

Cable operator prepares for growth by identifying energy-saving projects

Hitachi Consulting identified high-yield projects

Not so long ago, cable operators were the only game in town for high-speed Internet. Today, cable operators face fierce competition from nontraditional broadband providers that deliver fiber to the home, including Google and telephone companies.

To entice customers to not “cut the cord,” a major U.S. cable operator constantly increases speeds and enhances services. But every extra bit of data that travels over the network also increases energy consumption. The company knew that without action, energy demand in its thousands of edge facilities and plants would exceed supply at some point. Energy consumption had become an existential threat.

Which energy-saving projects would be most effective? The cable operator had experimented with a few. But its thousands of facilities vary so widely in size and layout—from a few racks in a basement to modern data centers—that the company wanted help to identify the projects with the biggest payback. The goal: a scalable energy-saving program that worked across the company’s widely diverse edge facilities.

Solution: Hitachi Energy Solutions

The cable operator engaged Hitachi Consulting to recommend energy-saving solutions for its edge facilities—part of the Hitachi Energy Solutions. Leaders from the two companies had met through the Society for Cable

Telecommunications Engineers (SCTE) and other industry forums. Hitachi offered the right combination of experience: smart energy solutions, operational technologies, an Internet of Things (IoT) platform for energy management, and in-depth understanding of the unique energy requirements of cable facilities. While an HVAC malfunction in an office building might cause employees to grumble and take off their jackets, in a cable headend or hub it can cause a service interruption that prompts customers to defect.

Ranking energy strategies by effectiveness

For each headend and hub surveyed, the Hitachi team conducted an on-site energy assessment and developed computational fluid dynamic models of existing airflow conditions. Based on this information, Hitachi identified three energy saving projects that would deliver payback in three years or less in 98% of the cable company’s facilities:

- Airflow optimization
- Advanced HVAC compressor controls that reduce energy consumption by 20%
- Replacement of older, less efficient and ozone-depleting refrigerants.

The cable operator received a set of recommendations optimized for different facility sizes and layouts. Hitachi also delivered energy-saving lighting strategies, and a schedule for replacing older HVAC systems with newer, more energy-efficient models.

Executive summary

Challenge

Prepare for continued growth and hedge against rising energy costs by increasing energy efficiency in cable headends and hubs. Edge facilities and the outside plant are the largest component of the overall corporate energy bill.

Solution

Hitachi Energy Solutions

Benefits

- Identified investments with most rapid payback, with expected 5-year savings for first 10 sites of >\$1.5 million
- Gained a way to measure the effectiveness of future energy-saving projects using an intuitive cloud-based tool
- Increased appeal to customers by demonstrating commitment to environmental sustainability



After completing a pilot in several locations, the cable company and Hitachi plan to implement energy saving projects in sites across the U.S. Hitachi will also leverage the solution for other major cable operators that have similar needs and facilities.

Gaining insights from the IoT

During the pilot, Hitachi leveraged a cloud-based IoT platform called the Hitachi Smart Energy Platform to collect, monitor, and analyze energy data from HVAC equipment in edge facilities. An intuitive dashboard shows which assets are working efficiently and which can be further optimized. Hitachi uses output from the Smart Energy Platform in what-if calculations to compare the outcomes and costs of various energy-saving projects.

Demonstrating corporate social responsibility

Finally, reducing energy consumption at headends and hubs will make more sites eligible for alternative energy, thereby reducing the cable operator's carbon footprint and dependence on the electrical grid. That's healthy for the planet, good for the bottom line, and attractive to a new generation of consumers.

"Between 73% and 83% of cable's overall energy consumption is by hubs and headends, as well as the access network power supplies powering the active equipment on the HFC network."

- Society for Cable Telecommunications Engineers

About Hitachi Consulting

Hitachi Consulting is the global solutions and professional services organization within Hitachi Ltd., a global innovation leader in industrial and information technology solutions and an early pioneer of the Internet of Things. Hitachi Consulting is a business integrator for the IoT era and a catalyst for digital transformation. Using our deep domain knowledge, we collaborate with clients to help them innovate faster, maximize operational efficiency and realize measurable, sustainable business and societal value. As a consulting-led solutions company, we can help you leverage data as a strategic asset to drive competitive differentiation, customer loyalty and growth. To learn more, visit www.hitachiconsulting.com.