



Sentiments Towards Automation in Warehousing, Distribution and Manufacturing

In the past, material handling users have had mixed sentiments about automation. A common perception was that automated material handling technologies promised more than they delivered: automation was reputed to be expensive, inflexible and unreliable.

More recently, design improvements and advancements in software and controls have led to automated solutions that are touted by original equipment manufacturers and systems integrators as more reliable, lower in cost and easier to implement, use and maintain.

Those improvements have coincided with heightened demands on facilities managers and supply chain professionals to reduce costs and overhead, boost productivity and achieve greater inventory accuracy. More importantly, the success of manufacturing and warehousing operations that were once largely invisible to the enterprise are now viewed as central to meeting broader corporate business strategies.



The Integrated Systems and Controls (ISC) Council of Material Handling Industry of America (MHIA) recently conducted a study of manufacturing and warehousing/distribution professionals to uncover if changes in automated solutions have led to changes in the perception of

automation in the marketplace. The results lead to several conclusions:

- There is a high degree of satisfaction among users of material handling automation: Eighty-one percent of manufacturing respondents and 86% of warehousing/distribution center respondents are satisfied, very satisfied or extremely satisfied with their systems.
- More than 90% of users report that automation is an asset to their operation, a career enhancer and a competitive advantage to their company.
- Of these facilities with automation, 76% plan to add more automation in the next 18 months.
- Despite a challenging economy, 61% of manufacturing users and 53% of warehousing/distribution center users say current business conditions are influencing their plans to buy more automation hardware.

Meanwhile, 42% of manufacturing users and 50% of warehousing/distribution center users say the economy is influencing their decision to buy software.

- Among non-users, however, the perceived cost of automation is still the number one reason why non-users say they have not considered automation or considered and rejected plans to automate (53%). Forty-seven percent (47%) say automation is tough to justify to top management.
- Still, roughly a third of non-users believe that automation may be considered for their facilities in the next 18 months due to increased sales, business growth and an improved economy.

Automation Drivers and Deterrents

Done right, automation can deliver a number of benefits to an operation. However, there are still barriers to justifying and implementing an automation project. As part of the survey, respondents were asked to identify the leading drivers influencing their decision to invest in automation and the leading deterrents that are preventing them from investing in automation.

The result: respondents using or implementing automation focused on the economic benefits that go directly to the bottom line of their operations, including cost justification, labor savings, return on investment (ROI), time savings, increased productivity and the economy.

Experience and Expectations

The success or failure of an automated system is the result of more than whether the equipment works as it was designed to work. It's based on the totality of a project, from the implementation and start up through the ongoing operation and maintenance of the system. A project that comes in over budget, behind schedule and with higher maintenance costs than was originally projected may be deemed a disappointment even if it moves product to plan.

In this survey, a majority of manufacturing and warehousing/distribution respondents experienced successful implementations: 72% of manufacturing respondents say their project went online on-time (62%) or ahead of schedule (10%) while 73% say their projects were on budget (58%) or under budget (15%). Similarly, 63% of warehousing/ distribution projects were on-time (57%) or ahead of schedule (6%) while 62% were on budget (56%) or under budget (6%).

Additionally, respondents were asked whether material handling automation matches their expectations for their systems: Ninety-four percent (94%) of manufacturers and 88% of warehousing/distribution respondents say their systems meet or exceed their expectations.

Automation in Departments

Automation has made inroads in every department in manufacturing and warehousing/distribution facilities. In both instances, automation is most prevalent in processes with a high labor component. These include order picking, shipping and order consolidation in warehousing/distribution and the production line, finished goods handling and assembly cells in manufacturing. See details in chart.

More than half of both manufacturing (56%) and warehousing/distribution respondents (63%) still find automation tough to justify and expensive to maintain (60% warehousing/distribution/49% manufacturing).

Still, more than 90% of all users say automation is an asset to their operations, a career enhancer and a competitive advantage. More than 85% say automation is a risk worth taking.

Inside Non-Automated Facilities

Forty-seven percent (47%) of the respondents not using automation say it was not considered at all for their facility. The remaining 53% say they considered but rejected automating their facilities. More than half of those respondents (64%) say that material handling automation is not used at any other facility in their company.

While 63% of professionals at facilities without automation say they are not considering automating in the next 18 months, 37% will consider automation if business conditions change.

Summing up

Looking over the survey as a whole, several key takeaways important to the material handling and logistics industry emerge.

- Users of automation are finding value from their systems and seeing improved performance metrics. Over 80% of the unaided comments were positive.
- Those same professionals overwhelmingly say that automation has met their expectations.
- Despite a challenging economy, 75% of users plan to add more automation in the next 18 months.
- That said, among those not currently using automation, the perception remains that automation is too costly and a challenge to justify to management.

Performance Metrics Enhanced by Automation

Manufacturing

	% of Respondents
Throughput	44%
On-time Delivery	35%
Order Accuracy	35%
Cycle Time	33%
Unit Cost	30%
Product Damage	28%
Inventory On-hand	25%
Uptime/Downtime	25%
Cost Per Order	12%
Order Fill Rate	5%
Other Indicators	5%

Warehousing/Distribution

	% of Respondents
Order Accuracy	61%
Throughput	58%
Cost Per Order	30%
Order Fill Rate	29%
On-time Delivery	22%
Cycle Time	17%
Unit Cost	16%
Inventory On-hand	16%
Product Damage	9%
Uptime/Downtime	9%
Other Indicators	3%

Methodology, respondents and their facilities

A survey was e-mailed in December 2010 to lists compiled by *DC Velocity* (www.dcvelocity.com), *Modern Materials Handling* (www.mmh.com), *Material Handling & Logistics* (www.mhlnews.com) and MHA. Affinity Research Solutions (www.affinityresearchsolutions.com) completed the survey on behalf of ISC.

A total of 529 qualified responses were received, including 339 (64%) respondents from warehousing/distribution and 190 (36%) from manufacturing. Respondents represented industries as varied as food, beverage and tobacco, pharmaceutical, apparel, consumer electronics and machinery. All respondents were involved in purchasing decisions for material handling equipment and related systems, technologies and services.

Fifty-five percent (55%) worked in automated facilities and 45% worked in non-automated facilities. Of those working in automated facilities, 75% of the respondents were involved in warehousing while 25% were involved in manufacturing.

The average non-automated facility was between 230,000 sq. ft. (manufacturing) and 278,000 sq. ft. (warehousing). Automated facilities ranged between 532,000 sq. ft. (manufacturing) and 642,000 sq. ft. (warehousing).

A significant number of respondents in automated manufacturing (25%) and warehousing (30%) facilities were in locations with more than 1 million sq. ft. Indeed, the size of the facility was a good predictor of whether automation was present: Only 5% of the manufacturing respondents and 10% of the warehousing respondents in facilities with more than 1 million sq. ft. did not have automation.

ISC is an Industry Group of MHA. ISC members are the Industry's leading suppliers of integrated material handling and controls systems and is comprised of members of the Automated Storage/Retrieval Systems (AS/RS), Automatic Guided Vehicle Systems (AGVS), Conveyor & Sortation Systems (CSS), Order Fulfillment Solutions (OFS), and Supply Chain Execution Systems & Technologies (SCE) Industry Groups of MHA. They supply systems worldwide and in virtually every major manufacturing and distribution sector. To learn more about ISC, visit www.mhia.org/isc.