



Strategically Align Your Workforce

IET worked with NASA through the federal SBIR program to develop a prototype for strategically aligning their workforce.

The Customer

National Aeronautics and Space Administration (NASA), whose mission is to pioneer the future in space exploration, scientific discovery and aeronautics research.

The Challenge

NASA is faced with the competitive need to rightsize the total human resource requirements for their organization, which is common to traditional U.S. manufacturers who are competing in a global market. Varied work requirements due to economic conditions and competition have driven companies to establish an employee reorganization strategy. Predictable models for varied markets and competitive situations are needed to direct NASA and the U.S. manufacturers alike. To that means, a methodology and platform for an expert system to review, analyze and establish the optimal mix of manpower, skills and pay levels in NASA facilities was requested.

The assorted employment models utilized by NASA in response to the Strategic Planning Process which includes budget changes, employee expertise availability, government constraints, and direction towards a research facility have shown that appropriate software could provide invaluable improvements. These improvements include selection, performance measurement, coaching, clarifying employee expectations, mentoring, identifying training requirements, and predicting appropriate employee requirements based on the job requirements.

The Solutions

The IET team members and NASA representatives worked closely during this project to evaluate this expert system potential. The team determined the appropriate algorithms to predict company manpower, analyzed weaknesses and statistical measures of manpower fit predictions, and developed a preliminary prototype software platform for evaluation. NASA team member evaluations demonstrated a tremendous need for this type of expert system development to coincide with the current software packages utilized by Kennedy Space Center personnel at NASA to predict and monitor employment rightsizing.

Utilizing the prototype format, the manpower requirements of all jobs can be broken down into skills. Each skill requirement can be broken down into factors, which can be weighed and measured against skill availability and establish a basis for rightsizing models. The highlights of the technical objectives include the conclusion that employment mix is predictable for a business unit based on employee skills, job factors and environmental conditions. This research also demonstrated the potential accuracy of these predictions, the ability of this software to fit with the current models of Kennedy Space Center, and the ability to move employee and job development throughout the organization, which fit with the current strategy of NASA.

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Vertical integration

Horizontal integration