Editorial

Business Process Reengineering and Information Infrastructure in Healthcare

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Reengineering is the fundamental rethinking and radical redesign of business processes and workflow to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed. Many organizations today employ Lean or Six Sigma to reengineer their processes [1].

Lean focuses on creating more value for customers with fewer resources. Lean emphasizes the transformation of the entire organization by looking at the business issues of purpose, process, and people [2]. Denver Health generated more than $135 million in financial benefit over a six-year period through the use of Lean processes and has even started marketing its own Lean training program to parties outside the organization [3].

Six Sigma strives to eliminate defects in processes to a level of 3.4 defects per million opportunities.

Six Sigma utilizes an acronym to improve processes known as DMAIC: define, measure, analyze, improve, control [4].

Many vendors offer BPR tools today, and some of the process modeling tools are available for free downloading.

BPR has matured to the extent that there are industry standards for process modeling called Business Process Model Notation (BPMN) and even for transferring models from one vendor to another called XML Process Definition Language (XPDL).

Some healthcare IT systems today include BPR software that can allow organizations to design their own processes.

The information infrastructure must be able to support today's business requirements and anticipate emerging or future business requirements.

A current trend, known as bring your own device (BYOD), is one example of an emerging requirement prompted by doctors, nurses, and other employees who want to use their own notebook computers, tablets, or smartphones on the enterprise network.

Most healthcare organizations today probably do not have the proper security and network infrastructure in place to support a BYOD strategy. A good example of a future business requirement is Internet Protocol version 6 (IPv6). Most healthcare organizations today utilize Internet Protocol version 4 (IPv4).

While today's applications do not support IPv6 yet, new infrastructure purchases, including new operating systems and network hardware, now support both, and organizations that make sure their new purchases have that capability will be well positioned for the future.

Overall, an organization should have a process in place to examine or evaluate emerging trends and technologies.

This evaluation should be done on a regular basis as new technologies emerge or existing technologies begin to be adopted. As part of the process, the organization should decide where it wants to be on the technology adoption curve.
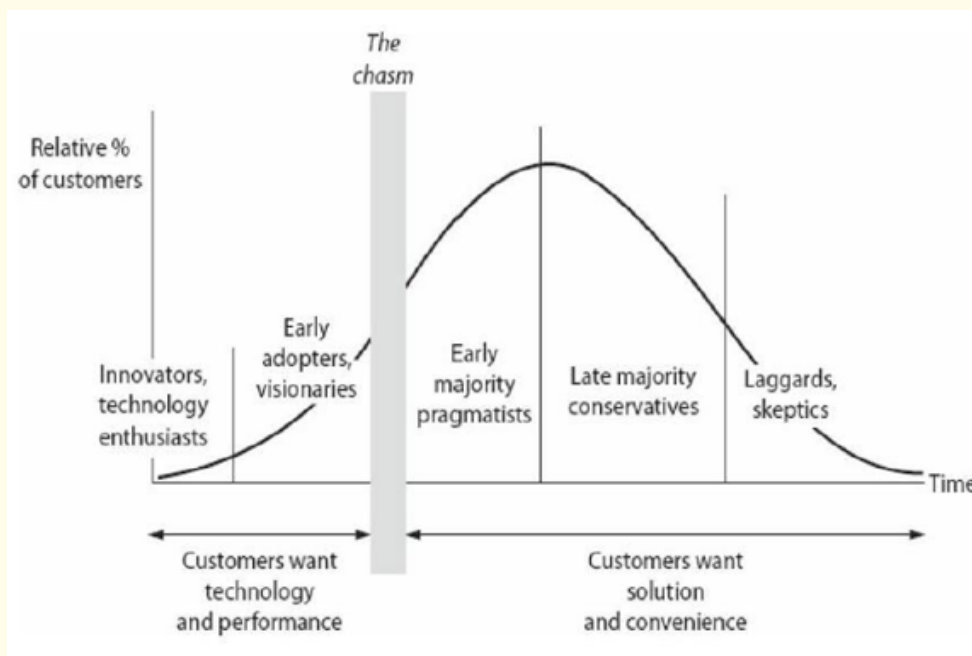
Figure: Technology adoption curve.

As more and more healthcare records are electronic, business continuity emerges as a key part of the IT infrastructure. Organizations must plan for various types of disasters, whether natural or man-made.

Off-site storage of data becomes a minimal requirement. Many sites negotiate contracts with disaster recovery vendors to retain not only copies of data, but also the capability to restore entire systems.

Larger organizations may own multiple data centers in which they may mirror their data. Networks must be in place to access these remote sites.

The business continuity plan must not only ensure that the remote sites are in place, but also test the plan at frequent intervals to make certain that it can be executed.

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