting, and technology platform.
- Cloud hosting enabled NRGi to build a solid IT foundation while focusing on functionality rather than hardware. This meant significantly reducing cost and effort compared with a standard CIS replacement.
- With the first customer live on the platform only five months after the project kick-off (as opposed to an
 industry standard of 12-18 months), NRGi's was the fastest utility CIS implementation in Danish history.

Recommended Actions

- Don't just digitize, digitally transform. Digital transformation is not only about digitizing existing processes.
 It is also about leveraging digital technologies to do different things.
- Consider cloud deployment and as-a-service procurement. Solution vendors and service providers can
 offer very lean and effective deployment options and are increasingly open to innovative pricing models,
 even when complex business-critical systems are concerned.
- Stop customizing, configure instead. Make the most of standard CC&B configurations, catalogs of bestpractice workflows, and market packages. It is proven that up to 90% of requirements can be covered through rich out-of-the-box functionality.

Source: IDC Energy Insights, 2017

SITUATION OVERVIEW

IDC Energy Insights' Case Studies Series

IDC Energy Insights' case studies series provides utilities with fact-based, comparable, consistent, and independent views on interesting projects implemented across the world. The focus is on new business models, digital transformation initiatives, IT and operational technology (OT) solutions implementations, and, more broadly, energy technology initiatives that contribute to innovation and sustainability. Collaborating with utility companies and vendor personnel directly involved in the projects, IDC Energy Insights analysts gather all relevant information and analyze the approaches taken and the solutions' success in meeting their stated goals. Case studies are assessed against the four criteria that IDC Energy Insights believes are critical to generating value: contribution to operational effectiveness, degree of technological innovation, transformational impact on the company's businesses, and, more broadly, the utilities industry value chain.

Why This Case Study?

Using digital to deliver a better customer experience at lower cost has become a business imperative across mature competitive energy markets where margins and customer expectations move in opposite directions.

This case study shows how Danish utility NRGi is using process modernization and business model innovation to accomplish its ambitious vision to become the country's number 1 digital utility. Specifically, it analyzes how NRGi and its technology partners managed to quickly deliver a solid technology foundation to this vision by using the right procurement model and IT infrastructure.

Company Overview

NRGi is a cooperative utility company distributing and selling electricity and district heating across Denmark. Headquartered in Aarhus, the company is the result of the merger of several local municipal utilities and energy companies between 2000 and 2008, and employs around 1,100 people across the country.

NRGi's activities in the electricity sector include:

- A distribution system operator (NRGi Net) that owns and manages the distribution network and end-user smart meters across the municipalities of Aarhus and Horsens, the Mols area, and the islands of Samsø, Anholt, and Tunø.
- An electricity retail company (NRGi Elsalg) serving 220,000 residential and business customers across Denmark.

These add to NRGi's district heating company (NRGi Lokalvarme), which owns and manages 11 local CO₂-neutral plants and serves approximately 1,800 customers. NRGi VE, the company's renewable energy business unit, manages a portfolio of eight wind turbines with a combined capacity of 24.1MW, with a target of 100-150MW in onshore, nearshore wind, and solar generation by 2020.

NRGi also offers electrical engineering services (under the EL:CON brand), energy consulting services (Kuben Management), and sustainable urban furniture solutions (Veksø).

Business Needs

Although the Danish electricity sector was formally liberalized in 2003, market opening accelerated in recent months as a new regulatory framework was introduced to increase competition and encourage the development of new customer products and services.

In April 2016, the retail electricity market moved to a supplier-centric model where electricity retailers have become the primary contact and sole billing interface for consumers, buying grid services on a wholesale basis and selling "delivered electricity" to end users. This coincided with the end of regulated electricity prices, on which the vast majority of consumers had remained since liberalization. All this brought in more transparency for consumers, encouraging them to become more active thanks to a simpler bill and a single electricity price, covering both consumption and grid fees.

Enabling this market model shift was the launch, in 2013, of a centralized platform for the management and exchange of data between market participants (so-called "data hub"). Managed by transmission system operator Energinet.dk, the data hub is instrumental to making customer switching easier and making energy consumption data accessible to end users.

These changes leveled the playing field and lowered entry barriers for new entrant retailers, requiring existing operators to modernize their operations to be able to cope with increasing competition and pressure on margins. They also made the market more complex, requiring existing operators to adapt their processes to comply with the new model.

For many companies in the market, this was the key driver of a comprehensive overhaul of their business systems.

The Best Practice Approach Project Objectives

To seize the growth opportunities offered by this market discontinuity, NRGi set off on a journey to transform the customer-utility interaction and customer perception, while also innovating its business model. It did so under the deliberately bold vision to become "Denmark's number one digital utility," achieving the best customer service and the lowest cost-to-serve in the sector. The company also set itself the ambitious target to double its turnover within five years.

With legacy IT unable to meet new requirements, the company needed to procure a new business platform that would not only enable it to comply with the new market model, but also enhance the customer experience and lay the foundation for future digital initiatives, while opening new avenues for growth.

In more detail, from a market perspective, NRGi wanted to:

- Operate profitably in the more transparent and competitive market context. Comply with new regulatory requirements while reducing the high cost-to-acquire and serve by maximizing its customers' use of low-touch, self-service channels and automated functionality.
- Build new business-to-business (B2B) revenues. Launch a multi-brand "retailer-in-a-box" service offering retail customer operations to small third-party suppliers, with a pay-per-use model.

From a customer perspective, NRGi wanted to:

- Become a more customer-centric utility, capable of offering a consistent, simplified, and personalized multichannel experience to its end users, regardless of where they are on their customer journey.
- Be able to collect, enrich, and organize data in order to obtain a single view of its customers. Extract insights from this data to improve on attraction, retention, and upsell efforts, as well as to offer better billing and support.

Solution Description

To achieve this, NRGi contracted Wipro to design, build, host, and deploy an Oracle-based business solution with a five-year platform-as-a-service (PaaS) contract. This first-of-its-kind Oracle deployment was later called Digital Utility Solution as a Service (or DuSaaS) by Wipro.

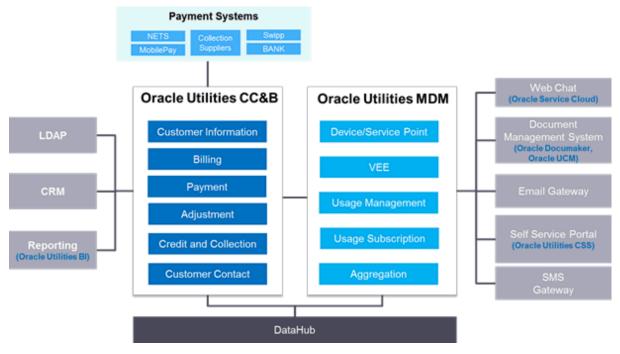
DuSaaS packages hosted Oracle's metering, customer operations, and customer experience solutions with Wipro's accelerators, application support, datacenter, and network services, in a single contract. The solutions stack deployed include (Figure 2):

- Hosted Oracle Utilities Customer Care and Billing (CC&B) and Meter Data Management (MDM) as the core customer information and metering systems
 - These systems communicate with the data hub through a standards-based integration solution developed by Wipro, capable to handle more than 50 types of market messages and scale to 500,000 customers.
- Oracle Utilities Customer Self Service (CSS) and Oracle Service Cloud as the self-service portal and Web customer relationship management (CRM) components
- Oracle Universal Content Management and Oracle Documaker as enterprise content management (ECM) platform and document automation (EDA) solution, respectively
- Oracle Enterprise Service Bus for SOA integration and Oracle Utilities Analytics for CC&B as analytics and reporting tool

Wipro's IP and services include embedded utility business model templates, a prebuilt business integration framework, and the Wipro Easy Run and EasyU tools for maintenance and upgrade of the Oracle landscape. This adds to a prebuilt customer self-service platform and access to local digital customer experience design capabilities.

FIGURE 2

DuSaaS Solutions Deployment Scope at NRGi



Source: NRGi, 2016

From a customer operations and customer experience management standpoint, the DuSaaS solution deployed by NRGi covers the full process stack, including:

- Marketing and sales: from campaign management to sales management supporting multiple business models (organic, acquisition, wholesale, and white label), marketing, and branding (Figure 3)
- Commodity billing: customer information, billing of electricity and district heating, payments and collections
- Omnichannel customer experience: multichannel communication, including social media, self-service, and digitization of customer communications
- Customer analytics

FIGURE 3

Self-Service Enrollment Functionality on the NRGi Website

NRGi STEP 01 HVOR STOR ER JERES FAMILIE? STEP 02 BOR I I HUS ELLER LEJLIGHED? > STEP 03 HVORMANGE kWh BRUGER 1? VEJLEDENDE ELPRIS PR. ÅR BASERET PÅ DINE VALG OG NUVÆRENDE ELPRISER VEST FOR STOREBÆLT (EKSKL. ABONNEMENT, UDGIFTER TIL NETSELSKAB OG AFGIFTER TIL STAT)

Source: NRGi, 2017

Selecting the Solution

To build the IT foundation to its digital and business model innovation program, NRGi wanted:

- A proven integrated portfolio of customer operations and digital customer experience management products embedding industry best practice
- A single contractor for applications delivery and systems integration, offering competence and delivery record with the chosen solution, including deployable tools, integration frameworks, and accelerators

 Knowledge of the Danish market, especially around the data hub concept and local digital design capabilities that could maximize the impact of the new business solution

Oracle and Wipro were selected as solution and service providers, respectively, with the DuSaaS solution's procurement and deployment model further providing NRGi with:

- The ability to pursue a phased approach to improving the cost to serve and customer experience, deploying capabilities in bundles and providing higher business agility and faster go-to-market
- Reduced TCO, with all software, hardware, and cloud services bundled and sold to NRGi as a service
- The ability to leverage the platform's scalability to introduce a new offering and sell retail customer operations management as a service to B2B clients

Implementing the Solution

With the overall business needs identified and a Business Model Canvas, NRGi set off evaluating MDM, CRM, and CIS solutions in April 2015. A shortlist of nine solution vendors was compiled based on off-the-shelf market research, direct market analysis, and existing internal knowledge. As a desktop exercise, five vendors were invited for demonstrations and proof of concept, and finally, in September 2015, NRGi selected Oracle Utilities as core solution provider and Wipro as supplier and integrator of the end solution.

The PaaS contract with Wipro was signed in December 2015, and the project kicked off in the same month. The solution was deployed within a three-phase program:

- Phase 1 involved enabling the platform's core functionality and fulfilling market compliance. The full scope of the CC&B and MDM systems were implemented, and integrated with the data hub and a first set of payment systems. The analytics and reporting solution was also deployed. Finally, NRGi's main front end was implemented, including the self-service portal, email gateway, and content management solutions. During Phase 1, NRGi's legacy CIS platform and the new solution coexisted, with the former running business as usual and the latter used to start developing new functionality.
- Phase 2 involved deploying both front- and back-end CRM capabilities, and enhancing the customer experience online. This adds to customer data migration from the legacy platform using a "change of supplier" approach and overall process optimization.
- Phase 3 will involve enabling the multibrand "retailer-in-a-box" service functionality and marketing scale-up, in addition to integrating with the remaining payment systems needed.

Phase 1 user acceptance testing began in March, only two months after the planning stage. After more than 1,200 test runs, Phase 1 came to an end in May 2016 with a soft launch to NRGi employees only five months from project kick-off and nine months from greenfield. The platform was then opened for external customers in September 2016.

Phase 2 is ending in March 2017, just 15 months after the project kicked off, within scope, deadline, and budget. Phase 3 is set to start on May 1, 2017.

Business Value

Marking a clear departure from the traditional CIS replacement model, NRGi's DuSaaS deployment was a success in its own right, even before the solution went live, mainly due to the reduced cost, flexibility, and sheer speed of execution.

- The PaaS model eliminated the need for NRGi to invest in an expensive solution up front, effectively reducing NRGi's capex. It also made for an attractive commercial solution for the company, with a single interface and single contract covering SaaS services, software licenses, annual support cost, datacenter hosting, and technology platform.
- The entirely hosted and cloud-based solution enabled NRGi to build a strong foundational IT architecture while focusing on functionality rather than hardware. This meant avoiding additional capex and reducing overall implementation effort by 40% compared with a standard CIS replacement, with NRGi's internal effort limited to just five full-time resources.
- With the first customers going live on the platform only five months after project kickoff (as opposed to an industry standard of 12-18 months), NRGi's was the fastest utility CIS implementation in Danish history. The quick time to market of new capabilities enabled NRGi to drive market change, providing a significant competitive advantage.
- Using a "change of supplier" approach to customer data migration rather than a
 conventional extract, transform, and load process (ETL) proved particularly effective from a
 business perspective. It helped mitigate risks and reduce the billing inaccuracies linked to
 the forceful migration of legacy data into the new data model.

With almost all customers now migrated onto the new platform, NRGi is seeing the following benefits from the project:

- The time to market of any new offering or modification of existing ones has been reduced by three times compared with the legacy platform.
- The order registration handling time was cut by almost 90%, from 18 to 2 minutes.
- The time required for customer care training of new employees has been reduced dramatically, from several weeks to a single day for first-level and one week for all-round support.

Lessons Learned and Next Steps

NRGi's DuSaaS deployment was in many ways a first-of-its-kind project for all stakeholders. One of the key lessons learned by NRGi lies is in the superior value of a partnership based on collaboration and trust over the traditional customer-supplier relationship.

In particular, one of the risk factors perceived by NRGi was with the delivery team's location. It was the first time the company had ventured into a project of this magnitude, where a lot of the development would be done offshore by a service provider the company had never worked with. Some of the ingredients of what turned out to be a smooth and flawless delivery were:

- NRGi's strong executive sponsorship and management focus on the project from day 1, including a clear line-of-business mandate to the IT organization in charge of digital transformation.
- The strong collaboration, "can do" spirit, and good cultural match between NRGi's IT and business, Oracle and Wipro. Working as one team, people could socialize and brainstorm gaps, solutions, and issue closures, which aided faster collaborative decision making.
- Wipro's domain expertise, along with its accelerated delivery approach.

Other key takeaways from the project relate to the impressive speed and flexibility achieved by the program and include:

The importance of adapting out-of-the-box processes rather customizing the solution, leveraging standard functionality and existing best practice to speed up implementation. Overall, only 15 customizations were made on the solution, mainly for localization purpose. A deliberate choice was also made for an English-language system setup, which ended up helping change management.

- The importance of hosting and cloud to speeding up the time to market of services and enabling a "try and fail fast" project environment.
- The importance of the best-practice approach and partnership model based on trust to achieving flexibility and being able correct the program's direction on the go, when needed. In the run-up to Phase 3, the team has managed to review and change the scope of that phase to best reflect updated business needs. It did so using an agile approach, without the need to discuss the feasibility of add-on applications or their commercial impact.

In the longer term, Oracle CC&B represents the IT foundation onto which NRGi intends to build its digital customer experience management capabilities and, with them, its vision to become a best-in-class retailer. A first step was taken by including Oracle Service Cloud in the initial project scope. This provided NRGi with advanced CRM functionality such as social media and chat-based customer support, context-aware knowledge management, and FAQ available to both customers and service representatives. As part of the future journey, NRGi is considering implementing other Oracle CX solutions including:

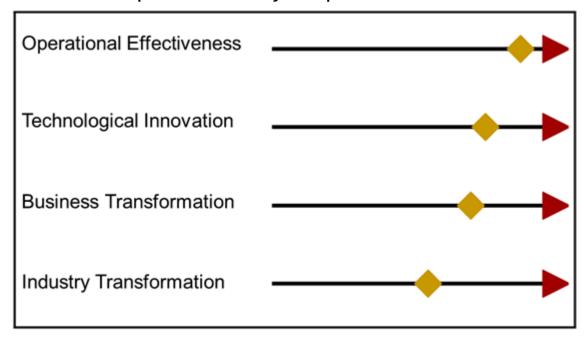
- Oracle Social Cloud, providing social listening, social analytics, social engagement, and lead generation capabilities
- Oracle Commerce Cloud, enabling ecommerce capabilities for new products, services, and solutions
- Oracle Sales Cloud for sales force automation and Oracle CPQ Cloud to support with configuring, pricing, and quoting its B2B service offering
- Oracle Utilities Opower solutions for enhanced customer engagement

ADVICE FOR THE TECHNOLOGY BUYER

Project Impact Assessment

Figure 4 presents IDC Energy Insights' impact assessment of NRGi's DuSaaS implementation based on its operational effectiveness, technological innovation, and business and industry transformation potential.

NRGi's DuSaaS Implementation: Project Impact Assessment



Source: IDC Energy Insights, 2017

Essential Guidance

Given its transformational nature and strategic scope, any utility approaching a similar project should consider the following:

- Don't just digitize, digitally transform. Digital transformation is not only about digitizing
 existing processes. It is about leveraging digital technologies to do different things.
 Successful digital transformers have a bold approach to their strategies and can leverage
 market and technology discontinuity to bring real change to the business.
- Fully align the technological program and the business strategy. Ensure future business systems will support the overall business strategy. While functionality is key to the selection process, the procurement model and technology foundation are also critical.
- Consider cloud deployment and as-a-service procurement. Solution vendors and service
 providers can offer very lean and effective deployment options and are increasingly open
 to innovative pricing models even when complex business-critical systems are concerned.
 This can result in much shorter deployment times and lower TCO.
- Stop customizing, configure instead. Make the most of standard CC&B configurations, catalogs of best-practice workflows, and market packages. It is proven that up to 90% of requirements can be covered through rich out-of-the-box functionality. In addition, most vendors offer business rules libraries and comprehensive business process design tools, such as workflow engines and wizards. This will also bring benefit in terms of project duration and lower cost of ownership in the longer term through quicker patching and upgrade.

- Start considering technology options at the earliest. Invite solution vendors and service
 providers in at the process design stage to provide client-side advice and proof of concept,
 and increase understanding of what is possible and how it can best be achieved. This will
 help bulletproof the architecture design, technical specifications, and final product
 selection.
- Phase the program. "Big bang" transformations maximize the impact but leave little room for error and can make project management very complex. A phased rollout will enable to deploy capabilities quicker, resulting in shorter time to market, and limit the fallout should issues arise.
- Solve real problems for real customers. Simplifying customers' lives translates into attracting, engaging, and retaining customers. Customers seek to eliminate complexity in their day-to-day existence. They seek to establish reciprocity in their interaction with utilities. Utilities should focus on finding needs and problems that can be cleverly solved.
- Secure appropriate sponsorship. Despite the multiplicity of parallel projects that normally compete for resources and organizational commitment in utilities, very few have a comparably deep impact on the organization. Ensure that top management is fully engaged and provides strong sponsorship to the project.

LEARN MORE

References

Interviews with:

- Roberto Schurmann Bentsen, Head of Digital Transformation, NRGi.
- Karsten Revsbech, Product Development Manager, NRGi.

Related Research

To learn more about customer journey and experience and the software solutions implemented, please refer to the following IDC Energy Insights documents:

- Customer Experience chez Engie Italia! (IDC Energy Insights #EMEA42338617, March 2017)
- Utilities and 3rd Platform Technologies Enabling Digital Transformation (IDC #EMEA40828417, February 2017)
- Utilities Smart Customer Operations Quarterly Update: October-December 2016 (IDC Energy Insights #US40829517, February 2017)
- How Has the Adoption of Cloud Evolved Over the Past Three Years Among European Utilities? (IDC #EMEA42212917, January 2017)
- IDC FutureScape: Worldwide Utilities 2017 Predictions (IDC #EMEA40123816, November 2016)
- IDC MaturityScape: Digital Transformation in Utilities 1.0 (IDC Energy Insights #AP41102916, November 2016)
- IDC MarketScape: Worldwide Customer Experience Management Solutions for Utilities 2016 Vendor Assessment (IDC Energy Insights #US40130216, April 2016)
- IDC MarketScape: Worldwide Customer Care and Billing Software in Competitive Unbundled Energy Markets 2016 Vendor Assessment (IDC Energy Insights #US40145616, April 2016)
- Driving Utilities' Digital Journey to the Next Level: Highlights from the 2016 IDC Pan-European Utilities Executive Summit (IDC Energy Insights #EMEA41171716, April 2016)

- Business Strategy: Utilities' IT Investments for Smart Customer Operations Results from the 2015 Utility Surveys (IDC Energy Insights #EMEA41050616, March 2016)
- IDC MarketScape: Meter Data Management Software for EMEA Utilities 2015 Vendor Assessment (IDC Energy Insights #EMEA40706815, December 2015)
- E.ON UK Rebuilds Trust with Customer Engagement and Digital Transformation (IDC Energy Insights #EISC05X, May 2015)

To learn more about case studies discussing best practices in utilities, please refer to the following IDC Energy Insights documents:

- Business Strategy: The Utility is Dead, Long Live the Utility: Eneco's Business Reinvention (IDC Energy Insights #EMEA41831216, October 2016)
- Business Strategy: CLK Enerji Sets an Ambitious Tone for Business Transformation in the Turkish Energy Industry (IDC Energy Insights #EMEA41687416, August 2016)
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- Best Practices: Anglian Water Moves Closer to a Smart Water Network With a Leakage and Pressure Management Solution (IDC Energy Insights #EIOS03V, June 2013)
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- Best Practices: Low Carbon London, Promoting Innovation in the Distribution Network (IDC Energy Insights #EIRS04U, December 2012)
- Best Practices: Spotlight on Mobile Applications Mekorot, Israel's National Water Company (IDC Energy Insights #EIOS57U, September 2012)
- Deep Dive into Smartcity Málaga Ranked #1 in IDC Smart Cities Index for Spain (IDC Energy Insights #EIRS03U, May 2012)
- Best Practices in Building Energy Management: Høje-Taastrup and Middelfart Municipalities Partner with Schneider Electric to Improve Buildings Performances (IDC Energy Insights #EIRS01U, January 2012)
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- Utility Remote Wind Power Management: EdP Bets on Logica's IT Solution (IDC Energy Insights #EIRS53Q, April 2008)

Synopsis

This IDC Perspective analyzes how Danish utility cooperative NRGi moved to a cloud-hosted as-a-service business platform to enhance its customers' experience, reduce cost, and lay the foundation for new digital initiatives. The key opportunity for transformation was Denmark's move to a "supplier-centric model" in the retail electricity market, which brought more transparency for consumers and more competition for utilities, by leveling the playing field and lowering entry barriers for new entrant retailers.

"Using digital to deliver better customer experience at a lower cost has become a business mantra in mature competitive energy markets, where margins and customer expectations move in opposite directions," said Jean-François Segalotto, research manager, IDC Energy Insights. "This case study shows how NRGi is leveraging process modernization and business model innovation to accomplish its ambitious vision to become Denmark's number 1 digital utility."

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