Exsys Case Study

Network System Monitoring/Repair/Prediction

Pacific Bell (AT&T California)

Pacific Bell developed a set of knowledge automation systems to monitor the Loop Maintenance Operating System (LMOS) front-end computers, which serve as transaction managers for mainframes. The software performs three functions - monitoring, repair assistance and problem prediction. All of the LMOS knowledge automation systems have improved productivity and reduced down time, and won awards for innovative uses of AI.

Monitoring: The MONITOR system constantly monitors LMOS' integrity and checks for errors. If an error is detected, it announces the error to system data specialists through the public address system using a synthesized voice. Data specialists can perform other work and be confident that if there is a problem developing, the system will detect it and immediately contact them.

Repair: Once the problem has been detected, the CONSULTANT knowledge automation system can be used to walk support personnel through troubleshooting or repair procedures to correct the problem and prevent the system from going down. The CONSULTANT system has expertise in over 12 subject areas. Printed repair recommendations are provided to the user. Prior to the implementation of the software, troubleshooting had to be performed by a limited number of highly trained staff. Now, with knowledge automation system assistance, more less experienced people can accurately determine the cause of the problem and correct it.

Prediction: In addition to the monitoring function, there is another application, FORCASTER, that checks system files and notifies personnel of impending problems, even before they generate error messages. The knowledge automation system logs onto the network to get data and monitor for suspicious trends in file structure, resource allocation, error messages, etc., which could be warning signs of a serious problem. FORCASTER allows potential problems to be corrected before they turn into emergencies. Prior to implementation of this application, this type of monitoring was not practical in time or resources.

Pacific Bell has also fielded another application for network assistance. **NetHELP** is a knowledge automation system that provides assistance to the users of the Netway network. When a user is having problems with the network, they can call the knowledge automation system. The system asks the user questions about the current state of their network and suggests appropriate repair strategies. If the problem requires repair procedures not appropriate for the user, the system automatically issues a "trouble indication number" for the user to refer to and it notifies the appropriate agency to correct the problem. The system provides a 24-hour per day uniform method of correcting or reporting problems within the network. This system was so successful that Pacific Bell sold it back to Netway, the company that developed and markets the Netway network.