



# WMS Cost Justification

*@ modern WMS overall business performance, allowing you to take charge of inventory, fulfill accurately, and lower operational costs. This brief will help shed some light on justifying a WMS return on investment (ROI), and is meant to be used in tandem with SmartTurn's WMS ROI worksheet. Most analysis and how quickly ‡ U opays for itself.*

Justifying the cost of a Modern Warehouse Management (WMS) System

## Justifying the Cost of a Modern WMS

### WMS 2.0™ Next Generation Warehouse Management System

If you have done a cost justification for a WMS in the past, you will find that SmartTurn provides a few additional benefits for consideration that were likely not in previous ROI calculations. Namely:

**SmartTurn is an on-demand or Software-as-a-Service (SaaS) offering running entirely over the internet**, requiring little or no IT resources or systems. A SaaS WMS customer also benefits from maintenance, support and upgrades at no additional cost since a subscription and not a purchase.

**SmartTurn systems offers WMS2.0™**, or next generation web WMS capabilities like “Inventory Networks”, “Inventory Gadgets”, built-in business affiliate visibility, multi-warehouse business processes for both sell-side and buy-side logistics, all running entirely over the internet. Customers get the latest XML/web services integration capabilities that allow inter-application integration, supporting inventory cash-to-cash cycle industry standards.



**Rapid implementation** significantly lowers your time to value, or the ramp up time required to break-even. Critical for logistics services providers (3PLs) needing to on-board new customers frequently. SmartTurn can be deployed in days, instead of months like traditional WMS systems.

**Unlimited user model** As technology advances; old, dated practices need change. Supply chain challenges require collaboration across many disciplines, between you and your customers, with your suppliers and business affiliates, or just within your own organization. Create logins with unique, secure access and permissions for anyone you wish to share inventory information or simply push information to any application over the web.

**SmartTurn scales up** from a single warehouse or stock-room to multiple, integrated warehouses across organizational or geographic boundaries. Since all warehouses exist virtually over the internet, it's quick to integrate and get visibility between a warehouse in North Carolina and China, or across a federation of warehouses globally. Deployment is rapid, inexpensive, and unobtrusive

**SmartTurn is Flexible** ideal for “Program Supply Chains”, for when you to change your supplier or distribution network to take advantage of short-term market opportunities. Agile, market-driven or pull-supply chains become a reality and normal practice as they should be.

**Seamless growth paths** SmartTurn is a true SaaS solution, meaning that it is a true multi-tenant system similar to Amazon.com, eBay or Bank of America's online banking, in which all customers run within the same secure, enterprise-class system, sharing all resources except private data. This means that adding a user, a warehouse, or a new supply chain network is as easy as most social or professional networking sites like Facebook, LinkedIn, or MySpace where sharing information is simple and core not unlike inventory visibility is to your business. Imagine your next business planning meeting if you knew how fast your products were flowing through your channel or to your end-customers, which items sold faster, which ones needed less safety stock....in real-time, as fast as your market drives your business.

### Introduction – why do an ROI?

A modern Warehouse Management System (WMS) often represents a step-change in overall business performance, allowing you to take charge of inventory, fulfill accurately, and lower operational costs. Businesses often incorrectly assume that the cost of acquiring and managing a WMS outweighs the immediate or long term benefits. This brief will help shed some light on justifying a modern WMS from a return on investment (ROI) standpoint, and is meant to be used in tandem with SmartTurn's WMS ROI worksheet.

Everyone must make their own assessment, but most are pleasantly surprised by their figures and what a WMS can mean for their business.

“Much more complicated and costly fulfillment approaches aspire to this level of coordination, but with usually disappointing results. SmartTurn's flat, per-site monthly charge is likely to turn the industry on its ear.”

– John Fontanella, AMR lead  
WMS Analyst

We hope that you get enough out of these tools to

continue your WMS journey, but it can be easier....call us at **888-667-4758**--- and our warehouse-savvy Customer Experience Management and account teams can help you work the numbers with no obligation.

This whitepaper will provide you with the basic tools for cost justifying a WMS, with the caveat that not systems all are created equal in today's rapidly changing technology market. In particular the on-demand, web based WMS, better known as Software-as-a-Service (SaaS) model is transforming how even some of the largest businesses in the world run their applications. This approach truly addresses how customers want to use technology in a pay-as-you-go model that is more reflective of the timing of the cost savings and benefits received from the use of the technology. It also provides additional benefits we'll discuss later.

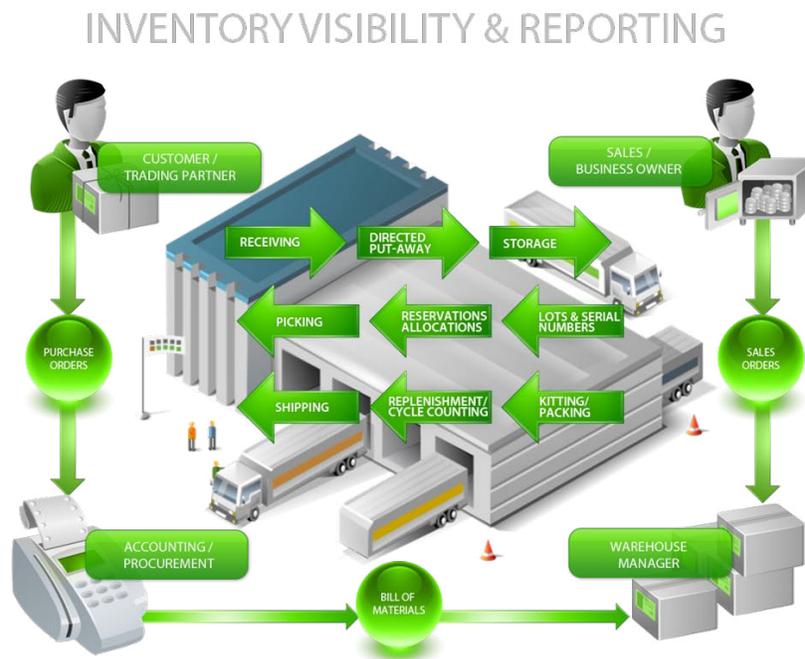
Traditional software companies rely on consulting services and annual maintenance or support contracts to grow their revenue, pushing more upgrades, user licenses and sometimes unused features to build that revenue stream. SaaS providers must keep customers satisfied continually to keep their business. It's like a company developing advanced features for Analog TVs when the world is moving to digital. The CEO of one of the leading application software companies is quoted as saying "We would be hurting our margin, and hurting our stock" if they moved to a Software-as-a-Service delivery model.

SmartTurn only sells SaaS products and is built around a new value curve, creating **smart, simple** and **safe** products that are both cheap and easy to use, delivering capabilities never before offered by the software industry.

## What is a WMS?

We won't go into too much detail in this ROI paper, and you may have your own definition, but according to the community on Wikipedia, "a warehouse management system, or WMS, is a key part of the supply chain and primarily aims to control the movement and storage of materials within a warehouse and process the associated transactions, including shipping, receiving, put-away and picking".

Add built in order management, Kitting, RF hand-held support and web integration to customers and trading partners, and you have a pretty powerful tool on your hands.



## Why a WMS?

To whet your appetite for this ROI exercise, let's ask ourselves, "why a WMS". Here are some numbers commonly known to customers using a WMS today.

**1 in every 300 keystrokes** → the number of errors produced by good data entry personnel. If you are able to introduce RF technologies (and yes you really need a WMS to handle all that data), the number of errors drops to 1 in 3 million scans. How many people do you use to do data entry and recheck and correct errors as a standard practice....how many wrong shipments

**50% of your warehouse costs are represented by picking** → system directed picking or put-aways will reduce people or forklift travel significantly. At least 50% of the picking process is travelling to and from locations. Using a spreadsheet to measure the trips out as part of your operation works, but cost you dearly. Reductions in operating costs of up to 40% are not uncommon with the introduction of a WMS.

**35% reduction in operating expenses** → are typically realized by warehouses using a WMS

**27% reduction in inventory carrying costs** → using a WMS and automating processes in your warehouse (up to an additional 5-10% in the first year)

**20% improvement in inventory accuracy** → with a WMS system. This is the “big win” as errors snowball across the inventory cash-to-cash cycle, from ordering to receiving to shipping. It is well documented that a WMS will always achieve near perfect inventory accuracy in the warehouse. This translates directly into lower safety stock, accurate shipments, and improved customer satisfaction. The value of a 10 to 20% improvement in inventory accuracy might be enough to stay in business or win in your market. Here again, cycle counting, or how often an operator updates the actual inventory on hand is a major departure from periodic physical inventory counts necessary without a WMS.

**5% improvements in shipping accuracy** → no matter how good your TMS/traffic department may be, or your freight rates, they might still be shipping the wrong items or missing critical customer deadlines

**Zero physical inventories** → implemented correctly, your last physical inventory is when you install your WMS, after that, you are just doing cycle counts. By design, shrinkage immediately drops, obsolescence is reduced and there is no more “voodoo” or magic inventory appearing or disappearing whenever you do inventories.

## Cost Justifying a Warehouse Management System

If you are looking to cost justify a WMS, you may already have a good idea about the benefits such a system can mean for your business. In general, based on general experiences, successful implementations of a WMS can reduce warehouse operations costs by 10 to 40%. If this cost represents 2-3% of sales (typical consumer goods allocate up to 10-15% of sales toward logistics costs), then this reduction in warehouse costs can add as much as 2-3 percentage points to your bottom line. It may be a trivial amount at first glance, but when you add up the real dollars on \$3 million in annual sales, that \$60,000! You might find that the visibility will also allow you to save money elsewhere. One SmartTurn customer was able to save an additional \$40,000 in trade discounts for raw materials consumed in the first month because of real-time visibility.

Extended over 3-5 years, the typical time period for ROI analysis, these numbers are significant for most businesses struggling to improve gross margins. So why do more than 25% of the 600,000 warehouses in the US not have a WMS?

## High Cost of Traditional WMS Software – How SaaS affects ROI calculations

To begin thinking about technology return on investment, the “investment” portion begins with setting the baseline for acquiring the technology. In this case, the cost of the WMS historically has been higher than desirable, with heavy up-front consulting, and long drawn out deployment timelines and costs. This paper will cover the mechanics of doing an ROI analysis for cost justifying a WMS, but for ROI to be an effective exercise, we have to understand that the software “investment” itself has changed with the introduction of on-demand software or SaaS.

Comparing on-premise software to SaaS is akin to buying a gas-powered generator for electricity in your home versus subscribing to power on a monthly basis. Unless you live on an island or a farm far away from the electricity grid, you may not want to purchase and maintain that generator yourself. For those living on an island, generating your own electricity is “core” to your life-style, but for everyone else, they would be better served calling the local

power company. The on-demand software model makes sense for many businesses today as the increasing complexity and cost of maintaining software on site becomes inhibitive to the growth of your business.

### **WMS becomes Affordable and Mainstream**

For most WMS buyers, the upfront investment is a barrier to entry, and thus the dismal penetration of WMS into US warehouses, not to mention warehouses of trading partners and suppliers in other countries.

According to Steve Banker of ARC Consulting, “Just a few years ago, the average license price for a mid-sized WMS was close to \$250,000. It’s now possible to buy a stripped-down WMS for as little as \$20,000, and for a slightly, more complex system, not much more than \$100,000”.

It’s likely that customers will also need to pay for on-site consulting as well as training fees that could be significant depending on the state of the operation. Additionally, customers usually need to pay between 17 and 20% in annual maintenance fees and in-house IT resources to keep the system running. It’s no surprise then that most mid-sized companies and warehouses still use paper-based or legacy, home grown systems to manage their operations. Since most buyers of a more serious WMS will not be looking for a stripped down system running on a single PC somewhere in the corner of a warehouse by itself, we will assume that you are looking for an affordable enterprise-class system that can grow with your business without constraining your ability to collaborate with your customers, suppliers or trading partners. For example, a mid-sized 3PL who needs to do kitting, set up different pick policies for each of their clients, or integrate with a B2B or B2C order management system, a stripped-down system won’t do.

Later in this paper, we will add the Software-as-a-service (SaaS) specific ROI discussion, so that you can do a rudimentary cost comparison between an on-premise WMS vs. SaaS WMS. In a SaaS model, the total cost of ownership (TCO) is significantly lower, with almost no up-front costs and a fee-structure that allows customers to pay as they go, thus turning what used to be a large, upfront capital outlay into an operating cost. In the case of most SaaS solutions, this operating cost or subscription fee usually comes in below the annual maintenance fee of on-premise software. In a similar fashion to the performance to cost ratio of computer hardware that came with the Intel-based PC or server, software now has a disruptive model that breaks the value-cost trade-off in considering purchase of a WMS.

In a similar fashion to Salesforce.com, SuccessFactors, NetSuite, among others, SmartTurn has become the leader in the on-demand WMS space with a true, multi-tenant SaaS architecture that not only brings WMS to customers at a new price point, but ensures that customers get secure data management with enterprise-class high availability, scalability and reliability. This computing model is no different from your on-line banking at Bank of America for example, your brokerage or 401K login at Schwab or Fidelity, or Amazon.com. In fact SmartTurn is “Powered by Oracle” and runs on IBM’s global server farms. Most modern, internet computing innovations like EBay, Amazon.com, Google, or Facebook run in a SaaS computing architecture which leverages computing economies of scale and the internet.

In July of 2008, John Fontanella, AMR’s VP of Research in supply chain said, “Much more complicated and costly fulfillment approaches aspire to this level of coordination, but with usually disappointing results. **SmartTurn’s flat, per-site monthly charge is likely to turn the industry on its ear**”

So read on, and we will dive into the depths of ROI calculations and cost justifying a WMS, SaaS or on-premise.

## **ROI Calculations – What you need to arm yourself with**

If you are a business owner or warehouse executive, a WMS cost justification must include both quantitative and qualitative benefits. If your WMS project is competing with other internal projects, the qualitative benefits become crucial to making an informed decision. In particular, it’s important to consider interactions between supply chain initiatives especially if they have overlapping benefits. A very simple rule of thumb when considering a WMS is to itemize the negative and positive impact on other parts of the business, including touch points with customers and

trading partners. If you are a 3PL or wholesaler, you may have a very high service level on fulfillment, but being able to identify inventory levels upstream or downstream of your DC may have significant impact on re-order points, or safety stock levels beyond the four walls of the warehouse in question. You could also be creating a higher lock-in for customers who get comfortable with higher levels of real-time inventory visibility that you could provide with a modern WMS. For a 3PL, who cannot easily differentiate on freight prices or basic warehouse cost offerings, visibility, collaboration and flexibility to support value added services become core business practices to sustain customers.

To put ROI to task, here are some solid guidelines to follow in your ROI analysis (according to Supply Chain Management Review)

1. **Go Deeper** → analyze the cause of your warehouse costs, not just the effects (eg. fulfillment errors cost labor and restocking costs, but may be caused by put-away errors instead of picking errors)
2. **Quantify the impact** → evaluate the link between WMS performance and business value (how important is it to your business to fulfill at 99.9% vs. 92% accuracy)
3. **Be consistent** → develop a common framework for continuous performance measurement and cost comparisons (once you purchase your WMS of choice, make sure you are tracking a set of metrics, as well as the benefits of repurposing your IT resources or clerical staff on other core business areas in the case of a SaaS WMS)
4. **Don't just follow the money** → focus on strategic intent not just financial benefits. Is a WMS and its direct impact on customer service levels and back-end costs core to your business growth
5. **Risk** → how committed are your teams to successful implementation. How can you lower your business risk by adopting a flexible system that can help you or your customers adapt to changing market conditions (See SmartTurn WMS2.0 concepts)
6. **Put ROI to work** → use your financial analysis to define your supply chain strategy, not just to defend your WMS initiative

Lastly, make sure you consider the value or impact of a WMS on your firm's KPIs – in the case of a manufacturer, Finished Goods Inventory, or in the case of a 3PL – direct cost reductions for customers while allowing them to maintain visibility and control of their inventory.

ROI Shortcomings: one thing to worry about in paying too attention to traditional ROI as is it places too much emphasis on a narrow set of financial benefits. This may encourage investments in supply chain initiatives that generate short-term gains (still a good thing in a slow economy) but fail to cultivate the key resources and capabilities need to achieve long term strategic objectives. The simple method to ensure your ROI makes business sense is to link your analysis directly to a balanced scorecard that includes both financial and non-financial metrics. This can be done informally by identify a set of KPIs considered critical to your business success. The results of the following ROI methodology can then be extended to include these additional KPIs. Examples of these KPIs include:

- **Net income** (financial metric)
- **Inventory turnover** (effectiveness of internal business processes)
- **On-time delivery** (performance from your customer's perspective)

When viewed through purely a financial lens, changing the supply network might be seen as the most attractive improvement. Consolidating inventory into a central DC may be seen as a logical choice to reduce freight costs and take advantage of economies of scale. The impact, in terms of a narrow measure of financial return in a typical company ROI analysis demonstrates big cost improvements. However, when viewed from a strategic perspective, a different story usually emerges.

On the other hand improving order fulfillment and current inventory and warehouse practices without moving warehouses has a faster, direct impact on business. When order fulfillment management is improved, accounts receivables look markedly better (including taking advantage of trade discounts), on-time delivery significantly improves customer satisfaction which ultimately improves shareholder value, cash-to-cash cycle time, and

days receivables outstanding. Improving order management especially on sell-side logistics has the broadest and most significant impact on a firm's balanced scorecard.

## ROI and Risk

Traditional ROI analysis often fails to address risk. For supply chain initiatives, risk come in two forms, namely implementation risks and business risks.

- **Implementation risks** including project delays, cost overruns and project cancellations
- **Business risks** are changes in the business or operating or economic environment that might render an initiative obsolete or impair its ability to deliver value (a great example was the high fuel prices in 2008 that prompted supply chain network changes that were considered hasty when fuel prices returned to normalcy)

Deciding on a WMS option that minimizes risk should be a primary checkmark if the value needs to be realized as a key component to business growth. SaaS becomes the ultimate weapon for business and IT, with its rapid implementation cycle (weeks instead of months or years), as well as the built-in adaptability of the system since physical location becomes moot with the ubiquitous and flexible nature of web-based solutions.

## Making ROI in your WMS Decision work

If you have not used ROI in your business decisions to great effect, this paper will help you get started on one of the most important supply chain decisions you could make for your business. Managing your inventory more efficiently in all its nuances of value has far reaching effects on your business, not to mention immediate cost savings. Once you have a framework for using ROI in your investments, use the methodology to value and judge additional initiatives to guide the design timing and scale of all new efforts.

If you are like most businesses, you might have woken up on the wrong side of bed by basing your supply chain decisions heavily on past trends and experience. You might find yourself fighting last year's battle (as in the case of the financial crisis of 2008 with the poor US economy and slower global business), only to fall further behind your best-in-class competitors. Making the right decisions requires a deeper understanding of how changes in your supply chain and particularly your inventory and warehouse management practices impact business performance. By using a consistent technique for selecting and managing your supply chain initiatives, you can make the hard investment choices while still investing to stay ahead of your competition.

In addition to helping you build up an ROI, we also hope to help you decide on an appropriate WMS that will stay with you for years to come.

For all supply chain initiatives that seek to improve business performance (e.g. supply network planning, demand planning, order fulfillment management), the most significant savings are always associated with inventory reductions. These savings include inventory carrying costs and a reduction in write-downs for inventory obsolescence and price declines. Additionally, manufacturers have the added complexity of understanding the flow and appropriate levels of WIP inventory (inventory that is on the shop-floor between raw materials and finished goods). Making sense of how much or how fast inventory flows in WIP and then tying that to incoming and outgoing levels of a component is a constant nightmare for the production lead. Companies that have introduced Vendor Managed Inventory (VMI), Just-in-time (JIT) or aspire to create "pull supply chains" have one fundamental critical path decision to make. When and where do I place a WMS, can I live with latent inventory level tracking vs. real-time inventory, and who do I need to collaborate and share information with. All other supply chain solutions depend on capturing inventory levels at some atomic point in the supply chain - thus the need for a WMS.

For the warehouse manager or 3PL who is not primarily responsible for inventory levels, keeping operating costs such as labor under control while maintaining customer service levels may ultimately take a higher priority as an ROI criterion. Luckily, most inventory reduction efforts usually come hand-in-hand with operating cost savings.

DiCentral's on-demand WMS with its optional SmartTurn Inventory Grid offering may tempt you to crunch the numbers to determine if you should wait as you might have previously, or charge forward and make a qualified buying decision on acquiring a next generation warehouse management system (WMS 2.0)

#### ROI and Benefits of a successfully installed WMS

- Inventory visibility - quality real-time inventory levels and flow rates
- Inventory reduction
- Customer service improvements
- Faster order turn-around time
- Improved order fulfillment rates
- Reduced errors and returns (caused by clerical or inaccurate picking or otherwise)
- Labor savings and efficiencies – better facility throughput
- Compliance labeling (license plates, track and trace, recalls, etc.)
- Agility and flexibility in inventory level and location planning
- Customer and trading partner collaboration
- Rapid customer onboarding and changes (in the case of a 3PL)
- Business transparency and informed decision making

For the busy executive, this list might seem daunting, but is in fact a short list of “BIG” WMS projects. However, if done correctly, you will be able to get a quick picture of “What-if” and “Why now” for yourself or your management team.

## Quantitative Cost Justification

### Labor Cost Savings

Most warehouse managers will immediately talk about labor costs as a key success element of their warehouse operations. This is the obvious focus because labor manifests itself as an operational challenge on a daily basis especially if the warehouse has fluctuating labor demands. The efficiency and cost burden of the warehouse on the business weigh heavily on the warehouse leadership, but should not overshadow the benefits that a WMS may provide such as inventory visibility and customer satisfaction.

Key to ensuring that a WMS ultimately improves productivity is the identification of issues which limit optimal operations such as:

- Optimal storage locations for high traffic and fast moving items
- Is it easy to move or add locations to ensure optimal pick routes?
- Do you have effective slotting techniques to ensure inventory does not become fragmented?
- Is there already a manual cycle count practice in place or does the inventory accuracy decline rapidly after physical inventory?
- How well do your teams handle blind receipts, or incorrect receipts?
- Do your warehouse teams rely on memory (“voodoo picking”) to grab and move items for single or batch picking or put-away?

To begin calculating current labor productivity rates, you need to begin tracking your current labor force efforts for a typical day over a 4 week period. In addition to hours per day, you could also track total transactions and therefore calculate your average cost per transaction (example line picked, or items put-away). Most mature warehouses have some form of metric to measure current productivity, even if it's an arbitrary measurement.

It's very important to be cautious on not overstating productivity gains in justifying the acquisition of a WMS. To some degree, any technology adoption will require some change management to realize new best practices. That



system consistently. Software productivity is directly related to being able to form new habits in your organization. Putting together a leadership team and making team members accountable for using the system correctly will allow you to quickly show real improvements

## ROI Conclusion – Just do it!

**7 out your ROI now.** Contact us today and we'll give you our ROI calculator and work with you to get an honest assessment of what savings a modern WMS might generate for your operation. Just give us a call at **1-281-218-4892** --- and we'll help you with the analysis by taking you through the calculator and providing some data from other warehouse operations.