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The Business Case
For Reduced Space Symbology®
(RSS®) on Coupons

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Joint Industry Coupon Committee Re-Engineering Task Force
September, 2005

This industry research project is sponsored by the Joint Industry Coupon Committee (JICC) on behalf of the Re-Engineering Task Force, which is comprised of major Consumer Product Goods (CPG) manufacturers, retailers, coupon processors and representatives from the Association of Coupon Professionals (ACP), the Food Marketing Institute (FMI), Grocery Manufacturers Association (GMA) and GS1 US™, formerly the Uniform Code Council, Inc.® (UCC®).

This project follows previous work by GS1 US and the JICC. In September 2002, the UCC Coupon Re-engineering Project issued a set of business requirements to address the problems with coupon bar coding. This was followed by a study of alternative solutions that recommended adoption of a bar code smaller than the Universal Product Code (U.P.C.). It was recommended that Reduced Space Symbology (RSS) be used on coupons. RSS is now being used to mark small healthcare items (such as vials, blister packs, ampules, and syringes) and was endorsed by the U.S. Food and Drug Administration (FDA) in its efforts to reduce medication errors. RSS has a large number of applications, including pharmaceuticals, produce, meat and other perishables, candy, health and beauty care and general merchandise, periodicals, magazines, greeting cards and coupons and is expected to be used more widely throughout the scanning environment. In its latest draft proposal, issued in October, 2004, the JICC proposed that RSS be fully implemented by retailers and manufacturers by January 2008.

The Coupon Re-Engineering Task Force provided data and insights for the report. In addition to association representatives from FMI, GMA, National Cattlemen's Beef Association (NCBA), Produce Marketing Association (PMA), Association of Coupon Professionals (ACP), and GS1 US, companies participating in this business case included:

Ahold	Campbell Soup
Balls	CMS
Big Y	Hallmark
Hannaford	Pathmark
Hobart	Pfizer
IBM	Price Chopper
Kroger	Procter & Gamble
Land O'Lakes	Spartan Stores
Loblaws	Symbol Technology
Merisant	Target
mpXML	Toledo
NCH	Ukrops
Nestle	Wegmans

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Richard E. Shulman, President of Industry Systems Development Corp. (ISD) conducted the research for this report. He is recognized as one of the food industry's leading authorities on the application of computer technology to retailing. ISD provides consulting services in the application of computer technology to retailing. Mr. Shulman's consulting clients include major supermarket chains, food wholesalers and technology companies in the U.S., Europe, and Japan, and the nation's major trade associations.

Since 1974, Mr. Shulman has been Technology Editor of *Supermarket Business* Magazine, now *Progressive Grocer* Magazine, and currently, he is the contributing editor for *Grocery Headquarters* Magazine. He has served on the Board of Directors of two publicly held supermarket chains and currently serves on the Board of Weis Markets (an NYSE retailer). During his ten years of board service at Weis, he served as Chairman of the Audit Committee and of the Compensation Committee.

Mr. Shulman served as co-chairman of the UCC Technical Advisory Committee in the development of the standards for the U.P.C. He was a founder of FMI's Advanced Management Information Systems Group and served as its Chairman. He was also the consultant retained by FMI to guide the Electronic Payment Systems Committee in its selection of a vendor to work in developing the industry's future EPS strategy and offerings.

Grocery Manufacturers Association www.gmabrands.com
GMA is the world's largest association of food, beverage and consumer product companies. The organization applies legal, scientific and political expertise from its member companies to vital food, nutrition and public policy issues affecting the industry. The association also leads efforts to increase productivity, efficiency and growth in the food, beverage and consumer products industry.

GMA members and staff participate in the JICC and the coupon re-engineering efforts of the committee.

Food Marketing Institute www.fmi.org
FMI conducts programs in research, education, industry relations and public affairs on behalf of its 1,500 member companies – food retailers and wholesalers – in the United States and around the world.

FMI members and staff participate in the JICC and the coupon re-engineering efforts of the committee.

Association of Coupon Professionals www.couponpros.org
ACP is an industry trade organization for marketing professionals who work, or have interests in the consumer promotion business, including manufacturers, retailers, processors and third party providers. ACP goals include providing a forum for the education and resolution of common industry concerns in the development, distribution and redemption of coupons. The ACP's Sunrise Task Force examines re-engineering efforts and acts as a liaison between ACP members and the JICC's Coupon Re-Engineering Committee.

GS1 US www.gs1us.org
GS1 US is a not-for-profit organization dedicated to the adoption and implementation of standards-based, global supply chain solutions. GS1 US operates three wholly owned subsidiaries, EPCglobal US™, RosettaNet, and 1SYNC™. GS1 US manages the United Nations Standard Products and Services Code® (UNSPSC®) for the UN Development Programme. EPCglobal Inc is a joint venture of GS1 US and GS1 (formerly EAN International). GS1 US-based solutions, including business processes, Extensible Markup Language (XML) standards, Electronic Data Interchange (EDI) transaction sets, and the bar code identification standards of the EAN.UCC System are currently used by more than one million companies worldwide.

GS1 US is responsible for the assignment of EAN.UCC Company Prefixes, referred to in the coupon industry as Manufacturer ID Numbers (MINs). GS1 US also facilitates the efforts of the Global Symbology Committee (GSC), which coordinates the engineering and technical development that will support approved standards.

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I. INTRODUCTION

This report is the result of industry wide efforts to improve the coupon bar code used in the current paper-based system. Presently, the system faces limitations, which cause cashier intervention at the point-of-sale, customer confusion, and chargebacks in the clearing environment. Manufacturers and retailers are also limited in their ability to match evolving promotion needs with the technology and process currently available. Reducing or eliminating these limitations can result in the potential for manufacturers and retailers alike to increase sales and customer satisfaction via a more accurate exchange of information between trading partners. The current coupon system dates back to 1985. On the retail side, the use of scanning has increased and matured in the convenience store, chain drug, mass merchandising, and department store industries, as well as in the grocery industry. With over 340 billion coupons distributed in 2004[1] in the US, coupon design, coding and processing is big business.

As early as1985, the industry was talking about the need for longer codes to automate the reading of expiration dates at check-out, collect marketing data and facilitate the move to electronic clearing. In 2000, the UCC began issuing variable length UCC Company Prefixes, and in association with the 2005 Sunrise initiative, retailers are now expected to accept imported products identified with EAN.UCC Company Prefixes. Both changes will lead to an increasing number of coupon misredemptions if the full Company Prefix is not embedded in the coupon bar code for processing. This will impact retailers, manufacturers, and coupon processing agents.

RSS can hold more data than its companion symbologies, the 12-digit U.P.C. and 13-digit EAN codes. The robust data capabilities of RSS bar codes make it particularly valuable for use on pharmaceuticals, produce, meat and other perishables, candy, health and beauty care, and general merchandise items, as well as magazines, greeting cards, and coupons. To take advantage of the data offered by RSS, and go beyond the scanning of the Global Trade Item Number® (GTIN®) only, retailers will be required to install software upgrades and all parties will need to revise certain business processes.

The objective of this report is to present the industry with a cost benefit analysis for RSS on coupons, considering its use in other areas of store operations where it would be logical and beneficial. The investment required to upgrade existing hardware, software and business processes for adoption of RSS technology will be shared among the various retail applications beyond couponing.

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[1] "2005 Trends," CMS, Inmar, Top Coupon Trends, page 19.

The move toward adoption of RSS is global. The GS1 Board Committee for Standards through the Global Standards Management Process (GSMP) will be updating and expanding its report to incorporate topics related to RSS including:

- Potential global applications for RSS
- Updated information comparing RSS scan rates to U.P.C.'s due to advances in scanning technology
- Additional cost and benefit information
- A timetable for implementation and adoption of RSS
- Information regarding hardware readiness for RSS
- RSS as a transition step for the Electronic Product Code™ (EPC)

We expect this information will supplement the details of this report and further support the acceptance and implementation of RSS for coupons and other applications by retailers, manufacturers, technology providers and others in the industry.

II. EXECUTIVE SUMMARY

According to GS1 US data, more than 90% of retailers will have RSS compliant scanners by the end of 2007. The costs of moving to RSS will be spread out over all of the applications (coupons, meat, deli, produce, etc.) and there are credible benefits when the applications are grouped together.

An important benefit of the RSS is to exploit the ability to print a smaller symbol. This is increasingly important on small items like a single dose of medicine stored on a blister pack, or a small scannable label on an orange, identifying the orange type and brand as a replacement to the current PLU number, which identifies it only at the commodity level.

RSS poses no conflict with other future technologies in the industry. Implementation of RSS is not in conflict or competition with EPC implementation. The applications development is relevant to transitioning to EPC; it gives the industry experience using better information to make better decisions.

III. INDUSTRY CONTEXT and ROI

A. The Broader Context for RSS from a Technology Standpoint

The concepts and use of RSS are part of a natural evolution in the use of retail technology that will contribute to the efficiency and productivity of the entire CPG supply chain. It complements other emerging technical standards such as the use of the GTIN, the synchronization of data between buyer and seller, and the use of the EPC as either a case or pallet identifier, or as the EPC for a consumer package. The concepts defined for the EPC are completely compatible with those that are defined for use with RSS. The GTIN and serial number allows the additional information associated with a consumer package to be retrieved from a central database via the Internet. Using RSS, that same data could be encoded in the bar code and printed on the label or coupon. In fact, the use of RSS will pave the way for some of the uses of the EPC by helping the industry to validate projected benefits today, rather than waiting for the date in the future when the use of EPC is economically viable.

There is no conflict with other future technologies in the industry. Implementation of RSS is not in conflict or competition with Radio Frequency Identification (RFID) implementation. The applications development is

relevant to transitioning to RFID; it gives the industry experience using better information to make better decisions.

All of these emerging technologies – EPC, RFID and RSS – will evolve as retailers and their trading partners validate the projected benefits and focus on changing their business processes to take full advantage of these opportunities. The use of RSS will set the stage for the industry to move away from the expensive handling of paper coupons to adoption of electronic clearing practices that will automate the entire coupon handling process. By using retailer point-of-sale (POS) data from the scanning of coupons, manufacturers could reimburse retailers without the physical receiving, sorting and counting of coupons. The first step toward this electronic clearing of coupons is for the industry to begin widespread scanning of coupons with RSS coding in order that the technology can be tested and data reliability confirmed.

B. The Benefits of RSS in Produce from a Business Standpoint
Produce, like all perishable departments, has worked for years within the limited space requirements of the shared perishable U.P.C. structure. The department has been able to handle the huge growth in new products because so many are identified by a PLU number. However, continued growth of organic and the new hybrid and tropical fruits will soon create identification problems that can only be handled by an expansion of the numbering system.

The use of RSS can address this need for more produce numbers and several other pressing issues, including specific identification of the grower or packer, improved category management and market research data, traceability, and self-scanning, ultimately helping retailers make better merchandising and buying decisions. (See details in Appendix C.)

The benefits of using RSS in the produce department have not been quantified in a live store situation. However, as an example, a store with average weekly sales of $200,000 and produce sales of 7% will have a typical weekly gross margin of 39% or approximately $4,000 per week. If the produce benefit were only an increase of .1% in gross margin, the entire cost of upgrading scale printers and scale management software should be recovered in less than one year.

C. The Benefits of RSS in Meat from a Business Standpoint
The meat department faces some of the same product identification business issues as produce. The meat department has seen an explosion of branded fresh meat products and a growth in the use of a service department to

provide the customer with special cuts of meat and oven ready product. To address those issues, the NCBA has championed a very structured use of their U.P.C. numbers in order to develop a national coding standard that will support the availability of syndicated market research. While their Uniform Retail Meat Identity Standards (URMIS) structure works, a far easier solution would be available if more information was encoded into a RSS symbol. The use of the RSS structure could allow more data to be captured during the check out process. This would allow the meat department to add pull dates, support automatic markdowns, improve store-level information for in-stock and ordering, and support traceability requirements. (See details in Appendix C.)

The broad range of benefits outlined above will provide better service to retail customers. A typical meat department represents 12% of store sales. For a hypothetical store with $200,000 in weekly sales and an average gross profit of 26%, it would take less than one year to recover the capital costs of using RSS. A gross profit increase of just .1% or a sales increase of the same .1% would probably recover all meat specific costs associated with RSS in approximately one year.

D. The Shared Advantages of RSS in Perishables from a Business Standpoint
By-and-large, the business systems for each perishable department are unique, creating consequential additional operating expenses to support and enhance each system. When all perishable departments exploit the added data capture capabilities of RSS, the differences between departments will be reduced and the opportunity to develop common profitability reporting systems and traceability processes will increase.

Opportunities will increase for cross department promotions using either special RSS coded coupons issued at the store or automatically triggered by scanning at the POS, such as one free pound of potatoes with each five pounds of chuck steak or a discount on seasoning with the purchase of a chuck roast. Using the consumer's profile and requests entered at a kiosk, recipes could be printed at POS to match the product purchased.

E. The Benefits of RSS in the Pharmacy from a Business Standpoint
In 2004 the U.S. Food & Drug Administration mandated that by April 2006, the pharmaceutical industry must mark all unit dose drug packages with a bar code to be used in the record keeping associated with delivery of medicine to the patient. RSS is used when the medicine is small, such as a pill in a blister pack or a pre-measured dosage in a disposable syringe. While it is possible that packages with RSS will appear in a supermarket pharmacy's inventory, it is likely that the drugs will be part of a larger unit that carries the usual U.P.C. In fact, several major supermarket chains have warned pharmaceutical companies not to use RSS coding on the packages sent to their stores because there is no way to read them at the pharmacy.

F. Summary of the ROI

The financial benefits of RSS on coupons will emerge from various sources. While there will be a need by some to invest in new hardware and new software applications, there are opportunities to recover the investments through the increased scanning of coupons at the front end (and other RSS applications). Assuming that nearly 25% of today's coupons need to be key entered, the potential reduction in handling time and key entering offers a potential significant savings to the retail industry. Also, the increased automatic validation of coupons at the front end should improve cashier productivity and reduce clearing challenges, enabling retailers to collect their redemption fees sooner.

IV. THE BUSINESS CASE FOR RSS – BENEFITS TO THE COUPON INDUSTRY

Previous reports discussed the various problems with current approaches to the bar coding of coupons and the importance of coupon re-engineering to resolve these deficiencies. Some of these bear repeating as they are the benefits that accrue financial returns to retailers and manufacturers, and accelerate the move to electronic clearing. Benefits are grouped into results areas.

Expedited retail reimbursement through data accuracy

Coupons will be charged to the correct manufacturer.
- EAN.UCC Company Prefix numbers (referred to in the coupon industry as MINs) are now variable length and are often longer than the coupon application's 6 digits. Newly-issued numbers can collide or overlap with existing numbers on the coupon bar code, resulting in incorrect billing, chargebacks and additional manual intervention.
- RSS enables the encoding of the entire EAN.UCC Company Prefix and allows for the correct identification of the issuers of coupons.

Reduced manual intervention at retail check-out

The expanded availability of data, and the software and hardware technologies to harvest it, will allow retailers to reduce manual processing at various points in the process.
- Codes that currently require cashier intervention can be accounted for within RSS and captured at point of sale.

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Benefit Calculation:

RETAILERS' TIME TO PROCESS FREE COUPONS

    1.76% of 3.2 billion redeemed coupons are for free products[2]
    = 56,320,000 coupons for free products
    @ 5 secs/coupon to look up and record price
    = 78,222 hours @ $10 per hour

    = $782,222 per year savings

OR

RETAILERS' TIME TO PROCESS FREE COUPONS

    1.76% of 3.2 billion redeemed coupons are for free products[3]
    = 56,320000 coupons for free products
    @ 10 secs/coupon to look up and record price
    =   156,444 hours @ $10 per hour

    = $ 1,564,444 per year savings

- Expiration dates will be automated. The new data structure incorporates the end date into the scanning environment eliminating any need for retailers to visually check dates.
- For those retailers using paper PLU-based store coupons, RSS coupon technology can support improved offer compliance with reduced administrative effort.

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[2] Average of CMS and NCH rates

[3] Average of CMS and NCH rates

Benefit Calculation:

RETAILER SAVINGS (INDUSTRY TOTAL)

$14,000,200 Annual labor cost savings to those retailers that check expiration dates visually on manufacturer coupons

> Calculation assumption
> 3.2 billion coupons redeemed 2004[4]
> 50% manually checked for expiration[5]
> = 1.7 billion coupons
> @ 3 seconds review time per coupon[6]
> = 1, 420,000 hours
> @ $10/hour
>
> **= $ 14,200,000 per year savings**

Benefit Calculation:

RETAILER SAVINGS BY SCANNING ALL COUPONS (INDUSTRY TOTAL)

> Calculation assumption
> 3.2 billion coupons redeemed 2004[7]
> 23.4% of these coupons were not scanned
> = 748,800,000 coupons
> @ 7.1 seconds to key enter coupons (Assuming handle and drawer times are constant for all coupons)
> = 1,476,800 hours
> @ $10 per hour for cashiers
>
> **= $ 14,768,000 per year savings**

Other potential cost savings may be in self check-out lanes. Industry numbers indicate that self check-out systems will generate transactions worth $161 billion in 2005 and approach $450 billion annually by 2007, with the number one complaint being employee intervention, currently needed in 1 out of 3 times self-checkout is used.[8]

- Fraudulent and counterfeit coupons will be identified without checker review because the terms of the coupon are contained in the bar code.

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[4] "2005 Trends," CMS, Inmar, Top Coupon Trends, page 19.
[5] Assumes only those retailers who double coupons currently read expiration dates. www.couponinfonow.com, "Grocery Chains Accepting Bonus Coupons" data shows that 47 of 89 retailers (53%) surveyed double some or all coupons.
[6] "Coupon Handling Practices Analysis and Recommendations" 1982, pg. 17 estimates 2-4 seconds
[7] "2005 Trends," CMS, Inmar, Top Coupon Trends, page 19.
[8] According to IHL consulting group study as mentioned in *Progressive Grocer*, August 8, 2005.

Benefit Calculation:

COUPONS REQUIRING CASHIER INTERVENTION

Assuming 1.2% of redeemed coupons require cashier intervention (These are the coupons with the "00" value code.)
= 38,400,000 coupons require cashier intervention
@ 5 seconds/coupon for manual review
= 53,333 hours
@$10/hour

= $ 533,330 / Year of potential savings per year industry savings

(With less need for 00 code as a result of more offer information encoded into the RSS)

Increased effectiveness of complex promotions
The RSS data structure provides the ability to support more complex coupon offers.
- Up to three complementary or dissimilar products from different companies can be structured.
- Promotional partnering and cross selling by manufacturers is supported. Consumer compliance with the terms of the offer can be monitored by scanning at check-out.
- There will be virtually limitless possibilities on the cents-off values of coupons versus the current maximum of 100 value codes.
- Coupons will allow the coding of data about purchase requirements, product/quantity requirements, retailer restrictions, or other redemption requirements or restrictions.
- The reduced bar code size may free up space on the coupon for artwork and consumer-oriented information.
- Ability to code and monitor dollar purchase thresholds, retailer-specific coupons and "with this coupon" offers.

Increased compliance with terms of coupon promotions
RSS implementation will allow the efficient electronic checking of both consumer compliance with the terms of the offer and the authenticity of coupons (e.g. serialization). In particular:
- Scanning will reduce incidence of unintentional misredemption and fraud, increasing sales revenue and reducing cashier labor and decision making time.
- Coincident with the emergence of the RSS coupon standard is the emergence of synchronization of data about products shared between the retailer and the manufacturer. This synchronization should grow to include the product family codes.

- Retailers with bonus programs (coupon doubling and tripling) will receive additional benefits.
- Many uses of the 992 bypass code will be eliminated, along with the cashier intervention and special handling that is currently required.

Benefit Calculation:

BENEFITS FROM REDUCING MISREDEMPTION

LOST SALES ASSUMPTIONS:

    864,000,000 coupons   Multiple purchase coupons
         Redeemed (@ 27% of 3.2 billion total) [9]
    @ 5.2% misredeemed[10]

    = 44,900,000 misredeemed coupons

RETAILER & MANUFACTURER LOST SALES OPPORTUNITY COST

    22,450,000 of misredeemed coupons have no related product purchase[11]

    7, 633,000 do not satisfy quantity requirement.[12]

    = <u>**30,000,000 items not sold**</u>

    $64,200,000 in lost sales to retailers [13]
    $48,000,000 in lost sales to manufacturers

MANUFACTURER COUPON COST SAVINGS

$30,000,000 Annual coupon reimbursement costs for misredeemed coupons (e.g., do not result in purchase of promoted product)

Other benefits: Retailers and Manufacturers can capitalize on RSS to gain additional benefits, including:
- Collection of market data at POS
- Improved audit capabilities for large and small stores due to accuracy of transaction log ("T-log") and related reports
- Improved tracking of "item movement to purchase requirement"

V. REQUIREMENTS FOR INDUSTRY-WIDE ADOPTION

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[9] "2005 Trends and Promotional Planning Guide", CMS, p. 19
[10] "Coupons: A Complete Guide – Joint Industry Coupon Guidelines", JICC, 1998, p.34.
[11] "Coupons: A Complete Guide – Joint Industry Coupon Guidelines", JICC, 1998, p.34.
[12] "Coupons: A Complete Guide – Joint Industry Coupon Guidelines", JICC, 1998, p.34.
[13] Average retail item price of $2.14. ACNielsen 52 Weeks ending 8/13/05.

According to GS1 US data, more than 90% of retailers will have RSS compliant scanners by the end of 2007. The costs of moving to RSS will be spread out over all of the applications, and there are credible benefits when the applications are grouped together.

The use by retailers of the RSS bar code structure will require that scanners be updated to read RSS. This cost will likely be shared with other uses of RSS in produce and meat and other perishable departments. These departments will also realize significant operational and merchandising improvements from adding new data to the existing U.P.C. The use of RSS in the perishable departments will also require upgrading the scale printers to print the bar code. The costs of these hardware upgrades should be recovered in a year or less.

Status of equipment and software adoption

Overall Scanner Timeline

RSS Capable Scanners
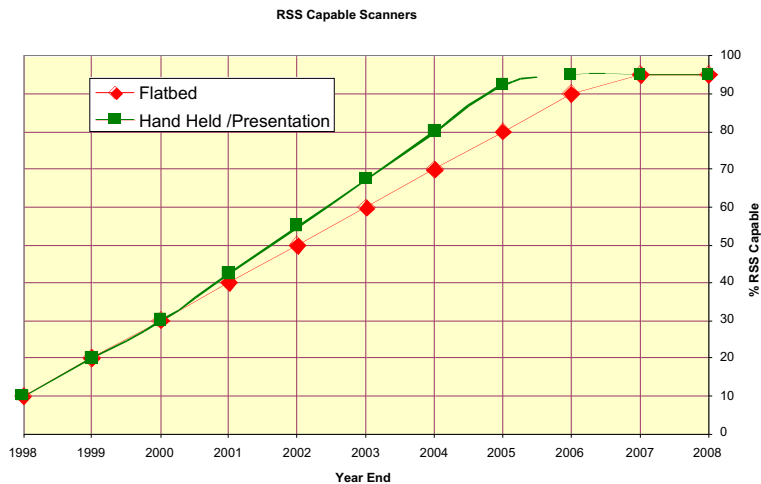
The chart shown above presents the GS1 US projection of the growth in scanners capable of reading RSS.

Costs
The costs for hardware are focused on two areas: one mandatory, the POS Scanner, and one optional area, the perishable scales. The scales only become a required capital investment when a company decides to take advantage of the potential benefits of printing an RSS Expanded bar code on perishable products that are packaged in the store.

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As a general rule, scanners that have been purchased within the last three years can be upgraded for a cost that ranges from $250-$500 per scanner or with a firmware upgrade that will cost $50-100. New scanners can be expected to cost between $1,000 and $1,800 each. Upgrades to scanners require labor at the store level and if this is not part of the vendor's offering, it can cost approximately $125 per scanner to upgrade it along with the POS registers.

The costs to implement RSS scanning capability at retail
The cost of introducing a new technical standard at retail is comprised of investments in new or upgraded hardware and the application software changes required to support the new bar code data formats. For the most part, the hardware changes relate to the scanner and to the in–store printers that would be used to print an RSS bar code, such as a scale printer or printer in a kiosk. Most application software vendors have committed to providing support for all emerging industry standards as part of their normal annual maintenance process. However, this does not imply that they will be willing to commit to the extensive software changes needed to support the many data opportunities associated with a specific use of RSS. [Please see the *Next Steps and Timeline for Implementation* section of this report.] Some retailers may also find that the application demands for the complete support of all RSS opportunities may be beyond the capabilities of some of the oldest POS systems.

In the new RSS approach to coupon processing, the checkout application will automatically validate both the coupon expiration date and the coupon purchase requirement; today this is a manual operation. The date validation is a simple process, supported by a retailer provided parameter of the number of days beyond the coupon expiration date that a coupon can be accepted. The validation of the purchase requirements for the RSS coupons can require more extensive programming logic. For example, matching the items purchased with those required, as stipulated in the RSS bar code, can require extensive application programming. Both sets of program logic are required.

Industry Survey
We conducted a survey of retailers to estimate the costs of equipment conversions. Ten supermarket chains with over six thousand supermarkets participated in this survey. This sample should present a reasonable representation of the costs to implement support for the use of the RSS bar code at retail. The costs presented here are an average of those submitted. In many areas, particularly slot scanners, the average retailer probably has already made the major capital expenditure for at least half of his installed base. This investment was made as a normal replacement decision or for new stores. The important take away from these cost values is that future capital expenditures should only be for those products that can support the

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use of RSS. Today there is no material advantage or savings in buying scales or scanners or POS systems that can not now or through upgrades support the exciting new applications that will require the use of RSS. And, any applications purchased from a software company that capture POS data should have a written commitment to the support of the data formats associated with RSS for coupons and the emerging standards for pharmacy, meat and produce.

Reading the RSS symbol is only the start of the process; interpreting it in the context of the applications requires additional investment in application software. Most software vendors have an implicit commitment to upgrade their software to support emerging industry standards. Because when GS1 or GS1 US establishes a "Sunrise Date" for the first phases of support for the use of RSS on coupons, all POS software vendors must include RSS interpretive support in their software by January 2008 as part of their annual maintenance fee. This does not mean that their standard support will provide a complete solution. Many of the retailers interviewed plan to develop support with their own technical staff to support all aspects of a specific use of RSS and estimates from those companies for coupons range from $40,000 to $500,000 when the effort encompasses POS support for all uses of RSS. (The $500,000 estimate was significantly higher than all others and not coupon specific; it was based on a completely customized solution and was significantly higher than the others.)

UPGRADES REQUIRED	COUPONS	MEAT	PRODUCE	PHARMACY
POS SCANNER	X	X	X	POSSIBLY
POS SOFTWARE	X	X	X	POSSIBLY
POS FILE MAINTENANCE SOFTWARE	X	X	X	X
SCALE PRINTERS		X	X	
SCALE MANAGEMENT SOFTWARE		X	X	
POS AUDITING AND SECURITY SOFTWARE	X	X	X	X

As retailers begin to use the expanded data formats that are possible with RSS they will need to expand their host support of store applications. The host support is required to establish larger data structures in all the appropriate headquarters files in a process that is similar to that which was required to support the use of the GTIN. Some of this support can be expected to be provided by the software vendors as part of their annual

maintenance fees. For example, coupons are a form of tender, and if the coupon standard changes then the vendor who provides the front end security software should be expected to develop the software required to support the new expanded coupon formats and to add the audit changes this new format makes possible.

Scales for the produce, deli and meat departments have wide ranges of base costs. However, as a guideline, the cost to improve those scales that can be upgraded to support the printing of an RSS-formatted label will typically be in the range of $300-600 per scale, including on-site labor to install the requisite software. Most scale vendors will soon be offering only scales that are upgradeable to support RSS.

The gating factor to the use of RSS in meat and produce is the development of an industry standard. Today there is no standard and hardware and software companies will be reluctant to provide support on an ad hoc basis, even for their largest customers. If the meat and produce industries formalize their formats for the use of the RSS bar code expect the company that provides you with scale management software to support these new standard formats. If not, your development staff will have to add the incremental software for the data structures you select at a cost that has been estimated to range from $50,000 to $150,000.

The implementation of RSS will require additional application features in your scanning host support system to support and analyze the new RSS data. For a very few retailers the move to support the use of RSS throughout the entire store may cause them to decide to move from an internally developed host system to one purchased from a professional software company. These systems typically offer expanded data integration and analysis and represent a consequential initial investment.

RSS CAPITAL EXPENSE	RANGE OF COSTS	
Slot scanner –upgrade labor	$10/lane to $80/store	
Slot scanner upgrade	$100 - $250.00	
New scanner (replacement)	$1,000 - $1,400	
New hand held scanner	$100-$150 each	
POS Checkout software reading RSS	Part of annual maintenance fee	
Internal development of application logic to POS for coupons meat and produce	$10-25,000	
Host File Maintenance Support internally developed for existing application	$20,000	

Host File Maintenance update from vendor	Part of annual maintenance fee	
Buy new Host File Maintenance System		
Scale upgrade	$300	
Scale management upgrade for RSS	Part of annual maintenance fee	
Buy new Scale Management System		
RSS Test Lab for equipment and software	$5,000 - $20,000	
% of scanners currently RSS ready or upgradeable	50% - 100%	
% of scanners ready for RSS by 1/2007	**95%**	

VI. NEXT STEPS and TIMELINE FOR IMPLEMENTATION

It is logical for every retailer to establish a purchase policy that all new store equipment that scans or prints bar codes is capable of supporting the requirements of RSS, or can be upgraded to handle this requirement.

During 2005 and 2006, the food industry needs to commit to the sponsorship of a series of in-store labs to test the use of RSS and validate the benefit opportunities. The results of these labs should be reported to the industry.

It is also recommended that the industry define the sequence of elements in the new RSS coupon structure, in order to assist trading partners in communicating the priorities in any programming and process upgrades.

An official industry "Sunrise Date" for coupon-specific RSS implementation will be a requirement if vendors are going to develop software applications. It is recommended that timeline corrections be published and widely distributed, with a starting point defined as a generic point of acceptance, rather than a specific month and a subsequent timeline adjustment in months and years, acknowledging the need for sufficient lead time in promotions planning and budget decision processes.

Parallel industry efforts
The Produce and Meat Industries need to establish a committee to develop formal RSS data standards and a logical phased implementation plan. In

addition, they need to develop benefit testing strategies that can be tested in a store lab sponsored environment.

Start with a Business Case
Build your company-specific business case on the basis of the rationale and link it to key performance indicators. Assess your current business processes to define the benefits specific to your business and evaluate your current IT landscape to define the implementation costs.

Pilot it – monitor it
Engage in pilots with these selected partners, monitor results and make necessary workflow, process and technical adjustments before moving to full production.

Help drive adoption
Support the drive towards industry-wide participation by … sharing your results and publishing case studies.[14]

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[14] Roadmap to Implementation for Trading Partners for GDS (Global Data Synchronization), from GS1 US, June 2005.

APPENDIX A

Survey Instructions and Questionnaire

To: FMI IT COMMITTEE

From: DICK SHULMAN

CC: PAT SHINKO, PAT WALSH

Re: FMI-GMA RSS Cost Benefit Study

I am working on a project for FMI and GMA to develop a cost benefit analysis for the use at retail of the Reduced Size Symbology (RSS). To support that effort I need your help. Your answers will not be released to anyone. However, I do need to include the names of the companies that participated in the fact gathering effort. Time is of the essence as GMA and FMI want to complete the report and have it ready for release to the industry in April of this year. PLEASE RETURN THE SURVEY ON OR BEFORE FEBRUARY 15, 2005.

Attached is an outline of all the areas of retail technology that may be impacted by the use of RSS. I need your help to identify the costs your company would incur to prepare for RSS. Your specific values will not be released; an average cost will be presented for each area identified. If you have already completed some aspect of this effort to prepare for RSS, please share the strategy, e.g., "upgraded total POS system including scanner," and where possible identify the cost for a single lane and let me know the components of that solution.

For the program products that you use at retail or in support of retail that will be impacted by the introduction of RSS I need to develop cost projections. For each area of software expense I need you to contact the companies that provide your software plan to implement support for RSS and what will they require before they begin development. To establish a reasonable cost for this support ask them if it will be delivered as part of their normal maintenance offering or if there will be a special charge. If there will be a special charge ask if they can project, for purposes of this study, what that charge might be or a range of value for the new facility.

Following the issues of cost to support RSS you will find a list of areas where retailers will realize benefits from the use of RSS. I would like to know if any of the executives in your company in the perishables or pharmacy area have an interest in any of these areas and would be willing to speak with me, off the record, for a few minutes to discuss the benefits.

One special comment on the subject of cost is in order. I recognize that some of you will feel that your exact cost is confidential. To address those concerns please give me a reasonable representation of your values. Remember all values will be averaged for each make and model of hardware and for each program product.

To make it easier for you to complete the survey please prepare your input by indicating the question number and then your answer. In addition, please give me a contact with a phone number and e-mail address if I need to clarify an answer. Thanks for your help!

PLEASE SEND YOUR RESPONSES TO ISD@ATT.NET

RETAILER COSTS TO SUPPORT RSS

1. Scales must be upgraded. For each make or model please provide the cost to upgrade printers to produce the RSS bar code.
   a. Produce
   b. Meat
   c. Deli
   d. Bakery
2. Scale management **software changes. Please identify the program product and the cost of adding RSS support.
3. POS host file maintenance **for:
   a. Scales
   b. POS
4. POS transaction processing software. ** Please identify the program product(s) used and for each the cost projected for adding RSS checkout support for
   a. Coupons
   b. Meat
   c. Produce
   d. Pharmacy
   e. Deli
5. Changes required to front end shrink control software (special feature or part of maintenance?) **
6. POS Scanner Upgrade for RSS Please identify the make and models and:
   a. Hardware upgrade. . .cost by make and model
   b. Software upgrade. . . .cost by make and model
   c. Installation costs of upgrades
7. Lab testing of RSS required changes
   a. Hardware investment
   b. Incremental labor costs beyond current staffing
8. Software costs to support in-ad development and printing of RSS barcodes **
9. Host Software and Scan Data Base changes required to support expanded RSS code structure
10. Kiosk printing of RSS coupons

Question for all software vendors…
   1. What is their schedule to support RSS and/or what will start their development cycle and how long should it be?
   2. Does the vendor expect support to be part of normal maintenance or a billable feature?

RETAILER POTENTIAL BENEFITS FROM USING RSS

COUPONS
1. Collision Avoidance
2. Potential for Electronic Coupon Clearing
3. Elimination of the 992 coupon
4. Reduced checkout labor to handle complex coupons
5. Elimination of limitations in current coupon structure for amounts
6. Increased sales from new coupon offers
7. Increased coupon validation to family class
8. Reduce chargebacks
9. Eliminate need for cashier to read expiration date

PERISHABLES
1. Elimination of current product numbering limitations - particularly branding
2. Ability to track pounds sold – develop better P&L and yield
3. Ability to handle automatic markdowns at POS
4. Ability to handle automatic not for sale on pull date – prohibit sale
5. Ability to handle frequent shopper discounts based upon pounds or other purchases (marinade with roast)
6. Ability to handle sales from service case (meat) as separate products – develop service case P&L
7. Ability to track inventory for case ready meat products – reducing shrink
8. Traceability

PHARMACY
1. The ability to scan packages as part of the script process – improved control of inventory and service
2. Ability to validate the accuracy of the fulfillment

Appendix B

Information Needed to complete Business Case for Coupon Reengineering:

Any/all information you can provide will be aggregated and used in conjunction with other data to compile potential examples of tangible benefits of reengineering the coupon bar code. Specific company names will remain confidential regarding data examples, but please indicate whether your company name can be listed as a participant in the project.

Please reply to Dick Shulman at isd@att.net with all information. Note if any numbers are approximate. Thank you.

1.) Hard to Handle coupon numbers
   IN 2004, how many of the following types were in circulation?
   00s_____
   01s_____
   992s_____
   BOGO_____
FREE Codes:
14_____
16_____
19_____
02_____
What percentage of overall coupons distributed in 2004 does this represent: _____
Based on what number of overall coupons distributed? _____

2.) Time/Labor on Manual Intervention
Time spent intervening, researching, deducting and/or working around:

MIN
Collision_____
Hard to
Handles_____

Are you a retailer, manufacturer or processor?_____

3.) Expired Coupons
How many actual denials (i.e. past grace period) occur annually?_____

4.) Loss associated with inability of current value code system to accommodate offers?

(I.e. if multiple purchase requirements are not captured by bar code as in Buy 10 cat foods get 1 free or Buy 5 yogurts get 1 free)[Explain assumptions.]

_____

_____

5.) Permission to list my company name as a participant in this data collection effort and in the report? YES NO
Name of
Company_____

Appendix C

THE BENEFITS OF RSS IN PRODUCE – Detailed

The use of RSS can address this need for more produce numbers and several other pressing issues:

1. The current product identification process, using a small label with PLU number supports only a generic or commodity identification of a product, e.g. "red delicious apple" and not the grower. Using the RSS-14 Stacked with a complete GTIN would allow the identification of the grower and product.
2. An RSS-14 Stacked symbol with a GTIN on each item sold displayed in bulk will make it possible to have improved information for category management and syndicated market research data.
3. An RSS-14 Stacked symbol with a GTIN will support the growing need for traceability of produce from a specific grower or source. With the current system this is all but impossible.
4. An RSS-14 Stacked symbol with a GTIN. will allow for better merchandising and buying decisions as it identifies movement back to the source and to track waste and quality.
5. The use of a RSS-14 Stacked symbol with a GTIN should make self scanning easier for the consumer by eliminating the requirement that the customer correctly identify the product. [15]

THE BENEFITS OF RSS IN MEAT – Detailed

The use of the RSS Expanded Stacked structure could allow more data to be captured during the check out process. This would allow the meat department to:

1. By adding the weight of the product to the code structure the meat department could develop important information to measure profitability. It would also allow the POS system to offer accurate markdowns for promotions and to track those markdowns back to a specific product, e.g., the number of pounds of ground chuck that are marked down rather than simply a dollar value for the meat department.
2. Uniquely track product sold thru the service case will allow the store and company to develop a discrete P&L for the service department.
3. By adding the pull date to the RSS Expanded Stacked data structure the POS checkout process can support the automatic markdown of product that is near to that date and void purchase if the date has passed.
4. Using the expanded data structure that would be possible with an RSS Expanded Stacked label it will be possible to develop the business systems to develop daily and weekly profitability, improve store ordering and in-stock positions.
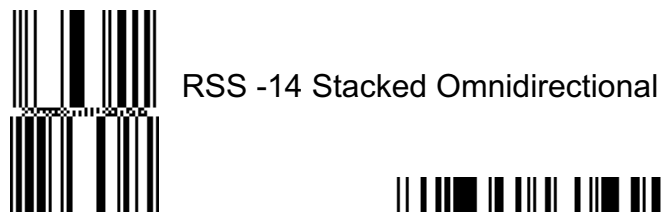
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[15] The use of a very small U.P.C. label has raised concerns that additional rescans will be required. This issue will be addressed in current tests being conducted by the Hobart Corporation in conjunction with GS1 US and should resolve this issue.

5. Clearly the added data support of an RSS Expanded Stacked label will improve the ability to support bio-terrorism requirements for traceability of product.

6. Meat, deli, or party trays with retail prices over $100.00 can be encoded with a bar code and scanned.

Appendix D

Various forms of RSS

RSS 14

RSS Truncated

RSS -14 Stacked Omnidirectional

RSS Expanded Stacked

RSS Expanded

RSS-14 Stacked

RSS Limited

Since RSS Expanded is a Segmented Code, it can be printed smaller than a UCC/EAN-128. Offer Code is 6 digits. Shown below is a side-by-side comparison of the current Coupon Format Four. The recommended printing specifications for RSS Expanded at 10 mils.

RSS Expanded with a Coupon offer at close to maximum capacity with 61 characters (out of 70) of data including the hypothetical AI shown.

Bar codes:
Approximatedl 7.5 mils
(Should print as close
to 8 Mils as possible.)

(8110)10022342123456289110120121208501004800030 3123191

This example shows the proposed "new" coupon with maximum information, including **complete** company prefix, offer code (expanded to 6 digits), family code, purchase requirement, save value (cents off), additional company prefix and family code, serial number and expiry date:

In addition, there are optional flags used to indicate that the coupon is a store coupon, or that it should not be doubled.

The use of RSS allows for increased information. The following charts outline how the data is expanded to fit the specific goals of the coupon issuer:

Required Coupon Fields

Application Identifier	Unique EAN.UCC key to identify this as a coupon
Primary Company Prefix*	The EAN/UCC Company Prefix of the manufacturer making the offer
Offer Code *	A code assigned by the manufacturer to identify this offer
Primary Purchase Family Code *	A code to identify the qualifying family of products to be purchased
Primary Purchase Requirement + Purchase Code	The quantity the consumer must purchase to qualify for the offer Units/Lbs/$
Save Value *	The value of the coupon (e.g. "cents off")

* Fields also found in current coupon structure

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Optional Coupon Fields

Serial Number*	Identification of targeted region or population
Start Date	Date this coupon can first be redeemed
Expiry Date*	Date this coupon expires
Qualifiers	Don't Multiply Flag, Store Coupon, Save Value Code, Save Value Applies to Which Item
Retailer Company Prefix	Identification of specific retailer where coupon is to be accepted

Uniform Code Council, Inc.®