How did you get interested in the world of computerized maintenance management systems (CMMSs)?

I have been working on the CMMS application for the healthcare environment for more than 15 years and have been involved in the computer industry for over 25 years. Previously, I developed applications for multiple industries, such as the sporting goods, oil, and poultry industries and for various wholesale distributors. After I began working with the CMMS application and discovered the impact it can have on improving patient safety and reducing the cost of healthcare delivery, I decided to focus all my efforts on helping the community. I want to make healthcare delivery more safe and affordable for everyone.

A good CMMS features a wealth of information, including total cost spent over the life of the device, purchase price, purchase date, life expectancy, downtime information, support capability (by manufacturer/third party), functional risk, patient safety risk, cybersecurity risk, and technology information. Combined, these elements can provide healthcare facilities with the information needed to project the right time for replacement of the device, thereby minimizing the cost of ownership.

With newer, more rapidly evolving regulations, a CMMS also can help a facility implement and review the compliance status of regulatory policies. A CMMS has become more essential for healthcare today than at any other time in history.

Why is a CMMS crucial to healthcare today?

Total spending on medical devices reached $150 billion in the United States in 2010, which is about 10% of total healthcare cost. If the goal is to reduce the cost of healthcare delivery, we have to explore every possibility, which certainly includes lowering spending on medical devices without compromising patient safety. A CMMS can help bring spending on medical devices down by assisting in reducing the total cost of ownership of devices. The data that reside or can reside in the CMMS provide the right platform.

Is a CMMS for healthcare different from a CMMS for other businesses? If so, how?

Every industry has different business processes and business needs, including healthcare technology management (HTM) departments in facilities. The biggest difference between healthcare CMMSs and those for other businesses is the service provided by hospitals: the betterment of people’s health and life. The regulations for healthcare, in general, and especially those that affect the workflow of HTM departments, are becoming more complex and demanding. A CMMS for an HTM
department should have all the in-built intelligence of these ever-evolving regulations. For example, the CMMS should guide the user on which devices can be on an alternative equipment maintenance (AEM) plan for preventive maintenance (PM) and which should follow original equipment manufacturer instructions. Also, CMMSs should help you deal with and document the PM inspections for “unable-to-locate” devices or devices that are in use on patients and other special cases, with minimum effort and in-built processes. The CMMS also should help in evaluating and mitigating the cybersecurity risk of devices, as medical devices are becoming increasingly interconnected and part of the Internet of Things (IoT).

**What enhancements to CMMSs do you foresee occurring in the next five years?**

Medical devices will become increasingly smart and interconnected. I see the CMMS becoming more intelligent and equipped with artificial intelligence to allow it to learn from all the information it gathers from connected devices. The CMMS also will help in providing a more secure infrastructure by using the information it gets from systems and processes like MDS and Zingbox. The CMMS will guide predictive maintenance by using information from automated testers.

**How does the success that you saw at the IHE Connectathon, where your platform successfully completed patient care device interoperability testing, compare with the real world of healthcare? Are there examples of actual healthcare facilities leveraging these capabilities?**

We have spent most of the previous decade supporting and implementing IHE PCD in our system. We knew from the beginning that it’s a marathon, not a sprint, and that there will be no short-term gain from this work. Every business needs to have short-term vision but also keep an eye on the future. In the past, we envisioned that IoT would become common and devices would become smarter. We are always looking forward, in order to ensure that our customers stay ahead of the curve. The success that we saw at the IHE Connectathon really validated that we were going in the right direction, both technically and from a business perspective. We successfully tested with vendors like B. Braun Medical, Baxter, CapsuleTech, CareFusion, GE Medical, Hospira, Masimo, Philips, and Smiths Medical. We are currently implementing IHE PCD at a few sites and working to bring the benefit it provides to the live environment. We should have a few sites up and running with IHE PCD integration sometime next year. We’re also seeing an uptick in interest for these capabilities in recent request for proposals.
What hurdles need to be overcome for healthcare to achieve “true” interoperability?

We have seen more and more manufacturers coming on board with IHE PCD. Most newly released devices are smart and have a network connectivity interface. The main hurdle that IHE PCD is facing today is time. Hospitals still own old devices and will be retiring them in the future. Until they get rid of the old devices and replace them with new ones, there cannot be true interoperability. With the pace of today’s technological advancement, we should get there within the next five to 10 years.

If you could give just one piece of advice to a healthcare facility about how to successfully implement and use a CMMS, what would that be?

Before I provide advice on the implementation and on how to successfully use a CMMS, I would like to say that the technicians and engineers should spend the minimum time possible to document their work orders, so that they can spend more time on the tasks they are supposed to do. Even though the technician should spend less time on documentation, the system should still be able to provide all key performance indicators as per management goals and requirements. To successfully implement a CMMS, you should make sure that all the business use cases are mapped and the technicians/engineers are trained accordingly. For example, everyone should know how to document PM failure, unable to locate, device in use, send to vendor (for devices with protected health information), etc. The CMMS should adapt to your processes, not the other way around. The other major impediment to a successful implementation is failing to clean up and standardize the database.

Some experts say that HTM must agree on a vision for electronic data interchange between institutions and manufacturers. They believe that standardizing nomenclature, procedures, failure codes, repair categories, and data entry practices within different CMMSs is a vital part of making data more practical, meaningful, and shareable. First, do you see value in standardizing these common elements across CMMS platforms? And how do you foresee this push toward standardization unfolding?

Standardization plays a pivotal role in getting critical information out from any system and is helpful for assisting with proper decision making and effective equipment life cycle management. If the data are standardized, you can easily compare which devices are breaking more often than other similar devices or which devices you are spending more to maintain compared with other similar devices. If standardization exists across institutions, then you can compare similar devices across healthcare facilities in terms of cost-of-service ratio, failure rate, downtime, etc. This will be useful in realizing true benchmarking. Also, with new regulations, history is becoming more critical. With standardized and shared data across institutions, you will be able to more quickly obtain the necessary information to allow you to determine whether you should or can perform AEM on devices.

Reliability-centered maintenance also is possible if all organizations are using standardized failure codes, repair categories, and other standardized lists.

How might standardization affect the way CMMS vendors compete in the marketplace?

If the data lists become standardized, then the competition among the CMMS applications will be more about how automated, quick, and easy the interface is and the intelligence that is built into the system. A CMMS with a strong architectural backbone, in-built artificial intelligence, interconnectivity with medical devices and other systems (e.g., IHE PCD, automatic testers, real-time location systems, enterprise resource planning systems) will become the system of choice for most hospitals. In addition, at EQ2, and presumably at other CMMS vendors, we are looking at how we might provide “big data” analytics to our individual clients based on their collective universe.

If you could change one thing right now related to CMMSs, what would that be?

All CMMSs should be able to share information using standardized electronic data interchange, and all CMMS vendors should be using and promoting the use of standardized data.

Reference

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