Building a Business Case for Hospital Warehouse Automation

Identifying value that drives your investment request across the finish line
Introduction

Gaining approval to invest in warehouse improvements, including automation, is a challenging endeavor in most hospital systems. Overall healthcare industry conditions, along with individual network and hospital concerns such as availability of capital, competing capital projects and other obstacles often stand in the way.

Reasons commonly cited for rejecting or delaying investments to substantially improve hospital warehouse operations include:

- Prioritization of capital toward top-line growth, e.g., expansion of an Emergency Department, investment in ambulatory care services, or readmission reduction programs
- Concerns about an existing or ongoing decline in reimbursement and its effect on profitability
- Limited availability of capital due to competition from clinically-focused projects
- Unwillingness to put capital at risk due to instability related to M&A activity

Given these potential obstacles to obtaining investment approval, the development of a sound, thorough business case is essential for the hospital supply chain organization that wants to move a project forward successfully. Project business cases based solely on financial impact have little hope of successfully navigating their way through the array of capital competition and other organizational issues blocking the path to approval. Inclusion of relevant organizational value beyond the pure dollars and cents, such as increased storage and throughput capacity, real-time order fulfillment, improved order accuracy, ability to better meet site delivery requirements, etc., are generally needed to drive an investment request across the finish line.

This white paper outlines the key requirements for development of an effective automation business case that will increase your likelihood for receiving senior management support.
Financial Impact

One of the primary factors when considering capital approval is the financial impact of the investment: What are the resultant additional profits or cost reductions? For hospitals, this might mean: what can be gained from improving patient outcomes, servicing higher patient volumes or optimizing supply inventories? If this hurdle of financial impact can be overcome to the satisfaction of senior management, the additional factors outlined below become less critical, yet still important.

Understanding the required criteria for approval is the first step in the process of developing the financial portion of a business case. Many organizations focus on simple payback period (payback) as the primary measure of financial impact, with some organizations rejecting out-of-hand any initiative not providing a minimum payback within a 2-year time frame. When considering investment in software or automation through material handling systems, these hard-and-fast requirements are challenging to meet with projected labor savings alone. Other, less-obvious savings often need to be quantified to drive estimated returns high enough to gain approval.

Listed below are quantitatively verifiable opportunities for savings through software and automated material handling systems that are often over-looked when developing a business case analysis:

- Reduction in outside or overflow storage at individual hospital sites, as well as the associated loading, unloading and handling labor; more efficient use of existing warehouse space also enables hospital space to be re-purposed for revenue-generating, patient-care activities
- Reduction in opportunities for human error by improving picking accuracy; shorter turnaround-times
- Enhanced purchasing savings through efficient handling of low unit of measure (LUM) items
- Risk reduction via compliance with regulatory agency requirements for recall or information-tracking initiatives, such as the Drug Supply Chain Security Act (DSCSA)
- Decrease in overall inventory and related carrying costs; with more efficient processes and improved inventory control, it may be possible to reduce safety stock levels, improve inventory turns and reduce the amount of supplies stored on hand
- Reduction in waste due to expiration of supplies, devices or medication as a result of improved inventory management and tracking
- Improvement in workforce retention and satisfaction through the addition of goods-to-person technology, shortening new staff training and reducing manual labor
- Reduction in clinical-staff time spent on supply management

Many of these ancillary benefits require support from management and staff outside the supply chain organization. Through involvement of these non-operations experts and inclusion of their input into benefits calculations, the buy-in for the initiative begins to spread through other areas of the health system. In particular, involvement of finance and accounting team members and their consensus on calculations is extremely beneficial.

The projected cost of not making the investment in automation should also be included in the analysis. To learn more about calculating the cost of maintaining your status quo, visit swisslog.com/modernization to download the white paper, “The Cost of Doing Nothing: Evaluating Modernization for Hospital Warehouses.”
Increased Capacity

Ensuring sufficient capacity to meet health system growth projections, particularly for fast-growing systems, is a critical and, to some degree, predictable operating variable. Nothing puts patient outcomes at risk like a supply chain organization unable to meet demands. A warehousing initiative providing additional order processing capacity or higher service levels can support or lay the groundwork for health system expansion. The value of dynamic distribution operations that are able to react to and accommodate changes may be apparent only when an operation fails to adapt and meet the needs of the system.

A recurring mistake made when planning for future growth and additional capacity is to focus exclusively on a bottleneck area. The current capacities for all storage areas, work functions and work spaces need to be thoroughly assessed early in the planning process. An all-encompassing plan should be developed to ensure that each function within the warehouse can meet future design requirements with either its current or augmented capabilities. Without a comprehensive plan, there is a danger that investment to eliminate one bottleneck can result in creation of a second, third or more bottlenecks.

Goods-to-Person Automation

There are several ways to demonstrate payback on your investment. However, before you begin, it is beneficial to inquire with the finance team at your health system to see if there is a preferred model for demonstrating return. The list below includes line items to consider when implementing goods-to-person automation in a consolidated service center (CSC):

- **Labor**: Goods-to-person automation delivers picking efficiency, resulting in significantly less labor than manual shelving. Reallocation of these resources can support the needs of growing health systems. When building a new warehouse, these savings can come in the form of labor avoidance.
- **Cycle count reduction**: Eliminate the need to manually check inventory discrepancies through the continuous cycle counting of a goods-to-person system.
- **Training/new hire reduction**: Intuitive pick-to-light workstations and elimination of the need to memorize item locations lead to a dramatic reduction in new employee training.
- **Cleaning/housekeeping**: An enclosed, dense storage system helps to maintain packaging integrity and makes for a considerably cleaner warehouse, requiring less upkeep to maintain warehouse standards.
- **Lift truck usage**: When using automation, fewer forklifts are required because put-away goes directly into the storage system.
- **Scanning equipment and voice picking license reduction**: Decrease the amount of equipment needed for manual picking operations.
- **Space savings**: By leveraging vertical space, a dense storage system can significantly reduce the footprint taken up by static shelving.

When including capacity increases as a contributor toward the overall business case, it is critical that the overall ability for the supply chain organization to accommodate your health system’s growth projections be understood. Otherwise, the business case will not be approved, or even worse, the investment will be made with the potential of failing to meet senior management’s expectations.
Improved Customer Experience

Although “customer” is often a word heard in retail business, hospital supply chain organizations (SCO) have numerous customers. In addition to patients, a health-system SCO serves hospitals, clinics, physician offices and long-term care facilities. More specifically, they serve physicians, nurses and value-analysis teams. Not to be forgotten are the CFO and finance organization, to which every supply chain organization must deliver significant savings.

According to Gartner analysts in a webinar entitled, Supply Chain Solutions: Growth Opportunity for Software Providers (July 2012), the desire to improve customer service and the customer experience is the number-one business priority for companies today. With the decline in reimbursement resulting from The Patient Protection and Affordable Care Act (ACA), this is no different for hospitals. Today, health systems are laser-focused on improving the patient experience – and the accountability for that belongs not just to clinicians, but with (you guessed it) the supply chain organization. It’s about more than just making supplies available when nurses need them. It’s analyzing the cost and outcomes of medical devices and other supplies to determine how to deliver the most consistent care for the best value.

To go one step further, many hospital warehouse initiatives must provide meaningful, favorable impact on the customer experience. For investments that have marginal financial return, inclusion of the specific service improvements that will be achieved in the business case can make the difference between approval and failure.

Investment in warehouse and distribution capabilities can enhance the customer experience. Below are some examples of customer-related benefits that should be incorporated into the business case, where applicable.

- More time for clinicians to focus on patient care through demonstration of accurate, consistent and timely fulfillment of the supplies they need
- Improved procedure outcomes via the analysis and standardization of devices
- Greater order accuracy: shipping the right supplies, in the right quantity, to the correct site, at the right time
- Floor or unit-specific labeling and/or other value-added-services (VAS)
- Better tracking capabilities for supplies or medications from the warehouse to the patient to ensure the right materials are available when needed

- Shortened delivery lead times. By becoming more efficient and increasing distribution capacity, supplies get to the hospitals, and therefore the patient, with the urgency required
- Improved clinical relationships. Consistent, timely deliveries build trust and confidence in the supply chain organization and reduce unnecessary safety stock inventory in hospital storerooms

With patient satisfaction being a focal point for health systems, it’s likely that competing capital projects may be designed to address this issue. Given this, a business plan focused on warehouse improvements must also tie back to achieving this goal.
Hospital Priorities Shift Toward Patient Satisfaction

Results of a survey* conducted by IDN Summit and with ECRI Institute and Jack Welch Management Institute indicate that the patient experience is influencing supply chain decision-making.¹

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*200 senior healthcare supply chain executives from the United States, estimated to be in the top tier in terms of size and dollars spent on supplies annually.

Employee Safety, Ergonomics & Environment

Reduction of employee exposure to physically demanding and/or extreme repetitive motion activities is a key benefit of introducing technology and automated equipment into the warehouse work environment. Fatigue and exposure to work tasks that have the potential to result in injuries can be greatly reduced through automation. Additionally, the introduction of modern automation technology can eliminate the need to carry replenishment reports, pick lists and other documents so workers have both hands to lift, transport and place product.

Any improvement in employee safety and ergonomics would be viewed as an extremely favorable impact and enhance a marginal business case, with real, long-term costs associated.

Workplace environment is another potential benefit of streamlining product flow through automation or other technology as employees can work much more efficiently. The ability to move more product through the various areas within the warehouse with less effort is typically viewed positively by, and fosters a “winning” mentality among, the workforce. This type of environment is critical to attracting and retaining successful employees. Health systems and their patients expect a flawless performance from their employees, which means they need the tools and resources to match those high expectations.

Some examples of how automated solutions and technology investment can enhance the workplace environment include:

**Goods-to-person picking methods:**
- Eliminates foot or lift-truck travel during the picking process
- Ensures that picking tasks occur at ergonomically correct heights and reach-ranges at engineered workstations as opposed to bending/stretching to reach low/high shelves in bin shelving/carton flow racking or pallet racking
- Reduces new employee training period through workstations that direct picking and do not require memorization of inventory locations

**Automated data capture:**
- Eliminates the need for paper-based work tasks with barcode scanning, voice-recognition technology and/or automated label print-and-apply systems
- Eliminates the need to manually write information and handle documents; with automation technology, both hands are free for handling product
Conclusion

In today’s healthcare environment, most warehouse initiatives requiring substantial investment are closely scrutinized. After all, supply chain organizations are expected to deliver savings. To increase the likelihood that your project will be funded when it is competing with multiple initiatives from other departments, a compelling business case is essential. Inclusion of all potential financial impacts, measured from multiple perspectives, along with other relevant benefits, will provide a much more effective case for investment in warehouse improvements.

Collaboration with other functional areas in your organization, for example—finance, during the development of the business case creates buy-in and a feeling of ownership among key executives, which will foster support for your initiative. By developing a comprehensive business case with active support from your peers in other departments, you will greatly enhance your chances for approval, funding and a successful project that delivers on cost, quality and outcome goals.