PROJECT PRIORISATION FOR PORTFOLIO SELECTION BASED ON THE ANALYTIC NETWORK PROCESS

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ABSTRACT

Project selection and priorisation in power utilities in Venezuela is a complex problem due to many factors affecting the decision and all actors participating or being affected by it. Project priorisation is a periodical activity that has to be executed at least once a year to adjust company´s budget. In this paper a new approach to prioritize project portfolio in an efficient and reliable way is presented. It is based on strategic objectives of the company and multicriteria decision methods.

The paper introduces a rigorous method with acceptable complexity which seeks to assist managers of a big Electrical Company of Venezuela to distribute the annual budget among the possible improvement actions to be conducted on the electrical network of Caracas. A total of 15 network improvement actions grouped into three clusters according to the strategic objectives of the company have been analyzed using the Project Strategic Index (PSI) proposed.

The approach combines the use of the Analytic Network Process (ANP) method with the information obtained from the experts during the decision-making process. The ANP method allows the aggregation of the experts' judgments on each of the indicators used into one Project Strategic Index. In addition, ANP is based on utility ratio functions which are the most appropriate for the analysis of uncertain data, like experts' estimations. Finally, unlike the other multicriteria techniques, ANP allows the decision problem to be modeled using the relationships among dependent criteria.

The participating experts coincided in the appreciation that the method proposed in this paper is useful and an improvement from traditional budget distribution techniques. They find the results obtained

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coherent, the process seems sufficiently rigorous and precise, and the use of resources is significantly less than in other methods.

Keywords: Analytic Hierarchy Process, Analytic Network Process, power distribution network