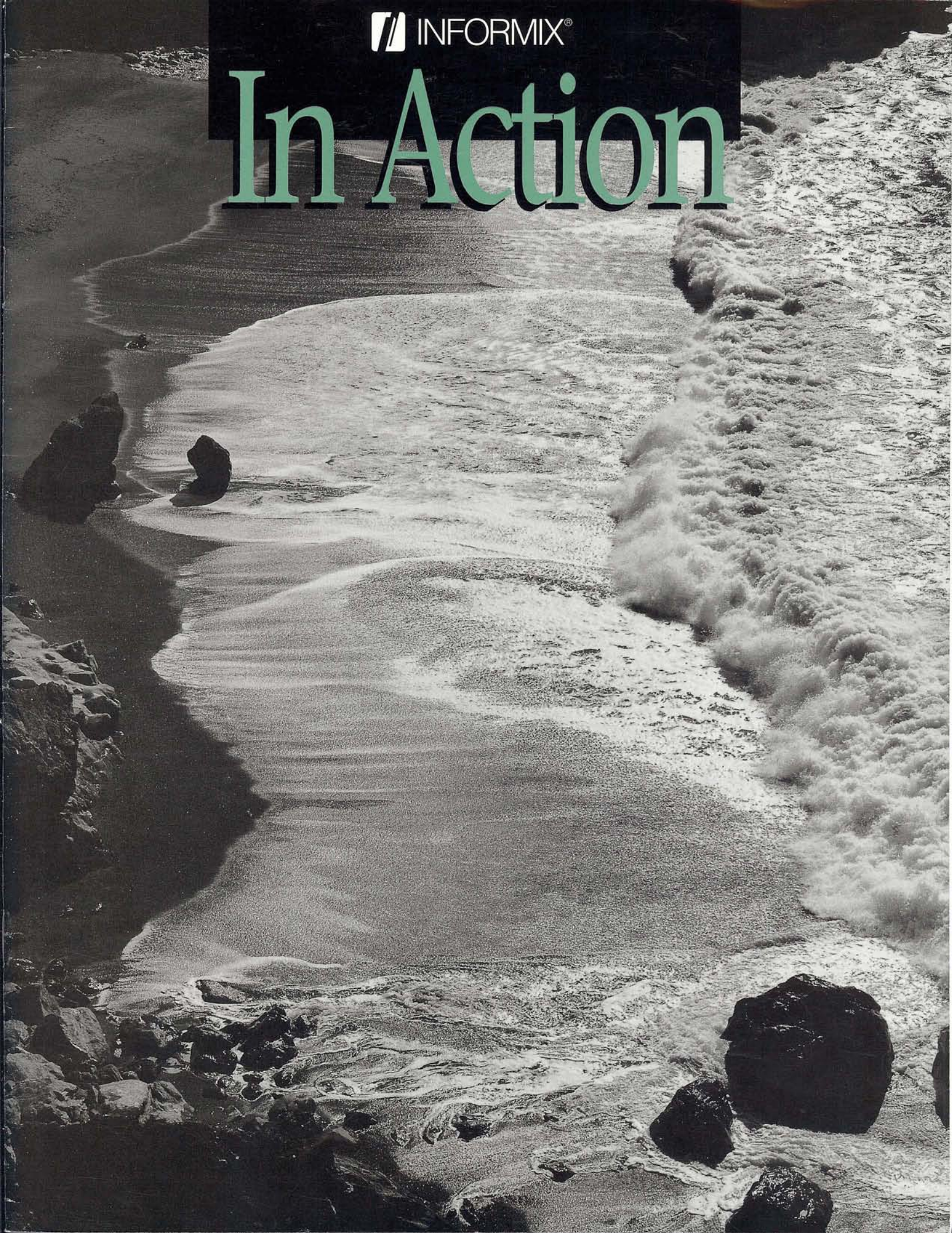


 INFORMIX®

In Action





About the Cover:

Nature's elements work in harmony to shape and define our world. Informix believes that technology must work in the same way to shape the corporate computing environment and offers the information management products you need to make that happen.

Photography by: Richard Garrod

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Welcome to *Informix in Action*. This biannual magazine focuses on Informix's leading role in providing information management solutions to organizations around the world. From health care to finance to non-profit, you'll find Informix's 12 years of experience in the UNIX® marketplace provides a competitive advantage — an advantage you'll want on your side when you're ready to build new UNIX-based applications or integrate UNIX into your current computing solution.

Informix's commitment to UNIX and open systems, for both decision support and on-line transaction processing, delivers our customers cost-effective software solutions driven by the latest technology and backed by industry standards. With Informix, customers can streamline operations and be confident that their business decisions are based on the latest and most pertinent information available because Informix builds tangible solutions for real problems.

As Informix continues to prove UNIX and open systems can meet the toughest information management challenges, *Informix in Action* will continue to showcase those worldwide successes.

A handwritten signature in black ink that reads "Phillip E. White". The signature is written in a cursive, flowing style.

Phillip E. White
Chief Executive Officer
Informix Software, Inc.

Informix and the Conferenza Episcopale Italiana

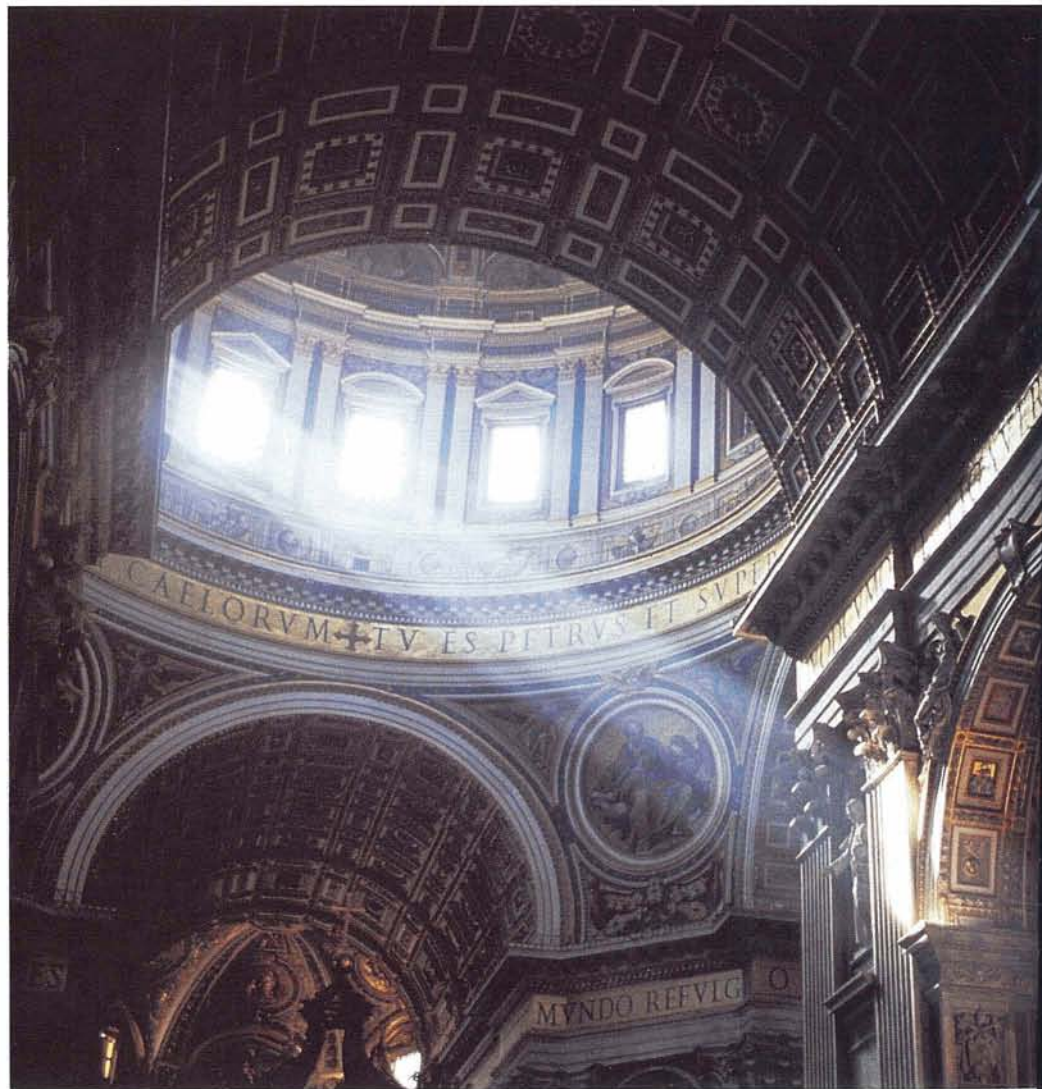
The Conferenza Episcopale Italiana (CEI), the Italian Bishops' Conference, is the coordinating body for 226 dioceses in Italy, and is automating Curial activities with 800 PCs running Informix software. The new systems increase strategic decision-making power by providing a structure within which to store and access current data, and tools with which to manipulate the data.

Industry: Non-profit

Hardware: Olivetti, IBM, Compaq, MIPS, Pyramid

Application: Catholic Church membership log

Informix Products:
INFORMIX-OnLine
INFORMIX-STAR
INFORMIX-4GL
INFORMIX-SQL
INFORMIX-NET
INFORMIX-NET PC



Islands of Information

The Catholic Church, with over 35,000 dedicated people and more than 4,000 companies and institutions working under its jurisdiction throughout Italy has grown well beyond the size of many Fortune 500 corporations. Yet unlike most large corporations, the Church has been slow to embrace a modern day computing environment — many of the activities involved in the day-to-day operation of the Church are still handled with manual systems and those few operations handled by computers are seldom integrated or accessible. The result of these manual and isolated



systems has been the creation of islands of information without an integrated big picture.

The need to better access and control information, and a push to make the best use of current resources, triggered a serious evaluation of internal operating efficiencies.



Informix was chosen because it best met the demands for scalability, adherence to standards, and high performance.



Integrating Activities

In 1989, the Conferenza Episcopale Italiana looked to Informix relational database management system (RDBMS) software and the UNIX operating system to streamline manual tasks and increase information access for better decision-making capabilities.

As part of the computer system of the Italian dioceses project, now in the final stages of completion, the Italian Bishops' Conference introduced computers into various offices of the Curia via over 180 local area networks (LANs) and 800 PC workstations in the various dioceses.

Today, over 165 completed Informix-based applications answer a wide variety of information management needs for the chancery, administrative offices, the office of Catholic instruction, the diocesan caritas organization, and the diocesan telephone directory.

Specifically, the new Informix-based system automates Curial activities — particularly manual and repetitive tasks — and provides computer support for activities that benefit from relational technology.

These activities include data processing, analysis, projections, and planning. For the CEI, the new systems provide valuable insight into operations and resource utilization.

The Informix Decision

After a lengthy evaluation process, Informix was chosen because it best met the demands for scalability, adherence to standards, and high performance.

Informix's scalability was a key selling factor. Because the size of the dioceses varied, Informix allowed the CEI to choose one database that would run on the different hardware and operating systems at the various offices. DOS was the best solution for smaller dioceses — approximately 60 of the 226 dioceses — and Intel and RISC processors running UNIX were chosen as the hardware platform for the larger offices.

As the CEI's applications grow and change, their commitment to Informix and open systems makes it easy to expand their system. Informix's adherence to industry standards and active role in the development of future standards gives the CEI hardware independence and access to accepted protocols.

High system performance has been achieved by using INFORMIX-OnLine, Informix's powerful, high performance, on-line transaction processing (OLTP) database server for the UNIX operating system. The CEI uses OnLine's multimedia capabilities to store images as binary large objects (BLOBs) for education, publications, and training purposes.

The Future

It is clear that these new Informix-based tools increase the value of the information at hand — by making it accessible and providing new ways to process it. In practice, the systems provide new levels of complexity that were otherwise unattainable, in turn, increasing work quality without additional expense. ■

Informix Offers Marie Callender's A Bigger Slice of the Pie

Marie Callender's, a leading family-style restaurant chain with 161 stores in the United States, has implemented a UNIX-based sales tracking and inventory control system using Informix RDBMS software. The Informix system has improved Marie Callender's competitive position by allowing the chain to more accurately track customer preferences and by creating greater consistency among the restaurants through centralized product ordering.

Industry: Retail

Hardware: AT&T, IBM

Application: Sales tracking, inventory control

Informix Products:

INFORMIX-OnLine
INFORMIX-4GL
INFORMIX-ESQL/C
INFORMIX-SQL

Competition in the family-style restaurant business today is fierce. Consumers can choose from among hundreds of restaurants, from fast food to sit-down, from Chinese to American to Italian.

"Consumers have so many choices in restaurants that we have to



provide them with strong reasons to return," says Jon Alder, Marie Callender's director of information services. "The restaurant has to be convenient and the service and quality of our food must be exceptional. Otherwise, people won't come back — it's that simple."

Marie Callender's, founded in Long Beach, Calif. in 1947 as a wholesale pie bakery, today has 161 stores in 17 states. The company serves the high end of the family-style restaurant market and in 1990 had annual sales of \$246 million. But with

increased competition in the 1980s, the company began looking for new ways to improve its customer service and therefore maintain a loyal customer base.

Basing Menu Choices on Hunches

Perhaps the most critical issue that faces Marie Callender's is determining customer preferences.

In the past, Marie Callender's determined menu items using "gut feeling and guesstimations," says Alder. "When our people sat down and decided menu selections, they

essentially didn't know what was going to sell and relied solely on intuition. Then they'd wait to see whether their guesses were correct or not. It wasn't a very scientific method."

Decentralized Ordering

Marie Callender's also suffered from a lack of consistency from location to location.

"Before we installed the Informix system, a restaurant manager couldn't know about the current day's pricing, or even product quality," says Alder. "Therefore, he was dependent on his vendor account representative to take his order and make substitutions for the best product for that day. If you think about it, that's pretty risky — Marie Callender's was dependent on a person who didn't work for the chain to make important product choices."

In addition, decentralized ordering omitted Marie Callender's corporate office from the ordering loop. Corporate was therefore unable to track buying patterns to determine customer preferences or to combine orders to obtain discounts from its vendors.

Informix Transforms Operations

In 1990, Marie Callender's installed Informix RDBMS on an AT&T UNIX minicomputer at corporate headquarters and on DOS-based PCs at each restaurant. By collecting data from each restaurant with the Informix RDBMS and uploading it periodically to corporate headquarters, Marie Callender's has made tremendous gains in three areas:

- understanding customer buying patterns to more accurately determine menu selections;
- creating consistency across all restaurants by centralizing product ordering; and
- taking advantage of vendor discounts by purchasing items in bulk.

Customer Preferences

Using INFORMIX-4GL, Marie Callender's wrote the menu-mix reporting application. This sales

reporting tool allows the company to eliminate "guesstimations" and to base food selections on concrete feedback. Store managers key in the number of entrees sold daily. Once a week, the stores upload this information to corporate where it is consolidated and used to generate reports that detail customer preferences.

"We now have a much better idea of what our customers like," says Alder. "The reports detail exactly which menu items are selling and which aren't. We then use this information to create new entrees and menu items that more accurately reflect what our customers want."



INFORMIX-4GL's flexibility makes it easy to write complex applications very quickly.



— Jon Alder —

Centralized Ordering Assures Consistency and Cost Savings

While Marie Callender's serves a higher-end market than McDonalds, the company believes it could learn something from McDonald's about consistency — a Big Mac in California tastes remarkably similar to a Big Mac in New Jersey. Customers are assured that they will get the same product regardless of location.

Informix is helping Marie Callender's to achieve a high level of product consistency. All ordering is now handled through the corporate office using Informix. This allows Marie Callender's, not its vendors, to determine the highest quality product at the best price.

"Today, if my food and beverage department says that this week there's a special on a very high-quality cheddar cheese, we can provide that to our restaurants," says Alder. "Before, we were dependent on the distributor. And because we have centralized the

ordering process, an entree in Los Angeles will have the same ingredients as an entree in San Francisco — providing customers with consistency.

"Also, because corporate is buying items in quantity, I now know when I am x number short to get a \$100,000 discount. Therefore, we can order that extra number to make sure we get it."

Informix Tools Accelerate Application Development

According to Alder, Marie Callender's would never have automated as quickly as it has were it not for the INFORMIX-4GL development environment.

"In the last year, we wrote a tremendous amount of software with INFORMIX-4GL. INFORMIX-4GL's flexibility makes it easy to write complex applications very quickly. FourGen's tools were also fantastic. These products have helped us a great deal by ensuring that everybody writes consistent code. When I came to Marie Callender's we had six computer users. Now, four to five hundred employees use a computer — everyone from the cooks to restaurant managers to corporate personnel."

Informix portability and support of UNIX has also contributed to Marie Callender's success. The openness of UNIX provides Marie Callender's the freedom to purchase computer products at the lowest prices. And Informix portability allows the chain to run Informix under UNIX at corporate headquarters and under DOS in the restaurants.

Remaining Competitive

Today, Marie Callender's is in a strong position. It better understands what its customers want; it delivers a consistent, high-quality product in all of its restaurants; and it takes advantage of large discounts on food supplies — discounts it has never before received. The cumulative effect is a company that is well-prepared to compete in the restaurant business of the 1990s. ■

The Salzburg Savings Bank Saves with Informix

The Salzburg Savings Bank, with almost 30 billion Austrian shillings in assets, is using a sophisticated information management solution from Informix to attract investors by offering a full line of custom financial services and keeping operating expenditures to a minimum.

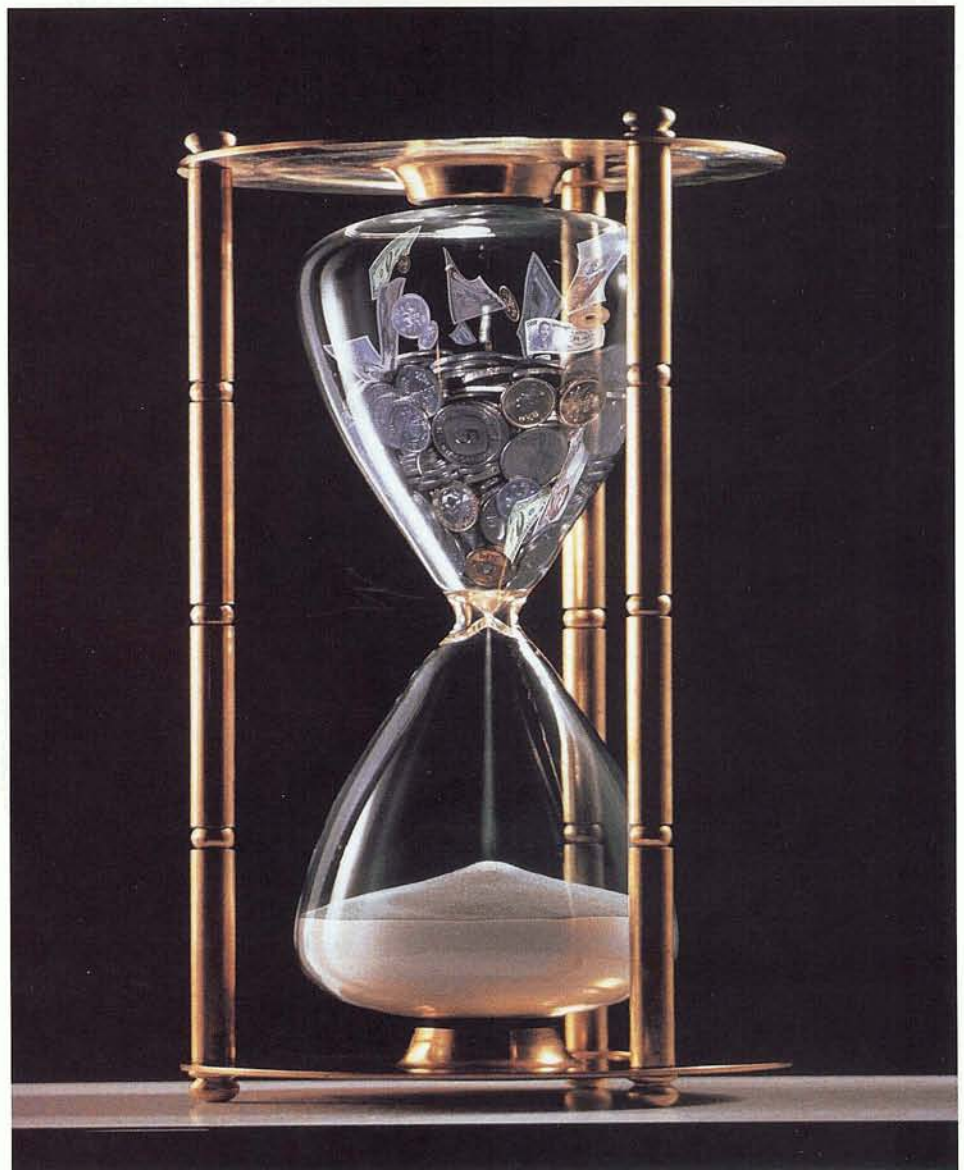
Industry: Finance

Hardware: Philips

Application: Financial services

Informix Products:

INFORMIX-SE
INFORMIX-4GL
INFORMIX-SQL



With the lowest interest rates in years and pessimism about a quick economic turnaround at an all time high, the 1990s have been a trying time for financial institutions. In order to survive in these difficult times, banks must keep a close check on internal expenditures while continuing to attract new customers. Yet, in order to woo hard earned money away from would-be investors, banks must perform more than at any time before: they must provide personal and comprehensive services with admirable results.

Ahead of the Curve

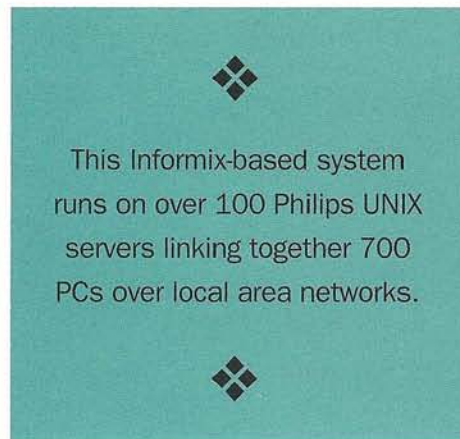
With over 100 branches, a staff of over 1,000 employees, and a balance sheet total of almost 30 billion Austrian shillings, the Salzburg Savings Bank is a major force in the European financial community. To keep this strong position, the Salzburg Savings Bank is building an integrated information management solution based on Informix software.

This Informix-based system, built by the organization and data processing experts of Salzburg Savings Bank in conjunction with Philips, runs on over 100 Philips UNIX servers linking together 700 PCs over LANs.

The new system streamlines internal operations by bringing previously manual tasks on line and integrating isolated groupings of data. Today, all business areas such as checking and savings accounts, loans, securities, insurance, and real estate link into one central computer system. This integration means that all traditional banking functions — including repayment plans, investment advice for securities, real estate agency activities, and private on-the-spot loans — can be run from any PC on the system.

Equally important to the automation of tasks is the flexibility the Informix system provides for answering specific customer requests with

great accuracy. With INFORMIX-4GL, Informix's fourth-generation programming language (4GL), the Salzburg Savings Bank can easily change its applications as its customer's needs grow or change. Running specific reports is also much easier with INFORMIX-SQL's built-in reporting capabilities. The accessibility of information, the new tools with which to manipulate it, and the reliability of the data affords the Salzburg Savings Bank's customers greater service and admirable returns on their investments.



The security of the database is ensured with a complex authorization system that restricts access to specific kinds of data. Only members of the staff permitted to perform designated transactions are given codes — limiting access and safeguarding confidential information.

Informix Advantages

Previously, the Salzburg Savings Bank was operating with automated systems that were difficult to use and modify. As a result, information was not easy to access and was seldom integrated or up to date. The new Informix-based system solved these problems.

Convenient menus combined with built-in help panels allow users to complete over 1,200 different transactions directly from the menu system. The Salzburg Savings Bank has

reduced training fees and learning curves because the new interface written in INFORMIX-4GL makes inexperienced users comfortable working with the sophisticated database system. And a uniform desktop interface, common to all applications as well as a UNIX-oriented development environment, makes it easy for users to move from one application to another without additional training.

In finance as in many other industries, up-to-date information is a critical requirement. Accounts must reflect all completed transactions. Applications must incorporate current market prices and exchange rates. With Informix, reliable on-line information is a given. INFORMIX-SE updates database records immediately without the delays of batch systems. Salzburg Savings Bank has also reduced database administration expenses dramatically with its new system because of INFORMIX-SE's minimal maintenance requirement.

With the help of Informix products, the Salzburg Savings Bank can keep operating costs at a minimum and provide the flexibility needed to adapt to changing customer requirements in the future. ■

Informix in Swedish Health Care

New computing systems based on Informix software are increasing the operating efficiency of health care in western Sweden by increasing the flow of information between 11 hospitals and 160 clinics and, in turn, improving the treatment of over 9,800 patients every day in Göteborgs sjukvård and in Älvsborg by making patient and treatment information easily accessible to doctors, nurses, and hospital administrators.

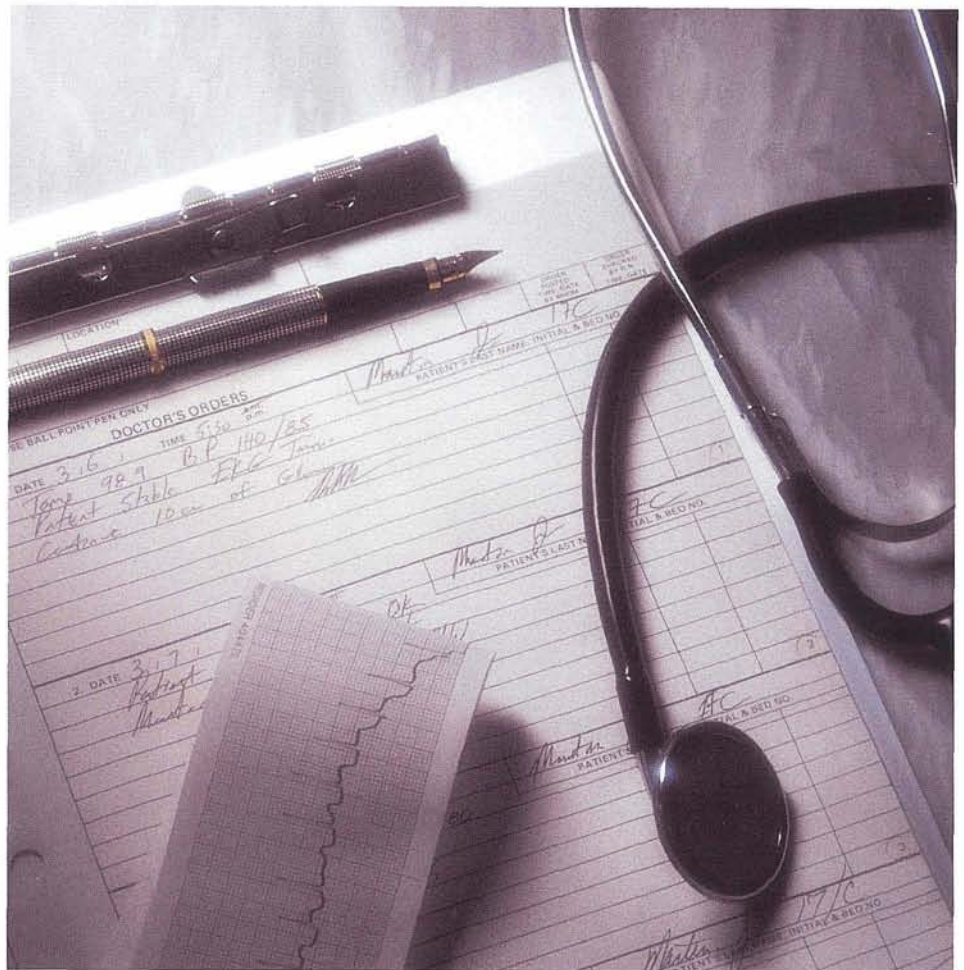
Industry: Health care

Partners: ÖstgötadataAB, IDK Frontec, ADB-Kontoret, ApplitronAB

Hardware: Hewlett-Packard

Application: Patient tracking and others

Informix Products:
 INFORMIX-OnLine
 INFORMIX-4GL
 INFORMIX-STAR
 INFORMIX-NET



The Swedish health care system integrates primary hospitals and specialized centers to create a network of patient referrals to various specialists. Though not strictly required, referrals reduce service fees and often expedite processing when patients visit hospitals, clinics, and specialists. Each referral, accompanied by the patient's medical record, often re-

quires multiple appointments, often with several doctors, sometimes even at different locations. The result of this complex web of interactions is a high-maintenance, paper-dependent system.

Swedish politicians have placed pressure on the county councils — the organizations responsible for the administration of Sweden's health

care — to save money while simultaneously improving the quality of patient care. To meet these seemingly opposing demands of greater cost efficiency and improved patient care, many of Sweden's county council's have taken a new approach to health care — one that moves decision-making power away from a central operating body by distributing patient information on line to all levels of health care workers.

Informix Helps Meet the Challenge

"In order to meet these challenging goals, we needed a computer system that connected different organizations with one another and made accurate and reliable data available to all levels of health care workers," says Jan Persson, chief information officer at Göteborgs sjukvård, the health service in Gothenburg, Sweden.

For Älvsborg and Göteborgs sjukvård, cities in western Sweden, the current computer systems fell short of this integration. Göteborgs sjukvård had an outdated system in operation and the county council in Älvsborg had individual PCs that handled parts of each operation — but provided no activity overview.

Both organizations knew they needed an improved information management solution and looked to Informix for an answer. The county councils in Älvsborg and Göteborgs sjukvård are now making substantial investments in computer support for hospitals, clinics, and local health care centers. One such investment is in INFORMIX-OnLine, Informix's high-performance OLTP database server for the UNIX operating system.

Quick Decisions

The installations began operating in the fall of 1991, and in Älvsborg the system is already distributed over 15 units. Both at the county council in Älvsborg and at Göteborgs sjukvård, the project is still in development.

Developed with INFORMIX-4GL, the new systems used by the county council in Älvsborg and Göteborgs sjukvård "provide a good

level of security and allow users to develop and adapt systems quickly," says Bengt-Göran Olausson, director of Älvsborgdata, an independent consultant to the county council. "Plus the Informix products are solid and accessible."

The new Informix-based system makes appointments, keeps financial accounts, and tracks medical records and referrals. Although the actual medical records are not stored in the database, the system does contain information on the record location.

"The system achieves both of our goals: greater efficiency and better patient service," says Olausson.

With the new system, an office administrator can check the status of a referral or the time of a doctor's appointment quickly with just a few key strokes — patients get the answers they need without delay and the staff spends less of their valuable time digging through files and more time working closely with the patients. It's a "win-win" situation.



The system achieves both of our goals: greater efficiency and better patient service.



— *Bengt-Göran Olausson* —

Less Paperwork

Göteborgs sjukvård and the county council in Älvsborg are linking the local health care centers to the patient clinics. As early as next year, it will be possible to send patient information over the public telenetwork from health care centers to clinics. This link will dramatically reduce the paper flow between the two levels of health care and prevent duplication of data entry.

Göteborgs sjukvård has developed other applications based on Informix to increase the operating

efficiency of health care services. One such application is a complete system for blood banks, including routines for bottling, blood analysis, and processing results. Administrative routines are also available for handling the storage of blood.

Another Informix-based application offers assistance to physicians when prescribing medication. The system contains information about each drug's side effects and how drugs interact.

A third Informix-based system streamlines operations in the pathology laboratory.

Confidentiality is Key

"With the importance of privacy in medical care, the new system offers security advantages that surpass those of paper systems," says Olausson. "It's impossible to get the same degree of security with paper circulating throughout a department."

With the Informix system, only certain staff members have access to confidential information because passwords and other security measures provide a considerable degree of control.

The Future

Göteborgs sjukvård is sharing experiences with Informix users at the Chicago, Ill.-based Rush Presbyterian, St. Luke's Medical Center.

In the near future, Göteborgs sjukvård and the county council in Älvsborg are both interested in integrating the Wingz® spreadsheet into their applications.

"Wingz is a very interesting product for the future of Swedish health care," says Olausson. "With Wingz you don't need any programming expertise to get information from the SQL database. A clinic chief can use Wingz, for example, to get patient statistics or do team analyses within a friendly point-and-click environment. Wingz, just like the rest of the Informix software, will continue to help us spend less time on health care administration and more time with the patients." ■

Vernons Hits the Jackpot with Informix Software

Informix has helped Vernons Pools save millions on its OLTP system.

Industry: Entertainment/
Leisure

Hardware: Pyramid

Application: Coupon and
dividend processing

Informix Products:
INFORMIX-TURBO
INFORMIX-4GL
INFORMIX-SQL
INFORMIX-ESQL/C

Who says systems written with 4GLs are slow? "The response we get from our Informix system is virtually instantaneous, around 300 milliseconds per transaction," says Bob Johnson, operations director for Liverpool-based pools giant Vernons. He continues: "That's just as fast as the system we replaced — staggering when you consider that we've gone from assembly language to a 4GL."

The Vernons' experience conclusively demonstrates the advantages of using Informix products to build your OLTP applications. You can get not only a shorter development path but also a flexible, reliable, and fast-running end result.

Speed is of the essence in a business like Vernons', which entails processing a huge volume of data within demanding time scales.

Vernons' customers gamble on the outcome of soccer matches, either by submitting weekly predictions, or by placing a standing entry for a period of several weeks. Vernons processes two million coupons in two days.

Throughput peaks at around 300 transactions per operator per hour, with around 90 data entry terminals simultaneously on the go. The punters' bets are usually machine-read from their coupons, but other data, such as names and addresses, is keyed in.

The system has to handle all aspects of the business: not only the input of the entry forms, but also the identification and payment of winners, plus all associated accounting. Football games are played at weekends and winners' dividends are paid by the following Thursday.

For many years all this work was done on a mainframe computer, using programs written in assembly language. The system relied on a purpose-written file-handler, since the development had predated off-the-shelf file-handlers. This old system was serviceable but, by the late 1980s, it was difficult to maintain. There were also worries about its capacity, given the problems of upgrading an obsolete model. The only answer was to re-engineer the system.

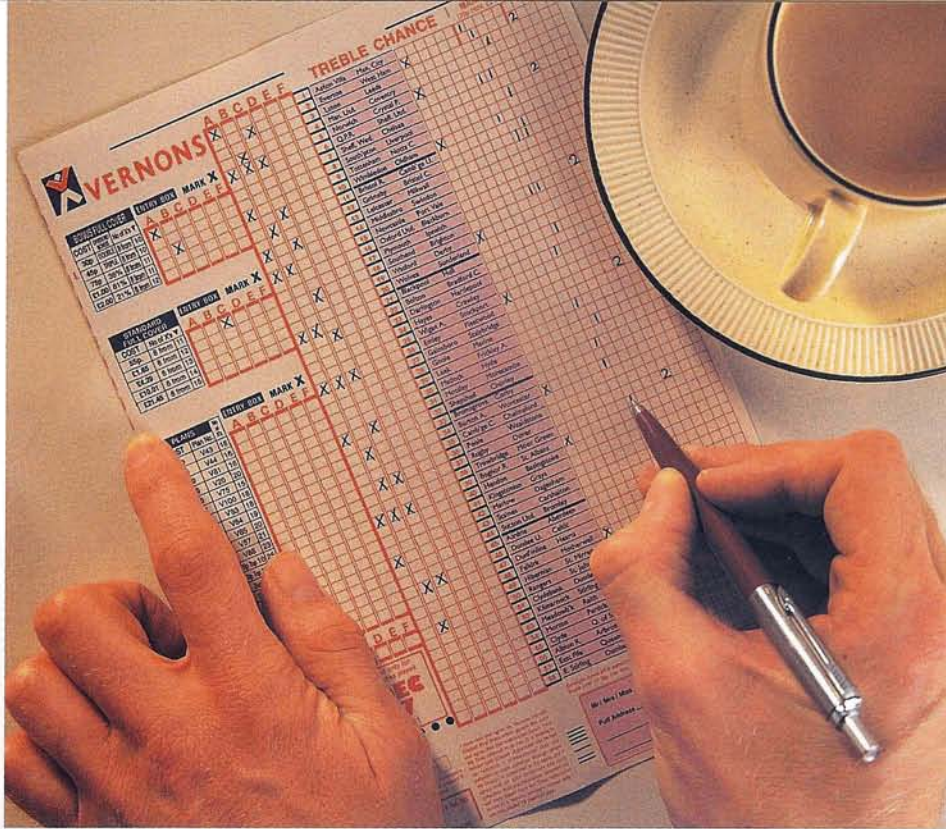
For the new system, Vernons decided to take advantage of the latest RDBMS technology. Such an ambitious project needed all the development shortcuts it could get, so a 4GL

was also on the shopping list. And the company recognized the redevelopment as an opportunity to break away from the stranglehold of proprietary systems.

Accordingly, Bob Johnson reviewed the open systems market for a suitable development medium. Informix is one of the few vendors to offer an efficient OLTP environment under the UNIX operating system. Its SQL-based INFORMIX-TURBO RDBMS, designed specifically for OLTP was the obvious choice for Vernons, and now provides them with an easy migration path to INFORMIX-OnLine, Informix's second-generation OLTP database server.

The application software was mostly written in INFORMIX-4GL. Some routines which are particularly performance-critical are written in C, taking advantage of INFORMIX-ESQL/C. This allows the developer to embed commands in the standard RDBMS access language, SQL, into both program code written in C or another general-purpose third-generation language (3GL), so as to get the best of both worlds.

Vernons' sizeable development project was completed within 18 months by a team of six. "There was no need to recruit any new staff or buy in any expertise, and the retraining requirement was by no means prohibitive," says Johnson. "The 4GL was easy to learn. C took a bit longer, but if you have a grasp of another programming language you can pick up C



end on the Pyramid. Informix products will let us do this with minimum disruption," says Johnson.

Apart from its cost-effectiveness and flexibility, the Informix system gave Vernons another important bonus. In the old system, there had been no facility for ad hoc reporting. If a manager identified a new information requirement, there was nothing for it: a programmer would have to be called in to develop a new assembly language program, a task which could take anything up to six weeks. Now thanks to Informix's comprehensive reporting facilities, managers can find out what they need to know, when they need to know it.

Steve Roberts is a projects manager with responsibility for helping other Vernons managers specify their new information requirements. He says, "With the mainframe, every time I used to go and see Bob about new requirements, it was a case of, 'The answer's no, what's the question?' Now the answer's always yes."

A new report or enquiry rarely takes more than a day to complete, so the application backlog is a thing of the past. "It's easier now to see what data is available within the system, and design your query accordingly," Johnson says. "And facilities like the SQL editor help with the construction of test data."

A cool three million in five years: that's what Vernons expects to save from its Informix-based open systems strategy, compared with the cost of an equivalent mainframe solution. Added to that, the improved management information has a value which can't be quantified in money terms. Today, managers like Roberts find it difficult to imagine how they'd survive at all if they were still subject to the limitations of the old system.

Johnson's advice to anyone hesitating on the brink of the proprietary-to-open-systems divide is, "Don't be frightened, get on and do it. Our experience shows that, with adequate planning and tuning, there are no performance disadvantages, and there's certainly an extremely good financial case." ■

without much difficulty. As regards SQL, the main thing is to grasp the RDBMS concepts: after that the syntax is straightforward."

Lengthy parallel running of the old and new systems wasn't feasible with such a high transaction volume. Anyway, it was unnecessary: the team had carried out a carefully planned and exhaustive system test (helped along by INFORMIX-SQL's query facilities), and therefore felt confident enough to go for a "big bang" implementation. Their confidence was justified by events.

"We've had very few problems since the changeover in August 1990," says Johnson, one year on. "We have done some performance tuning mainly of our SQL, but we have been able to achieve all of that in-house. There are no bottlenecks on our system now." The team took advantage of the performance monitoring and tuning tool set which came with the Informix RDBMS.

Vernons runs its system on one of the high-performance UNIX boxes from Pyramid, the MIServer 12/04. The configuration is highly resilient, as it needs to be for this application: all disk updates are mirrored on another disk, and the main computer can survive the loss of one of its four parallel processors.

In another part of the same building, separated off by hefty fire shutters, there is a second Pyramid, an MIServer 4/01, which is used for development and back-up. The two Pyramids, the 110 production terminals and PCs, and a further 25 development terminals, are linked to a single LAN. In the event of a disaster, such as a fire, the production terminals and PCs can swiftly be switched from the production machine to the back-up machine.

Vernons' management now has the reassurance of knowing that the new system can grow smoothly in line with its business. There is already the processor power to accommodate more terminals, and the Pyramid MIServer can be upgraded from four to as many as 12 parallel processors should the need ever arise.

On the software side Johnson is planning a step up from INFORMIX-TURBO to OnLine, Informix's latest and most powerful RDBMS server, in the near future. "All our existing executable code will run under OnLine. And it offers us further opportunities in areas like performance tuning."

A longer term strategy will modify the system to conform to a client-server pattern. "We'll move the front end on to PCs and leave the back

Società per la Pubblicità: Making Headlines with Informix Software

The Società per la Pubblicità in Italia (SPI), the Association for Advertising in Italy, has 34 offices located throughout Italy. Each office can access over 500 common applications and exchange information with the other offices, through a distributed computer solution based on Informix software.

Industry: Advertising

Hardware: Compaq, IBM

Application: Sales tracking, accounting, and others

Informix Products:
 INFORMIX-OnLine
 INFORMIX-SE
 INFORMIX-STAR
 INFORMIX-4GL
 INFORMIX-NET
 Wingz



A Flexible Giant

In 1886, the SPI had its first contract with the *Gazzetta Piemontese*, which later became *La Stampa* of Turin. Today, with earnings of 450 billion lire, SPI is the largest, independent advertising distributor in Italy that sells advertising space in press publications.

SPI has expanded to 34 Italian offices, including 12 branch offices, 13 affiliates, and nine subsidiaries. Each office monitors the actual publication of the advertisements and stores this information on line creating a client and media portfolio for each sales representative. The on-line system also records information about

regulations, discounts, and commissions. Yet, because the SPI offices were operating on independent computer systems, there was no way for the offices to easily share this valuable information or send daily totals to the headquarters.

The Courage to Innovate

With a commitment to create a system that would allow SPI to access and share information from the different offices, SPI decided to sidestep the route of a large mainframe and local or remote terminals throughout Italy.

Instead, SPI chose a more innovative architecture that fully incorporates the open system and distributed database philosophy. That decision is now paying off for those who promoted and supported it.

Informix is at the heart of the system, which consists of Compaq SystemPro PCs that function as central UNIX servers and drive a large number of PCs tied to a local or geographical network.

An Open Structure Oriented Towards the Future

Sergio Orthmann, director of organization for SPI, planned and implemented the company's new Informix-based system.

"When we were faced with the need to choose a computing environment to grow with," says Orthmann, "we chose INFORMIX-4GL because of the extremely advanced characteristics of its language which I feel is the most suitable for working in a UNIX environment.

"My programmers have found INFORMIX-4GL fast and easy to use," says Orthmann. Its structure and logic allowed for fully autonomous development of a software series that now includes some 500 applications, while the flexibility of the language ensures the development of a uniform interface across all of the work tools that the company currently uses.

"We used the INFORMIX-4GL Rapid Development System to develop procedures which would then be compiled into INFORMIX-4GL code," Orthmann says. "It was extremely productive and efficient."

Today, more than 90 percent of the software used at SPI is written in INFORMIX-4GL allowing offices to share information, including a mailing list of more than 170,000 customer names which is the most important part of SPI's computer files.

Towards a Comprehensive Client/Server Environment

Initially, data management was handled by INFORMIX-SE, Informix's SQL-based database server ideally suited for small- to mid-range application environments. Now INFORMIX-OnLine, Informix's powerful OLTP database server has been introduced in some offices to meet more demanding computing requirements — the applications were easily migrated from INFORMIX-SE to OnLine.

cutting edge of technology guarantees our future growth with Informix and open systems," Orthmann says.

Tools to Support Decision Making

To provide easy-to-use tools to support decision making for top management, SPI turned to Wingz, the graphical spreadsheet from Informix. With its very advanced graphic tools and HyperScript®, its event-driven programming language based on English-like syntax, Wingz is the ideal tool for transforming SQL data into easy-to-understand information in a client/server environment.

"It only took a week from the time Wingz HyperScript was introduced at the office until I got the first functioning application," says Orthmann. "I came to appreciate the very rapid development time it provides. We are so pleased, we intend to include Wingz HyperScript in our future development plans.

"Recently we also did some test installations using INFORMIX-STAR, distributed database connectivity software, and we got substantial performance gains," says Sergio Orthmann. "INFORMIX-STAR promises to play an important role in allowing our offices to work more closely with one another."

The overall picture that emerges of SPI is one of a company that has been able to expand its information management tools as its own demands have increased, without creating bottlenecks, and guaranteeing the best possible capacity for future growth. ■



Given its advanced characteristics, INFORMIX-4GL is the most suitable language for working in the UNIX environment.



— Sergio Orthmann —

"We look forward to implementing OnLine's sophisticated functionality, including the BLOB capabilities, which will allow us to store entire documents and scanned images as we would any other data in the database record. Informix's push to stay on the

Informix Software Helps DHL Deliver

DHL Worldwide Express, a world leader in the air express market, is implementing a UNIX-based, worldwide package tracking system based on Informix RDBMS software. This high-volume, OLTP system facilitates and speeds the flow of information throughout DHL's global network. Developed by DHL Systems Inc., the system expedites the movement of packages through customs, and improves service to customers by enabling DHL personnel to quickly determine package locations and expected arrival times.

The International Air Express Market

In 1990, DHL delivered more than 40 million packages to 180 countries. Each day, packages were carried on over 1,750 flights and 550,000 customers were served. DHL's express network of offices is one of the largest of any multinational organization, spanning more countries than either Coca-Cola or American Express.

Founded in 1969, DHL created the international air express market and is now a leader in this area. What began as a small operation to help ship owners speed their cargo through customs has mushroomed into a company that services 55,000 communities around the world.

Industry: Shipping

Hardware: Hewlett-Packard, IBM, NCR, and Pyramid

Application: On-line package tracking

Informix Products:
INFORMIX-OnLine
INFORMIX-4GL
INFORMIX-ESQL/C
Regency Support®

Today's air express market, however, is vastly different from that of 1969. Intense competition, greater demand by customers for quicker service, and rising fuel costs are a few of the critical issues DHL faces as it seeks to maintain its leadership position.

Information as a Strategic Asset

In the mid-1980s, DHL recognized that one of its most strategic assets — information — would be critical to remaining competitive in the 1990s.

According to Len Hanlock, DHL's chief information officer, "DHL is very dependent on information to deliver a product. International shipping today requires that you work closely with customs to move information ahead of the package. That's the key to fast delivery. Because if

you lose information, customs may hold your shipments. And they won't simply hold one package — they might hold a container full of packages. Also, timely and accurate information enables us to track our customer's packages so we can provide immediate responses to inquiries. For DHL it's crucial that we have very, very reliable information systems."

Older Proprietary Systems Ineffective

When DHL analyzed its information systems in the mid-1980s, the organization determined the systems needed a major overhaul. DHL's information network consisted of many proprietary computers, including IBM System 36 minicomputers throughout much of the world, an IBM 3090 for billing in the United States, a fault-tolerant Stratus computer for shipment tracking in the United States, and a variety of smaller UNIX and PC XENIX systems in smaller locations.

The structure presented a number of problems: first, because of the older design of the System 36 computers, information was transferred in batch mode, and therefore information was not as current as desired.

The proprietary nature of the computers also presented a challenge, especially in the area of flexibility. DHL is a highly decentralized organization and each office exerts strong control over its operations. For



A Visionary Decision: UNIX

In 1986, DHL made a decision that was both visionary and radical at the time: it committed itself fully to open systems and the UNIX operating system. The company made this decision at a time when UNIX had barely penetrated the commercial sector.

“Looking back, for an organization that was so dependent on information to make that decision in 1986 was incredibly foresighted,” says Hanlock. “I remember thinking that proprietary systems were in control and thought it would be a long, long time before UNIX would take hold. But that decision has positioned us well for the marketplace in the 1990s.”

DHL believed that UNIX would provide the organization with:

- flexibility. “We saw UNIX as the direction that would help us develop core systems, but would allow the local organizations enough flexibility to modify and adapt systems for their local needs,” says Hanlock. “UNIX allows each local office to use the vendor that provides the best platform and support, and UNIX provides the openness that local organizations need to develop local extensions to their systems.”
- portability. DHL could easily port applications across a wide variety of hardware, allowing hardware and vendor independence. Each office could choose the vendor that would provide the best support in that location.
- scalability. Each office could run its applications across a variety of platforms, from PCs to mainframes.

Equally as important in its adoption of UNIX was DHL’s commitment to a new computer architecture — one based on a distributed model and a relational database that would allow data to be shared among all offices in real time.

example, a DHL office in Senegal, with one major service center, has different requirements from the Italian operation with 17 major service centers and dozens of supporting stations. With proprietary systems, each office was locked into using one computer vendor and was therefore unable to rely on local companies and vendors to help develop local extensions and modifications.

Finally, because the size of each office varied, so did the performance needs for the individual office systems. Therefore, DHL needed a system that was scalable and allowed each office to determine its own performance requirements.

“

Informix is one of those decisions we’ve made that says ‘this is our standard’ and many of the systems that we develop will use the Informix database.

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— Len Hanlock —

Informix: A Key Partner

Today, DHL has begun to assemble the necessary infrastructure — operating system, relational database, communications, and applications — that will provide this distributed, real-time capability. A key partner in this effort is Informix.

“Informix is one of those decisions we’ve made that says ‘this is our standard’ and many of the systems that we develop will use the Informix database,” says Hanlock. “What we’re trying to do is develop an architecture so that the developers can focus on the applications and all other tasks are handled with standard interfaces and standard products. Informix is an example of that. It is our standard database management system and many of our key applications and communications software use this database system.”

Prior to selecting Informix, DHL used a relational database from another vendor but soon abandoned it. DHL felt that the company wasn’t as committed as Informix to the continued development of its database server.

“The main reason we’re staying with Informix is because of the company’s commitment to developing the functionality of the database,” said Hanlock. “As we grow and demand more from our database we feel comfortable knowing that Informix is in step with us and providing the features as we need them. In addition, DHL is a global organization and Informix has the capability to support our systems worldwide.”

Dave Pepper, manager of DHL Systems’ Data Services Group, is particularly pleased with the performance of INFORMIX-OnLine, Informix’s OLTP database server for the UNIX operating system. “Our databases are quite large and handle a

high volume of activity,” says Pepper, “and we’ve found that Informix has given us the robust environment that we need.

“The kind of problems Informix has handled well include the ability to archive large databases in a timely fashion, particularly OnLine’s ability to archive while the database is on line,” says Pepper. “OnLine also recovers well from system failures and provides the performance necessary to process our volume of data and still allow us to update and query the database.”

OnLine runs across a spectrum of UNIX hardware platforms deployed by DHL, including those from Hewlett-Packard, IBM, NCR, and Pyramid.



As we grow and demand more from our database we feel comfortable knowing that Informix is in step with us and providing the features as we need them.



— Len Hanlock —

Track and Trace

When fully implemented, OnLine will be at the heart of each DHL office’s *Track and Trace* application. This application will track the movement of packages and allow DHL to trace lost packages. At selected points along a package’s journey — at the originating office, selected hubs, gateways, and, ultimately, the destination — data

will be entered into the Informix database. With this information, DHL will be able to transmit data about a package before its arrival at customs. In addition, because of real-time transmission, a DHL representative will be able to query the database and provide customers with current status information.

“We’ve already seen improvements in our ability to serve our customers,” says Kyle Barriger, DHL Systems director of development support. “By being able to get to the data quicker, our personnel can provide a much faster response to customer inquiries.”

A Good Working Partnership

As DHL moves forward with the implementation of its distributed, relational database, the organization looks forward to a continued close working relationship with Informix.

“We see our relationship with Informix as a partnership,” says Hanlock. “When we have urgent problems, we’ve found Informix to be responsive to our needs. Informix’s support people and our technical people have established a good working relationship. I’m very satisfied with the support and the relationship that we have with Informix.”

This relationship, along with the continued evolution of UNIX and its acceptance in the commercial market, positions DHL well to maintain its leadership in the coming years. ■

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