Research on Management Work Support Systems for Privatization of Local Governments

Year of Research	2006・2007	

(Purpose)

The notification, "Promotion of Comprehensive Privatization in Management and Maintenance of Wastewater Facilities (May 2004)" was issued by the Ministry of Land, Infrastructure and Transport Japan. With such policies in place, a growing number of local governments have begun to implement comprehensive privatization. Contracting of private operators is expected to permit the exploitation of their advanced technologies, reduce costs and so on. On the other hand, such comprehensive privatization raises concerns, i.e., degradation of technique/skill levels of local government employees and improper supervision and evaluation of maintenance and management they perform, because local governments will back away from practical work.

This research was intended to establish a system (Management and Supervision Work Support System) to maintain and supervise the service level of private companies by maximizing constantly evolving information technology (IT) to implement comprehensive privatization by local governments. It was also intended to propose a system to accumulate and pass on concrete examples of daily operation, maintenance and management and problem solutions as know-how (Knowledge Database System) to maintain the technical/skill level of local governments.

(Results)

(1) Management and Supervision Work Support System

The Management and Supervision Work Support System has two support functions: one is management and supervision support to confirm that private companies run plant facilities properly; and the other is facility functioning check support to judge whether the maintenance is conducted properly in accordance with the guidance/instruction manuals.

This support system sends and receives signals using a monitoring system pre-installed in each wastewater facility. This system allows operators to maintain the facilities, mainly on screen. Table 1 shows the functions and their corresponding windows of the Management and Supervision Work Support System.

Table 1 Function and Corresponding Screens of the Management and Supervision Work Support System

	Functions of the Management and Supervision Work System	Corresponding Windows
1	Monitoring the facilities under normal conditions	Plant window
2	Monitoring the facilities under abnormal conditions	
3	Checking maintenance status of the facilities	
4	Generating trends in the current measurements of the facilities	Trend window
5	Generating trends in the past measurements of the facilities	
6	Displaying more than one trend (combined trends are displayed)	
7	Making reports	Report/report checking result windows
8	Comparing acquired data with data reported by private companies	
9	Monitoring utilities of the facilities	Utility monitoring window
10	Referring to operation/malfunctioning	Operation/malfunction reference windows
11	Managing plant register	Plant register/member list windows
12	Managing maintenance/repair information	Patrolling/checking history windows, etc.
13	Facility performance diagnosis support	Facility diagnosis history/facility diagnosis support/lifecycle support windows

(2) Knowledge Database System

The Knowledge Database System is an IT-based system that saves and manages past knowledge, experiences and the like in the forms of image and/or document data. This system focuses on information exchange in daily operations. Thus, it is assumed that it will utilize the system as part of the information network software already used by the local governments. From this perspective, we present software functions. Figure 1 shows one example of the screens presented by the database.
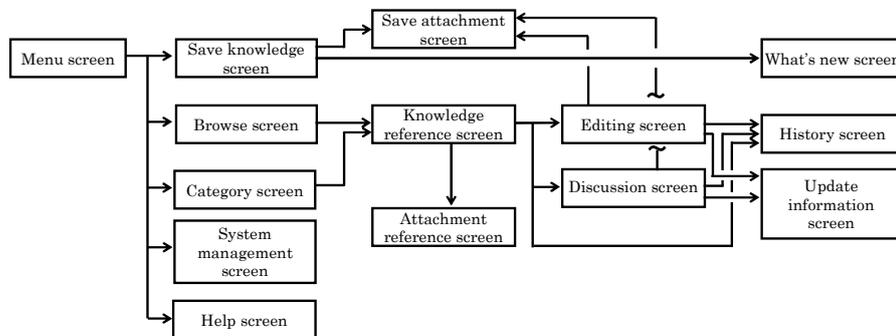
Figure 1 Screen Contexture on Knowledge Database System

(3) Precautions for Maintenance and Management

To use the above two support systems, the following must be kept in mind:

In the system configuration, the existing monitoring and/or information facilities will be linked. It is imperative to consider the network security and segmentations carefully. In particular, we have to avoid stopping the existing systems under the impact of the support systems.

(4) Compilation of technical data

Data concerning this support system, technical matters about planning, design, maintenance etc. were summarized as "Technical Data of Management Work Support Systems for Privatization of Local Governments".

Key words	Comprehensive privatization, maintenance and management, IT, work support, knowledge