Chapter XIII
The Role of Information Resource Management in Enabling the 24-Hour Knowledge Factory

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ABSTRACT

The term 24-Hour Knowledge Factory connotes a globally distributed work environment in which teammates work on a project around the clock. The 24-Hour Knowledge Factory is a special case of a globally distributed team in which the different teams work on a sequential basis that has been clearly defined in advance. Whereas a manufactured item was the end product in the case of the factory which emerged as a consequence of the industrial revolution, knowledge-based services and knowledge-based products are the end deliverables in the case of the current information revolution; hence, the term 24-Hour Knowledge Factory. Work can be decomposed by task style or by organizational style, and allows for greater specialization of workers. A case study from IBM details surprising differences between colocated and distributed teams, and leads to a future state analysis for organizations seeking to study or implement the 24-Hour Knowledge Factory.
INTRODUCTION OF CONCEPT

The term 24-Hour Knowledge Factory connotes a globally distributed work environment in which members of the global team work on a project around the clock; each member of the team works the normal workday hours that pertain to his or her time zone. At the end of such a workday, a fellow team member, located in a different time zone, continues the same task. This concept flows from the fundamental belief that, in most cases, a person can work most effectively during the normal daytime work period (roughly from 9 am to 5 pm). While one can temporarily work during the night, such a mode of operation is not convenient or optimal over an extended period of time. Further, by having three sets of individuals perform work over a 24-hour period, the objective is to drastically reduce the time needed to develop information systems and to facilitate effective knowledge-based processes to occur.

Software development involves the creation of a product that is produced primarily through the transmission of knowledge between members of the development team. The figure below illustrates a distributed factory with software design operations in three countries around the world. In this particular delivery model, each geographic location is responsible for a separate task, and the overall efficiency of the project is improved since each location perceives that progress is made “overnight” when workers at that location are asleep. Additional models, discussed in the following sections, are characterized by different distributions of tasks depending on the appropriate needs for information management.

In a “24-hour software development environment” (Gupta & Seshasai, 2007) that encompasses three or more development centers located around the world, the distributed team is envisaged to concentrate on the same problem and to perform the same function (whether it be development of code or testing of subsystem) on a successive basis, with each collaborating center retaining ownership of the endeavor for 8-hour periods in every 24-hour cycle. Many industries, including the software industry, are characterized by a development cycle that relies heavily on sequential performance of specific functions, such as development, testing, and verification. In a traditional software development environment, where all parties are located in the same geographic area, a code developer typically waits until a fully functional portion of the product is available before passing it on to an engineer to test it. However, with the potential for receiving testing feedback overnight, the devel-

Figure 13.1. A distributed factory with software design operations in three countries around the world
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