

# Finance



A White Paper by  
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CN Resources  
International (CZ) a.s.  
A CN Group Company

## **Introduction**

The CN Group was founded as CN Resources International (CZ) a.s. in Prague in 1994 and in 1998 its daughter CN Resources International (SK), s.r.o. was established in Bratislava. CN has over thirteen years experience providing near-shore software development outsourcing services and supporting consultancy to customers, particularly in the telecoms, financial, aerospace and automotive sectors.

There are two shareholders, each owning 50% of the Group:

**Corena**, the International software, services and consulting group, is the leading documentation supplier to major clients mainly in the aerospace, defence, airlines and manufacturing industries specialising in documentation services and systems particularly in safety critical and mission critical environments.

**Anritsu A/S**, a division of the Anritsu Corporation, is a leading worldwide provider of test and measurement instruments and network monitoring solutions for optical, wireless, wireline, broadband and enterprise networks to blue chip companies in over 140 countries.

### **Outsourcing**

The CN Group has more than thirteen years experience in 'near-shore' outsourcing services developing software for clients in Scandinavia, Germany, the UK, other European countries and its home markets. CN complements this activity by IT Management Consulting to help customers effectively organise the outsourcing partnership, manage projects and assure quality.

The Group operates from the Czech and Slovak Republics, delivering the benefits of geographical proximity, competitively priced, highly qualified resources, and a shared culture and business environment.

### **Software engineering**

CN Group has a proven track record of professionally managed software projects. CN follows an iterative variation of the waterfall model with special focus on prototyping and early first deliveries for visibility purposes. Where appropriate Agile techniques are used, for example the SCRUM framework.

CN Group is well practised in adjusting its standard software development process to conform to the customer's own standard, and can do this thanks to its extensive experience acting as a software development / project management / testing / QA services sub-supplier to other software companies.

### **Quality assurance**

The CMMI (Capability Maturity Model Integrated) methodology is an internationally recognised quality assurance standard developed at the Software Engineering Institute (SEI) of Carnegie-Mellon University in the United States. CMMI is a process improvement approach particularly suited to software development organizations, providing them with the essential elements of effective processes. CN Group met the CMM Level 2 standard in 2002, and was added to the list of organisations compliant with the CMMI Level 3 standard on May 1<sup>st</sup>, 2008.

## CN Group Financial expertise

### ❖ *Banking and finance application areas:*

- payment systems
- anti-money laundering
- soft collection
- mortgage loans
- payment cards
- distribution channels
- core banking system implementation/testing
- banking documentation archiving
- automated template systems
- teller's applications
- on-line secure payments

### ❖ *Cards:*

#### *Business domain knowledge*

- Complete overview on payment card transaction processes and connected systems mainly in banks and providers
- Payment card acceptance system design and implementation
  - Business case
  - Feasibility study
- Customer identification processes
- Pre-paid cards
- Loyalty cards programme
- Card management system analysis
- Payment card transaction bank accounting
- Reconciliation
  - based on clearing incoming (acknowledgement/notification)
  - based on settlement
- Settlement
- Personalized Credit Card
- Chip&PIN
  - PIN change

#### *Technical knowledge*

- VISA CARD (intermediate knowledge)
  - Types of transaction messages
  - Clearing chargeback cycle
  - "Edit Package" application
- Master Card (deep knowledge)
  - Documentation
  - Types of transaction messages
  - Process flow
- Clearing
  - Clearing message formats
  - Transaction processing flow (including transaction types, chargeback cycle)

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- Authorization
  - Positive balance
  - Stand in authorisation
  - Offline/online authorisation
- Clearing
  - Business services
  - Clearing files exchange
- Issuer
  - Card issuing
  - Stoplisting
  - Range management
- Acquirer
  - Merchant acquisition
- E-Commerce
  - Internet shopping – basic knowledge
  - 3-D secure – basic principles (both issuer and acquirer side)
- Fraud detection
  - On-line monitoring

### ❖ *Example of various projects types conducted in banking environment*

- mortgage portal development
- core banking applications development, integration & testing
- business to IT alignment and IT management consultancy
- data warehouse optimization and performance tuning
- delivery of series of development /testing workshops
- “Near-Shoring” new sw development model as pilot trial / testing
- cost savings – business /IT operations
- document management, archiving & migration of document systems
- project management of large IT projects
- PM coaching and agile techniques implementation
- assessment of people resources
- delivery of IT specialists
- vendor management
- Quality Assurance / Assessment services

## CN Group Finance Projects

### ***Global retail bank (Czech branch) Data Migration Project***

CN Group migrated the core system of the bank to the latest versions of the database platform. An important component of this was the migration of one of the bank core system's Data Warehouse from Microsoft SQL Server 2000 to 2005, running under Microsoft Windows XP/2003 Server. The project involved detailed analysis, migration planning and implementation.

CN Group was responsible for analysis of the options for successful migration of the existing SQL Server 2000 database to the new SQL Server 2005 environment, implementation of the load process, 1 to 1 migration, ensuring preservation of the complete business logic, testing the implementation in the new environment and improving performance of the migrated database and application.

The project, on a time-and-materials basis, was executed over a two months period, involved a team of up to three at times and 130 man/days of effort.

## **White Paper: CN Group in Finance**

Not only has the bank met the goal of using the latest technology to provide a better, speedier and more secure service to its customers, it also has achieved a system that will grow with their business thanks to a more sophisticated implementation, better process control and a wider optimization range.

### ***Komerčni Banka Monitoring unauthorized debits on current accounts***

CN Group was required to provide a centralised application for monitoring unauthorized debits on current accounts that would allow communications scenarios to be created and changed easily, control to be applied centrally and printing of letters to customers to be managed in one place, including at a remote print shop.

The bank's requirement specified that it should be a Client / server application hosted on a Windows 2003 application server. The database server was Oracle 9.2 running under Unix. The client application was to be developed in Delphi on Win XP workstation.

CN Group was responsible for the analysis, design and development of the entire application using a dedicated team and a member of the bank's technical staff.

The configurability of scenarios has been greatly improved and it is now possible to create and change them without the need to write new application code – a saving in maintenance costs.

Employee effort at branch level has been saved by centralising the process and allowing the printing and distribution of letters to customers by an external service provider at lower cost.

The new system implementation considerably increased reliability and effectiveness of an account overdraft management process.

### ***ING Statements***

CN implemented a new application for account statements printing, fully integrated with core banking system. The application provides users with possibility to introduce new user defined statement layouts without necessity to release new application version, an option to assign different layouts to selected clients' accounts.

The project was executed over a four month period, involved a team of up to three and 200man/days of effort.

CN used MS .Net Framework 2.0, MS Reporting services and MS SQL Server 2005.

The new application is easily reusable in CEE countries thanks to localization at system configuration level. ING is able to create new layouts without dependency on a supplier. The solution includes an archive that allows a statement reprinting.

### ***A FTSE 100 UK Bank outsourcing projects***

Mortgage core system:

CN Group develops and supports a Key Fact Illustration document engine for selling and maintaining of the UK bank's mortgage products. The project consists of features analysis, development, test analysis and testing, 2nd level production support. The project is running since 2006 with currently a team of 5 FTE based in Prague performing deliveries (releases) on-time in 100% cases. Average number of application releases is 40 per year.

Debt Management project:

CN performs Support & Maintenance of a Debt Management application for the UK bank since May 2008.

Mortgage portal:

CN developed and supported a Mortgage broker website with large scale of features for UK customers with 2 developers/architects and 1 tester based in Bratislava. Project consisted of technical analysis, design, development, test analysis, testing and 24/7 support.

### ***Komercni Banka Escudo***

CN was responsible of developing an a information system that would support the electronic registration of paper documents stored in 2 central storages and keep track of the documentation from it's take over to back office to archiving.

The application first supported the debit trades documentation evidence. But after CN has successfully implemented and deployed it, KB asked for its extension to cover also documentation of credit trades. The implementation of the first phase took 6 months and the second phase covering credit trades took 5 months. The application was developed in Visual Basic and uses the Oracle database.

Now the application is used on a daily basis, further changes and extensions are continuously implemented according to customer's new business requirements. CN is providing new features development support and maintenance of application based on a long term support contract with KB.

### ***ExperCash - Secure on-line payments for eshops***

In cooperation with the customer CN team designed and implemented a new system for online web shops that guarantees payment to merchants and allows delayed payment via bank-to-bank wire transfer by customers after receiving ordered goods. Based on the customer's request the system was developed in open source technologies – PostgreSQL database, JEE (Struts 2, Axis 2, Spring, JPA / Hibernate), and administration tool in Grails. This new system allows the customer to provide a new payment service on the German market.

## **Software technology skills**

(used in Finance projects)

### *Programming languages*

- Java: JSE / JEE, Spring, Struts 2, Axis 2, iBatis, Hibernate, Grails, Drools, DoJo, Ajax
- .Net Framework 2.0-3.5, C#.Net, ASP.Net, WCF
- Visual basic 6,

### *Databases*

- Oracle
- MS SQL Server
- PostgreSQL

### *Operating systems*

- Linux
- Windows

### *Tools*

- Unit testing frameworks: JUnit, CppUnit, Nunit
- Testing tools: QFTest, Selenium
- Build tools: ANT, Maven, Team Foundation server / Team Build
- Static code analyzers: Lint, Checkstyle, PMD
- Profilers: JProfiler
- Continuous integration: CruiseControl, TeamCity, Hudson
- Versioning systems: CVS, SVN, PVCS, Team Foundation server
- Issue tracking systems: Mantis, Team Foundation server
- UML modelling: Sparx Enterprise Architect
- DB modelling: Sparx EA
- IDE: Eclipse, MS Visual Studio

### *Other skills*

- UML
- XML Schema, XSLT

## CN Group key references in Finance

- *Commerzbank [DE, CZ]*
- *Komerční Banka [CZ]*
- *Citibank [CZ]*
- *ING Bank [CZ]*
- *ExperCash [DE]*

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