

# **The Survey Says: Space & Labor... Liability or Opportunity**



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## Executive Summary |

Being competitive in today's evolving marketplace is more than gaining an edge with a better or lower cost product or service. Competitiveness is backing up good research and development with reductions in the cost of doing business. Two of the biggest cost factors are space and labor.

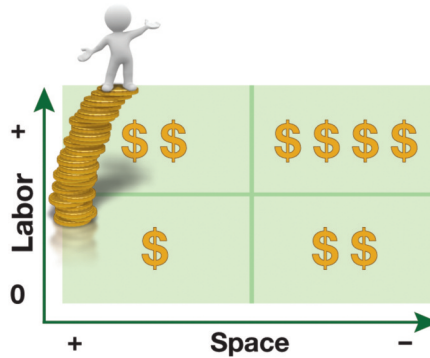
Space is the physical footprint required to manufacture, distribute and/or manage a product or service. By minimizing this operational footprint, manufacturers, warehouse and distribution operations, medical supply and service companies, and other businesses can significantly reduce operating costs. There are many common and best practices that can be easily employed to minimize an organization's footprint and provide the increased value and savings associated with it.

Labor is often the largest cost consideration of a business and is the most difficult to manage and control. Good practice here also requires that the elements that add to the cost of labor, such as health insurance and training, be minimized without risking output or quality or time to market.

A quick fix to reducing space and labor costs has been to set up offshore operations. Clearly the simpler the manufacturing process and commoditization of the product dictates the success of these operations. Going offshore provides space and labor for pennies on the dollar when compared with direct costs of operating in North America. However, many businesses are seeing the true cost of offshore operations as being much higher than anticipated. By calculating the additional costs due to an extended supply chain, poor quality control, loss of intellectual property, corporate officer's personal legal liability for product issues, and lack of responsiveness to the marketplace is turning many companies back to North America.

By conducting a space and labor survey, manufacturers, warehouse and distribution operations, medical supply, and other

business organizations can quickly gain insights into space and labor dynamics and how they influence profitability. A survey allows an organization to find the processes



*When calculating a facility's operational requirements, the three major considerations are Space, Labor and Cost. Each quadrant represents a blend of Space and Labor and its associated cost. ISD uses its survey process to create systems that meet not only space and labor requirements, but also hit cost targets to create a fast Return on Investment (ROI).*

best suited to optimization, which translates into the competitive advantages required to excel in today's global economy.

## Space...Use it or Lose It |

There is an intrinsic value associated with space, and successful organizations convert space into opportunities. For example, consolidation and optimization might be the right solution for too much space. Can multiple facilities or departments carrying spare parts for manufacturing, maintenance, customer service, customer walk-ups, e-commerce, mail order, retail and wholesale facilities be combined? Consolidating operations, particularly non-value added operations such as storage, not only reduces inventory, but also recovers space for more valued-added operations. In some cases, entire buildings can be removed from operations.

Space optimization, or the reclamation of unused space, can be achieved through process improvement and the installation of high-density storage and material handling equipment. Improving processes often translates into balancing zones better, reducing buffer storage, eliminating inventory

and human touches by combining applications and areas.

By reducing the amount of space required for operations, companies can construct smaller, more energy efficient buildings, shrinking the construction footprint by up to 15% in some cases, conserving natural resources and reducing maintenance costs. This improved space utilization helps reduce energy costs, which helps reduce an organization's overall carbon footprint.

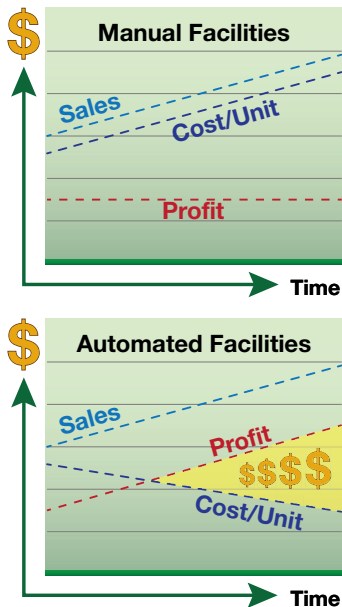
With a proper survey these space optimization elements can be observed, measured, analyzed, and implemented.

## Streamlining Labor |

The cost of labor, and the associated costs of health care and training, comprise a large percentage of the cost of goods sold. While these costs can't be eliminated, they can be controlled and often reduced by modifying workflow routines to eliminate bottlenecks, redundant or non-essential operations. Overall throughput improves, and the time saved results in less operating cost and improved customer service.

Redundant or non-essential handling can be reduced with automated systems by using techniques in storage and retrieval applications that pick multiple orders simultaneously and maximize system capacity and the storage of parts in appropriate distribution quantities. These techniques reduce part handling time and the costs associated with unnecessary handling.

Often, more labor doesn't translate into more efficiency and productivity. Automated systems and workflow improvements make workers more efficient and allow businesses to operate with fewer personnel, even when business begins to grow.



*A survey provides cost and profit information for business improvement. In manual systems, the output per labor hour/operator becomes a constant, so increasing profitability per pick is almost impossible. By improving the process, the cost per pick/hour of labor goes down and the delta (difference) pays back the cost of the system and turns into profitability.*

## Optimizing Space and Labor Efficiency I

The key to optimizing space and labor efficiency is process improvement. Process improvement can, for example, eliminate inflexible or unreliable operations that cause manufacturing companies to produce goods before they are required. By eliminating inefficient layouts, process improvement reduces wait time between jobs or when retrieving items in a warehouse or distribution operation.

Process improvement can also eliminate overly complex procedures and can reduce the amount of inventory required to meet production needs or to fulfill orders in distribution operations.

In terms of ergonomics, process improvement can reduce worker fatigue and injuries by locating work zones to eliminate bending, stretching and reaching, and climbing while optimizing process throughput.

With these lean initiatives directed at eliminating these areas of waste and inefficiency, manufacturers, warehouse and distribution operations and medical businesses can improve their quality and service while boosting the bottom line.

Space and labor optimization can be used as a framework for the practical implementation of sustainable building design and construction, sometimes referred to as the green initiative. Sustainable design can result in substantial energy savings, at the same time reducing overall operating costs and improving efficiency by creating a more ergonomic work environment.

A space and labor survey can identify areas for improvement and build a foundation for lean, and green, initiatives programs.

## Finding What Works I

In reality, finding what works means matching business objectives with the benefits that increased materials handling efficiencies can provide. In effect, balancing risk with reward.

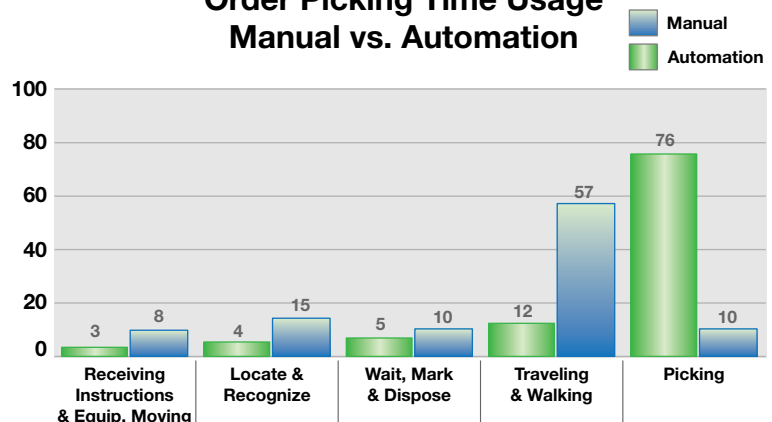
The "free shipping" marketing strategy offers an example. Free shipping is an illusion; it is simply moving money from one source in an organization to another.

However, a natural response is to match a free shipping offer by a competitor. While this might stop market erosion, free shipping can adversely impact the bottom line.

One way organizations have funded free shipping is through improvements in distribution efficiencies. This includes reducing the cost of space and labor by optimizing existing processes, procedures and equipment. The way to determine how much efficiency is enough is by creating a financial target to aim at while surveying existing processes and evaluating solutions to improve efficiency.

For example, going from a primarily manual system to using smart pick lists offers zero risk and can provide huge gains. Incorporating batch picking, voice picking, pick-to-light technology, bar code scanning,

## Order Picking Time Usage Manual vs. Automation



*Time surveys clearly show that order pickers spend 10% of their time picking and 90% on activities preparing to pick in manual systems. Implementing even basic automated solutions allows operators to spend 76% of their time picking, over a 2/3 improvement in efficiency.*

and radio frequency identification (RFID) can double and triple efficiencies.

Add flow rack, carousels, Vertical Lift Modules (VLMs,) batch stations, and automated storage and retrieval systems and efficiencies can reach 400% to 600% improvement levels.

How much is enough? That depends on the business model and what the financial target is for the market, operation or process. Once the financial target is defined, the next step is to define what situation or condition exists that prevents that target from being hit. Or conversely, is there a process or operation opportunity that can be taken advantage of to hit the target sooner or more accurately?

Once target and opportunity have been identified, a space and labor survey can provide insights into existing processes and workflow patterns, such as how much time is required for the process, how much space the equipment associated with the process requires, and how many employees are required to run the process. Other survey areas include inventory considerations such as the physical characteristics of the inventory and the size and capacity of the equipment used to store and move the inventory. Ergonomic design is also a consideration. Can processes be designed to reduce worker fatigue and injury potential? Can processes be automated or simplified to reduce training requirements?

After this information has been collected and reviewed, a solution can be selected that best meets financial goals. This is where industry experts can be of service. The solution becomes the catalyst for a preliminary budget from which ROI can be

calculated to determine if funding (risk) is worth the reward (savings and increased profitability).

Depending on the application and system, benefits such as 2/3 less labor and 85% less required space can be achieved. An organization may realize this lower labor requirement or redistribute the saved labor to other departments and areas. Fewer workers directly impact ROI, while reassigning often translates into revealed opportunities for improved throughput and productivity. Being able to produce additional goods, increase SKU capacity to add additional lines or products, and the ability to perform value added operations (kitting, spares distribution or gift wrapping) also increase revenues and profitability.

An easy to conduct survey can provide meaningful insights into current operations and open new doors of opportunity for improved bottom line performance in the new marketplace of the 21st century.

## About ISD |

Integrated Systems Design is a leading manufacturer and systems consultant, designer and integrator for warehouse, manufacturing, distribution, wholesale, institutions and retail organizations in North America. ISD systems are renowned for their tremendous value, reliability and ease of maintenance. Systems are designed using technologies from the leading material handling manufacturers of the world.

Solutions designed by ISD focus on providing space savings, increased productivity, reduced labor, higher accuracy and system flexibility to change as on operations activities change in the future. Utilizing proven technology and off the shelf components helps provide cost effective solutions requiring minimum maintenance and yielding fast Return on Investments (ROI).

ISD expertise ranges from handling and picking pieces (eaches), cases, pallets, build lines, and special or custom handling solutions. Products and services include: automatic storage and retrieval (ASRS), conveyor, robotics, batch stations, automatic inserters and printers, pick to light, A-frames, horizontal and vertical carousels, vertical lift modules (VLMs), controls, software (including inventory management, WCS, WMS, MES and ERP), application and facility consulting and design, AutoCAD, system simulation, moves, installation and service.

