White Paper:

8 Signs You Need an Automated Data
Collection Solution

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Executive Overview

In today's competitive environment, those who strive for excellence are often backed by robust systems that seamlessly weave business processes with raw data, while remaining flexible enough to gracefully pivot in the face of change. These systems are as powerful as they are due in part to many component attributes. One such attribute is "automated data collection" or "ADC," which is a common term used to describe a set of technologies that enhance and streamline pre-existing business systems.

An automated data collection solution can consist of hardware and software that function in tandem with, and expand the horizons of, an organization's existing systems. This synergy provides incredible productivity gains, operational efficiencies, and monetary savings. This set of results is the outcome of addressing business needs with relevant industry solutions.

At some point in time, companies made the decision to bring in computerized terminals (PCs) to replace the clipboards, typewriters, and other manual instruments that were in place within the office. This decision was founded on basic needs that were realized and acted upon. The decision to acquire and implement an ADC solution is no different—there are business challenges that need to be addressed in different functional areas of the business (shop floor, warehouse, freight dock, etc.).

A prime example for this discussion would be a supermarket. Before barcode labels were used, items were "rung up" manually and it was cumbersome and difficult to determine how much inventory was received, sold, damaged, and missing. After the supermarket installed barcode-reading register terminals and leveraged the barcode labels on products, their ADC solution was implemented and a new, industry-wide operational standard was set. In addition to accurate inventory metrics, additional benefits were also realized—faster inbound/outbound processing of goods, enhanced reporting capabilities, and an improved customer experience, which ultimately led to more repeat business and higher sales revenue.

Automated data collection solutions deliver a broad assortment of positive results and are implemented for various reasons. Often, both internal and external factors can manifest to create circumstantial business needs which demand immediate resolution. Most organizations that are amidst this type of critical scenario usually cite similar reasons for wanting to acquire and implement an automated data collection solution. A detailed analysis of each reason provides insight into how automated data collection can provide a solution for the most commonly reported market factors.

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1. Inefficient Manual Processes

Manual, paper-intense methods of completing tasks are still a common element in the business processes of some organizations. These methods are slow, wasteful, and inherently flawed, since human error is rampant and difficult to mitigate. The resulting errors ultimately lead to an increase in costs and a decrease in efficiency. Manual methods should not be a primary approach for completing a task, but rather, a last resort.

According to a study conducted by the IDC, workers spend more than 27 hours per week searching, gathering, and analyzing information. The research also concluded that these workers spend 3.5 hours per week searching for information that is never found and 3 hours per week recreating or duplicating content.[1] These excessive hours translate to equally excessive costs. The elimination of manual processes is one of the primary reasons why organizations seek out automated data collection solutions.

A robust, flexible automated data collection solution is able to eliminate a majority of manual processes. Not only is the manual element of the process eliminated, but the inconsistencies are replaced with logic and pre-defined standards. More work is performed by fewer people, in less time, with minimal errors, producing additional revenue.

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2. Business Growth

An increase in business volume should always be coupled with an increase in business resources to promote broader throughput. This is an opportune time to redesign workflows, evaluate business processes, and invest in technology and infrastructure. A failure to adjust for projected growth can bear devastating consequences which can actually decrease the size of business and, in severe cases, shut down the company as a whole.

Growth is experienced by many successful companies. To accommodate for growth, existing systems should be enhanced with new technologies that can deliver unprecedented efficiencies. According to Korn/Ferry International, 7 out of 10 business executives believe that technology has significantly improved company efficiency.[2] Automated data collection solutions provide a crucial upgrade that is designed to improve overall productivity. The scalability of these solutions ensures that additional growth is not only possible, but can also be easily attained and accommodated.

[1] Feldman, S., et al. (March 2005). The Hidden Cost of Information Work
[2] Korn/Ferry International. (July 2005)

3. Increasing Margin Pressure

Slower sales and declining revenues due to a stagnant market and increased competition can be harbingers for imminent change. It is in these trying times where a reengineering of business processes is needed to tighten and reduce operational costs so that efficiency can be cultivated.

Change means opportunity. Throughout history, economic turmoil has been a common reoccurrence. This unfortunate market factor has forced the "sink or swim" mentality across every industry. Only those organizations who have taken initiatives to reinvent themselves have stayed afloat. Automated data collection solutions promote lean business environments since, through automation, less resources are needed to accomplish a workload. This gives organizations an option to reallocate or reduce the total workforce. This has become a common tactic amongst many competitive organizations. The automaker, Volkswagen, has stated that it can now operate with only 66% of its current workforce. Based on the same study, Procter & Gamble is experiencing higher sales revenue than before and has dismissed over 12% of its employees.[3] Other major companies have followed this trend as well.

4. Infrastructure Limitations

Not every type of organization has the ability to provide wireless/network coverage to its entire workforce. There are some business models which require data collection to occur in remote locations where network coverage and even electricity may not be present. The lumber, agri-business, and seafood industries are prime examples of industries operating with inherent infrastructure limitations.

Automated data collection solutions thrive in these types of environments via the use of batch or mobile clients. According to the NPD Group, approximately 75% of small and midsize business plan to purchase tablets in the next 12 months. The NPD Group also reported that 25% of worldwide mobile PC shipments in 2011 were tablets.[4] Mobile devices are experiencing a popularity boom in both the public and private sectors. The portability, ergonomic design, and storage capacity of modern mobile devices drastically expand the reach of an organization's data to even the most desolate of places.

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[3] Alberts, David S. & Papp, Daniel S. (2007). The Information Age: An Anthology on Its Impact and Consequences
[4] Ritter, Larry. (February 2012). 5 Reasons for Business to Go Mobile Now

5. Leverage Existing Systems

Enterprise resource planning (ERP) systems and database management systems (DBMS) are the informational backbones of almost every major company. However, these systems alone cannot provide an encompassing, cost-effective solution for common business processes throughout an organization. ERP systems and DBMS merely arrange for business rules and methods that are used to process raw data. They do not facilitate nor improve the actual collection of the raw data. Backend systems do not provide the hardware or software necessary to perform all data collection activities—an automated data collection solution does.

Automated data collection solutions are fully capable of collecting data from every far corner or distant reach. This data is then passed to the ERP systems and DBMS for processing. Based on a study conducted at Statistics Finland between 2004 and 2009, the working hours spent on data collection activities were decreased 35% after the introduction of an integrated automated data collection solution.[5] This drastic reduction was the result of implementing an automated data collection solution that was able to capture data across multiple facilities and store it within one central DBMS.

6. Government Regulations

Certain industries such as food, drug, finance, aerospace, and defense must operate under strict government rules, regulations, and mandates such as Sarbanes-Oxley, ePedigree, the FDA Bioterrorism Act, and more. Any failure to adhere to these policies can result in severe penalties which can include (but are not limited to) judicial action, criminal convictions, fines, restitution, and imprisonment. Additional damage is also incurred from a poor public image, loss of revenue, and costly corrective actions that must be taken to become compliant.

According to a study conducted by Foley, the cost of compliance for organizations with less than $1 billion in annual revenue has increased from $1.7 million to $2.8 million since the enactment of Sarbanes-Oxley.[6] After the Sarbanes-Oxley Act of 2002 was passed, many organizations realized that some of the features which they were not using in their ERP systems could now be activated and enabled. Simply turning on these features within their ERP systems would incur a one-time expense that would yield savings and maintain compliance for years to come. Automated data collection solutions are capable of adjusting when changes in a workflow or business process are incurred.

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[5] Konttinen, Juha-Pekka. (2012). Automated Data Collection in Accommodation Statistics
[6] Foley & Lardner LLP. (February 2007). Foley Study Reveals Continued High Cost of Being Public

Automated data collections solutions dynamically adhere with the logic and rules that exist in backend ERP systems. This ad-hoc flexibility reduces the overall cost of compliance and promotes continued complicity with legislative mandates.

7. Traceability Requirements

Based on media and research reports, product recalls are becoming more frequent in industries as diverse as automobiles, electronics, food, and toys. The challenge of conducting a recall is to rapidly identify which products were affected, where the defective products are physically located, and what will be done to the recalled products. Many organizations are not prepared to perform recalls, simply because they lack the ability to track the lifecycle of a product from warehouse to consumer. This oversight can make an already costly recall effort far more burdensome.

In the produce industry for instance, The Produce Traceability Initiative (PTI) ensures complete produce traceability making it possible to track produce from its country of origin to a retail location where it is purchased by consumers. Produce traceability is vital to protecting public health since it allows health agencies to quickly and accurately identify the source of fruits or vegetables believed to be the cause of an outbreak of foodborne illness, immediately recall them, and effectively communicate information throughout the supply chain.

Although automated data collection solutions can reduce the impact of a recall, a recall is an unfortunate, yet unavoidable event. The findings of a survey conducted by the GMA indicated that approximately 58% of respondents reported that their company had performed a product recall within the last five years.[7] Shortening the timeline of a recall can reduce both financial setbacks and integrity losses incurred by a company. Keeping track of lot numbers, batch numbers, and serial numbers is an excellent precursory initiative that automated data collection solutions excel at performing. These additional attributes can be applied to almost any type of product and tracked as thoroughly as any other data element.

8. Improve Total Accuracy

With the onset of the Information Age, accuracy is more important than ever. Organizations can no longer afford to maintain inaccurate metrics which subsequently lead to costly errors that can have irreversible consequences. Due to plummeting costs, computers and technology

The findings of a survey conducted by the GMA indicated that approximately 58% of respondents reported that their company had performed a product recall within the last five years.

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[7] Grocery Manufacturers Association. (October 2011). Capturing Recall Costs: Measuring and Recovering the Losses

are being leveraged in virtually every industry. This digital prevalence is tightening the tolerance level consumers have for the mistakes made by organizations. Therefore, concepts such as order accuracy, item availability, on-time deliveries, and prompt customer service have become global edicts.

Automated data collection solutions collect and validate data via many methods including barcodes, RFID or voice and provide accurate updates to backend systems in real-time. Based on an implementation performed at an organization already using an automated data collection solution with traditional barcodes, accuracy rates were at 98%. With the implementation of a voice-enabled solution, accuracy increased to approximately 99%. In addition, training cycle times for new employees were reduced by 50%.[8] With accurate information, an organization is in an ideal situation to make informed decisions and confidently commit to vendors and customers. High levels of accuracy minimize the risk and magnitude of potential operational costs.

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Conclusion

Some of the challenges of operating an organization are unnecessary and precarious. These challenges can easily be neutralized with the implementation of an automated data collection solution. ADC solutions have been proven to eliminate errors and reduce costs while increasing productivity, promoting efficiency, and bolstering revenue. The resulting outcome is an organization that experiences a profound competitive advantage which is reinforced by an optimistic managerial team, a lean, agile workforce, and a growing customer base. These findings are repeatedly validated by numerous case studies and through the many testaments of personnel at every level of the organizational chart. In the Information Age, those who can accumulate raw data and process it into meaningful, organized information are better equipped to make split-second decisions that can thrust their company far ahead of the competition.

About the Author

Deep Gréwal is a Senior Systems Analyst at RFgen Software. He has been a consultant, systems analyst, software developer, researcher and educator in the IT field for more than 10 years. Having worked with numerous companies to automate supply chain process workflows, Mr. Gréwal possesses extensive first-hand knowledge and industry best practices in the supply chain automation arena.

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[8] Napolitano, Maida. (September 2012). Nature's Best Deploys the Best of Both Worlds. Logistics Management, 51(9), 50-53.

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