

Information Technologies

A specialist in RealTime IT solutions with high added value for specific industrial sectors, such as Energy, Environment, Traffic and Transport. Telvent is a leading provider to these industries in Spain, North America, Latin America and Asia.



With over 40 years experience in industrial supervisory control and business process management systems, Telvent executes projects and supplies technical services in the field of mission-critical, real-time control and information management, which are complemented with the most comprehensive portfolio of outsourcing and consulting services, for managing IT and technological infrastructure for its extensive international client base.



www.telvent.com

Information Technologies

Executive Summary

The year 2003 brought a dramatic change to the global economy after a prolonged period of economic and political crisis and uncertainty. Affecting all industry sectors, and in particular the Information Technologies segment, a turning point was reached in the continuing trend of declining consumption of software and electronic products and services. That change, however, did not begin to take place until the third quarter, while the beginning of the year continued to be impacted by a variety of negative factors, including the continued mistrust of financial markets, reduction in employment figures, increased unused production capacity, stagnation in the growth of the GDP, reduction of investment, and increased uncertainty on the international political scene. During the second half of 2003, there was a general improvement in the financial results of the global marketplace, reflecting a departure from the economic climate that had existed over the last three years, which in turn brought about an increase in profitability in financial markets, and heightened optimism for increased economic prosperity. In short, although 2003 was, on average, a year that provided marginal productivity and profitability improvement within the global marketplace, the recovery in the latter part of that year allows a much more optimistic outlook for 2004.

In this setting, the year 2003 has meant a lot of things to Telvent, but one which undoubtedly must be emphasized above all other result is the fact that this year the horizons for Telvent have opened up enormously, setting its limits much further away, in places we previously only dreamed about. Our entry to North America has meant not only geographic expansion onto a new market, which is absolutely true; our entry to North America has also meant that, in addition to adding a series of variables we previously did not have to the Telvent equation, which opens up new perspectives and options for us. The already interesting journey by Telvent has now become something exciting. Telvent now has the opportunity, one not exempt of responsibility, of living it from the inside as an important player in the demanding technological sector in North America, which will provide a continual source of enrichment for all the organization throughout the world. Telvent is now a recognized company on this demanding market due to its technology, on which it is



competing on a daily basis with the leading multinational companies.

During our 40 year history, the innovative implementation of our industry leading systems and solutions has led all of us who work at Telvent to feel proud of our accomplishments and proud to be part of this company. It has also helped for the secure, environmentally responsible and economically efficient provision of the following essential services:

- Transportation of more than 10,300 million barrels of crude oil and derivatives along more than 280,000 km of pipeline.
- Distribution of more than 12,400 billion cubic feet of natural gas that supply more than 94 million people.
- Generation of more than 12,500 kilowatt-hours of electric energy.
- Transportation and distribution of more than 140,000 GigaWatts



Information Technologies

of electric energy providing power to more than 80 million people.

- Controlling vehicle traffic at more than 6,000 crossroads, through which more than 170 million people pass through per day.
- Monitoring and controlling the transit of more than five million people per day, over more than 8,700 kilometers of motorways, dual highways and tunnels.
- Managing the transportation of more than two billion passengers every year on trains and subways.
- Ensuring the safe and efficient landing and takeoff of more than 60 million passengers at more than 70 airports.

A significant milestone that was achieved this year was the successful integration of our new North American business unit with the rest of the Telvent organization. The success of this implementation would very likely have not been possible had it not been for the clear objectives that were set out in our Integration Plan at the beginning of the year, which were subsequently achieved. This success validates our ambitious strategic growth plan.

The success of Telvent is based on the quality of our people and our corporate culture. The contributing factors include the following:

- Telvent has a Common Management System that provides the framework for our culture; a System that has been the mechanism for integrating and synchronizing our new North American business with the rest of Telvent in an extremely swift and effective manner, establishing a common management language for our business from the outset, enabling efficient and appropriate communication and understanding. This System, which is continually updated and enhanced by Abengoa, maintains a fine balance between experience, our historically acquired values, and our defining corporate doctrines, along with our innovation, creativity and our vision of the future, providing the recollection of what we have been, the reality of what we are, and the expectations of what we wish to become.

- The extremely positive outcome of our recent integration success is also the result of the exceptional efforts of our new team of North American Telvent professionals. From the very beginning of the acquisition process, the talent and motivation of this group of people have been integral to our integration program, during which time they have also enriched the entire organization through their contributions. Prior existing knowledge and a good working relationship between our two companies were also key elements and a constant facilitator, creating a climate of confidence and respect during this critical period. Telvent has grown as an organization, with the inclusion of our people in Calgary, Houston and Baltimore, by much more than what is shown in their impressive financial sales figures.



In order to increase the profitability of our activities and the efficiency of our processes, during 2003 we have continued with the process of unification of the general service departments that began in 2002, and are now providing centralized management services for Human Resources, Administration, Finance, Operations, Systems and Quality to all of our business development units. This initiative is part of our mandate to maintain strict control over general expenses, even while taking into account the growth in our volume of business. Another important program towards which we dedicated a great deal of effort during 2003 is the improvement of our preventive problem auditing system for the certifying body. Key to this program is the continual monitoring of the progress of certain special projects, allowing the participation of the entire organization in proactively addressing potential areas of concern, prior to becoming problematic, by detecting and analyzing associated causation factors.

We have also continued to develop specific process improvement projects using 6 Sigma methodology, the first impact being from the four projects concluded during this past year, which has already positively affected Telvent's 2003 profitability results. It is expected that the four new programs that began in the third quarter of last year, will produce similar positive results in 2004.



Information Technologies

This year our upward trend in sales continued, based in large part on the Outsourcing and Technological Infrastructure Management contracts that we have entered into with more than 170 customers. This client list features a number of new customers, which includes Telecom Italia, Hispasat, and the Spanish Ministry of the Economy. This area of success will help make it possible for Telvent to continue to expand its solutions portfolio, offering increasingly greater added value in the sectors of Energy, Environment, Traffic and Transport. This also allows us to complement our traditional project solutions by establishing Emergency Recovery Centers on our premises, as well as through total or partial outsourcing of the business processes, integrated in real-time with our solutions infrastructure.

During 2003, another important milestone that was achieved was the consolidation of all Telvent business groups, creating one identifier for all of our activities, and replacing all previous brands, including recognized names such as Sainco, Sainco Tráfico and Carrierhouse. The objective of this change was to communicate to our customers and the general public that Telvent is now one sole entity, which is comprised of more than 2,100 professionals. The activities that were carried out affected all key areas, including our technology, our culture, our management, our administration, and our corporate vision. This ambitious program involved the participation of everyone at Telvent, culminating in "one company, one name".

In terms of significant technological development during 2003, one of our most important achievements was the implementation of our network of Excellence Centers in our offices in Seville, Calgary, Baltimore and Bilbao, from which we are going to coordinate the majority of all of our Research and Development projects. These Excellence Centers have the responsibility for developing the products that meet the needs of the markets in which we operate. This will allow us, for example, to use products developed in our Seville Excellence Center, and then market those products throughout our global business network, including Spain as well as in North America, Latin America and China. Telvent has continued its investment in a number of technology areas: equipment for data acquisition and control, energy measurement equipment, contactless payment systems, and dynamic and free tolls, as well as new information analysis and processing capacities in our software, developing new mathematical

models that support our simulation programs, and improving the level of security in all of our technology solutions.

As to our Quality System, in 2003 Telvent completed a self-evaluation of the Energy and Environment area using the EFQM model. This program was subsequently validated by an accredited member of the Quality Management Club (Tea Cegos Deployment) which granted us a rating of 419 points. This impressive rating also gives us the opportunity to obtain the Silver Stamp, during 2004. From the self-evaluation report, a list of Improvements Actions have been extracted and integrated into the Improvement Actions Plan EFQM 2003 for Telvent, which will be implemented during the first quarter of this year. Another important achievement in 2003 was the obtaining and renewal of the ISO 9001-2000 certifications in all Telvent organization units.

In Human Resources management, we have made significant progress in improving the work environment, with projects such as the installation of physical fitness centers at our offices in Madrid, Seville and Calgary; declaring Smoke Free buildings in all of our worldwide office locations; and establishing permanent medical services at the two centers where we have the largest concentration of staff members - Madrid and Seville. These projects are just some of the examples of initiatives undertaken in 2003, with the objective of increasing quality of work life. The success of our Human Resources management program is one reason why Telvent was chosen as one of the 100 best companies to work for in Canada. In 2004, in addition to monitoring the success of the current programs already in place, a number of new innovative human resource initiatives are also planned.



Information Technologies

Energy

Electric

Within the electric sector in 2003, a number of important projects were awarded, focusing in particular on integrated control and protection systems, which consolidates our leadership position in the markets of Mexico and Brazil. In addition, a number of projects were successfully completed during this past year, which were awarded during the last half of 2002.

Some important milestones this year include the following:

- Telvent successfully completed a distribution control center upgrade for Burlington Electric (USA).
- Telvent completed testing with City Water Light & Power of Springfield Illinois on a system which will interface to the Midwest Independent System Operator, allowing operational data access. City Water Light & Power is the largest municipal utility in the state of Illinois and has a total generation capability of 620MW.
- Telvent was awarded an exclusive vendor contract with City Public Service (CPS) for supplying all RTU equipment during 2003 and 2004. CPS is the nation's largest municipally owned energy company providing both natural gas and electric service. Acquired by the City of San Antonio in 1942, CPS serves approximately 600,000 electric customers.
- Telvent completed an upgrade to the Conway Corporation distribution system, making it dual redundant. This customer is headquartered in Conway, AR, USA and is the sole operator of the municipally owned electric distribution system.
- Telvent was awarded a contract to provide 76 Remote Terminal Units (RTUs) to Illinois Municipal Energy Agency (IMEA) for delivery throughout 2004. IMEA provides wholesale electric power to thirty of its municipality members and is located in Springfield, IL.
- Telvent completed an upgrade to the main control system for the Eastern Iowa L&P, Linn County, and East Central Iowa cooperatives. These are distribution cooperatives located in the eastern part of Iowa, which manage their operations using one OASyS SCADA system, via remote access.
- Telvent delivered 36 Remote Terminal Units to Niagara Mohawk Power, a large generation, transmission and distribution utility. Niagara Mohawk provides power to 1.5 million customers and is located in Syracuse, NY.
- Telvent delivered a OASyS SCADA system to the City of Radford, Virginia's publicly owned municipal electric distribution utility.
- An upgrade was completed on a Distribution Management System for the Village Of Freeport on Long Island system. The Village Of Freeport operates seven generating units and has a peak load of 60MW.



Information Technologies

- Contracts for the Control and Protection Systems for Substations for the Federal Electricity Commission of Mexico. Specifically, contracts were awarded for the following:
 - Control and Protection Systems: 613 (Aguascalientes, Guanajuato, Jalisco and Nayarit)
 - Distribution: 614 (Veracruz, Oaxaca, Morelos and Guerrero) and 615 (Area Peninsular)
 - Transmission: 712 (Baja California Sur) and 717 (Riviera Maya)



- Contracting the remote Front-End units to perform the function of intelligent communications nodes for the new telecontrol network installed by Red Eléctrica after acquisition of the assets of the transmission network from other companies.
- Start-up of 30 Integrated Control and Protection Systems for Endesa distribution substations, covering a total of more than 150 systems in the last five years.
- Delivery of 800 equipment units for the Telecontrol of the Network of Distribution of Unión Fenosa, totaling more than three thousand points automated in the last three years.
- Delivery and start-up of the Local Control Systems (SICLE) for the CFE, covering the substations of Zaachila, Río Bravo, Agua Azul, Escobedo, Arroyo Coyote, Frontera, Aeropuerto, Terranova, Casasgrandes, Juchitán, Conín, Lauro Villar, Yautepec, Fresnillo, El Sabino, San Martín, Silao and El Fresnal.
- Completion of the supply and start-up work on the Distributed Control System at the Combined Cycle Plant of El Sauz in Mexico.
- Completion of the control systems for the substations interconnecting the Tucuruí-Villa do Conde and Coxipó-Jaurú lines for Eletronorte in Brazil.
- Completion of the control systems for the substations interconnecting the Xingó-Angelim-Tampina Grande line for Furnas in Brazil.
- Completion of the work on the first substation on the reform project for the Transmission System at Maranhão in Brazil.
- Completion and Start-up of the Remote Control Service for the field equipment as well as the SCADA system on the Madrid-Zaragoza and Zaragoza-Huesca High Speed lines, which were the first to be completed under the High Speed Plan that has been developed in recent years.
- Start-up of ten Integrated Control Systems for substations on the transmission network owned by Red Eléctrica, among them, those that have been built to feed the new branches of the High Speed lines which will soon be placed into operation.
- Commissioning of the Electrical Office for Autogenerators, which has allowed Abener to gain access to the electricity market operator OMEL, thereby improving its sales.

Information Technologies

- HidroCantábrico has continued to entrust Telvent with the extension of its Corporate Business Management Platform. During financial year 2003, HelpDesk, Authorization Management and Quality Management components were included. Moreover, the global platform was set up for Internet access to this organization's corporate information systems.
- Awarding of a contract from Shanxi Electric Power Company to provide the Energy Management System for the Shanxi Power Grid. The signing ceremony was held at the Canadian Embassy in Beijing, China in September 2003.

Based on the above projects, and other initiatives during the past year, Telvent confirmed its leadership position in the electric market in Spain and is positioned as one of the most important suppliers of Control and Communications Solutions for the electric market in Latin America and North America.

Oil and Gas

In the United States and Canada, the following projects represent some of the major milestones that were reached during the past year:

- Cascade Natural Gas Corporation. Work continues on the upgrade to OASyS DNA with advanced gas applications for Cascade Natural Gas, which transmits gas out of the State of Washington, USA. Previously, Cascade was the first customer to adopt Telvent's 6.2NT technology.
- Chevron Texaco. Following the merger of Chevron and Texaco, Telvent co-engineered, updated and integrated the new company's disparate SCADA systems. Chevron Texaco was operating two gas and two liquids systems, and is now very close to being integrated into one OASyS platform.



- ConocoPhillips Pipe Line Company. Telvent will deliver a solution to consolidate three systems with OASyS DNA and advanced liquid applications (LMS) to ConocoPhillips, the third largest integrated energy company in the US, and the fifth largest refiner in the world. Future initiatives include additional advanced applications and leak detection.
- Inter Pipeline Fund (IPF). Installation and commissioning are ongoing for Telvent's pipeline management system for IPF. This is Telvent's first OpenVECTOR to OASyS migration project. IPF owns and operates four crude oil feeder pipeline systems in southern Canada. IPF also owns and operates the Cold Lake heavy oil pipeline, Canada's largest heavy oil gathering system, which includes over 900 kilometers of heavy blend and condensate pipelines.
- TransGas. The TransGas system represents Telvent's first OASyS DNA with GMAS solution which is now being installed in Saskatchewan, Canada. TransGas operates 13,500 kilometers of gas gathering and transmission pipelines.

Information Technologies

The following list of projects in 2003, provide support for Telvent's leadership position in the petroleum and gas sectors in Latin America:

- Contract and execution of major extensions of the control project for the Heavy Crude Pipeline in Ecuador for OCP Limited, aimed at increasing the level of management of the installations.
- Delivery of the Safety System on Platform AKAL-L (IPC-78-B) which is being built by Dragados Off Shore for Pemex Exploración y Producción.
- Contract and Delivery of the first phase of the Control System, Management and Communications for the Lima-Callao Natural Gas Distribution Company, owned by Tractebel in Peru.
- Shadow Office Contract for the network of CLH oil pipelines in Spain.
- Hiring and Delivery of the Measurement and Control System for the Terminal of Abkatún for Pemex Exploración y Producción in Mexico.
- Completion of the Supervision System for the Measuring Stations on the Yacuibá-Río Grande Gas Pipeline for Transierra in Bolivia.
- Delivery of the SCADA systems for two Gas Pipelines transporting natural gas and LPG in Camisea (Peru) for Techint.
- Execution of the Emergency Shutdown Systems at five Pumping Stations for Transredes in Bolivia.
- Ecopetrol. Ecopetrol is Colombia's state-owned Oil and Gas Company and Telvent's first international OASyS DNA project delivery. Following a successful FAT, Telvent is migrating Ecopetrol's existing OASyS 5.2.2 system to the new OASyS DNA technology.



- Contract award of an optic fiber based Communications System for the Gas Natural pipeline between Lima and Callao, Peru.

Others countries:

- Caspian Pipeline Consortium (CPC). CPC and Telvent signed the System Acceptance Certificate in Novorossiysk, Russia in 2003. Awarded in late 2000, the CPC project includes SCADA, simulation and leak detection. The CPC pipeline spans over 1,500 kilometers from oil fields in Kazakstan to a marine terminal on Russia's Caspian Sea.
- Istanbul Gas Distribution and Trade Corporation (IGDAS). Telvent will deliver an integrated, turnkey, fully redundant SCADA system to IGDAS in Turkey. IGDAS is the Istanbul Metropolitan Municipality-owned company that distributes natural gas to more than 2,240,000 subscriber customers, and approximately 300 industrial consumers.
- Completion of deployment of the National Communications System Network for the petrol company Conpet in Romania; conclusion of the field tests and provisional reception of the system is foreseen in the first semester of 2004.

Information Technologies

Environment

Meteorology

Within the environmental sector, the Meteorology business area is in full growth in Spain as well as abroad.

Telvent has spent more than 20 years providing technological solutions in Meteorological Observation in Spain. Practically all of the airfields in Spain have been equipped or modernized with Automatic Weather Observation Systems (AWOS) by Telvent, systems which serve to improve the efficiency and safety of aerial operations at airports. The versatility, extreme reliability and competitiveness of this technology allows important project references to continue to be obtained throughout the world, which makes Telvent one of the worldwide leaders in Aeronautical Weather Systems.

The technological leadership of Telvent in the area of Meteorology is substantiated by such projects as the following:

- Execution of the weather observation equipment project for the new runways at Madrid-Barajas Airport and remodeling of the existing system on the present runways, involving one of the most complete and innovative AWOS systems in Europe to be put into service, which is foreseen in March 2004.
- Award of the meteorological equipment contract for the third runway at El Prat Airport in Barcelona, and remodeling of the existing equipment on the present runways.
- Execution and start-up of the Shear Detection System (LLWAS) at Reina Sofía Airport in Tenerife Sur. This is the first operating system in Europe with the latest generation LLWAS Phase III technology.
- Renewal of the contract for refurbishment and maintenance of the weather radar system for the National Water Board (CNA) of Mexico.



- Award of the contract for Modernization of the National Meteorology and Hydrology Service (Senamhi) in Bolivia, an innovative service that, in addition to implementing observation networks, includes the Telvent (Integrated) Weather Information System (TWIS), which allows generation, presentation and distribution of weather prediction data, using industry-leading technology in weather observation and prediction.

Water

In the Water sector during 2003, the following projects should be included as being noteworthy:

- The position gained with the National Water Commission in Mexico, as a result of the supply and installation contract of 36 Data Collection Platforms, for hydro-meteorological application.

Information Technologies

- Moreover, the SAIH contract for the Guadalquivir was renewed again, which assures Telvent the leading position with that Water Board.
- Upgrade of the “Confederación Hidrográfica del Guadalquivir” Geographical Information System (GIS). The analysis and exploitation have been finalized throughout the present year.
- The Consultancy for Implementation of the electronic authentication and signature in the advanced electronic signature integration system in the Application by the Directorate General of Industry and Agro-food Promotion (DIPA), in order to perform implementation of @firma at the Department of Agriculture and Fishery for the Regional Government of Andalucía.
- Ankara Water and Sewage Administration, Turkey (ASKI). In 2003 Telvent finalized successfully the ASKI Dam Lines SCADA Project). The project consists of the control and management of the three main pipelines for supplying the City of Ankara and is an extension of the original project of the year 2000, which Telvent was also awarded.
- City of Columbus. Telvent will upgrade the City of Columbus Division of Water’s SCADA system. This system will monitor and control the supply and treatment operation of one of the City’s three water treatment plants.

Environmental Protection

Lastly, in the area of Environmental Protection, in addition to the renewal, once again, of the maintenance contract for the Air Quality Network for the Department of the Environment of the Regional Government of Andalucía, the following contracts are noteworthy due to their nature and geographic location:

- Supply of Mobile Units for real time management of information related to forest fire fighting, prevention and extinction decision making to the Regional Government of Andalucía.
- Air Quality Monitoring Network for the Municipality of Tegucigalpa, Honduras, in addition to diverse laboratory instrumentation.
- Air Quality Monitoring Network in San Pedro de Sula, Honduras.
- System to Control Emissions for the Thermal Power Stations of Guerrero Negro and Guaymas, for the Federal Electricity Commission (CFE) of Mexico.



Information Technologies

Traffic

Telvent's activity in Traffic is focussed on applications, products and services related to the Intelligent Traffic Systems (ITS). At present, the advances achieved in the evolution of the ITS systems concern not only the involved industrial sectors, but also the daily lives of citizens. Every day new applications directed to the Management, the Control and the Road Safety arise. These applications are transforming the road infrastructures into true "Intelligent Highways" facilitating a high level of service and comfort for users and a better flow of the interregional communications, supporting progress and prosperity.

Telvent also contributes a global solution for the problems of traffic in the urban areas and for the control, surveillance and administration of state highways and motorways. These solutions guarantee the safety and optimise the efficiency of traffic flow; providing Telvent with both a national and international leadership position, based on our wide coverage in a great number of countries in the American, Asian and European areas.

The most significant achievements in the Spanish market were as follows:

- Inauguration of the Traffic Management Centre of Valladolid and Dynamic Signalling of its area of jurisdiction, covering the roads and highways of the Region of Castilla-León and Access Control to the cities of Valladolid, Burgos, Tordesillas and Benavente.
- Completion of the project for Access roads to the Central Pyrenees for the DGT (Traffic Office), with special treatment of the meteorological data applied to Road Safety.
- Finishing of the Access Control to Andalucía (Despeñaperros stretch) for the DGT.
- Inauguration of the Interurban Road Control System for the Palma de Mallorca Ring Road, for the Island Council of Mallorca.
- Traffic Control Project for High Capacity Roads in Vizcaya for the County Government.
- Access Control to the Valle de Arán for the Regional Government of Catalonia.



- Occupancy and Data Systems for Traffic in the Region of Castilla-La Mancha.
- Maintenance of the Traffic Control Systems Network for the Government of Alicante.
- Interurban Traffic Control Systems ITS on the M-50 Highway and Radial Motorway 4 in the Region of Madrid.
- Control and Operations System for the Piles & Infranzone Tunnels in Asturias for the DGC and Traffic Control at the mountain pass of Piedrafita based on weather data for the DGT.
- Integral maintenance of the Road Network of the Transversal Axis of Catalonia and the Tunnel Control System of the city of Barcelona.
- Urban traffic light centralisation in the cities of Pontevedra, Lugo and Oviedo, as well as renewal of urban maintenance in the cities of León and Vitoria.
- Renewal and Development of Traffic Data and Information for the Local Government of Madrid by Internet via the municipal website.
- Execution of the maintenance contracts of the GPS Differential (GPSD) systems and several Traffic Control systems has begun. Legislative changes coming soon are expected to ensure this market grows considerably in Spain over the coming years.



Information Technologies



- At the Board of Public Works and Transport, integration of the @firma platform in two of the processes assigned to the Board for publication of what are called the Top20. The first of the processes is related to the application that manages the pool of public housing, while the second process is associated with the traffic fines system.
- Contract for the Port Traffic Control Systems for the port of Tenerife.
- Contracting of several Simulators for the Sea-coast Social Institute for Isla Cristina's School and the School of Las Palmas.
- In the Monitoring fleet product line, a System of Monitoring has been developed for Fleets of urban, rural and forest Fire Brigade Service including an application for co-ordination and planning of fire fighting operations jointly with a global supply company serving the fire brigades.
- The activities related to the F100 Frigates has continued. A very significant milestone during 2003 was the award of the maintenance program for the consoles on the F100 Frigates. That type of maintenance contract has preferably been preferentially awarded by the Navy through Izar or Indra up until now. The elimination of the intermediaries between this company and the end customer will increase Telvent's agility and quality with respect to the services being provided.
- Development of the CONAM console prototype has been concluded for the S80 submarine, awaiting the manufacturing contract for the series during 2004. Commercialisation of the WECDIS console has begun in Spain, Eastern Europe and in South America.



As for the international market, it is important to emphasize Telvent's expansion of activities in Southeast Asia and Latin America and the opening of new markets in Eastern Europe. The most significant activities in these markets were as follows:

- Operations Management System for the Motorway Network of the Province of Peking for the Concessionaire Beijing Capital Highway Development Co. The project will modernise the Control Systems of these infrastructures for the 2008 Olympic Games, for which Peking is the official host city.
- Urban Centralisation Projects in the Chinese cities of Fushun and Xiu Xiang, with implementation of advanced Traffic Control Systems in Real Time: ITACA.
- Inauguration of the ITS projects on the Motorway Network of Shenzeng: Yantian Bagan and traffic control in the cities of Wuhan and Zhengzhou.
- New Urban Traffic Control projects in Vietnam.

Information Technologies

- Urban Traffic Centralisation Project in all the traffic light installations of the Brazilian city of Salvador de Bahia, with implementation of the ITACA Adaptive System.
- Telvent has developed and implemented the “Electronic Document Exchange System” for the Integral Port Administration System of Veracruz. This project is a benchmark achievement in TIC implementation among the logistics operators’ communities in the manner that these communities can optimize their production capacity by increasing the performance of their operations. The system is based on automation of the exchange of information between operators acting within the logistic community, with the security provided by the digital signature integrated in the transactions carried out throughout the system. As an added value within the local scope of Mexico, the system has been developed in compliance with the Mexican Official Standard (NOM-151), that regulates commercial practice and the requisites to exchange data messages.
- The Mexican market has been developed through the contracting of the Port Traffic Control systems for the ports of Manzanillo, Tampico, Progreso, Lázaro Cárdenas and Mazatlán.
- In civil simulation, the Navigation Simulator with Visual display for the Royal Navy of Morocco was supplied, which is a significant landmark in the proposal of these solutions for the market.
- The air-naval simulator for the Chilean Navy has been inaugurated, representing the completion of the contract awarded in September 2002, and including preventive maintenance, adaptation and system correction features.
- Project ITS of Interurban Control of the highway of Romania between Bucharest and Cernavoda for the National Administration of Highways of the Transport Ministry, obtained with funding of the BEI.

Transport

Transport activity during 2003 has continued to undergo sustained growth based on a strong international presence and inclusion of new technologies and applications in the field of Transport Payment Systems.



Telvent, always in the forefront of the most effective and advanced transportation solutions, has incorporated new systems and products during 2003. The following are included in the list of noteworthy accomplishments:

- SmarTOLL for Remote Toll Management with in-house manufactured Tag and Antenna. Work continues to complete the Toll Management System for Free Flow (non channeled toll).
- ClearingTOLL: centralisation of toll collection and management systems using state-of-the-art technologies and programming methods.
- ClearingTrans: fare integration and evolution of the Ticket Sale and Cancellation systems in buses.
- ClearingPark: centralisation of Car Park Collection and Management Systems.
- AVC: new Automatic Vehicle Classification System for toll management.
- New ticket payment systems for road and railway transport systems based on cards – contact-free chips.

The most significant achievements within the Spanish Transport market include the following:

- Centralised System for Railway Traffic Control (CTC) on the Medina - Salamanca - Fuentes de Oñoro Line, controlling the railway lines of León,

Information Technologies

Ponferrada, Ávila, Salamanca and Palencia, and including state-of-the-art technologies.

- Transport Toll and Ticketing System for line 9 on the Barcelona Metro to equip the 46 new stations, with implementation of magnetic technology and contact-free cards.
- Inauguration of the Toll Systems for Metro Sur for Metro de Madrid and RENFE Local Trains on the Railway Network of Madrid.
- Design, supply and installation of Access Control and Management Systems for Customers at the new Bilbao Exhibition Center, through a Parking System and Attendance Accreditation system.
- Installation of a Pilot Trial of the Ticketing System with a Contact-free Card for Metro de Bilbao, at the following four stations: Abando, Baracaldo, Areta and Plentzia. This new advanced system will make entry easier for the users and considerably facilitate operational efficiency of the Metro.
- Installation of equipment for Rotation Parkings in several Spanish cities, including new technologies using the Internet: e-park.
- Interoperability tests for the 'Pista' Project by the Development Ministry for Tags and Antennas for Remote Toll Management on our SmartTOLL project. A huge market has been opened up for Telvent with these products, not only in Spain and Europe, as they comply with the European standards, but also in the rest of the countries with Toll implementations, such as those in North America, China and Southeast Asia.
- The installations of Toll Highway equipment have been completed on several concessionaire motorways on the National Network: Audenasa, Aucalsa, Avasa and Autopista del Sol.

Internationally:

- Inauguration of the Toll Project on the motorway network of Shenzeng in Yantian-Bagan.



- Commencement of work on the Toll System of the Chinese motorway of Sandong.
- Completion of work on the Railway Signalling project for the Uruguayan railways AFE.
- Notification of the award of the Ticketing System project on the new Metro of Tianjin in China.
- Contracting of the Tetra Radio-Communications Network for Tianjin's light train in China.

Information Technologies

Public Administration

The year 2003 has led to the definitive consolidation of Telvent in the area of Public Administration, the main focus being the development of applications and services to address the challenges of the Information Society.

Within the public sector, the accomplishments achieved in the Digital Health Sector are very notable, as major references were obtained in 2003. This activity commenced at the end of 2002, as a result of Telvent's presence at CITIC (Centro Andaluz de Innovación y Tecnologías de la Información y Comunicación) and is reflected in the following projects:

- The CEIS project with implementation of a Call Center service for the Andalusian Health Service (SAS).
- Through the "GIS Excellence Centre" in Seville, use was made of this technology in the field of Health, a pioneering project on a national scale that includes integration of the data bases with alphanumeric information, graphic representation and automated cartography, as well as specific modules for system administration, health planning and decision making support.
- The "Integral Control Board" project aims to control the main indicators of the Public Health System. Its mission is to contribute to the improvement of the public health conditions in Andalusia. This project will be executed making use of **SAP** technology, which is a fundamental step forward in Telvent's strategic direction.
- However, the most significant step took place with the project for an "Integrated System to Acquire, File and Communicate Medical Images" for the Health District of Huelva. This project will provide all the Hospitals and Primary Care Centers in the province of Huelva, with the computer systems and necessary infrastructure to replace conventional X-rays with digital images, allowing immediate access to the medical images from all the health centers in the province. This project is a key step towards the integration of the Digital Health Records.
- In 2003, installation was completed on the Geographic Information System for Employment Resources in Andalusia (SIGREMA), sponsored by the Department of Employment and Technological Development. Within the corporate sector, this project also has great potential for the future within the Andalusian Health Service (SAS), and for integration with the rest of the systems now being developed by Telvent within that Department.
- The last GIS implementation was performed at the Ministry of Justice, as part of the new citizen's portal (www.justicia.es), where the GIS tool is used to represent the organization from the point of view of the Judicial Administration throughout the Spanish territory, providing access to the location of any Judicial body in an interactive manner through easily used GIS tools.
- The Department of the Economy and Revenue has continued to entrust Telvent with the integration of the electronic authentication and signature platform with its critical systems. At present, all of these systems are integrated with a Telvent platform.
- The global vision of Information Systems in a distributed and critical operation environment has been used by the Public Corporate Entity Red.es, in the project carried out by Telvent on the Master Plan for Information Systems and Communications by the Ministry of Foreign Affairs. Telvent has provided its global management model for Information Systems services, including technological assets, telecommunications networks, service standards and remote management, which is especially important in the highly dispersed and varied international environment in which the Ministry of Foreign Affairs operates.
- The **CRM** project for the Department of Employment and Technological Development, that began as a Call Center, comes into production in January 2004, thanks to a record implementation time of three months. This project is a key component of the ambitious Citizens' Care Scheme, which includes the Citizens' Care Line (Call Center). An extension of this project includes support for the Andalusian Employment Service (SAE).

Information Technologies

- Execution of the **Document Management** project at the Directorate General of Co-operatives, a project of enormous complexity covering all aspects of all phases within the field of official records located in the eight provinces of Andalucia.
- At the Department of Justice and Public Administration, definition, development and implementation on an open platform of the "LexTramita" system for management of processes and activities related to publication of the by-laws and laws.
- During 2003, Telvent began to execute a "Revenue Management System" for the Commissioner for the Tobacco Market of the Ministry of the Economy. The Commissioner for the Tobacco Market will use that application to expedite management of revenue from authorizations, tobaccoists concession fees, fines and others.

Outsourcing and Management of Technological Infrastructures

During financial year 2003, Telvent consolidated its offer of Information Systems outsourcing. The present direction within the information technology field and the search for the maximization of investment and the improvement of the competitiveness found in Telvent solutions is focused on such areas as Asset Management, Operating and Maintenance Centers, Micro computing, User Care Centers and Network Management.

The year 2003 has allowed us to consolidate our strategic vision of the importance and capacity of Telvent to supply services aimed at management of information and communications systems for our existing customers in Energy, Environment, Traffic and Transport.

Implementation of the strategy developed in 2002, focused on providing the corporate sector with added-value professional services, achieved significant positive results during 2003, resulting in a 15% increase in sales, and an increase of more than 30% in the number of customers using Telvent centers. This diversification of sectors, along with a more uniform distribution of the revenue per customer than in previous years, provides us with greater

protection against possible future market setbacks, such as for example, that suffered by the telecommunications market in recent years.

Our offer for the industrial sector, following the guidelines defined in our Strategic Plan has been complemented by the development and consolidation of new products, which include the following:

- Data storage solutions in pay-per-use mode and dedicated services, in SAN (Storage Area Network) technology as well as NAS (Network Attached Storage).
- Backup Center Services, Business Contingency and Continuity (BRS).
- Intrusion detection service (IDS) and content protection (HIDA) in 24x7 mode.
- Virtual Private Network (VPN) implementation and management services.
- Complex corporate hosting, integrating complete telematic security solutions, data storage and application servers.
- Systems administration services for IBM AIX, DB2, WebSphere technology and Microsoft technology.
- Network administration services and Internet (IP) telephony platforms.
- Application administration services in the field of advertising management systems and viral marketing and corporate systems based on Lotus Domino.
- Monitoring services and management of remote data services, to guarantee continuous operation 24 hours a day.



Information Technologies

- Products integrated in the ASP model of solutions to dispatch energy, telesupport, alert engine, SMS message platform, broadcasting of events, management of content and e-mail marketing.

Maintenance of the contribution by the Telcos sector, along with the entry into the Corporate sector and the process of optimization of the operations has led to an increase in 2003 in our EBITDA of 40% compared with the previous year. Even more significant, this will allow us to undertake commercialization of our services in 2004 on an emerging market in a focused manner, consolidating our market leadership position on the Iberian Peninsula, and creating a positive after tax profit.

Key institutions and companies that joined Telvent in 2003 to obtain complete Internet operation and access services, within the strictest levels of service quality, include:

- Entidad Pública Empresarial Red.es. It has hosting, Internet access and 24x7 services for operation of its servers, among them the primary server of the Spanish ".es" domains.
- Portal Madrid. This is the portal for the Local Government of Madrid, representing a unified platform for services for all the citizens of Madrid, and providing an important mechanism for promoting the City.
- Euroconsult. It has a contingency centre for continuity of its business within the field of quality control in construction.
- Profit. It has the necessary hosting services to operate its Spanish Tourism Quality Certification System, developed for the Ministry of the Economy.
- SEPES or Entidad Pública Empresarial del Suelo, assigned to the Development Ministry, requires hosting for its Web, providing citizens and institutions with the necessary services for managing national town planning actions.
- Asland. As a leading company in the supply of construction materials, it utilizes safe housing services for its corporate information systems in a centralized manner, which facilitates communications with its branches nationwide.
- Fundación Tripartita – Forcem. Manages the ongoing training funds agreed between workers and companies in Spain. It has a complete computer platform to host its management applications for Spanish training. The platform design includes all of the hardware and baseline software to provide telematic security solutions and data storage.
- Eli Lilly. A multinational pharmaceutical company that requires secure Internet access, technical floor arrangement and services for BRS solutions.
- Agencia Española de Cooperación Internacional. (Spanish International Co-operation Agency): Has hosting to support its study grant management applications.
- Ministry of Economy, performs complete monitoring of its data processing centre, including the secretariats of economy, commerce and tourism.

