

Körper Supply Chain

Making the business case for voice

Creating and supporting the ROI



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Introduction

This paper is designed to help you create and explain a return on investment model using a calculation formula to present the performance and financial payback from a variety of voice enabled applications.

You will find it easy to understand and use and you will feel confident in your ability to sell your effective business case for implementing a voice solution in your operation.

Voice-enabled work benefits:

Increased productivity
generally from 10% to 25%

Higher accuracy rates

Reduced training time



Speaking to CIOs

The phrases “show return on investment,” “make a business case,” and “get the CIO’s buy-in” test the mettle of any competent and confident DC Manager. Ask you to pump up the team, to identify how well specific associates are performing, or to state your DC’s current safety record, and you are well in your element. But ask you to convince your CIO that a purchase of voice technology will be cost-effective and achieve payback in less than one year, and you are, perhaps, a bit wary.

You’re already under unrelenting pressure to drive operational performance – to constantly find new ways to reduce labor costs, improve productivity, and increase order accuracy. When you get in front of senior managers to ask for a considerable financial investment, your credibility is on the line, and you need to feel confident that you can understand and speak their language.

We understand your hesitation. But we also know that you can rise to the occasion, once you have a chart to help you navigate these unfamiliar waters. And that’s all they are – unfamiliar waters. The simple reality is that you understand your DC operational needs better than anyone, and if anyone can make the business case, it’s you.

“I asked for... an accuracy rate of 99.99%, and that was easily obtainable. In just six months, I’ve already gotten my return on investment.”

Director of Information Systems
Smith Drug Company

Voice and ROI

Over the past two decades, voice-enabled work has been established as a strong alternative to labor-intensive technologies like paper-based or RF scanner-based systems, and pick-to-light (PTL). It has been widely documented that voice enables efficiencies that result in measurable operational gains.

Assignments for selection (or other workflows generated by the warehouse management system) are transmitted via a wireless network to a mobile computing device, which translates the assignment data into verbal commands heard through the headset that direct the person to an aisle or section of the DC and a specific slot or pick location. The associate confirms the location by speaking a numeric identifier into their speech recognition headset. The associate then hears, for example, “pick three.” They pick three of that item and respond back, “three.” Then the next location is provided. This process repeats until all assignments are complete and the associate delivers their completed order (or may be directed as to where to deliver it).

Voice-enabled work accelerates performance improvement, whether the associate is case-picking, piece-picking, replenishing, putting product away, back-stocking, or line-loading. It also supports many picking styles such as the ability to pick and pass, or to pick multiple orders simultaneously. Management and supervisors maintain control of the process from their computers so they can resequence assignments, obtain labor reports, and respond to shortages when – or even before – they happen, rather than later in the process.

The return on investment (ROI) from these projects is often substantial. Fortunately, the impact of voice technology is easy to calculate with a few common metrics.

Building the business case

To begin building a business case for voice-enabling a DC, an understanding of your operation's current performance metrics and pain points is key. What percentage of your outbound shipments arrives on time and accurately? How much overtime does the team put in every month? Are associate compensation claims too high?

A study from a leading industry publication highlighted research findings on the top 10 metrics 160 companies currently use to measure their DC performance. The most common

measurement indicators include on-time shipments, inventory count accuracy, and order-picking accuracy.

Once you have assessed your overall DC performance, the next step is to identify those areas where improvement is needed – those which will most affect your bottom line. If your DC could benefit from higher accuracy rates, productivity increases generally from 10% to 25%, and/or reduced training time, then voice-enabled work could be a considerable benefit to your organization.

Impact on performance and quality

Improved accuracy

Typically, voice systems enforce order accuracy through the use of random check digits. The check digits are placed directly next to the product and must be read when an associate is at the appropriate location. The system won't allow the associate to continue unless they read the appropriate digits, thus ensuring near 100% accuracy.

Paper pick lists/labels and RF devices require the associate to divert their attention to read off a screen or sheet. This may result in the associate then looking back up and selecting product from the wrong location. Voice eliminates this source of error as attention is always on a singular task with the eyes focused on that task. There is no dependence on a device display, or on a paper label or pick list, which can be misread.

Correctly filled orders mean fewer returns for the distribution center. When a product doesn't need to be returned and reshipped, DC transportation costs drop. Labor is also reduced, because fewer products need to be received, put away, stored and shipped for a second time. Voice is a technology that ensures accuracy.

Increased productivity

Voice increases productivity by making associates more efficient. There is generally no need to scan barcodes or key in data on a handheld or mobile computing device. Voice picks up precious seconds throughout the workflow process. Those seconds accumulate to an impressive total over the course of a year.

By eliminating the need to read a display screen, a paper pick list, or a purchase order, associates obtain their next assignment en route to the next location, thereby reducing the wasted time associated with travel. If you have engineered standards in place, productivity gains can be estimated by eliminating the unnecessary steps associated with paper and RF systems. Typically, productivity gains will range from 10% to 25% associated with paper and RF systems.

When compared to pick-to-light, voice offers similar productivity rates, but with much higher throughput potential. Because voice is product-independent, multiple associates can be in the same area at once, giving your management the flexibility to commit additional resources to an area with excessive demand. In addition, associates can complete multiple assignments simultaneously, thus greatly reducing their travel distance.

Other workforce benefits

Language barriers, turnover, seasonal fluctuations in part-time employees, and the cost of training are a few labor-related issues that often compromise both productivity and accuracy. However, voice keeps labor costs down by making it easy for your associates to be trained.

When compared to pick-to-light, voice offers similar productivity rates, but with much higher throughput potential. Because voice is product-independent, multiple associates can be in the same area at once, giving your management the flexibility to commit additional resources to an area with excessive demand. In addition, associates can complete multiple assignments simultaneously, thus greatly reducing their travel distance.

Within 15 minutes, voice technology learns individual associates' personal accents and unique speech characteristics. The associate is then ready to be directed through each step of the job assignment. Because it's easy to use, training is literally cut from weeks to hours.

Voice-dedicated devices are small enough to fit in a pocket, giving associates freedom of mobility. Also, because it is much simpler to speak into the microphone on the headset than to enter data manually, they achieve higher productivity. By tracking personal productivity and accuracy, associates develop a sense of pride, turnover is reduced and you save the cost of training new associates.

Calculating a simple ROI

The overall value of any technology purchase is largely judged by the ability to demonstrate strong ROI. The challenge is in being able to identify where it occurs and knowing how to calculate it. Once you clearly understand your overall supply chain needs, the value of voice can be identified by calculating the average savings as a percentage of project cost.

The following example determines savings due to improvements in accuracy and productivity for a DC which ships 20,000 cases per day over an eight-hour period. It assumes a cost-per-error of \$8 and 260 working days per year.¹

For example purposes only, case picking is shown in the following section. However, the same calculation can be made for other areas of the DC, such as piece-picking, replenishment, and putaway.

"Paper order filling took a full day for the employee to get the idea of what was even going on. We can get people trained in one pass through the building with voice – and it creates a much safer environment."

Logistics Core Team Leader
Patterson

Questions about your pick area

What method do you currently use to pick orders?	Scanning
How many units do you pick per day?	20,000 units per day
How many errors do you have per thousand?	5.0 errors per thousand
How many total associates do you have in the case pick area?	18 associates
What is the average burdened wage rate for associates?	\$18.00 per associate

¹To calculate the cost of an error, review the sequence of events in the distribution process associated with correcting and finding errors. Additional handling, returns, audit processes, transportation costs, out-of-stocks at the store, poor customer service and additional clerical time are examples of areas in your supply chain which will incur additional costs due to poor accuracy. You will need to identify the specific areas tasks in your supply chain affected by poor accuracy to calculate the cost of errors to your organization.

Accuracy savings

Step One:

Determine what errors are costing your operation annually.

20,000 units per day x (5 errors per 1,000) x 260 days per year = 26,000 errors per year x \$8 per error = \$208,000

Step Two:

Determine what errors will cost you if voice is implemented and the error rate is reduced to 1 error per 1,000. (<1 error per 1,000 is common with voice)

20,000 units per day x (1 error per 1,000) x 260 days per year = 5,200 errors per year x \$8 per error = \$41,600

Step Three:

Subtract the cost in Step Two from Step One to calculate the potential savings.

Accuracy			
	Percentage	Errors	Cost
Without voice	99.5%	26,000	\$208,000
Expected with voice	99.9%	5,200	\$ 41,600
Savings		20,800	\$166,400

Productivity savings

Step Four:

Determine the labor savings if associates become 15% more productive, i.e., the same work could be accomplished with 15% less FTEs (full-time equivalents).

18 associates x .15 = 2.7 FTEs

Step Five:

Calculate the resulting labor savings in dollars.

\$18 per hour x 40 hours per week x 52 weeks per year x 2.7 FTEs = \$101,088

Step Six:

Compare the total investment price to the sum of Step 3 and Step 5. If the total investment price is less than the first year of savings, the payback will be under one year. Typically voice systems pay for themselves within the first nine to 12 months.

Productivity		
	FTE	Cost
Without voice	18	\$673,920
Expected with voice	15.3	\$572,832
Savings	2.7	\$101,088

Other potential savings

In addition to accuracy and productivity savings, which typically lead to a favorable ROI, there are other potential savings as well. Consider some of these possibilities:

Reduction in safety incidents: With voice, workers' eyes are up and looking ahead at their work and at the area surrounding them. They are completely aware of their environment, including the lift trucks and other hazards that can cause injury. They no longer have their eyes glued to a piece of paper or a screen. And while their eyes are free to focus on the task at hand, their hands are not occupied holding papers or scan devices. Workers are not only more productive and accurate; they are safer in the warehouse.

Ergonomic and cost effective hardware: Körber's broad range of voice offerings are ergonomically pleasing and technology-leading solutions that offer all workers, including those with disabilities, a premier worker experience and less turn over. Companies find savings in the durability of Körber's devices, with lowered repair and maintenance costs often found associated with RF and PTL hardware. Savings are also found with the removal of paper from DC workflows. Furthermore, the flexibility of the technology allows you to integrate voice into the unique needs of your warehouse.

Process and technology efficiency gains: From training new employees to faster ramp up at the start of a shift, productivity gains are found everywhere in the DC.

The whole purpose of voice-directed work technology is the creation of an efficient and effective workforce. That goal requires great training. Training of new employees as a normal course of business is costly, and training of seasonal or peak period employees is especially challenging. The cost of training a new-hire also includes the cost of the trainer or supervisory resource assigned in one-on-one efforts to bring the new hire up to speed.

Companies using voice-directed work site significant reductions in the cost of new-hire training. Most see a cost reduction of 66%. Some see much more. The training tools provided with the voice system enables workers to self-train using web based tools. And trainers are able to monitor and coach multiple workers in the same

or less time than they are accustomed to.

Consider the calculation below as an example of the savings related to training new employees:

Number of new employees trained annually: 9

Current training hours attributable to device/system: 24

Current cost of new-hire training: \$3,888

Trainer/Supervisor hours (3 for 24 hrs. @ \$25): \$1,800

Total current training expense: \$5,688

New hire training

Current training cost			\$5,688
Expected with voice (66%)	Total new hire hours	8 hours	\$1,296
	Total trainer hours	5,200	\$ 200
Savings			\$4,192

Consider also the elimination of battery changes: a DC using 20 pickers per shift on two shifts and spending "only" 5 minutes per picker per shift changing batteries: 5 minutes per shift per picker x 2 shifts per day x 20 pickers per shift x 260 work days per year = 52,000 minutes or nearly 867 hours annually lost to battery changes.

Tax Benefits: The laws for calculating tax benefits will vary from organization to organization and country to country, and only your finance professional can make this type of calculation for you. Tax benefits could range anywhere from 15% to 40%, depending on the nature of your organizations tax structure.



The Körber difference

All of the benefits described above are available to customers who have implemented a voice-directed work system that is designed, developed and implemented in ways specific to your organization's unique business needs in order to improve operational processes. That is Körber's specialty – creating customized solutions that are made with your business in mind.

Körber's expertise is applied to every voice implementation. Our analysts are experts in voice technology and operational best practices within the distribution center. Our focus is on improving processes within your operation, and making your supply chain a competitive advantage.

We do not simply work to have you change your processes to match the baseline voice software, nor do we simply try to modify the base software capabilities to match your existing workflow. We work with you to design the best solution for you using best practices and creative concepts. We then modify existing software or invent new software solutions and implement them using a proven development and implementation methodology.

The result is a refined and consistent work process delivering superb business results. Our commitment to your success ensures that you will achieve the best ROI in the industry.

Conclusion

Voice-enabled work has proliferated into markets beyond food distribution, such as retail, third-party logistics providers, healthcare, and consumer packaged goods. With good reason. Many organizations in these sectors are using voice technology to reach higher accuracy and productivity levels than ever before while, at the same time, reducing operating expenses and maintaining a coveted competitive advantage.

Organizations often view an investment in voice-enabled work as one element in a broad management strategy to improve order accuracy, increase productivity, and reduce labor costs (including training time) in the supply chain. And the ability to determine how voice technology can deliver measurable ROI is a critical step in defining a successful implementation.

In labor-intensive, high-volume, high-SKU operations like manufacturing and distribution, voice demonstrates a direct payback to the bottom line – typically, in less than one year. With accuracy rates of up to 99.995% and greater and productivity increases often between 15-25%, voice-enabled work has been demonstrated to pay for itself relatively quickly under most circumstances.

Find out more

Learn more about the benefits of voice-enabled work :

[Read more](#) →

