

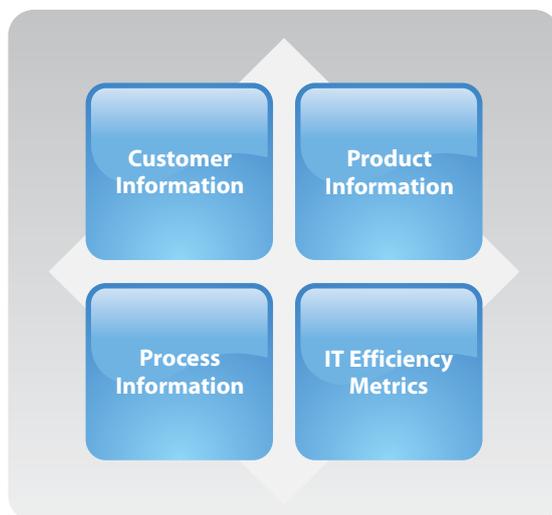
Universal Banking

TCS BANCS



Banks are constantly exploring opportunities for growth and expansion even as they pursue customer-centric strategies. The business of banking is fast becoming one of leveraging technology and knowledge to become more agile, flexible and innovative. While institutions adopt different methods, the fundamental strategy of banks across the world lies in:

- Creating strong competitive capability for the long term
- Becoming data driven, enabling agility
- Leveraging the 'Banking Information Network' enabled by core systems



Such strategies are achieved through transformation or process reengineering initiatives within the bank and they broadly achieve and target the following benefits:

■ Scalability

- The solution displayed high scalability using target volumes on the IBM mainframe
- For Online transactions processing (OLTP), the highest average TPS achieved (using full configuration) was 9,445 TPS with an average CPU utilization of 88.6%. The benchmark was conducted for one of the largest banks in china

■ Improved Operational Efficiency

- Ability to simplify or streamline processes (mid – and back – office) and empower the business
- Automation or elimination of processes through transformation

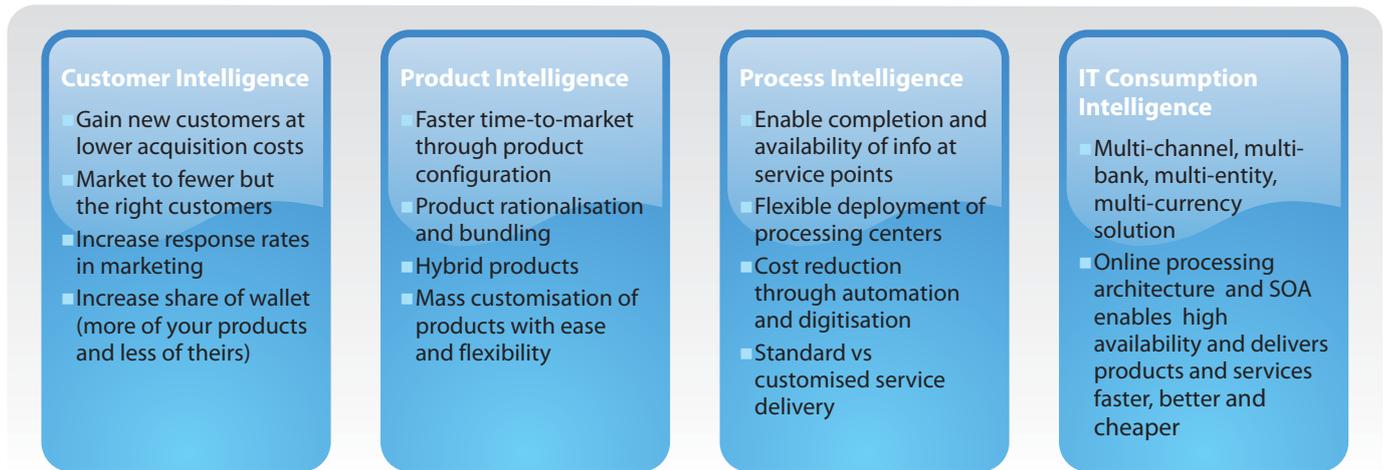
■ Excellence in Customer Service

- Improved, streamlined customer-driven processes
- Better product capability to meet customer needs
- Complete view of the customer – products, transactions, behaviours and needs – resulting in increased customer value management

■ Product Innovation – Removal of IT Constraints

- Flexibility in product design leveraging data and customer/market information
- Simplified IT Infrastructure
- Reduced time-to-market
- Ability to create tailored products without complex and expensive projects

In effect, successfully designed and implemented core systems deliver this 'embedded transformation intelligence', creating a culture of growth and profitability. In summary, the 'banking information network' and drives intelligence.



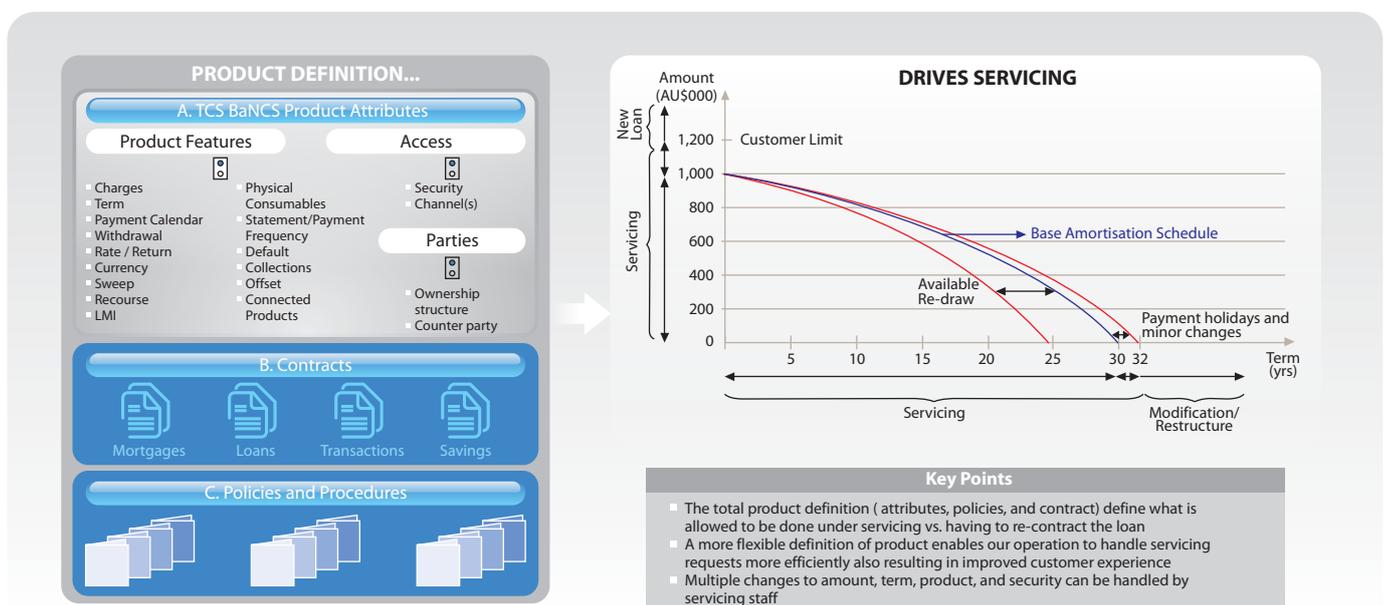
The universal banking technology from TCS BaNCS

- Scalable infrastructure that links front-, mid- and back-office transaction processing for a range of products and services within retail, treasury, trade finance, payments and investment operations in real-time using Straight-Through-Processing (STP)
- Benefiting from thousands of person-years of product engineering
- Designed to incorporate end-to-end universal banking functionalities, extending its seamless customer-centric design
- Comprehensive portfolio of unified application modules meeting the various requirements of financial institutions
- Unified platform helps deliver personalised services over multiple delivery channels, while maintaining a collaborative one-to-one relationship with customers

Agility – Excellence in deploying new products and services

The universal banking technology from TCS BaNCS empowers, enhances and extends the traditional 'Business of Banking'. Through its ability to configure and manage the entire life-cycle of customer banking processes - from origination to servicing - it uniquely focuses on orchestrating all banking capabilities with customer and product dimensions.

The TCS BaNCS platform encompasses an array of pre-configured, customisable banking product lines, including - deposits, investments, retirement accounts, consumer & commercial loans, mortgage loans, equity financing, cards, payments, treasury management and trade finance. In addition, thousands of transaction banking services, clearing & settlement functions across the banking value chain enable business process configurability using the service integrator solution from TCS BaNCS.



Solution Highlights

- Complete coverage of lines-of-business: Covers deposits, loan origination and servicing, payments, treasury management, trade finance, and cards – with functional depth and market-tested reliability
- Cross-channel integration: Provides a consistent customer experience across multiple channels with total visibility to the bank's servicing agents enabling banking anywhere, anytime
- Single view of the customer and the bank
- Online real-time limits and exposures
- Conventional and Islamic
- Corporate and Consumer
- Origination and Servicing
- Automated fees, GL postings, product attributes can be overridden at the account level
- Interest Rates Base, Margin, Tiers, Discounts, Fixed, Variable, Caps and Collars
- Workflows, e.g. Account opening workflows by product

Market-ready, Fit-for-purpose Solution Suite

The universal banking technology from TCS BaNCS has pioneered the adoption of object orientation and service orientation by imbibing the principles of value adds to technology and operations. Further, it covers multiple lines of business including core banking, payments, treasury, among others.

The core banking solution from TCS BaNCS enhances the basic business of banking through the capability to configure and manage the full cycle of banking processes, from origination to servicing, across multiple channels. The solution supports banking operations across entities, time zones, languages, and currencies. Institutions of every operational size and complexity across the globe are using our solution. Coupled with our business process templates and implementation expertise our clients have achieved transformational benefits.

The integrated Payments platform for both domestic and cross-border payments supports a wide range of products such as transfers, collections, bills of exchange, postal payments and CLS clearing, among others. The solution has successfully delivered enhanced efficiencies by reduction of operational costs and lowered risk through the consolidation of multiple systems into regional hubs, or a single processing center.

An intelligent learning engine that uses neural networks technology to detect and report suspicious activities is a key enabler in our Compliance framework. The solution provides a comprehensive framework for achieving regulatory compliance, risk management and financial fraud detection.

The integrated, multi-entity, multi-currency, and multi-asset-class-enabled Treasury offering from TCS BaNCS facilitates rapid implementation while reducing the Total Cost of Ownership (TCO) and operating costs with extensive risk measurement capability. With its modular and flexible design built on Java EE architecture, the solution ensures quick response to regulatory compliance requirements alongside SOA-enabled services for enterprise integration and a solid foundation for business growth.

Compliant with interpretations of Islamic law to suit different banking and fund management requirements, the Islamic Banking solution from TCS BaNCS supports products for Musyarakah, Mudarabah, Murabahah, Hajj Savings, Wadiah, Qardhul-Hassan, Salaf, Istisna' Ijara, Bei Al Arboun, Kafalah, among others.

Origination, an integrated workflow management solution from TCS BaNCS, helps banks introduce customers to new services, select the right products, and handle origination, fulfillment and servicing through multiple customer channels.

Deployed at leading banks in India, our back-end-agnostic Financial Inclusion gateway can connect to any type of front-end device such as kiosks, tablets, and Smartphones, among others. The solution links end users located in remote areas through multiple delivery channels and provides financial institutions and micro-finance organizations with extensive and easy reach to an unbanked population.

Our mobile banking solution allows banks and financial institutions to provide their customers with the flexibility and convenience of managing their finances anywhere, anytime. This modular solution offers location-based and customized services on multiple mobile handsets and platforms, with varying standards across multiple segments, including retail banks and investment firms. By providing convenient account access to users to make online payments, transfer funds real-time, manage their personal financial portfolios and even execute trades, this solution is comprehensive and reliable, in keeping with the experience certainty paradigm that TCS delivers to its customers.

As an enterprise-wide, single source of risk information and management, our Global Limits & Exposure Monitoring (GLEM) solution enables risk-based performance measures, monitoring and controls. It also helps banks to continuously identify risks, assess the institution-wide impact and implement an enterprise-wide strategy to manage those risks collectively. It also provides a unified picture of risk across a bank in order to achieve accurate, integrated strategies, complete transparency and prudent decision making, thereby reducing overall costs.

TCS BaNCS Billion Account Benchmark

- The core banking solution from TCS BaNCS on HP Superdome Servers delivered outstanding benchmark results for one of the world's largest retail banks, With a 1 billion benchmark for deposit and loan accounts and transaction history of 20 billion:
- The batch window processing for loan and deposits were completed in 88 minutes
- Sustained peak online transactions per seconds – 17,154
- 278 million online transactions processed in 4 hours and 48 minutes

Benchmark Data Volume:

Deposit Accounts	900 Million
Loan Accounts	100 Million
Branch Tellers	570,000
Number of Branches	41,000
Deposit Transaction History	18 Billion (20 per Account)
Loans Transaction History	2 Billion (20 per Account)
Database Size	29 TB

Benchmark Results:

Batch Processing

- End of Month Duration: 88 minutes (for deposits and loans processing)
- No of streams for Deposit processing: 80 per server
- No of streams for Loans processing: 44 per server
- Application Layer CPU Utilization: 78%
- DB Layer CPU Utilization: 60%
- Application Memory Utilization: 40%
- DB Memory Utilization: 86%

Online Transaction Processing

- Peak Transactions Per Second (TPS): 17,154
- 278 Million transactions processed in 4 hours and 48 minutes
- Application Layer CPU Utilization: 40%
- DB Layer CPU Utilization: 70%
- Application Layer Memory Utilization: 80%
- DB Memory Utilization: 96%
- Transaction mix: 50 transaction types

State Bank of India

State Bank of India (SBI), with its associate banks, is India's largest bank servicing over 280 million customer accounts and a banking network of over 18,400 branches across the urban and rural landscape, including 25,000 ATMs. SBI wanted to widen the scope of servicing its customers by providing banking solutions anytime and anywhere rather than being restricted to a single bank branch. To achieve this, SBI required a unified technology platform that would consolidate the banking services.

Tata Consultancy Services implemented the core banking solution from TCS BaNCS, which provides for multi-entity, multi-currency and multi-language operation based on international messaging standards. This state-of-the-art architecture provided SBI with unprecedented scalability, fault resilience and business continuity. Enabling them to integrate and centralize their customer base across the country. As one of the world's fastest growing technology and business solutions providers, TCS played the dual role of technology partner and innovative solutions provider, thereby, helping SBI infuse a superior technology into mass banking to provide consistent service levels. Also enhancing customers' satisfaction by providing them with a true 24x7 multi-channel banking service on the world's largest homogenous banking network.

any place is a banking place™

The universal banking technology from TCS BaNCS addresses the reality of direct banking. Focusing on the customer segment that seeks convenience enrichment services, the solution aims to provide seamless channel integration experience - be it via the internet, contact center, branch or mobile.

Our direct banking concept integrates business concepts such as 'Self Directed' and 'Advisor Assisted' through an integrated Wealth Management offering.

It helps banks with key customer strategies for migrating customers to self-directed channels thereby delivering 'more for less'. With the solution, banks benefit from:

- Broad functionality addressing critical requirements in direct banking covering aspects such as online account opening, KYC, needs analysis, financial planning, risk appetite scoring, investment recommendation, model portfolios, asset diversification analysis, portfolio valuation, rebalancing et al
- Integration of delivery channels for customer access to all accounts 24x7 enhanced by security controls for authorisation and authentication, including mitigating risks such as identity theft, security and privacy issues
- SOA and the associated technology infrastructure enabling seamless third-party product distribution through the likes of funds supermarket, meaningful custom-made offers et al

Global Channel Partner Program:

For banks to adapt a scalable, packaged technology solution that can facilitate quick time-to-market and grow with their business without periodic re-platforming, the Global Channel Partner Program from TCS BaNCS helps banks deliver this fit-for-purpose, easy-to-use solution through our partners.

The Global Channel Partner Program comprises three strong elements:

- an internationally acclaimed banking product suite in an 'Off-the-shelf' format
- a strong local partner who brings the local knowhow
- quick accessibility and support along with a strong enablement program, which enables our partners to succeed This fit-for-purpose, easy-to-use solution, delivered through our partners can help emerging financial organizations benefit from advanced international banking best practices, flexible architecture and pre-configured products. TCS enables its partner to provide implementation services and first level of production support, thereby helping banks achieve quick time-to-market, reduced costs and enhanced operational efficiency.

"TCS BaNCS is a modular, highly configurable system, which meets our high performance requirements"

Enrico Lardelli,
Head of Information Technology, PostFinance

A leading direct bank in Australia

The 6th largest bank in Australia offering retail, commercial and mortgage banking services deployed our Universal Banking Technology and built a complete direct banking business.

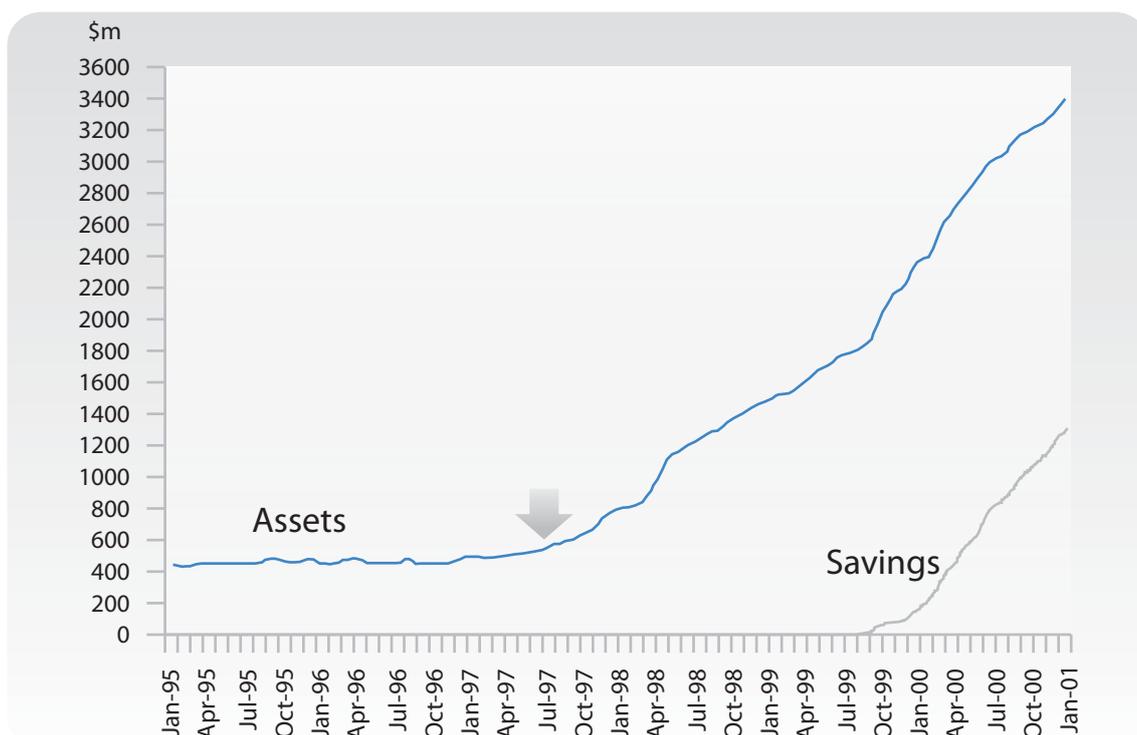
The bank achieved the following:

- Gained from a solution that helped it manage new channels rapidly
- Centralized operations
- Managed aggressive growth forecasts with a highly scalable, reliable and flexible solution
- Achieved rapid ROI

Today, the bank is the fastest growing lender in Australia with over 1.2 million customers. The bank is also the fastest growing subsidiary for the parent bank and has won numerous international accolades from the industry.

Deutsche Bank transforms with TCS BaNCS:

TCS BaNCS helped Deutsche Bank to transform its legacy-based system to a single-uniform core banking platform for Global Transaction Banking (GTB). This move was part of a global initiative to transform the bank's transaction banking platform in more than 30 countries. TCS BaNCS replaced several solutions with one modern, transaction-safe and cost-efficient platform. Core banking solution from TCS BaNCS provided Deutsche bank with transaction banking functionality including account services, interest and charges, limits and facilities, liquidity management, funds transfer and payments, statements and risk management and reporting.



Why TCS BaNCS

The TCS BaNCS product suite for banking, capital markets and insurance enables business transformation in financial services. Increasing operational efficiency and helping financial institutions stay agile, our solutions deliver a competitive edge with unmatched certainty. We aspire to be better than established benchmarks, which is why we have embedded an Alpha (“ α ”), representing superior returns delivered to our customers, consciously and prominently within our brand. The plug and play, component-based product suite consistently turns in impressive benchmark results, with a fine-tuned, highly scalable technology architecture that supports financial institutions with the highest capacities for transaction volumes, peak transactions per second, and transaction history size. With such a track record, it is only natural that the TCS BaNCS product suite can help financial institutions of any size gain a distinct, competitive edge.

Contact

To learn more about how we can help you innovate, transform and experience certainty through our Universal Banking solution, connect with us at www.tcs.com/bancs or tcs.bancs@tcs.com

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India’s largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

For more information, visit us at www.tcs.com

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