From the Fog to the Cloud

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The Digital Age

• Information drives **innovation** and **growth**

• Information leads to greater insight, higher customer satisfaction, accelerates time to market, helps to open new opportunities, and enables you to remain competitive

• Information is a key **strategy** component for every organization
Internet of Things (IoT)

Internet of Everything (Cisco),
Industrial Internet (GE Software),
Industry 4.0 (Siemens)

Machine to Machine (M2M) connectivity across the internet

“Any machine or device connected (via fixed wire or wireless communication) to the internet & being able to transmit information in one form or another”
What is Cloud Computing?

- Software-as-a-Service (SaaS)
- Platform-as-a-Service (PaaS)
- Database-as-a-Service (DBaaS)
- XaaS
- Integration-as-a-Service (IaaS)
- Computing-as-a-Service
- Data-as-a-Service (DaaS)
- Anything-as-a-Service
- Infrastructure-as-a-Service (IaaS)
- Hardware-as-a-Service (HaaS)
- Security-as-a-Service (SaaS)
- Voice-as-a-Service (VaaS)
- Managed Video-as-a-Service (MaaS)
- Ruby Cloud Platform-as-a-Service (RaaS)
- Everything-as-a-Service (EaaS)
Current landscape is foggy…
Standardization of Integration

Lift the fog, move to the Cloud

Combine all streams of standardization in one cloud-based solution
The solution is...

Standardization

Connectivity

File Formats

Security

Specifications and testing
Standardization of Connectivity

- SWIFT continues to be the most popular choice of standardized bank-neutral connectivity
- Slowdown in adoption pace at around 2012 was recovered by the introduction of SWIFT Alliance Lite 2
- Local bank-neutral networks, such as eBICS and CBI continue to be in use by local markets

**SWIFT Corporate Access**
Registered Corporates

**New Corporate groups:** 55 (+8% ▲ 2013 Q3 vs 2014 Q3)

**Traffic:** FIN + 23% ▲  FileAct + 46% ▲  (2013 vs. 2014)

**Corporate adoption (BIC8)**

- Americas: 69%
- Asia Pacific: 21%
- EMEA: 10%

**Bank adoption**

- 1,720 banks (BIC8) ▲ offering SCORE corporate connectivity
- 53 banking groups certified
  - 652 banks (BIC8) ▲
  - 120 countries
Standardization of File Formats

- Share of ISO XML based transactions now exceeds 50% of global transaction volumes processed by Citi’s integrated file channel

- Adoption of ISO XML standard is global, not limited to any region

- The effort of Common Global Implementation (CGI) group help in further standardization of ISO XML messages

**Share of file formats**
CitiConnect for Files processed transactions

- **ISO XML**
  - **EMEA**: 69%
  - **ASIA**: 48%
  - **North America**: 28%
  - **LATAM**: 34%

- **EDIFACT**
  - 16%

- **SAP IDOC**
  - 18%

- **Other**
  - 12%
3SKey
A multi-bank and multi-network personal digital identity solution

- Main use cases:
  - Digital signature for file-based communication
  - Authentication for online banking applications
- Over 25 banking groups subscribed
- Over 30,000 tokens issued

Mobile Technologies

- Can we replace security devises all together with the mobile technologies?
  - Dynamic password sent via SMS
  - Apps to generate dynamic password or challenge/response
SWIFT MyStandards
A collaborative web platform to better manage standards in the financial industry

- Supports ISO 20022 XML and SWIFT MT messages, with ability to customize the schema for bank-specific requirements
- Allows generating consistently looking and easily comparable formatting guidelines for all participating banks
- Over 35 banking groups and vendors subscribed

Now with Readiness Portal
Testing in the cloud for faster customer onboarding
Citi’s Response to the Cloud: Digital Value Proposition

Citi’s best-in-class platforms, channels and data help companies optimize working capital strategies and cash management across Citi’s global footprint in 96 countries and 135+ currencies, 23 languages.

Initiate Transactions via CitiDirect BE
Send files and SWIFT messages via CitiConnect
Or upload files via CitiDirect BE

Approve and Release Transactions via CitiDirect BE Mobile
via CitiDirect BE Tablet
via CitiDirect BE

Pivot Critical Data & Analytics via CitiDirect BE Tablet
View reports via CitiDirect BE
via ERP
Integrated Value of Citi’s Access Channels

1) Prepare
2) Initiate
3) Approve/Release Transactions
4) Reconcile
5) Review/Analyze/Inquire
SAP® Financial Services Network is an innovative cloud-based network that offers a single connection point across multiple services, businesses, and financial institutions. It provides secure connectivity and tight process integration on a platform that accommodates future integration needs.

- Clients can incur large integration costs (connectivity, security and business rules) when connecting with Citi.
- Citi too incurs large costs on on-boarding and usage.
- Industry continues to evolve on connectivity, security and format/standards.
- Clients typically have more than one banking partner.
- 2/3rd Clients of Citi use SAP as ERP platform.

To lower integration barrier and to speed up implementation/revenue through the door, SAP and CITI have co-innovated a FSN, which will be owned and built by SAP.
FSN brings benefits to both Corporates and Banks

**Benefits for Corporate**
- Multi-bank, reduced counter-party risk
- Low IT costs – FSN connectivity built into ERP
- Real-time transactions and visibility
- Future-proof solution
- Better working capital and liquidity management

**Benefits for Citi**
- Rapid adoption across corporate base
- Lower operating and client acquisition costs
- Positive client relationships through value-add apps
- Future-proof solution
- Ease of complying with regulatory / market changes

**Key features**
- Ready connection between Corporates and their Banks for interchange of messages related to financial services – including payments, payment status, and statements
- Cloud-based file format transformation the integration with multiple business partners without on-site hardware or custom development
- Security from the Ground Up - Multi-tenant architecture isolates each bank and corporate from all others
- Pay-as-you-go subscription model

** Typical Corporate Profile**
- Looking for comprehensive integration solution, covering Connectivity and Security and File Format
- Prefers ISO XML messaging competency to be outsourced
- Values flexibility of choice
- Sees strategic value in SAP providing banking integration services
SAP FSN – Citi Experience

The foundation

- First public announcement of Financial Services Network solution 19th April 2012 with Citi and Royal Bank of Scotland
- In October 2014 another 5 banks announced support of the FSN
- Co-innovation program under way with more Banks, Non-Bank Financial Institutions and Corporates

Collaboration of Citi and SAP

- SAP FSN solution to take advantage of Citi’s market leading global footprint of 90+ countries with ISO 20022 XML
- Citi worked with SAP on building a Client Onboarding and Support model
- In collaboration with the SAP FSN team, Citi has identified key industry trends in regards to connectivity and security protocols

Milestones achieved

- Completed all connectivity and technical readiness/development
- Full testing complete in all 3 environments:
  - UAT (User Acceptance Testing)
  - CTE (Client Test Environment)
  - Production
- Citi is fully integrated with SAP Financial Services Network and is ready to support upcoming pilot clients

Pilot

- Multiple clients engaged in pilot:
  - Multi-national corporations
  - Active in 20+ countries
  - Working with 5+ banking partners
- Pilots clients expected to go live this year
Summary

The industry strives to satisfy the demand and address the challenges of corporate-to-bank integration through standardization.

Solutions such as the Financial Services Network emerges as strategic initiative for the banks and service providers to establish closer relationships with corporate customers.

Together we can make the difference, lift the fog and elevate the corporate-to-bank integration to the next level.
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