Chapter X
Customer Oriented PACS

BACKGROUND

During the early development phase of PACS, its implementation was mainly a matter of the radiology department. This is changing rapidly, and PACS planning is increasingly seen in the context of a hospital-wide or regional approach. With increased networking among healthcare institutions and the growing relevance of teleradiology scenarios, PACS strategies must take not only local but also regional and global factors into consideration.

For hospitals and healthcare institutions, quality function deployment (QFD) is a helpful tool for developing new systems or services. QFD was originally developed by Yoji Akao in 1966 when the author combined his work in quality assurance and quality control points with function deployment used in Value Engineering. QFD has been described as “a method to transform user demands into design quality, to deploy the functions forming quality, and to deploy methods for achieving the design quality into subsystems and component parts, and ultimately to specific elements of the manufacturing process” (Mizuno & Akao, 1994). QFD is designed to help planners focus on characteristics of a new or existing product or service from the viewpoints of market segments, company, or technology-development needs. The
technique yields graphs and matrices. It is widely accepted that benefits of using QFD in the healthcare industry include:

- Increased customer satisfaction
- Improved quality
- Time efficiency
- Multidisciplinary teamwork orientation
- Documentation orientation

The QFD method has been successfully applied to many industrial and manufacturing processes in order to ensure that quality is built into products at the outset rather than tested for after their production. However, this method has rarely been applied in the healthcare industry.

Moores (2005) presents a study of the potential for applying the QFD method to the analysis of the framework for safety management contained in the Ionizing Radiation (Medical Exposure) Regulations (IRMER) of 2000. In his chapter, the term quality is used to describe the degree to which the needs and requirements of the customer are fulfilled. In the case of diagnostic radiology, it was noted that safety management must not only be concerned with radiation protection but, more importantly, with the accuracy and consistency of any diagnostic outcome. According to Moores, both should be treated as important patient needs. A first stage analysis of IRMER 2000 was presented and assessed how patients’ needs had been expressed by the individual IRMER components of justification, optimization, clinical audit, expert advice, equipment, and training. The analysis involved a QFD assessment by four radiation protection experts with over 100 man-years of experience. A second stage analysis assessed how the individual IRMER components had been engineered into a safety management framework through specific requirements embodied in IRMER 2000. The results of this assessment were discussed in terms of clinical, human, operational management, and equipment related aspects of the radiological process. The study highlights how the QFD approach may be applied to engineer specific aspects of radiological practice that play a key role in ensuring that patients’ needs are fully met. As an example, clinical audit requirements were analyzed by means of the QFD method to indicate the design requirements of information and knowledge based systems that could provide the necessary information for this type of key management activity.

Due to recent reforms in Sweden, the demands on the people working in community-oriented healthcare service are increasing. The individual providers need professional knowledge and skills to perform their tasks quickly and safely. The individuals are also confronted with new tasks and situations of which they lack experience. At the same time, the resources for education and development are
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