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Healthcare Asset Maintenance and Patient Safety

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The greatest expenditure of hospitals today is mobile medical devices, starting from patient beds to other technologically advanced diagnostic systems.

The efficiency of a healthcare organisation largely depends on its ability to know where things are and on how efficiently these resources are used by the hospital staffs and patients.

Asset Management Systems: An Overview

Hospital IT systems have been an integral part of healthcare for the past few years and are witnessing advancements in diagnostic and disease management technologies such as CTs, MRI machines etc. When it comes to the usage of the right technology to track and manage their assets, the hospital industry lags behind other industries. This leads to the over-utilization or under-utilisation of their inventory assets.

In spite of the fact that an average hospital spends 15% more on maintaining their equipment, the main focus of European healthcare organisations rests principally on improving the quality of care and patient safety. This pushes the investment on asset management systems (AMS) down their priority chart.

Major Drivers for Asset Management Systems

Cost & Productivity Benefits

Equipment-financing is squeezing all hospitals in Europe. It is not only incongruous but difficult to spend huge amounts of money, time and resources in searching for misplaced, lost or stolen equipment. It has to be noted that to perform planned maintenance and repair which entails high cost, many hospitals in Europe rely on Original Equipment Manager (OEM) and distributor/suppliers of medical equipment. Asset management's automated collection of asset information such as date of manufacture, location, maintenance status, etc. leads to cost and productivity benefits. Moreover, governments are finding it increasingly difficult to keep a track of the assets in public hospitals. It is essential for a government to account for taxpayers' money and also submit an account of value obtained from it. This requires proof for investments on assets.

Added Value of Wireless LAN

One of the major advantages of wireless LAN technology is that once adopted for AMS, it can also be used for other healthcare IT solutions such as disease management, e-prescription, EMR etc. Thus, once an initial outlay is invested on building the basic infrastructure, there is a fall in follow-on investment requirements for the future.

Asset Management Applications

The key asset management applications include asset tracking, asset identification and authentication, data collection, data transfer and sensing. Asset tracking has the highest priority, followed by identification of assets in relation to patients and authentication. Apart from its application to assets, data collection and transfer are also performed in relation to staff and during clinical trials in patients. Asset sensing, which has the most minimal priority, has major potential for both assets and patients in hospitals.

Offerings at Departmental Level Remains a Priority

Given the relatively low number of AMS providers, it is evident that the European market is still not mature and the level of competition is low. Often, the services of AMS are provided to hospitals only as a part of a larger IT implementation project. In most of the cases, it is taken up by

large Tier-1 companies who have an international presence or by Tier-2 companies who have a strong local presence and are often referred as system integrators.

Previous studies show that almost 95 percent of all healthcare AMS installed till 2009 were performed and initiated only at the departmental level. Many vendors have recognised this demand ceiling and continue to initiate projects at the department level, albeit with a long term goal of providing AMS service to the whole hospital setting.

Challenges: From Cost Factor and Lack of Quantitative Data to Other Technology Related Factors

Not all hospitals in Europe are equipped with the infrastructure for wireless technology. The time and money involved in shifting from wired to wireless technology is very high and deters many hospitals from adopting it. The public funds are insufficient for this. Hence, hospital managers and CIOs are facing an investment dilemma in wireless technology. In such a scenario, it is important for the AMS vendors to emphasise patient safety and security, a subject to which the European healthcare system is already sensitive, and use this as a stepping stone to promote the initial installation at departmental level.

Another challenge that is facing the adoption of AMS is the fact that there is little if any data to quantify the ROI that it can deliver. In addition, the market for AMS is at the initial stage and only slowly progressing towards a growth stage, with less than 2 percent of hospitals in Europe having adopted this technology. As a result, there is little user experience to make a convincing case for AMS.

Given this lack of analytical, evidence-based data, it is difficult for the hospital staff to clearly understand the technology and merits of AMS.

In addition, on the technical side, depending on the source and distance, data transmission by wireless networks use a variety of frequencies. There are widespread concerns about interference problems arising when multiple emitters are used within the same spectrum.

The market for AMS also lack standards that can promote its integration with other hospital management systems. CE Mark is the only certification that vendors need to possess while selling an AMS. However, this does not describe the quality and relative effectiveness of a solution and hence vendors are finding it difficult to convince customers about the accuracy of the information provided by their products.

Moreover, hospitals are not able to adapt to the landscape of fast evolving technologies, owing to the usually tight financial budgets for healthcare IT in Europe. Shifting from wired to wireless LAN consumes a lot of time and is a complex, sometimes cumbersome, process. Due to the lack of standards and lack of quantitative proof, it becomes difficult for vendors to convince the CIO and head of each department within the hospital. By the time a decision is made, it can be too late – with the adopted technology already outdated.

Electronic and Wireless Economy: Finding a Set of New Opportunities

The potential for wireless healthcare technology demands mobility in today's healthcare environment. When the market for other technologies in healthcare-IT has already matured, it is the precise time to forge ahead and accommodate wireless technology in hospitals. Wi-Fi (Wireless fidelity) and active RFID (radio frequency identification) are the two major technologies which are dominant within the AMS market. The two technologies are ideally used within a Real Time Location Systems (RTLS). They are also combined with other wireless technologies such as infrared (IR), ultra-wideband (UWB) for different purposes.

In the broadest terms, Internet technology is reorienting the way healthcare organisations function. The open and scalable nature of Web-based technology and services allows easy addition of applications, provided they are compatible with Internet protocols. Integration of mobile devices, such as PDAs and hand held computers to support real-time information capture, is becoming a norm today. The electronic economy is finding itself a new set of opportunities, challenges, and restraints in the healthcare environment in Europe. When it comes to the usage of information systems/information technology (IS/IT) in healthcare management, it is finding itself in a state of turbulence and flux.

Though the current entry cost of RTL tags is high, market growth is translating into a trend of decreasing unit costs, and is expected to make RTL increasingly affordable over the years, along with an improvement in the battery life. This will have a positive influence in the demand for Wi-Fi based RTLS.

Moreover, the loss and misplacement of high value assets such as wheelchairs and ventilators, the growth in technology savvy patients as well as healthcare regulations like the Healthcare Information Portability and Accountability Act (HIPAA) will converge to justify the value of the tags. It is still critical for healthcare organisations to be very clear of where the RFID and Wi-Fi technologies are to be used, as its application can extend from simple location of wheel chairs or pump to matching up patient records and connecting it to equipment maintenance records.

An Integrated Approach to Provide a Better Customised Service

Choosing the right vendor helps healthcare organisations avoid confusion, as a result of multiple components purchased from different vendors. Given this factor, vendors should remain capable and committed to providing high quality patient care in a more cost effective way to their customers.

This requires solutions to be more customised with an inbuilt capability to progressively remove the complexity and risk, which they are otherwise associated with.

New customers often specify both general and customised features they expect from a product as well as special valueadding features such as scalability. Since the importance of providing a customized solution as a part of a major project keeps growing with time, there is a clear need for more strategic alliances and partnerships among infrastructure vendors and software vendors who have already made a mark in the industry.

An integrated approach by vendors is likely to help demonstrate an innovative product offering with advanced technology across a variety of geographic regions.

Key Factors to Jumpstart the Asset Management Systems Market

The benefits of mobile technology in healthcare for its users are often underestimated. Healthcare workers, especially in Europe, often resist change that a technology brings. This is yet another problem for most vendors.

Such resistance can be broken by establishing a better rapport with existing clients. Loyalty and trust held by each vendor should be maintained by concentrating on the response time for all inquiries raised by hospital staff. Frequent meetings and brainstorming sessions should be held with the administrative and management staff to address new technology updates, issues and latent concerns related to the technology should be actively solicited. It is also important to provide advance notice on any major, impending upgrades.

Whenever such an upgrade is made, it is very important to organise sessions involving customer participation and obtain feedback from them. Vendors could jumpstart the AMS market by systematically addressing questions on compatibility, added value, the maintaining of data ownership, issues about file distribution and synchronisation, and above all, the ability to improve patient safety through timely updates and recall management.

Marketing Strategies for Healthcare Asset Management Systems (Europe)

Reference Points: Since AMS today are mostly accepted at the departmental level, it becomes essential to convince the CIOs, administration and various department heads. With the relationship built on the bases of proven trust and quality, references for expanding the sales to other departments can be obtained; this is an important sales and marketing strategy.

Conferences: Since the market for AMS is emerging and relatively new, conferences can prove to be a very useful basis for sharing information and knowledge on the technology. Such an approach may be essential in today's competitive healthcare environment as it helps to send the right message to the customers and drives the growth of value added offerings. In many cases, more than two vendors could partner to hold conferences. In such situations, technology benchmarking is well accepted. Good brand awareness among the customers will help in maintaining market position.

Newsletters: Vendors can use newsletters as a medium to promote their products by highlighting their AMS product features and advertising how it can improve a customer's profit and service. It is also an opportunity to cite previous experiences, which can act as a proof of performance. The customers also get to compare various products by different vendors and learn about upgrades, innovations and new product launches.

Partnership: Apart from being able to provide more advanced and innovative products, partnership and strategic alliances also helps in gaining market share and geographic expansion by an emerging company or a new market participant. Most of the strategic alliances and mergers are made by the large Tier-1 companies who are dominant in other healthcare-IT solutions. Vendors who enter new markets are working with strong partners that can use their extensive sales and distribution capabilities to penetrate key markets outside their established ones.

Asset Management Systems Market Has a Bright Future

Both existing and new AMS vendors have an open market to distinguish themselves. Though the existing companies operate on various pricing models such as leasing and licensing as a competitive strategy to overcome the biggest challenge – namely cost – not many companies have yet reached the bottom line of profitability. This can be attributed as one of several factors common to emerging industries.

However, the real hurdle is that AMS providers generally show poor commitment to large contracts, which in turn, would accelerate market acceptance and vendor profitability. From past experience, it is evident that the provider market is slowly shifting its view and is moving to

implement enterprise-wide tracking and management solutions.

To summarise, the future of asset management systems market looks bright. Companies providing more accurate and reliable solutions are sure to have a high level of demand and will be best positioned to capture more contracts in the future.

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