

## Introduction

We are an independent consulting company that implements projects for financial institutions in the area of credit, market and operational risk management. Our team of specialists in mathematics, statistics, programming and finance bring a wide range of knowledge and experience, a creative approach and proven solutions.

Creative, Reliable, Adaptive



## RISK CONSULTING

### **Scoring models**

- Application and behavioral scoring
- Advanced models development, calibration and validation
- Reject inference approaches
- Cut-off setting using cost of error weighting

# **Basel II and Economic Capital**

- RWA, PD, LGD and EAD modeling and methodology
- Time series analysis with economic downturn assessment
- Methods dealing with incomplete observations (LGD)
- PIT x TTC rating (variable scalar approach)

# Advanced methodology for LGD Modeling

- Cost allocation + data implied discount rate determination
- Modeling techniques for partial recovery rate observations
- Downturn portfolio LGD

## RISK CONSULTING

#### Value at Risk Models

- Parametric and nonparametric VaR and CVaR models
- Advanced (e.g. GARCH) correlation and volatility estimations
- EVT (Extreme value theory)
  VaR implementation

#### Valuation of derivates

- Valuation and risk
  quantification of portfolio
  of plain vanilla forwards,
  options or interest rate
  swaps
- Advanced stochastic modeling and exotic derivatives valuation

## Basel II Implementation and Capital optimization

- Basel II market and operational risk capital calculation
- Standardized or VaR based approach
- Stress testing and economic capital allocation

## BIG DATA CONSULTING

# **Exploration of all kinds of information**

- Internal data sources
- Understand your data through internal or external internet data sources
- Understand better your clients through fusions with external sources (TELCO, energy)

# Recognition of hidden profitability opportunities

- Identifying weaknesses in your processes
- Minimizing your client's attrition
- Maximizing sales numbers of your products
- Optimizing your business model

# All types of methods to explore the maximum information

- From regression trees to random forests
- From Bayesian to neural networks
- From simple regression to ensemble models
- Gradient boosting, stacking,
  Adaptive Boosting
  (AdaBoost) and other
  methods

## FINANCIAL AND INVESTMENT CONSULTING

# Optimal Portfolio Allocation

- Expected return versus risk optimization
- Algorithmic trading strategies analysis, design and implementation
- Bayesian approach to asset allocation
- Optimal allocation
   of financial assets inclusive
   reliable measurement of
   their return and risk profile

## Performance Measurement and Risk Reporting

- Definition of key performance indicators, benchmarks and risk measures
- Implementation of automatic reporting systems and monitoring processes

# Cash Flow Optimization

- Proposal of optimal cash flow structure, financing and financial asset management
- Analysis and hedging of balance sheet foreign exchange, interest rate and liquidity risks

## IT CONSULTING

### **Credit Rating System**

- (Web-based) Application for storing and management of financial statements
- Supported by the database structure
- Process of client-level rating assignment, the definition of user roles (analyst, client manager)

### Recovery Management System

- Definition of particular recovery processes
- Storage of realized actions on account, direct and indirect costs
- Support recovery process analysis and optimization
- Data export for LGD modeling

#### **Tailor Made Software**

We offer software
 development on demand
 and our own software
 products. We have
 a competent team with
 extensive know-how in the
 area of software applications
 development and software
 solutions development

## EXECUTIVE DIRECTOR

## Jiří Witzany

#### **WORK EXPERIENCE**

- Co-founder of Quantitative Consulting
- Senior Consultant CRA System, a quantitative risk management division of Mediaresearch
- Director of the Credit Risk Management Division in Komerční banka (scoring functions development, credit risk reporting and data management, implementation of Basel II, real estate valuation)
- Modern market risk management system development in Komerční banka, implementation of the dealing system Trema, the Middle Office function, and a Management Information System for financial markets trading

#### **ACADEMIC ACTIVITIES**

- Professor of Finance, Faculty of Finance and Accounting, University of Economics, Prague and Faculty of Mathematics and Physics, Charles University, Prague
- Guarantor of the Financial Engineering Master degree program
- Formerly a lecturer at the Pennsylvania State University and the University of California in Los Angeles

## STRATEGIC DEVELOPMENT

#### **Pavel Charamza**

#### **WORK EXPERIENCE**

- Research Development Director in Median
- Group CRO of Home Credit International
- CRO of Home Credit in China
- Member of the Board of Directors in Mediaresearch.
  Established a financial consulting division later transformed into Quantitative Consulting.
- Credit Risk Manager in Komerční banka.
  Responsible for developing and implementing a new scoring system for the bank.

#### **SUMMARY AND SKILLS**

- Lecturer at the Probability and Mathematical Statistics Department, Charles University, Prague.
   Lecturer of Credit Risk, University of Economy, Prague
- International experience
- Top management experience
- Analytical and mathematical skills
- Credit risk and scoring
- Antifraud, underwriting and collection processes

## METHODOLOGY DEVELOPMENT

## Petr Veselý

#### **WORK EXPERIENCE**

- Head of Department of Portfolio Management and Reporting in Sberbank CZ
- Head of Department of Credit Portfolio Management in Raiffeisenbank
- Head of Department of Portfolio Management in eBanka
- Head of Department of Scoring and Portfolio Management in Komerční banka

#### **SUMMARY AND SKILLS**

- IFRS 9 provisioning methodology
- Credit risk statistical modeling
- Scoring functions development
- Early warning systems
- Risk premiums
- Loan loss provisioning
- Basel regulation

## REFERENCES

akcenta











































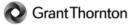












# CONTACT

## **Quantitative Consulting, s.r.o.**

Opletalova 1417/25

110 00 Praha 1

Czech republic

+420 602 356 122

info@quantitative.cz

www.quantitative.cz