

# **RFID** JOURNAL **LIVE!**

## **OPTIMIZING SMART LABEL PERFORMANCE FOR MAXIMUM R.O.I. IN YOUR RFID PROCESS**

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## DISCUSSION TOPICS

- Real World Read Rates
- What Is Being Done To Improve?
- GEN 2 Expectations
- R.O.I. Improvement Opportunities
- Positioning Yourself For a Strong Future R.O.I.

## REAL WORLD READ RATES

- **Paxar is Seeing 70% to 95% Acceptable Inlays From our Suppliers**
  - We “Weed Out” Bad Inlays in Production Process (100% Readable Smart Labels Shipped)
- **“There is still a high failure rate (around 30%) of tags in any batch of tags. The majority.... have already been identified by the manufacturer and tagged as such.”**
  - -Nicholas Wilcox, VP of IT, Unilever North America, in *Consumer Goods Technology*, February 2005
- **“....The Wal-Mart team indicated it is now seeing read rates in the high- 90% range... One exception: it’s currently only reading between 50% and 90% of cases moving from the back room to the front of the store on a pallet.”**
  - -Christine Overby, Forester Research, in *Consumer Goods Technology*, February 2005

## WHAT IS BEING DONE TO IMPROVE ?

### Improved Testing and Mapping of Inlays/Chips

More chip manufacturers entering the market

EPC Global Applied Tag Team is developing test standards

Independent labs are certifying performance

Technology providers developing labs to support customer testing

### Additional Antenna Fabrication Capacity

More inlay providers entering market (Two original are now 10)

Converters & inlay providers are now focusing on yield earlier in process

Investment in capacity is providing stability in production processes



### **New, More Robust Designs**

Inlay providers are developing greater understanding of customer needs

Focus on cost vs. performance is driving innovation

ISO standards will generate stability of design parameters

New process methods to attach chips to antenna are being commercialized

### **New Test Equipment and Standardization of Protocol interface**

Multi-protocol testers provide greater flexibility for test

Reader manufacturers are developing more experience in the market

Gen 2 is focusing design parameters

**“More experience will yield higher success”**

## GEN 2 EXPECTATIONS

### 5 Main Performance Improvements

1. Global interoperability and one protocol focus
2. Up to 10 times faster read rate than Gen 1 products
3. More Dense reader operation capability in RF noisy environments
4. Improved anti-collision algorithms
5. Improved security for identification, read, write & kill functions



## HOW ARE YOU SETTING YOUR RFID STRATEGY?

- **The Days Of Slap And Ship Are Dwindling**

Increased compliance expansion will require deeper integration

- **Risks Of Adopting A Wait-And-See Approach:**

Market share erosion if a company does not have a clearly articulated RFID strategy

May not have time to work through challenges and difficulty with implementing RFID

May be forced into a sub-optimal solution at higher long term cost

**“GETTING STARTED AT SOME LEVEL IS NECESSARY”**

- **Look Beyond The Current “Slap And Ship” Approaches**
- **Do Not Be Alarmed By Talk Of Poor Tag Yield, Poor Performance, or High Cost**
- **Flow Chart Your High Cost Or Poor Performance Processes**
- **Can You Utilize The Technology Where R.O.I.’s Have Been Achieved?**
  - Use of totes or reusable process items
  - Lost inventory problems
  - Poor fulfillment processes (low on-time delivery)
  - High value inventory item accuracy
  - Freshness requirements (food, pharmaceuticals, process bas
  - Fraud or diversion ( Brand Management)
  - Multiple labor touches





## MANUFACTURERS WITH NON-EPCGLOBAL COMPLIANT RFID INSTALLATIONS

- International Paper
  - Marks & Spencer
  - Best Buy
  - CHEP
  - Harley Davidson
  - DOD
  - Siemens Dematic
  - Nestle
  - Club Car
  - Abercrombie & Fitch
  - TrenStar
  - Michelin
  - Las Vegas Airport
  - Toyota
- Numerous other customers have trials in process for internal RFID justification & use

**THEY HAVE ALL FOUND PAYBACK AND IN MOST  
CASES NOT WHAT THEY HAD PREDICTED**

# KEY STEPS FOR SUCCESSFUL IMPELEMENTATION

- Develop A Multi-Discipline Team  
( Operations, MIS, Engineering, Materials, etc.)
- Educate Team On Technology: Internet,  
Trade Publications, Supplier Visits, Trade Shows
- Establish Short & Long Range Goals
- Establish Process Flow That Supports Good Practice
- Establish Measurement Techniques Of Key Process Parameters
- Select Reliable Suppliers To Work With
- Initiate Trials In Your Facility
- Develop Implementation Plan With Timing & Costs



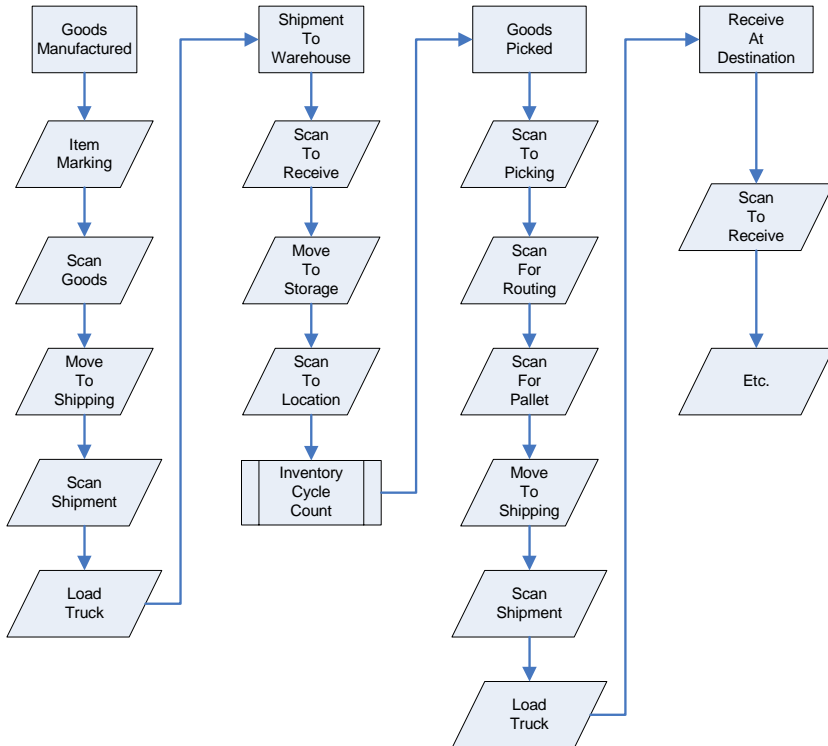
## ESTABLISH PROCESS FLOW THAT SUPPORTS GOOD PRACTICE

- Flowchart The Processes That Are Affected By The Short Range Goals (Pick/Pack, Warehouse Locators, Production Packaging, etc.)
- Determine Best, Most Cost Effective Place In The Process To Integrate RFID. Answer:
  - Do You Want To Only Label And Verify RFID? Integrate Into Your Current Shipping Label? Into The Case Label? No Label At All? How Will Employees Know What Is There?
- Examine Your Flowchart For Optimum RFID Placement
- What Data Streams Do You Need To Modify For The RFID Info To Flow For Printers? (Usually Only 1-2 Lines Of Data)
- What Is The Best Method To Encode/Verify RFID For The Mandate? (Desktop Printer, Applicator, Pre-Programmed Labels, Fixed Data RFID Labels, EPC Seal & Identifier)

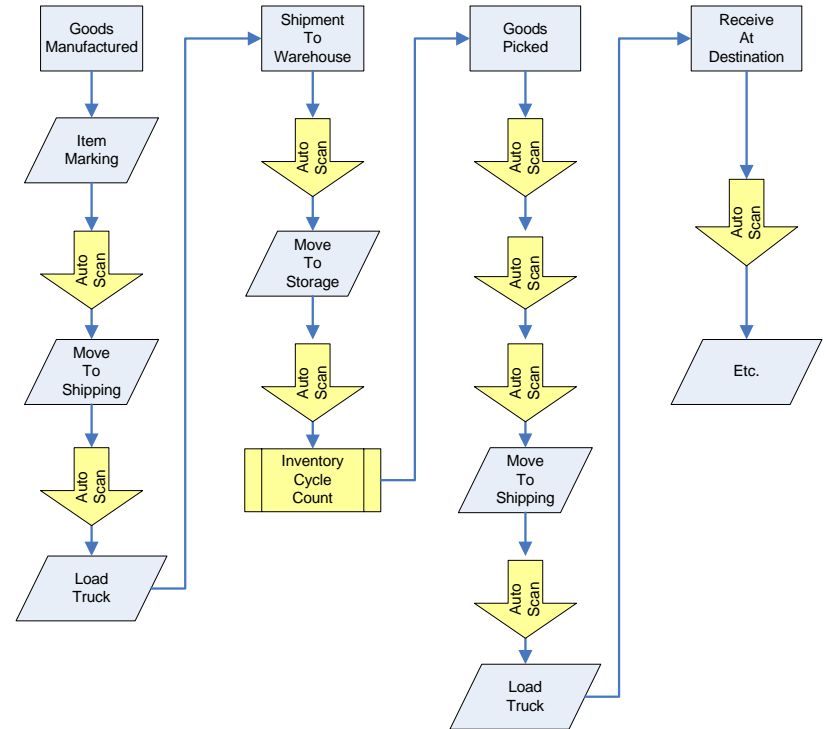
**ADDING RFID INTO A POOR PROCESS WILL MAKE IMPLEMENTATION HARDER AND THE PAYBACK WEAKER!**

# RFID PROCESS FLOW ANALYSIS

- Traditional Scanning



- RFID Auto Scanning



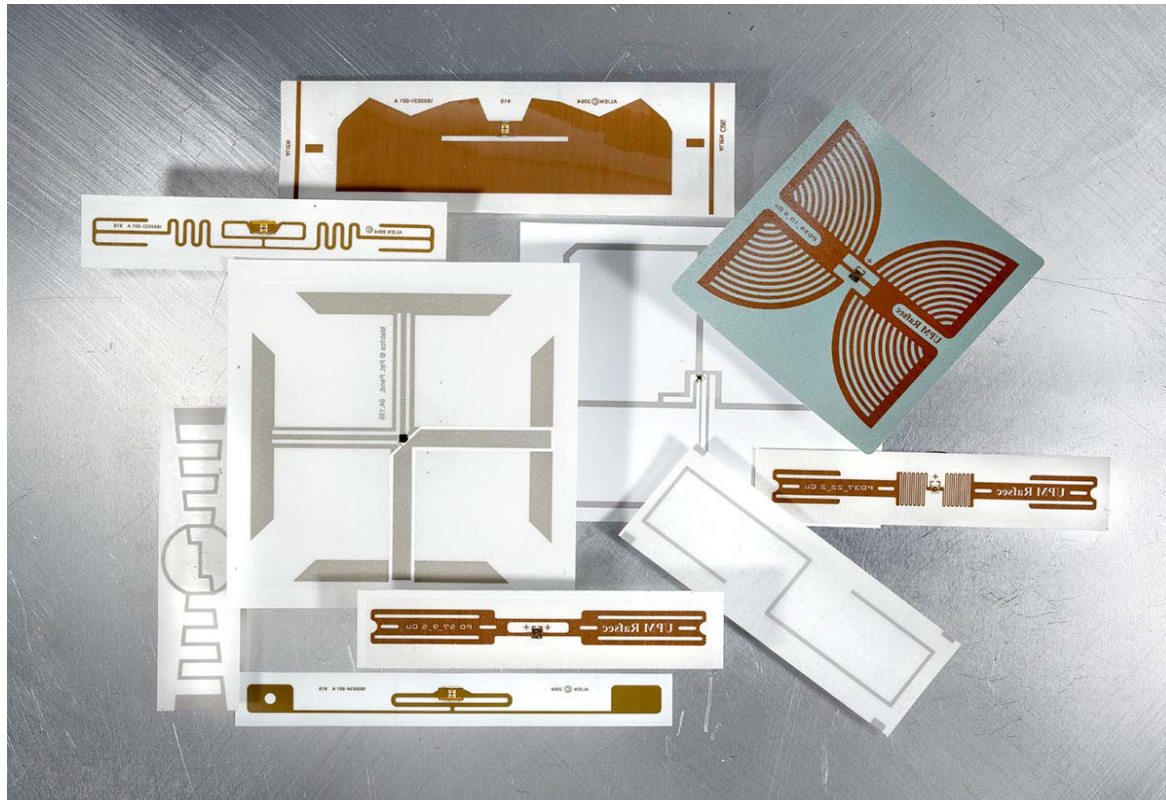
## FIND PARTNERS THAT CAN ASSIST WITH RFID PRODUCT MARKING

- How Can You Get Best Possible Performance Today
  - Best Transponders for the Job
  - Verified by Label Converter, Failed and Low Power Transponders Weeded Out
  - Optimum Location on the Carton/ Pallet For the Product

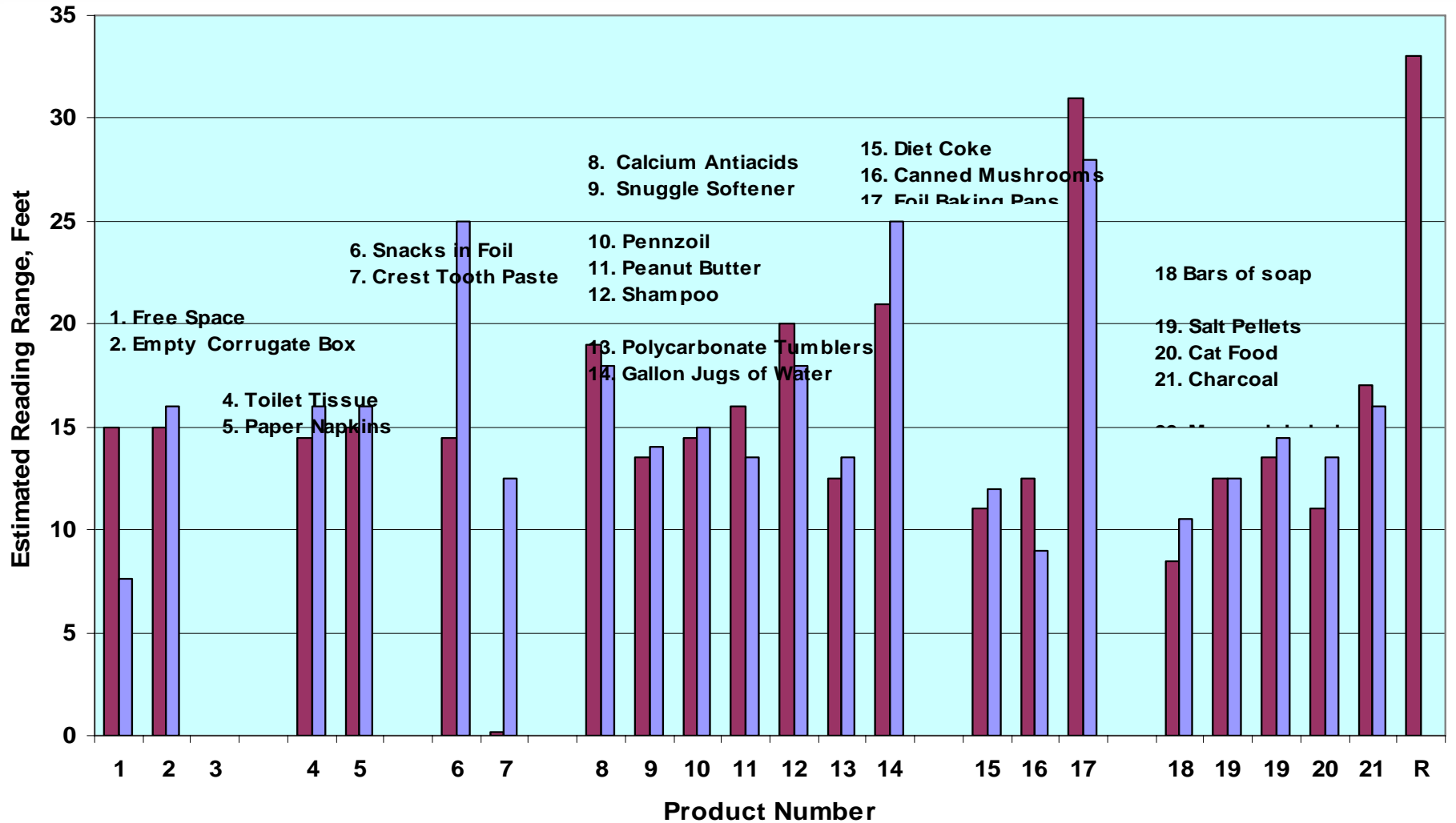


# FIND PARTNERS THAT CAN ASSIST WITH RFID PRODUCT MARKING

- Work With A Consultative Company That Understands The Technology
  - Numerous Available Inlays Today, New Developments Regularly- Which Is Best For This Product/ Application?
  - Can They Perform Cost/Performance Analysis?



# COMPARISON OF ANTENNA BEST READS



## INITIATE RFID TRIALS IN YOUR FACILITY

- Internal trials will answer questions whether process changes and payback are feasible in near or long term
- Technology partners can quickly assist your RFID teams in quickly assessing viability and cost
- Successful trials with out of pocket expense less than \$25-30K are common
- Require a full post-trial review by your internal team and technology providers
- Waiting to trial this technology until it matures will result in lost competitiveness



## PREPARE FOR IMPLEMENTATION SUCCESS

- Identify Key Supplier Requirements
  - Create Official Review Of Test Trial Issues
  - Identify Internal Business Requirements
  - Provide Management Review Of Progress, Plans, Timing & Costs  
Initiate Sub-Trials To Resolve Open Issues
  - Use Supplier Selection Criteria To Narrow Scope To 2-3 Per Function
  - Develop RFP Requirements Doc. And Expectations
  - Meet And Interview Responses From RFP
  - Finalize Investment Proposals, Process Maps And Timeline
  - Obtain Management Approval
  - Proceed With Implementation Roll-out With Regular Review Periods
- 
- Typical Implementation, Excluding Software, Can Be Achieved In 3-6 Months

## SUMMARY POINTS

- This Is New Emerging Technology. Expect Growing Pains and Do Not Get Frustrated
- Technology Is Not Discrete Like We Are Used To In a Digital World. Answers Are Not Black & White But Are Shades of Gray
- Many New Inexperienced Suppliers Make Claims That You Need To Validate Through Reviews. You Need To Rely on Suppliers to Bring You The Latest Technology
- Beware of Vaporware! Many Products Are Announced as Released but Are Not Available When Expected
- Great Long Term ROI For Your Business. Short Term Justification Can Be Found Without Traditional Firm Labor Paybacks
- Compliance Initiatives Are the Impetus That Will Reduce Costs and Improve Performance For All Of Us In The Future



## •Resources

- ✓ 800+ Million Dollars Annual Revenue (NYSE: PXR)
- ✓ 9,000+ employees
- ✓ Presence in over 75 countries
- ✓ 250,000 Customers Worldwide
- ✓ Technical experts to implement and integrate RFID products
- ✓ Industry expert System Consultants
- ✓ Multi-million Dollars in R&D
- ✓ Member EPC Global
- ✓ Member AIM
- ✓ Active participant REG  
(RFID Experts Group)

# PAXAR RFID PRODUCT SOLUTIONS

- Provide Comprehensive RFID-based Print Solutions Including
  - Tags and Labels
  - Printers
  - Applicators
  - Field Services
  - Consultative Services
  - Software (via third-party partners)



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## QUESTIONS/COMMENTS

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