

TCS BaNCS for Trading



The rapidly changing technology landscape and customer expectations are shaping the future dynamics of the brokerage industry today. Cloud based solutions and data analysis tools are helping drive improved customer experience even as cybersecurity becomes a focus and digitization gains stronghold. Customer experience is becoming central to the future operating model of trading. Firms are looking at unifying the user experience across multiple devices and form factors, while they cater to the discerning retail investor of today, who wants actionable data gleaned from social media behavior and pattern detection analytics. On the institutional side, the rapid adoption of algorithmic trading and co-location facilities is driving the race towards low latency platforms.

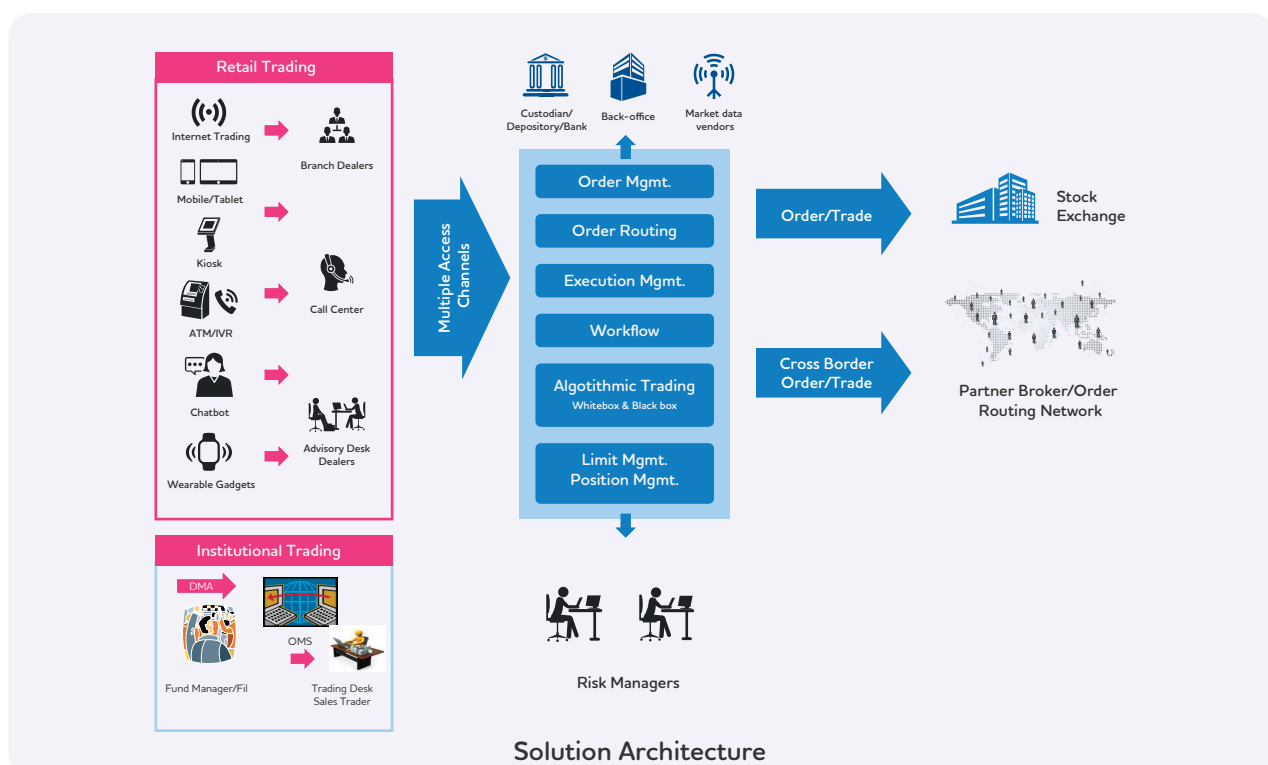
TCS BaNCS for Trading is a multi-market, multi-asset trading solution, which seamlessly integrates as a complete front-to-back office offering. Deployed as a standalone solution or integrated with third-party or in-house back-office systems, its modularity allows for the implementation of independent components such as channels, risk management, FIX, and more. The digital solution has been developed with responsive web design principles ensuring portability across different devices and form factors. The institutional module supports multiple execution types such as worked orders, Direct Market Access (DMA), Direct Strategy Access (DSA) and algorithmic trading. Further, the usage of in-memory architecture and high performance computing principles enable low levels of latency.

Overview

Today, with both retail and institutional customers making sophisticated choices and demanding better services, brokerages are finding it difficult to attract and retain clients. Retail investors expect superior usability experience. Brokerage firms are consistently innovating the user experience by offering seamless connectivity across traditional and digital channels (branch, mobile/tablets). Added to this, personalization, rich content, and actionable analytics are going a long way in improving user experience, enabling intelligent decision making.

To generate new opportunities, institutional customers need to build and customize their trading strategies without depending on a broker. A low latency trading platform can help brokerages compete effectively in the market.

- Retail and institutional trading
- Multi-asset, multi-lingual, multi-market, multi-currency
- Real-time risk management
- Integrated front-mid-back office as well as standalone front-office or back-office solution or trading channels
- Solution for retail and institutional trading for brokers, banks and financial institutions
- Hosted/White label solution for exchanges/brokers
- Digital trading channels



Access Channel	Entities	Asset Classes	Order Management	Risk Management	Execution Management	Connectivity	Market data	Analytics
Trader Work Station	Trader	Equity	Order Routing System	Limit Management	Direct Market Access	Exchanges	Exchange Market Data	Pattern Detection Tool
Internet Trading	Sales Trader	Listed Derivatives	Order Management	Position Management	Electronic Desk Access	Colocation	Market Data Vendor	Social Media Monitoring
Active Trader	Risk Manager	Exchange Traded Bonds/ETFs	Order Blotter	Pre-Trade Compliance	Waving & Scheduling	Order Routing Networks	News Vendor	
Call Center	Call Center	Mutual Funds, IPO	Portfolio		Basket Trading	Third-party Order Management Systems		
Mobile/Tablet	Clients	T-Bills, Warrants, ETFs	Decision Support		Algorithmic Trading, ROBOTRADER	Partner Brokers		
ATM/IVR		OTC	Charting		Broker Strategy Access	FIX		
Smartwatch/ Wearable gadgets					Advanced Trading	FIX Enricher		
Chatbot								
External Portfolio Manager								
Interfaces	Payment Gateway Depository Post-Trade Settlement and Back-office Systems SSOL							
Models	Institutional Retail Financial Superstore Bank Broker							

Solution Components

Benefits

TCS BaNCS for Trading can accelerate business growth for a sell-side firm by offering the following benefits:

- **Digital trading channels**
 - State-of-the-art HTML 5.0 based web, mobile and tablet trading applications enabling personalized user experience across multiple devices and platforms
- **Increased trading efficiency and control**
 - Support for all types of trade executions, viz, care orders, - Direct Market Access, algorithmic trading and Direct Strategy Access increasing dealer productivity and efficiency
 - Custom trading strategy for greater control over trade execution
- **Superior risk management**
 - Pre-trade validation for buying power limits and market-specific regulations, prior to sending of orders
 - Highly effective order-level risk management and overall exposure monitoring via an extensive rule base
- **Anytime, anywhere trading**
 - Convenient access channels - such as the internet, mobile/tablet, ATM, and IVR to improve market accessibility for investors. Support for mobile platforms such as iOS and Android



Web-based Trading System

With extensive experience and knowledge of capital markets and of having deployed state-of-the-art solutions for more than 370 solutions globally, TCS has built a comprehensive best-in-class trading solution that caters to the needs of retail and institutional brokerage firms, such as:

- Support for multiple asset types, including equity, equity-based futures and options, ETFs, currency derivatives as well as the collection of IPO and mutual funds
- Ease of creation and introduction of new investment products
- Multi-lingual trading
- Centralized and real-time order-level risk management across asset classes
- Connectivity to global liquidity pools either directly, via native/FIX protocol, or through partner brokers over FIX
- Multi-market, buy-side/sell-side connectivity using industry standard FIX Protocol over Global Order Routing Networks (Bloomberg EOR, ROR, among others)

Retail Brokerage

The solution offers a complete universe for trading with analytics and social media integration

Web-based Trading System:

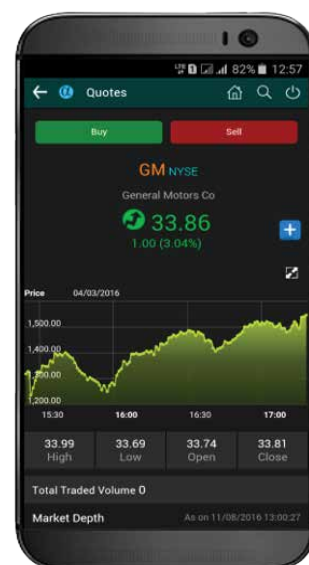
The web terminal is an advanced HTML 5.0 based trading front-end allowing retail investors both transactional and analytical capabilities. A dashboard built on a widget-based layout delivers rich content.

Features:

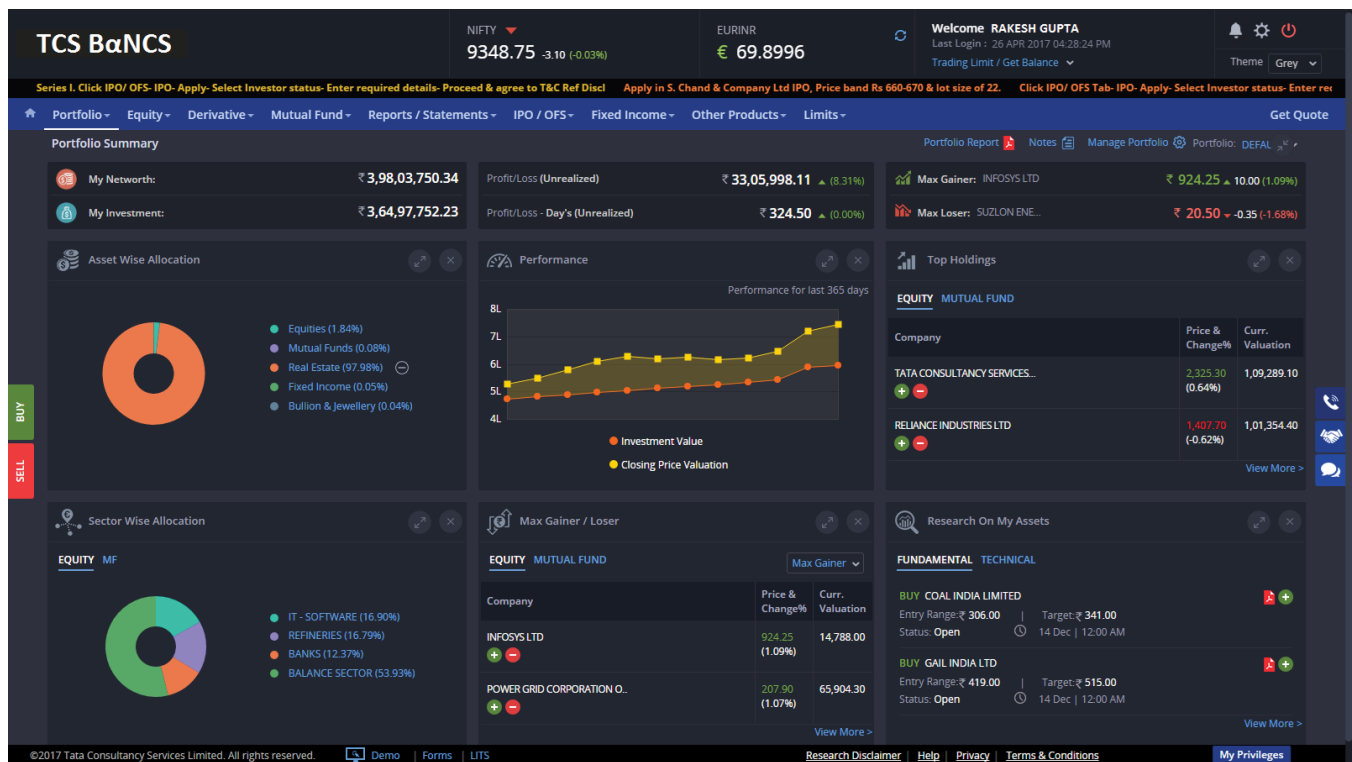
- Multi-market information
- Real-time market feeds
- Graphical portfolio view (Exchange wise, currency wise, asset wise)
- Advanced charting
- News, research & analytics

Mobile/Tablet Trading:

A hybrid mobile application supports multiple devices and technology platforms.



Mobile Trading

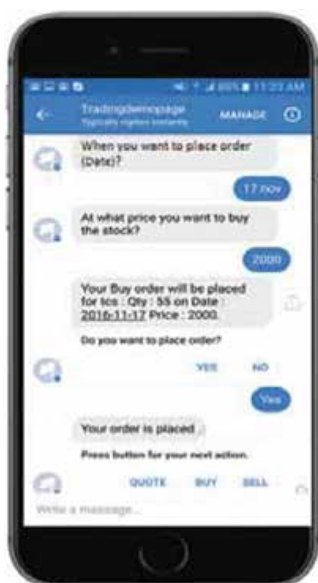


Portfolio Module

Features:

- Streaming market data
- Multiple watch list
- Advanced trading
- Real-time portfolio valuation
- Heat map
- Online hold/release fund
- Advanced charting & research

Chatbot: Messaging-based bot, which has the ability to communicate with messenger services (Facebook, WhatsApp, WeChat). Chat-based trading for investors, simplifying the trading experience wherein they can perform basic functions such as check quotes, portfolio information, transaction history and buy/sell, all on a conventional bot

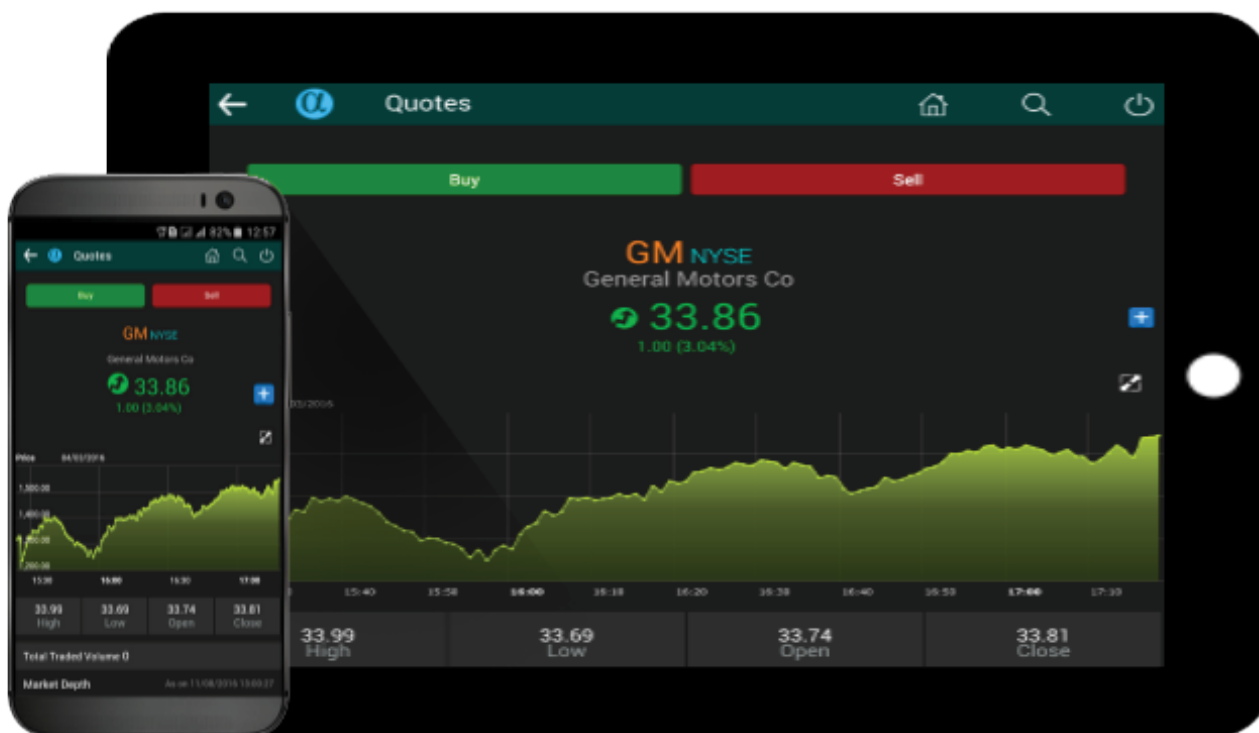


Chatbot

Advanced Portfolio Module: A comprehensive multi-portfolio application providing full information of holdings across asset classes, markets and currencies displaying asset-wise allocation, and applicability of corporate actions and real-time valuation

Robo Trader: Automated execution of trades based on strategies applied to stock price movement in real-time

- Multiple access channels, including dealing and advisory desk, web-based trading, high-speed trading terminals with streaming market data, mobile phones/tablets, chatbots, IVR and ATMs
- Standard interfaces to help manage lien marking for funds and securities in real-time
- Support for direct connectivity to exchanges as well as partner/broker model (disclosed/omnibus)
- Support for advanced trading (conditional orders, slicing, basket orders) and charting from multiple investor channels
- Personalized front end-customizable screen layout and functionality
- Hybrid mobile architecture – A single application supporting different mobile platforms and devices
- Analytics and Social Media Monitoring – Pre-built integration with technical analysis and social media monitoring tools enabling informed decision-making by investors



Institutional Brokerage

TCS BaNCS provides a low latency platform with algorithmic trading strategies for best execution, offering:

- Electronic access to the order blotter as well as Direct Strategy Access for portfolio managers/fund managers over an optimized, embedded FIX engine
- Scheduling orders based on combinations of price, time, and quantity, with intelligent rule-based routing to liquidity pools
- Program trading along with management of lists, baskets, and trading
- Direct market access to liquidity pools and order routing networks (ROR, Marco Polo, and partner/broker) over FIX
- Algorithmic trading support for industry standard protocols (for e.g. VWAP, TWAP, ICEBERG, Volume Participation, Peg & Pounce, Hidden, Arbitrage-Cash-to-Futures, Future-to-Future) as well as access to algorithms developed by brokers or with third-party systems
- Direct Strategy Access for brokers to offer TCS BaNCS trading algorithms to the buy-side, allowing them to use the algos directly

Technology Advantage

- Unix, Linux support resulting in low TCO
- Data Access Layer – Supports all prominent databases for persistence
- Responsive web design framework – Optimal viewing experience across devices
- Low latency architecture - In memory database architecture, high performance parallel computing

For the broking subsidiary of a leading Financial Services Group, Tata Consultancy Services implemented an integrated multi-exchange, multi-asset, multi-lingual securities trading platform, replacing their existing, disparate trading systems. The new trading platform helped them streamline their trading operations and provide a convenient, easy-to-use and feature-rich single point of trading access for their investors. In a year's time, the firm was able to enhance market share and move into the Top 5 league.



Integrated Risk Management capabilities allow brokers to monitor the risks associated with trading in the equity and the derivatives segment. They can set risk limits and monitor margin utilization and exposure of the various entities in the system. A flexible rules engine allows the system to mimic unique requirements of different trading members.

In a nutshell, the securities trading solution from TCS BaNCS helps sell-side firms to compete successfully in the broking business by improving client acquisition and retention, while increasing trading efficiency and controlling operational risk.

About TCS Financial Solutions

TCS Financial Solutions is a strategic business unit of Tata Consultancy Services. Dedicated to providing business solutions to financial institutions globally, TCS Financial Solutions has compiled a comprehensive product portfolio under the brand name of TCS BaNCS. The TCS BaNCS solution suite is designed to help financial services institutions enhance end customer experience, enabling them to embrace open and innovative technologies that embody true digital customer engagement. Deployed at more than 450 installations worldwide, it is the largest collection of components, enterprise and consumer apps for the financial industry made available through the cloud, helping firms become more agile and intelligent by leveraging the power of new and extended ecosystems.

To know more about TCS BaNCS, please visit: <https://www.tcs.com/bancs>
or write to us at tcs.bancs@tcs.com

About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is a purpose-led transformation partner to many of the world's largest businesses. For more than 50 years, it has been collaborating with clients and communities to build a greater future through innovation and collective knowledge. TCS offers an integrated portfolio of cognitive powered business, technology, and engineering services and solutions. The company's 469,000 consultants in 46 countries help empower individuals, enterprises, and societies to build on belief.

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