Supplier and Retailer Views on EPC/RFID Technology for Direct Store Delivery (DSD)






A research-based report from the
Global Commerce Initiative DSD Working Group

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Introduction

Merchandise that flows to consumers through direct store delivery (DSD) is managed differently than merchandise that passes through the more commonly understood warehouse delivery supply chain (from consumer goods supplier to retailer warehouse/distribution center to retailer store). DSD operations have their own unique processes and business challenges, which sometimes tend to get overlooked in analysis and discourse over EPC/RFID use in the retail and consumer goods industries. This Global Commerce Initiative (GCI) report and its underlying research were produced to examine the role and value of Electronic Product Code (EPC)-based radio frequency identification (RFID) technology in the DSD supply chain.

The report is a snapshot in time that provides baseline data on DSD suppliers' and retailers' views on various aspects of EPC/RFID value and performance based on a survey conducted in November and December 2007. It measures their perceived value of EPC/RFID, how they could incorporate the technology into their operations, and their expectations for when they might do so. It also highlights important differences between DSD and warehouse delivery operations that relate to EPC/RFID. It is assumed that the responses were primarily given respective to sellable products in the retail supply chain, rather than other applications like tracking reusable assets (e.g. trays, crates, totes, kegs, etc.). When the survey was taken, 42 percent of respondents were piloting EPC/RFID technology and 22 percent were using it in ongoing operations (this data includes EPC/RFID use throughout the organization and is not specific to DSD operations). Representatives from six different retailers and twenty-nine different consumer goods suppliers responded to the survey. The results published in this report are the summary of those survey responses and are not necessarily the opinion of GCI or any of its groups/subcommittees.

This GCI report is intended to foster continued discussion among manufacturers, retailers and other interested parties about the role of EPC/RFID in DSD operations based on the current attitudes and experiences of DSD companies. We also hope it calls attention to specific DSD issues so that suppliers, retailers and technology developers can recognize and acknowledge these conditions when planning strategy and technology initiatives.

The GCI DSD Working Group gives its sincere thanks to the members of the EPC/RFID subcommittee that developed this report, and to Intermec Technologies for its sponsorship:

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Executive Summary

Many of the envisioned and potential benefits to using Electronic Product Code (EPC) radio frequency identification (RFID) technology in the consumer goods and retail industries in general do not necessarily apply to direct store delivery (DSD) operations in particular. That is a leading conclusion drawn from research into a representative sample of retailers' and consumer goods manufacturers' current attitudes and experiences regarding the use of EPC/RFID in DSD operations conducted in November and December, 2007.

The six retailers and twenty-nine suppliers who responded to the survey generally agree on many issues related to implementing EPC/RFID for DSD. They particularly agree on the importance of broad industry adoption to make EPC/RFID efforts successful, the great challenge of getting a positive return on investment (ROI), prerequisites and obstacles to adoption, and how EPC/RFID projects are prioritized relative to other strategy and technology initiatives within their companies. They also agree that EPC/RFID technology shows some promise for various aspects of delivery and receiving operations, and that conditions will not likely be favorable for widespread EPC/RFID adoption for at least seven years. There is also some consensus about what specific processes and business relationships should be in place before pursuing EPC/RFID, and some current obstacles to adoption.

Suppliers and retailers have much less agreement on the specific business processes where EPC/RFID could potentially add value, with retailers having a more positive perception of the technology. Figures 1 and 2 show the leading areas of consensus and disagreement between retailers and DSD suppliers for various EPC/RFID topics.

Fig. 1: Select Areas of Agreement Between Retailers and DSD Suppliers

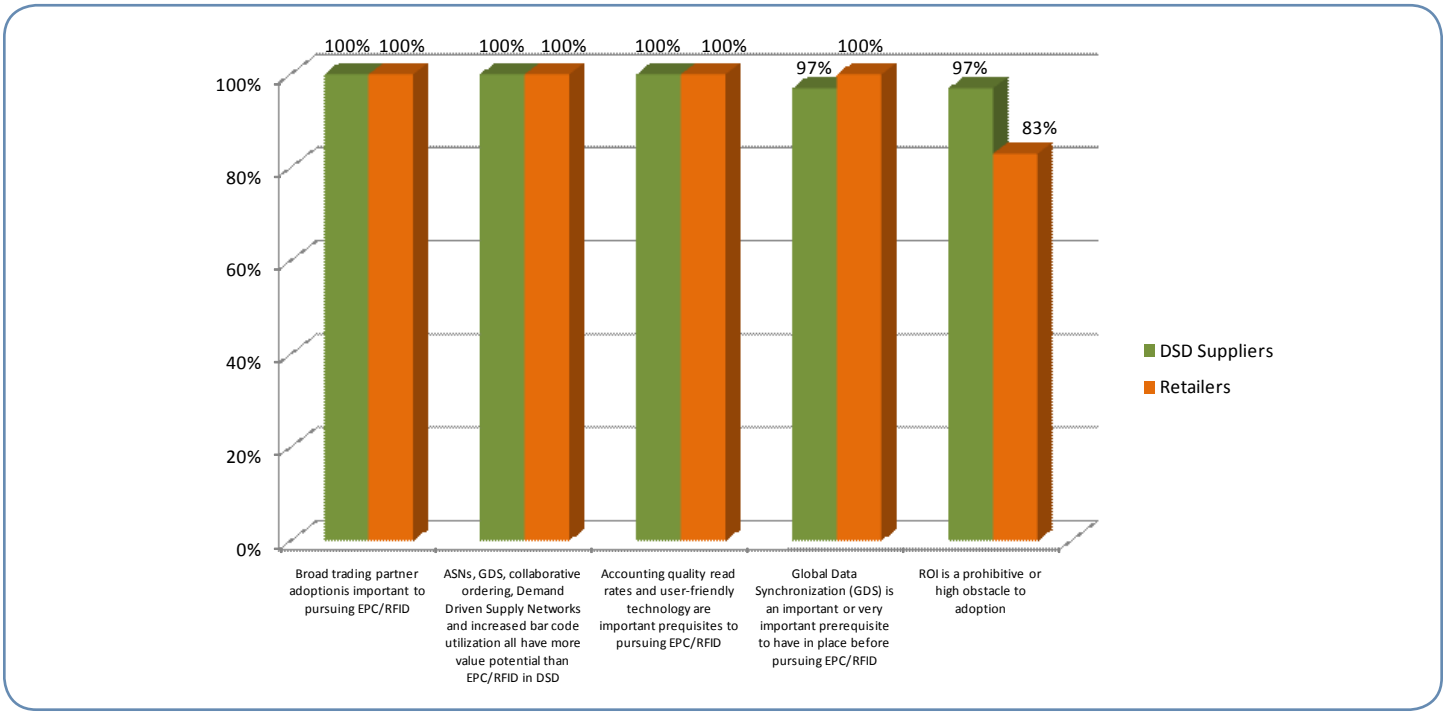
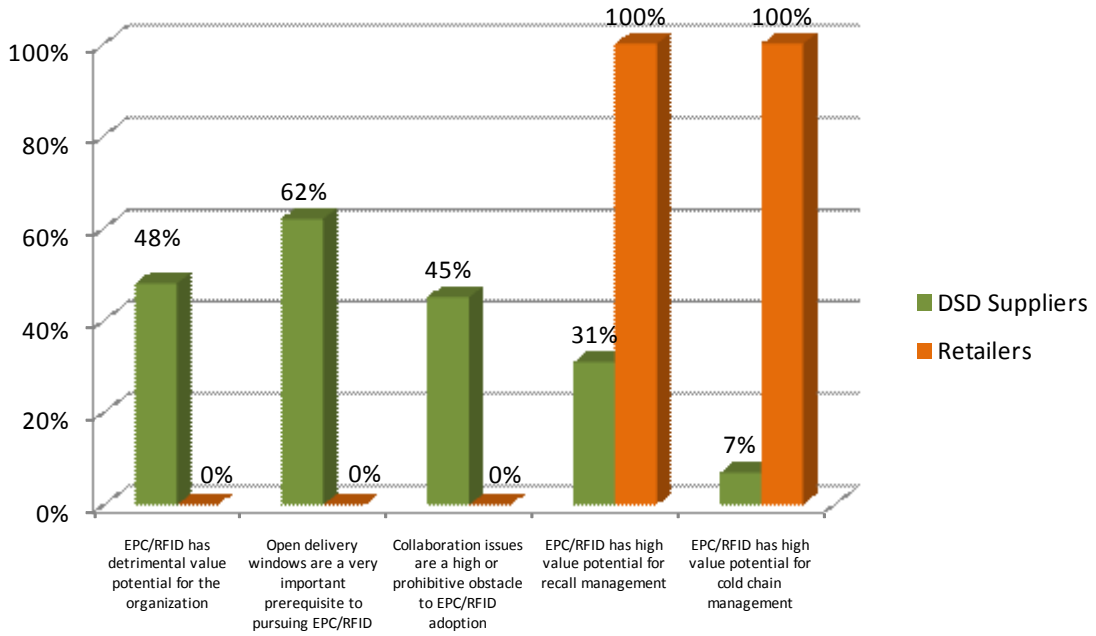


Fig. 2: Select Areas of Disagreement Between Retailers and DSD Suppliers



Perhaps the most important topics of consensus are the difficulty in finding positive return on investment from using EPC/RFID in DSD and the importance of broad adoption by trading partners for pursuing the technology. The skepticism expressed about earning a positive ROI overrides other EPC/RFID considerations, and is probably the reason why respondents are prioritizing other technology and business initiatives ahead of EPC/RFID projects. Companies say trading partner adoption is very important to their own pursuit of EPC/RFID, which may be creating a chicken-and-egg situation since there appears to be little current adoption momentum. There have been stops and starts to EPC/RFID momentum throughout the years. Attitudes toward EPC/RFID adoption can change, especially if new business cases, traceability requirements, technology breakthroughs or industry initiatives emerge.

Overall, 94 percent of respondents say ROI is a prohibitive or high obstacle to EPC/RFID adoption in DSD. The number of DSD suppliers who consider ROI prohibitive is nearly double that of retailers (62 percent vs. 33 percent), although the overwhelming majority of respondents in both groups say ROI is at least a high obstacle to adoption, as Fig. 1 shows.

ROI conditions are not expected to become favorable soon -- the majority of respondents think it will be at least seven years before ROI conditions will be favorable for pursuing EPC/RFID for their DSD operations (see Fig. 3). A quarter of respondents said ROI will never be favorable. Technology costs and performance, internal priorities and scale related to trading partner EPC/RFID use are among the potential reasons. Retailers felt ROI conditions would be favorable sooner than DSD suppliers, and also expressed considerably less overall skepticism about the technology (Fig. 4).

Fig. 3: Expectations for Favorable ROI Conditions to Pursue EPC/RFID (all respondents)

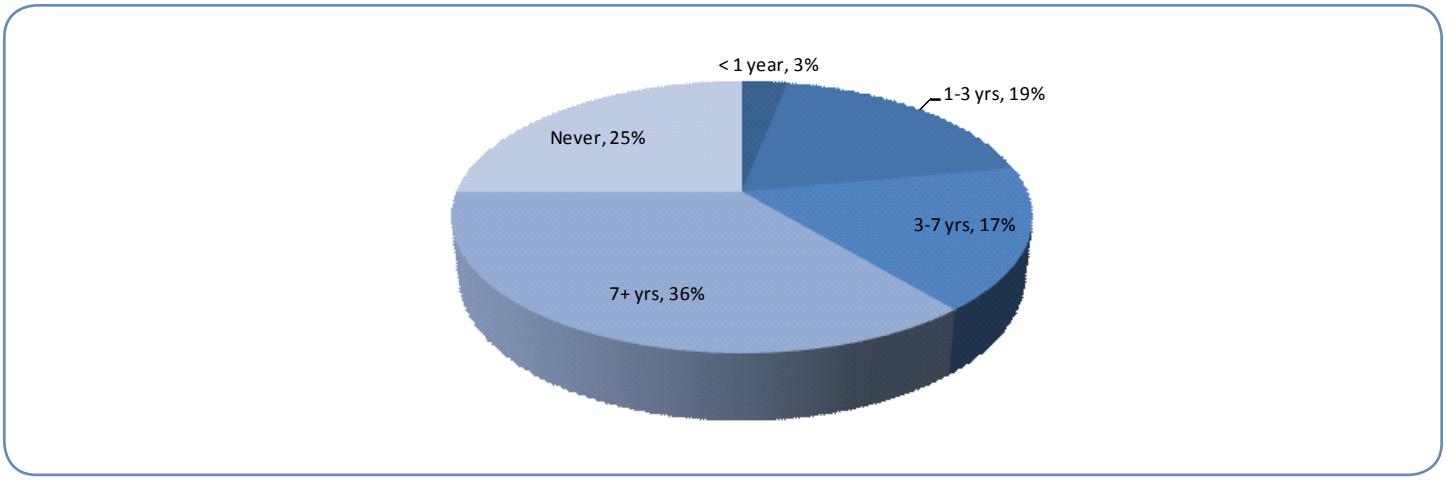
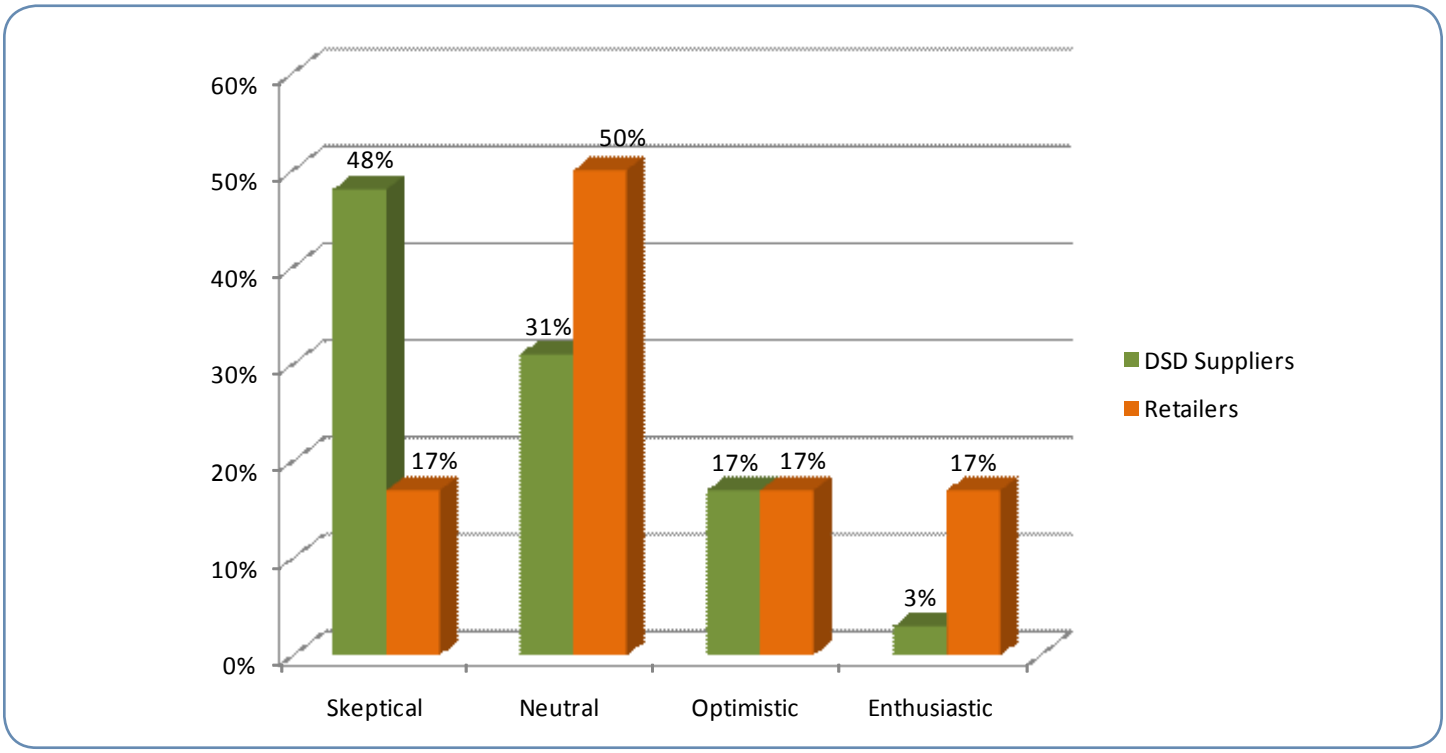


Fig. 4: Overall Outlook for EPC/RFID



There is a strong feeling, especially among suppliers, that various EPC/RFID use cases and benefit projections that have been presented for the retail and consumer goods industries do not readily apply to direct store delivery because of the fundamental differences in how DSD products are ordered, tracked, delivered, replenished and invoiced compared to products that are delivered through a retailer's own warehouses. Because DSD supplier representatives frequently work inside retail stores for delivery, replenishment and merchandising, they already have a base level of inventory visibility that is higher than that of warehoused products; therefore, there is less potential for EPC/RFID traceability to make a meaningful improvement. Retailers generally see more opportunities to improve their operations with EPC/RFID and show decidedly more enthusiasm for adopting the technology, as evidenced in Figures 4 and 6.

Attitudes about EPC/RFID's potential impact on processes and ROI potential reveal how DSD suppliers and retailers feel about the value of EPC/RFID itself (see Figure 5). Respondents were very clear that they think there is currently

much greater value potential in other technology and business strategy initiatives they can pursue. These include: implementation of advance shipping notices (ASNs); Demand Driven Supply Network models; collaborative ordering; and Global Data Synchronization (GDS). Figure 5 shows how many respondents ranked the value potential for each initiative as high; Figure 6 provides complete response data. EPC/RFID projects must compete with these and other initiatives for resources. Respondent data strongly suggests EPC/RFID won't win the competition.

Fig. 5: Initiatives With High Value Potential for the Organization (all respondents answering "yes")

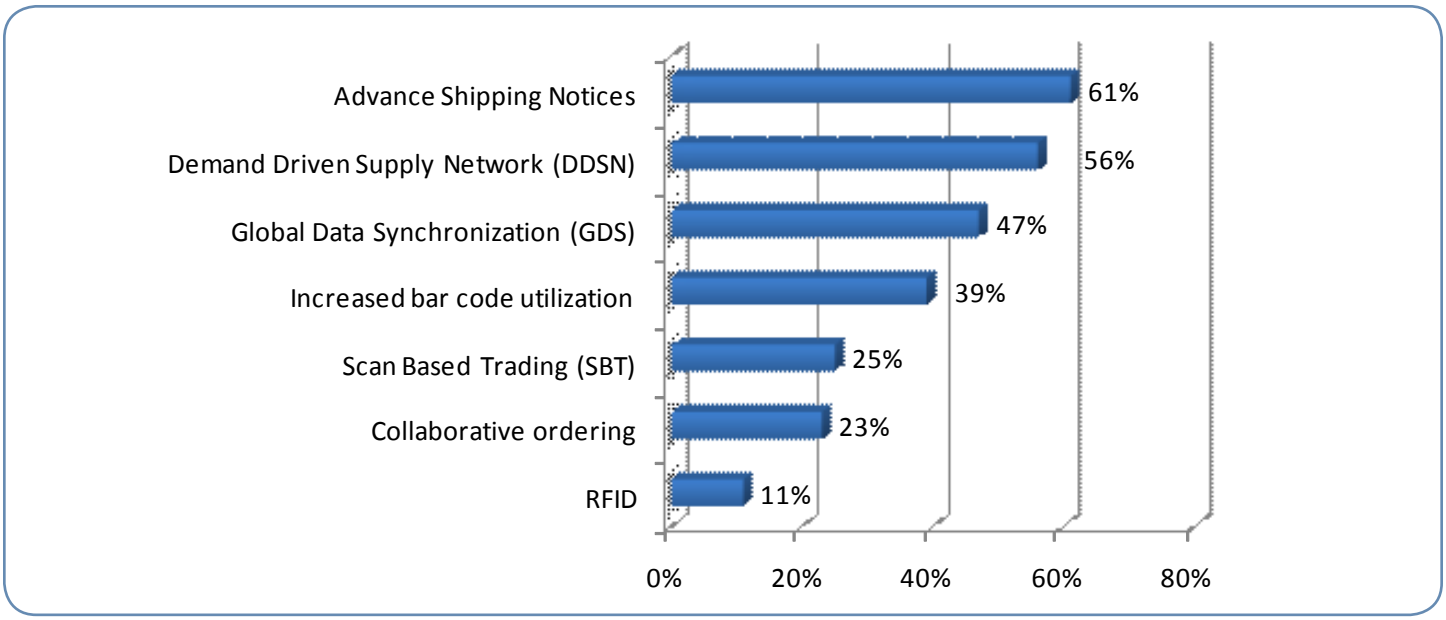
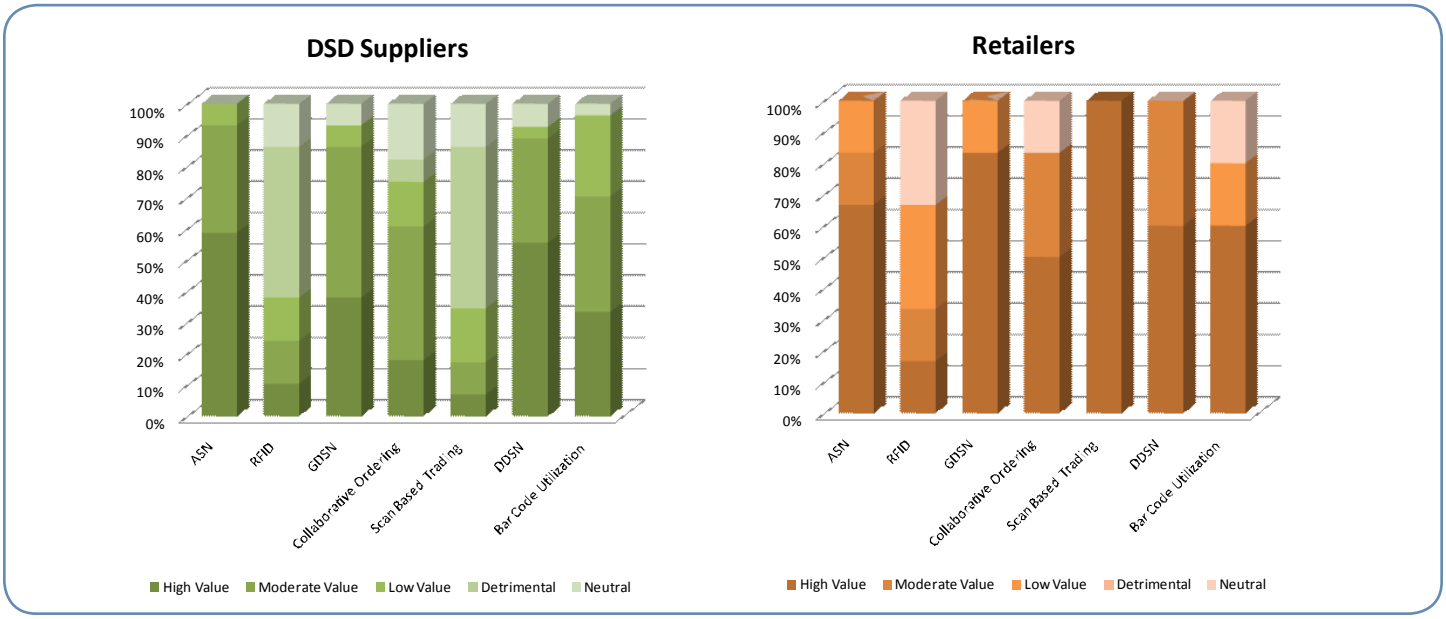


Fig. 6: DSD Supplier & Retailer Ratings of Value Potential for Different Initiatives



Pursuing other initiatives has the potential to both limit and improve the business case for EPC/RFID.
Many of the projects that EPC/RFID currently competes with are considered prerequisites or necessary foundations for EPC/RFID implementation by most organizations ("prerequisites" may not be formally required, but are seen as important foundation elements). Respondents were given a list of 17 technology and business initiatives and asked which were considered prerequisites for implementing EPC/RFID in DSD. All 17 were rated "important" or "very important" by a

majority of respondents, DSD suppliers and retailers alike. These items may not be technically required to use EPC/RFID, but rather may be considered key to maximizing value from EPC/RFID systems or making adoption worth the effort. However, business benefits delivered by implementing prerequisites may leave less value potential for EPC/RFID to claim.

Some of the necessary precursors are major initiatives and/or require participation by trading partners. These developments will take time, and are consistent with the respondents' long-term outlook on when conditions will be favorable for pursuing EPC/RFID.

While the general outlook for near-term ROI is not encouraging, respondents did acknowledge EPC/RFID holds at least moderate potential to improve some specific processes. The majority of DSD suppliers and retailers said EPC/RFID technology has medium or high value potential for ASN reconciliation, shelf/stock/code date management, delivery and receiving, and returnable asset management (see Fig. 8). They differed on many other process improvement opportunities, with retailers generally seeing more value potential than DSD suppliers. Figure 7 summarizes the overall outlook for the value in using EPC/RFID in DSD processes, and Figure 8 highlights specific processes where the majority of DSD suppliers and retailers feel the technology has medium to high value potential.

Fig. 7: Summary of Perceived EPC/RFID Value for Various Process Steps

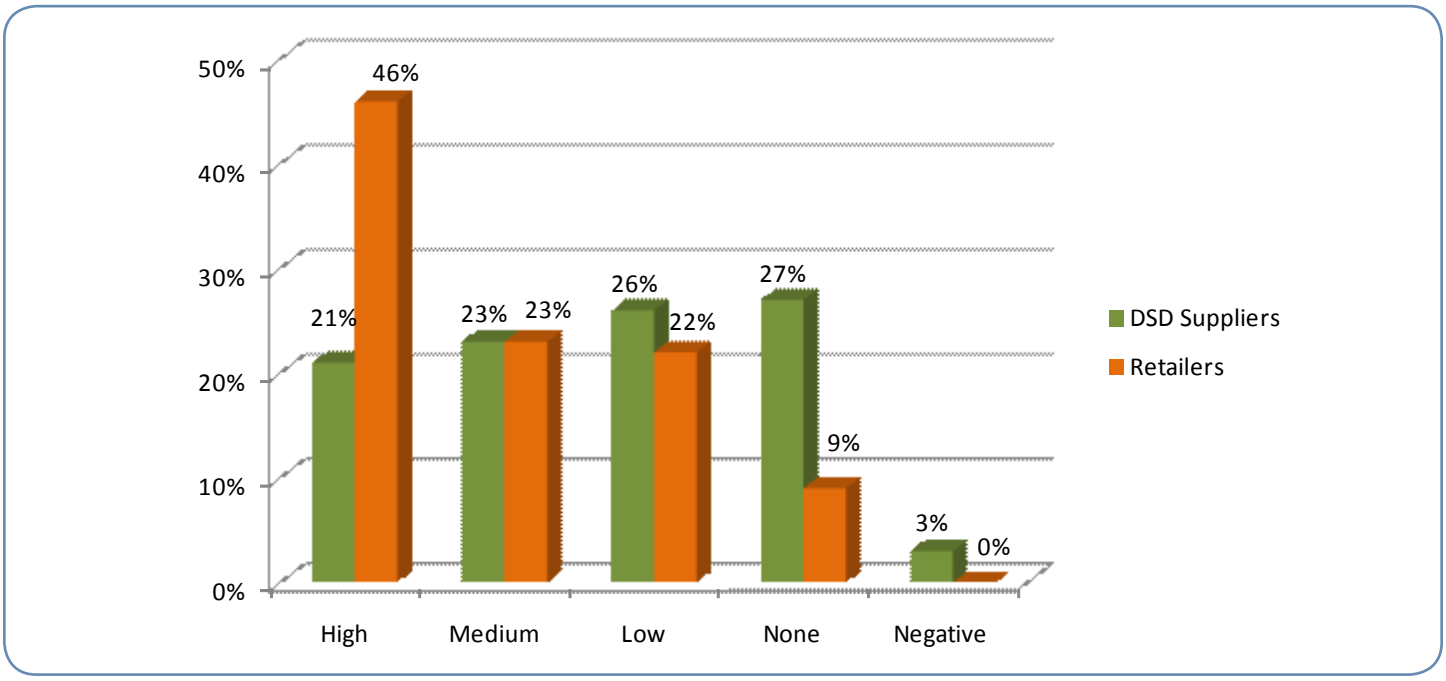
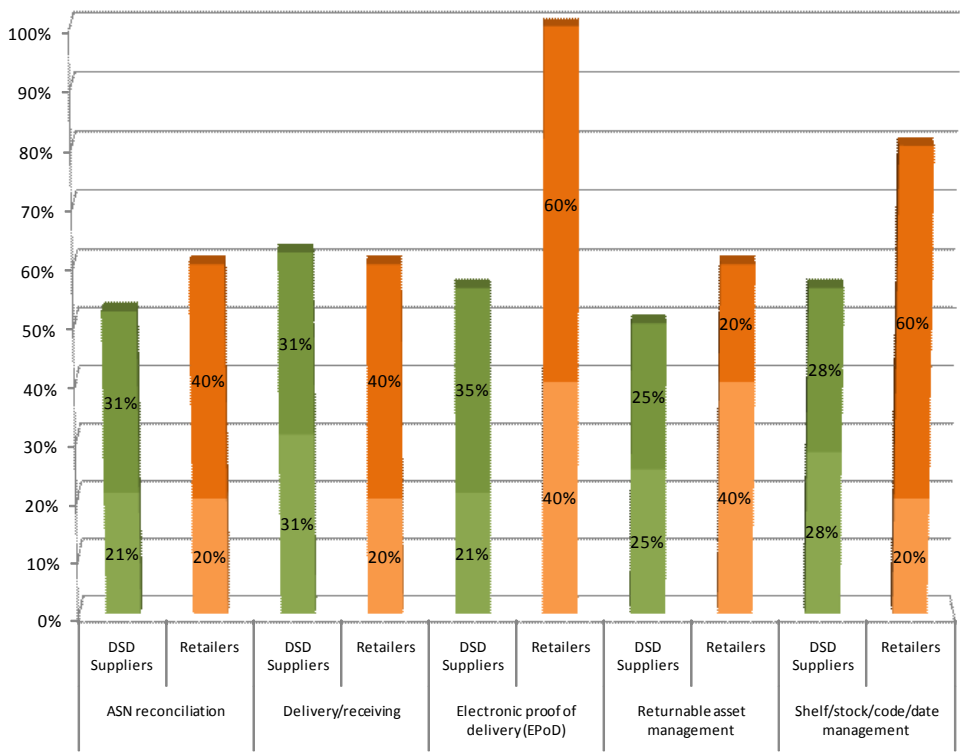


Fig. 8: DSD Process Steps Where Majority of DSD Supplier & Retailer Respondents See Medium to High Value Potential for EPC/RFID (darker color is "high", lighter color is "medium")



Considering the skepticism over EPC/RFID's value potential and the lack of consensus on which business processes would benefit most from the technology, the GCI DSD Working Group believes DSD products and processes should be considered "EPC Challenged[1]" at this time according the framework the Grocery Manufacturers of America (GMA) established for assessing EPC/RFID's value potential for specific product categories. (For details about the GMA designations and framework, see the GMA report EPC/RFID: Proposed Industry Adoption Framework, which is available at www.gmaonline.org/publications/index.cfm.) The "EPC Challenged" designation for EPC/RFID in DSD is given based on real-world conditions today and is subject to change.

Companies surveyed showed more confidence in the strength of obstacles to adopting EPC/RFID technology than in the benefits they would obtain by doing so. The best DSD processes to apply EPC/RFID, the business value to doing so, and the cost and complexity of adoption are all uncertain. The risks and rewards of using alternative technologies or pursuing other strategies are better understood, and are currently deemed to hold more business value for DSD suppliers and retailers. Therefore the GCI EPC/RFID Subcommittee recommends suppliers and retailers prioritize EPC/RFID adoption in DSD behind warehouse products and operations and the other initiatives referenced throughout this report.

1 The GMA defines "EPC Challenged" as: "Products or scenarios that do not have foreseeable benefit potential in the near term and present significant deployment challenges. This tier requires focused testing and potentially additional research and development efforts by the technology and research community to make EPC/RFID work."

Technology performance, prices and business conditions can all change quickly and alter the value proposition and adoption climate. Therefore this report does not represent the final conclusion about the suitability of EPC/RFID technology for DSD, but rather encourages continued dialogue and planning based on current conditions and perceptions. In that spirit, we make the following recommendations:

- Trading partners should identify and acknowledge the business processes that are unique for DSD products and plan accordingly when determining EPC/RFID pilots and roll-outs.
- Consider DSD operations to be "EPC Challenged" according to the GMA EPC/RFID Adoption Framework.
- DSD operations and products should follow warehouse delivery for EPC/RFID implementation.
- Focus on receiving, ASN reconciliation, proof-of-delivery and returnable asset management operations as the first potential DSD processes for RFID.
- Pursue Global Data Synchronization and increased use of EDI and ASNs.
- Initiate and maintain dialogue with trading partners about potential process improvements.
- Continue to monitor EPC/RFID activity in the industry and by trading partners.
- Monitor EPC/RFID technology developments.

The Recommendations section provides the complete list of the GCI EPC/RFID Subcommittee's recommendations and the rationale behind them, which cites data and analysis presented throughout the report.

The value potential and perception for EPC/RFID technology is influenced by multiple factors and will change, and it is important to remember that more than half respondents did report moderate to high value potential for ASN reconciliation, EPoD, shipping/receiving and returnable asset management processes. As DSD trading partners get more put more precursors in place and EPC/RFID adoption becomes more widespread, its value proposition may become more favorable.

The following sections provide more data, details and analysis of the general themes and findings described here. See Appendices A (total responses), B (DSD supplier responses) and C (retailer responses) for complete survey results.

Scope and Methodology

The Global Commerce Initiative's DSD Working Group and EPC/RFID subcommittee sought to create an assessment of the perceived value of EPC/RFID technology specifically for DSD. This report presents the data and leading conclusions from that effort, which centered on an online survey of consumer goods supplier and retailer members of the GCI DSD Working Group the EPC/RFID subcommittee conducted in November and December, 2007. GCI Working Group members include representatives from retailers, beverage, snack food, dairy, bakery and other DSD category manufacturers, plus distributors, technology providers, industry associations and other interested parties. Appendix A shows the complete survey and results. Appendices B and C show results for supplier and retailer respondents, respectively.

Prior to the survey, the subcommittee attempted to identify and rate value opportunities for EPC/RFID in DSD operations by asking GCI DSD Working Group members to complete a worksheet. The worksheet presented 15 process steps (which were different for DSD suppliers and retailers) and respondents were asked to rate the potential value for using EPC/RFID at various packaging levels for each process step. The intent was to gather enough data to make recommendations regarding which processes and products were EPC Advantaged, EPC Challenged, or EPC Testable, in accordance with the previously developed framework established by the Grocery Manufacturers of America. The worksheet is presented as Appendix D.

The worksheet was distributed to the consumer goods supplier and retailer members of the DSD Working Group during the summer of 2007, but a low response rate did not yield enough data to draw meaningful conclusions and led to questions about how strongly GCI members were involved in EPC/RFID. There was some belief that worksheet recipients lacked the EPC/RFID experience to complete the worksheet. Despite the attention given to high-profile retail and supply chain EPC/RFID programs, there was a sense that use of the technology was not that widespread or seen as a high priority among DSD suppliers and retailers.

The survey was developed to probe these issues. It departed from the original worksheet by asking not only about the potential value of EPC/RFID technology for specific operations, but also how respondents viewed the value of EPC/RFID relative to other technologies and strategic initiatives their companies could pursue.

The online survey was conducted in November and December, 2007. The survey was open to 111 consumer goods supplier and retailer members of the GCI DSD Working Group, and all were invited to participate. Respondents include a cross section of DSD suppliers and retailers of different sizes and categories. The majority of respondents are based in North America, but work for multinational companies. Some companies have more than one member in the DSD Working Group. The response rate measured by organization was 43 percent (Coincidentally, the response rates for supplier and retail organizations each also equaled 43 percent). A total of 36 completed surveys were received. Of these, 29 respondents identified themselves as consumer goods suppliers, 6 as retailers, and 1 as “other” (see Fig. 9). Most respondents identified themselves as being in management roles, followed by IT, with a few specifying operations or other functions (see Fig. 10).

Respondents were promised confidentiality and will not be identified individually. Research and communications firm Burnell Reports was engaged to collect and organize response data and had access to individual responses, which could not be viewed by GCI members. Burnell Reports conducted follow-up interviews with some respondents to provide additional context for the data.

Fig. 9: Respondent Organizations

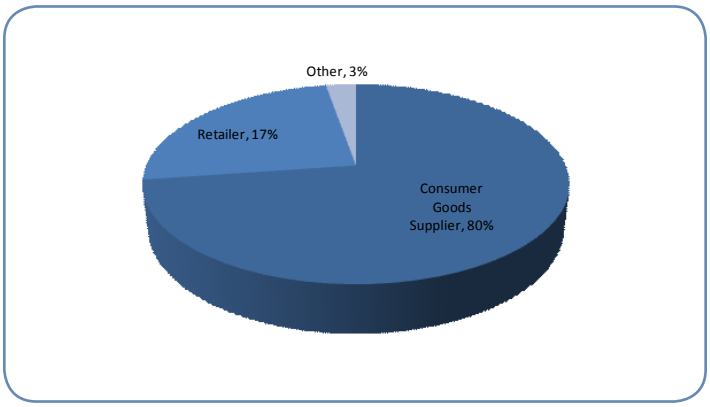
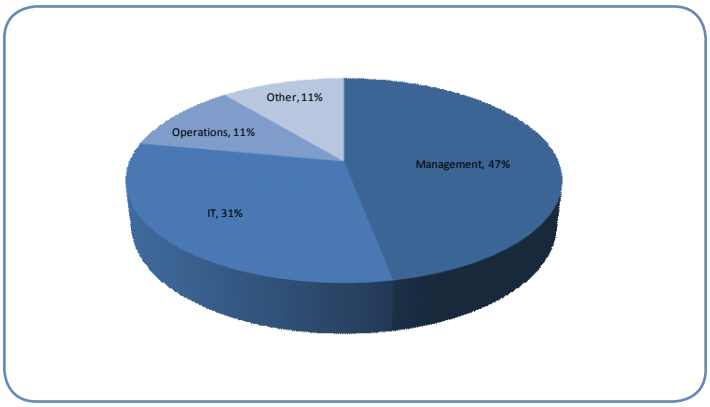
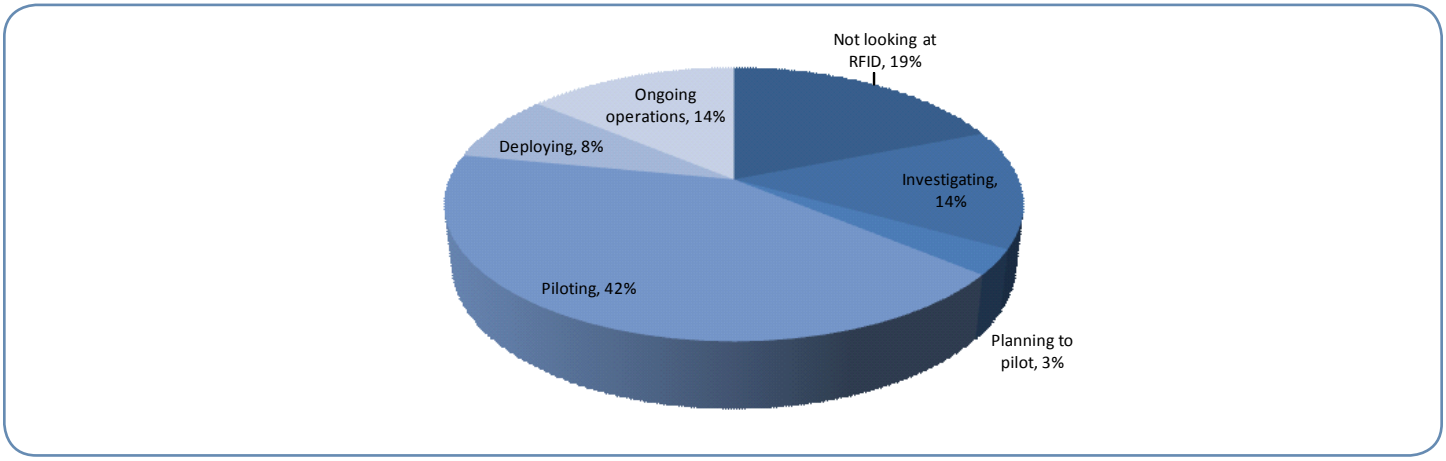


Fig. 10: Primary Job Function of Respondents



Most respondent organizations have some experience with EPC/RFID (Fig. 11), although about a fifth are not looking at the technology. When the survey was conducted, 14 percent of respondents were already using EPC/RFID in their ongoing operations, another 8 percent were deploying, and 42 percent were piloting. This activity includes RFID use throughout the organization (e.g. for warehouse or manufacturing operations) and is not specific to EPC/RFID use in DSD operations. More detail about the volume and packaging level of EPC/RFID activity is presented in figures 12 through 17.

Fig. 11: EPC/RFID Activity at Respondent Companies



After the respondent data was collected and tabulated, a sampling of participants were interviewed to provide additional context. This report was produced based on analysis and review of user data and information from interviews.

Fig. 12: Respondents' EPC/RFID Experience

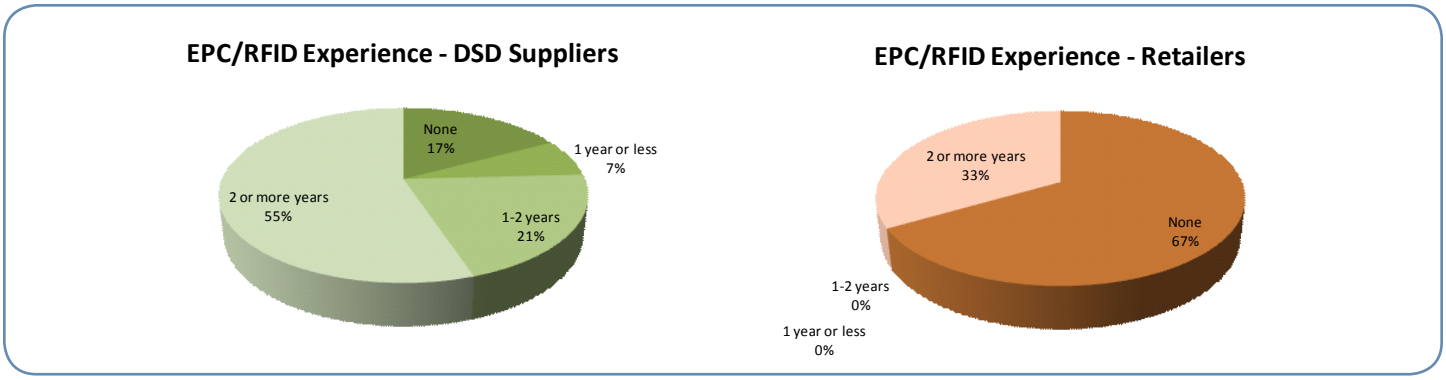


Fig. 13: EPC/RFID Experience by Number of Stores

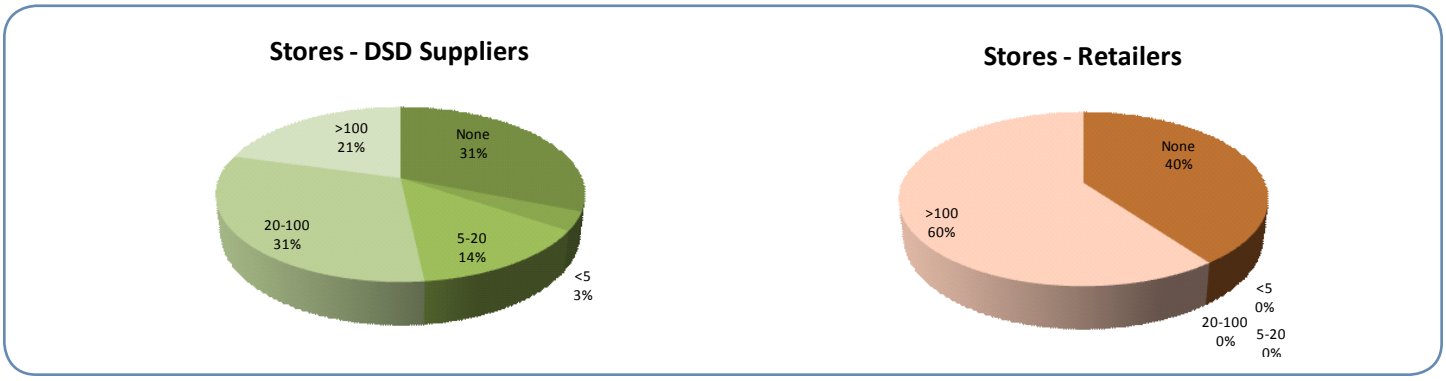


Fig. 14: EPC/RFID Experience by Number of SKUs

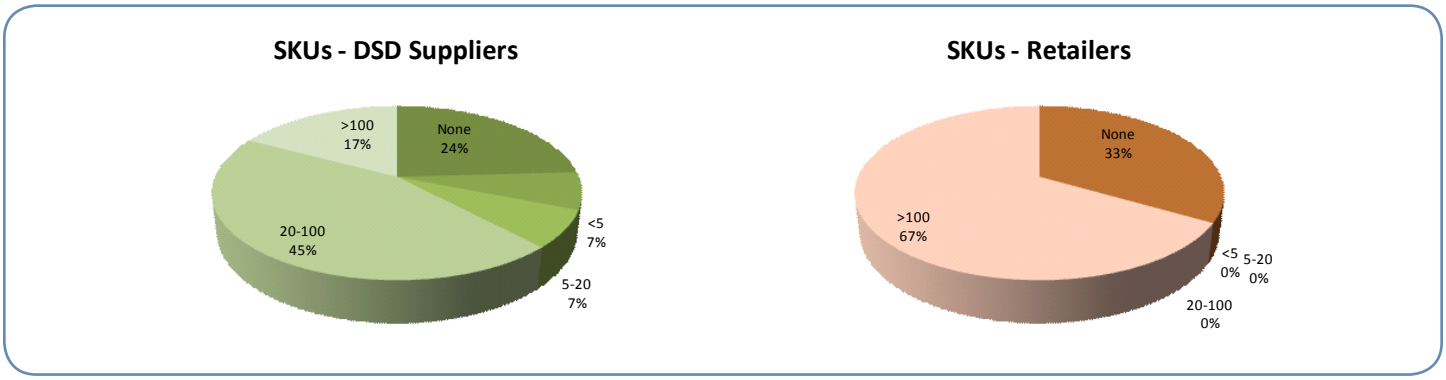


Fig. 15: EPC/RFID Experience by Number of Trading Partners

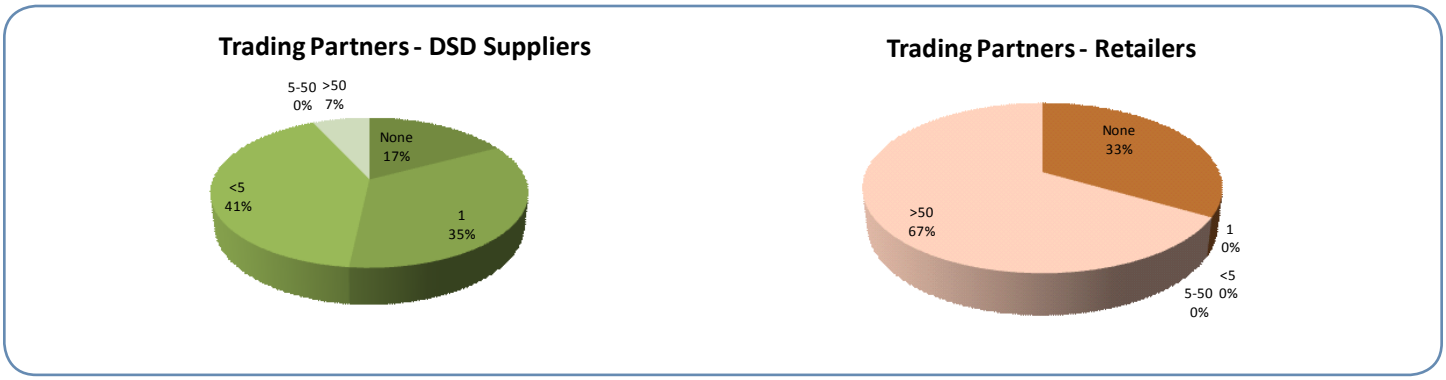


Fig. 16: EPC/RFID Experience by Percent of Volume

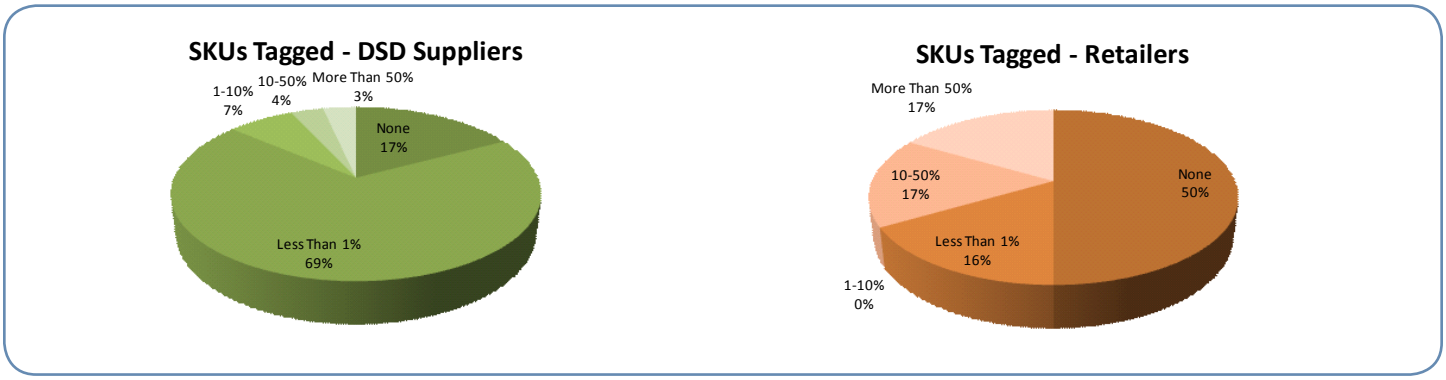
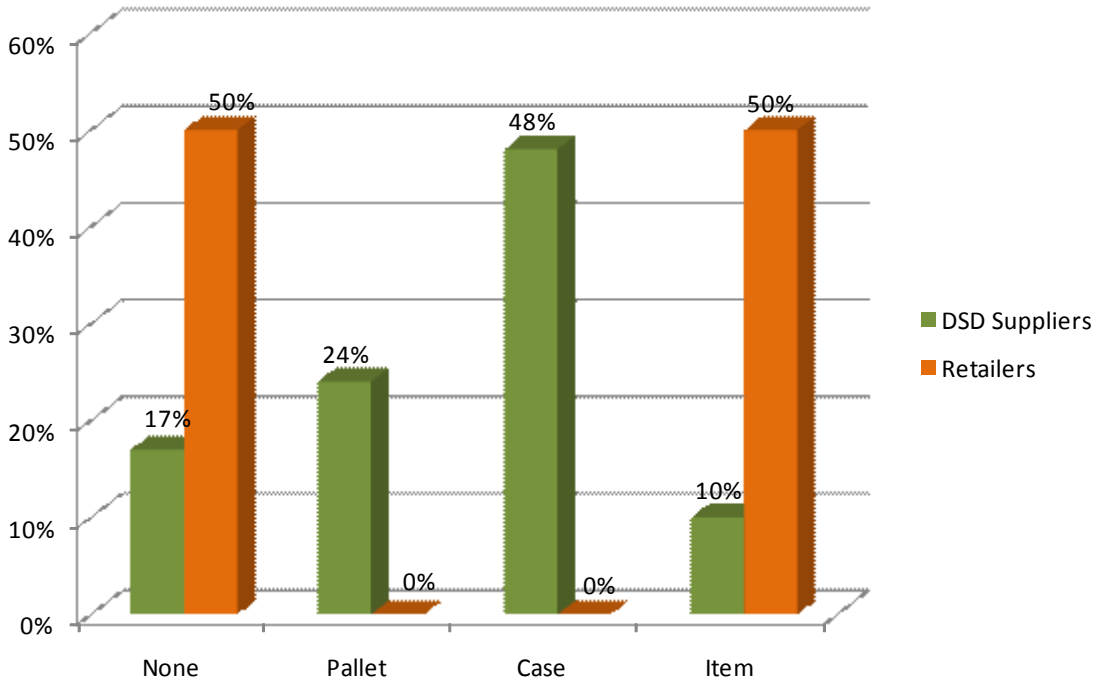


Fig. 17: Lowest Level of Tagging



Perceived Value for EPC/RFID in DSD

Adoption momentum for EPC/RFID in direct store delivery is very likely to lag other technology implementations and strategy initiatives because EPC/RFID is widely perceived to have lower value potential, as documented in Figures 5 and 6 in the Executive Summary (which are also presented below for convenient reference). Retailers rated EPC/RFID's value potential last out of seven options presented and DSD suppliers rated it next-to-last. Figure 5 represents the aggregate response.

Fig. 5: Initiatives With High Value Potential for the Organization (all respondents answering "yes")

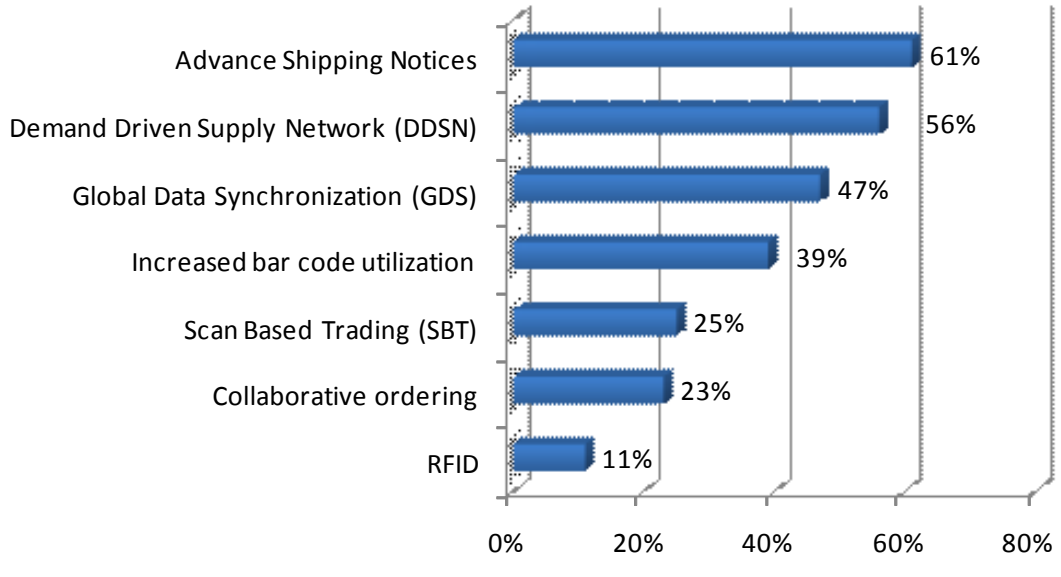
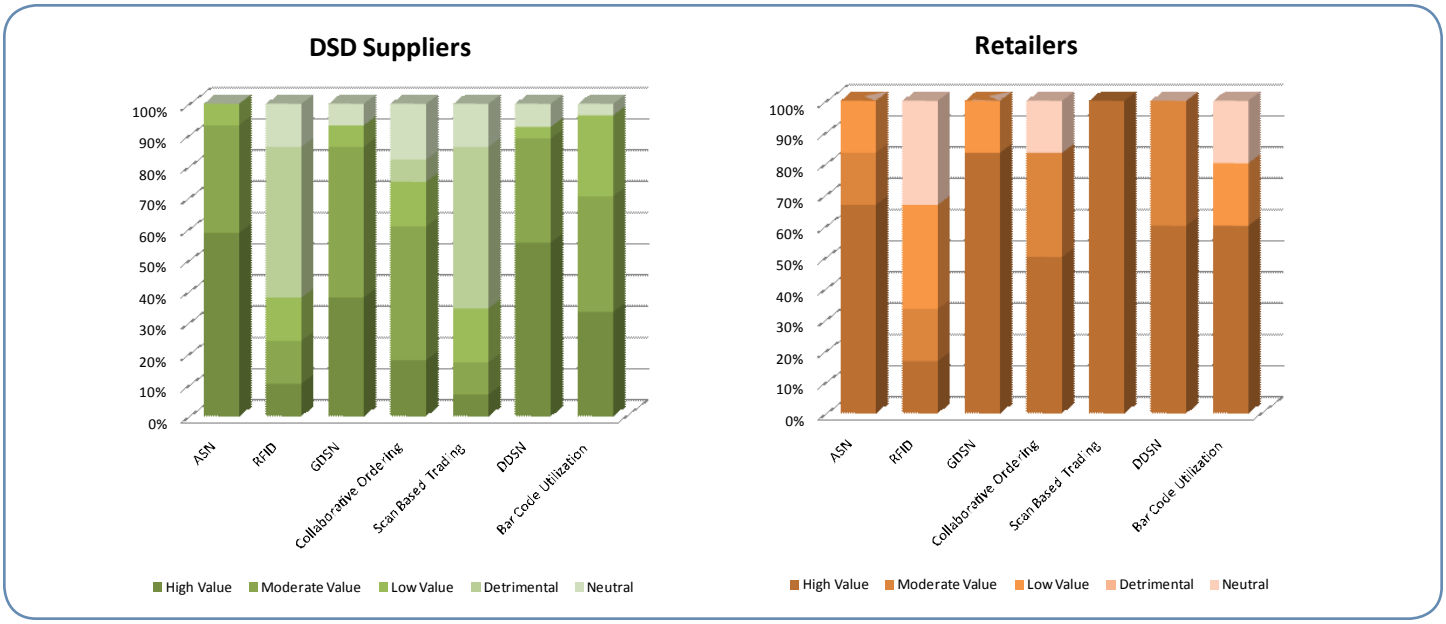


Fig. 6: DSD Supplier & Retailer Ratings of Value Potential for Different Initiatives



This is not to say respondents do not see value potential for EPC/RFID – they clearly do for several processes – but the benefits are not considered low-hanging fruit. As a result, RFID initiatives are not likely to be funded before other productivity initiatives until there is broad adoption by trading partners.

During interviews, respondents noted that not only does EPC/RFID have lower value potential than other options they can pursue, they also believe it will be harder to implement. The value potential of increased bar code utilization reported in Fig. 8 illustrates this point well. Many retail processes are already bar code centric, but 60 percent of retailers said increased bar code utilization holds high value potential for their organizations, compared to only 17 percent who said EPC/RFID holds high value potential.

Results are similar for less mature technologies and strategies. Compared to bar coding, Demand Driven Supply Networks (DDSN) are a relatively new concept, are much less widely used and may be more difficult to implement. Yet 60 percent of retailers and 56 percent of DSD suppliers say Demand Driven Supply Networks hold high value potential for their organizations, again far outstripping EPC/RFID. Also, DDSN does not require critical mass adoption before delivering value. Nearly half of DSD suppliers said EPC/RFID would be detrimental to their organizations; no retailers said EPC/RFID would be detrimental.

Low expectations of EPC/RFID value are also reflected by other data. Respondents who are skeptical about EPC/RFID greatly outnumber those who are optimistic, as Fig. 4 shows. Respondents also expressed low expectations of attaining positive ROI and identified many other specific, significant obstacles to adoption.

While the general EPC/RFID value perception is not good, DSD suppliers and retailers did acknowledge the technology holds value potential for some specific processes. Respondents were presented a list of 13 areas of DSD operations and asked to rate EPC/RFID's value potential for each. Figure 8 (from the Executive Summary, repeated below) highlights the most promising areas, while Figure 18 provides the complete data for DSD suppliers and retailers -- the darker the bar, the higher the perceived value to using EPC/RFID in the process.

Fig. 8: DSD Process Steps Where Majority of DSD Supplier & Retailer Respondents See Medium to High Value Potential for EPC/RFID (darker color is "high", lighter color is "medium")

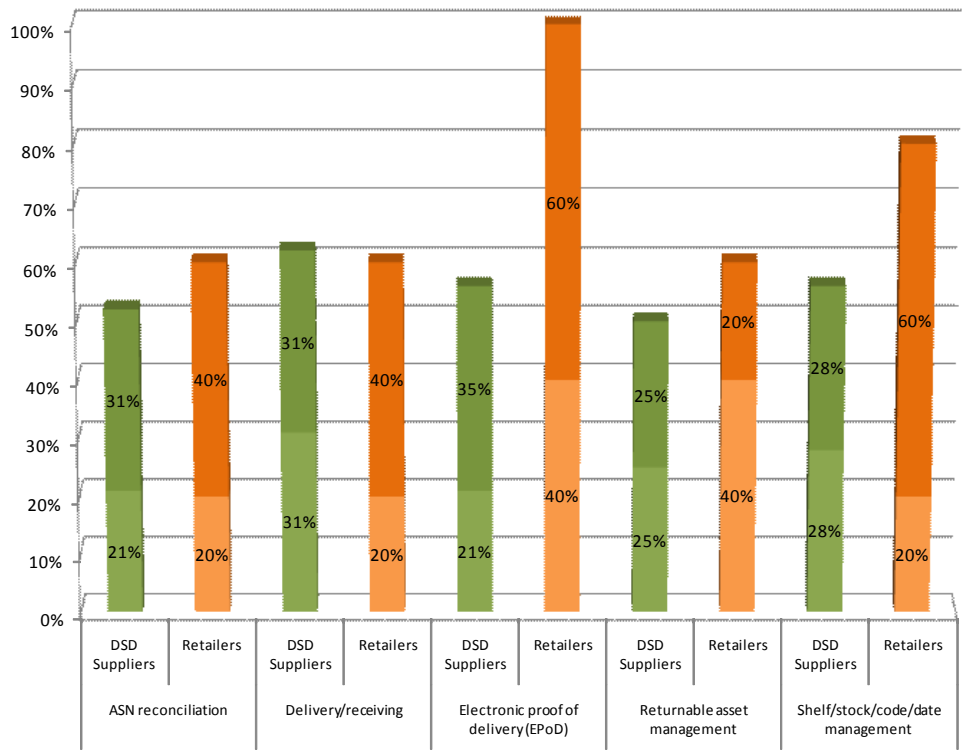


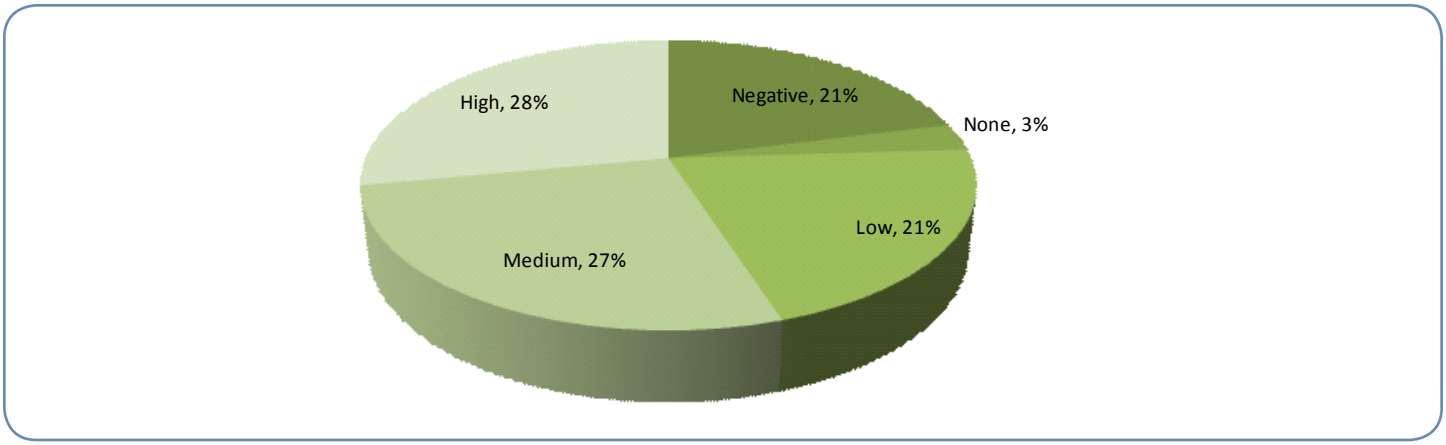
Fig. 18: DSD Supplier and Retailer Perceptions of EPC/RFID Value for Various Processes



In general, DSD suppliers see more potential in EPC/RFID for delivery-related activities compared to retailers, who seem to view it more as a potential resource for item management. For example, 100 percent of retailers said they expected to find high value from using EPC/RFID for recall management, compared to only 31 percent of suppliers, nearly as many of whom (28 percent) said the technology would provide no value for that operation. Retailers also showed strong optimism for value potential for track and trace, cold chain, and shelf/stock/code/date management.

DSD suppliers and retailers showed some consensus on the value for using EPC/RFID in delivery/receiving operations, ASN reconciliation, electronic proof of delivery (EPoD) and returnable asset management. A majority of DSD suppliers and retailers also said EPC/RFID had medium to high value potential for shelf/stock/code/date management, although many suppliers expressed reservations about using EPC/RFID for this process -- 21 percent said EPC/RFID would provide negative value and another 25 percent said it held no or low value potential (see Fig. 19). Overall, the majority of DSD suppliers said they expected to find low, no or negative value from EPC/RFID in nine of the 13 categories; there were only four categories where a majority suppliers expected to find more than low value.

Fig. 19 DSD Supplier Views on EPC/RFID Value for Shelf/Stock/Code/Date Management



Delivery/receiving, ASN reconciliation, EPoD, shelf/stock/code/date management, and returnable asset management represent the common ground where the majority of DSD suppliers and retailers each see moderate to high value potential. These areas represent a logical starting point for further investigation and potential pilots. They also illustrate some of the challenges that await integration of EPC/RFID into DSD operations. For example, while 62 percent of DSD suppliers say EPC/RFID has medium to high potential to improve delivery/receiving operations, the majority (79 percent) of suppliers also assert open delivery windows at stores must be in place before pursuing EPC/RFID. No retailer respondents said open delivery windows are essential for their EPC/RFID adoption (but the survey did not ask their willingness to provide them). Prerequisites merit an entire section of this report, but were referenced here to show how EPC/RFID perceptions and value are influenced by many other factors.

DSD suppliers likely see limited EPC/RFID value potential for many processes because they already spend considerable time managing inventory and merchandising in stores and have continually improved these processes. Consider, 40 percent of retailers expect to find high value from using EPC/RFID for demand forecasting, while only 17 percent of suppliers see this level of value potential and 38 percent say EPC/RFID would provide no value at all for the process. Results for unsaleables management are similar. The differences in expected value in using EPC/RFID for specific processes serve as a reminder of the differences between DSD and warehouse-delivery products. It also suggests retailers could benefit by adapting DSD principles to manage other product categories.

There are clear differences between DSD suppliers and retailers on the ROI potential from using EPC/RFID in direct store delivery operations and the general optimism for the technology. Data on the expected value in using EPC/RFID in specific processes helps to explain these differences. It also shows some areas of agreement that suppliers and retailers can use as a starting point for further investigations.

Prerequisites to EPC/RFID Implementation

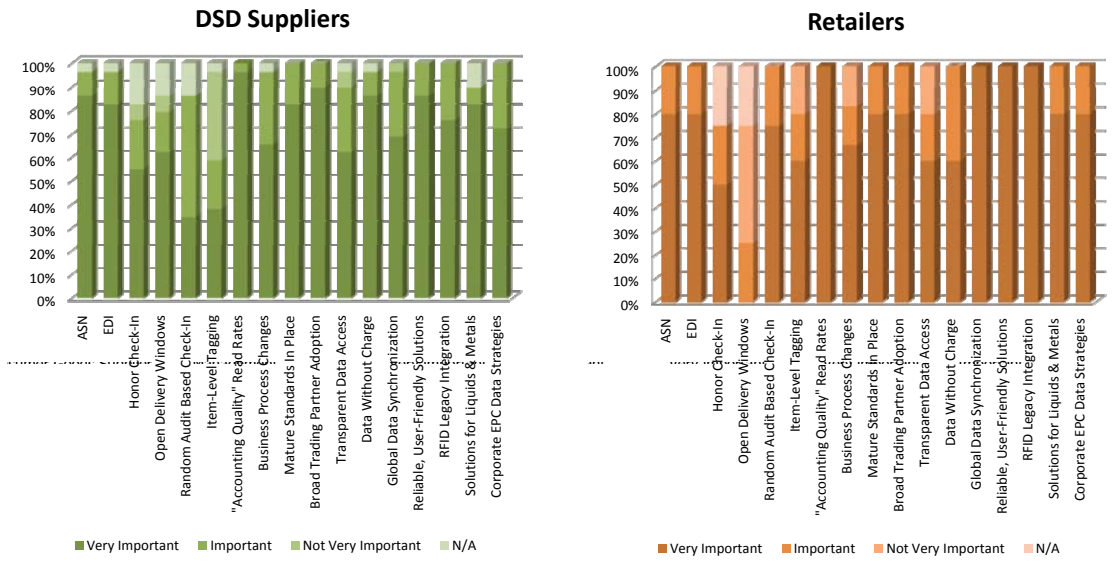
While there are strong differences of opinion about where EPC/RFID could provide value in DSD operations, there is strong consensus that many business processes and complementary technologies should be in place before EPC/RFID implementation is pursued. These items may not be technically required to use EPC/RFID, but rather may be considered key to maximizing value from EPC/RFID systems or making adoption worth the effort. There is also a strong sense that EPC/RFID will only be practical, valuable and worth pursuing if adoption is widespread.

Fig. 20: Most Important Prerequisites

Top Prerequisites to EPC/RFID Adoption			
Rating (max = 3.0)	**DSD Supplier Prerequisite**	**Rating**	**Retailer Prerequisite**
2.9	Accounting quality read rates	3	Accounting quality read rates
2.9	Broad adoption by trading partners	3	Global Data Synchronization
2.8	Reliable, user-friendly technology	3	Reliable, user-friendly technology
2.8	Mature standards	3	RFID solutions that integrate to legacy systems

Survey respondents showed more consensus on the importance of prerequisites than any other area. The survey listed 17 topics related to business processes, technology infrastructure, trading partner relationships, EPC/RFID technology and other far-reaching topics, and asked which were important to have in place before pursuing EPC/RFID adoption for DSD. All prerequisites were rated “important” or “very important” by a majority of DSD suppliers and retailers (see Figure 21).

Fig. 21: Importance of Prerequisites to EPC/RFID Implementation in DSD



It is difficult to draw specific conclusions from the ratings because so many are regarded as very important. The differences between higher- and lower-rated prerequisites are not that great, but there are a few areas of notable alignment and divergence that are interesting to look at more closely.

DSD suppliers rated “Accounting quality read rates” the single most important prerequisite for pursuing EPC/RFID implementation, slightly ahead of “Broad adoption by trading partners.” “Accounting quality read rates” was also top-rated by retailers, although three others tied it in importance: “Global Data Synchronization,” “Reliable, user-friendly solutions” and “RFID solutions that integrate to legacy systems.” All four of these prerequisites received the top importance rating by 100 percent of retailer respondents.

About 80 percent of all respondents said “solutions that work for liquids and metals” are a very important prerequisite, which is notable because so many DSD-category products are beverages and/or have metal or foil packaging. EPC/RFID vendors and users must make considerable progress before accounting-quality read rates are achieved. Respondents noted EPCglobal Gen 2-standard performs better than previously developed UHF EPC/RFID technologies, but Gen 2 performance needs further improvement to be viable for many operations.

During discussions, respondents who have tested and used EPC/RFID systems reported read rates considerably less than 100 percent. Perhaps more significant, EPC/RFID read rates were well below those produced by legacy bar code systems, so EPC/RFID technology did not represent an improvement. EPC/RFID results were often for pallet and case tracking; item-level tracking could be expected to produce lower read rates, necessitating even more technology improvement since many prospective users feel item-level tracking applications are necessary to make EPC/RFID adoption beneficial.

Item-level tagging was actually one of the lower-rated precursors to adoption (it ranked last among DSD suppliers and 14th out of 17 among retailers). Flexible check-in processes (open delivery windows, honors-based check-in, etc.) were also among the lowest-rated. For context, it again bears noting that these prerequisites were rated as important or very important by the majority of suppliers, so their ordinal rankings shouldn’t be used to infer they are not important.

Only two prerequisites attracted a significant number of “not very important” responses: 50 percent of retailers said open delivery windows were not a very important prerequisite to EPC/RFID adoption, and 38 percent of DSD suppliers said the same about item-level tagging.

Many of the prerequisites identified are not widely in place, which could explain why many respondents feel it will be several years before conditions are favorable for pursuing EPC/RFID adoption in direct store delivery (which is covered in the Industry Readiness section). Some of the prerequisites will require significant commitments to implement (e.g. Global Data Synchronization), others have been pursued for years but are still not fully penetrated (ASN, EDI), and some developments would represent a significant change in how DSD operations are conducted (unattended check in, open delivery windows).

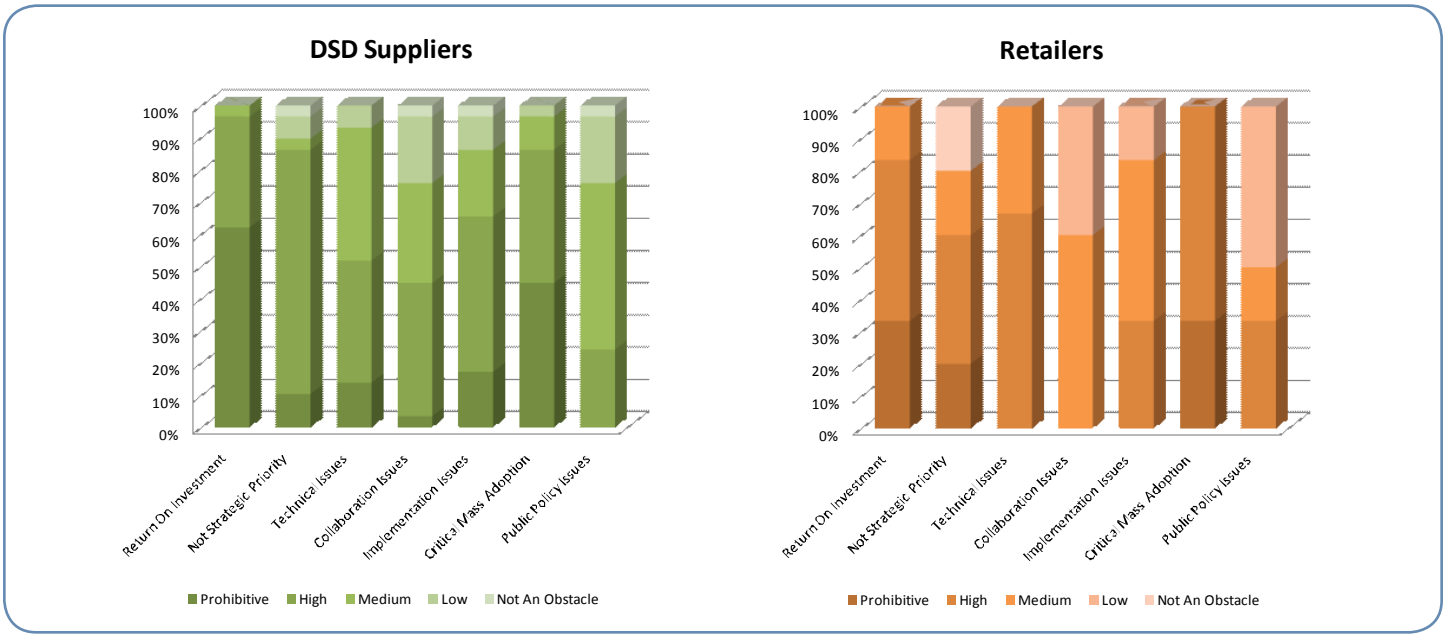
Respondents feel technology stability will be achieved well before other conditions will become favorable for EPC/RFID adoption. A more complete analysis of expectations for future developments and accompanying data are presented in the Industry Readiness section.

Obstacles to Adoption

This report has already identified ROI as the leading inhibitor to using EPC/RFID technology in DSD operations: 83 percent of retailers and 97 percent of suppliers say return on investment is a prohibitive or high obstacle to adoption. But even if EPC/RFID tags and equipment were free and EPC-enabled business processes were proven to provide strong business value, significant implementation obstacles would remain. Respondents recognize these obstacles, and currently believe they will remain in place for years. These obstacles contribute to another: companies do not appear willing to pursue EPC/RFID adoption themselves until the technology is being adopted by many of their trading partners, creating a chicken-and-egg situation. New business cases, traceability requirements, technology breakthroughs or industry initiatives could break the cycle.

As with prerequisites, the survey presented a list of potential obstacles to EPC/RFID adoption in direct store delivery and asked respondents to rate them. Figure 22 presents complete respondent data on obstacles. In general, technical issues are considered lesser obstacles than business-oriented (e.g. ROI, priority, collaboration) topics.

Fig. 22: How DSD Suppliers & Retailers Rate EPC/RFID Implementation Obstacles



The data does not present the full picture of obstacles to EPC/RFID adoption. The well-documented and widely-held belief that multiple precursors are necessary before pursuing EPC/RFID should also be considered an obstacle, since most of the prerequisites have not been satisfied. Companies are currently putting more emphasis on some of these initiatives and other programs than they are on addressing specific EPC/RFID obstacles. Note in Fig. 22 that many DSD suppliers and retailers say that EPC/RFID is not a strategic priority at their organizations. This obstacle is consistent with the belief (Fig. 5) that other initiatives have more potential value for DSD than EPC/RFID adoption. Respondents with management roles rated strategic priority as a higher obstacle than IT and operations professionals. IT staff consider technical issues less of an obstacle than management and operations respondents.

The majority of DSD suppliers rated five of the seven obstacles as “high” or “prohibitive.” The majority of retailers rated four of seven obstacles as high or prohibitive, and all were rated at least medium. Figures 23 and 24 detail the obstacles rated as high or prohibitive by the majority of DSD suppliers (Fig. 23) and retailers (Fig. 24).

Fig. 23: Leading Obstacles to Supplier Adoption of EPC/RFID in DSD

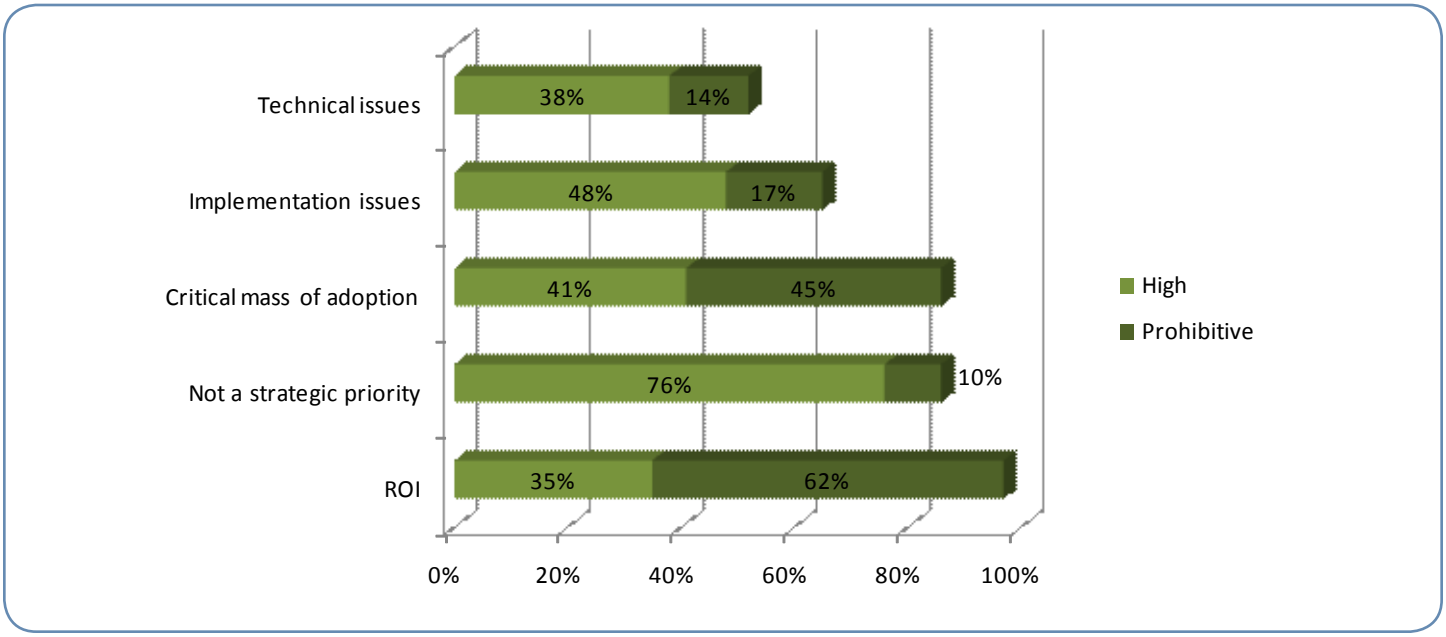
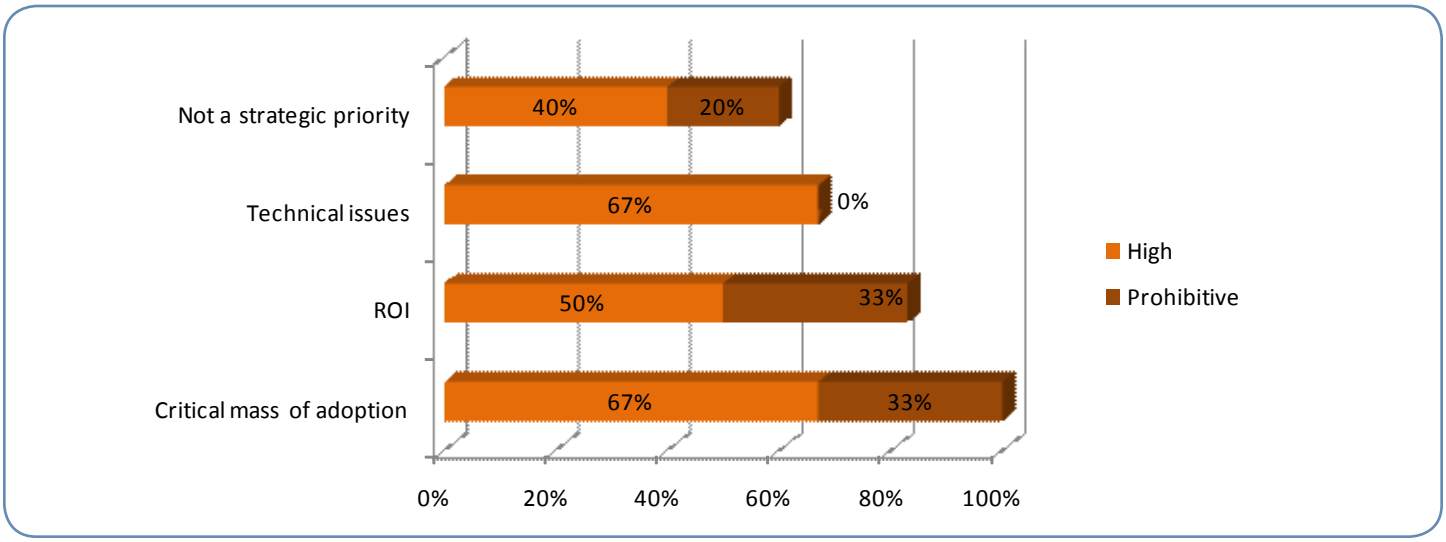


Fig. 24: Leading Obstacles to Retailer Adoption of EPC/RFID in DSD



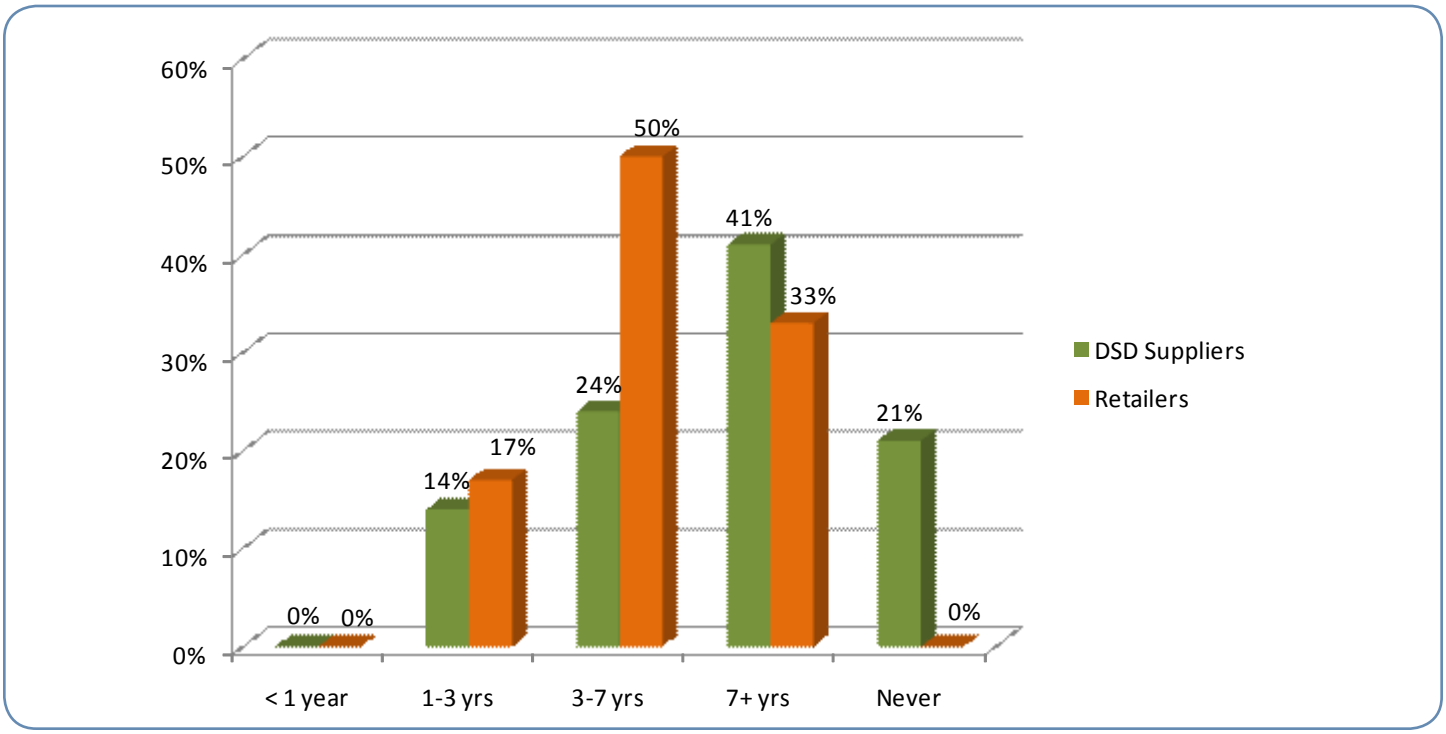
DSD suppliers and retailers each identified ROI, critical mass, and priority issues as the leading obstacles to adoption, but differed on the importance of other obstacles. Retailers see public policy issues as less of an obstacle than do suppliers. Retailers consider collaboration as much less of an obstacle than do DSD suppliers -- the topic represents one of the biggest divisions measured in the entire survey. No retailers said collaboration would be a high or prohibitive obstacle to EPC/RFID adoption, while nearly half (45 percent) of suppliers said it would. There is little insight into why these differences exist. Whatever the reason, different expectations about collaboration could become an obstacle.

Overall there is enough consensus among DSD suppliers and retailers to see that there are many clear and significant obstacles to EPC/RFID implementation. There is general recognition and agreement on most obstacles. Differences of opinion surface as to how long these obstacles will persist and are documented in the following Industry Readiness section.

Industry Readiness

The prerequisites indicate DSD suppliers and retailers generally are not ready for EPC/RFID, and data about its performance and cost suggest the technology is not currently ready for wide scale adoption. Most of the industry is not yet ready to embrace adoption, which is widely considered to have less value potential than other technology and business programs and is currently prioritized behind them in most organizations. It is important to make clear that the survey represents a snapshot in time. When the survey was taken in November/December 2007, 42 percent of respondents were piloting EPC/RFID technology and 22 percent were using it in ongoing operations (this data includes EPC/RFID use throughout the organization and is not specific to DSD operations). Most EPC/RFID activity has been small scale, as documented in Figures 13 through 16. Experience from these systems could greatly change expectations.

Fig. 25: DSD Supplier and Retailer Expectations of Favorable Conditions for Trading Partner EPC/RFID Adoption



Data highlights the challenge of gaining the critical mass that many companies feel is necessary to make EPC/RFID use worthwhile. Many respondents have a long-term outlook as to when trading partner adoption of EPC/RFID will be favorable for them to pursue it for their own DSD operations, as Figure 25 shows. Sixty-two percent of DSD suppliers feel it will be at least seven years before trading partner conditions are favorable to pursuing EPC/RFID in DSD, while a majority of the retailers feel conditions will become favorable within seven years. However, a third of retailers feel it will take longer, and 21 percent of DSD suppliers say trading partner adoption conditions will never be favorable for them to pursue EPC/RFID for themselves.

Respondents feel trading partner adoption will be one of the last conditions to become favorable for pursuing EPC/RFID. Figures 26 (DSD suppliers) and 27 (retailers) show when respondents expect various conditions to be favorable for pursuing EPC/RFID in DSD operations, and Figure 3 provides an aggregate summary. Respondents show more confidence that EPC/RFID technology will be viable than in the DSD industry's ability to harness it and benefit. Technology-related issues (e.g. standards, stability and system costs) are generally expected to become favorable sooner than business issues, such as developing internal capabilities for using EPC/RFID, industry adoption, and notably, ROI.

Fig. 26: DSD Suppliers - When Will Conditions be Favorable to Pursuing EPC/RFID adoption in DSD?

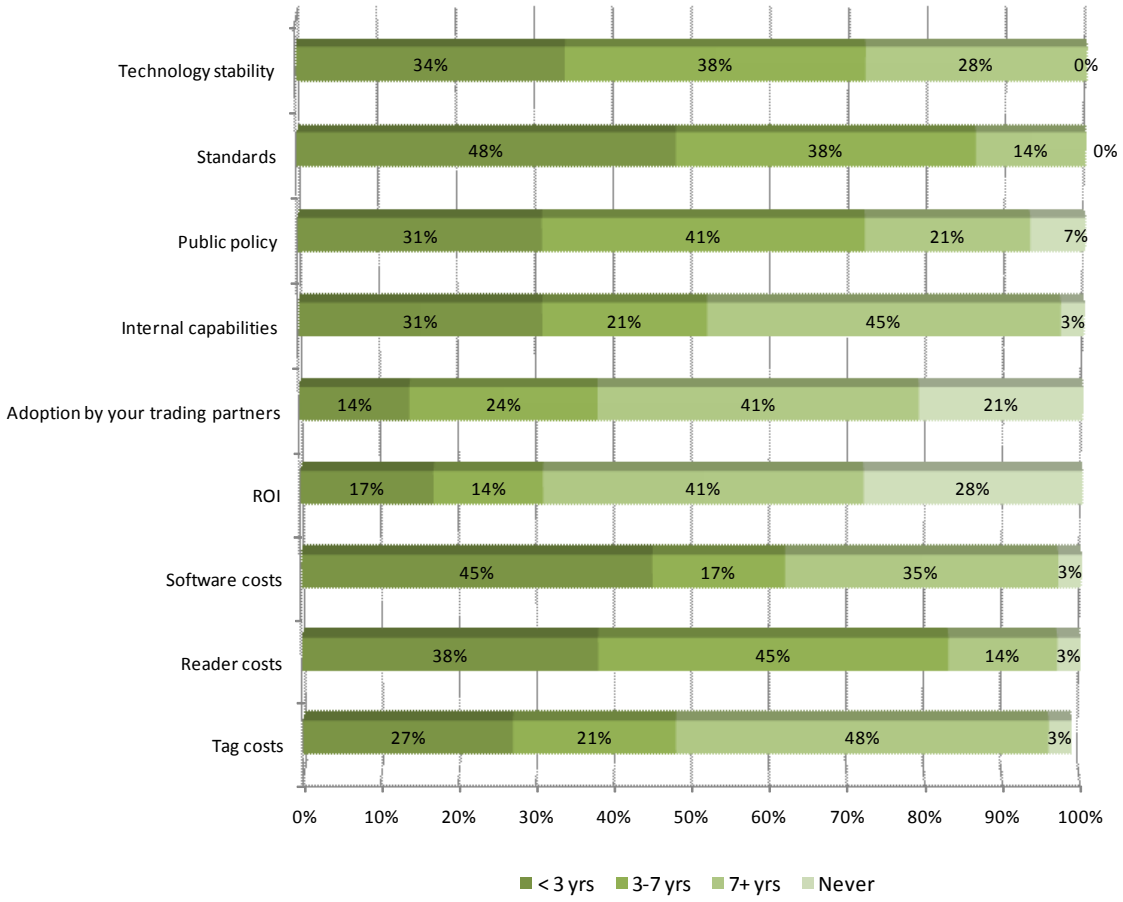


Fig. 27: Retailers - When Will Conditions be Favorable to Pursuing EPC/RFID adoption in DSD?

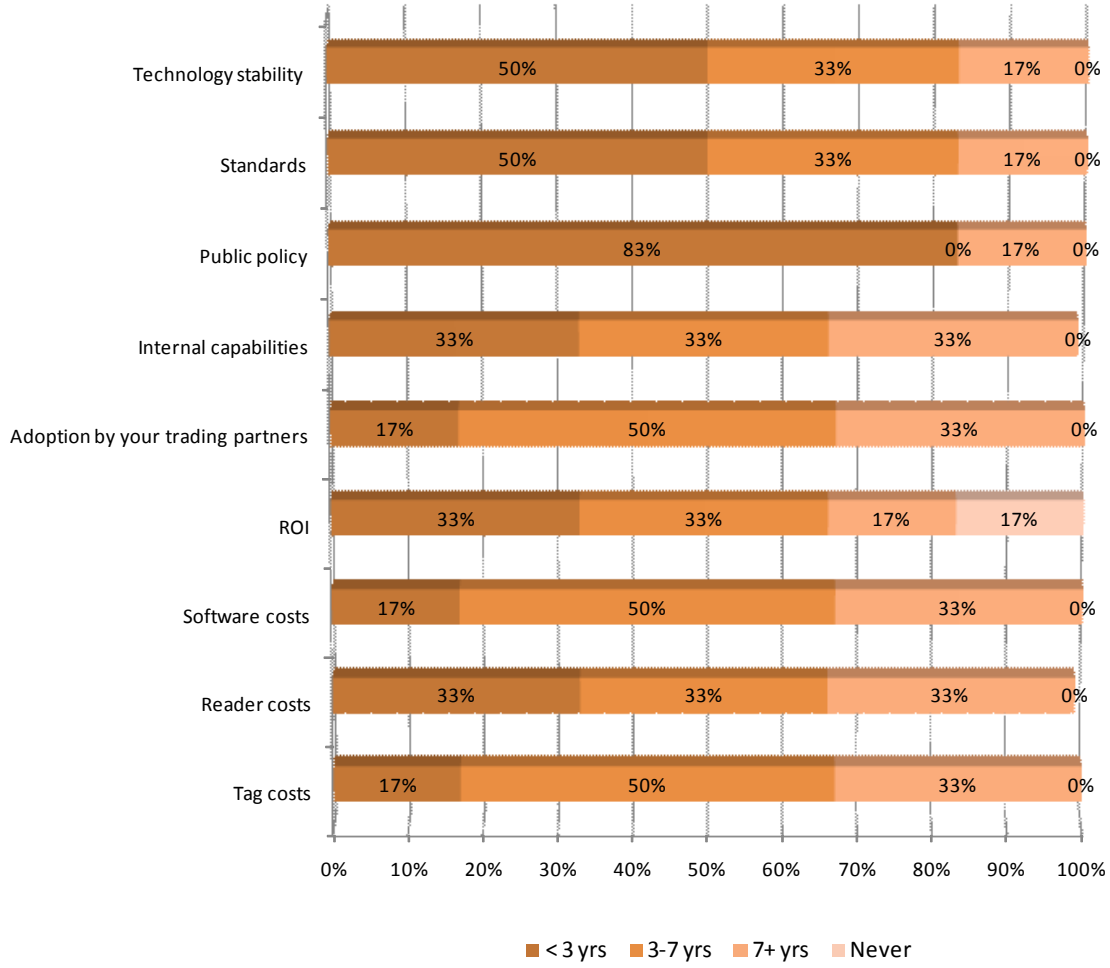
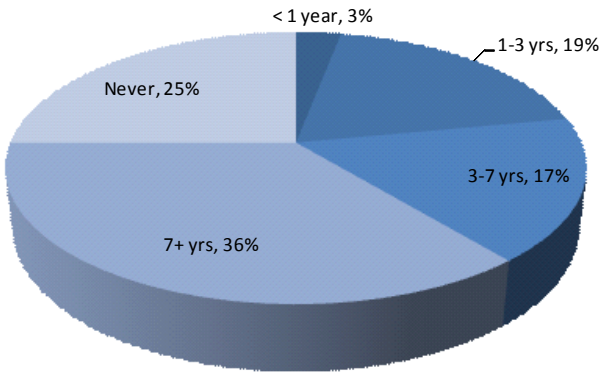


Fig. 3: Expectations for Favorable ROI Conditions to Pursue EPC/RFID (all respondents)

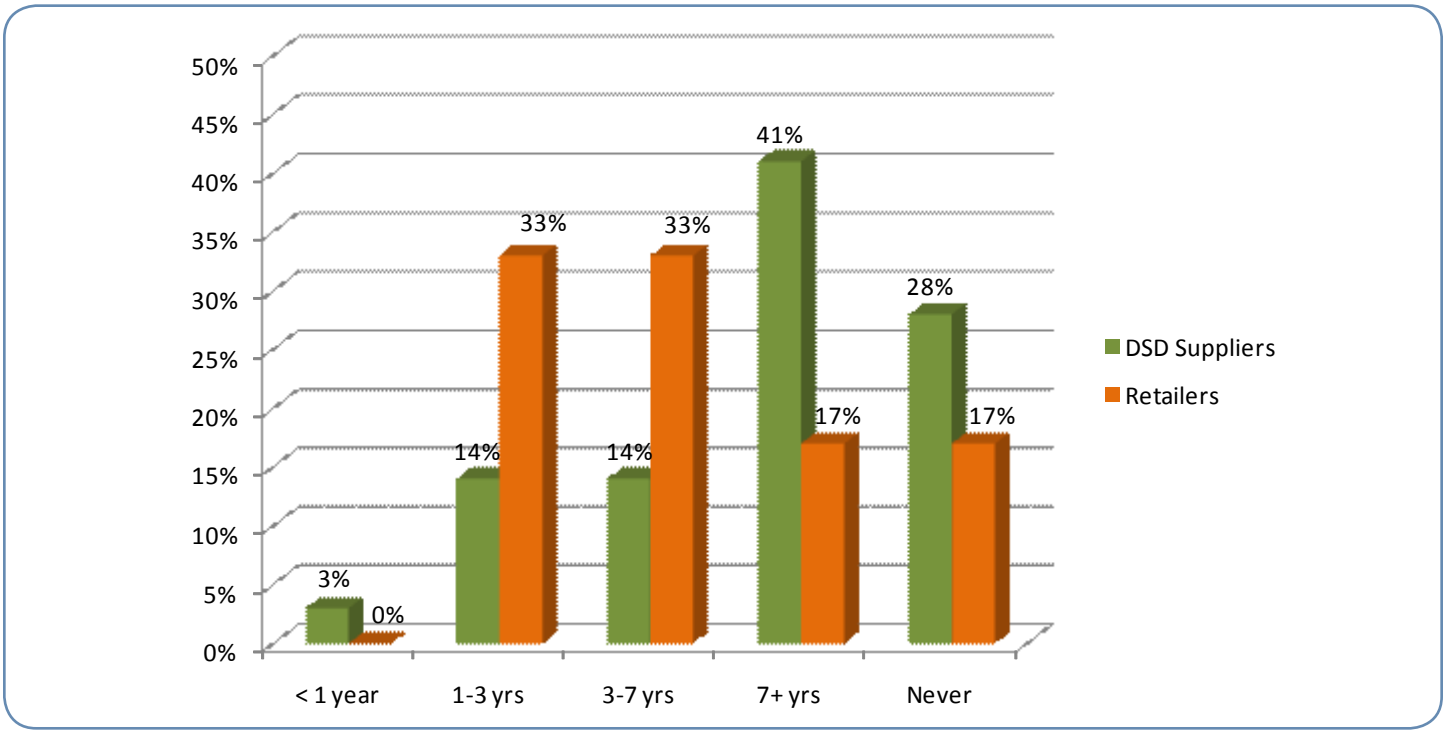


Nearly half of respondents feel that within three years, EPC/RFID standards and technology stability will be favorable for pursuing the technology. Respondents take a longer view on tag, reader and software costs, which most feel won't become favorable for at least three to seven years. Suppliers are especially skeptical about tag costs; slightly more than half feel favorable pricing is at least seven years away.

Tag costs have always attracted considerable attention for retail and consumer goods operations, but respondents seem to recognize that getting value from EPC/RFID systems depends on much more than tag prices. Consider that only 3 percent of DSD suppliers and zero retailers said tag costs would never be favorable to pursuing EPC/RFID technology, but 28 percent of suppliers and 17 retailers said ROI would never be favorable.

Of all the issues, respondents feel ROI will take the longest to become favorable.
Figure 28 below segments the data by supplier and retailer respondents.

Fig. 28: DSD Supplier & Retailer Expectations of Favorable EPC/RFID ROI Conditions



An important measure of a company's readiness to pursue EPC/RFID adoption is how many of the essential precursors the company and its trading partners have in place. Respondents rated all 17 prerequisites presented as important or very important to have in place before implementing EPC/RFID in direct store delivery. The survey did not ask how many of these requirements have been satisfied, but it is accepted that many of these practices are not fully in place throughout the industry. For example, EDI and ASNs have held promise to reduce paperwork and streamline operations for years, but many companies haven't completely implemented these systems with trading partners. Global Data Synchronization can be more complex to implement, and is much less widely used. EPC/RFID will rarely be used in standalone systems, so its adoption depends in large part on how companies prepare their systems and processes to accommodate EPC/RFID data.

Most companies engaged in DSD do not appear to have sufficient IT infrastructures and business systems in place to benefit from EPC/RFID data, judging by self-reported attitudes about requirements and current conditions. Companies also feel they lack the expertise to take advantage of EPC/RFID; only 11 percent said they would have internal capabilities to pursue EPC/RFID within a year, and the majority said it would be at least three years before they had these capabilities. While there have been some notable early adopters of EPC/RFID, a large new wave of adoption does not appear imminent in DSD.

Recommendations

Companies surveyed showed more confidence in the strength of obstacles to adopting EPC/RFID technology than in the benefits they would obtain by doing so. The best DSD processes to apply EPC/RFID, the business value to doing so, and the cost and complexity of adoption are all uncertain. The risks and rewards of using alternative technologies or pursuing other strategies are better understood, and are currently deemed to hold more business value for DSD suppliers and retailers. Therefore the GCI EPC/RFID Subcommittee recommends suppliers and retailers prioritize EPC/RFID adoption in DSD behind warehouse products and operations and the other initiatives referenced throughout this report.

Technology performance, prices and business conditions can all change quickly and alter the value proposition and adoption climate. Therefore this report does not represent the final conclusion about the suitability of EPC/RFID technology for DSD, but rather encourages continued dialogue and planning based on current conditions and perceptions. In that spirit, we make the following recommendations:

- **Trading partners should identify and acknowledge the business processes that are unique for DSD products and plan accordingly when determining EPC/RFID pilots and roll-outs.** DSD categories do not always provide the same opportunities for improved inventory visibility as products delivered through retail warehouses and distribution centers. Retailers and suppliers should carefully consider how EPC/RFID could impact process steps and operations when considering rollouts.

- **Consider DSD operations to be "EPC Challenged[2]" according to the GMA EPC/RFID Adoption Framework.** The implementation obstacles, industry readiness and questionable value for using EPC/RFID in DSD operations at this time warrant the "EPC Challenged" designation, especially considering other optional technology and strategy options are considered to have more value potential and less risk.

- **DSD operations should follow warehouse delivery for EPC/RFID implementation.** EPC/RFID use cases and benefit opportunities are better understood for warehouse/distribution center operations than they are for DSD. Experience gained from these efforts is considered valuable for determining if and how EPC/RFID should be used in DSD.

- **Focus on receiving, ASN reconciliation, proof-of-delivery and returnable asset management operations.** There was the most consensus among DSD suppliers and retailers that EPC/RFID technology holds value potential for these processes. Therefore they are a logical starting point for discussions on process changes and potentially for EPC/RFID pilots.

- **Pursue Global Data Synchronization, increased use of EDI and ASNs.** These activities were all rated as having more business value potential than EPC/RFID and were also all considered prerequisites to adoption. Pursuing these initiatives can provide an immediate benefit and position the company to benefit from EPC/RFID technology in the future.

- **Initiate and maintain dialogue with trading partners about potential process improvements.** As the survey data showed, DSD suppliers and retailers have differences of opinion over which processes could most be improved with technology. Discussing these processes and business challenges openly could lead to a better overall understanding of needs and where EPC/RFID or other technology enablers could best be applied. These discussions could also lead to GDS projects, new receiving operations and other changes with recognized value potential.

- **Continue to monitor EPC/RFID activity in the industry and by trading partners.** Companies consider EPC/RFID adoption by their trading partners as one of the most important prerequisites to pursuing adoption themselves. Companies should especially watch for new processes, initiatives and applications that could provide opportunities for additional value or address challenges, and also note whether legacy EPC/RFID programs are expanding to the point where critical mass may be approaching.

- **Monitor EPC/RFID technology developments.** Technology improvements and product price changes tend to be incremental, but breakthroughs are always possible. The cost-benefit ratio for EPC/RFID and other technologies is constantly changing and bears periodic watching.

2 Ibid.

Conclusion

Many DSD suppliers and retailers have some experience and current involvement with EPC/RFID systems, but feel they are years away from realizing significant business benefits from the technology. Potential users are skeptical about earning a positive return on investment from EPC/RFID adoption, which is the biggest issue faced by DSD operators. Most companies acknowledge EPC/RFID technology performance has improved and expect it to continue to get better and cost less, but remain largely unconvinced that these developments will translate to favorable ROI for at least the next several years.

There is also a collective wait-and-see attitude about EPC/RFID in DSD: a strong majority of companies do not want to pursue the technology until it has been widely adopted by their trading partners. These attitudes help create a long-term horizon for EPC/RFID to penetrate DSD.

DSD suppliers and retailers have differing opinions regarding which business processes could benefit most from EPC/RFID, but they showed consensus that EPC/RFID has some value potential for ASN reconciliation, receiving, proof of delivery and returnable asset management. These all represent starting areas for DSD suppliers and retailers to investigate EPC/RFID's value potential. However, many other process and technology initiatives were all rated as having higher business value potential than EPC/RFID, and will likely be prioritized ahead of it. These include global data synchronization, collaborative ordering, ASNs and increased bar code utilization. There was also consensus that numerous prerequisites should be put in place before pursuing EPC/RFID projects. Respondents acknowledged during discussions and interviews that conditions could change and EPC/RFID won't necessarily remain a low-priority consideration.

Direct store delivery operations do not appear to be good candidates for EPC/RFID use at this time because of the uncertain value proposition, especially compared to more established alternatives. Technology performance and cost concerns, plus insufficient IT infrastructures and business processes to take advantage of EPC data, also contribute to the general lack of momentum or enthusiasm for the technology throughout the industry. Despite these challenges, many companies maintain a neutral outlook toward EPC/RFID technology for DSD operations. The industry remains undecided about the role and value EPC/RFID will play, and the technology remains largely unproven. These circumstances will certainly change, but how and when are far from certain.

It is important to remember that the conclusions and data represent a snapshot of attitudes at the time the survey was taken. Outlooks on EPC/RFID's role and value can change. One value opportunity should not be overlooked: EPC/RFID can be valuable today if the topic can brings retailers and suppliers together to discuss how various processes and technologies could improve DSD operations. We hope this report stimulates and helps guide these discussions and is another resource for the industry's ongoing collaborative efforts to improve direct store delivery.

Additional Resources

This report, survey and the DSD evaluation tool were developed by the Global Commerce Initiative (GCI) DSD Working Group's EPC/RFID subcommittee. GCI members include representatives from retailers, beverage, snack food, bakery, dairy and other DSD category manufacturers, distributors, technology providers, industry associations and other interested parties. GCI is the single unifying force that brings manufacturers and retailers together on a worldwide parity basis to simplify and enhance global commerce and improve consumer value in the overall retail supply chain. It is a global user group, and its charter is to drive the implementation of industry standards and best practices. The GCI Web site, www.gci-net.org, has additional information about EPC/RFID and DSD projects, contacts, meeting dates, previous reports, links to partner organizations and many more resources.

The following organizations have information and activities relevant to the use of EPC/RFID technology in DSD operations.

GMA/FPA was formed by the 2007 merger of the Grocery Manufacturers Association and the Food Products Association. The organization is involved in a variety of DSD, e-commerce and technology initiatives. The GMA portion of the Web site has several reports, white papers, position statements and transcripts of testimony to regulatory and government bodies regarding EPC/RFID. www.gmabrands.com/. The GMA set an excellent foundation for the industry to discuss and evaluate EPC/RFID technology in its report EPC/RFID: Proposed Industry Adoption Framework, which is available at www.gmaonline.org/publications/index.cfm.

EPCglobal develops, maintains and promotes the EPC network and standards, including Gen 2 and EPCIS. EPCglobal Web sites have EPC/RFID implementation guides, research and white papers about technical and business issues, backgrounders and technology definitions, public policy guidelines for using EPC/RFID on consumer goods, and more. www.epcglobalinc.org

GS1 is the global standards body that maintains the EAN-UCC system and is parent organization to EPCglobal. The GS1 Web site has complete information about EPC/RFID, bar code, e-commerce and other standards, implementation guides, plus links to EPCglobal and other GS1 organizations. www.gs1.org.

Appendix A: Total Survey Responses

GCI EPC/RFID Survey

1. I work for a:			
		Response Percent	Response Count
Consumer Goods Supplier		**80.6%**	29
Retailer		16.7%	6
Other (please specify)		2.8%	1
	answered question		**36**
	skipped question		**0**

2. My role is primarily:			
		Response Percent	Response Count
IT		30.6%	11
Operations		11.1%	4
Management		**47.2%**	17
Other (please specify)		11.1%	4
	answered question		**36**
	skipped question		**0**

3. Please indicate the current state of RFID at your company? (select one)		
	Response Percent	Response Count
Not looking at RFID	19.4%	7
Investigating	13.9%	5
Planning to pilot	2.8%	1
Piloting	**41.7%**	15
Deploying	8.3%	3
Ongoing operations	13.9%	5
	answered question	**36**
	skipped question	**0**

4. Please quantify your company's EPC/RFID experience:						
EPC/RFID experience						
	None	**1 year or less**	**1-2 years**	**2 or more years**		**Respor Coun**
Select	27.8% (10)	5.6% (2)	16.7% (6)	**50.0% (18)**		
SKUs						
	None	**Less than 5**	**5-20**	**20-100**	**More than 100**	**Respor Coun**
Select	25.0% (9)	8.3% (3)	5.6% (2)	**36.1% (13)**	25.0% (9)	
Stores						
	None	**Less than 5**	**5-20**	**20-100**	**More than 100**	**Respor Coun**
Select	**30.6% (11)**	2.8% (1)	13.9% (5)	25.0% (9)	27.8% (10)	
Trading partners						
	None	**1**	**Less than 5**	**5-50**	**More than 50**	**Respor Coun**
Select	19.4% (7)	27.8% (10)	**33.3% (12)**	0.0% (0)	19.4% (7)	
% of volume						

	None	Less than 1%	1-10%	10-50%	More than 50%	Respon Coun
Select	22.2% (8)	**58.3% (21)**	5.6% (2)	5.6% (2)	8.3% (3)	

Lowest tagging level

	None	Pallet level	Case level	Item level	Respon Coun
Select	22.2% (8)	19.4% (7)	**38.9% (14)**	19.4% (7)	
				answered question	
				skipped question	

5. What does your company think the prerequisites are for implementing EPC/RFID for DSD?

	Not very important	Important	Very important	N/A	Rating Average	Response Count
Advance Shipping Notice (ASN)	0.0% (0)	11.4% (4)	**85.7% (30)**	2.9% (1)	2.80	35
Electronic Data Interchange (EDI)	0.0% (0)	14.3% (5)	**82.9% (29)**	2.9% (1)	2.77	35
Honor based check-in (unattended)	5.9% (2)	20.6% (7)	**52.9% (18)**	20.6% (7)	2.06	34
Open delivery windows	11.8% (4)	17.6% (6)	**55.9% (19)**	14.7% (5)	2.15	34
Random audit based check-in	0.0% (0)	**47.1% (16)**	41.2% (14)	11.8% (4)	2.18	34
Item-level tagging	34.3% (12)	20.0% (7)	**42.9% (15)**	2.9% (1)	2.03	35
“Accounting-quality” read rates (high read rate accuracy)	0.0% (0)	2.9% (1)	**97.1% (33)**	0.0% (0)	2.97	34
Changes to current business processes	5.6% (2)	27.8% (10)	**63.9% (23)**	2.8% (1)	2.53	36
Mature standards in place	0.0% (0)	20.0% (7)	**80.0% (28)**	0.0% (0)	2.80	35
Broad adoption across trading partners	0.0% (0)	11.4% (4)	**88.6% (31)**	0.0% (0)	2.89	35
Transparent, unfettered access to trading partner data	8.6% (3)	25.7% (9)	**62.9% (22)**	2.9% (1)	2.49	35
Trading partners must have access to data without charge	0.0% (0)	14.3% (5)	**82.9% (29)**	2.9% (1)	2.77	35
Global Data Synchronization (GDS)	2.9% (1)	22.9% (8)	**74.3% (26)**	0.0% (0)	2.71	35
Reliable, user-friendly RFID	0.0% (0)	11.4% (4)	**88.6% (31)**	0.0% (0)	2.89	35

RFID solutions that integrate to legacy systems	0.0% (0)	20.0% (7)	**80.0% (28)**	0.0% (0)	2.80	35
Solutions that work for liquids and metals	0.0% (0)	8.6% (3)	**82.9% (29)**	8.6% (3)	2.66	35
Corporate strategies for EPC data	0.0% (0)	25.7% (9)	**74.3% (26)**	0.0% (0)	2.74	35
					answered question	**36**
					skipped question	**0**

6. What value potential do the following initiatives have for your organization?

	Detrimental	Neutral	Low Value	Moderate Value	High Value	Response Count
Advance Shipping Notice (ASN)	0.0% (0)	0.0% (0)	8.3% (3)	30.6% (11)	**61.1% (22)**	36
RFID	**38.9% (14)**	16.7% (6)	16.7% (6)	16.7% (6)	11.1% (4)	36
Global Data Synchronization (GDS)	0.0% (0)	5.6% (2)	8.3% (3)	38.9% (14)	**47.2% (17)**	36
Collaborative ordering	5.7% (2)	17.1% (6)	14.3% (5)	**40.0% (14)**	22.9% (8)	35
Scan Based Trading (SBT)	**41.7% (15)**	11.1% (4)	13.9% (5)	8.3% (3)	25.0% (9)	36
Demand Driven Supply Network (DDSN)	0.0% (0)	6.1% (2)	6.1% (2)	33.3% (11)	**54.5% (18)**	33
Increased bar code utilization	0.0% (0)	6.1% (2)	24.2% (8)	30.3% (10)	**39.4% (13)**	33
					answered question	**36**
					skipped question	**0**

7. How significant are the following obstacles for EPC/RFID adoption in DSD?

	Not an obstacle	Low	Medium	High	Prohibitive	Response Count
Return on investment (ROI)	0.0% (0)	0.0% (0)	5.6% (2)	38.9% (14)	**55.6% (20)**	36
Not a strategic priority	5.7% (2)	8.6% (3)	5.7% (2)	**68.6% (24)**	11.4% (4)	35
Technical issues	0.0% (0)	8.3% (3)	38.9% (14)	**41.7% (15)**	11.1% (4)	36
Collaboration issues	2.9% (1)	22.9% (8)	34.3% (12)	**37.1% (13)**	2.9% (1)	35
Implementation issues	2.8% (1)	11.1% (4)	25.0% (9)	**47.2% (17)**	13.9% (5)	36
Critical mass of adoption	0.0% (0)	2.8% (1)	8.3% (3)	**47.2% (17)**	41.7% (15)	36
Public policy issues (privacy, environment, etc.)	2.8% (1)	27.8% (10)	**44.4% (16)**	25.0% (9)	0.0% (0)	36
					answered question	**36**
					skipped question	**0**

8. When do you anticipate the following conditions to be favorable for pursuing EPC/RFID for your DSD operations?

	Less than 1 year	1-3 years	3-7 years	7+ years	Never	Response Count
Tag costs	2.8% (1)	25.0% (9)	25.0% (9)	**44.4% (16)**	2.8% (1)	36
Reader costs	5.6% (2)	33.3% (12)	**41.7% (15)**	16.7% (6)	2.8% (1)	36
Software costs	11.1% (4)	30.6% (11)	22.2% (8)	**33.3% (12)**	2.8% (1)	36
Return on investment (ROI)	2.8% (1)	19.4% (7)	16.7% (6)	**36.1% (13)**	25.0% (9)	36
Adoption by your trading partners	0.0% (0)	16.7% (6)	27.8% (10)	**38.9% (14)**	16.7% (6)	36
Internal capabilities	11.1% (4)	19.4% (7)	25.0% (9)	**41.7% (15)**	2.8% (1)	36
Public policy (privacy, environment, etc.)	2.8% (1)	**36.1% (13)**	**36.1% (13)**	19.4% (7)	5.6% (2)	36
Standards	2.8% (1)	**47.2% (17)**	36.1% (13)	13.9% (5)	0.0% (0)	36
Technology stability	2.8% (1)	**36.1% (13)**	**36.1% (13)**	25.0% (9)	0.0% (0)	36
					answered question	**36**
					skipped question	**0**

9. How much value would you expect to find in the following areas by using EPC/RFID in DSD?

	Negative	None	Low	Medium	High	Response Count
Order picking	14.3% (5)	22.9% (8)	**28.6% (10)**	20.0% (7)	14.3% (5)	35
Truck loading	0.0% (0)	28.6% (10)	**31.4% (11)**	**31.4% (11)**	8.6% (3)	35
Shelf/stock/code date management	17.1% (6)	2.9% (1)	20.0% (7)	28.6% (10)	**31.4% (11)**	35
Delivery/receiving	0.0% (0)	17.1% (6)	17.1% (6)	28.6% (10)	**37.1% (13)**	35
ASN reconciliation	0.0% (0)	14.3% (5)	31.4% (11)	20.0% (7)	**34.3% (12)**	35
Unsaleables management	0.0% (0)	**28.6% (10)**	25.7% (9)	**28.6% (10)**	17.1% (6)	35
Electronic proof of delivery (ePOD)	0.0% (0)	22.9% (8)	17.1% (6)	22.9% (8)	**37.1% (13)**	35
Cold chain management	0.0% (0)	**32.4% (11)**	26.5% (9)	20.6% (7)	20.6% (7)	34
Recall management	0.0% (0)	22.9% (8)	22.9% (8)	14.3% (5)	**40.0% (14)**	35
Track and trace	0.0% (0)	20.0% (7)	22.9% (8)	25.7% (9)	**31.4% (11)**	35
Demand forecasting	0.0% (0)	**31.4% (11)**	28.6% (10)	20.0% (7)	20.0% (7)	35
Product diversion	0.0% (0)	**47.1% (16)**	23.5% (8)	20.6% (7)	8.8% (3)	34
Returnable assets	0.0% (0)	**29.4% (10)**	20.6% (7)	26.5% (9)	23.5% (8)	34
					answered question	**35**
					skipped question	**1**

10. What is your company's outlook for RFID? (select one)

	Response Percent	Response Count
Skeptical	**44.4%**	16
Neutral	33.3%	12
Optimistic	16.7%	6
Enthusiastic	5.6%	2
	answered question	**36**
	skipped question	**0**

11. A previous DSD EPC spreadsheet survey was distributed, with few responses received. If your company did or did not respond, please indicate the reasons (check all the apply)

	Response Percent	Response Count
Our company did respond	33.3%	12
We plan to respond	0.0%	0
I don't know if our company responded	**44.4%**	16
Our company is currently not involved in RFID	11.1%	4
We lack sufficient RFID background to respond	8.3%	3
We don't see value in RFID	25.0%	9
The spreadsheet looked too difficult to fill out	5.6%	2
Not sure who to have respond in our company	5.6%	2
I'm not involved in RFID projects	2.8%	1
Our company does not wish/policy to disclose our RFID plans	5.6%	2
Concern with anonymity	5.6%	2
Forwarded to someone else in the organization	8.3%	3
Please resend me the spreadsheet survey	8.3%	3
	answered question	**36**
	skipped question	**0**

12. Please list any other comments or suggestions you have on EPC/RFID for DSD.		
		Response Count
		9
	answered question	**9**
	skipped question	**27**

13. Please list your name, email address and/or phone number if we may contact you to discuss your responses.			
		Response Percent	Response Count
Name		**100.0%**	21
email address		**100.0%**	21
Phone		**100.0%**	21
	answered question		**21**
	skipped question		**15**

Appendix B: DSD Supplier Responses

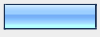
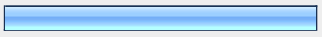
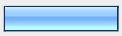
GCI EPC/RFID Survey

1. I work for a:

	Response Percent	Response Count
Consumer Goods Supplier	**100.0%**	29
Retailer	0.0%	0
Other (please specify)	0.0%	0
answered question		**29**
skipped question		**0**

2. My role is primarily:

	Response Percent	Response Count
IT	34.5%	10
Operations	10.3%	3
Management	**44.8%**	13
Other (please specify)	10.3%	3
answered question		**29**
skipped question		**0**

3. Please indicate the current state of RFID at your company? (select one)			
		Response Percent	Response Count
Not looking at RFID		13.8%	4
Investigating		10.3%	3
Planning to pilot		3.4%	1
Piloting		**48.3%**	14
Deploying		6.9%	2
Ongoing operations		17.2%	5
		answered question	**29**
		skipped question	**0**

4. Please quantify your company's EPC/RFID experience:						
EPC/RFID experience						
	None	**1 year or less**	**1-2 years**	**2 or more years**		**Respor Coun**
Select	17.2% (5)	6.9% (2)	20.7% (6)	**55.2% (16)**		
SKUs						
	None	**Less than 5**	**5-20**	**20-100**	**More than 100**	**Respor Coun**
Select	24.1% (7)	6.9% (2)	6.9% (2)	**44.8% (13)**	17.2% (5)	
Stores						
	None	**Less than 5**	**5-20**	**20-100**	**More than 100**	**Respor Coun**
Select	**31.0% (9)**	3.4% (1)	13.8% (4)	**31.0% (9)**	20.7% (6)	
Trading partners						
	None	**1**	**Less than 5**	**5-50**	**More than 50**	**Respor Coun**
Select	17.2% (5)	34.5% (10)	**41.4% (12)**	0.0% (0)	6.9% (2)	
% of volume						

	None	Less than 1%	1-10%	10-50%	More than 50%	Respon Coun
Select	17.2% (5)	**69.0% (20)**	6.9% (2)	3.4% (1)	3.4% (1)	

Lowest tagging level

	None	Pallet level	Case level	Item level	Respon Coun
Select	17.2% (5)	24.1% (7)	**48.3% (14)**	10.3% (3)	
				answered question	
				skipped question	

5. What does your company think the prerequisites are for implementing EPC/RFID for DSD?

	Not very important	Important	Very important	N/A	Rating Average	Response Count
Advance Shipping Notice (ASN)	0.0% (0)	10.3% (3)	**86.2% (25)**	3.4% (1)	2.79	29
Electronic Data Interchange (EDI)	0.0% (0)	13.8% (4)	**82.8% (24)**	3.4% (1)	2.76	29
Honor based check-in (unattended)	6.9% (2)	20.7% (6)	**55.2% (16)**	17.2% (5)	2.14	29
Open delivery windows	6.9% (2)	17.2% (5)	**62.1% (18)**	13.8% (4)	2.28	29
Random audit based check-in	0.0% (0)	**51.7% (15)**	34.5% (10)	13.8% (4)	2.07	29
Item-level tagging	**37.9% (11)**	20.7% (6)	**37.9% (11)**	3.4% (1)	1.93	29
“Accounting-quality” read rates (high read rate accuracy)	0.0% (0)	3.6% (1)	**96.4% (27)**	0.0% (0)	2.96	28
Changes to current business processes	0.0% (0)	31.0% (9)	**65.5% (19)**	3.4% (1)	2.59	29
Mature standards in place	0.0% (0)	17.2% (5)	**82.8% (24)**	0.0% (0)	2.83	29
Broad adoption across trading partners	0.0% (0)	10.3% (3)	**89.7% (26)**	0.0% (0)	2.90	29
Transparent, unfettered access to trading partner data	6.9% (2)	27.6% (8)	**62.1% (18)**	3.4% (1)	2.48	29
Trading partners must have access to data without charge	0.0% (0)	10.3% (3)	**86.2% (25)**	3.4% (1)	2.79	29
Global Data Synchronization (GDS)	3.4% (1)	27.6% (8)	**69.0% (20)**	0.0% (0)	2.66	29
Reliable, user-friendly RFID	0.0% (0)	13.8% (4)	**86.2% (25)**	0.0% (0)	2.86	29

RFID solutions that integrate to legacy systems	0.0% (0)	24.1% (7)	**75.9% (22)**	0.0% (0)	2.76	29
Solutions that work for liquids and metals	0.0% (0)	6.9% (2)	**82.8% (24)**	10.3% (3)	2.62	29
Corporate strategies for EPC data	0.0% (0)	27.6% (8)	**72.4% (21)**	0.0% (0)	2.72	29
					answered question	**29**
					skipped question	**0**

6. What value potential do the following initiatives have for your organization?

	Detrimental	Neutral	Low Value	Moderate Value	High Value	Response Count
Advance Shipping Notice (ASN)	0.0% (0)	0.0% (0)	6.9% (2)	34.5% (10)	**58.6% (17)**	29
RFID	**48.3% (14)**	13.8% (4)	13.8% (4)	13.8% (4)	10.3% (3)	29
Global Data Synchronization (GDS)	0.0% (0)	6.9% (2)	6.9% (2)	**48.3% (14)**	37.9% (11)	29
Collaborative ordering	7.1% (2)	17.9% (5)	14.3% (4)	**42.9% (12)**	17.9% (5)	28
Scan Based Trading (SBT)	**51.7% (15)**	13.8% (4)	17.2% (5)	10.3% (3)	6.9% (2)	29
Demand Driven Supply Network (DDSN)	0.0% (0)	7.4% (2)	3.7% (1)	33.3% (9)	**55.6% (15)**	27
Increased bar code utilization	0.0% (0)	3.7% (1)	25.9% (7)	**37.0% (10)**	33.3% (9)	27
					answered question	**29**
					skipped question	**0**

7. How significant are the following obstacles for EPC/RFID adoption in DSD?						
	Not an obstacle	Low	Medium	High	Prohibitive	Response Count
Return on investment (ROI)	0.0% (0)	0.0% (0)	3.4% (1)	34.5% (10)	**62.1% (18)**	29
Not a strategic priority	3.4% (1)	6.9% (2)	3.4% (1)	**75.9% (22)**	10.3% (3)	29
Technical issues	0.0% (0)	6.9% (2)	**41.4% (12)**	37.9% (11)	13.8% (4)	29
Collaboration issues	3.4% (1)	20.7% (6)	31.0% (9)	**41.4% (12)**	3.4% (1)	29
Implementation issues	3.4% (1)	10.3% (3)	20.7% (6)	**48.3% (14)**	17.2% (5)	29
Critical mass of adoption	0.0% (0)	3.4% (1)	10.3% (3)	41.4% (12)	**44.8% (13)**	29
Public policy issues (privacy, environment, etc.)	3.4% (1)	20.7% (6)	**51.7% (15)**	24.1% (7)	0.0% (0)	29
					answered question	**29**
					skipped question	**0**

8. When do you anticipate the following conditions to be favorable for pursuing EPC/RFID for your DSD operations?						
	Less than 1 year	1-3 years	3-7 years	7+ years	Never	Response Count
Tag costs	3.4% (1)	24.1% (7)	20.7% (6)	**48.3% (14)**	3.4% (1)	29
Reader costs	6.9% (2)	31.0% (9)	**44.8% (13)**	13.8% (4)	3.4% (1)	29
Software costs	10.3% (3)	**34.5% (10)**	17.2% (5)	**34.5% (10)**	3.4% (1)	29
Return on investment (ROI)	3.4% (1)	13.8% (4)	13.8% (4)	**41.4% (12)**	27.6% (8)	29
Adoption by your trading partners	0.0% (0)	13.8% (4)	24.1% (7)	**41.4% (12)**	20.7% (6)	29
Internal capabilities	10.3% (3)	20.7% (6)	20.7% (6)	**44.8% (13)**	3.4% (1)	29
Public policy (privacy, environment, etc.)	3.4% (1)	27.6% (8)	**41.4% (12)**	20.7% (6)	6.9% (2)	29
Standards	0.0% (0)	**48.3% (14)**	37.9% (11)	13.8% (4)	0.0% (0)	29
Technology stability	0.0% (0)	34.5% (10)	**37.9% (11)**	27.6% (8)	0.0% (0)	29
					answered question	**29**
					skipped question	**0**

9. How much value would you expect to find in the following areas by using EPC/RFID in DSD?						
	Negative	**None**	**Low**	**Medium**	**High**	**Response Count**
Order picking	17.2% (5)	20.7% (6)	**27.6% (8)**	20.7% (6)	13.8% (4)	29
Truck loading	0.0% (0)	27.6% (8)	**34.5% (10)**	31.0% (9)	6.9% (2)	29
Shelf/stock/code date management	20.7% (6)	3.4% (1)	20.7% (6)	**27.6% (8)**	**27.6% (8)**	29
Delivery/receiving	0.0% (0)	20.7% (6)	17.2% (5)	**31.0% (9)**	**31.0% (9)**	29
ASN reconciliation	0.0% (0)	13.8% (4)	**34.5% (10)**	20.7% (6)	31.0% (9)	29
Unsaleables management	0.0% (0)	**31.0% (9)**	27.6% (8)	24.1% (7)	17.2% (5)	29
Electronic proof of delivery (ePOD)	0.0% (0)	24.1% (7)	20.7% (6)	20.7% (6)	**34.5% (10)**	29
Cold chain management	0.0% (0)	**39.3% (11)**	28.6% (8)	25.0% (7)	7.1% (2)	28
Recall management	0.0% (0)	27.6% (8)	27.6% (8)	13.8% (4)	**31.0% (9)**	29
Track and trace	0.0% (0)	24.1% (7)	**27.6% (8)**	24.1% (7)	24.1% (7)	29
Demand forecasting	0.0% (0)	**37.9% (11)**	27.6% (8)	17.2% (5)	17.2% (5)	29
Product diversion	0.0% (0)	**50.0% (14)**	21.4% (6)	17.9% (5)	10.7% (3)	28
Returnable assets	0.0% (0)	**32.1% (9)**	17.9% (5)	25.0% (7)	25.0% (7)	28
					answered question	**29**
					skipped question	**0**

10. What is your company's outlook for RFID? (select one)			
		Response Percent	**Response Count**
Skeptical		**48.3%**	14
Neutral		31.0%	9
Optimistic		17.2%	5
Enthusiastic		3.4%	1
		answered question	**29**
		skipped question	**0**

11. A previous DSD EPC spreadsheet survey was distributed, with few responses received. If your company did or did not respond, please indicate the reasons (check all the apply)

	Response Percent	Response Count
Our company did respond	37.9%	11
We plan to respond	0.0%	0
I don't know if our company responded	**44.8%**	13
Our company is currently not involved in RFID	10.3%	3
We lack sufficient RFID background to respond	3.4%	1
We don't see value in RFID	27.6%	8
The spreadsheet looked too difficult to fill out	6.9%	2
Not sure who to have respond in our company	3.4%	1
I'm not involved in RFID projects	3.4%	1
Our company does not wish/policy to disclose our RFID plans	6.9%	2
Concern with anonymity	6.9%	2
Forwarded to someone else in the organization	10.3%	3
Please resend me the spreadsheet survey	6.9%	2
	answered question	**29**
	skipped question	**0**

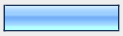
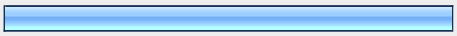
12. Please list any other comments or suggestions you have on EPC/RFID for DSD.		
		Response Count
		6
	answered question	**6**
	skipped question	**23**

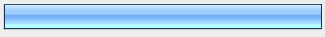
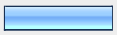
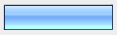
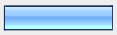
13. Please list your name, email address and/or phone number if we may contact you to discuss your responses.			
		Response Percent	Response Count
Name		**100.0%**	15
email address		**100.0%**	15
Phone		**100.0%**	15
	answered question		**15**
	skipped question		**14**

Appendix C: Retailer Responses

GCI EPC/RFID Survey

1. I work for a:			
		Response Percent	Response Count
Consumer Goods Supplier		0.0%	0
Retailer		**100.0%**	6
Other (please specify)		0.0%	0
	answered question		**6**
	skipped question		**0**

2. My role is primarily:			
		Response Percent	Response Count
IT		16.7%	1
Operations		16.7%	1
Management		**66.7%**	4
Other (please specify)		0.0%	0
	answered question		**6**
	skipped question		**0**

3. Please indicate the current state of RFID at your company? (select one)			
		Response Percent	Response Count
Not looking at RFID		**50.0%**	3
Investigating		16.7%	1
Planning to pilot		0.0%	0
Piloting		16.7%	1
Deploying		16.7%	1
Ongoing operations		0.0%	0
	answered question		**6**
	skipped question		**0**

4. Please quantify your company's EPC/RFID experience:						
EPC/RFID experience						
	None	**1 year or less**	**1-2 years**	**2 or more years**		**Respon Count**
Select	**66.7% (4)**	0.0% (0)	0.0% (0)	33.3% (2)		
SKUs						
	None	**Less than 5**	**5-20**	**20-100**	**More than 100**	**Respon Count**
Select	33.3% (2)	0.0% (0)	0.0% (0)	0.0% (0)	**66.7% (4)**	
Stores						
	None	**Less than 5**	**5-20**	**20-100**	**More than 100**	**Respon Count**
Select	33.3% (2)	0.0% (0)	16.7% (1)	0.0% (0)	**50.0% (3)**	
Trading partners						
	None	**1**	**Less than 5**	**5-50**	**More than 50**	**Respon Count**
Select	33.3% (2)	0.0% (0)	0.0% (0)	0.0% (0)	**66.7% (4)**	
% of volume						

	None	Less than 1%	1-10%	10-50%	More than 50%	Respon Count
Select	**50.0% (3)**	16.7% (1)	0.0% (0)	16.7% (1)	16.7% (1)	

Lowest tagging level

	None	Pallet level	Case level	Item level	Respon Count
Select	**50.0% (3)**	0.0% (0)	0.0% (0)	**50.0% (3)**	
				answered question	
				skipped question	

5. What does your company think the prerequisites are for implementing EPC/RFID for DSD?

	Not very important	Important	Very important	N/A	Rating Average	Response Count
Advance Shipping Notice (ASN)	0.0% (0)	20.0% (1)	**80.0% (4)**	0.0% (0)	2.80	5
Electronic Data Interchange (EDI)	0.0% (0)	20.0% (1)	**80.0% (4)**	0.0% (0)	2.80	5
Honor based check-in (unattended)	0.0% (0)	25.0% (1)	**50.0% (2)**	25.0% (1)	2.00	4
Open delivery windows	**50.0% (2)**	25.0% (1)	0.0% (0)	25.0% (1)	1.00	4
Random audit based check-in	0.0% (0)	25.0% (1)	**75.0% (3)**	0.0% (0)	2.75	4
Item-level tagging	20.0% (1)	20.0% (1)	**60.0% (3)**	0.0% (0)	2.40	5
“Accounting-quality” read rates (high read rate accuracy)	0.0% (0)	0.0% (0)	**100.0% (5)**	0.0% (0)	3.00	5
Changes to current business processes	16.7% (1)	16.7% (1)	**66.7% (4)**	0.0% (0)	2.50	6
Mature standards in place	0.0% (0)	20.0% (1)	**80.0% (4)**	0.0% (0)	2.80	5
Broad adoption across trading partners	0.0% (0)	20.0% (1)	**80.0% (4)**	0.0% (0)	2.80	5
Transparent, unfettered access to trading partner data	20.0% (1)	20.0% (1)	**60.0% (3)**	0.0% (0)	2.40	5
Trading partners must have access to data without charge	0.0% (0)	40.0% (2)	**60.0% (3)**	0.0% (0)	2.60	5
Global Data Synchronization (GDS)	0.0% (0)	0.0% (0)	**100.0% (5)**	0.0% (0)	3.00	5
Reliable, user-friendly RFID	0.0% (0)	0.0% (0)	**100.0% (5)**	0.0% (0)	3.00	5

RFID solutions that integrate to legacy systems	0.0% (0)	0.0% (0)	**100.0% (5)**	0.0% (0)	3.00	5
Solutions that work for liquids and metals	0.0% (0)	20.0% (1)	**80.0% (4)**	0.0% (0)	2.80	5
Corporate strategies for EPC data	0.0% (0)	20.0% (1)	**80.0% (4)**	0.0% (0)	2.80	5
					answered question	**6**
					skipped question	**0**

6. What value potential do the following initiatives have for your organization?

	Detrimental	Neutral	Low Value	Moderate Value	High Value	Response Count
Advance Shipping Notice (ASN)	0.0% (0)	0.0% (0)	16.7% (1)	16.7% (1)	**66.7% (4)**	6
RFID	0.0% (0)	**33.3% (2)**	**33.3% (2)**	16.7% (1)	16.7% (1)	6
Global Data Synchronization (GDS)	0.0% (0)	0.0% (0)	16.7% (1)	0.0% (0)	**83.3% (5)**	6
Collaborative ordering	0.0% (0)	16.7% (1)	0.0% (0)	33.3% (2)	**50.0% (3)**	6
Scan Based Trading (SBT)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (6)**	6
Demand Driven Supply Network (DDSN)	0.0% (0)	0.0% (0)	0.0% (0)	40.0% (2)	**60.0% (3)**	5
Increased bar code utilization	0.0% (0)	20.0% (1)	20.0% (1)	0.0% (0)	**60.0% (3)**	5
					answered question	**6**
					skipped question	**0**

7. How significant are the following obstacles for EPC/RFID adoption in DSD?

	Not an obstacle	Low	Medium	High	Prohibitive	Response Count
Return on investment (ROI)	0.0% (0)	0.0% (0)	16.7% (1)	**50.0% (3)**	33.3% (2)	6
Not a strategic priority	20.0% (1)	0.0% (0)	20.0% (1)	**40.0% (2)**	20.0% (1)	5
Technical issues	0.0% (0)	0.0% (0)	33.3% (2)	**66.7% (4)**	0.0% (0)	6
Collaboration issues	0.0% (0)	40.0% (2)	**60.0% (3)**	0.0% (0)	0.0% (0)	5
Implementation issues	0.0% (0)	16.7% (1)	**50.0% (3)**	33.3% (2)	0.0% (0)	6
Critical mass of adoption	0.0% (0)	0.0% (0)	0.0% (0)	**66.7% (4)**	33.3% (2)	6
Public policy issues (privacy, environment, etc.)	0.0% (0)	**50.0% (3)**	16.7% (1)	33.3% (2)	0.0% (0)	6
					answered question	**6**
					skipped question	**0**

8. When do you anticipate the following conditions to be favorable for pursuing EPC/RFID for your DSD operations?

	Less than 1 year	1-3 years	3-7 years	7+ years	Never	Response Count
Tag costs	0.0% (0)	16.7% (1)	**50.0% (3)**	33.3% (2)	0.0% (0)	6
Reader costs	0.0% (0)	**33.3% (2)**	**33.3% (2)**	**33.3% (2)**	0.0% (0)	6
Software costs	16.7% (1)	0.0% (0)	**50.0% (3)**	33.3% (2)	0.0% (0)	6
Return on investment (ROI)	0.0% (0)	**33.3% (2)**	**33.3% (2)**	16.7% (1)	16.7% (1)	6
Adoption by your trading partners	0.0% (0)	16.7% (1)	**50.0% (3)**	33.3% (2)	0.0% (0)	6
Internal capabilities	16.7% (1)	16.7% (1)	**33.3% (2)**	**33.3% (2)**	0.0% (0)	6
Public policy (privacy, environment, etc.)	0.0% (0)	**83.3% (5)**	0.0% (0)	16.7% (1)	0.0% (0)	6
Standards	16.7% (1)	**33.3% (2)**	**33.3% (2)**	16.7% (1)	0.0% (0)	6
Technology stability	16.7% (1)	**33.3% (2)**	**33.3% (2)**	16.7% (1)	0.0% (0)	6
					answered question	**6**
					skipped question	**0**

9. How much value would you expect to find in the following areas by using EPC/RFID in DSD?

	Negative	None	Low	Medium	High	Response Count
Order picking	0.0% (0)	**40.0% (2)**	**40.0% (2)**	0.0% (0)	20.0% (1)	5
Truck loading	0.0% (0)	**40.0% (2)**	20.0% (1)	20.0% (1)	20.0% (1)	5
Shelf/stock/code date management	0.0% (0)	0.0% (0)	20.0% (1)	20.0% (1)	**60.0% (3)**	5
Delivery/receiving	0.0% (0)	0.0% (0)	20.0% (1)	20.0% (1)	**60.0% (3)**	5
ASN reconciliation	0.0% (0)	20.0% (1)	20.0% (1)	20.0% (1)	**40.0% (2)**	5
Unsaleables management	0.0% (0)	0.0% (0)	20.0% (1)	**60.0% (3)**	20.0% (1)	5
Electronic proof of delivery (ePOD)	0.0% (0)	0.0% (0)	0.0% (0)	40.0% (2)	**60.0% (3)**	5
Cold chain management	0.0% (0)	0.0% (0)	20.0% (1)	0.0% (0)	**80.0% (4)**	5
Recall management	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (5)**	5
Track and trace	0.0% (0)	0.0% (0)	0.0% (0)	20.0% (1)	**80.0% (4)**	5
Demand forecasting	0.0% (0)	0.0% (0)	**40.0% (2)**	20.0% (1)	**40.0% (2)**	5
Product diversion	0.0% (0)	20.0% (1)	**40.0% (2)**	**40.0% (2)**	0.0% (0)	5
Returnable assets	0.0% (0)	0.0% (0)	**40.0% (2)**	**40.0% (2)**	20.0% (1)	5
					answered question	**5**
					skipped question	**1**

10. What is your company's outlook for RFID? (select one)

	Response Percent	Response Count
Skeptical	16.7%	1
Neutral	**50.0%**	3
Optimistic	16.7%	1
Enthusiastic	16.7%	1
	answered question	**6**
	skipped question	**0**

11. A previous DSD EPC spreadsheet survey was distributed, with few responses received. If your company did or did not respond, please indicate the reasons (check all the apply)

	Response Percent	Response Count
Our company did respond	16.7%	1
We plan to respond	0.0%	0
I don't know if our company responded	**50.0%**	3
Our company is currently not involved in RFID	16.7%	1
We lack sufficient RFID background to respond	16.7%	1
We don't see value in RFID	16.7%	1
The spreadsheet looked too difficult to fill out	0.0%	0
Not sure who to have respond in our company	16.7%	1
I'm not involved in RFID projects	0.0%	0
Our company does not wish/policy to disclose our RFID plans	0.0%	0
Concern with anonymity	0.0%	0
Forwarded to someone else in the organization	0.0%	0
Please resend me the spreadsheet survey	16.7%	1
	answered question	**6**
	skipped question	**0**

12. Please list any other comments or suggestions you have on EPC/RFID for DSD.		
		Response Count
		3
	answered question	**3**
	skipped question	**3**

13. Please list your name, email address and/or phone number if we may contact you to discuss your responses.			
		Response Percent	Response Count
Name		**100.0%**	5
email address		**100.0%**	5
Phone		**100.0%**	5
	answered question		**5**
	skipped question		**1**

Appendix D: EPC DSD Value Overview Spreadsheet

Welcome!

This evaluation tool will help you to identify where you may see benefit from using EPC/RFID in your DSD processes. You can use this tool from an overall company perspective or create separate analysis for your different product lines, use cases, and channels. These instructions will be helpful in using this tool.

- You will enter your data in the worksheet "Your Data". A sample for a fictional company has been added in worksheet "Sample" with two process steps completed as an example.
- The left side of the worksheet (columns A – J) contains steps in the DSD process from the GMA/FPA's "E-Commerce Opportunities in Direct Store Delivery" with additions for retailers. You do not need to change this information, although you can re-sort the order of the steps (see below) depending upon whether you are a CG supplier using a process with pre-sales or spot/peddle/route sales, or a retailer.
- On the right half of the worksheet (columns K-Q) you will enter the potential value for your company using EPC/RFID for each of the column categories (Assets, Pallet, etc.). For each cell, the choices are:
  - **A** = Advantaged – High benefit, few complications for implementation
  - **T** = Testable – Some benefit, or some implementation challenges
  - **C** = Challenged – Little or no benefit, or significant implementation challenges
  - **N/A** = Not Applicable
- You can click on the following buttons in the worksheet to color code your responses or to sort the rows:

Color Code	to color code your responses
Sort for Pre-Sell	to sort the DSD steps for a separate Pre-sell and Delivery process if you are a CG supplier
Sort for Spot Sell	to sort the DSD steps for a Spot/Peddle/Route Sales process if you are a CG supplier
Sort for Retailer - Pre	to sort if you are a retailer for a PreSell/Delivery process
Sort for Retailer - Spot	to sort if you are a retailer for a Spot Sell process

For an electronic copy of the EPC DSD Value Overview Spreadsheet contact Brian Schulte at brian.schulte@intermec.com

GCI: EPC Value Overview for DSD

DSD Delivery Step					Spot Sell	Pre-Sell Business Process			Retail		RFID Relative Value Add					
Spot/Route Sell Step #	Pre-Sell Step #	Retailer PreSell Step #	Retailer Spot Step #	Steps / Activity	Route Sales	Account Manager	Delivery Driver	Merchandiser	Retailer	Assets	Pallet	Mixed Pallet	Case	Mixed Case	Saleable Unit	Value Comments
1	3	na	na	Review shelf & backroom, remove out-of-code and damaged product from these locations.	x	x		x								
2	9	na	na	Inventory shelf, displays and backroom.	x	x		x								
3	4	1	1	Issue/receive credit from removed product — not physically, just acknowledgment of items requiring credit.	x	x		x	x							
4	10	na	na	Create or pick (route sales) order for current needs.	x			x								
5	1	na	na	Oversee picking of pre-sell order or selection of brands/packages for truck inventory at distribution center.	x		x									
6	11	2	2	Review order with retailer/DSD supplier (if needed).	x	x			x							
7	12	3	na	Create/forecast order for future delivery (May vary by DSD channel/supplier.)	x	x			x							
8	2	na	na	Load truck	x		x									
9	5	4	3	Reconcile delivery to advance shipment notification (ASN) where applicable. (YES - if in store RANDOM AUDIT @ Time of Delivery)	x		x		x							
10	6	na	na	Deliver product to backroom	x		x									
11	7	5	4	Check-in delivery (scan/verify item and price or conduct DEX process).	x		x		x							
12	8	6	na	Check out-of-code and damaged product.	x				x							
13	13	7	5	Create/receive proof of delivery document/invoice.	x		x		x							
14	14	8	6	Receive/provide store stamp, signature or money.	x		x		x							
15	15	na	na	Merchandise store/build displays.	x			x								

Sort for Spot Sell | Sort for Pre-Sell | Sort for Retailer - Pre | Sort for Retailer - Spot

Color Code

GMA Adoption Framework		
A	Advantaged	High benefit, few complications for implementation
T	Testable	Some benefit, or some implementation challenges
C	Challenged	Little or no benefit, or significant implementation challenges
N/A	Not Applicable	

GCI: EPC Value Overview for DSD

DSD Delivery Step					Spot Sell	Pre-Sell Business Process			Retail		RFID Relative Value Add					
Spot/Route Sell Step #	Pre-Sell Step #	Retailer PreSell Step #	Retailer Spot Step #	Steps / Activity	Route Sales	Account Manager	Delivery Driver	Merchandiser	Retailer	Assets	Pallet	Mixed Pallet	Case	Mixed Case	Saleable Unit	Value Comments
5	1	na	na	Oversee picking of pre-sell order or selection of brands/packages for truck inventory at distribution center.	x		x			A	C	C	T	C	A	Value has to do with ensuring the right items are on the order and that the invoice qty matches the physical delivery. Can do this today with UPC codes so the RFID value is associated with time savings. The time savings would have to offset the infrastructure required to create postive ROI. Unless can solve for saleable units, would have to have redunancy for 100% accuracy checks and adjustments. Existing pick-to-light and voice pick systems already delivering +99% accuracy for saleable picking. RFID accuracy opportunity ~1%.
8	2	na	na	Load Truck	x		x			T	T	C	A	C	A	Value comes from ensuring the right products are loaded on the right trucks for scheduled deliveries. RFID could likewise be used to transfer inventory ownership to a route from the distribution center. In a Spot Sell model, there would be little value associated with loading the "right product" because the picking process occurs at the store. Where pre-sell models use ASNs for customer delilvery, the SSCC barcodes might also serve to ensure correct truck loading.

GMA Adoption Framework		
A	Advantaged	High benefit, few complications for implementation
T	Testable	Some benefit, or some implementation challenges
C	Challenged	Little or no benefit, or significant implementation challenges
N/A	Not Applicable	





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