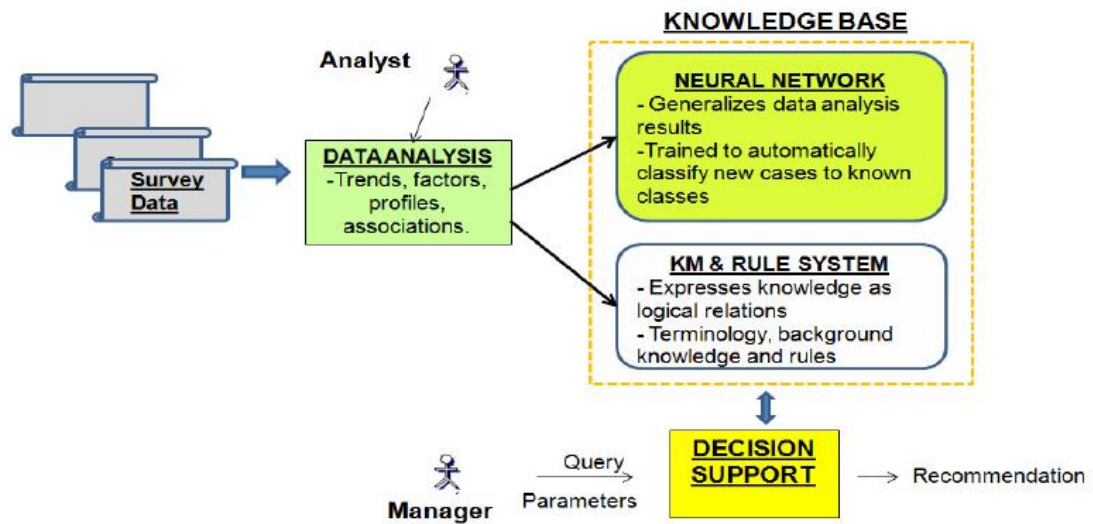


Marketing decision support using AI and Knowledge Modeling

KEYWORDS: Data mining and analytics, marketing, tourist destination management, specialized IT skills, knowledge management framework, artificial neural networks for automatic classification, decision support tool, Tourist Marketing Decision Support Systems (TDSS).

The use of advanced technologies, such as **data mining** and **analytics**, is widely used in based **marketing**, particularly in **tourist destination management**. However, there is a need not only for **specialized IT skills** and the **benefits of a knowledge management framework**, but also for **artificial neural networks for automatic classification** and **decision support tool**, which would allow users to resolve marketing-related issues (like maintaining, expanding and consolidating reusable knowledge accessible through the semantic web) without having to possess a certain expertise in data analysis.

A **Tourist Marketing Decision Support Systems (TDSS)** (see the figure below) is presented as a solution, that englobes data analysis, knowledge engineering and artificial intelligence. The **Data Analysis component** focuses on the identifying the nonlinear relations, decompose complex phenomena and recognizing population clusters. The **Neural Network component's** role is to generalize case classification, whereas the **Knowledge Modeling component's** function is to present the obtained results in an understandable manner. Moreover, the **Decision Support component's** capacity is to help the marketers to answer high-level questions on marketing planning with an interface and inference engine.



The system was used to the group visitors in Thessaloniki and it showed good performance for simpler tasks, which allowed marketers to get insights and make decisions tailored to specific situations and customer profiles.