

# INNOVATION IN THE TUITION OF PROCESS MANAGEMENT AT TOMAS BATA UNIVERSITY

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## 1. Presentation of Our Tuition Abroad

In May, IDS Scheer organised its latest international conference entitled: "ProcessWorld Europe 2006". This year it was in Amsterdam. IDS Scheer is the leading provider of software products in the field of the management of business processes.

The motto for ProcessWorld Europe 2006 was "Innovation for the future" oriented on discovering the entrepreneurial spirit of the future, forward-looking ideas and inspirational visions in the Future Workshop, the meeting place for start-ups, spin-offs and businesses at the frontier of research. This year, the congress was attended by more than 1300 participants representing 41 countries from around the world. Apart from Prof. A. W. Scheer - the founder of this congress, the key presenters included Dr. W. Jost and J. Cruyff. We were the only representative from the Czech Republic at this international conference with our article: Teaching the ARIS Module at Tomas Bata University in Zlín.

It deals with instrumentaria which represent the appropriate software support for Process Management, and those tools which are used in a whole range of Czech and world-class manufacturing production and non-manufacturing enterprises as well as in organisations and other public sector administration institutions. The innovation in the tuition process lies in the fact that this software is not used for modelling the processes within the university (the organisation itself) - but rather, that the students themselves model and analyse processes drawn from real-world praxis (working practices) in manufacturing production and non-manufacturing enterprises.

## 2. Why Business Process Management?

First of all, in this article I should evaluate the reasons which lead enterprises to exploit ele-

ments of process management in their working practices. **The aim of Process Management is to develop and to optimise the daily running of an enterprise** in a way which defines these work-related procedures (i.e. processes) as a unified flow or cascade of activities throughout the enterprise, where for each and every process its inputs are clearly defined as are the outputs or results, and where the associated responsibilities and personal responsibilities are assigned for each and every process or activity, while establishing a system for the measurement of the performance of these processes and tracking and evaluating each and every process.

These activities must be realised (i.e. implemented) **such that:**

- The quality of production will be maintained through given measurement parameters.
- All available resources shall be optimally exploited.
- All of the performance indices of the enterprise have been improved continuously throughout in line with previously agreed and known and measurable criteria. [2,7]

This however means that there is a need to describe just what distinguishes or characterises a process, which is a so-called "management process". This means that such a process has:

- A defined, ranked set of steps to be taken and appropriate responsibilities allocated.
- A set of measurable parameters derived from customer demands or requirements, or internal standards - "owners" of the process/es.
- A permanent process team who meet regularly with the aim of seeking improvements to the process/es.
- An annual plan which contains the requisite outputs/outcomes/results for each and every key process, as well as appropriate budgets and demands on resources.

- A mechanism for the regular and interim controls of the process/es performance.
- Procedures and resources (i.e. the process team) for the resolution of problems associated with the process/es. [6]

### 3. Process Modelling Tuition

The aim of Process Modelling is the creation of a process model of the organisation. The design of such a process model is highly-demanding on time, and it is only with great difficulty and with many restrictions that it can be mastered without the appropriate software.

A core component of the whole system for the documentation of processes is the mutual interlinkage of all of an organisation's document flows, which are broken down into three basic levels:

The Organisational – these define the organisation's structures and their aims.

The Processional – these define the approaches and procedures that lead to the attainment of the organisation's aims and goals.

The Performance – the level at which activities are carried out by the appropriate responsible employees.

How is such a process model created? The whole problem and associated issues regarding the creation of a process model is covered in detail within the framework of the tuition of subject Computer Support of Business Processes at Faculty of Management and Economics, TBU in Zlin. This paper is not intended to serve as a substitute for the role of the syllabus and thus, it only indicates in structured points just how one should proceed in the course of designing process models as well as how the students actually work in practice.

1. The identification of the processes.
2. The description of the contexts of the processes.
3. The establishment of maps of the processes.
4. The description of the processes
  - 4.1 The identification of the ordering and ranking of the events and functions (i.e. activities).
  - 4.2 The breakdown of these processes into their component sub-processes.
  - 4.3 A detailed description of their functions.
5. The controlling of the consistency and correctness of the process model -

5.1 Controlling the rules governing the creation of the model (i.e. its syntax).

5.2 The perpetual controlling of both models and objects.

5.3 Controlling relationships between models.

Processes can be broken down into categories according to the value-added they provide to external customers as follows:

- Management processes – These determine and ensure the development and management of an enterprise's performance. They create the conditions for the correct functioning of other processes in that they ensure the management and integrity of an enterprise. Among these are, for instance, strategic planning, quality management, etc.
- Key/Core processes – These create value in the form of products or services for external customers. Value-added chains are created, representing key/core areas of the enterprise's business activities. For instance, production, sales, distribution, etc.
- Support/Ancillary processes – These ensure the conditions governing the correct functioning of all of the other processes in that they give/deliver them the products (tangible or intangible) – but which at the same time, are not part of the main or core processes. By these, we have in mind for instance economic (financial) management, human resource management, IT services and support, ecology, plant and equipment repairs and maintenance, etc. [3,4]

The aim here is to describe a process at its highest level, i.e. its main inputs and outputs and most important relationships. We describe the summarising characteristics of the process from both the customer and the performer of the process' point-of-view. Depending upon the purposes of the process analysis, we track various characteristics of the process. For instance, in the case of an analysis intended for information strategies, emphasis will be placed predominantly upon working with information. The identification of the attributes of the process serves to define and delimit the borders of the process and the instructions for its detailed analysis.

The first description of the context of the process is not a final description, but rather the primary summarisation of information about the

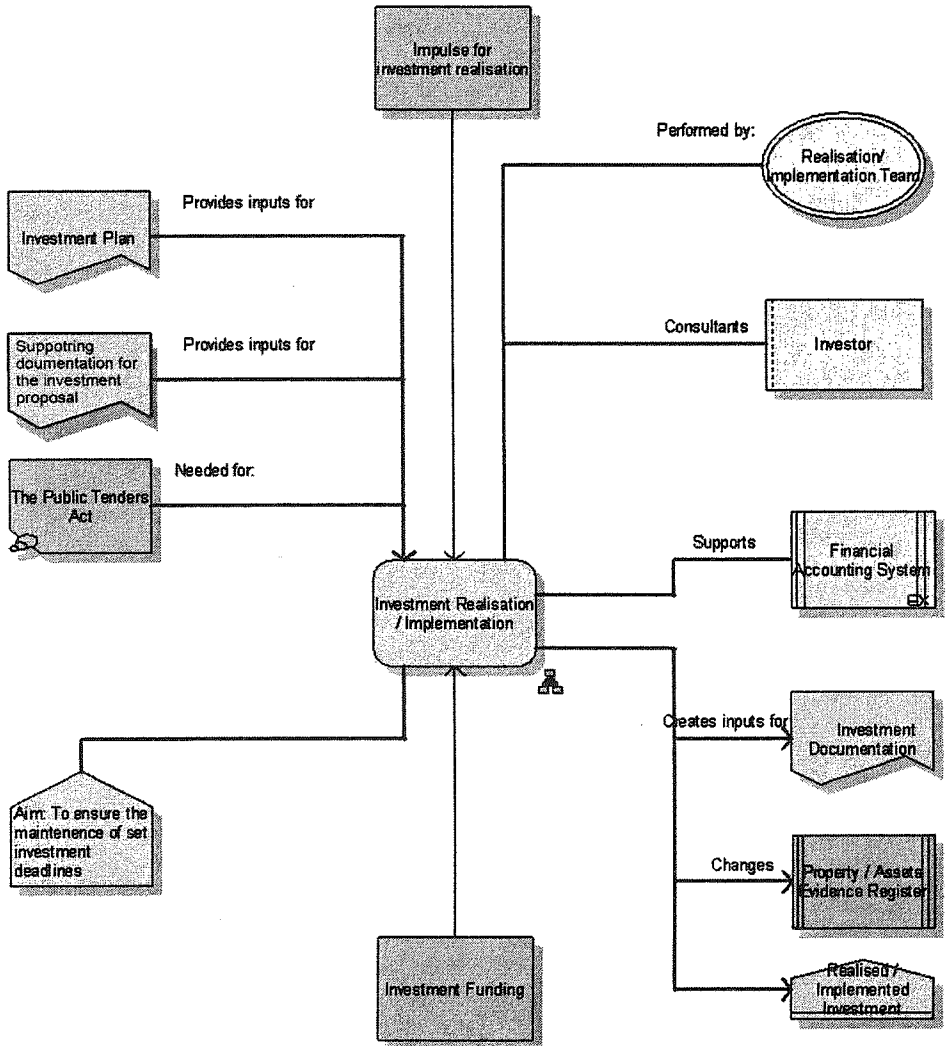
Fig. 1: Description of the Context of a Process (ARIS Toolset)

Name: Realisation of an investment

Category: Support/Ancillary Process

Process Purpose: To implement/realize decisions about performing investments

Process Customer: Investor, the financial accounting process for administering assets, external suppliers



Source: own

process prior to its even more detailed analysis. At this stage therefore, its internal structure is not described, nor are the actual processes that take place within that process. An example of such a model is set out in Fig. 1. The aim of this sample model is to show the ordering and ranking of the functions, and to provide an overview or perspective on the context of the process.

#### 4. Structure of the Tuition of Process Management at FaME

##### What study disciplines is Process Management taught in?

In the 2005/2006 academic year, Process Management is being taught in the following disciplines:

The Master's Degree Programme: Economics and Management, for full-time students, in the following Specialisations:

- Enterprise Economics;
- Industrial Engineering.

In the 2006/2007 academic year, Process Management will be taught in all full-time specialisations.

In the 2007/2008 academic year, Process Management will be included in all of the specialisation of the Combined (Distance/Lifelong) Studies programme.

##### Linkage of the Process Management studies:

In the first year of the Master's Degree Programme:

- In the winter semester, the subject: Reengineering – The Theory and Basics of Process Management is taught.
- In parallel with this, the subject: Computer Support of Business Processes (now called "The Theory of Industrial Business Systems II) is also taught; within the context of which students learn to work with ARIS Easy Design (ARIS Toolset).

#### 5. Benefits of Using the ARIS Software Tool

**ARIS** – The complex definition and design of enterprise processes within the context of the whole company, including analyses and optimisation.

Tuition based on the use of the ARIS and Microsoft Navision enterprise applications in the Production Systems subject links onto the tuition of these applications in the preceding (parallel) subjects – except for the fact that it concentrates on the clarification of the management of commercial and economic (financial) processes. In so doing, it helps to make more attractive the position or standing of the Master's Degree study programme, or even of FaME in competition with other economics-oriented faculties (not only in the Czech Rep.).

It increases the attractiveness of the disciplines of Industrial Engineering and Enterprise Economics in that the freshly innovated content of these subjects contributes to a significant degree to the offer of a complex educational programme oriented on the exploitation of ICT in the management of production, logistics, commercial (sales), and economic (financial) processes.

This interlinkage with other subjects within the framework of the study disciplines of Enterprise Economics and Industrial Engineering allows economics/managerial students to acquire a multi-professional knowledge in relation to the use of ICT.

##### The significance of tuition using the ARIS modules.

The main aim is to improve the quality of tuition of Process Management at the Faculty of Management and Economics, TBU in Zlín. Tuition will be concentrated on the area of exploiting these software applications on the basis of model situations based on the everyday practices of enterprises (a case-study approach). It allows students to also acquire practical knowledge and skills, which they will later be able to apply in their future careers.

It ensures close cooperation with entrepreneurial practices, which should allow – among other things, the presentation of model situations drawn from the working practices of manufacturing production companies. It makes connections within the framework of the tuition of individual specialisations between the various types of knowledge that students have acquired (will acquire) within the framework of other subjects: i.e. apart from the subject of Reengineering:

- In the subject of Production Systems – in the course of the tuition of discrete simulations using the Witness application.
- In the subject of Enterprise Information Systems using the ERP Microsoft Navision

applications for the economics (financial), commercial (sales), and CRM fields.

- Or in the subject of Information Management using the Oracle E-business Suite 11 application for the management of production and logistics processes, which will - at FaME - Department of Production Management - Industrial Engineering, be realised in the form of a leasing arrangement - the ASP model and taught as an alternative to the Navision or SSA Supply Chain Solutions applications.
- (The last two subjects named above are taught in the summer semester of the 1st Year of the Master's Degree studies programme). [5]

**This way of teaching enables [1]:**

- Increases in the competitive ability of FaME graduates on the labour market.
- Making FaME more attractive and especially making its Master's Degree studies programme more competitive with regard to other economics-oriented faculties.
- Support of the building of hybrid careers as economists/managers in relation to the exploitation of ICT.
- Increasing the attractiveness of the disciplines of Industrial Engineering and Enterprise Economics by the offering of a complex educational programme oriented on the exploitation of ICT in the management of production, logistics, commercial (sales), and economics (financial) processes.
- The long-term further development of cooperative ventures between FaME and ICT providers, their customers, and this on the basis of extremely close ties between them and the educational process.

**6. Previous Approaches to Teaching**

Tuition using ARIS is realised through: (i.e. the client/server architecture)

- a) A Dell PowerEdge 2600 server.
- b) 15 client PCs.
- c) A Microsoft Windows 2003 Server CZ + a Firewall Kerio Server.
- d) A Microsoft SQL Server - 2000 Enterprise Edition.
- e) A 100 Mbit LAN.

The approach to tuition using the ARIS Easy Design (Toolset) within the framework of the

subject "Computer Support of Business Systems is equivalent to the needs placed on the participants of the training programme provided by the IDS Scheer Company. We cooperate with IDS Scheer CR by preparing our lessons.

Among all of the above-mentioned subjects, a logical interlinkage has been created which means:

- a) That the subject of Reengineering is linked in the field of process modelling of the use of the ARIS system through practical applications to Process Management and in the course of the complex definition and design of enterprises' processes within the context of the whole company, including analyses and optimisation.
- b) That the subject of Production Systems complements and fills out students' experience with knowledge of the discrete simulation of production processes.
- c) That the subject of Enterprise Information Systems is linked through the use of the ERP Microsoft Navision in the fields of economics (finances), commerce (sales) and CRM.

**7. What does the Future Hold in Store?**

A range of support material used in the tuition process draw directly upon case-studies and research realised within the framework of collaborative ventures between FaME and IDS Scheer and its customers who are production (manufacturing) as well as non-production organisations. For example, this has to do with qualitative research in the following enterprises: Cement Hranice, NKT Cables Kladno, Kostal CZ Černín, AAA Auto Praha, Teplárna Strakonice or Pražská energetika, etc. We are also undertaking quantitative research whose aim, among other things, is the clarification of aspects exploiting the principles of process management in everyday practise in Czech enterprises in the production (manufacturing) as well as non-production spheres and to determine which of the elements of process management are in use to-date in Czech enterprises and what extent they are used.

In order to master the theory of the transition from functional management to process management, and the theoretical basics of process management and the basics of process modelling through the use of the ARIS Easy Design applica-

tion, it is realistic within the framework of tuition in the given specialisations to link these to **ARIS Business Optimizer** – Clarity of the processes gained through the modelling of organisational structures and organisational procedures and approaches is applied to the key performance indices – i.e. Key Performance Indicators (KPI) from information technology (IT) and Controlling.

Process-related KPI can be imported from the ARIS structure as well as other source systems and be evaluated by analyses like: "What-if ?", Timeline Studies, Comparative Scenarios analyses.

The use of the ARIS Easy Design suite for processing certain types of diploma theses with an orientation on the problems and issues associated with process management.

In cases where there is an interest in **expanding Process Management tuition** with the support of the ARIS applications – even for disciplines like: Management - marketing for students of full-time and combined studies programmes.

We are involved in the preparation of a project for the tuition of the ARIS Toolset and some of the other tools belonging to the ARIS Controlling Platform at the **Technical University in Zvolen (Slovakia)**.

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Doručeno redakci: 28. 8. 2006

Recenzováno: 14. 11. 2006

Schváleno k publikování: 2. 4. 2007