



Let There Be (Inexpensive) Light: Intel® Platform Helps Acquirente Unico Ensure Affordable Power for Italian Consumers and Small Businesses

SOLUTION SUMMARY

Challenge

Facing rising demand and some of the world's highest energy prices, Italy is deregulating its utilities marketplace. The new company of Acquirente Unico (AU) is charged with helping create a more efficient marketplace and driving down energy costs for Italy's consumers and small businesses. To succeed, it needs powerful, flexible infrastructure that delivers maximum availability at minimal cost.

Solution

Taking advantage of the wealth of platforms, software and services available in the open Intel® ecosystem, AU deployed flexible and cost-effective Intel® architecture front to back. Oracle9i® Real Application Clusters (RAC) on Hewlett-Packard ProLiant® servers provides outstanding availability, Vedaris Contango® suite offers an efficient, integrated approach to energy trading and risk management, and Accenture, Intel and HP came together to deliver a best-of-breed solution that went from idea to reality in just five months. On the desktop, fast Intel® Pentium® 4 processors provide ample performance to run the client aspects of the Contango suite and handle background tasks such as virus scanning and encryption.

Business value

Holding the line on its own costs will be critical to AU as it strives to reduce electricity prices. AU's choice of HP ProLiant servers powered by Intel architecture reduces upfront expenses and offers ongoing savings in total cost of ownership (TCO). AU's open, modular infrastructure provides the scalability and flexibility any start-up organization needs. Combined with outstanding availability, the solution positions AU to fulfill its mission, and its rapid deployment means a faster return on investment (ROI).

Servers

HP ProLiant DL380 G2 and DL360 G2 servers with dual Intel® processors

Operating system

Microsoft Windows® 2000 Advanced Server

Application

Vedaris Contango suite

Enterprise database

Oracle9i Real Application Clusters (RAC)

Client PCs

HP PCs with Intel Pentium 4 processors

Storage

Storage area network with HP StorageWorks® MA8000

System integration & project management

Accenture

Technology integration

HP Professional Services

Business Challenge

KEY PLAYER IN A CHANGING MARKETPLACE

In a world where energy is almost as essential as air and water, Italy's households and businesses suffer under some of the highest electricity rates anywhere. Those rates present a hardship for financially pressed consumers and impede economic progress, and they have become a particular issue since the formation of the European Union (EU).

With Italy's demand for electricity rising rapidly, the Italian government knew it needed to take action. In 1999, it created—in Legislative Decree 79/99, known as Bersani's Decree—an energy deregulation law that will privatize Italy's ENEL monopoly, liberalize the electricity market and create an open market framework. In short, Italy is moving toward an open electricity exchange designed to increase competition among electricity suppliers, increase energy supplies and reduce rates.

This shift has spawned several new public services. The Gestore Rete Trasmissione Nazionale (GRTN) is the new system operator, responsible for transmission and dispatching and for managing the national electricity grid. The Gestore del Mercato Elettrico (GME) is Italy's public operator, with overall responsibility for managing and organizing the trading of electricity. And Acquirente Unico (AU), a joint-stock company, will act as the default supplier and single buyer for what are called captive or non-eligible customers—households and small businesses. Founded in 1999 and headquartered in Rome, AU is charged with buying electricity for these users and selling it to distributors who will service the captive sector. The company is remunerated with fees based on economic efficiency criteria.

SHOULDERING A HEAVY LOAD

AU is a small player—30 employees at last count—with a big impact. The company will handle roughly 50 percent of the Italian electricity market and will move some 160 terawatt-hours of power per year. Its success is key to the entire liberalization process.

To do its job well, AU must have powerful financial management software to handle its interactions with the power exchange and help it determine how much energy to buy (both from Italy's power exchange as well as directly from producers) and at what price to sell it to Italy's distributors.

"We had very stringent requirements for the performance, availability, security and scalability of our technical architecture," says AU's system architect, Sergio Di Carlo. "Since our mission is to ensure the economy and efficiency of the electricity supply, we also wanted a solution that would be economical to deploy and efficient to manage."

AU also needed a solution that could interface with the business systems of Italy's distributors and providers, as well as with those of the GRTN and GME. In addition, since AU faces a rapidly changing regulatory climate

and the likelihood that its charter will continue to evolve, the company needed flexible infrastructure that it could expand and modify as business conditions altered.

Given AU's important role in opening up the Italian electricity marketplace, it's fitting that, although Di Carlo and his team evaluated RISC architectures, they opted for an open solution based on the Intel® platform. "In the Intel environment, you can choose the best elements from many vendors and put together a solution that does exactly what you need it to do, often for far less cost," he says.

Business Solution

A WINNING TEAM, A BEST-OF-BREED SOLUTION

Acquirente Unico's choice of the Intel® architecture opened it up to a wealth of products and services. To create a robust solution tailored to its business requirements, AU decided to work with Accenture, one of the world's leading management consulting and technology services organizations. Accenture has 75,000 people in 47 countries and focuses on helping companies use leading-edge technologies to bring their ideas to life. Accenture teamed with Hewlett-Packard (HP) Professional Services for integration and testing, and Intel provided technical assistance throughout the project development and pilot phases.

Together, the companies developed an open, standards-based solution that uses the Extensible Markup Language (XML) as the primary integration technology, Oracle9i® Real Application Clusters (RAC) for high database availability, Vedaris Contango* suite for energy trading and risk management, and highly available HP ProLiant* Intel®-based servers front to back to power the solution and provide affordable, uninterrupted service. Under the project management leadership of Andrea Marazzi of Accenture's European Technology Park in Sophia Antipolis, France, the system was ready to go live right on schedule after just five months.

Vedaris is a global player that offers leading-edge trading and risk management software for the natural gas, electricity and oil markets and maintains an ISO-9001 certified development center in India. Its Contango suite is a comprehensive package that handles both energy derivatives and the physical markets and delivers multi-currency, multi-commodity and multi-location global trading. The software covers front-office and back-office needs while also satisfying finance and operational requirements.

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Andrea Marazzi
Project Manager
Accenture

With the Contango suite as the centerpiece, the system takes in suppliers’ pricing data, demand forecast data, metering data and bid data and manages the bid submittal process. The system exchanges injection plans with producers, invoice data and bids with the GME, and injection and withdrawal plans for the GRTN.

Analysts and traders manage the deal workflow and market information through a single shared Oracle9i RAC database. “Oracle9i RAC was a clear choice to meet AU’s needs for high availability,” explains

Marazzi. “By allowing users to run their databases on clusters of HP ProLiant Intel-based servers, Real Application Clusters enables companies to enjoy the advantages of Moore’s Law, including the continual decrease in the cost of computing power.”

Oracle9i RAC is well suited to AU’s requirements, Marazzi adds. “The architecture of Real Application Clusters provides speed and scalability,” he says. “It is also inherently reliable since it eliminates the risk of single points of failure.”

To access the system, AU started with Intel® Pentium® III processor-based PCs and now deploys HP PCs based on fast Intel® Pentium® 4 processors to give analysts and traders the performance they need to work with the Contango suite, as well as to run power-hungry background tasks. “You can have all the performance you want in the back-end and mid-tier, but if you don’t have enough performance on the desktop, the user’s productivity will suffer,” says Di Carlo. “Contango suite has a powerful client element, and we also run virus scanning and encryption on the desktop. With our Pentium 4 processor-based PCs, we don’t have to worry about users having enough power.”

AFFORDABLE REDUNDANCY

For the database server, Acquirente Unico chose HP’s ProLiant* Parallel Database Clusters. These rack-mounted platforms set the standard for dense, 2-way servers and deliver the flexibility needed by a fast-growing organization such as AU. The ProLiant DL380, used for the mid-tier and clustered on the back-end, meets AU’s uptime needs with

a variety of advanced high availability features. The platform supports hot-pluggable redundant fans, power supplies, PCI slots and hard drives, as well as up to 6 GB of 2:1 interleaved ECC SDRAM, with optional Online Spare Memory. Together, these features provide performance and availability previously reserved for more expensive systems. The thorough testing done by HP to ensure the viability of this solution was also critical in Acquirente Unico’s selection of a platform.

AU’s initial servers were powered by dual Pentium III processors for servers, which provide a scalable and affordable entry point for business computing. In early 2003, as the company expands its operations, it plans to move to servers based on dual Intel® Xeon™ processors. The Intel Xeon processor, built for dual-processor servers, and the Intel® Xeon™ processor MP, designed for 4-way and larger configurations, feature Intel’s unique Hyper-Threading Technology, which boosts performance by allowing each processor to mimic the behavior of two separate processors.

The entire architecture is highly available, with mid-tier servers paired in an active/active configuration and Oracle9i RAC handling back-end redundancy. Servers are load balanced to keep performance high and meet AU’s need for uninterrupted service.

A high-speed, fiber-optic storage area network (SAN) based on the StorageWorks* MA8000 gives AU a powerful, compact storage solution with an initial capacity of 775 gigabytes. Since storage devices are clustered on a separate network and available to all servers, server power can be focused on application processing, contributing to higher performance. The scalable nature of the SAN and the StorageWorks equipment will enable AU to easily scale its storage capacity as it climbs into the terabytes range.

Industry best practices dictate a comprehensive multi-layer security architecture, and that’s what AU has deployed. A double

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Sergio Di Carlo
System Architect
Acquirente Unico

layer of Cisco Systems' PIX 500 Series Firewall provides enterprise-class perimeter protection. Internet Security Systems' RealSecure* 7.0 adds scalable intrusion detection, screening for malicious attacks at every possible point of intrusion. Entrust Technologies' Entrust/PKI* provides digital certificate management and helps lock down the environment, from the desktop through the database. Finally, Symantec's Norton AntiVirus* Corporate Edition 7.6 runs on desktops and file servers to prevent file corruption or mischief.

READY TO SHINE

Operating since October 2002 and preparing for expanded operations in February 2003, Acquirente Unico will play an important role in delivering affordable electricity to captive consumers and spurring economic growth among Italy's small business sector. With its robust and flexible infrastructure in place, AU is ready for the challenge.

More Information

www.intel.com/eBusiness

www.acquirenteunico.it

www.accenture.com

www.hp.com

Solution provided by
Accenture



LESSONS LEARNED

■ There's power in an open marketplace.

Acquirente Unico, a linchpin in Italy's move to open its electricity marketplace, took advantage of the freedom of choice available to companies that deploy solutions based on the Intel® architecture. The company surrounded itself with expertise and developed a robust, best-of-breed solution that was architected and deployed in just five months.

■ **Design for flexibility.** Acquirente Unico is a new company in a nation that's moving into a new world of deregulated utilities. The last thing the company needed was a rigid, inflexible solution. Working with Accenture and HP Professional Services and basing its solution on Intel architecture, AU has created a flexible yet powerful platform that holds the line on costs and will serve it well in the years to come.

■ **Take advantage of Moore's Law.** Intel co-founder Gordon E. Moore predicted in 1965 that the number of transistors on a chip would double for the foreseeable future. Today, Intel continues to fulfill Moore's Law, creating a spiral of rising performance and falling prices. By using Oracle9i* Real Application Clusters and running its database on the Intel® platform, Acquirente Unico can enjoy outstanding reliability without sacrificing Intel architecture's performance, flexibility, scalability and cost-effectiveness.

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Intel e-Business Network members featured in this Case Study: **Oracle, Hewlett-Packard**

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