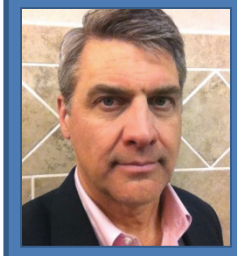
The ThomsenGroup Inc.

About The Author



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Pharmacy Automation In Retail Pharmacies: Assessing the right reasons, the right time, and the right extent to automate

By Christopher Thomsen
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Introduction

Retail pharmacy is frequently in one of three camps when it comes to pharmacy automation and dispensing technology:

1. **The "adopters"** embrace technology wholeheartedly, believing that technology is a viable way to confront many challenges in retail pharmacies today.
2. **The "technology avoiders"** hesitate to consider (much less invest in) new technology. They may fear it is just too expensive, too disruptive to their time-honored practices, or too confusing to even start.
3. **The "prudently cautious"** know that technology can help solve problems and run their business more effectively, but they are not sure where to start.

Technology adopters cross the entire spectrum of age, experience, income level and education. Pharmacy owners in their 60's as well as owners in their 30's can identify with one of these three camps. And, as recent research and polls have indicated, they cross all spectrums of age, experience, income level and education. Pharmacy owners, managers and operators can identify with one of these three profiles.

This focus of this white paper is to help the "technology avoiders" and the "prudently cautious" make an honest assessment of current practices, identify the areas where you want to make improvements, and then help you to analyze the many classes of technology options that you might be facing.

Pharmacy experts agree that technology provides the biggest and surest ROI – if carefully selected, correctly implemented and properly managed. The average U.S. retail pharmacy dispenses 78% to 82% of its daily prescription volume from bulk tablets and capsules, and the balance in unit-of-use or manufacturers packages. To handle larger (or increase current) prescription volumes without adding staff, it is logical that an investment in the right technology can increase productivity, increase efficiency and ensure accuracy for most, if not all, of a pharmacy's prescription orders.

One important distinction to make, however, is that "pharmacy automation" is not a generic term for robotics. Today, pharmacy automation generally refers to a variety of hardware and software solutions that meet very specific and unique needs of a particular pharmacy.

The Cost of Dispensing

We need to ask the uncomfortable but important question, "What is the cost of *not* investing in dispensing technology?" A pharmacy that is using a plastic tray and spatula to dispense prescriptions still has plenty of room for improvement. For starters, a ThomsenGroup study (*An Analysis of the Accuracy & Productivity of Automated Prescription Dispensing Systems - 2005*) discovered that the average pharmacist and technician is only 96% accurate in terms of tablet and capsule counting. Also consider that an over-count of one $3.00 tablet/capsule, once a day, will cost a pharmacy $21.00 per week or $1,092.00 per year. A simple counting device with a count accuracy of more than 99% could help to eliminate this.

It is also important to note that, according to a groundbreaking Auburn University Study (*National Observational Study of Prescription Dispensing Accuracy and Safety in 50 Pharmacies - 2003*), a retail pharmacy filling 250 prescriptions per day commits an average of four errors per day. As the volume increases, so do the prescription errors.

And according to the same Auburn University study, most prescription dispensing errors can be dramatically decreased or eliminated by some form of pharmacy technology such as counting systems, robotics, automated workflow, etc., and/or the improvement of a pharmacy's physical workflow.

Daily prescription volume, albeit very important, is just one factor that must be considered. One could conclude from the previously noted studies that the higher the daily prescription volume, the more likely a pharmacy operation will benefit from some form of technology. But other equally important factors to consider are:

- Small staff size
- Time and energy consuming activities (i.e., counseling, compounding, 90-day fills)
- High stress or anxiety levels among the pharmacy staff
- Difficulty in hiring/retaining quality pharmacy staff
- The growing occurrence of dispensing errors
- The high cost of specialty medications (e.g., oncology)

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A Careful and Scientific Approach

It is very important to take a strategic and somewhat scientific approach when evaluating your pharmacy's layout and operation and investigating automation and technology of any type or size.

A first step should be to take some time to write down a "wish list"; itemize the challenges that you face and the improvements that you would like to make. Note where you think automation and technology might help. Also, make note of the automation and technology vendors that you would meet with. Interview them and prepare a team of your own staff members who will be part of this project and will help to keep the project focused and on track. These will be your partners during the selection, implementation and management process.

The next step will be to briefly separate yourself from your daily role and look at or record (video) what is actually happening in and around the current space. After more than two decades of consulting with pharmacy owners, managers and operators about how to design and operate more efficient pharmacies (with or without pharmacy automation), The ThomsenGroup has found this to be very important. Pick a fairly slow day, remove the white coat, set up a video camera, and sit with a slightly elevated and detached viewpoint with a notebook. Then observe your pharmacy and staff in operation. After only a few minutes, you will begin to see the big picture – what is actually occurring and what should not be occurring.

By temporarily leaving behind the role of owner, manager or operator, and studying the pharmacy as an impartial observer, this is one of the best ways to view and gather the necessary intelligence for what a pharmacy truly needs to do in terms of safety, workflow, efficiency, productivity and customer service.

Exercise A

If one or more of these challenges occur in your pharmacy, strongly consider pharmacy automation.

- ❑ Daily Rx volume is over 100
- ❑ Need a competitive edge to earn new business or retain customers
- ❑ Still hand-counting by 5's
- ❑ Concerned about dispensing errors
- ❑ Pharmacy insurance company suggested "risk-minimizing technology"
- ❑ Paid too much in taxes last year
- ❑ Pharmacists are dispensing medications, not technicians
- ❑ Want to free up time to grow business
- ❑ Don't use any verification software (barcode-scanning to check the stock bottle with the order)
- ❑ Daily Rx volume is rising
- ❑ Hard to fill staff vacancies
- ❑ Pharmacy environment is stressful and strained
- ❑ Want to focus more on customer service
- ❑ Always wanted a pharmacy robot, but assumed they were too expensive, too big, or too much hassle

Next, look at flow. Locate the inventory and prescription dispensing area in such a way that steps to and from these areas are minimized as much as possible. Look at where the prescription drop-off, pick-up, will call and the drive through window areas are located. If they are scattered at each corner of the pharmacy, find how to relocate each of these areas so that they are more or less centered around or near the designated dispensing area.

Next, print off a list of your top 100 to 200 dispensed medications, and see if their current location makes sense. Would moving the highest movers nearer the designated dispensing area be sensible? A simple step like this can reduce unnecessary travel by as much as 80%, or nearly a half a mile of walking per person, per day.

Finally, look at the pharmacy shelving system and determine if it is limited to a single size shape or form of stock, or if it is flexible and adjustable. Consider the fact that high density shelving will allow for quick and simple relocation of inventory as your pharmacy changes and expands.

Once the physical environment has gone through careful observation and you have made efficiency improvements, the next step is to consider technology.

Types of Pharmacy Automation Devices

Simple tabletop or floor-mounted automated counting devices can and do provide very real and affordable dispensing solutions for a tremendous range of pharmacies: for those filling 50 prescriptions per day and those filling 500 prescriptions per day. Some of these small and simple automated counting devices can reduce fill times by as much as 48 percent and increase filling capacity by as much as 16%. (*TTG, 2005*) Plus, consider the fact that counting devices are fairly inexpensive ($5,000.00 to $15,000.00), require little counter or floor space and some even include elements of automated workflow management like fingerprint verification, barcode scanning and onscreen drug images to avoid dispensing errors.

And of course, there are robotic dispensing systems. In the past, robots automated a very high number of medications, and were sized and priced to be attractive for the busiest tier of retail pharmacies. More recently, however, pharmacy automation vendors have realized that the high cost of remodeling, inventory and maintenance has made some of these very large robots unfeasible and budget-prohibitive. Robotic vendors are now providing options for pharmacies of any size, prescription volume and budget. Even pharmacies dispensing 150 scripts per day can find a good ROI if all of the right factors are present. Newer robotic systems now vary in size, price and the number of medications they automate, but still perform all of the same basic labor saving steps of their predecessors.

Receiving a signal from the PMS, all of today's robots automatically fill prescriptions by selecting the correct vial, printing and applying the correct label and selecting and

counting the correct medication into the via. The robot acts as a second set of "very accurate and fast" hands in the pharmacy.

And, while robots do provide efficiency, productivity and safety, it is also important to point out that all robotics require a little attention, in terms of regular inventory replenishment of their cells or cassettes (50 up to 250+, depending on the robot). Some robots also require additional calibration and ongoing support so it is important to know what daily maintenance will be required of any robot.

Important Considerations Regarding Robotics:

1. Be prepared for some remodeling costs, possible relocation of fixtures and a little time with the vendor to ensure that you find the best location for the robot and success with your pharmacy team. Obviously, the larger the robot, the more remodeling you may have to undertake.

2. All robotic dispensers must interface to the pharmacy management system so they can receive the order immediately after adjudication and start processing automatically. Ask your automation provider for counsel on what is involved in interfacing to your current PMS software.

3. Predicting ROI is not always a simple equation. Many factors are involved, including the ratio of technicians to pharmacists on a typical shift (i.e., the fewer employees, the greater potential that a robot can bring about a quick ROI), the desire of pharmacy owners to divert activity to other areas (i.e., increasing revenue through front end sales, MTM and customer service initiatives). Ask your automation provider to walk you through an ROI calculation. But remember that ROI calculations can be heavily weighted toward that particular device.

4. Robotic dispensing may qualify for reduced monthly premiums from your pharmacy insurance provider under the category "risk-mitigating technology". (Read on for details.)

Automated Workflow Management Systems

Automated workflow management software (and its simplified cousin, scan-verification software) is vital to improving a pharmacy's operation, yet it is so frequently overlooked. I often liken it to seat belts and air bags; it is so readily available and affordable. So, why doesn't every pharmacy use *some* form of automated workflow? At its core, automated workflow is a system of software modules or products that can improve productivity and efficiency by automating and dividing tasks of the prescription dispensing processing into separate steps so that they can be consistently performed by one or more people. Every person filling, labeling, verifying, collating and storing a prescription with an automated workflow system follows the same rules. There are no exceptions.

Thus, a pharmacy using automated workflow or scan-verification has a standardized prescription filling process that is predictable and repeatable. Every prescription is filled efficiently, and without error or undue stress.

When automated workflow was first offered, most systems standardized the ***entire*** dispensing process – from adjudication all the way through will call. Automated workflow initially was offered only by automation vendors, and was very expensive. Now, workflow software is much more modular and affordable, and is available as a built-in function of many dispensing technologies (tablet counters with integrated verification software), on robots, or as part of the PMS.

Nowadays, you have options and do not necessarily need to invest in a full workflow system. With some automated workflow modules, or dispensing devices with built-in scan-verification software, the technology divides tasks of the dispensing process into separate steps so they can be consistently performed. Thus, errors are avoided, pharmacies are confident that all orders were processed in the same way, and time and costs are reduced. There is a wide range of functionality and price ($8,000.00 to $100,000.00) and the look and functionality is very different from one system to the next.

An automated workflow system's value may justify the investment, especially considering that lost or misplaced prescriptions cost the average pharmacy $60.00 to $100.00 per day in labor, and those could be drastically reduced or eliminated by workflow software. Start the discussion with your PMS provider, which may offer pieces of what you need – or an entire system.

Here's an added benefit: Ken Baker, RPh, JD (*Can we lower insurance rates if we cut med errors? – 2003*) even suggests that pharmacy automation and technology, automated workflow included, may even qualify for reduced monthly premiums from your pharmacy insurance provider under the category "risk-mitigating technology". Ask your pharmacy insurance provider – it can't hurt, and may help lower your premiums.

Important Consideration Regarding Workflow Systems:
Watch out for "technology paralysis." Like any technology, many workflow systems started out simple but might have become over-engineered and rigid. You'll be happiest with a system that can bend around your own pharmacy's needs. A system that forces a technicians through 10 steps versus what used to take 5 steps may not be the right system for you. Also, consider simpler counting and scan-verification units that may have some of your favorite automated workflow components.

Automation Help On The Internet?

Dispensing accuracy and speed is generally not impacted by the worldwide web. However, many dispensing technologies can benefit from networking. With a networked device, the technology vendor can service and troubleshoot the device remotely, and analyze the device's performance to help you maximize your utilization. This is especially true of a dispensing robot. Networked devices also can share data and collate orders between the units.

The internet can also help you generate goodwill, public attention and even increase business. If you invest in dispensing technology, let your customers know via your website and social media. Devote a section on your website to "technology" to publicize the fact that your pharmacy is the most advanced, safety-minded, and customer-centric business in the community as a result of your investment.

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Final Thoughts and Recommendations

Here is the present trend: many pharmacy automation and technology vendors are working at making their systems better, smaller, more fully integrated with the pharmacy management system and easier to operate. Incorporating workflow software and scan-verification software is very prevalent. And there are a few major innovations down the road (e.g., self-checkout kiosks for refills) that are being tested, gradually accepted and utilized in community pharmacies.

My advice has always been and will always be, "Find a way to invest in automation and technology." When applied correctly, the ROI is there, and studies have clearly demonstrated that pharmacy automation is capable of accomplishing the following:

- Improve prescription dispensing accuracy and safety
- Reduce staff stress
- Help to manage labor costs
- Free up time to devote to other business opportunities
- Reduce inventory shrinkage
- Attract new customers and retain current ones
- Establish an edge over competition

Exercise B

As you get serious about considering an investment in pharmacy automation, make sure you have considered these six steps:

1. Know your objective: Decide and rank-order your needs such as error reduction, filling speed increase, standardizing the entire filling process, removal of manual steps, or a combination.
2. Know your budget range: It's nice to dream about the shiny new contraption or the sweeping software platform, but you should know what you can put aside. One important decision to make is lease-vs-buy. Your accountant should be consulted to see which strategy is best for your cash flow. Keep in mind that not all lease packages are equal. Many technology lease packages come with a nominal buyout at the end of the lease term (e.g., $1) while other packages require you to re-sign another lengthy contract.
3. ID your technology team: Assign a capable staff member(s) to serve as co-planners, implementers and trainers. One lead person should be assigned as a "super user" – this will greatly increase your success rate. He/she can serve as the head trainer for the rest of the staff, trouble-shooter, and point person for any maintenance. A super user can be the pharmacy owner, manager or technician. More than the title, the important factor for being a successful super user is that you are interested in new technology, aren't by nature a skeptic of technology, and are engaged daily with the technology in the pharmacy.
4. Know your automation partner: Go beyond just the purchase or rental price and have pointed conversations about the impact of any technology, including maintenance costs, service records, training, remodeling costs, inventory impacts, etc. As their track record for delivering on their promises.
5. Do your homework: Ask for references/customers who are currently using this technology. See the technology firsthand – either in person or virtually. In the past, a site visit or trade show may have been the only way to see a new technology. Today, you may get the same benefits with a live streaming video demonstration or online tools. Some vendors also provide a free trial in your pharmacy, as long as the technology is portable.
6. Set your timeline: This may be impacted by the above factors.