



January 9, 2008

Mission Peak APICS

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AmberDove's Mission

AmberDove™ provides turnkey asset intelligence. Our solutions *convert implementation projects into drop-in products* to enable shopfloor control and MES while minimizing implementation costs due to

- Difficult training and new processes
- Burdensome IT infrastructure

Solution philosophy

No special knowledge or training required

We are your IT department

Works with what you already have

Enabling technology

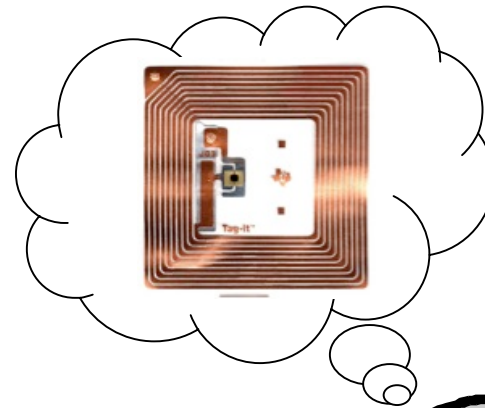
Point & click RFID/Barcode deployment

Appliance architecture

Advanced integration platform

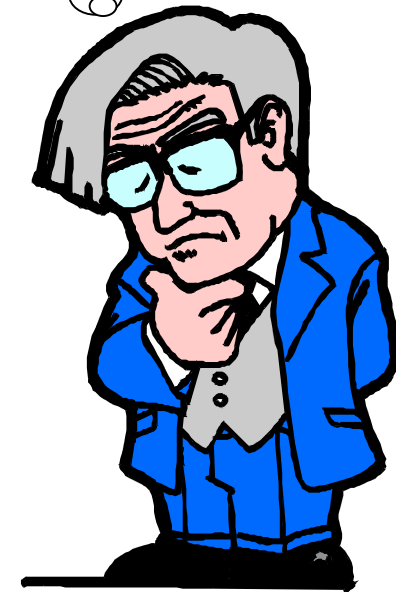


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Does RFID Payoff, Seriously?

**Beyond the hype —
demystifying the RFID Business case**

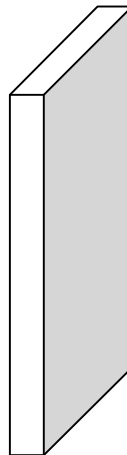
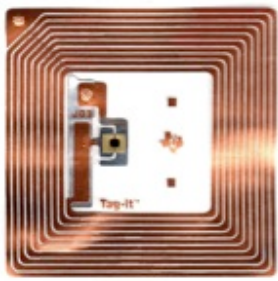
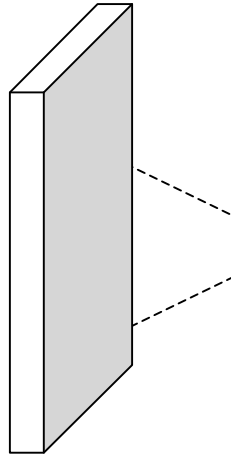


Michael Ibrahim
Chief Executive AmberDove Solutions



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What exactly is RFID?



How does that really help?

Must have
information

- Reduce labor and other costs of data acquisition
- Increase data quality



New
information

One-time benefits

- Free working capital
- Eliminate capital expenditures

On-going benefits

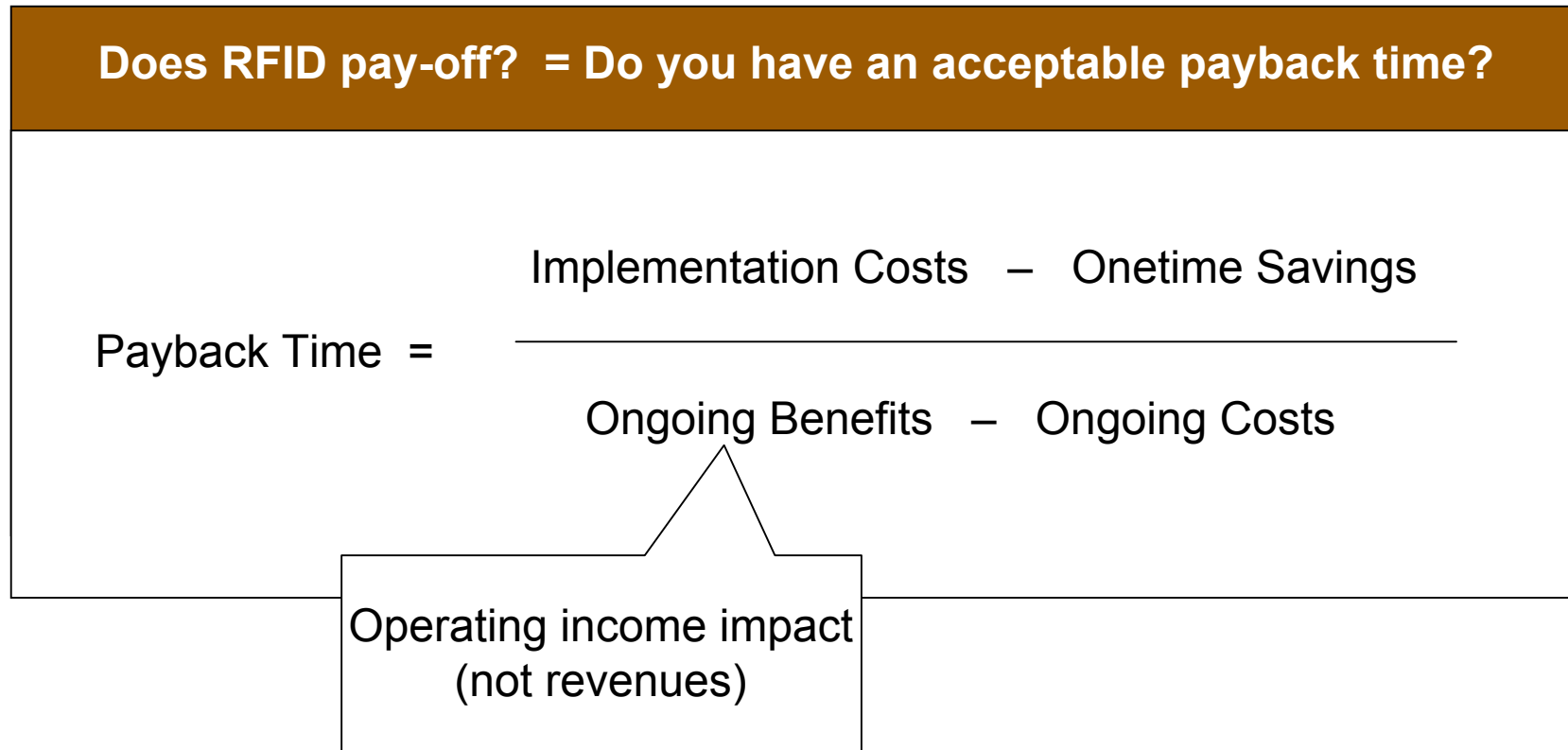
- Reduce labor
- Increase service levels driving new revenue and decreasing late penalties

Information ≠ \$\$\$\$



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Digging into the business case



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Example: Consumer packaged goods company tracking finished goods

- \$100mm revenues
- \$40/case
- 5% operating margins
- Open system



$\$0.20 \text{ tag/case} \times \$100\text{mm}/\$40 \text{ cases}$
 $= \$500\text{k year ongoing costs}$

$$\text{Payback Time} = \frac{\text{Implementation Costs} - \text{Onetime Savings}}{\text{Ongoing Benefits} - \$500+\text{k}}$$

VERY HARD

- Cost takeouts must *at least* drive 10% increase in operating income
- Or just increase your sales by \$10mm yearly



Good news: Closed applications don't suffer from the same challenge

	Tagged good's birth	Tagged good's grave	Archetype application
Open system	<ul style="list-style-type: none"> • Originating institution 	<ul style="list-style-type: none"> • Different institution • Typically far from birth location 	<ul style="list-style-type: none"> • Tracking finished goods in extended supply chain
Closed system	<ul style="list-style-type: none"> • Originating institution 	<ul style="list-style-type: none"> • Originating institution • Close to birth location 	<ul style="list-style-type: none"> • Tracking WIP goods within a manufacturing facility

Unlike Supply Chain – manufacturing applications have the potential of \$0 tag impact to ongoing costs



Manufacturing enablers and benefits

Example company profile

- \$100mm revenues
- Average \$25k/order
- 10% operating margins
- Raw+WIP Inventory turns ~ 7.5 / year

Representative enablers

- Complete WIP visibility and workorder status
- Real-time notification of required exception handling
- Real-time capacity and queue time visibility
- Refined information flow between operations, planners, and engineering

What can this company accomplish with these enablers?



Manufacturing enablers and benefits

Onetime savings

- **Free \$1.2mm** working capital by increasing turns 10%
- **Possibly save \$0.2-1.0mm** by eliminating excess capacity growth

Ongoing benefits

- **Increase operating income \$0.1mm** by driving 1% sales lift
- **Save \$0.05mm** eliminating .75 of a day late per order subject to late penalties
- **Save \$0.1mm** by eliminating overtime, labor inefficiencies, and expediting costs



Manufacturing enablers and benefits

Onetime savings

- Free \$1.2mm working capital by increasing turns 10%

Even being conservative it starts to look good

$$\text{Payback Time} = \frac{\text{Implementation Costs} - \sim\$1.0\text{mm}}{\sim\$0.1\text{mm} - \sim\$0.0}$$

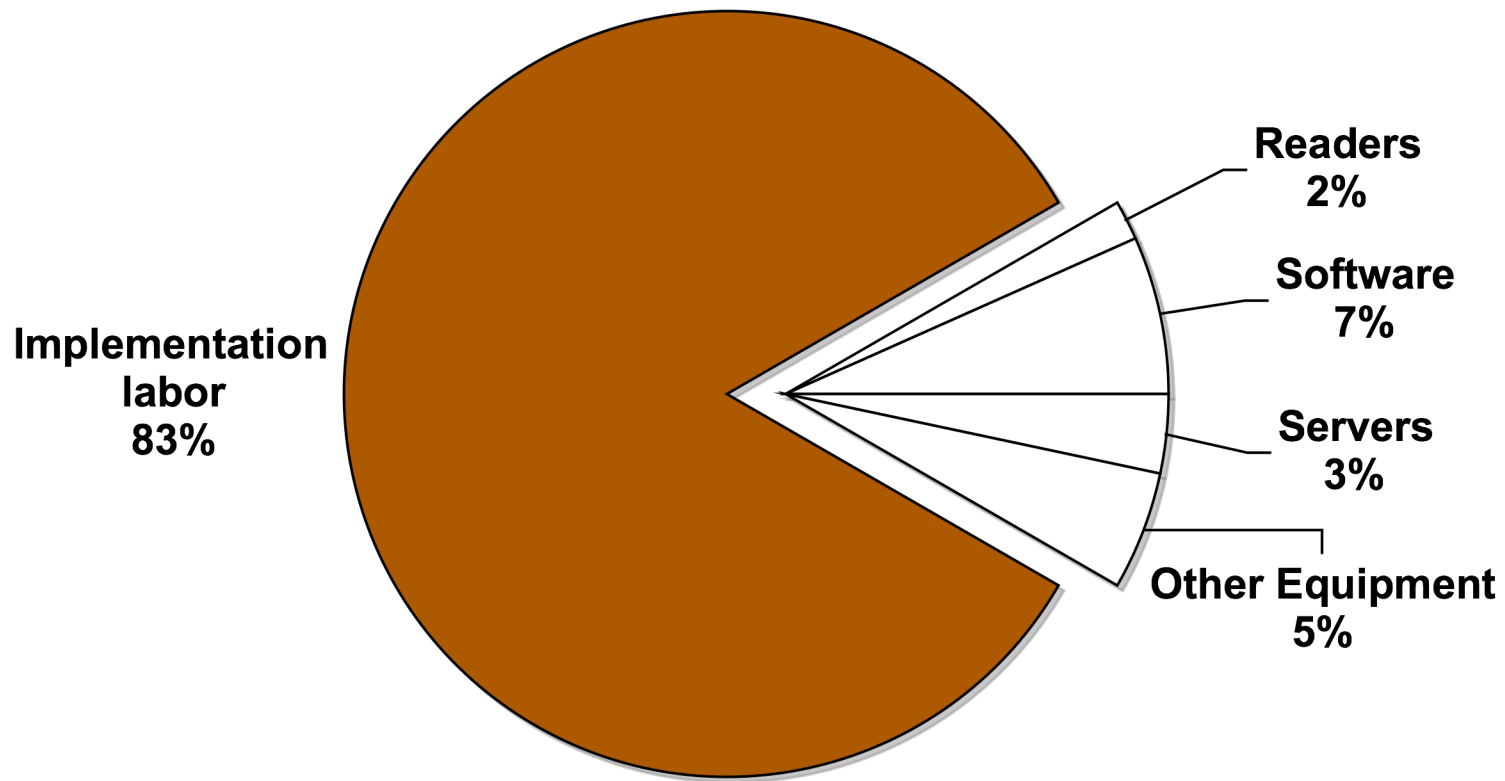
and expediting costs

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Implementation costs present a final obstacle

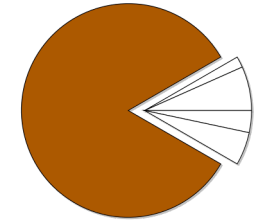
100% of implementation costs \approx \$1.0-\$1.5mm



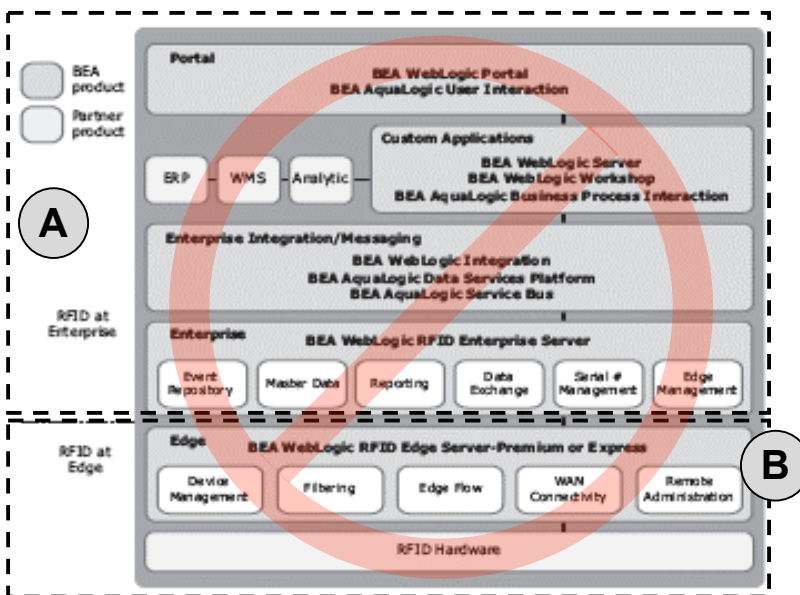
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Implementation cost driver 1: Someone has to build and integrate the IT



BEA RFID deployment architecture



- A** IT requirements exceed capabilities
- Item level tracking increases data quantity by up to 6 orders of magnitude
 - Up to 7 applications plus a database must be integrated into existing infrastructure
- B** Edge architecture puts more IT exactly where no-one can manage it
- Architecture requires servers in remote locations
 - Software has to be installed and maintained on numerous remote machines to enable information flows

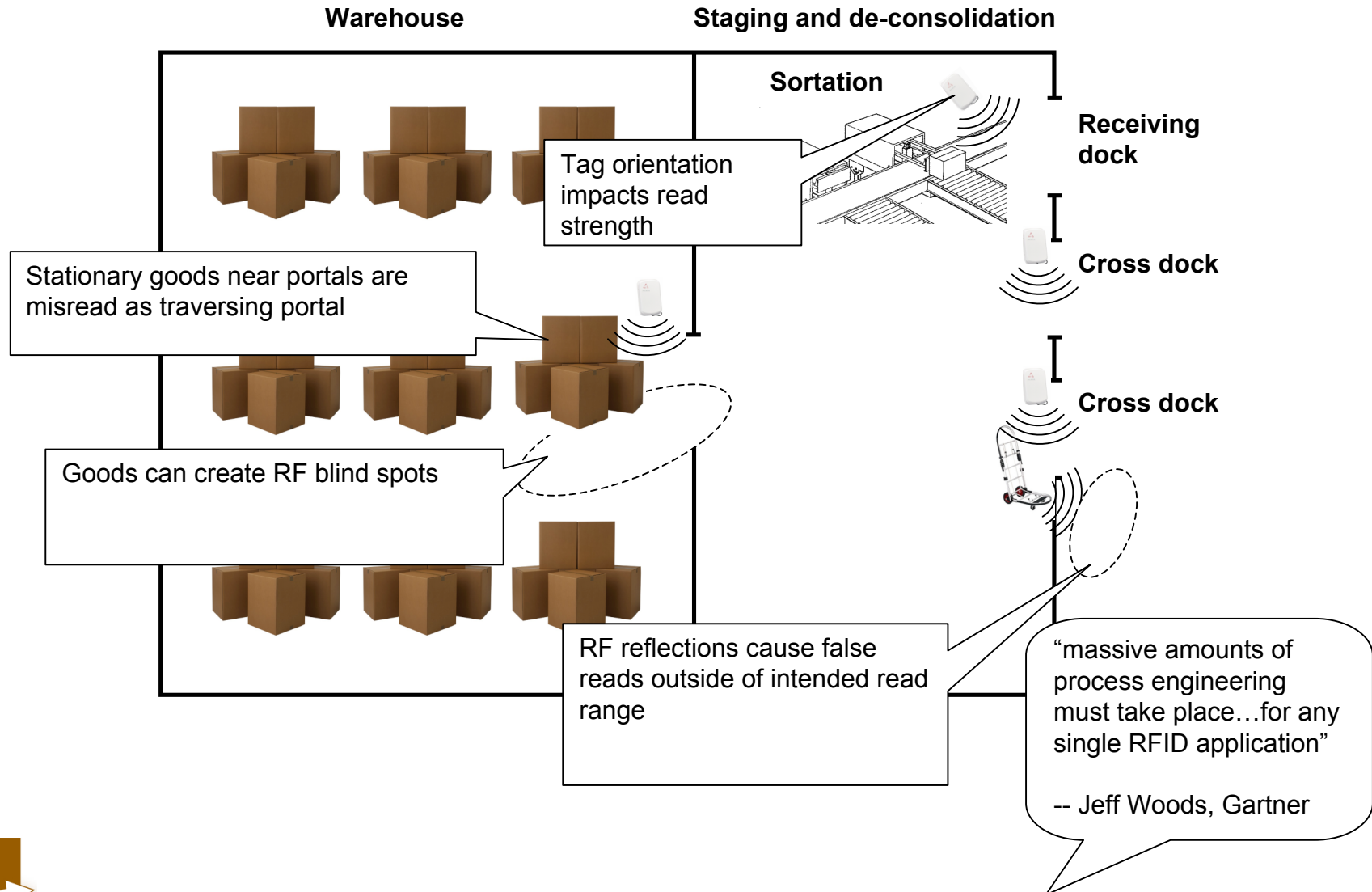
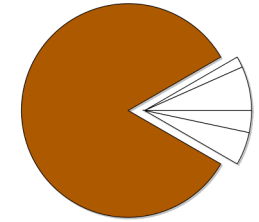
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Source: BEA Whitepaper

<http://www.amberdove.com>

Implementation cost driver 2: Converting RFID data into meaningful information requires difficult device integration and tuning



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So seriously, does RFID pay off?

YES! If...

- The cumbersome IT can be pre-packaged
- Software sprawl can be controlled
- Technology can replace the labor for device integration and tuning projects

But how? AmberDove provides...

- Drop-in appliance replacing integration and software
- Web 2.0 enabled interfaces
- Patent pending algorithms enabling Point & click RFID/Barcode deployment



So seriously, does RFID pay off?

Yes, RFID can pay off!!



Payback Time =

<\$0.2 – ~\$1.0mm

~\$0.1mm – ~\$0.0

YES

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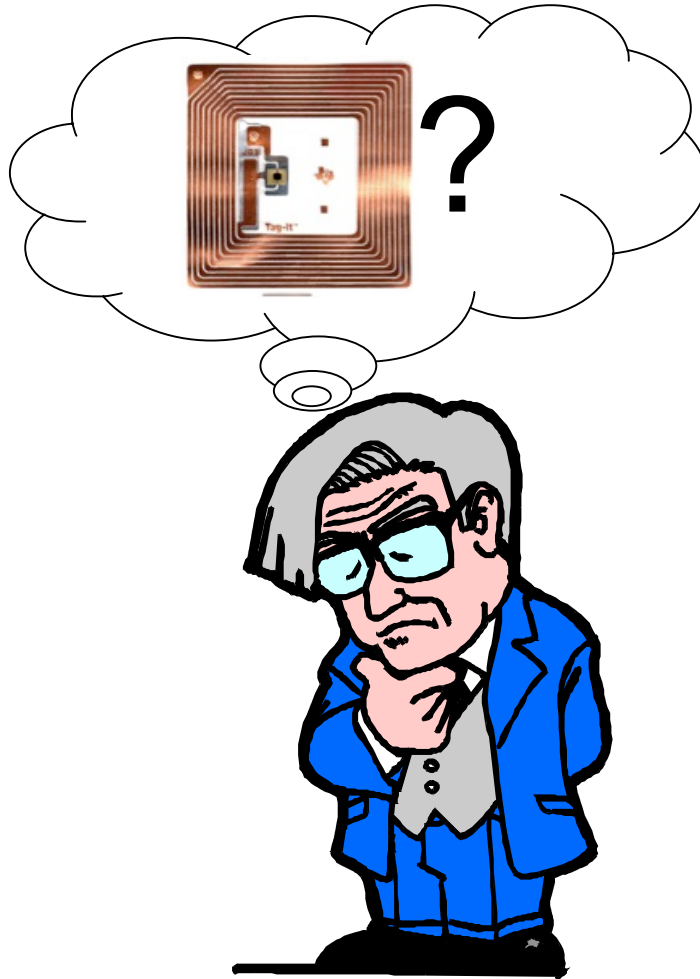
for device integration and tuning
projects

enabling Point & click
RFID/Barcode deployment

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Questions



Appendix: About AmberDove Solutions



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AmberDove™ delivers technology via drop-in, no-maintenance appliance



Maintenance-free appliance replaces edge IT

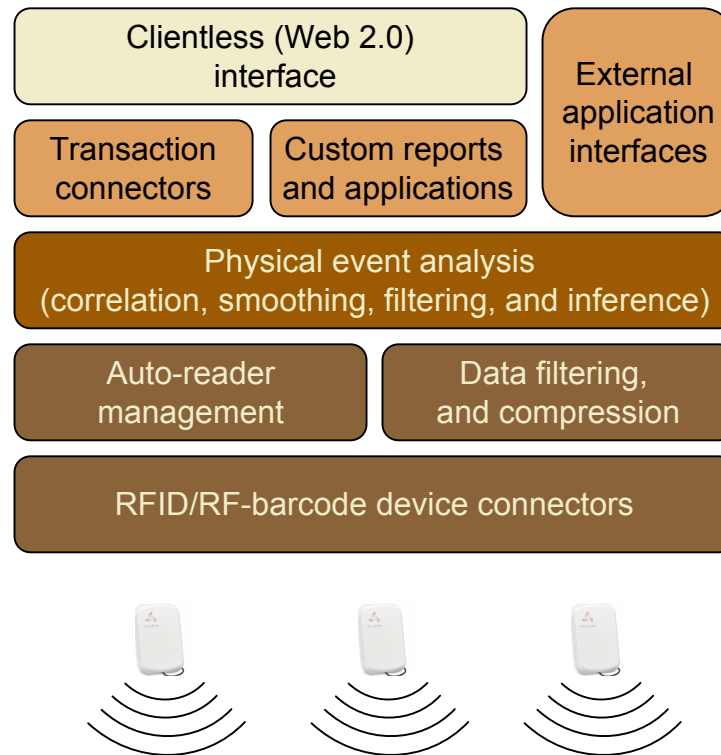
- Concentrator appliance is as simple to deploy as cable-box
- Appliance provides
 - Reader management and auto-configuration
 - Data stream compression and shaping
 - Complete application and integration platform

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<http://www.amberdove.com>

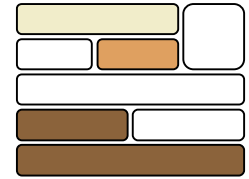
AmberDove™ stack utilizes modern, enterprise ready technologies



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AmberDove™ device management capabilities minimizes deployment costs



1. Upload floor plan to web application
2. Drag and drop readers and critical inspection points onto floor plan
3. Plug in concentrator, RFID/barcode hardware and deploy pre-configured tags

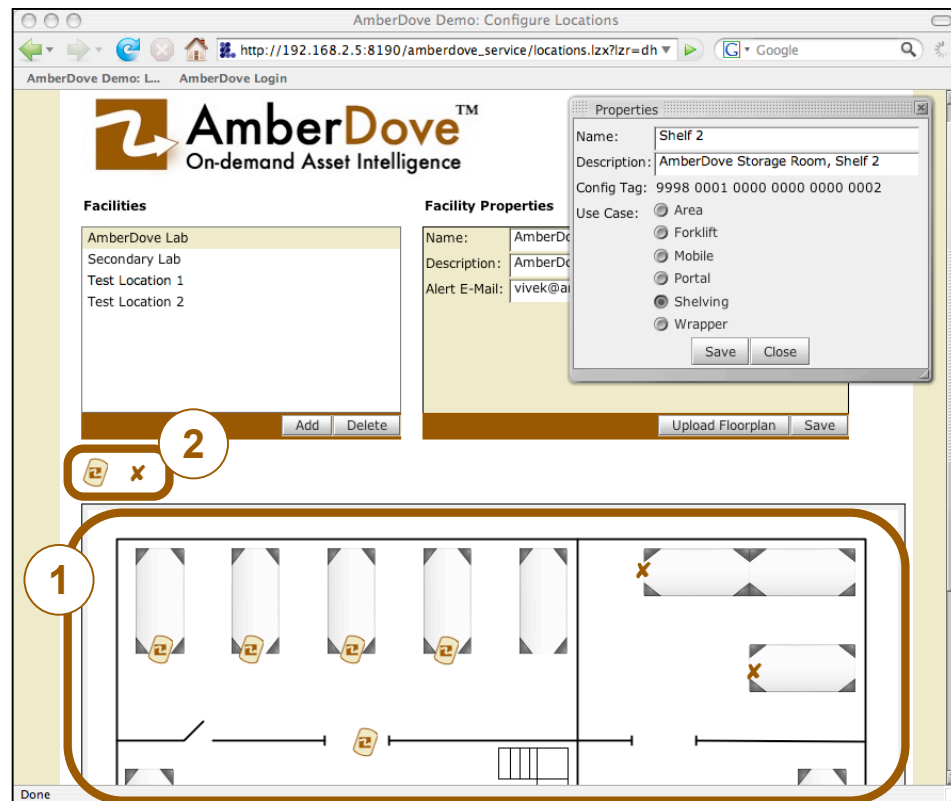
Done. Let AmberDove

- Auto-detect, configure and tune readers
- Provide all required IT infrastructure as service

Use AmberDove web application to

- Find items on the floor
- Audit item movements
- Take instant inventory

Configuration page

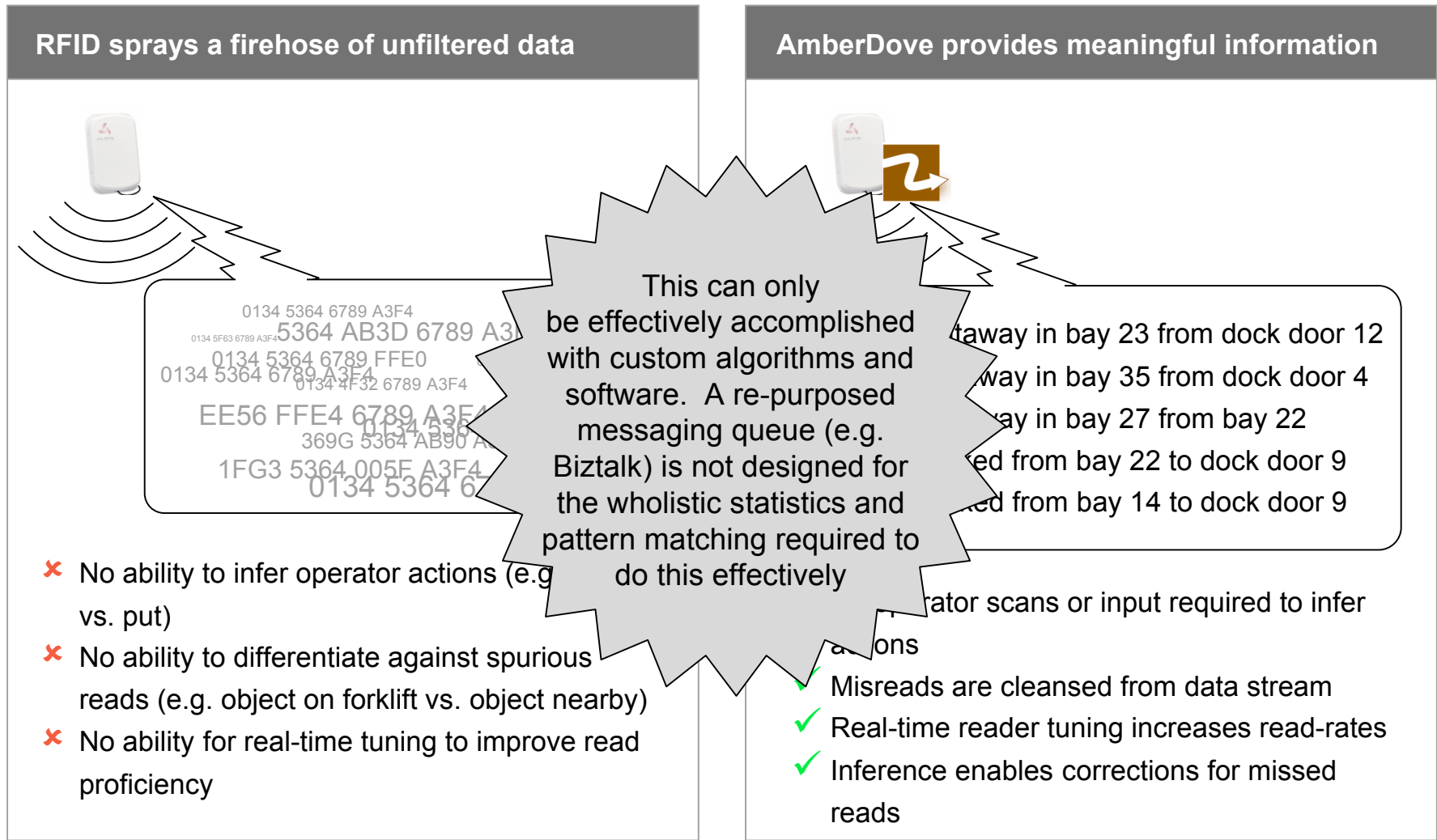
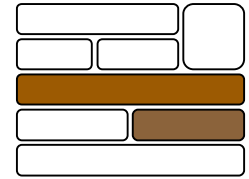


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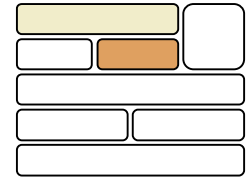
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AmberDove™ inference converts raw data into meaningful information with minimal operator training

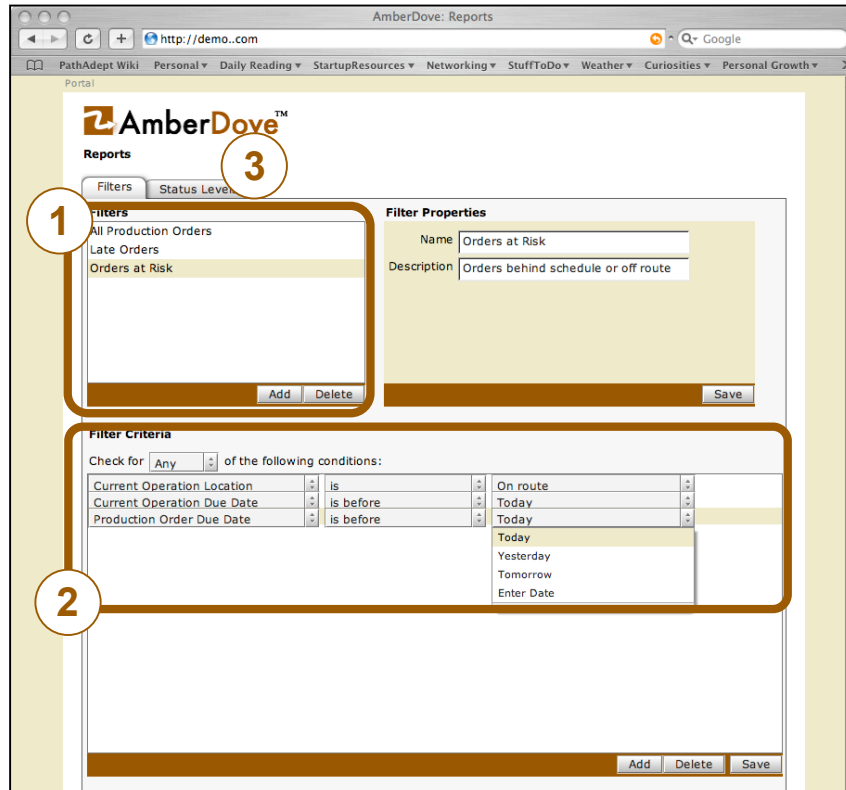


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Sophisticated reporting is enabled out-of-the box

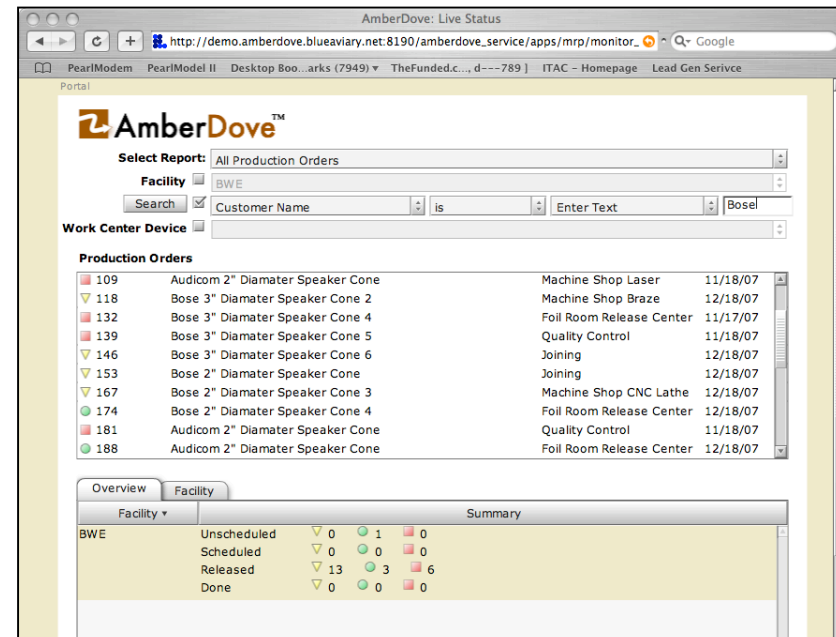


Custom report creation



1. Create as many custom reports as desired
2. Enter an unlimited set of criteria defining the report
3. Configure status and alert levels for report content if desired

Report monitoring



Done. Use any computer (no software installs) to review status and alert levels



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Summary

Solution philosophy

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Enabling technology

Point & click RFID/Barcode deployment

Appliance architecture

Advanced integration platform

Minimize investment,
maximize value

- Proprietary installation capabilities minimizes deployment and maintenance costs
- Application interfaces reduces IT integration costs
- Out-of-box features drives immediate realization of value proposition
- Opensource ensures efficient usage of dollars

Easier IT

- Appliance architecture minimizes impact on customer network
- Auto-reader management simplifies customer IT responsibilities

Less operator
training

- Transaction infrastructure delivers data and instructions to operators without software installation
- Proprietary UI enables simplified synchronization of 'data' and 'physical' spaces

