



# **AUTO-ID CALCULATOR**

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# AGENDA

- Objectives of Auto-ID Calculator
- Auto-ID Calculator progress
- Presentation of web tool
- Next steps



## OBJECTIVES OF AUTO-ID CALCULATOR

- To create a user friendly, web-enabled cost benefit tool
- Enable users to see initial impact of applying Auto-ID Technology
- Use today's cost assumptions to determine NPV
- Available on the public section of the website



## TEAM

- Joyce Lo, Project Manager
- Christian Tellkamp, M-Lab



# AGENDA

- Objectives of Auto-ID Calculator
- Auto-ID Calculator progress
- Presentation of web tool
- Next steps



## AUTO-ID CALCULATOR PROGRESS

- Initial design completed July 2002
- Data used in design included:
  - Business case data
  - Industry data
  - Cost data validated by current technology vendors
- Conducted interviews in August/September
- Start of programming business logic September 23<sup>rd</sup>
- 60 percent completed



# AGENDA

- Objectives of Auto-ID Calculator
- Auto-ID Calculator progress
- Presentation of web tool
- Next steps



## PRESENTATION OF WEB TOOL

### Scenario 1:

User is a *retailer* interested in *item level tracking* and wants to use RFID technology *both in distribution centers and outlets*

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### Auto-ID Calculator Getting Started

Auto-ID Center technology will help redefine how we make, buy, and sell our products. This technology will give us greater visibility into our supply chain and help us better track and trace our products optimizing our supply chains, securing the safety of our supply chain, and achieving the highest customer satisfaction.

To understand the impact of Auto-ID for your company, we have created a simple tool for you to use. The purpose of the Auto-ID Calculator is to give you an initial understanding on some of the implications when implementing Auto-ID to your business. Given the uniqueness and complexity of individual supply chains, this tool does not replace a more in-depth analysis of the impact Auto-ID will have on your business.

The results of this tool will be based on information about your company's supply chain. In case data is not available, default values based on industry averages have been provided. The more accurate information provided, the more reliable the results in gauging the success of Auto-ID in your environment.

Please allow **20 minutes** to use this tool

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**Auto-ID Calculator** Step 1 of 3

Auto-ID, a revolutionary technology will allow users to have more visibility into their supply chains.

Please answer the following questions to help us understand what you supply chain position is and what level you would like to have greater visibility of your product.

Which category best identifies your company?

What level would you like to track your product?

[Click Here](#) if you are not sure what level you would like to track

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**Auto-ID Calculator** Step 2 of 3

Based on the information you have entered, your company can be best described as a retail store interested in item level tracking. The following list describes specific benefits that can be achieved using Auto-ID.

Please select the benefits that would most interest your company.

If you want more information on the benefits, [click here](#).

**Benefits at Retail Distribution Centers**

- Receiving Efficiency and Accuracy
- Improved Stock Visibility
- Reduction in Inventory
- Physical Inventory Counting Efficiency
- Picking Efficiency
- Shipping Efficiency and Accuracy
- Reduction in Theft

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**Benefits at Retail Outlets**

- Receiving Efficiency and Accuracy
- Improved Stock Visibility
- Reduction in Inventory
- Physical Inventory Counting Efficiency
- Picking Efficiency
- Shipping Efficiency and Accuracy
- Reduction in Theft
- Reduction in Unsaleables

**Benefits at Retail Outlets**

- Receiving Efficiency and Accuracy
- Improved Stock Visibility
- Reduction in Inventory
- Physical Inventory Counting Efficiency
- Picking Efficiency
- Reduction in Theft
- Reduction in Unsaleables
- Reduction in out-of-stock
- Point of Sale Efficiency

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### Auto-ID Calculator Step 3 of 3

The following benefits are most important to your company:

- Retrieving Efficiency and Accuracy at Distr. Centers  
Increased Stock Availability at Distr. Centers

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*Reduction in out-of-stock: ?*

Time items are out-of-stock	<input type="text" value="3.5"/>	(% of time)
Reduction of out-of-stock if actual availability of cases indelivered were known	<input type="text" value="2.0"/>	(%-points)
Increase in sales due to reduction in out-of-stock	<input type="text" value="50"/>	

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*Point of sale efficiency: ?*

Reduction in time needed for check-out process	<input type="text" value="15"/>	(seconds per check-out process)
Number of check out processes	<input type="text" value="2500"/>	(per day per outlet)

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### Auto-ID Calculator Results

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$77.2 million USD**

Amortisation time: **3.8 years**

### Potential Saving Per Year

#### *Benefits at distribution centers*

Receiving Efficiency and Accuracy:	<b>\$5.0 mil USD</b>	<b>\$0.002 USD</b>
Improved Stock Visibility:	<b>\$1.2 mil USD</b>	<b>\$0.001 USD</b>
Reduction in Inventory:	<b>\$4.4 mil USD</b>	<b>\$0.002 USD</b>
Physical Inventory Counting Efficiency:	<b>\$0.4 mil USD</b>	<b>\$0.000 USD</b>
Picking Efficiency:	<b>\$1.2 mil USD</b>	<b>\$0.001 USD</b>
Shipping Efficiency and Accuracy:	<b>\$2.2 mil USD</b>	<b>\$0.001 USD</b>
Reduction in Theft:	<b>\$4.1 mil USD</b>	<b>\$0.002 USD</b>
Reduction in Unsaleables:	<b>\$3.4 mil USD</b>	<b>\$0.002 USD</b>

#### *Savings per item*

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<b>Tot savings at distr. centers:</b>	<b>\$21.7 mil USD</b>	<b>\$0.010 USD</b>
<i>Benefits at outlets</i>		
Receiving Efficiency:	<b>\$10.1 mil USD</b>	<b>\$0.005 USD</b>
Improved Stock Visibility:	<b>\$5.8 mil USD</b>	<b>\$0.003 USD</b>
Reduction in Inventory:	<b>\$5.1 mil USD</b>	<b>\$0.002 USD</b>
Physical Inventory Counting Efficiency:	<b>\$0.5 mil USD</b>	<b>\$0.000 USD</b>
Picking Efficiency:	<b>\$1.4 mil USD</b>	<b>\$0.001 USD</b>
Reduction in Theft:	<b>\$5.1 mil USD</b>	<b>\$0.002 USD</b>
Reduction in Unsaleables:	<b>\$3.0 mil USD</b>	<b>\$0.001 USD</b>
Reduction in out-of-stock:	<b>\$4.2 mil USD</b>	<b>\$0.002 USD</b>
Point of sale efficiency:	<b>\$7.5 mil USD</b>	<b>\$0.003 USD</b>
<b>Tot savings at Outlets:</b>	<b>\$42.6 mil USD</b>	<b>\$0.020 USD</b>

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**Estimated Costs**

<b>Annual costs:</b>	<b>\$10.0 mil USD</b>	<b>Per Item: \$0.005 USD</b>
Cost of Tags:	<b>\$0.0 mil USD</b>	Per Item: <b>\$0.000 USD</b>
<b>One time costs:</b>	<b>\$99.5 mil USD</b>	
Software Integration Cost:	<b>\$8.6 mil USD</b>	
Reader Cost (incl. Installation):	<b>\$90.9 mil USD</b>	

If you want to test the sensitivity of your result you may modify the following inputs:

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If you want to test the sensitivity of your result you may modify the following inputs:

Software Integration Cost:  USD

Cost of Capital:  %

Currently, it is assumed that the tag cost is absorbed during manufacturing. However, to view the potential impact if the tag cost is shared amongst your trading partners or in cases where reusable tags are used:

Sharing of RFID tag costs with supply chain partners:  %

Reuse of RFID tags:  %

You may consider to start with a subset of your product range (e.g. high value, high margin products) and expand the use of RFID tags over time:

Initial set of products:  (% of sales)

Average price of initial products:  USD

Margin on initial products:  (% of sales)

Growth:  (% of year)

The results give an initial estimate of what the potential cost and benefits of implementing Auto-ID technology may be. Individual benefits may vary by company.

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### Auto-ID Calculator Results

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$71.8** million USD  
Amortisation time: **3.9** years

Currently, it is assumed that the tag cost is absorbed during manufacturing. However, to view the potential impact if the tag cost is shared amongst your trading partners or in cases where reusable tags are used:

Sharing of RFID tag costs with supply chain partners:  %  
Reuse of RFID tags:  %

You may consider to start with a subset of your product range (e.g. high value, high margin products) and expand the use of RFID tags over time:

Initial set of products:  (% of sales)  
Average price of initial products:  USD  
Margin on initial products:  (% of sales)  
Growth:  (% of year)

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**Auto-ID Calculator Results**

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$-120.4 million USD**  
 Amortisation time: **0.0 years**

It may not be attractive for you to implement Auto-ID at this time in the areas you have selected, however, there may be other opportunities not outlined in this calculator that may warrant further consideration. Also, The cost of technology will decrease over time that may make Auto-ID more attractive at a later time.

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**Potential Saving Per Year**

<i>Benefits at distribution centers</i>		<i>Savings per item</i>
Receiving Efficiency and Accuracy:	<b>\$5.0 mil USD</b>	<b>\$0.002 USD</b>
Improved Stock Visibility:	<b>\$1.2 mil USD</b>	<b>\$0.001 USD</b>
Reduction in Inventory:	<b>\$5.3 mil USD</b>	<b>\$0.002 USD</b>

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### Auto-ID Calculator Step 3 of 3

The following benefits are most important to your company:

- Retrieving Efficiency and Accuracy at Distr. Centers
- Improved Stock Visibility at Distr. Centers

Average value of item	<input type="text" value="1.75"/>	Currency	<input type="text" value="USD"/>
Number of retail outlets	<input type="text" value="200"/>	Average margin (% of sales)	<input type="text" value="11"/>
Average size of outlet	<input type="text" value="5000"/> <input type="text" value="Square meters"/>		
Inventory in backroom (% of sales)	<input type="text" value="6.0"/>		
Yearly sales	<input type="text" value="3800"/>	Implementation start year	<input type="text" value="2003"/>

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## Auto-ID Calculator Results

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$117.2 million USD**  
Amortisation time: **3.0 years**

If you want to test the sensitivity of your result you may modify the following inputs:

Software Integration Cost:  USD  
Cost of Capital:  %

Currently, it is assumed that the tag cost is absorbed during manufacturing. However, to view the potential impact if the tag cost is shared amongst your trading partners or in cases where reusable tags are used:

Sharing of RFID tag costs with supply chain partners:  %  
Reuse of RFID tags:  %

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**Auto-ID Calculator Results**

Based on the following information provided your estimated impact when implementing Auto-ID can be described below:

Net present value: **\$13.4 million USD**

Amortisation time: **5.3 years**

**Potential Saving Per Year**

	<i>Benefits at distribution centers</i>	<i>Savings per item</i>
Receiving Efficiency and Accuracy:	<b>\$5.0 mil USD</b>	<b>\$0.002 USD</b>
Improved Stock Visibility:	<b>\$1.2 mil USD</b>	<b>\$0.001 USD</b>
Reduction in Inventory:	<b>\$5.3 mil USD</b>	<b>\$0.002 USD</b>
Physical Inventory Counting Efficiency:	<b>\$0.4 mil USD</b>	<b>\$0.000 USD</b>
Picking Efficiency:	<b>\$1.2 mil USD</b>	<b>\$0.001 USD</b>
Shipping Efficiency and Accuracy:	<b>\$2.2 mil USD</b>	<b>\$0.001 USD</b>
Reduction in Theft:	<b>\$4.1 mil USD</b>	<b>\$0.002 USD</b>



## Scenario 2:

User is a *retailer* interested in *item level tracking* and wants to use RFID technology *in distribution centers only to improve internal operations*

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### Auto-ID Calculator Step 2 of 3

Based on the information you have entered, your company can be best described as a retail store interested in item level tracking. The following list describes specific benefits that can be achieved using Auto-ID.

Please select the benefits that would most interest your company.

If you want more information on the benefits, [click here](#).

#### Benefits at Retail Distribution Centers

- Receiving Efficiency and Accuracy
- Improved Stock Visibility
- Reduction in Inventory
- Physical Inventory Counting Efficiency
- Picking Efficiency
- Shipping Efficiency and Accuracy
- Reduction in Theft
- Reduction in Unsaleables

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Net present value: **\$34.0 million USD**  
 Amortisation time: **4.8 years**

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**Potential Saving Per Year**

	<i>Benefits at distribution centers</i>	<i>Savings per item</i>
Receiving Efficiency and Accuracy:	<b>\$5.0 mil USD</b>	<b>\$0.002 USD</b>
Improved Stock Visibility:	<b>\$1.2 mil USD</b>	<b>\$0.001 USD</b>
Reduction in Inventory:	<b>\$4.4 mil USD</b>	<b>\$0.002 USD</b>
Physical Inventory Counting Efficiency:	<b>\$0.4 mil USD</b>	<b>\$0.000 USD</b>
Picking Efficiency:	<b>\$1.2 mil USD</b>	<b>\$0.001 USD</b>
Shipping Efficiency and Accuracy:	<b>\$2.2 mil USD</b>	<b>\$0.001 USD</b>
<b>Tot savings at distr. centers:</b>	<b>\$14.2 mil USD</b>	<b>\$0.007 USD</b>

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**Estimated Costs**

<b>Annual costs:</b>	<b>\$1.0 mil USD</b>	<b>Per Item: \$0.000 USD</b>
Cost of Tags:	<b>\$0.0 mil USD</b>	Per Item: <b>\$0.000 USD</b>
<b>One time costs:</b>	<b>\$9.7 mil USD</b>	
Software Integration Cost:	<b>\$7.5 mil USD</b>	
Reader Cost (incl. Installation):	<b>\$2.1 mil USD</b>	

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# AGENDA

- Objectives of Auto-ID Calculator
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## NEXT STEPS

- Calculation of business logic done by end of November
- User testing in early-December
- Incorporation of feedback and final testing in December
- Finalize in December
- Planned launch January 6th, 2002 – Media outreach by Fleishman-Hillard