



AGILE FOUNDATION FOR COMPETITIVE ADVANTAGE

Oracle Tuxedo Enables Speed, Innovation and Efficiency in Financial Services

Unrelenting competition is transforming the financial services industry, spurring firms to reinvent themselves to win customers and asset share. At the same time, organic growth, operational costs reduction, and risk and regulatory compliance remain among the most pressing issues facing financial institutions today. As financial institutions seek new ways to foster customer responsiveness, operational efficiency, and business agility, Oracle Tuxedo is ready to answer the call in banking, insurance, and capital markets.

Already the platform of choice enabling trillions of dollars of financial transactions daily across the globe, Tuxedo is now empowering financial institutions to transform their business and modernize IT infrastructure through innovative solutions to address their most pressing needs in banking, brokerage, trading and insurance.

Whereas other vendors lock you into costly proprietary technology, Tuxedo, now a key part of hot-pluggable Oracle Middleware, embraces open standards for maximum flexibility and interoperability, while continuing to deliver unmatched performance and scalability. Join the many financial service organizations that rely on Oracle Tuxedo for better transaction processing, low latency SOA-based business processes, and a superior ownership experience.

Rising Volumes of Payments and Financial Messages

The ongoing evolution in retail and wholesale payments markets is putting huge pressure on financial institutions and communities. The changes are primarily driven by two broad trends: accelerating movement from paper-based to electronic payments and the blurring of existing payment mechanism boundaries as payments system providers and users strive to meet new business requirements and gain competitive advantage.

Key Benefits of Tuxedo in Payment Networks

- **Decreased time to market** — Tuxedo allows payments service providers to concentrate on the functionality provided to the customer while relying upon the transactional and messaging capabilities of the Tuxedo infrastructure.
- **Reduced application development costs** — Choosing to "buy" rather than "build" a transaction and messaging engine has reduced the development costs of payment products.
- **Message formatting** — Tuxedo takes care of message formats by translating messages from heterogeneous platforms into the right format.
- **Message routing** — Tuxedo looks after message routing by identifying the type of message and routing it to the right service.
- **Reliability** — Tuxedo provides extremely high reliability for message transport and ensures transactional integrity.

The unprecedented growth in payments volume puts a premium on the scalability of the payments infrastructure and its efficiency, capabilities for which Tuxedo is well known in financial services industry. Leading wire transfer solutions, SWIFT payments gateways, and credit card/EFT switches have benefited from linear scalability and unmatched speed of Tuxedo infrastructure, supporting cost efficient growth as demand for payment services have skyrocketed. In US the acceleration of electronic payments was spurred by conversion of checks using the ACH or debit card networks and Check21 legislation enabling image-based presentment, which led to a five-fold increase in the number of electronic check images from March 2006 to January 2007.

In Europe, the Single Euro Payments Area (SEPA) project established the goal of harmonizing the billions of domestic and cross-border electronic retail payments made with cards, credit transfers and direct debits across Europe to reduce the cost and increase consumer convenience. With the implementation completed in 2007 the migration of cross-border and national payment systems begun in 2008 is expected to lead to 452 million SEPA consumers in Europe initiating over 100 billion non-cash payments a year by 2010.

As one major UK bank anticipated this demand they required their payments processing application to scale to more than a million transactions an hour. This application is responsible for processing the incoming and outgoing payment flows. In the incoming payments flow for checks/payments issued by the bank's customers issued to others, the payments are presented by other banks/clearing houses by creating a message on an incoming IBM Websphere MQ queue and are then processed by Tuxedo services, which update customer accounts in the Oracle database and create the confirmation message to be delivered via an outgoing MQ queue – all done as part of a single global transaction between MQ, Tuxedo services and the Oracle Database, leveraging two phase commit. In the outgoing flow for checks/funds which the Bank customers deposit to their accounts, customer accounts initially get credited with the amount kept in HOLD status and a payment message is sent to the other bank, which responds with its own confirmation message. Tuxedo processes the confirmation message and updates the customer account by changing the HOLD payment to account credit to make it available, or reverses the entry in case of NSF message.

The benchmark of the application scaled the infrastructure in steps from a single Tuxedo node to five, achieving over seven million transactions per hour. The results not only significantly exceeded customer's goals, but they also showed the application achieving 96% scalability – five node Tuxedo cluster delivered 4.8 times the performance of a single node. The Bank was assured that their payments applications can scale beyond current needs, and is prepared to meet the anticipated growth from SEPA and the UK's Faster Payments Service (FPS) with the transaction foundation that provides the speed and efficiency unsurpassed by anyone else in the market.

This is one of the reasons many of the leading payments software vendors choose Tuxedo as the foundation for their own services and software packages. Companies like Fundtech, Sterci, NEC, and Opus Software Solutions build on top of Tuxedo application platform to gain the scalability and robustness benefits and to simplify integration with Tuxedo-based applications and gateways deployed by banks and payments service providers. One of the top global inter-bank payments networks has delivered billions of messages over its Tuxedo-based gateways interconnecting thousands of banks with a robust centralized Tuxedo routing domain, and not one has been lost.

This inter-bank payment network has initially chose Tuxedo as a key part of its inter-bank payments infrastructure because it met their criteria for reliability and open systems conformance. Because Tuxedo provides a superior solution for inter-domain connectivity, and it is available on a number of platforms, it met the requirements of their vast inter-bank network of over 8,000 global banks with trillions of dollars in daily payment volume. As this payments network is now rapidly expanding to corporate customers, the scalability and interoperability provided by Tuxedo infrastructure has helped them to expand into the corporate market with a multi-bank solution for exchange of financial information (payments, securities orders, reporting) with the banks through one secure, standardized solution, as opposed to multiple connections to individual banks.

A different type of payments infrastructure requiring Tuxedo's scalability and flexibility is a credit card authorization switch. In many emerging economies, the growth in use of debit and credit cards has prompted build-out of national scale infrastructure to handle growing volumes of card users. While these types of systems have traditionally been built on mainframes, the capabilities of open systems have grown to the point where customers often compare mainframe and open systems-based approaches as they make key platform and application infrastructure decisions.

Not surprisingly, these comparisons often pit Oracle Tuxedo against IBM CICS or other mainframe transaction engines. For many customers these decisions involve price/performance tradeoffs based on infrastructure total cost of ownership (TCO) as well as IT flexibility and business agility. In a number of these comparisons, customers have chosen to build their new infrastructure on open systems powered by Tuxedo because of its speed and efficiency coupled with proven reliability and agile services framework that allows them to quickly bring new services to market.

A large national-scale credit card authorization system is a perfect example of Tuxedo going head-to-head with a mainframe and showing ability to deliver the required speed and reliability at a fraction of mainframe costs for initial acquisition and long term TCO. Initially required to handle 50 billion card transactions a year or about 3,000 per second, this system is one of the largest credit and debit card switches in Asia. Leveraging Tuxedo's clustering and load-balancing architecture it benchmarked at 13,500 transactions per second, assuring more than 400% growth capacity from the initial requirements. Its unified architecture with guaranteed service delivery links all national financial institutions and foreign banks and credit services into a single network with extensibility to the Web and mobile devices. In addition to providing a foundation for a unified switching and authorization framework in a scalable and open solution, Tuxedo and Oracle SOA technologies provided an extensible and agile platform that helped this organization deliver new financial services that help merchants and financial institutions to reliably and efficiently process customer transactions, manage risk, and discover actionable information related to those transactions.

Bank Renovation Through Multi-Channel Delivery

The competition for customers and their wallet share in retail and corporate banking has reshaped the banks approach to customer service and selling. Tuxedo has enabled many banks and other financial institutions to deliver a consistent customer experience across all channels, accelerating revenue growth while reducing cost-to-serve.

But how do you deliver seamless, consistent service —without gaps or delays—when resources are not readily shared across channels? How can you serve customers efficiently and eliminate the need for bank staff to log into different systems to access customer information? Tuxedo fulfills one of the most critical requirements in multi-channel delivery – integrated access to multiple Systems of Record for a unified, 360° customer view. Tuxedo provides a strong foundation to connect information and users across the enterprise – its robust interoperability with many legacy systems (including IBM, Unisys, Bull, and ICL mainframes as well as HP NonStop servers) and ability to coordinate global transactions across heterogeneous systems enables banks to easily adapt to support new channel and product initiatives, and satisfy new business needs.



Tuxedo Strengths in SOA

- Inherent services-based application style
- Native Web Services gateway (Oracle SALT) for SOA enablement of existing and new Tuxedo applications without rewriting to Java
- Bi-directional, transparent service invocation – calling Tuxedo services from web services and vice versa
- Bi-directional orchestrated heterogeneous messaging via Oracle Service Bus' Tuxedo Transport to all end points (JMS, EJB/RMI, REST, FTP, SMTP) with XA transactions

“We were impressed by the commitment of Unisys and BEA in working together to support the design requirements for this strategic customer-focused enterprise network.”

-- Dr. Enrique Grapa,
Banamex

One such bank leveraging Tuxedo is among the oldest financial institutions in North America, servicing the banking needs of millions of people for more than one hundred years. Over the past 124 years, Banamex has been a leader and innovator in Mexican banking. Banamex was the first Mexican bank to offer savings accounts, credit cards, international travelers' checks, and ATM machines. Along the way, Banamex has eagerly embraced automation and technology. To remain a vital, competitive institution by pursuing innovation, Banamex has Internet-enabled nearly every customer facing banking function. With Unisys consultants spearheading the effort, Banamex deployed Tuxedo, Tuxedo Mainframe Adaptors, and WebLogic Server to link its back-end systems for a unified customer view and provide customers with “anywhere, anytime” access to their account information and the bank’s entire suite of financial services.

Banamex’s e-commerce applications use an extended, multi-tier model that spans disparate hardware platforms, client input devices, and databases. Developing applications within this environment requires sophisticated messaging services to manage the flow of transactions as well as the coordination of application components. Tuxedo provides these services so that Banamex application developers can accelerate application rollouts and keep pace with hyper-dynamic Internet business requirements. Tuxedo also provides native Web Services gateway via Oracle Services Architecture Leveraging Tuxedo (SALT), which allows application architects to transparently integrate inbound and outbound Web Services requests with the existing Tuxedo application services to enable a broader integration with a myriad of modern devices used by customers to access banking information and services.

Bank Zachodni eBanking System

- Leader within eBanking in Poland – with one of the first eBanking solutions delivered to retail customers in 1999.
- 2006 Statistics: averaging 3M banking transactions/month through all channels of eBanking (web, IVR, WAP, SMS, home banking)
- 10M service calls/day (max 300/sec.) in eBanking
- Flexible three tier architecture allows for agile development
- Dozens of Tuxedo domains offering more than couple of hundreds Tuxedo services
- Very stable architecture
- Tuxedo-based main communication backbone
- Full integration with central system through Tuxedo

Half a world away, Bank Zachodni WBK Group is a leading bank in Poland in terms of asset size and market share. Leveraging Tuxedo’s robust messaging infrastructure to interconnect all of their branches with the central data center services was the initial reason for deploying Tuxedo, which also allowed them to interconnect with their credit card settlement system, Tuxedo-based investment funds portfolio management application, and variety of other financial systems. Having an integrated foundation for connecting with multiple Systems of Record, enabled them to take the next step and leverage Tuxedo and Jolt to build Poland’s premier e-Banking service.

This led to rapid market share growth, ability to offer new and innovative loan, asset management, and investment services, and supported the Bank’s active acquisition strategy. Leveraging the flexible and scalable Service-Oriented Architecture (SOA) built on Tuxedo helped the Bank to integrate acquired banks quickly and effectively. As the scope of integration needs grew, the Bank has recognized that ability to manage numerous point-to-point connections was becoming a gating factor in scaling their SOA and invested in Oracle Service Bus for its heterogeneous messaging, orchestration, and integrated management capabilities. The Service Bus provides Tuxedo Transport as one of its core end-points, which enables bi-directional connectivity between Tuxedo-based application services and heterogeneous end-points inside and outside the Bank.

This scalable, manageable SOA based on Tuxedo infrastructure for application services and Oracle Service Bus for orchestrating heterogeneous connectivity helped the Bank to continue growing at a blistering rate. In the most recent quarter, the Bank reported 10% increase in total income, including 30% increase in net interest income, driven by 30% year over year growth in customer deposits, 46% increase in total retail loan portfolio, and 37% increase in business loans.

Low Latency Application Infrastructure in Capital Markets

As the securities industry struggles to keep up with the relentless growth of electronic messaging rates and surges in volatility, low latency has become one of the main concerns and a crucial weapon in the battle for competitive edge. Due to growing volume of electronic and algorithmic trading on the sell-side as well as increased demands of hedge funds for client-hosted execution strategies on the buy-side, milliseconds matter. Some institutions have estimated that reducing latency by one millisecond can add up to over \$100M a year in incremental revenue.

Traditional latency concerns focused attention on networks and led to growing use of co-location facilities to shorten physical distances. Yet, recent tests by top-tier European investment banks have shown that the network's contribution to overall latency is insignificant at about 13% compared to applications at 65%. This puts a premium on reducing the complexity of applications and the integration of multiple data sources and pricing systems often required for routing and executing trading orders. Architects working to simplify the integration and reduce time-to-value through re-use would like to leverage the SOA approach. But traditional SOA middleware introduces significant latencies from many layers of software libraries, bloated data formats, and inefficient protocols – all of which adds to the milliseconds and microseconds that reduce competitiveness.



Oracle Tuxedo customers in capital markets have a hidden weapon – microsecond latency SOA platform that enables them to lead the market with robust, scalable, and services-oriented applications for trading, pricing, and customer services. Their Tuxedo-based systems provide some of the lowest latencies around, leveraging the low latency C/C++ execution environment, efficient message formats, in-memory inter-process communications using IPC queues, and built-in dynamic load-balancing that keeps application response times steady even when the traffic spikes. In a recent customer benchmark Tuxedo provided end-to-end response time of 4 microseconds for a blistering 250,000 transactions per second, increasing to 10 microseconds with database I/O included in the transaction. Tuxedo's microsecond latency capabilities have helped, for example, one of the leading Swiss investment banks to rise up to the challenge of nearly doubling transaction volumes, while also meeting the order execution and transparency requirements of the EU's Markets in Financial Instruments Directive (MiFID), which led to much increased data volumes.

Monitoring end-to-end transaction times and reporting SLA attainment has become a critical requirement in capital markets applications, and Tuxedo has delivered a new product component, Tuxedo System and Application Monitor (TSAM), that responds to this need. With TSAM, customers can monitor their Tuxedo-based online applications and related infrastructure end-to-end – from the time the request has entered Tuxedo environment, through multiple services, queues, nodes, and domains, until the final response has been delivered. Based on policy-controlled sampling of response times, TSAM provides SLA alerting for application requests, service activities, and transactions. In addition to application monitoring, TSAM also monitors the Tuxedo infrastructure, including throughput and utilization of Tuxedo servers and the health of Tuxedo domains, servers, gateways, and other components. TSAM alerts raise events in the Tuxedo Event Server, which enables user programmed services to be triggered on alerts, completing the loop from monitoring SLA objectives to automatically taking action when needed. For reporting and trend analysis users can view real-time and historical performance, query statistics on specific services or system components, and examine specific application patterns, including the service call tree and all system components in the path of a request.

Key TSAM Features

- Detailed application level performance monitoring
- Complete end-to-end view from client across domains
- Flexible monitoring policy and SLA management
- Open integration framework for customers and partners
- Centralized monitoring and control web console

In addition to a perfect platform for low latency applications, Tuxedo's services-based agile architecture significantly simplifies the integration requirements. For a number of Tuxedo customers, such as one of the consistently top ranked US online brokers, this combination helps to rapidly increase capacity while offering new value-add services to online investors. Leveraging re-usable components in Tuxedo-based SOA, this broker can develop new innovative services in days, and roll them out on top of the robust, performant, and scalable infrastructure that assures low latency and consistent results. The speed of their web site consistently ranks at the top of the broker scorecards published by independent analysts providing competitive benchmarking of online brokers' web sites. By providing guaranteed execution times and rolling out new innovative services, such as mobile trading solution and online global stock trading in foreign markets using local currencies, this customer grew the volume of trades 390% over two years, increasing sequentially 9.2% in the most recent reported month, while adding nearly 200,000 more retail accounts than they had a year ago.

Tuxedo Strengths in XTP

- Recognized as the leader in non-mainframe high volume transaction platforms reaching performance in excess of 100,000 transactions per second
- Built to scale from the ground up with linear horizontal and vertical scalability
- Broad range of multi-channel communications support with traditional (ATMI, CORBA, MQ) and SOA (WS, ESB) channels
- Dynamic request routing based on load or request data
- Linear scalability in grid implementations
- Mainframe-class management and end-to-end monitoring in distributed, heterogeneous environments

Another Tuxedo customer, a leading US and international provider of financial services and investment resources with over \$1.9 trillion in client assets under management, has adapted and evolved over the years to meet the changing needs of its customers. As they have expanded into institutional services, Tuxedo has been a key part of their application infrastructure during this time supporting a wide range of AAA-ranked applications that deliver the highest levels of availability, reliability, and performance to the users within and outside the enterprise. One of the applications that won over many of their institutional customers was the Web-based treasury management system that provides a continuously updated view of the customer organization's financial position, and instant access to a full range of transaction initiation capabilities. In addition, the instrument pricing and tax lot accounting applications built on Tuxedo are used to provide accurate and fast information for hundreds of mutual funds and other instruments to customers of their retirement services, wealth management, online brokerage, and independent investment advisor services. In the most recent reported quarter this Tuxedo customer reported a double-digit growth in institutional services compared to a year ago quarter, including 11% increase in client accounts, net new assets up by 10%, and 41% increase in daily commissionable trades.

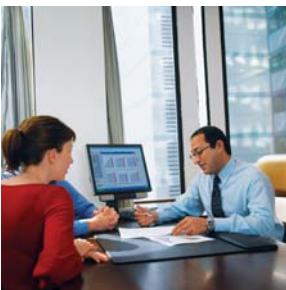
Low latency, near-linear scalability, services-oriented architecture, and unmatched robustness proven over its 25 year history have made Tuxedo a platform of choice for many applications from front-office to back-office for many of the leading brokerages and asset management firms in the securities industry. As markets get more complex and customer requirements more stringent, Tuxedo is pushing the envelope with eXtreme Transaction Processing (XTP) applications that scale beyond 100,000 transactions per second and features designed to add agility and flexibility to these dynamic, grid-based environments.

Gaining Competitive Edge in Insurance

For many traditional insurance companies, building scale and diversifying their business are important aspects of their growth strategy. The continuing drive to diversify across product lines, mature and emerging markets, and to develop competitive scale can be seen in continuing M&A activity taking place in the European insurance market as companies seek to bolster margins, balance their earnings mix and strengthen their capital and distribution bases. The advantages of, and impetus for, diversification in the insurance sector as a whole could grow still further ahead of the move to risk-based capital regulation, including EU Solvency II, which is expected to allow for geographical and product diversification in its capital calculations.

Diversification and pan-European growth were key objectives for one of the top 5 European insurers with more than 130 year operational history. To meet these objectives the firm embarked on a project to build a highly innovative direct online distribution and servicing channel for personal lines of insurance, including car, household and personal liability products to be offered on a pan-European basis to individuals and small businesses. Significant upfront architecture work was involved in building out this agile insurance selling and servicing platform to support rollouts across multiple countries with tailored products while supporting a centralized back-office. Selecting Tuxedo as its application platform helped this firm to ensure great application services flexibility with robust middleware providing scalable and responsive infrastructure that can be easily scaled on demand as services are rolled-out to new countries.

Now with four major European countries fully operational, this application is expected to bring in an additional \$1B in premiums and fees in five years. Exploiting the agility and speed of the Tuxedo platform, this firm is using micro-segmentation, which allows individual customer pricing. Supporting their focus on profitable growth, this direct pan-European online distribution of personal insurance products contributes to a diversified portfolio of general, life and investment products, which ensures a less volatile risk profile and helps to dampen the impact of major catastrophic events and market cycles. As the result, the firm was voted European Insurer of the Year by risk managers across Europe.



In US healthcare insurance, industry consolidation has created a menagerie of claims platforms to manage. As the result, the payers are facing the challenge of rationalizing and integrating multiple claims platforms and other business systems that are based on aging legacy applications which are code-bound and lack the flexibility found in more agile, rules-based systems. The need to provide a consistent user experience to members and healthcare providers across an array of products and markets from a single insurer is prompting these payers to seek new or replacement claims adjudication systems. At the same time, the healthcare world is undergoing drastic, fundamental changes - faced with growing competition from non-traditional players, such as large financial and retail firms expanding into the health plan market, as well as heightened sensitivity to healthcare costs and customer demand for new products and improved services.



These challenges led one of the premier US health insurers with 21M members and services in 16 states to explore replacing its home-built mainframe claims platforms with a state of the art packaged solution that provides payers with a sophisticated administrative and claims processing capability and a member-centric data model for a complete view of each individual member. This solution has been built to run on an IBM mainframe, utilizing CICS and DB2 as its run-time environment, requiring significant operational costs to run it. To keep IT operational costs manageable and generate cost savings that can translate into bottom line benefits for this very margin-sensitive business, the CIO decided that this solution could only be deployed if it could run on open systems infrastructure, which would allow IT to completely cut loose from the mainframes once the previous claims platforms were migrated to the new solution.

Working closely with Oracle Database and Tuxedo organizations, the solution vendor adopted a strategy to migrate the packaged solution from the mainframe to a scalable, platform-independent, Web-enabled n-tier client/server open systems environment to satisfy the requirements of their largest customer and to promote this flexible solution to other open systems-based customers. Following successful benchmark meeting the customer's 1M claims/hour speed requirement, the customer began migration from their previous claims platforms to this agile system that automates core administrative processes such as enrollment, member eligibility and claims processing using user-defined rules to increase efficiency, reduce costs, minimize conversion risks and improve time to market for new products.

The robust infrastructure of the application and its high performance has enabled this customer to offer real-time predetermination of benefits capability. Providing essentially real-time claims adjudication capability means that thousands of healthcare providers in their network can get almost instantaneous answers to patient eligibility, benefits and claim status questions. These innovations in practice management and service delivery help providers to offer their patients a better picture of the costs and insurance coverage as part of discussing proposed care alternatives. For patients, ability to clearly see the costs and insurance coverage of proposed procedures is an important benefit in today's confusing healthcare environment. And for the payer, this is one more way to compete effectively for the best providers, while increasing operational efficiencies, reducing costs and improving service to its 21 million enrollees.

Mainframe Modernization Delivers Lower Costs and Greater Agility

Migrating applications from mainframes to open systems is not only the domain of packaged solution providers, but in fact, a growing trend in many enterprises and public sector organizations with millions of lines of code in custom legacy applications. For many of these organizations, the cost issues coupled with increasing skills attrition and rigidity of the mainframe silos have raised sufficient concerns about sustainability of their mainframe-based operations to decide to migrate to an open systems environment.

Financial institutions lead the way among many customers that migrated their legacy custom applications to a lower cost open systems environment leveraging Tuxedo as the foundation on

Tuxedo Strengths in Mainframe Modernization

- 50-80% reduction in Total Cost of Ownership (TCO) after migration to open systems
- Strong compatibility with CICS and IMS TM features simplifies migration of mainframe TP applications, enables automated conversion for low risk project with high predictability
- Best of breed integration of COBOL services in SOA enables broad access to legacy logic and wide re-use
- Best of breed extensibility from COBOL to J2EE enables transparent integration
- Best of breed CICS/IMS adaptors for bi-directional, transactional connectivity to remaining mainframe assets

which to base their target architecture for mainframe migration. There are three major reasons that Tuxedo has been chosen to meet their requirements:

1. The application capabilities and IT cost structure are a major factor for financial services and often a key differentiator in the market, which makes protecting long term investment in these applications while lowering their operational costs a strategic business imperative. This leads them to choose a mainframe-compatible application platform to protect their investment in the invaluable business logic contained in the millions of lines of legacy COBOL or C code
2. The mission-critical nature and the scale of these applications require the most reliable and scalable application platform – a role they know Tuxedo can fulfill as the leading transaction processing and application server infrastructure that delivers mainframe-class speed, reliability, and other mainframe qualities of service on distributed systems.
3. The integration needs of these applications and their ongoing evolution require an open, extensible, and SOA-ready application platform that can not only run legacy COBOL or C/C++ mainframe code, but can also effectively expand the application’s capabilities with native web services connectivity, transparently integrate re-architected Java/J2EE components, and provide robust service bus connectivity for transactional, heterogeneous messaging orchestration. Meeting all of these requirements with Tuxedo protects organization’s long term investment by future-proofing the application to provide value for many years to come.

Tuxedo has proven to be a solid choice for rehosting mainframe applications ranging from a few hundred MIPS to well beyond 10,000 MIPS for the same core reasons financial services firms choose to build payments applications, core banking systems, brokerage, and insurance applications on Tuxedo – its proven history as an industry leading distributed transaction processing platform and COBOL, C and C++ application server.

“This target architecture is CNAM's first concrete step in component-based development. Functions are now re-usable. Development and Maintenance workload is reduced. Improved responsiveness and IT performance resulted in faster implementation of new features.”

-- Mme. Maryvonne Cronier,
CIO, CNAM-TS

The largest mainframe re-hosting project involving 12,000 MIPS mainframe environment at Caisse Nationale Assurance Maladie des Travailleurs Salaries (CNAMTS), French Social Security’s National Health Service was driven by significant cost concerns as well as the need to improve organization’s responsiveness to frequent changes in government regulations. Leveraging Tuxedo enabled CNAMTS to migrate thousands of COBOL programs to an SOA platform and start building new Java components which can transparently integrate with the migrated programs using WebLogic-Tuxedo Connector. The migration of the applications serving their 50M members and 80,000 online users from the BULL and IBM mainframe environment to open systems involved 270TBs of data and thousands of online and batch programs.

This project was accomplished without missing a single claim reimbursement out of 1.1B annual claims and the resulting 110B € in payments due to a combination of robust target architecture based on Oracle Database and Tuxedo and highly automated and industrialized migration project performed by Oracle partner Metaware. Commenting on this project, Mme. Maryvonne Cronier, the CNAMTS CIO has observed that their cost savings have reached 85% level compared to mainframe operations, but equally valuable was the ability to immediately start extending the applications using component-based development methodology and Java-based tools without having to re-write their existing COBOL components to Java.

Germany’s Debeka is a health insurance leader in Germany with over 2.7B € in contributions. The migration project involving over 11 million lines of code migrated to Oracle Database and Tuxedo environment and began with a five month pilot involving 2,200 programs. Following the successful execution of the pilot, the project was completed in phases by Accenture and Metaware. By migrating these applications to an open systems infrastructure, Debeka has significantly improved efficiency of their operations and became much more responsive to the market, enabling it to innovate with new insurance products in a number of areas.

Another mainframe modernization customer, Caixa Penedes – leading Catalonian bank in Spain – needed the flexibility, openness, vendor independence, compatibility, and versatility provided by open systems environment. Their approach was to migrate off the mainframe to an SOA infrastructure that could preserve their investment in core banking applications, but also provide an evolution path for the new applications that could tackle the challenges of electronic banking, risk management, and other issues. Working with HP Consulting & Integration, the bank was able to rapidly migrate their current application suite to Tuxedo – a project so successful that the Bank was able to offer these applications in collaboration with three other banks to other regional banks. The project, which transformed the core technological elements of the organization within a year, was a path-finder in the banking sector. There were a few doubts as to whether an open systems solution would be capable of handling the bank’s high volume of transactions at that time and any potential increase in the future, but after running load tests Tuxedo provided “excellent results”, according to Ivan Castellort, Head of Systems and New Technologies at Caixa Penedès (CEP.)

Following this fast migration of the core banking system, the Bank has introduced sophisticated risk management application built on WebLogic Server and using WebLogic-Tuxedo Connector to integrate with the Tuxedo-based core banking services in order to harmonize the risk management objectives in the bank’s asset operations with the Basel protocols. Deployed across the Bank’s whole office network, this application was able to deliver the complex functionality with the speed required in a critical front-office tool used in one-to-one interactions with the clients.

As the result of its experience in modernizing banking technology, Caixa Penedès in conjunction with three other banks decided to offer this Tuxedo-based core banking solution, Financial Server (FS), as an application package through a subsidiary company called Infodesa as well as provide financial services outsourcing based on their own hosted implementation. The success of the product almost immediately led to a rapid adoption by the Spanish financial industry, making FS one of the de facto standards of the current banking market in Spain with more than 20 institutions currently licensing the software.

These banks, along with Caixa Penedès, form an association called CEUS, which seeks to identify collaborative environments in terms of applications and technologies that allow members to create economies of scale and leverage the most advanced technology available on the market at any given moment. Right from the establishment of CEUS, Oracle has remained close to the organization’s many projects, collaborating in the optimization of the products involved—Oracle Tuxedo and WebLogic—and also providing fresh ideas for the new projects that stem from the diverse needs of the CEUS members. According to Castellort, “New applications such as e-learning and HR management applications, CRM tools to improve the client interface, and BPM environments to speed up administrative tasks, are some of the applications which have recently shown up the existing synergies between BEA [Oracle] and CEP.”

Over twenty banks in Spain moved forward in their own mainframe migration projects leveraging Oracle Database and Tuxedo application environment and Infodesa’s Financial Server. One of them, La Caja de Ahorros Municipal de Burgos, faced two alternatives: to implement IBM mainframe-based Altamira solution from Accenture or leverage HP & Oracle solution in conjunction with Financial Server from Infodesa and CEUS. Deciding to migrate from the mainframe using HP and Oracle solution, Caja de Burgos joined the growing financial market trend to replace the mainframe with open systems based solutions that bring many advantages in business agility, IT flexibility, and openness, while delivering mainframe-class speed at lower costs. Caixa Penedès, Caja de Burgos and many other banks have proven that modern open systems platform can provide the same degree of robustness and availability as mainframes, while enabling banks and other financial institutions to more effectively compete for customer market share and wallet share with lower costs and greater agility in bringing new products and services to market.

“The state of the financial market in Spain in recent years has demanded that organizations become more competitive. This has given rise to a growing interest in differentiating oneself from the competition, as well as in offering the best products, as soon as possible, to an ever more experienced and demanding public. This adaptation process, which has been termed ‘business speed’, has put IT departments on the spot, and managers have had to come up with rapid responses for their internal departments in order not to miss the boat.”

-- Ivan Castellort, Head of
Systems and New Technologies,
Caixa Penedès

Summary

Financial services industry has long discovered the competitive advantage of Information Technology. Some of the largest, fastest and most innovative financial institutions around the world have used Oracle Tuxedo to press this advantage. Your organization can join them in leveraging Tuxedo for:

- Mainframe-class reliability at a fraction of mainframe costs
- Low latency SOA leveraging C/C++ services for flexible, loosely-coupled application architecture
- Extreme scalability up to hundreds of thousands of transactions per second
- Protecting long term investment in mainframe COBOL/C application assets by rehosting them to open systems and integrating into modern architectures

Many financial institutions are hungry for transactional power to cope with skyrocketing business growth. If you need to reduce the cost of running C, C++, or COBOL business-critical applications, deliver new products and services at light speed, and cope with ever-increasing customer QoS demands, Oracle Tuxedo helps you meet these demands with the extreme scale-out capabilities for XTP applications. In addition to traditional SMP deployments, Tuxedo has been deployed successfully on a grid infrastructure comprising hundreds of CPUs for core application services together with an Oracle database cluster to deliver transaction rates exceeding 50,000 transactions per second. Leveraging distributed shared memory solutions to minimize network and disk I/O, Tuxedo based services orchestrate and process incoming requests to meet the most demanding transactional requirements for XTP applications with a cost-effective and vastly scalable grid infrastructure.

Over its 25 year history Oracle Tuxedo has pioneered many of the industry-leading technologies that today have become open standards and are used widely in many other products. Its operational excellence and customer satisfaction ratings remain unchallenged today as they have been during its entire history. But just as financial institutions continue to innovate to build and extend competitive advantage, Tuxedo continues to evolve and innovate to help financial institutions by adopting leading standards-based programming models and developer tools to support them, enabling services network discovery and services orchestration, supporting dynamic application deployment and on-demand provisioning, and pushing the performance envelope for distributed systems and grid computing. But one thing is not changing – Tuxedo’s unmatched speed, unrivaled innovation, and unparalleled efficiency continue to deliver competitive advantages to its users.

Tuxedo at a Glance

- Performance and interoperability leadership with support for ATMI, CORBA IIOP, MQ, APPC, SNA, Web Services, ESB Messaging
- Holds many top Unix/Linux spots for performance in industry-standard and customer benchmarks
- Mainframe-class reliability, availability, scalability, and performance supporting worlds largest transaction processing applications
- Deployed by 10s of thousands of customers in custom applications and as an embedded platform for packaged solutions, e.g., Oracle PeopleSoft

CONTACT US

For more information on Oracle Tuxedo call 1.800.ORACLE1 or +1.650.506.7000 to speak to an Oracle representative, or visit oracle.com/tuxedo. For more information on Oracle Modernization visit oracle.com/goto/modernization.



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Oracle Tuxedo Enables Speed, Innovation, and Efficiency in Financial Services
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