

Development of a DSS System for a Major Bank

Dr. Ferenc Kiss

Abstract

At the Budapest University of Technology and Economics Department of Information and Knowledge Management a new software development project have started in April, 2002. The goal is to build a Decision Support System for banks based on SAS technology, integrating the common controlling, CRM and risk management functionalities, Balanced Score Card techniques, standard and OLAP reporting services and interfaces to the accounting systems, for “real life” education demonstration purpose. The core decision model is quite unique: a combination of a specially structured balance sheet and some scoring models. Among the building elements can be found our data handling and metadata manager developed for our microsimulation system at the department in the last two years, some portfolio scoring models prepared for financial institutions and two working BSC models developed for Hungarian banks. The paper presents the state of the project, the future steps and the first experiences.

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Introduction

Budapest University of Technology and Economics Department of Information and Knowledge Management is the centre of the banking IT education in Hungary since 1994. Besides the graduate, postgraduate and customized education activities we provide wide range of services to the financial industry such as

- theoretical and applied research,
- building decision models,
- planning, executing and monitoring IT development projects,
- expertise and tools for
 - management levels decision support,
 - microsimulation,
 - building new e-business and m-business products,
- software development,
- advisory work,
- organizing conferences and workshops,
- preparing and publishing books and customized educational materials.

Based on our experiences and requirements of our financial IT courses we have started a new software development project in April, 2002. The main goal was to build a decision support system working model to demonstrate the information flow in the middle and high level management of a bank.

Antecedents

Some of the elements of this concept was developed recently. The fundamentals and the first versions of SB prepared by our colleague, Dr. Gyorgyi Matyok at Inter-Europa Bank in Hungary from 1994 to 1998 and this model is working till now. The account management system was a Midas on IBM AS/400, the SB based MIS was implemented in SAS on Microsoft platform. Although during the last few years this bank have changed some of its core systems to SAP, they could not provide an alternative MIS at a closely the same level of effectiveness, flexibility and accuracy.

Other building blocks were developed by our Microsimulation Research Group at the Department. This team headed by Mr Joseph Csicsman is working with close cooperation with Calculus Co. Mr Csicsman planned and developed the first microsimulation system in SAS at the Central Statistics Office in Hungary in the middle of 90's. This group have designed a new microsimulation system and have developed is during the last two years. Some of the parts of this system such as metadata manager, flexible data importing and handling system, query generator, elements of the model builder and the framework system are reusable in the DSS project.

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There are approx. 30-50 student research project managed, consulted and/or fully implemented in the eight research centres and groups of our department annually. The subjects of these are a wide variety of actual business and IT problems of large scale of business actors. Most of the results are getting used at our industrial partners. This DSS project will include the experiences and results of these projects.

We had developed some successful software for educational purposes earlier and some of them (mostly experimental MIS systems and expert systems) have turned to (not educational purpose) business products reacting to the market interests. Our most complex education purpose software are:

- Derivatives and Option Market Education System for the Hungarian Stock Exchange, which is a fully functional market extended with artificial news generation, special game master functions, performance measurement, sort of stored, customizable set of trading rules, strategies, and product generator.
- Electricity Exchange and Trading Education System for the Hungarian market, which can provide the OMEL, the EEX and some dashboard trading models, the NordPool is under development, and the education support services are quite similar to the Derivatives and Option Market Education System.

Of course, the education supporting technology will be included into our new DSS system.

Moreover, some Hungarian financial institutions use BSC models, credit scoring models and scoring software developed by our staff.

The system concept and development

The core concept is

- to build a data warehouse collecting some generated data from a simulated accounting and controlling system,
- integrate some ways of exploitation tools of the data warehouse with some business applications such as Customer Relationship Management and Risk Management,
- the MIS and EIS module should follow a special, accounting balance like structure (SB) providing an up to date financial and effectiveness overview on the scales of product lines, business divisions and geographic regions as well,
- include complex forecasting functionality,
- include lots of types of user interfaces,
- include proper user identification and authorization,
- include education support tools for decision situation simulations.

There was no doubt SAS should be the development platform. Figure 1 shows the basic scheme of the system.

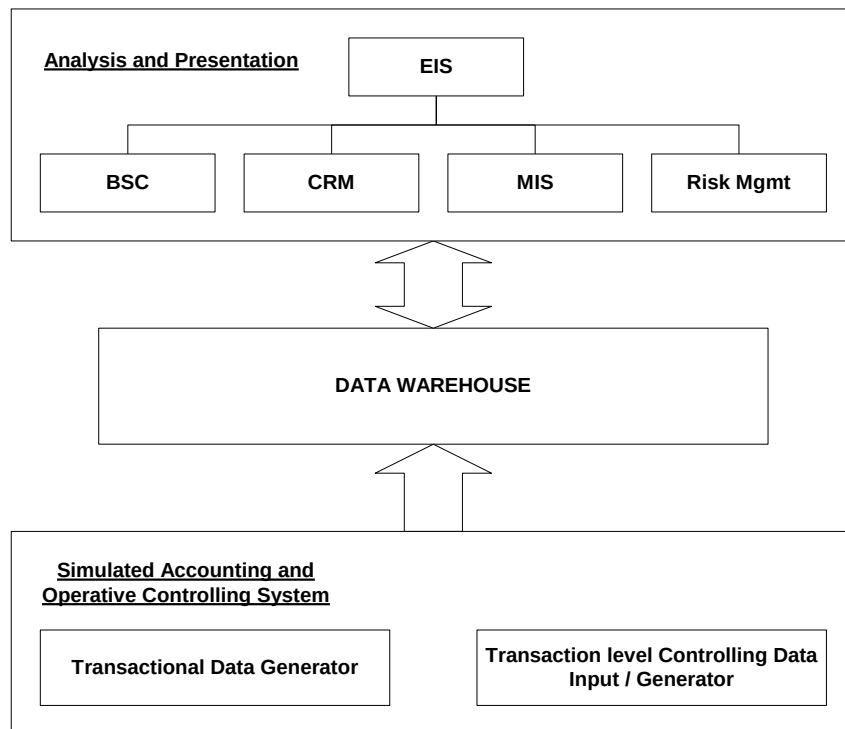


Figure 1. The core concept of the model DSS system

After the specification the planning process have started and the system now under development by our staff and students. The concept have presented at the National Student Scientific Conference, 2002 and won a First Prize.

We hope the first working version of the software will be available at the end of this summer, so we can use it in the 2003 autumn semester.