



**Issues and Considerations
in Calculating Economic and Operating
Benefits from Point-Of-Work Implementations**

Point-Of-Work Technologies



The Business Case for Point-Of-Work Vending

This Business Case examines the prospective economic and operating benefits for implementation of Point-Of-Work (POW) Automation Technology (sometimes called Point-Of-Work Vending) to streamline and control the distribution of direct and indirect materials at manufacturing and other industrial sites.

Current-State Norms: Issues and Opportunities

Historically, materials, tools, parts, components, kits and other critical assets have been retrieved by the workers who use them from tool cribs, storerooms and warehouses. Workers leave their work place, travel to the location where the needed items are stored and then request an item at a counter or window. The requested item is picked and the transaction is recorded.

The result is a costly, inefficient transaction. Data collected in these counter-type transactions is often incomplete and/or inaccurate and thus unreliable.

When attendants are not available in the storeroom, creative “workarounds” frequently emerge. These may include open access to storerooms for off-shifts, weekends and holidays, supervisor management of storeroom keys and accompaniment of personnel retrieving tools by plant security services.

These “workarounds” provide a way for workers to get needed materials, tools and the like, but they result in unrecorded and inaccurately recorded transactions which, in turn, lead to higher costs in the form of Stockouts, Emergency and Expedited orders and Production Delays.

Some industrial sites have developed alternatives to the traditional tool crib model. Among these are:

- **Unattended, Uncontrolled Storerooms**

These open storerooms provide easy access to inventoried materials and assets. The cost of attendant labor is eliminated, but the uncontrolled consumption typically results in increased usage levels of 15-30%. Restocking becomes problematic as recordkeeping for stock removals and replenishment is inconsistent at best. *Unreliable inventory information leads to excess inventory (safety stocks), out-of-stock conditions and frequent emergency or expedited orders.*

• Free-issue at the Point-Of-Work

For many commonly-used items, free-issue bins or cabinets are placed at or near the Point-Of-Work. Workers can take items as needed from the free-issue point. Although this approach may provide convenient access for workers, it creates other problems such as:

- Consumption increases
- High cost to monitor and replenish
- Increase in inventory levels
- Vulnerability to Stock Outs

Items commonly provided as free-issue may include:

- Gloves and safety supplies
- Tools
- Electrical components and parts
- Welding Supplies
- Fasteners
- Fittings
- Shop supplies

No record of inventory levels or transactions is maintained at these free-issue drop points, so inventory management and reordering are fraught with challenges and burdened by wasteful and unnecessary costs. To compensate for lack of reliable inventory and demand data, buffer inventories or safety stock frequently builds up both at the Point-Of-Work and at various midpoints in the Supply Chain.

• Delivery systems

In some cases delivery systems have been attempted wherein either an outside supplier or an internal resource (“tool chaser”, “runner”, “expediter”) delivers materials, tools, kits or needed supplies to a pre-designated area near or at the Point-Of-Work. In these cases, there is rarely any security for the chain of custody. The delivery is usually made to an unsecured area such as a workbench, shelf or a supervisor’s desk. No record of the receipt by the intended user is kept.

Routinely, the materials are picked up and used by someone other than the intended recipient. This can result in duplicate orders,

wasted, time, production delays, waiting time and wasted effort. Managers encounter even greater challenges when trying to understand true demand. Because orders are typically placed on an “I need it now” basis, deliveries often are not consolidated and delivery costs tend to be high.

The Case for Point-Of-Work Control and Automation

A rapidly-growing trend is to deploy secure, self-service automated distribution at the Point-Of-Work. Enabling technologies may include:

- Industrial Vending Machines
- Automated Locker Systems
- Automated Storage and Retrieval Systems
- Secure or Semi-secure Cabinet Systems

In these cases, users gain the benefits of controlling and automating transactions and inventory management at the Point-Of-Work.

Additional operating benefits also include:

1. Elimination of waste and inefficient manual processes
2. Collection of process data for Six Sigma and Lean initiatives
3. Automated replenishment processes
4. Support for integrated supply programs

The elevated control and demand visibility provided by Automated Point-Of-Work Technology produces direct cost savings such as:

- ❖ **Reduced Consumption**
- ❖ **Reduced Reordering Costs**
- ❖ **Reduced Inventory Levels**
- ❖ **Reduced Material/Part/Tool Retrieval Time and Cost**
- ❖ **Elimination of Stockouts, Downtime and Delays**

Users also receive many indirect benefits including:

- ❖ Automated collection of accurate, actionable data for process improvements
- ❖ Improved compliance with procurement, process, quality and safety standards
- ❖ Increased inventory turnover rates

The Advantage of
Outsourcing

*Dramatic Cost
Savings and
Productivity Gains*

*A Completely
Outsourced Service*

• **Alternative to Capital Expenditures**

Leasing can have the further benefit of conserving capital. Rather than engaging in a time-consuming capital appropriation process, users can acquire POW Technology via an Operating Lease.

In most cases this permits the monthly lease payment to be offset against the cost savings, appropriately matching the gain and expenses to reflect the true economic benefit of the outsourcing. The net gain is clear for all to see and the economic benefits are immediately reflected in improved operating results.

The effect of choosing an Operating Lease is that **a net economic benefit can be realized from the very first day**. Although each case must be considered individually, **this approach often eliminates the need for capital appropriations and complex payback or ROI calculations**. When the implementation is structured as an Operating Lease, a “netting” of cost savings and program expenses can be made, thus creating a very simple and straightforward view of the economic benefits realized.

• **Opportunities for Cost Savings**

Figure 1. below illustrates areas of cost savings typically achieved through broad-scale implementation of Point-Of-Work Technology implementations.

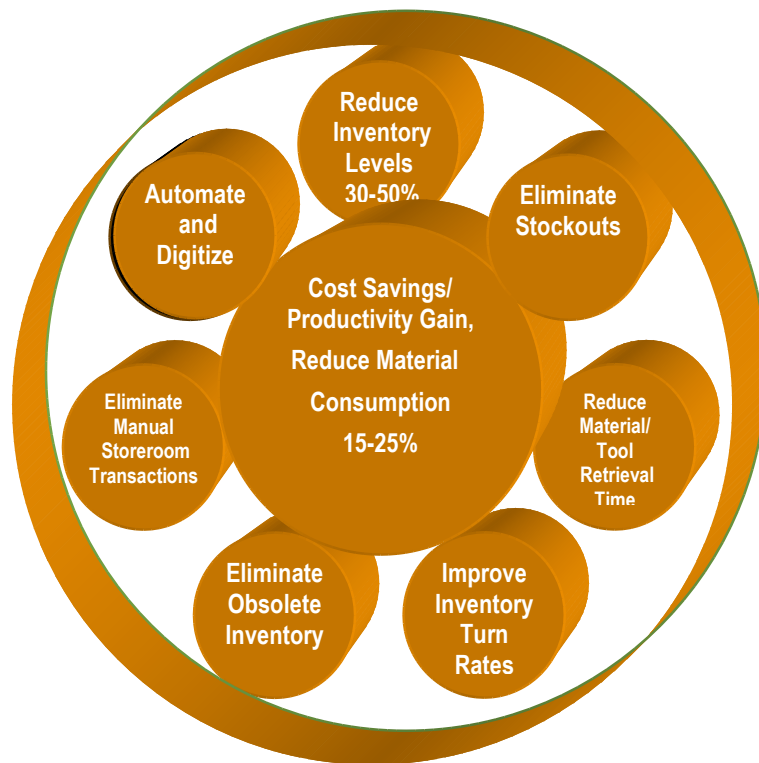


Figure 1.

Net Economic Benefits Can be Realized From Day One

Cost Savings Impact Many Functional Areas

Rapid Time-to-Benefit

- **Rapid Time-To-Benefit**

For implementations using an Operating Lease, clients can realize the full economic gain as soon as the program is implemented. There is typically no need for complex ROI or payback computations. The savings can be calculated simply as a net operating benefit or contribution.

Two additional fundamental ingredients for successful implementations are: using simple, straightforward technology; and selecting an experienced technology provider with qualified, local support resources. Study of many historical POW implementations indicates that a number of pitfalls can delay or impair achievement of the desired outcomes.

Factors frequently cited as disappointing or sub-optimal results are:

- Management time and attention is diverted from core business activities
- Execution plans are incomplete or inappropriate
- Implementation is poorly executed
- Systems integration and data distribution is not optimized resulting in manual processes being retained

To prevent these and other influencers that often drag down POW implementations, Apex employs rigorous pre-implementation, implementation and post-implementation services. This approach allows management to have confidence that its objectives will be met and accelerates the Time-To-Benefit cycle.

Calculating the Economic Benefit

A thorough examination of potential economic benefits should be conducted. Individual cases will present opportunities for savings and improvements in varying degrees for each of the possible savings areas.

Areas to be included in the analysis should include, at a minimum:

⇒ **Reduced Material Costs Due to Decreased Consumption**

The use of Industrial Vending systems to manage Point-Of-Work tools and supplies has historically produced a sustained reduction in material cost of between 10% and 30%.

*Replacing Inventory
and Inefficient Manual
Processes with
Information and
Automation*

*Reduced Consumption
Results in
Reduced Costs*

This is driven by greater accountability for material used and control over access and quantities issued. Workers are given the materials required for their particular jobs in the quantities specified. Benefits of the increase accountability and control include:

- Waste Reduced
- Shrinkage Reduced
- Maverick and Non-Compliant consumption monitored and controlled

Consumption reduction levels frequently vary for particular categories' items. Calculation of savings should consider:

1. The characteristics of the item
 - a. Unique use within plant
 - b. Utility and desirability outside plant
 - c. Access and portability of item
2. Value of item
3. The levels of control both in the current state and in the future state.

Saving ranges are typically 10 to 50 percent. Each item or category should be considered individually. Items with unique utility within the plant typically yield reductions toward the lower end of the range while items of high value and ubiquitous utility outside the plant (leather gloves, batteries, hand tools) can yield savings at the higher end of the range.

As workers become aware that their individual usage can be tracked and monitored, abuse and waste are reduced. Usage levels tend to go down.

Limits can be set for both access rights (authorization for particular workers to access particular items) and quantity levels (set quantity limits for the number of particular items workers can access over time — hour, shift, per day, etc.).

Improved visibility to usage patterns helps management to quickly identify abuse, waste and other opportunities for improvement. Because granular information is readily available across the Supply Chain, management can implement corrective actions quickly and effectively.

Finally, the ability to control access to particular items and to link those items to particular jobs or processes (machines, cells, jobs, etc.) dramatically reduces non-complaint or “maverick” usage. Materials, tools, parts and the like are used for the intended purpose in the specified quantities.

⇒ Inventory Reduction

By introducing accountability, tightly controlling inventory usage and automating replenishment, inventory levels can typically be reduced to less than two months on hand, thus “virtualizing” the inventory. **This will result in a one-time savings as the excess inventory is burned off.** The amount of the burn-off savings can be calculated by comparing the current- and future-state inventory levels.

Additional benefits of reduced inventory levels include:

- Lower Inventory Carrying Costs
- Reduced Storage Space (Valuable Space Can Be Reclaimed For Production)
- Reduced Damage
- Reduced Obsolescence

⇒ Direct Labor

In most historical models, production time is lost when workers travel to and from the tool crib or storeroom to retrieve the materials, supplies and tools they need to do their jobs. This process is also disruptive.

In some cases, a “lead person” or supervisor retrieves materials on a “batch” basis for his entire team. This leads to uncontrolled, excessive use, localized stockpiles or hoards and a second handling of materials as they are redistributed to workers who actually use them.

The control and automated replenishment provided by POW Technology **eliminates Stockouts and improves worker confidence that tools and supplies they need will be available when they are needed.** The improved confidence levels result in a reduction of “tool and supply hoarding”. This, in turn, has a positive impact on waste, spoilage and obsolescence.

*Control and
Reduced Inventory*

*Savings for Direct
and Indirect Labor*

In most cases, hundreds of hours of direct labor can be reclaimed for production each year. To calculate the potential amount of direct labor subject to reclamation, the following factors should be considered:

- Travel time for tool and supply retrieval
- Distraction, Socialization and Disruption occurring during tool and supply retrieval
- Waiting Time
- Put-away, picking, transaction processing and data processing

⇒ **Indirect Labor**

Workflow processes for reordering replenishment stock will be digitized, automated and streamlined.

This will result in:

- Greater Accuracy
- Elimination of Stock Outs
- Improved Efficiency

⇒ **Management will be relieved of redundant paperwork and manual approval processes.**

Areas where improvements are typically realized include:

- Reduction in Number of Requisitions
- Reduction in Number of Purchase Orders
- Streamlined Reconciliation and Payment Processes
- Eliminate Need for Management Involvement in Routine Processes, Expediting and Tool and Supply Searches

⇒ **Additional Opportunities for Financial Improvements**

Additional benefits may be found in the following areas:

- **Elimination of Stock Out Conditions:**
Demand monitoring and visibility and automatic re-ordering virtually eliminate outages, production delays and the need for expedited orders.

*Management Freed
From Non-Value
Added Reactive
Activities*

- **Management Information:**

It is difficult to put an absolute value on timely, actionable information, but the ability to get highly reliable, timely information greatly improves management data-driven decision-making. This will enhance other management initiatives such as:

- Six Sigma and other continuous improvement initiatives
- Lean Manufacturing
- Product and Vendor Consolidation

- **More Efficient Integrated Supply**

Automating material, tool and supply distribution with Point-Of-Work Vending Technology, Automating and Streamlining the Replenishment process and the availability of accurate, timely information throughout the Supply Chain enables Integrated Suppliers to provide more efficient services. This results in cost savings and improved performance for both Integrated Suppliers and their clients.

Conclusion

As best-of-breed companies strive to move critical materials, parts, tools, components and kits closer to the areas where they are used, Point-Of-Work Vending will play an increasingly greater role. Management must develop strategies that drive competitiveness and execute them effectively to drive cost savings and productivity gains.

Enterprise-level deployments of Point-Of-Work Vending Systems will be an essential ingredient in the success of those winning companies. Management must develop a well-conceived and easy-to-implement strategy that can be rolled out consistently on a world-wide basis. Apex Industrial Technologies LLC is the Premier Provider of low-cost, Internet-based and “Behind the Firewall” Point-Of-Work Vending products and services.

For more information about Industrial Vending Products and services available from Apex Industrial Technologies LLC, contact us at: info@apexindustrial.com.

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