Digital Transformation of Energy and Utilities with MicroStrategy
The challenge
The energy and utilities industry faces a vast number of challenges today. Organizations must navigate price volatility, seek out and replace reserves, run large global operations, and effectively manage risk and changing regulations—all while staying profitable. Aging infrastructure, increasing customer demands, and the emergence of new technologies also contribute to this challenging business environment. To stay relevant, it’s critical for energy and utility companies to harness the power of data to drive performance and efficiency.

The solution
MicroStrategy is an integrated platform that energy and utility companies can use to deploy customized, data-driven applications that meet their complex and unique needs. These powerful, secure solutions can help companies automate reporting and streamline processes in order to better manage workforces, customer service, supply chain activities, and regulations, as well as production, generation, and refinement operations. These high-performance applications can easily scale up to meet the needs of employees across the organization. And with our mobile platform, organizations can build custom, native apps that empower employees from executives to field operations or service employees with the tools they need to increase productivity and make better business decisions.

MICROSTRATEGY enables energy and utilities industries to digitally transform their businesses.
APPLICATIONS FOR ENERGY AND UTILITIES

- Exploration
- Production/Generation Analysis
- Field Operations
- Health, Safety, and Environment Inspection
- Energy and Utility Companies: Petroleum, Gas, Electricity, Coal, Nuclear, Renewable, Water
- Refining | Treatment
- Sales and Distribution
- Customer Analysis
- Customer Portal
- Call Center Operations
- Usher/Security
- Financial Analysis/Executive Reporting
- Digital Employee Badge
- Risk Management
- Supply Chain Analysis
- Operations Analysis
- Sales and Distribution
- Field Service
- Marketing

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- Field Service
- Marketing
The challenge
The exploration process is a difficult, risky endeavor and often requires significant resources. Having access to the right information is critical for companies to effectively and efficiently manage energy exploration and accurately pinpoint the location of untapped reserves.

The solution
MicroStrategy provides energy and oilfield services companies with a holistic view of their exploration data related to surveys, reservoirs, existing production, and wells so they can make informed decisions about where to focus their precious resources. Using powerful analytics, organizations can identify various geological profiles of high-producing wells or compare production predictions to actuals, helping them evaluate new potential sites. Organizations can also understand criteria related to current exploration leases, such as acreage available, terms, and location. Exception-based MicroStrategy dashboards help improve organizations’ ability to effectively analyze huge amounts of exploration data to make better decisions, fast.

Additionally, MicroStrategy Mobile apps empower seismic acquisition and well-logging crews to easily access and log data while in the field. Our high-performance apps work online or offline and provide survey crews with the ability to directly input photos, notes, and other data from remote locations.

Leverage analytics to better manage oil, gas, and mineral exploration data related to surveys, exploration wells, and land leases.
The challenge
In order to optimize production and meet demand, organizations must understand a wide range of information related to demand forecasting, equipment, resources, energy consumption, and recovery techniques.

The solution
MicroStrategy enables organizations to easily connect to and analyze large structured and unstructured datasets to gain a comprehensive view of production performance—a critical tool to help optimize processes and minimize downtime. Our solution provides powerful analytics and reporting capabilities that help companies better understand data related to power station utilization, energy mix, net energy gain, distributed generation, and more. With this tool, organizations can quickly identify various factors that are impacting production and act to help ensure supply reliability. For example, users can instantly access reports, production data, and geological information in order to quickly understand what actions can be taken to improve well performance. With advanced analytics capabilities, organizations can also better predict production versus demand, energy consumption, and equipment issues before they lead to system failure.

Optimize production processes by using analytics to better manage assets, maintenance, reserves, demand forecasting, and more.

Analyze production performance versus targets in order to help optimize processes and avoid downtime

Understand the peaks and valleys of production over various time periods

Drill into site details to quickly understand the various factors impacting production in order to help ensure supply reliability and take advantage of opportunities
Analyze and monitor real-time production data related to output, systems, equipment, weather forecasts, and costs.

**The challenge**
Companies face renewed pressure to increase productivity, but information silos, communication gaps, and technology shortfalls all compound this challenge.

**The solution**
With MicroStrategy Mobile apps, field operations personnel can monitor and analyze real-time energy production data related to output, systems, costs, equipment, building-energy management, and even weather forecasts. App users can quickly understand if production is falling short of target levels and drill into data to identify process bottlenecks and potential solutions.

These apps allow field supervisors to instantly document and capture images of safety violations and upload them to appropriate systems. Managers can view workforce performance, review time and attendance information, and make scheduling adjustments directly from the app. Using these apps, managers can also log conversations with their workers in regard to attendance, training, safety, and quality of work. Comments can be input directly into the app, and employees can acknowledge that the conversations took place via the signature capture. During an emergency situation, managers can view real-time maps of user activity and communicate with dispersed teams at the touch of a button.

Available online or offline, this powerful mobile solution helps ensure that field operations personnel are constantly connected to the critical information they need to run their drilling and mining sites efficiently and safely.

**MOBILE APPLICATION:**
Access information about well availability and service interruptions.

Mobilize energy and utility operations to help improve business agility, decision-making speed and quality, and workforce and asset productivity.
The challenge
A single major HSE incident can have significant human, financial, and reputational costs—in some cases even threatening the very survival of a company. Hence, it’s critical for energy companies to comply with regulations and ensure the health and safety of their workforce.

The solution
MicroStrategy Mobile HSE apps reduce paperwork, accelerate documentation processes, and help ensure that inspectors or site managers are working with live data. These solutions incorporate transactional input forms that empower users to capture and submit HSE data directly from their apps while on-site. App users can log information related to safety violations, maintenance issues, samples, environmental regulatory compliance, and more. Inspectors or site managers can capture and submit photos of incidents or infractions and submit notes for review. These comprehensive apps also provide access to past HSE data and to content related to training and corporate policies. Using these apps, companies can streamline HSE management processes and improve safety practices, compliance, preventative maintenance, and workforce productivity.

Streamline inspection and documentation processes and improve the communication of health, safety, and environmental issues and trends.

Input HSE data from apps while on-site
Capture and submit photos of incidents or infractions
Submit notes to improve communication
Analyze injury types, severity rate by location, and injury trends over time
The challenge
The challenges of supply assurance, cost containment, and risk management can make it difficult to run an efficient supply chain. Inventory can become bloated with extra parts or reserves that are needed to avoid service disruptions during emergencies; yet energy losses must be addressed quickly in order to remain profitable and compliant.

The solution
MicroStrategy gives energy and utility companies instant visibility into the end-to-end health and status of their supply chains. With critical KPIs and threshold-based alerts, organizations can monitor their complex, multi-tier supply chains so they can quickly identify and address inefficiencies related to energy losses, transportation, storage, inventory, costs, and more. For example, a power company can use our platform to quickly analyze transmission and distribution network data related to circuit length, transfer capacity, loss ratios, and location to better understand and optimize their supply chain performance. Companies can leverage powerful analytics to closely monitor fuel transportation, barrel storage capacity, and pipeline performance to improve their operations.

Our platform can also be used to provide procurement departments and suppliers with a secure, common view of data related to on-time deliveries, order fulfillment rates, invoice accuracy, and defective inventory. These insights help organizations drive supply chain efficiencies, refine demand forecasting, and improve negotiations.

Minimize delays, reduce inefficiency, and maximize profit margins with real-time insight into the transportation, transmission, and storage of energy.
The challenge
Refineries and treatment plants are complex operations that must adhere to rigorous safety and environmental regulations. Plant staff must be well trained and are often on-call 24 hours a day. Security is also critical for success.

The solution
MicroStrategy provides treatment plants and refineries with a comprehensive view of operational data, so they can optimize performance, ensure safety, and adhere to regulations. Our solution allows companies to efficiently report on huge volumes of data, distributed across multiple systems and domains. Plant personnel can easily access and analyze data covering process controls, emergency shutdowns, laboratory information, asset management, and more. These applications also help plant workers closely monitor energy consumption levels, production operations, equipment maintenance, materials balances, and the receipt and shipment of goods. Data-driven ‘smart alerts’ help ensure that plant personnel are focused on addressing high priority issues, such as system or equipment malfunctions, quality, and safety.

Energy companies can further boost plant worker productivity by empowering employees with apps that let them stay connected to plant operations from any location, both online and offline. Transactional functionality enables users to adjust labor and shipment schedules, document maintenance and safety issues, and input comments—all within the app. Workers can instantly access training materials and even view plant video feeds from security cameras.

Analyze and monitor complex plant operations and get real-time insight into product quality, energy consumption, workforce performance, safety, and more.
The challenge
Traditional sales and CRM systems are not equipped to handle the demands of a mobile sales team and fail to provide the in-depth insight into individual customers or prospects that salespeople need to be effective.

The solution
To succeed, it’s critical for companies to provide their sales representatives with the information they need to make fast, informed decisions while onsite with customers or prospects. MicroStrategy gives sales reps the ability to quickly view their book of business and analyze real-time information related to rates, buying patterns, demographics, regulations, regions, and more. In-app multimedia content such as presentations, brochures, and marketing and training videos help to drive more meaningful conversations with existing accounts, prospects, and sales management.

With on-the-go processing of mobile transactions, sales reps can update account information and forecasts, create sales quotes, and log meeting activities, regardless of their internet connectivity — so they can focus on closing deals instead of time-consuming administrative tasks. App users can also gain a comprehensive view of sales activities across distribution channels, which helps to ensure that the organization is working together to drive revenue and deliver exceptional customer experience.

Streamline communication and boost the productivity of sales teams by providing them with instant access to critical systems and information.
The challenge
Field technicians are exposed to numerous environmental and occupational risks, and their productivity is often limited by their inability to access up-to-date documentation when they need it.

The solution
MicroStrategy Mobile apps empower utility companies to better manage and enable their field technicians as well as reduce slow, paper-based documentation processes. Using our platform, companies can combine key field services workflows into a single streamlined app that’s available online or offline. These powerful apps aid with scheduling and route optimization and provide technicians with detailed information about equipment, parts inventory, billing, and individual customer accounts. Technicians can submit work orders directly from their mobile devices, access training videos and materials, and sign for work received using the app signature capture feature. These apps also provide technicians with visibility into how their performance compares to their peers, and technicians can communicate with their supervisors directly from the app (and vice versa).

Improve productivity with mobile apps that facilitate a smarter, more agile field services workforce.

View comprehensive job data
Provide technicians with geospatial analysis and mapping capabilities to help them locate customer appointments and highlight repeat visits

Help technicians stay organized by leveraging calendars
The challenge
Deregulation has led to increased competition between utilities, making marketing an increasingly important function for energy providers.

The solution
MicroStrategy provides critical real-time analytics that enable companies to optimize their marketing spend and increase campaign effectiveness. Whether it’s weblogs that track browsing behavior, purchase histories, customer reviews, or direct mail marketing, MicroStrategy can combine data from multiple sources and bring it together in a single dashboard application. With access to powerful visualizations, mapping features, and data discovery capabilities, marketing professionals can explore data and better understand market trends, competitor activity, and customer preferences.

These valuable business insights help marketing professionals better define target markets or consumer segments and further refine their messaging. And with real-time views of key marketing metrics like email open rates, video plays, and website traffic, marketers can proactively adjust their efforts to increase the effectiveness of campaigns.

Leverage analytics to optimize marketing campaigns and better compete in deregulated energy markets.
CUSTOMER ANALYSIS

The challenge
Many energy and utility companies are still operating in data silos and struggle to obtain a 360-degree view of their customers. Also, the streams of data generated by innovations such as smart meters and smart grids have complicated their efforts to connect customer interactions across all channels.

The solution
MicroStrategy makes it easy for energy and utility companies to quickly comb through large amounts of customer data and seamlessly connect activities from various touchpoints, from websites, to call centers, mobile apps, and social media. Our platform enables users to easily analyze customer data related to smart grids, revenue, complaints, marketing engagement, demographics, and more. For example, a natural gas provider can leverage analytics to monitor and estimate gas consumption levels, track third-party service work, and help ensure that customers are served in a timely manner. These valuable insights can be used to segment customers for marketing programs, predict customer defection, determine which areas to invest resources in, and personalize interactions customers have with the company. By enabling companies to be proactive with customer relationships, MicroStrategy can help these organizations acquire new customers, retain existing ones, and maximize customer lifetime value.

Use powerful analytics to better understand customer information related to energy consumption, revenue, service, engagement, and more.
The challenge
Today, energy consumers expect a customer experience that matches the quality of other industries. To retain customers and stay relevant, utilities must evolve the way they do business and take advantage of all engagement channels.

The solution
MicroStrategy empowers utility companies with the tools they need to provide a superior, personalized customer experience that boosts customer loyalty and creates new opportunities. Using our platform, companies can give their customers – both businesses and residential consumers – convenient access to information related to energy usage, billing, service disruptions, and customer service. This solution also lets consumers see how their consumption compares to energy usage of similar locations. By incorporating social media feeds into apps, utility companies can facilitate and encourage additional customer interaction. Utilities can also leverage smart meter data to deliver personalized customer services such as energy counseling. Data-driven ‘smart alerts’ help ensure that customers are notified of dramatic shifts in energy consumption or service outages. Furthermore, this solution can provide business accounts with convenient access to up-to-date information related to energy management, contracts, financing, and energy trading.

Provide customers with timely insight into their energy usage, costs, billing information, and consumption levels compared to similar homes.
The challenge
Call center fraud has grown by an alarming 45% since 2013.* Many businesses have fallen prey to these social engineering attacks, where entities attempt to acquire personal information over call center phone lines.

The solution
Usher helps prevent consumer fraud by supporting secure, remote authentication. Using Usher, call center employees can authenticate a customer’s identity over the phone using one-time codes or push notifications that are generated by the Usher app. Call center staff can also leverage password alternatives - like QR codes - for accessing sensitive applications and customer information. In addition, Usher provides other multifactor authentication capabilities that include biometrics, peer-to-peer validation, Bluetooth proximity, and more.

By providing better visibility into call center metrics such as wait times, quality and length of calls, and customer satisfaction, MicroStrategy Analytics helps energy and utility companies refine their operational, customer service, and sales strategies. Call center supervisors can also leverage powerful mobile apps to closely monitor call center activities in real time.

*Source: 2016 Call Center Fraud Report by Pindrop, 2016
The challenge
Energy and utility companies are often forced to rely on a variety of business reporting tools for financial analysis.

The solution
MicroStrategy financial reporting applications integrate data from a wide range of sources. With these tools, users can seamlessly access critical financial information related to profit and loss, risk, market performance, operations, and more. MicroStrategy gives users a secure, personalized view of the financial information that is most relevant to their role in the organization. These tools help ensure that users have the insight they need to efficiently manage their daily tasks, make better decisions, and effectively collaborate with colleagues.

Energy and utility companies can also deploy MicroStrategy Mobile apps to their executives and board members, giving them instant insight into the financial performance information they need to make critical high-level decisions in a volatile market. These secure apps help ensure data integrity, reduce costs by replacing large binders of paper, and can lead to significant time savings for the organization’s internal reporting team.

Streamline enterprise performance management and financial reporting processes to ensure that decision-makers have instant access to critical data.

Compare real-time KPIs to goals for various business categories and operational functions

Stay up to speed on the latest industry news

Exceed user expectations by including access to financial statements, company news, markets, and more
The challenge
Energy companies and utilities must manage a variety of risks: regulatory changes, commodity price volatility, geopolitical issues, climate policy uncertainty, HSE hazards, and more.

The solution
MicroStrategy can deliver the scale, performance, and flexibility needed for efficient risk reporting while also providing the self-service capabilities managers need to investigate problems. Our platform allows energy and utility companies to efficiently produce analytical reporting across huge volumes of data, distributed across multiple systems and domains. With these applications, risk managers can leverage sophisticated tools to uncover suspicious or hazardous trends before they become problems. MicroStrategy enables organizations to replace multiple, disparate point solutions with a single, common analytics platform, so they can maintain a governed, consistent enterprise data environment. With MicroStrategy, energy and utility companies can navigate risks more efficiently and with confidence, knowing their data is unified and consistent.

Effectively manage the requirements associated with external and internal risk mitigation.
SECURITY APPLICATION: DIGITAL EMPLOYEE BADGE

The challenge
Companies often rely on separate types of credentials to control access to offices and enterprise IT systems, resulting in a fragmented approach to identity management.

The solution
Usher digital badges enable authorized employees to securely and seamlessly access corporate facilities and critical information systems by leveraging their smartphones. With Usher, energy and utility companies have a variety of options to protect enterprise information through strong, flexible, multi-factor authentication, including push notifications, biometrics, one-time passwords, face-to-face validation, and Bluetooth proximity. Usher also provides visibility into user behavior across multiple enterprise systems — critical insight for optimizing asset utilization, improving productivity, and reducing risk.

Secure access to offices, systems, and sensitive information by leveraging smartphone-based multi-factor authentication.

Corporate employee/manager

Functionality provided:
- Connect to workstations/enterprise applications
- Access to sensitive digital and physical assets
- Access to MicroStrategy Desktop
- Access to employee parking, lounge, and gym

Satellite office employees

Functionality provided:
- Unlock workstations/enterprise applications
- Access to sites, facilities, and garage
- Timekeeping
- Peer-to-peer authentication
Customer case studies

Learn how our customers are using MicroStrategy to digitally transform their business.
Exelon, a leading energy provider, used MicroStrategy to build an interactive mobile risk dashboard. This app supports risk identification, analysis, mitigation, and monitoring by providing near real-time insight into key risk indicators. These indicators concern everything from regulatory and market developments, to credit risk, reputational risk, and environmental events. In the app, users can quickly get an overview of current risk, as plotted on an Enterprise Risk Heatmap, and determine a starting point for further investigation. Next, users can proceed to dashboards devoted to each risk indicator. For example, users can view asset locations on a map, select a specific site, and view environmental event logs for that facility. With this mobile app, company leaders are able to make better risk management decisions by minimizing the unexpected in an environment that’s defined by uncertainty.

**PROFILE**

**Industry Specifics:** Energy provider  
**Location:** United States  
**Products:** Mobile, Web, Server, Architect  
**Core Capabilities:** Enterprise Analytics, Mobile Productivity Apps, Mobile Analytics
GRUPO ENERGISA: ENERGY LOSS MANAGEMENT

PROFILE

Industry Specifics: Electricity market
Location: Brazil
Products: Web, Server, Architect
Core Capabilities: Enterprise Analytics

Application

The Energisa Group is one of the largest privately held energy conglomerates in Brazil, composed of 18 companies that offer integrated solutions for the electricity market in generation, distribution, and commercialization. Energisa employs over 10,000 people and serves 16 million people in 788 municipalities across the country.

One of the main problems the company faced was a rise in non-technical (commercial) losses of energy. This was primarily due to the actions of consumers—from theft, tampering with meters, and unauthorized connections—but also from failures in billing and collection processes. To help overcome this challenge, Energisa deployed a new data warehouse and used MicroStrategy to build a series of analytics applications that allows users to combine data from a variety of transactional systems. With these tools, users can quickly review and analyze consumer records, to information on billing, consumption, metering, service records, technical loss, and more. In addition, daily activity control reports allow the company to more accurately monitor corrective actions being made in the field.

With instant access to accurate, up-to-date data, decision-makers can devise better strategies to reduce fraud and energy loss. In fact, in the four years since the project was launched, Energisa has seen a 3.2% reduction in non-technical energy losses, representing approximately 365 gigawatt hours (GWh)—enough electricity to serve 2.4 million residential consumers for a month. Also, the company has reported a 370% increase in the amount of energy billed since the year before the project was implemented.
IPIRANGA: MOBILE SALES ENABLEMENT

Application

Ipiranga is the largest privately-held fuel distribution company in Brazil. It oversees more than 7,000 gas station franchises across the country, and it operates a network of convenience stores and tune-up shops.

Ipiranga’s retail department wanted to better serve its clients, the franchisees, by becoming more responsive to their requests. They also wanted to create new ways for sales teams to work with clients, while improving the management capacity of sales territories. To do so, Ipiranga used MicroStrategy Mobile to develop an app that extends new and existing BI applications to users’ mobile devices. In just over a month, the company was able to build and deploy the app to over 300 employees on their sales and marketing teams.

This app provides real-time access to a variety of data including sales volume per station, volume by fuel type, and convenience store sales. The mobile app delivers insights that allow marketing managers to quickly evaluate and monitor the performance of sales teams and clients. Sales professionals can now access the information they need directly on their tablets and make decisions quickly, without interrupting the flow of their daily routine. Reps can be more responsive in the field as they visit gas stations, and the sales and marketing organizations are better aligned to take coordinated, targeted actions to help drive revenue.
MULTINATIONAL ENERGY COMPANY: EXECUTIVE FINANCIAL REPORTING APP

This American multinational energy company produces, refines, transports, and sells oil and natural gas. They are one of the largest integrated energy companies in the world, with over 64,000 employees and revenues in excess of $129 billion in 2015.

In 2010, this company conducted an internal study that revealed they were spending a tremendous amount of time building a large set of management reports focused on financial performance. Their executives were forced to rely on binders full of these reports to make strategic and operational decisions. The IT and finance organizations recognized an opportunity to drastically simplify the process of arming these key decision-makers with timely, relevant information. They decided to build and deploy a financial reporting mobile app developed specifically for the Chairman and his direct reports.

This organization went through a significant vendor evaluation process to select the right solution. They ultimately chose MicroStrategy because of its high-performance capabilities, security functionality, and ability to seamlessly deliver reports on web and mobile. The team then built a mobile dashboard application that brought critical financial information together in a single location. They were able to successfully integrate MicroStrategy Mobile with their existing Oracle Workspace implementation and deployed a comprehensive financial reporting application to their entire C-suite—empowering these key decision-makers with instant access to critical information from anywhere in the world. With MicroStrategy, they were able to achieve rapid response times on top of a large and complicated data ecosystem, and they delivered a familiar, intuitive user experience by designing mobile workflows that reflect the structure of existing paper reports. The app has been extremely successful, and the company has already expanded the user base to include executives outside of the C-suite.

PROFILE

Industry Specifics: Multinational energy

Location: United States

Products: Mobile, Web, Server, Architect

Core Capabilities: Mobile Analytics
This leading electric distribution company employs over 2,300 people and serves over 1.4 million customers in 29 counties across central and eastern Pennsylvania. PPL is a regulated utility that delivers electricity to homes and businesses through a network of over 48,000 miles of power lines and related infrastructure. As a Default Service Provider, they are required by law to provide energy to customers who do not choose an electricity supplier. In this role, this company buys wholesale energy on an open market from a variety of suppliers and delivers it to customers. The company pays suppliers on a monthly basis and the procurement and payment processing of these transactions—which are often as much as $50M—is tightly controlled. In 2015, PPL was preparing to retire the legacy system that governed their payment and invoicing processes. They needed a technology solution that could facilitate a fast, effective, and auditable approval process for all payments. They chose MicroStrategy because it offers the scalable architecture and transactional, self-service capabilities needed to support these functions. This organization deployed a MicroStrategy transaction-based application that helps payment validators and approvers support the invoicing and service level agreements (SLAs) involved in the process of reimbursing wholesale suppliers. Powered by MicroStrategy Transaction Services, the application features an interactive interface that lets users directly input adjustments to vouchers, approve or cancel invoice records, and immediately update the underlying database. Using a series of pre-defined reports, users can look up invoices by supplier name, view transaction histories, review invoice status, and drill into payment details. Once invoices are approved, a PDF is uploaded to a separate portal system where suppliers may download and view the file. The Cash Operations team automatically receives a report that allows them to settle the invoices. The application allows PPL to control and manage over half a billion dollars a year. It has enabled them to remove the risk of manual processes, including the potential cost of an audit, which also saves time and resources. With this application, PPL is able to ensure that their invoices are built correctly and has optimized their operational costs by reimbursing suppliers every month with minimal disruption.