

Systems Research Institute, Polish Academy of Sciences

Preprints

TRANSITION TO ADVANCED MARKET ECONOMIES



Abstracts

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SESSION 6

COMPANY LEVEL ISSUES AND MICROECONOMIC MODELLING

Part 6B

THE ACHIEVEMENT OF WORLD CLASS MANUFACTURING

L.R. Foulds

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We attempt to identify what features world class manufacturing organizations have in common. We discuss practical strategies for improvement of quality and the simultaneous reduction of unit cost. We conclude with

- (i) a case study of how the ideas presented were used to enable an Irish computer manufacturer to improve significantly its international competitiveness,
- (ii) implications for other companies with similar aspirations.

SMALL AND MEDIUM ENTERPRISES STRATEGIC INFORMATION MODEL.

Dimitar Hristov

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The paper describes a concept based on an actual study of managerial information needs, on recent knowledge and concepts of strategic management and on an experience of Small and Medium Enterprises (SMEs) management consulting.

Managers want to receive highly processed information about how the environment factors impact the profit and how the strategy they choose impacts the performance.

The SME managers who want to plan strategically their business in the world market turbulency have no resources to develop and to support large data base for the analysis of environment and to use a sophisticated methods in order to report how their businesses get into profit trouble and what are the pathways out of trouble.

The presented strategic information model for SMEs management can be used as a tool for managers or consultants when they want to build a data base and a computer based system in order to monitor and to capture the major factors which explain the large amounts of variability in effectiveness of SMEs.

M.E.R.O.D.E. MODEL DRIVEN ENTITY RELATIONSHIP OBJECT ORIENTED DEVELOPMENT TECHNIQUE

Guido Dedene, Serge Desaranno, Carine Van den Acker

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The paper to be submitted deals with a new approach to the domain of system development. While going through the basic concepts of the methodology its improving aspects are emphasized.

The different elements of an object oriented business model are illustrated by means of a case study. In addition, the resulting specification will be submitted to different integrity control techniques.

Finally, the possibilities of prototyping and implementations of bussiness models are addressed.

The methodological framework presented yields a substantial contribution to the evolution of generic business models.

A METHODOLOGY FOR IDENTIFYING DIFFERENCES OF PERCEPTION BETWEEN INVESTORS AND YOUNG ENTREPRENEURS WITH RESPECT TO THE VALUE OF AN ENTERPRISE

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This paper reports on a new innovation introduced at the Manchester Business School aimed at improving the overall performance of venture capitalists. In this innovation venture capitalists can assess entrepreneurs' levels of skill in key areas of business management. We describe a method which enables them and their potential entrepreneurs to identify both strengths and weaknesses so that solutions can be sought in the areas of weakness. It is based on a simulation described below (Section 2) which the entrepreneur would take part in. The simulation is designed to provide valuations of the firm according to certain income and cost functions. Moreover, the reasons for actual values can be identified using the model, and entrepreneurs' strengths and weaknesses identified along 10 business dimensions. The valuation process is described in the appendix. Application of the valuation model is described in section 3 along with potential ways in which valuation can differ according to the valuer's qualitative judgements. The paper then presents a methodology for assessing dichotomies in perception between the investor and entrepreneurs, (section 4). We argue that only by identifying these differences can the true nature of small, high risk ventures be fully understood and the performance of venture capitalists improved. The simulation can help in the many exercises that venture capitalists typically employ when deciding on whether or not to invest in a company. The advantage of this simulation is that the venture capitalist and the entrepreneur have a structured way of looking at the entrepreneur's potential. Weaknesses can be identified early, and possible solutions proposed, so that investment in the project can go ahead.

PRODUCTIVITY/EFFICIENCY MEASUREMENTS

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The productivity, efficiency and performance concepts have recently become of prime importance in private and government enterprises as many countries suffer from economic downturn and experience increased international competitiveness. In the talk we shall focus on methods of assessing efficiency of a chain of organisational units.

The essence of all efficiency/productivity concepts is the relationship between inputs and outputs. In the simplest case efficiency is defined as the ratio of output to input. However, organisational units have multiple incommensurate inputs and outputs and the aggregate measure based on a simple ratio does not isolate impact of a single factor in joint production. A series of various ratios also does not assess overall performance pictures of efficiency.

Therefore effective efficiency measurement requires that all factors in multiple input and multiple output production be simultaneously considered and the utilisation of resources in the production process be assessed.

The following will be discussed in the talk:

- . parametric and nonparametric methods of measuring efficiency in a multiple input-output environment.
- . Conceptual and practical differences in these techniques; their strengths and weaknesses.
- . Communication of the efficiency results to management.

This is a general talk requiring only basic knowledge of statistics and linear programming concepts in order to understand the efficiency measurement methods. The talk will be illustrated by examples of practical applications from the author's experience.

MODEL ANALYSIS OF THE STATE REGULATORY IMPACT ON THE EFFICIENCY OF THE FIRMS ACTIVITY BY THE TAX MECHANISM

Ilia P. Tzvetanov

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The tax mechanism is a state instrument for direct impact on the results of the firms production and financial activities. It is mainly by means of the tax norms and the settled rules of taxation that influence might be exercised on the income and expenditure components of the process of formation of the profit and on the balance between the assets and liabilities of the firm. It was proved that this process may be described appropriately by a model and in this way it becomes possible to create the necessary instruments for its analysis. The present research deals especially with such a model description. By its nature the approach of a model description is a computer processed imitation.

The model is based on the integrated programme package for automatised information computer processing of data and for modelling. This model is a "kind of computer stand" giving the chance to analyse the process of the formation of the profit and the scheme of the balance between assets and liabilities of the firms. In this "stand" one may change the norms, make multi-variant analysis to imitate the rules of the taxation after the newly adopted financial Law on accounting, and so on. This law has the function to create in Bulgaria the necessary financial conditions during the period of the reform in the transition to market economy. It is shown how through the model important decisions may be taken for the improvement on the tax mechanism. Interesting results of the analysis are being discussed.

A DSS FOR AN INDUSTRIAL COMPANY IN THE VIETNAMESE TRANSITION TO MARKET ORIENTED ECONOMY

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We have designed a system to support the managers of an Industrial Company in decision making process.

The system consists of the following components:

- 1) A data base collecting information on the environment and the market, productive power (labour, machines and equipment, materials, finance, prices...) of the company.
- 2) Model base includes the models for forecasting, planning, man- machine heuristic procedures to compromise between demand and supply.
- 3) A management system software controls the system's activities, a number of menu for different tasks of decision processes.

Our system was designed and was practically tested in supporting the following problems:

- Reviewing of the productive possibilities, situations of the company, consideration of devices to improve the company's power and competitive advantage including situations of new goods and new projects.
- Calculating main economic-technical criteria of activities of the company and estimating the profit.
- Determination of the balance between supply and demand by heuristic and man-machine procedures, models, and determining the advantage in sharing the served market.

TAX CONTROL FOR THE TRANSITION TO A MARKET ECONOMY

Wanda Arczewska and Andrzej Straszak

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Poland started its way to market economy since 1982. The command and centrally planned economy had been replaced by centrally regulated economy. Even after 1989 some central regulation have remained. The most powerful economic regulator applied was the so called "Popiwiek" - incremental salary tax mechanism. In the paper computer simulation of "popiwiek" tax since 1982 till 1992 is presented.

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