

CLS transforms worldwide foreign exchange trading with IBM

Overview

■ Business challenge

- To eliminate the risk of default on foreign exchange dealings caused by time zone differences between global banks
- Leading financial institutions needed to transform foreign exchange settlement processes to enable simultaneous and real-time settlement of payment instructions associated with foreign exchange transactions, while accommodating growth and service expansion.

■ Solution

- Leading global banks set up CLS Bank to design a unique, innovative real-time process for the settlement of payment instructions associated with foreign exchange transactions
- CLS partnered with IBM to design, develop and manage the IT applications and infrastructure needed to support the uniquely secure new process
- The solution is delivered by IBM Global Technology Services Worldwide Strategic Outsourcing.

■ Key benefits

- Provides a streamlined, resilient, innovative service, processing more than 50% of global foreign exchange transactions, peaking at \$5.4 trillion a day and growing
- Eliminates the foreign exchange settlement risk caused by time-zone differences
- A real-time uniquely secure global system able to flex to meet the demands of a growing market.

CLS Group has worked closely with leading international banks to eradicate settlement risk in foreign exchange trades due to time zone delays. The company has created a unique end-to-end process that integrates with the operations of the global banking community and provides the world's only system for the simultaneous and irrevocable settlement of payment instructions associated with FX trades.

The global foreign exchange market trades several trillion US dollars each day in multiple currencies, involving central banks such as the Federal Reserve, the European Central Bank, the Bank of England and almost all of the world's leading commercial banks.

Foreign exchange (FX) transactions used to be settled directly between banks often in different time zones. Due to the temporal nature of cross border settlement, the exchange of payments related to FX transactions was not simultaneous, setting up the possibility of counterparty default (also known as settlement risk). The challenge was to eliminate this risk or face being charged for providing some form of security for the risk.

Radical rethink

This was the trigger that led 60 of the world's leading financial institutions to create CLS Group (CLS) - a new business incorporating a single-purpose FX bank, CLS Bank International (CLS Bank). CLS had the mission to radically rethink the way FX markets work and eliminate settlement risk.

CLS analysed the operations of the FX market and designed an innovative straight-through process called 'continuous linked settlement'. CLS Bank links the local central bank Real Time Gross Settlement (RTGS) systems during a five-hour window of overlapping business hours and facilitates the simultaneous and irrevocable settlement of payment instructions associated with FX trades.

“It would have been difficult to have established and extended this resilient settlement system for one of the world’s major financial markets without the commitment, skills and capabilities of IBM,”

– Rob Close, Chief Executive Officer of CLS Group and President and CEO of CLS Bank.

Driving innovation through business transformation

Business benefits

- Provides a streamlined, resilient, innovative service, processing more than 50% of global foreign exchange transactions, peaking at \$5.4 trillion a day and growing
- Eliminates the foreign exchange settlement risk caused by time-zone differences
- A real-time uniquely secure global system able to flex to meet the demands of a growing market
- Multilateral netting process improves liquidity and frees funds for further investment
- A standard legal framework for finality
- Conforms to the regulatory requirements of the Federal Reserve Bank of New York
- Mirrored environments in multiple data centres to deliver the highest levels of resilience and business continuity
- Reduced reconciliation costs and increased efficiency of foreign exchange operations
- Reduced complexity based on a single supplier for a full-scope IT solution: design, build and run.

Continuous linked settlement is enormously complex to deliver. Nothing of this scale had previously been tackled and a sophisticated technology environment was needed to facilitate the unique same-day settlement process.

A global partner for innovative systems design

After evaluating a number of candidates, CLS chose IBM as strategic partner for business application consultancy and to provide and manage CLS's entire IT infrastructure.

IBM Global Business Services worked closely with CLS experts to translate the requirements of the continuous linked settlement processes into a secure, high availability IT and communications infrastructure. The relationship between CLS and IBM has continued and developed beyond the launch to cope with a significant expansion in FX business and to handle the forthcoming launch of new products.

The original application development undertaken by IBM required the development of 200 main and 6000 individual programmes incorporating approximately 2 million lines of code. A secure messaging system was constructed to provide total reliability in communicating high volume daily online transactions to and from the SWIFT network.

Expanding the technical infrastructure to match business growth

The CLS service went live in 2002, and has proved immensely successful since that date. The system was designed to handle a maximum daily average of 240,000 trades, but growth has significantly exceeded expectations and IBM has recently implemented enhancements to allow a daily average of 350,000 trades with plans in place to take this to 500,000 during 2007.

To accommodate this unexpected business expansion, it was critical that the systems infrastructure developed by IBM could evolve to keep pace.

"Since the launch of CLS, we have moved into a period of growth as we take on more settlement members, increase trading volumes and add more currencies," commented Rob Close, Chief Executive Officer of CLS Group and President and CEO of CLS Bank. "Our relationship with IBM has developed into a strong, co-operative partnership. IBM has been quick to extend and enhance our technical infrastructure, and it has reacted very positively and flexibly in supporting our response to the huge increase in demand."

A broad set of skills to address complex challenges

The systems that underpin CLS's operations are complex and involve a wide range of technologies. Extending this infrastructure to accommodate the rapid growth in transaction volumes, presented some serious technical challenges.

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The original rationale for choosing IBM as the strategic partner to design and build the IT infrastructure has really come into play since the launch of the CLS service. IBM has a global presence, skills in the complete range of computer and network technologies, and a good understanding of the workings of global financial markets. Its integration skills have proved important in linking CLS with banks around the world through global communication networks. Banks communicate with CLS Bank via the secure messaging services provided by the Society for Worldwide Interbank Financial Telecommunication (SWIFT).

“It has been extremely valuable to be able to draw on the resources of the world’s largest services and technology company to support our business growth,” Close added.

High availability infrastructure

Performance, resilience and security are all of paramount importance. IBM’s strategic outsourcing services provide a fully resilient computer and communications infrastructure, with full network and systems management services. The infrastructure comprises ultra-reliable, ultra-high performance IBM System p servers hosted in two IBM data centres, providing assured business continuity with data mirroring of transactions for rapid switchover. The hosted service gives CLS total flexibility to scale operations as the number of participating banks and the volume of FX transactions grows.

The entire CLS global foreign exchange settlement system is audited and the IBM hosted service routinely satisfies the rigorous security, availability and reliability standards imposed by the Federal Bank of New York (the Fed) which regulates CLS’s operations.

Following events such as 9/11, the Fed has imposed additional requirements on CLS to provide increased resilience in its FX settlement systems. In response, IBM has constructed a second command centre in the USA to mirror processes 24*7 from the principal UK facility, and is in the process of constructing a third data centre in continental Europe.

The speed, volume and complexity of FX trades mean that complete regional resilience is essential. Continuity measures specified by CLS and implemented by IBM will ensure that FX markets continue to function uninterrupted, should a major disruption occur in any one country.

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Key components

Software

- IBM DB2
- IBM AIX
- IBM Tivoli Systems Management
- HotScan OFAC filter from Logica CMG
- FED gateway using the Fundtech PayPlus\$package
- CTS

Servers

- IBM System p
- IBM System x
- IBM ESS (Shark) storage

Services

- IBM Global Technology Services – Worldwide Strategic Outsourcing
- IBM Global Business Services – Application Management Services
- IBM Global Financing

Why it matters

The irrevocable settlement of FX trades in 15 currencies via the resultant transfer of multilaterally netted central bank funds. Global banks needed a safe and secure means of settling foreign exchange trades to eradicate settlement risk due to time zone differences. CLS designed an innovative straight-through process called ‘continuous linked settlement’ and partnered with IBM to translate the business requirements into a secure, high performance technical infrastructure. CLS now handles volumes which peak at over 500,000 transactions a day involving currency trades valued at up to \$5.4 trillion, and is now the preferred way of settling global FX payments. CLS in partnership with IBM has created the world’s only system for the simultaneous and irrevocable settlement of payment instructions associated with FX trades.

Successful FX settlement process

Since the launch of CLS, from anywhere in the world, banks are able to settle foreign exchange trades simultaneously and irrevocably through CLS Bank International via the IBM hosted service. The service has proved flexible and resilient in coping with the growing volume of business, which peaked at 502,000 transactions in one day.

To have achieved such rapid, wide-scale acceptance of a completely new on-line settlement process in one of the world's most critical financial markets is impressive. CLS Bank International has rapidly become the preferred way to settle currency transactions.

Banks have greater liquidity and are able to make their foreign exchange funds work harder. Same day settlements mean that there is less need for intraday credit, and a higher volume of trading can be conducted without increasing credit limits.

Foreign exchange settlements through CLS

Daily value of instructions	US \$2.7 trillion – Peak day \$5.4 trillion
Average daily instructions	250,000 (1 for each side of a trade) – Peak day 502,000
Currencies settled	15 (increased from an original 7 currencies)
Settlement Members (shareholders in CLS)	55
Participants trading daily through CLS	750 banks, corporates, non-bank financial institutions and investment funds
% of global currency traded through CLS	Over 50%

Errors are minimised and resources devoted to transaction matching and reconciliations vastly reduced. This has generated significant cost savings for CLS Bank's Settlement Members.

Rob Close concluded: "Volumes continue to grow ahead of expectations. The coming year will see CLS Bank extend its product portfolio for non-deliverable forwards (NDFs) and FX option premiums, encouraging greater participation and volume growth. IBM continues to work closely with us and will play an important role in increasing regional resilience and supporting our extended product range."

For more information

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