Introducing the three performance dimensions for your plant

SIEMENS
To succeed in today’s global oil and gas industry, it is essential to maximize productivity throughout the entire enterprise. That’s why current initiatives to increase plant performance have become an important key to business success. Isolated solutions that only touch individual areas are no longer adequate. A comprehensive approach is necessary to stay competitive.

Meaningful productivity increases can only be achieved with integrated solutions that address every aspect of plant operations, even when investing in specific fields. With this in mind, Siemens has adopted a philosophy that opens new dimensions in the quest for better performance.
that maximize productivity

Our completely integrated solutions consolidate the vertical information flow from the field level to Enterprise Resource Planning (ERP). Horizontally, information processing and integrated functions support supply chain management, while services and maintenance solutions span the third dimension over the life cycle of the plant. With our uniquely comprehensive capabilities comprising everything, from individual components, products, and systems to complete solutions, we are able to optimize all areas of oil and gas plants holistically for greater performance.
Our three-dimensional solutions completely integrate every key aspect of your operation. In the vertical dimension, we integrate your technological resources so that everything from production process management to enterprise level planning is optimized through integral data flows, prepared and displayed in real time according to individual decision-making requirements. Horizontally, we provide continuity right from suppliers to your final end users, applying sophisticated supply chain automation solutions. And in the third dimension, we additionally optimize your enterprise over time by providing after sales and support services that ensure performance will remain at competitive levels throughout the entire life cycle of your plant. From the initial planning phases all the way through facility upgrades, revamps and modernization to eventual decommissioning, we work with you as your business partner, ensuring that you always have the competitive edge you need.

Bundled expertise across a broad base

No other vendor is able to offer the oil and gas industry such a wide variety of products and services – from the component level up to completely integrated solutions. Our extensive technological portfolio encompasses products, services and solutions from instrumentation, analytics, process control, automation engineering and industry-specific IT solutions to power supply systems, turbine engines, electrical drives, compressors and heat & power solutions.

Our global manufacturing, logistics and consulting capabilities provide a unique “one-stop shopping” environment that eliminates many of the problems associated with integrating third-party solutions.

Our commitment to innovation and process optimization enables us to drive technological development and provides the basis for our business solutions.
Maximizing productivity by adding value to every stage of production provides the key to market success

Upstream. Midstream. Downstream. Your processes must function reliably, efficiently, safely and in an environmentally friendly manner; from production and transport through refining and further processing.

With each step you take, at every stage of production – in us you have a partner who understands your requirements and delivers customized solutions using the industry knowledge and global experience you need.

We not only make it possible to optimize and automate critical production processes, but also to meet your facility’s complete electric and heat & power needs. From low-power simple cycle gas turbine-generator sets to large-scale natural gas-fired combined-cycle power stations, operating independently or in grid-connected mode, we’re your partner.

Our business ethics reflect an uncompromising commitment to customer satisfaction and environmental responsibility. That’s why we are continually adding value to our products and solutions and providing fast and flexible service and safety standards.

We fully support our partners worldwide with a comprehensive series of audits and controls, designed to ensure full compliance with environmental, health and safety requirements. Through continual improvements, best practice information and knowledge sharing, we help our partners avoid the high cost of noncompliance. At every level, in all operating units and locations, we do everything we possibly can to increase environmental awareness and promote good corporate citizenship.
Horizontal integration

Upstream
Exploration, production and treatment: the most challenging basis of all

Siemens has a proven reputation for reliably delivering the advanced solutions that make today’s offshore and onshore installations perform. At the earliest planning stages, we provide the support you need, helping to define the most reliable and optimized solutions. Based on our ability to coordinate complex activities and meet the challenge of fast project schedules, we deliver efficient, effective solutions, while providing seamless support throughout the project.

In a multitude of remote, offshore and even deepwater locations around the world, Siemens is helping customers add value to the energy products that keep the world running. With so much at stake, success depends on partnerships that perform without compromise. As we do. Our high-performance products and services continue to meet today’s increasingly complex health, security and environmental challenges.

Drilling packages that show our deep commitment to quality

Our advanced drilling packages, featuring a wide range of functional modules, are designed to seamlessly integrate all of your drilling processes and system packages into a single cohesive system.

Applications are included for mud treatment, mud mix and storage, along with all normal drilling and pipe-handling functions, including micro process chromatographs to provide necessary mud logging. Operational advisory functions and an integrated closed-circuit television (CCTV) system help to ensure safe and efficient operations at all times. Even in the roughest field conditions, such as permafrost or desert climates, our drilling drive systems, skid-mounted power supplies, power generation and diesel power sets perform exactly as promised.

This self-propelled North Sea drilling platform can be positioned to an accuracy of a few meters, thanks to a sophisticated dynamic positioning system linked with our variable-speed drives. In addition to navigation and drive technology, we also supplied complete automation and process control technology for the platform, including electric power generation and telecommunications technology.
Onshore field development, production and gathering

From the wellhead, through separation, gathering and field storage, all operations must run smoothly and safely at all times, even under the harshest conditions.

As our partner, you can rely on our system competence to provide you with a complete, single-source solution for all your oil and gas field power, compression and pumping requirements.

Our global leadership in the application of high-performance drive systems includes gas turbines, steam turbines and electrical drives. By understanding your process needs, we can help you develop the power and process solutions that yield the highest economic value for your investment.

As soon as your product leaves the wellhead, our upstream solutions are adding value at the heart of processes, such as:

- Gas and liquid separation
- Recompression and export
- Gathering and refrigeration

As production slows from mature wells, our solutions are there to help with enhanced recovery techniques like:

- Gas injection
- Gas lift
- Water injection

Our solutions represent innovative and field-proven technology derived from the broad knowledge base and experience gathered on projects all over the world.
Offshore solutions that are right on target

Offshore production often places tough demands on crew and equipment. Weight must be kept to a minimum and space for equipment is often limited. As a result, systems designed for use in these environments are usually prefabricated modules that save weight and space with defined interfaces.

For more than three decades, Siemens has been specializing in automation and electrical systems, as well as compression, pumping and power systems for offshore structures. Today, with their improved economics, floating production systems represent the fastest growing segment in offshore oil and gas production for early production, marginal field development and deepwater production.

With considerable deepwater oil and gas production experience, we can meet the demands for fast project-cycle times, compact solutions, and for being a single-source supplier that successfully manages the complex activities among its own global operations, external suppliers, manufacturers and shipyards.

Our power solution portfolio comprises skid-mounted electric or gas turbine driven compression trains as well as complex process and power modules, including simple and combined-cycle power systems – all designed to meet our customers’ requirements and specifications.

We developed special versions of transmitters for processes where reliability and accuracy is of highest priority. These certified transmitters provide the same level of protection as a pair of redundant transmitters – saving the cost of a backup system.

Above or below the water, we deliver cost-effective, modular solutions that provide a high degree of process control and safety function integration. Our commitment to providing solutions with the lowest total cost of ownership will enable you to benefit from lower project costs, shorter project times and reduced risk.

We offer solutions for offshore processes, such as:
- Ballast systems
- Gas injection (associated gas)
- Export gas compression
- Export management (inventory management, scheduling)
- Gas/oil separation
- Power generation
- Pumping
- Seawater injection
- Seawater lift
- Crude oil storage
- Utilities (power, steam, instrument air)
- Water treatment

For tension-leg platforms, semi-submersibles and floating production systems, our solutions encompass the design, manufacture, supply, installation, maintenance and modernization of power, drive, automation, Supervisory Control And Data Acquisition (SCADA) and communications systems.
Subsea solutions that maintain our deep commitment to excellence

With increasing interest in locating new sources of energy below the ocean floor, Siemens has been a driving force in the creation of advanced solutions that meet these needs. Our extensive range of subsea products and systems includes power distribution, control and communications solutions – all designed for smooth integration with topside systems.

Subsea transformers
As a crucial component of subsea electrical distribution systems, subsea transformers must operate reliably for long periods of time under extremely harsh environmental conditions.

Siemens pressure-compensated oil-immersed subsea transformers have been setting standards for reliability in the field since 1998. These specially designed transformers operate in conjunction with pump motor applications in depths of up to 2,000 meters.

Subsea Well Enhancer
Our Well Enhancer provides oil and gas customers with a cost-effective, easy-to-install, fully scalable and flexible subsea control and monitoring system. This complete, stand-alone system is designed to add functionality and provide easy control and monitoring for subsea production systems and downhole instrumentation.

The installed Remote Operated Vehicle (ROV) system effectively utilizes existing subsea infrastructure and distribution systems without interrupting production. The Well Enhancer utilizes protocol-independent high-speed power line modems and can interface with virtually any sensor system, making it practical to install as a multipurpose “add-on” subsea control system worldwide.
Field processing solutions that clean your product and your balance sheet

Behind the wellhead, the product has to be separated, and gas streams treated for unwanted contaminants such as water, CO₂, H₂S and others before being subjected to further processing. Depending on the composition of the gas flow and the investor’s focus, gas components representing a particular commercial value, such as ethane, propane, butane, can be isolated from the main methane flow and marketed separately.

Depending on field conditions and customer requirements, a variety of processes may be involved, including product gathering, separation, dehydration, acid gas treatment, desulfurization, compression, fractioning, quality control and metering.

One example of Siemens’ innovative solutions is a special capacity level instrument that continuously monitors water contamination in LPG to ensure its separation.

By using this technique, only a single entry point is required. This greatly reduces the risk of gas leakage and delivers improved economics compared to standard industry offerings.

Tried and tested in the harshest of environments, you can rely on our solutions for:

- Injection
- Dehydration
- Gas boosting
- Recompression
- Refrigeration
- Test separators
- Remote terminal units
- Automation and control
- Field data acquisition
- Analyzers
- Decentralized power supply
- Field shelters
Horizontal integration

Midstream
The transportation of crude oil, refined products, natural gas and other inflammable fluids is a complex process involving pipeline systems, compressors, pump and valve stations, as well as intermediate storage and distribution facilities. For decades, Siemens has been a major player in this market, providing the most cost-effective solutions for delivering and integrating the rotating equipment that makes the task of transporting petroleum products and natural gas safe and economical.

**Keeping things flowing smoothly**

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**Putting efficiency into the pipeline**

Our Batch Tracking applications help operators accurately and flexibly plan pipeline capacity. Based on a real-time model, these systems can be seamlessly integrated into existing data acquisition systems or embedded in Supervisory Control And Data Acquisition (SCADA) systems to ensure safe, cost-effective pipeline operations.

Siemens Batch Tracking systems are recognized for providing optimal operation using the highest safety standards when transporting liquids or natural gas through pipeline networks that often extend over thousands of kilometers. These systems monitor product movements and process variations in pipelines and compressor/pumping stations in all climate zones. Movements are tracked, recorded and coordinated for optimized system operation. Sophisticated leak detection and control functions, along with continuous monitoring of the physical integrity of the pipeline, are all part of our advanced applications package.

As energy markets continue to be deregulated, electric motor-driven pipeline solutions will find increasing use wherever a stable and economic electrical infrastructure is available. Over decades, Siemens has built a reputation as a reliable supplier of both gas turbine and electric motor driven pipeline compression, pumping and gas storage solutions.

From remote terminal units and pipeline control through process simulations, fast and accurate leak detection, online pressure profile monitoring and pipeline inventory control, we continue to lead the way in helping to improve productivity and profitability for pipeline owners and operators worldwide.
Squeezing profits out of Liquefied Natural Gas

Our solutions utilize feed gas with either a high or low nitrogen or carbon dioxide content. They feature advanced boil-off gas handling due to our metallurgical expertise and proprietary variable inlet guide vanes. Siemens is redefining LNG base-load economics with an all-electric LNG concept, triggering a paradigm shift within the industry. Our electric LNG base-load plants, refrigerant compressors, drives and variable-speed drive systems provide higher availability, while lowering maintenance and operational costs – thereby minimizing your total cost of ownership. Regardless of the degree of automation involved in your project, we can provide you with appropriate solutions that ensure high availability and expandability without major modifications.

Plants are already being built according to this concept which promises higher plant availability, profitability, operational safety and environmental friendliness.

Our portfolio includes:

- Power generation
- Power transmission and distribution
- Electric drive systems (incl. high-performance, high-speed)
- Refrigerant compression
- Boil-off gas compression
- Feed, flash and fuel gas compression

Tank farms, terminals and the technology behind them

To achieve lasting business success in today’s market environment, oil and gas companies must stay flexible. They must be able to fill orders swiftly, supply any desired quality in any amount, while fully complying with increasingly stringent environmental and safety requirements.

One of the keys to meeting the challenge of a rapidly changing global marketplace is to have the best possible logistics in place. Specifically, this means uniform, consistent capture, evaluation and communication of all data from terminals and tank farms. This approach not only allows you to determine material flows, storage capacities and demand trends more accurately at both regional and globally networked facilities, it also makes it easier to strategically optimize your assets.

The Siemens Tank Farm and Terminal Management System

Siemens Tank Farm and Terminal Management System collect, bundle and process all relevant data from tank farms and terminals at a single location that can centrally monitor and control all processes in the networked facilities. To meet constantly changing demands and provide the highest availability for tank farms and terminals operating around the clock, our solutions provide customers with a wide variety of functions, including:

- Business transaction and inventory management modules
- Accurate reporting systems for pipelines, vessels and road/railroad tankers
- Product reconciliation and leak detection systems
- Blending and rebranding facilities
- Advanced automation and safety systems

Our comprehensive, integrated approach to tank farm management helps to ensure consistency from the field to the management level, providing the convenience of “one-stop shopping” while maintaining the flexibility to interface with legacy and third-party solutions.
Our Tank Farm Management System is an excellent platform for:

- Comprehensive product management
- Proactive distribution planning
- Extensive automation of routine tasks

As part of a completely integrated solution, the Siemens Tank Farm Management System makes it possible for you to take advantage of the many synergies that come with shopping from a single source. Through every stage of your project, we tap into the expertise within our globally networked organization.

**Underground gas storage: bringing excellence to the surface**

Natural gas storage facilities utilize salt caverns or porous layers of rock to ensure that there will always be enough gas for customers at any time of year. These facilities usually consist of several gas compression trains for injecting gas into the caverns and corresponding gas withdrawal trains for removing it again. The underground caverns and porous areas are connected to the trains using a manifold area that allows each cavity to be connected independently. Each gas injection train typically includes station metering, gas filtering, gas compression and a cooling facility, while the withdrawal train consists of a gas preheater, pressure reduction equipment, a glycol regeneration unit, coal filtering and a gas metering unit.

As a specialist in underground gas storage, Siemens offers solutions for all types of underground gas storage processes and subprocesses, including pump and compression systems for product transmission and compressors for underground natural gas storage. Our solutions meet the highest standards for availability, safety and productivity, and add value to your operation.
Horizontal integration

Downstream
Putting more productivity into processing and refining

The complexity and wide variety of oil and gas refinery processes presents a major challenge to engineers, suppliers, construction contractors and operators as they strive to build and operate refineries that are both safe and cost-effective at all times. Customers demand a multitude of different products, and plants consist of a multitude of different processes. Our sophisticated instrumentation and analyzers, engine or turbine driven compressors, and completely integrated automation and power solutions provide the answer – thereby delivering the productivity improvements that oil and gas customers need to stay competitive.

With the implementation of our innovative Totally Integrated Automation (TIA) solutions, we at Siemens have created an automation platform utilizing state-of-the-art products designed to help customers to reduce capital, operations and maintenance costs. Using our extensive range of standard hardware and software components, we are able to cover everything from the regular PLC to the fully integrated distributed control system (DCS) and highly redundant and fail-safe applications.

We use our process safety expertise to follow one goal: to reduce risk to the minimum. By providing multiple layers of protection that eliminate unnecessary risks from “out of control” hazardous events, we have been able to reduce risks to people, the environment, company assets and production quotas.

One of these protection layers is our Safety Integrated System, which is used for sensing critical signals, processing predefined logic, and acting upon it, generally without the need for human intervention. Due to the catastrophic consequences when something does go wrong, it is critical that this system acts reliably when required. However, it is also crucial that production is never stopped needlessly. Maintaining this balance between safety and system availability requires both safe design features and the use of fault-tolerant architectures. Our customers get the best of both worlds: fully optimized safety protection in a fault-tolerant package that has been refined and perfected through years of experience in providing safety systems for emergency shutdown systems (ESD), fire and gas detection and protection, and burner management.
Refining

Siemens is meeting today’s refining challenges by providing advanced solutions, systems, products and services designed to improve and automate refinery processes such as the distillation and fractioning of crude oil, the conversion of heavy into lighter fractions, the desulfurization and blending of petroleum products and much more.

Today’s state-of-the-art refineries not only convert crude oil into gasoline and other petroleum products using atmospheric and vacuum distillation processes. They also typically have a cracking section to fully utilize the residual crude oil remaining after distillation. Siemens steam turbines and motors are highly regarded by refiners and currently drive about half of the compressors used in these additional cracking and refining processes. One of these processes is known as fluid catalytic cracking (FCC). However, we also provide solutions for hydrocracking, coking, platforming and hydrotreating.

Environmental regulations in many countries require a reduction of the sulfur components in diesel and other fuels. To meet these regulatory demands, Siemens has solutions that continuously detect total sulfur concentrations below 0.5 ppm (parts per million) – a figure exceeding any existing environmental regulation. Our analytic solutions control the sulfur reduction according to the Claus process. Siemens is the world market leader in supplying chromatographic solutions to the oil and gas industry. Chromatography is becoming the preferred method of measuring sulfur concentrations, since only very small sample amounts are necessary, thereby significantly reducing tube corrosion and improving process safety.

Since existing conventional Claus processes alone are no longer sufficient to meet current demands, Siemens has developed a state-of-the-art tool for designing, analyzing and optimizing sulfur recovery processes. By optimizing existing plants using our Claus process solution you can:

- Meet strict regulations while avoiding energy waste
- Increase maintenance intervals
- Reduce life-cycle costs
- Avoid rekeying of data to third-party programs
- Operate plants as close to the limit as possible
- Maintain extreme accuracy

Online H₂ measurement in a refinery – faster and exacter by applying the state-of-the-art micro process chromatograph for improved process control.
Petrochemical

Safe, reliable and cost-effective processes are the backbone of a petrochemical processing plant’s infrastructure. Siemens has the experience, manpower, expertise and equipment to design, supply, install and maintain the complex process-oriented electrical equipment required to make your petrochemical facility a success.

We are the leading supplier of compression solutions for petrochemical plants where liquid and gaseous hydrocarbons are processed into ethylene, propylene, polyolefins, ammonia, methanol, purified terephthalic acid (PTA) and other chemicals.

By using Siemens as a single source for compressors, drive systems and other rotating equipment, while continuing effective preventive maintenance practices, customers have been able to achieve significant cost reductions. With our complete range of AC motors and gas and steam turbines, we can find the best solution for any application, and then adapt it to virtually any site, power network, process and driven machine to keep overall costs as low as possible over the entire life cycle of the plant.

Gas-to-Liquid Processes with Fischer-Tropsch synthesis (GTL-FT)

New gas-to-liquid processes are showing great promise for capitalizing stranded gas reserves by transforming natural gas into transportation fuels. By combining GTL processes that partially oxidize methane with Fischer-Tropsch synthesis, an ultraclean wax is produced that can then be transformed into diesel fuel through a hydrocracking process. These new processes make it practical to develop energy reserves that were formerly too expensive to bring to the huge transportation fuel market.

Siemens has the knowledge and resources to help the oil and gas industry to take advantage of this new resource, and has already had excellent results in supplying compressors and high-power mechanical-drive steam turbines for use in all stages of the GTL-FT process, including air separation. The use of oxygen enables an auto-thermal reforming process, which is more economical for large-scale GTL-FT plants than steam reforming.

Since Siemens has already built the world’s largest air compressor, we have been able to use our air separation knowledge in a GTL-FT-based coal gasification plant in South Africa.

As stranded gas becomes an increasingly important part of the world’s energy reserves, Siemens will continue to be a major equipment supplier for the new GTL-FT plants that will help bring this valuable source of energy to market.
Vertical integration

IT Solutions
The key to leveraging performance in many of today’s process-oriented businesses lies in improving the information flow to enhance the organization’s decision-making capabilities. Unfortunately, due to the complexity and system-related incompatibilities in many IT solutions, the management isn’t always getting the information it needs. Specialized automation solutions frequently don’t address critical business issues and leave gaps that make it impossible for managers to quickly gain a clear picture of what is going on in their organization.

The vertical dimension: strategies for using information to make better decisions and become more competitive

We can effectively close these gaps by integrating all your business processes to provide you with a complete, real-time picture of your entire enterprise. With our complete solution, your processes are integrated:

- **Vertically**, between every level of your company
- **Horizontally**, along your entire value chain
- **Over time**, throughout the entire life cycle of your plant

Using this unique three-dimensional approach to enterprise integration, we provide you with the information you need to make informed, timely decisions that will improve the time to market, reduce production cycles, enhance production processes and allow you to stay competitive while retaining your quality and reliability standards.
Providing for better decisions in the oil and gas industry

The oil and gas, refining and petrochemical marketplaces are characterized by intense competition, rapidly changing market demands and high energy and utility prices. To succeed in these markets, it is essential to assure process availability and safe operation wherever and whenever needed.

Our primary objective is to help our oil and gas industry customers to improve asset availability, increase production performance and facilitate supply chain collaboration.

Siemens process innovation, manufacturing operation and supply chain management solutions address the entire life cycle of your production facility, helping to keep you competitive and make sustained profitability a reality. We offer solutions for:

• Safe, reliable operation
• Planning & scheduling
• Real-time operational intelligence
• Electronic procurement & trading
• Pipeline operational management
• Operational advisories
• Process modeling, simulation & optimization
• Production operations management
• Asset management

The product knowledge and industry expertise embodied by our IT consultants provides the key to successful vertical integration projects and solutions. These experts are widely experienced in oil and gas processes and provide the support you need to reach your operational goals.

The integration of Plant Information Management Systems with our advanced Performance Monitoring, Performance Management, Yield Accounting and shop floor systems via SAP R/3 at this Brazilian processing plant allows easier, more effective decision-making by everyone. Process data is now automatically transformed into production data making it possible for information to be shared in real time by several departments.

During an extensive efficiency study and engineering evaluation at the largest refinery in Germany, we examined every piece of equipment in the plant, making specific recommendations to improve throughput. As a result, overall plant availability increased by 1%, operating costs were reduced by 8% in the tail gas unit, and sulfur recovery increased by 0.3%, all without major capital investment.

The integration of all shop floor systems to SAP R/3 using our PP-PI, QM, WM and MM modules at this Brazilian petrochemical plant lets managers make more effective decisions. Process data is now automatically transformed into production data and sent to SAP PP-PI for analysis. As a result, process and production information can now be shared in real time by several departments, thus improving productivity throughout the organization.
IT and Enterprise Intelligence Solutions that bring clear competitive advantages

The goal of our Industrial Enterprise Intelligence Solutions is to optimize production and business processes, increase production efficiency and improve product quality. Here, functions like offshore and pipeline management, production management, resource allocation, supply chain management, simulation and maintenance management are integrated and optimized. Our philosophy of using standardized IT components to create customized products and services allows us to quickly develop and deploy cost-effective solutions that are each tailored to a client’s individual requirements. This unique modular approach provides the flexibility to integrate a new solution into an existing facility, build a new plant or refurbish an older one. By doing so, we help you to effectively consolidate all important production and management activity information, thus providing a complete, real-time picture of your entire enterprise’s performance. That’s as comprehensive as it gets.

Saving money through better planning and scheduling

Our innovative scheduling application provides an excellent example of how we can help improve your bottom line. Research has shown that effective integration of plant processes, raw materials availability and actual customer requirements can result in scheduling improvements that save up to 10 to 15 cents per barrel. In a medium-sized refinery with a capacity of five million tons per year, this can result in savings of up to 6 million dollars annually. Our scheduling application helps oil and gas producers to maximize these scheduling savings by integrating vertical Enterprise Resource Planning (ERP) solutions with horizontal value chain management tools. This versatile, highly scalable application provides near real-time access to data, dramatically improving simulations and the quality of scheduling decisions.
Life-Cycle integration

Industrial Services
Maximizing the total life-cycle value of your facilities

Every industrial plant goes through many phases during its life. By taking a total life-cycle approach to plant productivity, we are able to maximize the value of your plant investment over the third dimension – time. From the initial planning phases, through commissioning, operation, maintenance and modernization, we have proven solutions that allow you to increase the useful life of your facility and maximize productivity at every stage of its life cycle. As your business partner, we support you at every step along the way, ensuring that you have the resources and tools you need to stay competitive.

Service concepts tailored to your specific requirements

Whatever your circumstances, we offer solutions that fully support the maintenance philosophy of your enterprise. Everything from traditional repair services to the complete operational support of your facility is available. Working with you, we can help you to determine the service strategy that is the most cost-effective for you. We are also able to monitor your operations, anticipate potential problems and ensure that service takes place in a manner that is optimized for your situation.

Creating a win-win partnership

There’s often more behind a successful partnership than meets the eye. To help ensure your business success, we’ll help you to design a maintenance strategy that is not only tailored to the specific processes and characteristics of your industry, but also addresses your specific business goals. According to your philosophy we provide support for either individual service tasks or take on full responsibility for both repair services and maintenance management and administration.
Winning through modernization

Today, you have a state-of-the-art facility. But what about tomorrow? To stay competitive, you must continually adapt your operations and upgrade your equipment to take advantage of current market opportunities. Our modernization and upgrade solutions enable you to increase your total return on investment and extend the useful life of your equipment through planned modernization initiatives designed to bring your existing plant and processes up to current specifications. Our experienced project teams can help you decide whether a gradual series of upgrades or a complete plant refurbishment is best for you. Whatever you decide, our total life-cycle approach to modernization will keep you competitive for years to come.

Service packages that promote cost-effective operation

As a company that designs, manufactures and integrates the core components and electrical, automation and control systems used within a plant, Siemens is in a unique position to create cost-effective, highly optimized solutions. For example, it just makes sense to get field service support from people who fully understand the equipment they are servicing. To meet your service and maintenance needs, we have experienced technicians available around the clock throughout our worldwide network of service centers. With a global logistics network, we have the resources you need to ensure that spare parts and tools are always available when and where you need them. Our service and maintenance capabilities also encompass the remote diagnosis and repair of equipment, using sophisticated on-line monitoring technology.

With the goal to improve safety, increase plant availability and minimize loss risk, we were able to optimize operations at this Oman natural gas liquefaction plant by combining advanced remote monitoring capabilities with a program of regular inspections and maintenance. As a result, there was an increase in availability in the plant’s large drive systems, while downtime costs (approx. US$ 6,000–50,000) were minimized – all with a relatively small investment.

We met the challenge of keeping this North Sea drilling platform operational under the worst possible weather conditions, using a sophisticated remote monitoring system to recognize, detect and eliminate potential faults in the large variable-speed drives that power the pumps and gas compression equipment. With this system and the support of our experienced technicians who are on call 24/7/365 days of the year, problems that could reduce plant availability are virtually eliminated – all at a very reasonable cost.
Auxiliary processes – using technology to gain a competitive advantage

New chemical and refining processes aren’t the only way for oil and gas companies to improve overall productivity. Very often, secondary or auxiliary processes like lighting, fire protection and communications systems can be optimized as well and make a significant contribution to overall plant productivity.

Power generation and distribution for a new generation of oil and gas facilities

We have the power you need. Our extensive power generation and distribution solutions include completely integrated industrial power supply and distribution systems, in-plant power generation, on-board systems and co-generation plants, low-, medium- and high-voltage substations with intelligent supervisory control and protection systems across voltage levels.

Involving our consulting and planning capabilities already at the earliest project phase will help optimizing your expenditures and reduce total cost of ownership.

Siemens innovative combined heat and power (CHP) solutions are especially interesting to the oil and gas industry. As a global provider of advanced power generation solutions, we offer tangible, quantifiable benefits that translate into competitive advantages in your daily business. We design, develop and manufacture all key components in our own factories and supply them individually or as part of a turnkey package.
Even a plant’s electric or steam power systems can have a direct impact on the bottom line. In all these areas, Siemens has both the knowledge and industry expertise to effectively integrate and optimize these subsystems, creating a complete solution that will ensure maximum productivity for years to come.

Highly available, application-orientated safe power distribution systems have become the backbone of every process-related industrial application. With energy costs expected to increase for the foreseeable future, these solutions are becoming much more cost-effective for oil and gas applications, including drilling, production platforms, ships, pipelines and downstream processes.

With our globally renowned power supply and distribution systems, we deliver complete, single-source power distribution systems that manage your power needs from the incoming feeder all the way to the final electrical consumer. These comprehensive solutions provide a level of performance that far exceeds solutions using a combination of individual components.
Products, systems and services for completely integrated solutions

Automation & Control
- Automation concepts
- Communication systems
- Monitoring
- PLCs and field bus network systems
- SCADA systems
- Process automation
- Process instrumentation
- Distributed Control Systems (DCS)
- Process analyzers
- Substation automation

Rotating Equipment
- Compressors
- Electric motors
- Gas and steam turbines
- Pumps

Power
- Power system concepts
- Energy management
- Transmission systems
- Generators
- Cables and cable systems
- Power stations
- Substations
- Components:
  - Switchgears
  - Power modules
  - Transformers
  - Power electronics

Safety
- Safety PLC’s
- Emergency shutdown systems (ESD)
- Fire and gas systems

Industrial IT
- Real-time operation intelligence solutions
- ERP solutions
- Simulators

Life-Cycle Services
- Feasibility studies
- Financial engineering
- Design studies
- Network studies
- Torsional studies
- Consultancy
- Project management
- Installation and commissioning
- Business-based maintenance
- Maintenance services
- Modernizations
- Relocations
- Retrofits
- Field service
- Spare parts services
- Service contracts
- Training
Further information can be obtained from our offices and representatives or from Siemens AG Solutions for Oil and Gas E-mail: oil-gas@siemens.com www.siemens.com/oil-gas