



The Ten Keys to RFID Compliance Success

SupplyChainDigest

Report Sponsored By:
HighJump Software, a 3M
Company



SupplyChainDigest™



The Ten Keys to RFID Compliance Success

Executive Summary

RFID/EPC compliance mandates are here. Following on the heels of announcements by Wal-Mart and the DoD, Target and Albertson's have both made preliminary statements about RFID initiatives that will also require vendor tagging. TESCO and Metro Stores in Europe have announced vendor compliance mandates, and many other retailers in both the U.S. and Europe are expected to join the fray over the next two years.

While the first specific compliance specifications are starting to emerge, along with related tag and communication standards, many companies are looking for guidance in terms of the right way to approach these multiple compliance mandates.

RFID requirements will force companies to make tough decisions, often with incomplete information. Just when a company believes it is on top of its process and technology needs, a new trading partner may emerge with requirements that throw that plan into question – meaning flexibility in compliance solution infrastructure will be key. It is also likely that the actual rollout timing of most trading partner programs, and the real performance and costs of RFID technology, will remain vague. It will therefore be important to put in place solutions that not only meet current demands but that can evolve over the long term, ultimately providing a platform for driving internal benefits from RFID.

This report provides a framework for successfully meeting new RFID compliance requirements. It is based in part on lessons learned from the first wave of retail compliance mandates in the early to mid-1990's for bar code labeling of pallets and cartons, advance ship notice generation, and other requirements related to Quick Response. It also considers the specific characteristics of today's new RFID compliance requirements, informed by discussions with dozens of companies considering how to best meet current and future RFID needs.

Keys to Compliance Success

The 10 keys to crafting RFID compliance capabilities detailed below are designed to provide a framework for success both in the short term to meet immediate requirements, and over a longer-term horizon as requirements and opportunities evolve.

1. Fully Understand and Maintain Customer Compliance Requirements

While it goes without saying that companies need to clearly understand their trading partners' RFID compliance requirements, experience gained during previous compliance programs indicates that there will be a wide range in the level of precision different companies maintain in tracking this requirements data. This is especially true as the number of trading partners that require tagging expands from just a few to potentially a dozen or more. The good news is that relatively simple measures can ensure both initial clarity and manageability of these requirements as they change and expand.

The need for a clear requirements tracking system is especially vital early in compliance programs, where mandates may be subject to frequent changes even within a given trading partner's program, as both sides gain experience with actual production programs. "Best practices" for tracking compliance requirements include the following:

- ❑ Assign specific individuals in both IT and operations to jointly "own" the understanding and maintenance of compliance requirements. Having the owner be in either area alone can mean subtle issues on the other side are missed.
- ❑ Do not rely solely on trading partner documentation – have face to face or at minimum, phone meetings to discuss requirements with each trading partner as they are released.
- ❑ Maintain a modest database that tracks requirements simultaneously across multiple trading partners. This database should identify requirements for tag types, tag data, packaging levels to be tagged, deadlines, human readable labeling, etc. It should also include the date and version of the latest specifications reflected in the database. Importantly, in developing this database it will often be discovered that some trading partners have simply not included specifications for certain areas in which others have detailed requirements. In that case, it is recommended that you speak to your trading partner to verify that there isn't an undocumented requirement.
- ❑ Regularly summarize current requirements via internal communication channels. This communication should reinforce key specifications and deadlines, and identify similarities – and differences – between different mandates.

Precisely tracking the latest compliance requirements involves a relatively small amount of effort, but having this data well-organized and communicated will eliminate considerable confusion and potentially avoid poor system decisions later.

Bottom Line: Having an easily accessible, comprehensive database of compliance requirements will make it much easier for everyone and avoid confusion.

2. Map Current Delivery and Operating Flows

As always, it is important to start with a clear picture of the “as is” state of current processes as the basis for change. Most consumer goods companies are finding that considerable complexity exists in their supply chain flows and distribution center processes that will be impacted by RFID.

Consumer goods companies generally have multiple product flows from their shipping points and product flows to retail customers’ distribution centers and stores. Mapping all the paths that exist to deliver the company’s product to those retail customers is critical to ensuring each will have support for compliance requirements. Typical delivery paths may include:

- Internal distribution center processing
- Third party distribution
- Plant direct shipments
- Shipments from “co-packers”

Within each delivery path to the customer, it is then necessary to map the specific order processing steps that are used. For example, a given facility may have a mix of full pallet pick, case pick and cross dock shipments even for a single retailer. Because RFID tagging and data collection capabilities may need to be added to each order processing type, graphically mapping these work flows using a simple tool such as Visio can ensure that each scenario is accounted for, and provide the foundation for re-engineering these processes to most effectively meet RFID requirements.

For large companies, this mapping effort will represent a substantial amount of work, and the information is rarely available “off the shelf” from existing documentation. Nonetheless, it is absolutely essential that this work be performed, at least for each customer shipping point that will likely require RFID compliant goods.

Bottom Line: A visual map of shipping flows and processes within each flow will provide the right foundation for re-engineering to meet compliance requirements.

3. Overlay Current Systems that Support Existing Flows

In parallel with delivery and process mapping, companies should identify the current systems that touch those physical processes, and which may need to be capable of supporting RFID data and processes. These systems would typically include:

- ❑ Order management systems
- ❑ Warehouse and distribution systems
- ❑ Manufacturing systems
- ❑ EDI systems
- ❑ Third party systems (3PLs, co-packers)

While at this stage it will not be clear what systems will be affected by the new requirements, and whether internal systems should be modified or new capabilities added from outside vendors, creating an inventory of existing applications mapped to product delivery flows will serve as the foundation for subsequent decisions.

Bottom Line: RFID compliance will ultimately touch many internal systems and likely require new capabilities/applications. Be sure to consider all systems that may be affected.

4. Start with Simple Distribution Center-Based Scenarios

For several years, it is likely that the volume of a company's shipments requiring RFID tagging as a percentage of total shipments will remain low, as various trading partner RFID programs move from low volume pilots to eventual critical mass. Given this ramp up time, and the expensive cost of tags, it is clear that for the vast majority of companies so-called "slap and ship" processing in the DC will be the most effective means for meeting initial compliance requirements. Pre-tagging in manufacturing must be planned for, but will only be viable when various retail and other programs have moved into large scale production stages, and the volumes of cartons to be tagged is a significant percentage of the total units shipped.

Companies should therefore initially focus on "to be processes" that re-engineer current DC workflows for each relevant delivery path, to identify the most cost-effective way to apply tags and manage RFID data. In some cases, the impact on operations will be relatively modest. An example is for existing carton "pick by label" processes, where in general, RFID compliant labels can simply be substituted for current ones within the current process. The impact will be greater

for existing case picking processes that do not currently require individual carton labeling, and substantial for consumer goods manufacturers that are currently picking in full pallets but will now have to break these pallets down in the DC to tag individual cartons.

The bad news – companies expecting to drive ROI from these compliance-oriented solutions today are unlikely to find many dollars. The key initially will be to develop processes and supporting technology that meet current requirements effectively, while setting the stage for potential expansion and ROI creation over time.

There are a variety of potential workflows to enable tagging in the DC on top of existing processes, such as receiving, picking or shipping. The more complex your supply chain network and processes are, the more new workflow types it is likely will be required. You should look for RFID compliance applications from vendors that can flexibly support multiple DC processing models, be easily extended to meet the specific needs of your individual operations, and provide a migration path for moving tagging into manufacturing and RFID-enabling core DC processes over time.

Bottom Line: Until volumes expand considerably, look for flexible back-end DC solutions that can meet trading partner requirements for now – but don't expect to drive ROI.

5. Determine Your Stance on Validation

One of the least understood aspects of RFID compliance involves whether validation of RFID tags/shipments is really required. For example, many companies are evaluating and investing in dock door “portals” to read each tagged carton as the pallet is loaded on the truck. However, it is unclear today whether this approach to validation will add value – or even work reliably. As the decisions a company makes on validation may have a significant impact on processing changes, exception handling, and total system cost, it is important that this issue be thoroughly considered as part of the overall system design.

EPC technology is still relatively immature, and there are still basic issues with consistently reading tags on certain types of products and packaging. This means that proactive validation – attempting to verify that every carton that is supposed to be on that pallet is read - will often result in notification that cartons the system expects to be on the pallet are missing. This result may then be costly and time-consuming delays in proving that all of the expected cartons really are on the pallet.

One of the early RFID adopters, for example, validates cartons on the pallet by placing an array of readers around its stretch wrap machine, where enough rotations can generally pick up all tags on the pallet.

It is reasonable to assume that in many cases it will be enough to validate that specific RFID labels have been printed and applied during the tagging process, and that those cartons have been placed on a specific pallet. The pallet is then simply treated as a unit load that is tracked and verified at the pallet-level only. Another approach is to deploy a simple check through a portal reader that only looks for any EPCs **that do not belong on that pallet** as a last but not failsafe check as the truck is loaded. This would catch some but not all errors, as a misplaced carton that wasn't read would be missed, but would also result in a vastly reduced number of the "false alarms" likely in proactive validation.

There is no right answer to this issue, but companies must clearly think through operating processes, project objectives and trading partner requirements to make a good decision on validation.

Bottom Line: How tagged cartons will be verified at the final shipping point– if at all – is a critical processing decision that may greatly impact hardware requirements, application needs, and total cost of system deployment and operation.

6. Build a Multi-Phased Master Plan That Includes Tagging in Manufacturing

While the low percentage of tagged items will initially strongly favor processing in the DC, for each company there exists a "tipping" point past which it becomes more cost effective to pre-tag during production processes. It is also likely that over time, internal distribution and other processes can be augmented to take advantage of RFID capabilities beyond meeting compliance requirements.

Simply put, most companies should build a phased plan that starts with simple compliance to trading partner demands in the DC ("slap and ship"), accommodates multiple shipping paths and DC processes as retail programs expand, and evaluates how and when it becomes cost effective to move tagging into manufacturing.

Determining where this "tipping point" is will not be easy, and it is probably a mistake to assume that this determination can be clearly made today at this early stage of the EPC and trading partner programs. However, development of a longer term but flexible plan that identifies likely phases of deployment and process change is a smart step. It will help put current compliance projects in context, provide a guideline for future decisions, and help companies avoid

developing solutions that lead to dead-ends for moving to subsequent stages. At this early stage of program rollout, the master plan may simply list likely options at key milestones.

For example, when the tipping point is reached and it becomes cost effective to tag in manufacturing, options may include sourcing cartons that are pre-tagged, or applying EPC tags in-line after carton fill. This question does not necessarily need to be answered today, but rather identified as a key decision when that stage is reached. However, when cartons and pallets are tagged in manufacturing, it will change existing distribution processes regardless of which method is used – and may present opportunities for leveraging RFID capabilities in the DC. All of this can be considered in a flexible master plan.

Bottom Line: Building a roadmap “in stone” for long term rollout of RFID at production volumes at this stage of compliance program and core EPC technology maturity is not realistic. However, producing a flexible master plan that details overall direction and key milestones for new processing models as volumes increase will provide an important guide for making later decisions.

7. Define New Technology Requirements

Based on the initial compliance process models, with an eye towards the master plan as volumes and trading partners increase, companies must identify the new technology components – both hardware and software – they will need to meet the new workflows. Integration points with existing systems must also be mapped.

There will be a variety of options for meeting these process and data collection needs, and detailing all of these options is beyond the scope of this document. Hardware will be sourced from one or multiple manufacturers or integrators, and decisions on what hardware to use will in part, be dependent on testing the readability of different tag and reader combinations on specific product and packaging configurations. In general, you will need some combination of the following hardware components:

- ❑ Tags: RFID/EPC tags or tag-label combinations
- ❑ Printers: tabletop or print and apply devices
- ❑ Readers: some combination of handheld, fixed station, portal and/or readers integrated with mobile data collection terminals

While some companies may choose to build their own RFID software solutions, early evidence is that most companies will look to external vendors to provide the technology. For example, many if not most companies today simply lack the staff or resources to build an internal compliance solution in time to meet tagging

deadlines. Even in this early stage of the RFID lifecycle, some vendors are bringing very packaged compliance solutions to market that enable a manufacturer to quickly meet initial mandates and provide a platform for meeting new RFID requirements as other retailers release initiatives.

This new software - for compliance only - will generally require some combination of the following capabilities:

- ❑ “Middleware” to control reader/tag interaction and provide low-level data management and integration.
- ❑ A database to hold EPC data for use by existing or new applications and to reference as the product moves through the distribution pipeline.
- ❑ Compliance application software to manage tag printing/encoding and specific workflows in receiving, order picking, shipping, verification, etc.
- ❑ EDI translators to add EPC data to Advance Ship Notices as required.

Of course, some vendors will be able to bundle some or all of these capabilities in a single integrated solution. In evaluating alternative solution providers, you should look for software that has the following capabilities:

- ❑ Supports a broad variety of operating workflows out of the box.
- ❑ Supports a broad range of tag and reader hardware.
- ❑ Allows flexible co-existence between RFID and bar codes, allowing you to easily mix and match these data collection technologies based on specific trading partner requirements and your own internal processing needs.
- ❑ Is flexible, so that you are able to meet the specific needs of your operation today, and will be capable of easily changing processes or adding new tagging/reading options as those needs evolve over time.
- ❑ Can provide a clear migration path for eventually moving tagging into production, and to leverage RFID capabilities in distribution processes.
- ❑ Be capable of scaling as shipments and EPC data volumes increase.
- ❑ Can easily integrate with current enterprise systems.

The key point again is that in a market this dynamic, deploying a system that provides maximum flexibility to adapt as needs, technology and processes change is the surest way to be able to respond to those changes quickly and at least possible cost.

Bottom Line: RFID compliance involves hardware and software tools that did not exist just a short while ago. Do the homework required to identify all the “piece parts” your mid-term compliance-oriented processes require, while considering their use as a platform for future expansion.

8. Review Plans With Trading Partners

Especially early on, it is important to review plans for RFID compliance with each trading partner that requires tagging. In addition to being simply the right way to deal with a customer, these reviews will often illuminate issues on either side that had not previously been considered.

Relying on written documentation from your trading partners alone to verify compliance is not enough – review of your specific plans for their tagged shipments provides a much better chance to catch problems and issues before plans and systems are finalized. You'll also want to set up a process through which you can monitor how the program is working for you and your trading partner once shipping begins. Timely feedback can help identify problems before they escalate into major issues – or cause large fines for non-compliance.

Bottom Line: Do not assume that trading partners have it all figured out, or that meeting written requirements is enough – as long as you are going through the cost and effort to comply, open a dialog to ensure timely feedback and mutual understanding.

9. Train and Communicate

Operators and managers will of course require training, both in new operating procedures and in an overall understanding of trading partner requirements and the basics of RFID technology.

For some reason, companies are often reluctant to share specifics about compliance requirements with the associates who must actually perform the work. As a result, operators are often unaware of the impact of failing to properly comply, either in terms of trading partner perception or potential “chargebacks” for compliance violations.

Supervisors and operators need to be trained at the level required for them to succeed. While the supporting compliance software should remove much of the complexity of meeting varying trading partner requirements through automated decisions regarding data encoding, work flows, etc., operators must possess a solid understanding of these requirements to enable the software solution to drive effective execution.

The same principles apply more broadly across the organization. RFID requirements, deadlines, and potential impacts from compliance success (improved position with the trading partner, increased revenues from out-of-stocks) and failure (chargebacks) should be broadly disseminated throughout the organization. For some reason, there is often a tendency for a few individuals to

keep such knowledge close to the vest. For RFID compliance to be most successful, the program needs to be understood and supported by employees from the shop floor to the executive suite – make sure your training and communication plan is broad and deep enough to get the job done.

Bottom Line: The success of any change is in the end “all about the people.” Make sure your program includes strong support for operator training and broad communication of program goals and results across the organization.

10. Implement and Measure

The specifics of compliance capability deployment will vary significantly between companies based on a number of factors, such as their product mix, scope of solution, number of trading partners, etc. The key to success in deployment regardless of technology or scope will be putting in place a measurement structure that tracks technical performance and adherence to project goals.

Unique to RFID, companies should look to capture such metrics as tag quality and read rates by unit of measure and SKU. Audits should be performed at each shipping point to measure how well internal and trading partner standards are being met. If possible, it is desirable to capture metrics that can be used to calculate costs for compliance, such as time required to label cartons, to benchmark for continuous improvement programs, help determine when alternative processes can be justified (such as moving the process to manufacturing) and frankly can be used in price negotiations with retail customers.

You manage what's important and measure what you manage – if RFID compliance is important to your company, you should put in place the metric systems that can help you track just how well your organization is performing.

Bottom Line: Don't ignore key operational metrics simply because the effort is compliance related.

Summing It Up

The frank reality is that for most companies compliance with trading partner requirements for RFID will be achieved more because it is required than because it is desired. While all companies hope to be able to drive internal benefits from RFID tags in the future, for most, the initial compliance efforts will not produce ROI and will

simply be required as a cost of doing business – as has been true of other compliance requirements before this.

History and common sense, however, shows that taking a structured and intelligent approach to meeting compliance mandates will reduce total costs, improve the results and set the stage for eventual leverage of the technology more effectively than would occur through less focused initiatives.

The keys to compliance success outlined in this paper can help companies meet trading partner requirements with effectiveness and confidence – and avoid the many headaches and problems many other companies will encounter as they roll-out compliance solutions. The key to this will be crafting a compliance solution that does not lock your company into a short-term solution that simply meets an immediate requirement, but provides an adaptable platform for the inevitable change in needs and trading partner requirements over time.

About The Report Co-Sponsor: HighJump Software, a 3M Company

HighJump Software, a 3M company, is the global leader in providing highly adaptable, best-of-breed supply chain execution solutions that streamline manufacturing and distribution from the point of source through consumption. HighJump's tightly integrated solutions empower operational excellence in the warehouse and optimize the flow of inventory throughout the supply chain by facilitating collaboration with customers, suppliers and trading partners. These comprehensive solutions combine robust, standard functionality, a best practices-based implementation methodology, and a uniquely adaptable architecture that facilitates fast, cost-effective system modifications. The result: the industry's lowest total cost of ownership for more than 700 satisfied customers worldwide. As part of the 3M family, HighJump leads the industry in financial strength and delivers on an unmatched commitment to innovation and quality. HighJump leverages these advantages to continually expand its solution footprint and empower operational excellence for domestic and multinational customers.

The company's Compliance Advantage™ solution – a component of its Supply Chain Advantage™ suite – provides a flexible, powerful solution for meeting the RFID requirements for Wal-Mart, Target, the DoD, and other large trading partners.

Compliance Advantage provides a comprehensive solution that is differentiated from the offerings of other vendors in the depth of its capabilities and the flexibility it provides to react to changes over time without new code, such as deploying RFID in manufacturing or other logistics processes beyond compliance.

Key capabilities provided by Compliance Advantage include the following:

- ❑ Comprehensive support for the specific RFID requirements of Wal-Mart, Target, and the DoD. Additional packaged support for specific mandates will be added as other requirements are announced.
- ❑ Out-of-the-box support for multiple processing workflows (e.g., order picking, staging, production line) to enable RFID tagging and verification in the warehouse and in manufacturing. Multiple workflows can be deployed and used in parallel in an existing facility, or across facilities.
- ❑ Native support for RFID and bar code “co-existence,” allowing companies to easily combine these technologies to meet specific trading partner requirements (for example, those which will require bar code labeling in parallel with RFID tags) and/or to use the capabilities for internal needs based on which technology is the right choice alone or in tandem.
- ❑ Comprehensive management and control of the entire process, including EPC number management and storage; tag/label printing and encoding; tag application and pallet build, either as part of the picking process or as a value-added service; shipment verification; ASN generation.
- ❑ The industry’s only user-configurable platform that enables companies to make changes to existing processes without new or custom code through easy to use workflow tools. This provides users with maximum flexibility to evolve processes over time, roll-out compliance capabilities to new facilities and processes, and react to changes in requirements.

Companies deploying Compliance Advantage not only achieve the benefits of the industry’s most powerful and flexible compliance solution, but also adopt a platform that enables a clear migration path for use of RFID technology in international production and distribution processes to achieve additional ROI from their investment in compliance solutions.

HighJump is also differentiated in its ability to make RFID technology work in your operation. For more than 20 years, HighJump has maintained a strong capability in deploying data collection related technologies, expertise that is critical to ensuring a successful RFID solution given the immaturity of EPC-based technology, and the constantly evolving nature of tag and reader systems and industry standards.

In addition to Compliance Advantage, HighJump’s Supply Chain Advantage suite provides powerful solutions for warehouse management, supplier collaboration, supply chain visibility, transportation management, pickface slotting, and other solutions. The entire suite is built on a common technology platform, is fully integrated, and provides the industry’s most adaptable solution to react to supply chain change quickly, without custom code.

To discuss your RFID or compliance related needs, or how RFID can be used to improve overall logistics and distribution processes, contact HighJump at:

HighJump Software, a 3M Company
6455 City West Parkway
Eden Prairie, MN 55344
1.866.HIGHJUMP
info@highjump.com
www.highjump.com

About SupplyChainDigest

SupplyChainDigest™ is the industry's premier interactive knowledge source, enabling end users and vendors to make better decisions through timely, relevant, and in-context information. Reaching tens of thousands of supply chain and logistics decision-makers each week, SupplyChainDigest is alone in the market in creating a two-way flow of information, keeping us deeply in touch with market needs and trends, and delivering valuable market intelligence to both end users and vendors.

Our flagship publications – SupplyChainDigest and SupplyChainDigest – Logistics Edition – deliver news, opinions and information to help end users improve supply chain processes and find technology solutions.

Subscribe today – it's free. www.scdigest.com

For more information, contact SupplyChainDigest at:
PO Box 714
Springboro, OH 45066
937-885-3253
www.scdigest.com
email: info@scdigest.com