

Innovation Associates: Improving the Rx Process

In this exclusive interview, Harry Boyer, founder, chairman, and chief technology officer of Innovation Associates in Johnson City, NY, talks to ComputerTalk Publisher Bill Lockwood about what his company is doing to address the increased pressures on pharmacies to handle more Rx volume while ensuring accuracy in the dispensing process. Boyer talks candidly about workflow and quality control issues, and the benefits of bringing more point-of-dispensing automation to the prescription process.

CT: All the emphasis of late seems to be on making the operations in pharmacy more efficient. Needless to say, one answer to this is the deployment of more automation. However, the area of workflow is more complex than meets the eye. Let's begin with your observations here.

Boyer: Bill, I agree that there seems to be a lot of emphasis on workflow and the efficiency of pharmacy operations. The paradox here is that technology can certainly help address a wide range of workflow issues, yet pharmacy has traditionally been skeptical about adopting new technologies.

Fortunately, these extraordinary technological times have yielded a plethora of computer power, data storage, image scanning, barcode technology, and automation hardware and software at prices that are truly astonishing. Many of these are

essential to implement an effective workflow solution.

Pharmacy automation suppliers understand that pharmacy's most basic requirements are to free up more of the pharmacist's time to perform additional services while enabling



Harry Boyer: "Our overriding goal is to incorporate as many accuracy checks as possible into our design, to ensure that our system is as foolproof as possible."

the pharmacy to provide better, faster, and cost-effective prescription-filling services. Furthermore, we understand that pharmacies want to solve their problem only once, or at least solve it for a long time, by implementing a cost-effective strategy and by providing a growth path for future expansion.

What this all means for pharmacy automation suppliers is that we must be as flexible as possible to handle changes from the standard workflow model to accommodate different combinations of prescription volume, physical layout, pharmacy preference, competitive advantage, appli-

cable laws, and many other variables such as the ever-important ROI calculation.

At Innovation, we've learned that every pharmacy calculates ROI differently, just as every pharmacy/chain has a different workflow. These variables all add up to quite a challenge for pharmacy automation suppliers.

CT: So what's the average pharmacy and small chain to do when they don't have the people resources or time to test systems in their pharmacies? Can you set out a few of the criteria for helping in the assessment?

Boyer: I would advise pharmacies to prepare for what they're getting into. It takes time and money for the facility changes, products, training, etc., and it takes a while before you begin to reap the benefits. Pharmacy workflow and automation changes together combine to formulate a business decision that your pharmacy will be living with for a long time. It isn't easy to test multiple automation options, so you should do your homework and be sure that you're going down the right path before you buy anything.

Get started by establishing the goals of your pharmacy. If you don't currently have a goal, I suggest that your primary one be to attain a system that can handle your present Rx volume and provide a growth path for increases in Rx volume. With this goal, you'll be in good company —

Direct Access

most of the chains and independents in the country will be there with you. From there, you need to prioritize the rest of the many variables. Your pharmacy automation supplier should be able to help you compile a list. I'll just touch on a few.

Your concern for workflow should be in proportion to the number of pharmacies and employees that will be impacted by your selection and by your educated preferences. There will be employee culture shock and pushback associated with this decision; expect it and use this knowledge to your advantage going forward. When tackling workflow, review your staffing requirements at various times during the day or week. Ask several automation vendors, or better yet, one or more of their customers, how fluctuations similar to yours are handled. For example, how do the jobs shift around, and does the system require a minimum staffing level that is in excess of your current minimum staffing? If so, how will you work around this problem?

I should also point out that a graphical user interface is a necessity because without it you won't have the capability to perform comprehensive "script checking" by viewing the original script, drug image, or script data-entry information.

Demand a robust interface from your PMS (pharmacy-management system) vendor, one that can take advantage of the capabilities that a robust bidirectional interface can provide. The power of these two systems communicating with each other will significantly add to the benefits you'll reap.

You don't need to be a pioneer — network with your peers and colleagues. See the system at a trade show, or preferably in live operation. Based upon just a few variables important to you, you'll quickly be able to identify at least two feasible solutions and can then begin to look fur-

“Our rigorous protocols for filling and replenishment have set a new standard for quality and eliminate the chance of cross-contamination.”

ther into each of them.

Remember, the best decision is not usually based on only one factor. It's principally about the speed, quality, and the cost improvements made in prescription-filling operations, and even more importantly — the benefits that accrue to your customers, your pharmacy, and you for making the changes.

CT: From what you've said, there's a lot more to it than simply installing a dispensing system or IVR system and expecting dramatic change. What are some of the interfacing issues that you see that could truly help increase a pharmacist's or technician's productivity?

Boyer: First and foremost, an interface must optimize your operational workflow by providing substantial, seamless data flow between your various intended systems. For example, in the case of pharmacy-automation systems or workflow software, an interface must be able to accept, validate, and process all standard one-way transaction types, e.g., fill, edit, and void, from a PMS without a hitch. If it does, it eliminates any manual intervention or workarounds necessary to handle exceptions or error conditions.

Secondly, a robust, bidirectional interface must also be able to transmit key data back and forth between

the automation system and the PMS. Starting from the simple transmittal of an order's updated record to a message saying that a dispenser is out of inventory or has malfunctioned for some reason, the automation systems today are able to inform the PMS of these important conditions. When each system employs a bidirectional interface, the pharmacy certainly benefits, because it basically brings additional functionality to the pharmacy through the PMS.

There is no question that this type of interface would maximize the investment in other technology and would support the pharmacy's information-system infrastructure. For example, pharmacy automation with simultaneous counting capability can maximize an investment in an IVR system by queuing up and counting Rx's while a pharmacist or technician processes the IVR queue at his or her convenience.

CT: You make a good point about quality control. With the Institute of Medicine's report targeting medication errors as a chief cause of morbidity and mortality, throwing more automation at the problem isn't always the answer. Automation must do the job of improving accuracy to be effective. Why don't you explain what's involved here?

Boyer: As a supplier of pharmacy-automation systems, we're always thinking about this problem — and it's always at the top of our mind as we design our products. Our overriding goal is to incorporate as many accuracy checks as possible into our design, to ensure that our system is as foolproof as possible. This often leads to making tough decisions because accuracy checks take time and pharmacies have huge volumes of prescriptions to process. Well, I'm proud to say that we have always taken a stand on providing superior quality and I think it's reflected in so

Direct Access

many of our product features.

For example, our rigorous protocols for filling and replenishment have set a new standard for quality and eliminate the chance of cross-contamination. Our use of digital imagery of medications and doctors' scripts provides pharmacists with visual proof for filling and verification. Our dispenser's secure buffer and hopper doors eliminate inadvertent access to the drugs. The list goes on.

There are so many places an error can be introduced. Given the sheer volume of Rx's filled every day and the number of people involved in the process, the pressure is on pharmacies to use technology to streamline processes, handle exceptions, and fill Rx's correctly. Although technology is widely used to perform tasks such as DUR, adjudication of claims, etc., I think we need to better educate pharmacists on the many ways automation products can dramatically reduce errors and improve accuracy, and still provide speed, process control, and a solid return on investment.

CT: This seems like a good opportunity for you to tell us about your SmartCabinet and talk a little about what's meant by scalability.

Boyer: When we talk about scalability at Innovation Associates, we're talking about the ability of a system to smoothly handle a pharmacy's increasing prescription volume or to handle a chain's varying volume levels across its stores.

Let's look at an example of how a pharmacy can think scalability. We believe workflow software, along with Rx scanning, manual filling, and Rx verification, are useful tools in any pharmacy, regardless of Rx vol-

ume. A pharmacy can start with our workflow software and then add counting technology at the appropriate time. At, say, 500 Rx's per week, a pharmacy can structure its workflow and define its processes to ensure consistency and to begin to prepare itself for larger volumes. We don't recommend adding counting technology at this point, although a simple weigh/scan scale is useful.

As a pharmacy's volume increases to 1,000 Rx's per week, it becomes necessary and useful to begin to add

“Ergonomics, visual cueing, and aesthetics all played a major role in the acceptance of PharmASSIST by the user community.”

in counting automation. At that volume, we recommend that the pharmacy implement a one-cabinet system, and it goes on from there. Add a second cabinet at 1,500 Rx's per week, a third at 2,000, and the fourth at 2,500. The additional automation requirements are definitely a function of the Rx volume, although the particular mix of drugs for any specific pharmacy can swing the volume points up or down from those I just proposed.

From a practical standpoint, this is what we've seen in our installations to date. We're proud to say that we have PharmASSIST systems installed in over 100 pharmacies today, and that number is growing rapidly. These pharmacies range in volume from 1,500 to 3,500 Rx's per week. The SmartCabinet system has been our most popular product to date, primarily because the large chain we're rolling it out in has developed its own workflow software. The best use of our SmartCabinet system is in a pharmacy where the workflow is an organized process, and the phar-

macy is looking to add quality protocols, consistency, and labor savings. I should note, though, that a pharmacy also has the option to start with SmartCabinet, similar to the many pharmacies out there today with our competitors' products, for counting technology only. These pharmacies can replace that technology with our SmartCabinet, and then go on to add more sophisticated workflow software to improve pharmacy workflow and operations at a later time.

CT: There's a perception by some that the type of systems you are talking about is for high-volume pharmacies, but from what you just described about the scalable design, this isn't the case. Would

you care to elaborate a little on this?

Boyer: You're exactly right, Bill. As I just explained, our products are designed to address all levels of prescription volume in all sizes of pharmacies. But we're also talking about providing quality control here, not just providing pharmacies with the ability to handle varying volumes.

Therefore, regardless of pharmacy prescription volumes, there is really no reason to wait and every reason to get started early to introduce quality to your operation. Using workflow software, you introduce quality protocols at various steps of the process, and it only gets better when you add counting technology that offers unparalleled process integrity for all filling and replenishment tasks.

CT: So, how would you sum up PharmASSIST's competitive advantage? Is it in the engineering and ergonomics or does it go beyond this?

Boyer: PharmASSIST certainly has

Direct Access

a competitive advantage when it comes to product engineering, but in general, I think our suite of products is the most functionally rich, cost-effective, and productive solution in the industry.

Let's start with the heart of the PharmASSIST system's dispensers. These individual counting units have built-in computer controllers that make each dispenser functionally intelligent. This unique technology has enabled us to introduce functionality that was previously unavailable to the retail market, including offering computer-controlled quality protocols that drive auto filling, replenishment, cross contamination prevention, and remote diagnostics. It also allows us to do things that other technologies simply cannot, such as enable a dispenser to shut itself down when it senses dusty conditions that may affect its counting accuracy.

Beyond that, the fact that we have only two dispenser models that count all tablets and capsules, and allow pharmacies to perform drug changeovers using only software, is an extension of our basic technology advantage. And when you add our dispensers' simultaneous counting capability, which enables pharmacy staff to attend to other tasks while multiple orders count, you see real automation in action.

Ergonomics, visual cueing, and aesthetics all played a major role in the acceptance of PharmASSIST by the user community. Whether it was having the ability to perform single-handed filling, to minimize a person's bending or steps, or to see a dispenser's flashing light, our goal was to design and deliver products that would make the pharmacist's job easier, more efficient, and eventually more fulfilling.

CT: User feedback seems like it would be important on what new features are engineered into the system. Can you give us a few examples

of what your users have come back with that will help us understand the attention to detail necessary to truly impact workflow and pharmacy operations?

Boyer: We have always encouraged both prospects and customers alike to provide us with feedback on how we can improve our products to benefit all users, and they have certainly been forthcoming with their suggestions.

One of the more critical up-front design issues we had was determining our dispenser's storage capacity or hopper size. One of the key requirements that our customers suggested was to increase the size of the current standard to enable them to minimize refill time. This was a major challenge, because our goal was to keep our overall dispenser size at its 25 percent of the old standard while also addressing the "practical capacity" issue. The end result was our development of an 800 cc hopper, which has proven to be ideal for both our customers and our overall space-saving design.

Another example is our initial plans for visual cueing, which is an integral part of our system. Our original design called for our dispensers to display different colors to reflect different tasks to users. Many early reviewers felt that multiple colors would be confusing and would also be a potential problem for a color-blind user, so we decided that a dispenser would display only one color, green. We do, however, use multiple colors in the PharmASSIST end-user software to reflect status on the screen, and our documentation describes their use in detail.

Finally, another user suggestion that was key to our overall system design was the request for a portable scanner to help streamline our manual filling process. They wanted to be able to take the scanner with them as they retrieved and scanned

product from the appropriate shelf, and they wanted the scanner to beep if they scanned the wrong shelf stock. These enhancements helped minimize their steps in case they retrieved the wrong product and had to return it to the shelf, saving yet more valuable time.

Bill, I should also point out that our system has numerous built-in features that will further streamline process and save time for pharmacists with automation such as we provide. For example, our replenish barcode scanning is ready now for capturing the lot code and expiration date off of any drug package's barcode, although the drug manufacturers and repackagers aren't yet including them. This simple step will save pharmacists the time and effort of having to manually enter this data into their system. At this point, automation systems haven't been able to use this information conveniently. When we have a large enough installed base, we believe our customers will demand this from the drug manufacturers and we'll be all set to handle it.

CT: This was a very productive interview. You answered a number of questions that will help give pharmacists the framework needed for moving forward with this automation. Any closing thoughts?

Boyer: Bill, I'd like to thank you for the opportunity to voice my opinions, discuss the industry, and describe the benefits of our PharmASSIST products. I truly sense that the industry has begun to "see the light" in regard to how pharmacy automation can address their various prescription growth, pharmacy workflow, and cost-control challenges. This is a very exciting time to be in this market and Innovation looks forward to partnering with the industry to meet the ever-changing challenges of pharmacy. **CT**