How Cloud Computing Impacts Trade Finance

Executive Summary

As worldwide trade gradually recovers, the financial climate enablers remain challenging. Affordability, accessibility and adherence to newer, stricter Basel regulations stand as unabated hurdles in the path to rapid recovery of trade finance.[1] According to a survey conducted by International Chamber of Commerce (ICC) in 2010, a total of about 42.9 million transactions were registered, representing a 5.81% increase over 2009 – a slight gain after the previous year's fall.

Technological innovations are bound to play a crucial role in accelerating the recovery process through the streamlining of front-end to back-end processes, enabling trade finance institutions to offer customized, low cost, value-added solutions that meet the requirements of geographically diverse customer segments.

This paper discusses a key technological advancement, cloud computing, which is already making inroads at leading trade finance software players. This development enables a bank to build a strong trade finance architecture for maximizing profitability, a goal which starts with making such services more affordable and accessible to customers.

Within trade finance and other corporate transaction banking services, financial institutions are moving ahead to reap the benefits from lower-cost private cloud services. These cloud services offer dedicated solutions with rigorous security controls, freeing both banks and customers from expensive IT investments.[2]

Trade Finance Industry Players

Trade finance is already an extremely mature industry, with numerous incumbent players. All of these players are impacted directly or indirectly with the kind of technology prevalent in the trade market. The players and the impact of technology on them can be classified as the following:

- **Importers (Buy Side):** These players have the need to buy goods or services from a seller in a different country. Importers use trade finance instruments from their respective banks for ensuring the timely delivery and quality of goods or services against the payments made. They expect a fast flow of documents and their verification to save demurrage costs and standing charges. The higher the Straight Through Processing (STP) rate in a transaction, the better it is for the importer. Communication needs to be efficiently managed between the bank and the importer.
- **Exporters:** These players form the sell side of the trade finance supply chain. When selling goods or services to a party in a different country, the sellers want to mitigate the default (non-payment) risk of the buyer. Using trade finance instruments, a seller ensures timely payment for goods or services delivered per the trade agreement. The exporter's finances

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Cloud Computing's Full Gamut

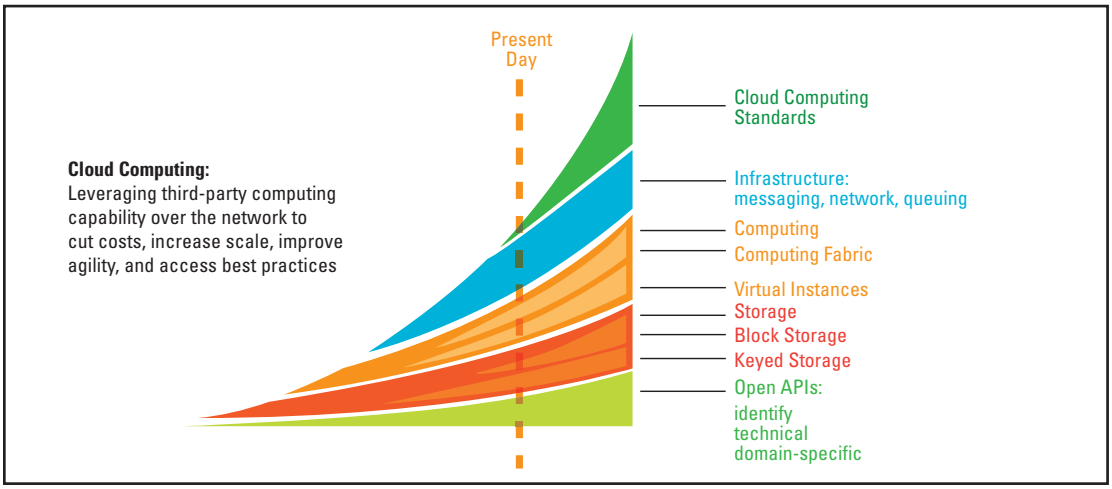


Figure 1

can be greatly affected by the STP rates, the time required for document verification and the speed of communication with the bank.

- **Banks:** Financial institutions play a major role in trade finance business. They provide various financial instruments to mitigate the risk arising out of a nonpayment in an international trade transaction. Adoption and upgrade of technology is of utmost importance for a bank's trade business as it is often the deciding factor for the customer in choosing a trade finance bank. Banks need systems running on robust infrastructure, the latest technology, the ability to accommodate constant regulatory changes and the industry's best practices.
- **Finance Providers:** This role is primarily assumed by banks. Exporters require financing for procuring raw materials for fulfilling the import orders. Similarly, importers may require financing to pay for goods being imported. Financing is an extremely crucial activity in the trade finance area and helps the parties in maintaining a healthy cash flow. Technology can play a vital role in enabling the financiers to make quicker and better decisions with regard to finance disbursements.
- **Technology Vendors:** These companies play a major role in providing customized technology services and solutions as per the requirements of banks and corporate customers. Technology vendors also provide specialized systems maintenance, upgrade and support to the banks. They can quickly absorb any industry-wide technological change and adapt accordingly to the needs of their clients.
- **Product Companies:** These are the players that develop specialized technology products to facilitate trade finance processing for banks. Misys, Surecomp and China Systems are examples of companies that have developed specialized technology products for trade finance processing that incorporate the industry's best business practices. These players must continuously upgrade their products to adjust to ongoing, industry-wide technological transformation.
- **Outsourcing Banks:** These are the banks that have built their own trade finance processing systems on a large scale and provide the facility to smaller banks to leverage these services. The smaller banks generally prefer to outsource their technology-intensive trade processing to larger banks or avail themselves of these services through white labeling. An example of such outsourcing is MaxTrad, a customer interfacing trade solution by Royal Bank of Scotland (RBS). Within the ever-changing technological landscape, smaller banks rely on larger banks to keep abreast of new developments.

Technology Initiatives for Trade Finance

Following the steep downturn in 2008-2009, the trade finance industry has made a recovery. The outlook for the year 2011, despite the uncertain global economy, is positive, with increasing

Trade Finance Market Players

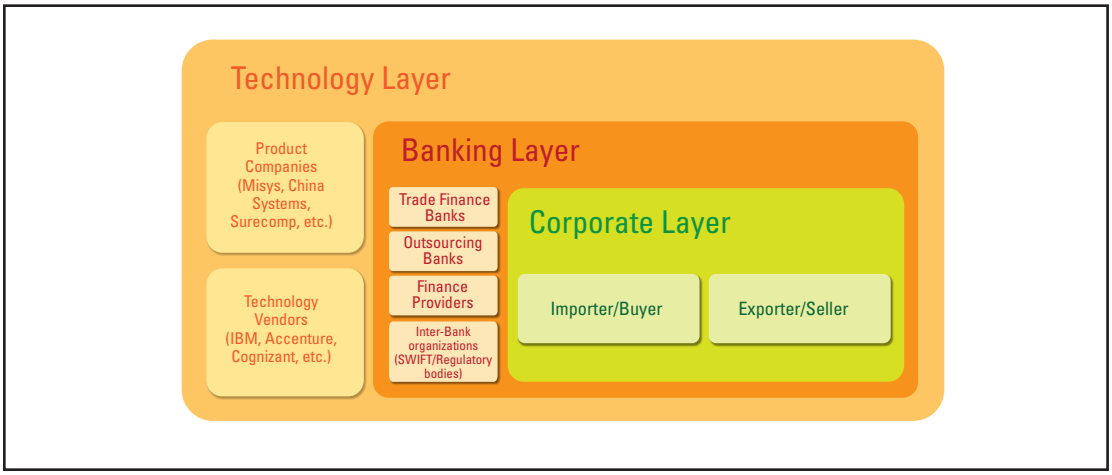


Figure 2

demand for traditional trade finance instruments. By choosing the right IT platform for themselves and their customers, banks can more effectively profit from the ongoing recovery by increasing STP rates for their transactions and increasing the affordability and availability of trade finance by reducing the cost and time related to manual processing. Over the years, numerous technological innovations have emerged in the trade finance industry. The more prominent developments are as follows.

- **Front-end Technology:** Trade portals provide corporate customers with an innovative Web browser-based approach for online requisition of business requests. It benefits the bank and its trade services or international guarantee teams by providing a personalized and dedicated front end to their back-office users, sales teams and administrators to review and process customer requests.[3] Front-end customer portals leverage technology to enable faster processing of trade finance applications and eventually contribute to achieving higher STP rates. This is made possible by using advanced XML techniques which map information fields of the customer's online application directly with the bank's back-end trade processing system, thus reducing the need for manual input.
- **Back-office Technology:** Trade finance back-office solutions provide advanced work-flow management that enables the streamlining of the entire trade finance operations lifecycle. These solutions are based on the latest technologies like service-oriented architecture (SOA), Web services standards and XML, which provide the control and agility for achieving efficient and fast trade transactional processing capabilities. These solutions also provide interfaces to bank's internal functions like limits and liabilities checking, document verification, letter generation, financing options, and generation of Society for Worldwide Interbank Financial Telecommunications (SWIFT) messages as well as postings to the required core banking and accounting systems.
- **Interbank Technologies:** Global interbank societies led by SWIFT have been actively involved in evolving innovative approaches such as Trade Services Utility (TSU) for open accounts transactional datasets matching, to enable high STP rates in fast-paced interbank transactional flows. .

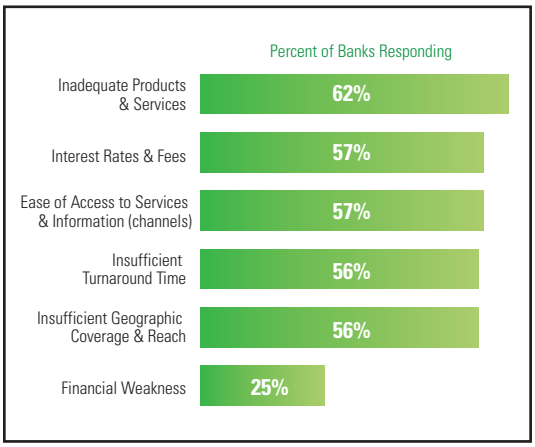
Trade Finance Trends

ICC's trade finance survey published in March 2011 reveals the following trends regarding the affordability of trade finance products and services:[4]

- The cost of trade finance remains high in many parts of Asia and Latin America.
- Traders in many low-income countries still have considerable difficulty accessing trade finance at an affordable price, particularly for import finance.

Figure 3 shows the reasons cited by banks for losing corporate business in the wholesale banking segment.[5]

Bank's View of Corporate Banking's Decline

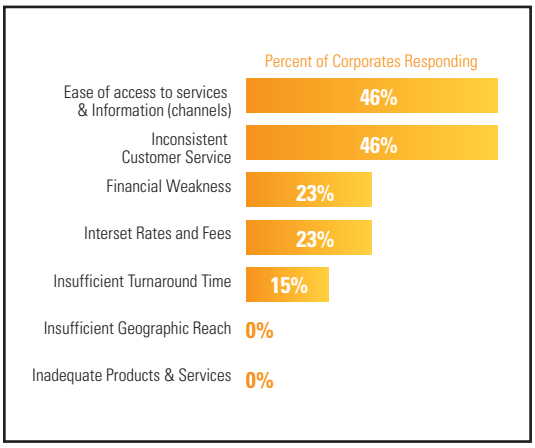


Source: Market Intelligence Report, Finextra/Pegasystems, 2010

Figure 3

Similarly, corporations cite the following reasons for reducing business with a bank.[6]

Company View of Corporate Banking's Decline



Source: Market Intelligence Report, Finextra/Pegasystems, 2010

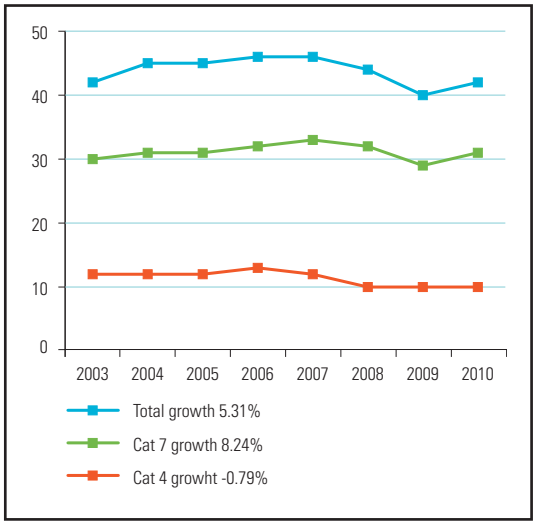
Figure 4

Distilling these data points, the following issues are the primary reasons for the decline of the wholesale banking industry:

1. Ease of access to services and information (channels).
2. Insufficient turnaround time.
3. High interest rates and fees (high cost).
4. Inadequate products and services.
5. Insufficient geographic coverage and reach.
6. Inconsistent customer service.

Based on SWIFT message figures published by ICC in March 2011, approximately 43 million trade finance messages were transmitted over the SWIFT network in 2010 (see Figure 5). Assuming that the majority of these are contributed by 400 prominent banks worldwide, we deduce that major banks on an average issue and advise close to 10,000 trade finance products such as Letters of Credit (LCs), guarantees and collections per month.

SWIFT Trade Traffic Worldwide



Note: Measured in number of messages, 2003 – 2010[7] *Source: ICC*

Figure 5

Leveraging the Cloud

Cloud computing supplies what IT always needs: a way to increase capacity or add capabilities on the fly without investing in new infrastructure, training new personnel or licensing new software. Cloud computing encompasses any subscription-based or pay-per-use service that, in real time over the Internet, extends IT's existing capabilities.[8]

Existing bank-supplied trade finance solutions and services are hosted on infrastructure consisting of data centers that are monitored and maintained by financial institutions themselves around the clock and incur immense investment

of time and money. Contrary to this, content on the public domain is accessible commonly on the Internet without the need to maintain the underlying hosting infrastructure which is managed by content providers (for example, Google Docs managed by Google).

This provides an attractive opportunity for banks to reduce or eliminate associated costs of provisioning and maintaining these applications "in-house." What is crucially required is the guarantee from cloud service providers of service delivery and data protection.[9] Typically, this guarantee can be provided through Service Level Agreements (SLAs) and data protection NDAs brokered between the providers and consumers.

Cloud Capabilities for Trade Finance

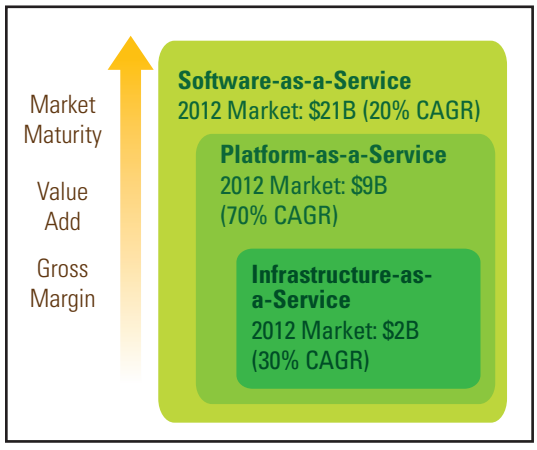
Cloud computing has gained momentum and prominence due to the immense cost saving potential that it promises for businesses. Based on discussions with various vendors, analysts and IT customers, the following is a rough breakdown of what cloud computing can offer and how can it benefit the trade finance industry.

Infrastructure as a Service (IaaS): This layer of cloud computing provides flexible on-demand storage space and virtual computing resources. The range of resources typically encompasses on-demand memory management, computational power and secondary storage available from a virtual resource pool over a network on a pay-per-use basis. In the long run, IaaS may emerge as a highly cost-effective alternative to data centers for hosting back-office trade transactional processing. The cost advantage emerges from a flexible capacity model that would be inflated during peak periods and decreased during the off season, thereby scaling costs to service demand.

Platform as a Service (PaaS): PaaS clouds provide a platform-based approach to developing or customizing business applications. A platform can be comprised of a development environment, a database management suite, a hosting service, etc. From an international trade perspective, applications such as customer portals, trade transactional processing solutions and trade reporting systems can be developed in any programming platform hosted on a PaaS layer.

Software as a Service (SaaS): This type of cloud computing delivers applications through a thin client, generally a standard Web browser, to thousands of customers using a multi-tenant architecture. From a trade finance perspective, especially for small players, SaaS can be leveraged to host a bank's entire trade finance system on cloud resources provided by a trusted partner.

Cloud Computing Ecosystem



Source: AMR, Gartner, IDC

Figure 6

Cloud Computing for Trade Finance

The trade finance processing system encompasses a customer interfacing trade portal, back-office transactional trade processing system, SWIFT transmission system, transactional data transformation and communication system and reporting system. In a combined manner, trade finance systems form a crucial part of corporate banking services for banks or financial institutions. Such a trade finance system must be extremely robust, scalable, secure, automated and compliant with ICC regulations and Basel II norms. If such a system is to be based on a cloud computing platform, the onus of managing it shifts partly to the cloud suppliers who must have expertise in handling technological platforms and a great sense of responsibility to address business-critical issues.

Trade Finance System Within a Cloud

We believe the ecosystem must have the following components (see Figure 7, next page).

Service provider: A cloud vendor providing application hosting, data center management, virtual databases, virtual server processing capabilities and storage and business support.

On the bank's side, it will include trade finance applications, such as:

- Customer portals.
- Back-office trade processing system.

Components of a Cloud-based Trade Finance Ecosystem

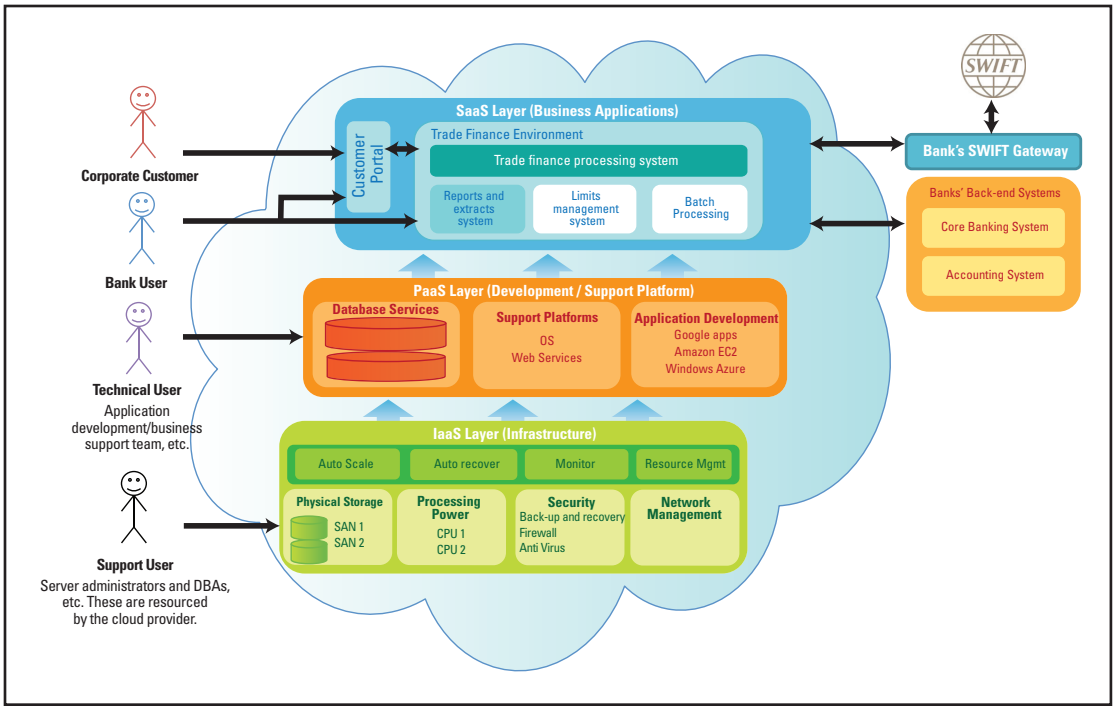


Figure 7

- Limits and liabilities management system.
- Reporting and extracts system.
- Interface to SWIFT gateway.
- Interface between customer portal and back-office trade system.

Pay-per-use Model: The services should be available on a contractual basis, with a minimum number of users and resources agreed upon. The system shall provide the flexibility to automatically allocate resources for an increased number of users during peak periods. The cloud service provider should charge a fixed minimal price for off-peak periods with reduced transactional processing and usage. Periods of increased activity and usage shall be charged on a "pay-per-use" model over and above the required threshold of users as agreed to in the contract.

A pay-per-use model includes the following.

Cost:

- **Periodic license upgrade costs elimination** for essential software and installations (fully managed by cloud service providers).
- **Infrastructure management cost reduction** (database upgrades, server upgrades, computational power upgrades).
- **Anti-virus upgrade costs reduction** (fully managed by cloud service providers).
- **Disaster recovery and backup centers cost reduction** (complete management of backups, recovery and disaster management by cloud service providers over the long term).

Strategic benefits:

- **Increased affordability through reduced costs** for banks trickling down to reduction of charges and fees on trade instruments.
- **Focus shift to business growth:** Management can focus on growing the business and leave IT management to providers.
- **Easy widespread availability** and accessibility through the cloud without the need of huge installations.
- **Decreased turnaround time** of transactions with high STP rates.

Key challenges and concerns include:

- **Data integrity, control issues, regulations, security and risk** are the biggest concerns regarding cloud computing. According to a survey of banking executives conducted by

independent research firm TechMarketView in conjunction with core banking systems provider Temenos, 44% of bank executives see the lack of data security as a significant barrier to the adoption of cloud computing.[10] Furthermore, only 15% of respondents are currently running cloud applications. The survey revealed that 80% of respondents could not name a leader of cloud computing in the banking sector.

- **Access of Internet/WAN is another critical concern**, especially for peak times of operation. Cost of bandwidth and other services will be higher, depending on the type of application used and data intensity.
- **Disaster recovery and system failure** is an important concern due to the potential for a "single point of failure" that will affect multiple systems concurrently.

Conclusion

Cloud computing has great potential to deliver massive cost savings to the slowly recovering trade finance industry. The benefits can be apportioned to increase affordability by reducing costs and increasing accessibility to trade finance solutions for both banks and corporate customers. Studies have shown that a full-fledged cloud migration can help reduce processing costs by 80% to 90%.[11] This cost reduction would then filter down to reduce the cost of trade finance transactional charges and fees levied by the banks, thus increasing affordability and yielding increased usage and growth for corporate customers.

Footnotes

1 ICC Trade finance survey findings, April 2011
http://www.ft.lk/2011/03/30/global-trade-recovery-takes-uneven-course-says-icc-survey/

2 UK Reuters, March 29, 2011
http://uk.reuters.com/article/2011/03/29/idUS132070+29-Mar-2011+BW20110329

3 Misys Trade portal http://www.misys.com/banking/markets/trade_services-trade_portal.html

4 ICC Trade Finance survey published Mar 2011

5 Source: Finextra/Pegasystems Corporate Banking Customer Satisfaction Survey 2010
http://www.pega.com//sites/default/files/Corporate_Banking_Customer_Satisfaction_Survey_2010.pdf

6 Source: Finextra/Pegasystems Corporate Banking Customer Satisfaction Survey 2010
http://www.pega.com//sites/default/files/Corporate_Banking_Customer_Satisfaction_Survey_2010.pdf

7 ICC Global survey on trade and finance, 2011

8 What cloud computing really means
http://www.infoworld.com/d/cloud-computing/what-cloud-computing-really-means-031

9 R. Buyya, et al., Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility, Future Generation Computer Systems (2009)

10 M2 Publishing – Banks skeptical on cloud computing, TechMarketView and Temenos survey reveals
http://www.m2.com/m2/web/story.php/200944CF0204B268F08F802575FA0037035C

11 To Move or Not To Move: The Economics of Cloud Computing, March 2011
http://www.cse.psu.edu/research/publications/tech-reports/2011/cse-11-002.pdf

About the Author

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