Software Development: From Conception to Implementation

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by Mary Ellen Mahoney, MS, RHIA

How can a software development company make sure its HIM products meet the needs of its users? By using HIM professionals to design, test, market, implement, and support those products. At Cerner Corporation, experienced HIM professionals play a role in every step of the software development process.

Product Management: A Vital HIM Role

Software development companies need to ensure the appropriate direction of all their product development activities. To that end, each solution typically has an experienced, RHIA-credentialed product manager responsible for defining the strategic direction of products and solutions. Understanding HIM best practices is key because the product manager identifies new features to be developed for release in our solutions.

To identify new development priorities, several questions need to be answered. First, it is critical to understand and be able to accurately define the overall needs of the market. For example, developing solutions to efficiently manage the electronic medical record (EMR) will only be important and applicable to those organizations moving forward with a paperless medical record. Further, a strong product manager needs to stay current on what competitors are doing in the marketplace. There are numerous aspects to consider when defining new development priorities; however, they must be balanced with product innovation that will enable the solutions to help in the transformation of our client's HIM departments.

Once we determine the product direction, detailed functional requirements are developed to guide the application developers. The product management group defines the specifics of what a solution should do and how it should look, including the visual layout. Next, the functional requirements documentation should reflect the voice of the client/market, because it will be the basis for the collaboration between the product manager and the software developers to design the technical solution. The technical architect is then responsible for defining how the solution will be developed and how the functional goals will be accomplished. He or she translates the product requirements into a definition of how the solution will be coded to achieve the desired functional requirements.

The value of HIM implementation and end-user experience prior to a product manager position cannot be overstated. Understanding how a software product will affect the daily operations of an HIM department is essential to the success of any solution.

Certification: Fixing the Bugs

Domain specialists test and certify all software solutions before they are released to any hospital for use within their environment. This step in the product life cycle ensures that as many software defects as possible are identified prior to general release. HIM professionals are very effective in this role because they are able to test and use the software in the way HIM employees might use the system, which may go beyond how the product was designed. This results in identifying a greater percentage of defects prior to release.

Sales and Marketing: Sending the Right Message

The next step is successfully marketing and selling the developed product. HIM professionals play an important role here because the domain in which the product will be used must be thoroughly understood. One of the keys to successfully selling HIM solutions is using seasoned HIM professionals to provide solution presentations that address the business needs of the buyer. The knowledge of HIM best practices allows both our HIM solutions specialists and our marketing manager to tailor the message to the audience. It is important to understand an organization's business needs to propose the best solution.

Additionally, the product's success also depends on its pricing and packaging. Not only should the solution be value priced, it also needs to be competitive with other solutions in the marketplace.

Implementation: The Real Work Begins

Once the solution is sold, the real work begins. Even the best solutions will not yield positive results if appropriate guidance and services are not offered as part of the implementation. Best practices should be defined and shared with other hospitals implementing similar solutions. Again, understanding HIM operations and processes is critical to providing guidance to our clients, so using HIM professionals in the implementation of our solutions has been vital to our success. Experienced HIM professionals are able to offer recommendations on how to best take advantage of the solutions to achieve desired business results. In addition to our experienced HIM professionals, we use less experienced individuals to assist with many of the repetitive implementation tasks to create a thorough and successful implementation team.

To influence the HIM leadership at each organization to implement suggested best practices, the consultants must be familiar with their processes and be able to communicate using familiar terminology. It is also critical that the HIM consultants conducting the implementation are knowledgeable of the legal aspects of HIM and the Medicare Conditions of Participation. For HIM professionals to provide guidance on the effect of the EMR and the changes required within a paperless HIM environment, the HIM education and training is invaluable.

Product Support: An Ongoing Relationship

Once a product has been implemented within HIM services, we provide ongoing functional and technical support of the solution. Communication between the technical team and the client is greatly facilitated by employing HIM professionals as product specialists. Their understanding of HIM operations supports quick closure of issues identified by clients.

HIM professionals' education creates a solid foundation that can be leveraged for success in many within a software development company. Further, their training ensures a broad perspective and understanding of the workings within healthcare, especially in the acute care setting. One of the greatest challenges within our company is staying one step ahead of the competition and meeting the needs of hospitals migrating to paperless medical records. It's a perfect environment for HIM professionals.

Experience Pays Off: Questions for Mary Ellen Mahoney

Describe your current duties. What are some of your ongoing projects?

As the vice president and general manager for the digital EMR, I am responsible for leading all aspects of the business, including development of the Digital EMR Group vision and supporting strategies, development of strategic client and business partner relationships, development of products and services, marketing and sales, implementation, and support. Because my primary responsibility is managing a business unit, I am involved in a variety of projects from assisting in defining product direction and sales.

How did you come to be in your current position?

Throughout my career, I have had the opportunity to experience a number of different roles in a variety of settings. I started my career in the acute care hospital setting as an HIM director at several different sites before moving into a hospital administration position. Several years ago, I also moved into a nontraditional role with a software company and traveled around the country implementing HIM solutions. I was fortunate enough to serve as HIM director at the first hospital in the US to use document imaging for the maintenance of clinical records. That great experience broadened my knowledge base to include technology. I then had the opportunity to serve as an assistant administrator at an academic medical center. I had administrative responsibility for HIM as well as a number of other departments. The institution was embarking on an EMR project with document imaging as the central solution. Because the organization did not have a CIO at the time, I had administrative

responsibility for the document imaging project. That experience continued to strengthen my project skills as it related to software implementation.

As a result of my experience as a "user" of document imaging technology at multiple sites, I changed focus and became the national practice leader for health document imaging at a major accounting firm with a large healthcare technology practice. In that role, in addition to providing services to hospitals, I was responsible for staying abreast of changes in the market place and understanding all the healthcare technology solutions providers within my domain. This included all aspects of the provider side: non-HIM areas such as patient accounting, materials management, human resources, home health, and other paper-intensive areas of organizations. This expanded my focus on technology beyond HIM.

That experience led me to the solutions side of technology. Having had previous experience in business development, consulting, software implementations, and a strong HIM background with multiple years of experience, the role of general manager of an enterprise at Cerner seemed to be a logical next step.

If an HIM professional is interested in working in your setting or in a similar role, what kinds of skills/experience should he/she acquire?

I would not recommend new HIM graduates to move directly into the positions available within software development companies without some prior experience in a more traditional HIM role. That experience will offer the greatest value to software companies. For those individuals within healthcare delivery organizations, I would strongly urge you to get involved in the implementation of any clinical system within your organizations. This will help to expand your experience and perspective to make you more attractive to a software company.

What do you find most rewarding in your job?

What I have found most rewarding about my current opportunity has been the ability to make a difference and drive business results. The position represents the culmination of years of experience that I can draw upon to effectively manage and operate a business unit.

What has been your biggest challenge in this position? How have you met this challenge?

The biggest challenge has been joining an organization with a strong matrix reporting structure and identifying how to efficiently and effectively manage the various relationships. The key to successfully operating in this type of environment is strong communication.

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