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TRANSITION TO ADVANCED MARKET ECONOMIES

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SESSION 13

DECISION SUPPORT SYSTEMS

Part 13B

AN INTERACTIVE DECISION SUPPORT SYSTEM DEFINING A POLICY FOR THE REINSERTION OF LONG-PERIOD UNEMPLOYED

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In France, the Employment/Formation forecast systems have shown their limits. There is a double problem: how to adapt the formation to the needs of employers and unemployed people. To overcome this difficulty, the French Ministry of Work and Employment created for each region an Employment/Formation Observatory, aimed to support policy decision makers in the working fields. The aim of these observatories is not to procedure new statistics and studies but to gather all the existing information on the subject. To propose a tool is generally not sufficient. It is necessary to help people using it. The Interactive Decision Support System (IDSS) we developed has been designed to help local decision makers to distribute a total amount of aids among several measures intended for the reinsertion of Long-Period Unemployed (LPU). The IDSS is a vertical system which integrates three components: the diagnosis integrates three components: the diagnosis system, the policy system making and the distribution system. The first component draws up a set of tables presenting a synthetic view of the work situation and employment. In the second, an expert system scans the data gathered in the first step and makes distribution proposals. The third allows the decision makers to define interactively the final distribution.

AN ORGANIZATIONAL PERSPECTIVE IN DESIGNING DISTRIBUTED DECISION SUPPORT SYSTEMS

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In organizational decision making, representatives of diverse functional units who possess different facts, expertise, assumptions, and points of views need to share information, make collaborative effort in solving problems and resolve their conflicts to converge to a desirable solution.

While early versions of decision support systems were based on the paradigm of a single decision maker - a Individual Decision Support System (IDSS), a Group Decision Support System (GDSS) involves a group of people who share a joint responsibility on an outcome. As GDSS extended the concept of decision support from an individual to a group, an organizational Decision Support System (ODSS) extends computer support for decision making to a higher level of the organization. Subtleties between GDSS and ODSS get more complicated by the introduction of a Distributed Decision Support System (DDSS), whereby decision making process may need to be distributed across multiple participants each of whom contributes to the final decisions by performing one or more interrelated but independent tasks.

While the novelty of the concepts is partly responsible for the absence of clear distinctions among GDSS, ODSS, and DDSS, the conceptual development of various decision support systems needs to be more tightly coupled with organizational characteristics such as organizational structure and decision tasks.

This study i) develops a clear cut definition of DDSS and places the concept in the rigth perspective in relation with other types of decision support systems, and ii) suggests design alternatives for DDSS from the organizational perspective.

ASSESSMENT OF ECONOMIC AND LABOUR OBJECTS VIA DICHOTOMIC OUTRANKING TECHNIQUE AND COMPUTERIZED SUPPORT: A MANAGERIAL ASPECT

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A procedure for assessement and choice, either individually or collective of work places/stations, workers and employees whatever the field of the economy, is outlined. The economic reform in the Eastern European countries, particularly, the transition from planned/regulated economic systems to free market ones indispensably demonds such (re)assesment and (re)selection procedures for the new economic structures to be more effective. An accurate specification of the appraisal kinds is given: absolute evaluation - the choice feasible (most likely) cardinal values representations of a given economic object in a prespecified closed interval (max-min), or a relative evaluation - the choice among feasible or available single-type objects by means of some comparison. A dichotomic outranking technique of preference aggregation (a nearvoting procedure) is shortly described and how to be applied to the concerned object. It is important to use to such an appraisal a collective choice approach, expert and criteria analysis, knowledge elicitation from preselected experts, etc. This MADM in essence approach is wery easy implemented in practice via an appropriate decision support. How to use a DSS "UNIDAS 2" in such economic studies is briefly discussed also. A vivid ilustration of the approach will be given in the object privatization sphere.

TOPICS: Decision Support Systems, Management & Organization Issues, Mo els for preferences, perceptions & Choice, Knowledge-Based Tools.

PROJECT SELECTION UNDER IMPRECISION OF JUDGMENTS: A FUZZY MATHEMATICAL PROGRAMMING MODEL

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Transition to market economy implies key role of strategic planning and management for each firm. It is connected with solving a system of decision making problems and one of the most important of them is project selection. Choosing a set of product, process or R & D projects to be funded and realized determines the way of development of a firm and is a main factor of productivty increase.

Project selection is done in accordance with the overall strategy of the firm and with respect to various economic and technical criteria. It is based on expert judgments. The reason is lack of quantitative information about projects and environment. Expert opinions are usually expressed in verbal form, that is why it is convenient to use fuzzy sets for their representation.

In this paper project selection is described as a part of strategic planning and management and in connection the increase in productivity. The main criteria applied to different types of projects are presented. A fuzzy mathematical programming model for project selection is proposed. Coefficients are obtained by aggregation of expert judgments in the form of fuzzy intervals. The model is transformed into deterministic one which can then be solved using available software packages. It is applied to an example of automation system project selection.