SPYCHIPS:
Laying the groundwork for pervasive consumer surveillance

Katherine Albrecht, Ed.M., CASPIAN

(Consumers Against Supermarket Privacy Invasion and Numbering)

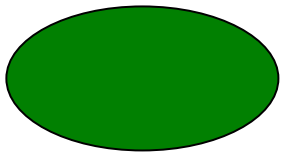
www.spychips.com

www.nocards.org

www.BoycottBenetton.com

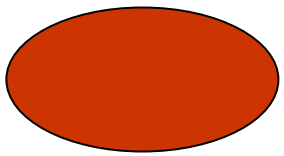
www.BoycottGillette.com

Three different databases



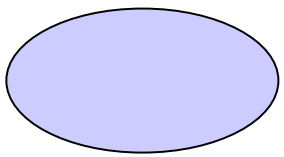
- **Database #1: Manufacturer's "supply chain" database**

  Poses no consumer privacy threat



- **Database #2: EPCglobal product info database**

  Poses obvious consumer privacy threat



- **Database #3: Retailer's POS purchase database**

  Poses invisible consumer privacy threat

Database #1:

"Item 308247: Cherry Chapstick produced on assembly line 12 at 3:15 PM."

Database #2:

"Item 308247 is a cherry Chapstick"

"Companies would 'join the EPCglobal universe,' which means they would get an identification number, and they would have access to the network where all of the codes would be stored."

- Jack Grasso, EPCglobal

EPCglobal

Source: http://www.senate.ca.gov/ftp/SEN/COMMITTEE/STANDING/ENERGY/_home/11-20-03trans.htm

Database #3:

"Item 308247 is a cherry Chapstick belonging to Katherine Albrecht."

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Why Database #3 is so likely… and so worrisome

CONCERN:
Item-level tagging…

Combined with ubiquitous readers…

Reader devices can be invisibly embedded in:

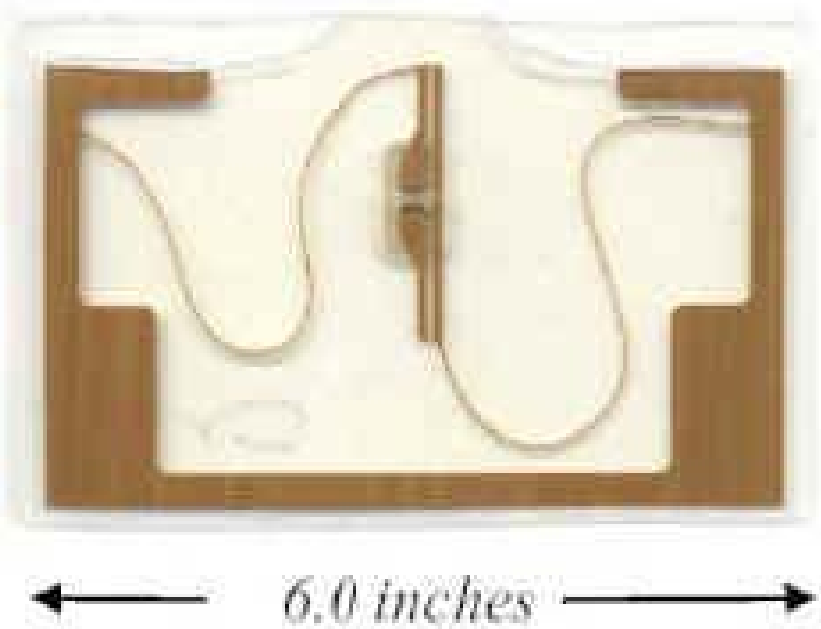
- Walls
- Doorways
- Floor tiles
- Carpeting
- Floor mats
- Vehicles
- Roads
- Sidewalks

- Counters
- Shelving
- Furniture
- Consumer products
  - Printers
  - Copiers
  - Vacuum cleaner
- Handheld devices, e.g., cellphones, PDA's

…and current levels of retail data capture and abuse

Will lead to widespread, surreptitious consumer surveillance

Hidden Tags
(But isn't a 6" tag hard to hide?)

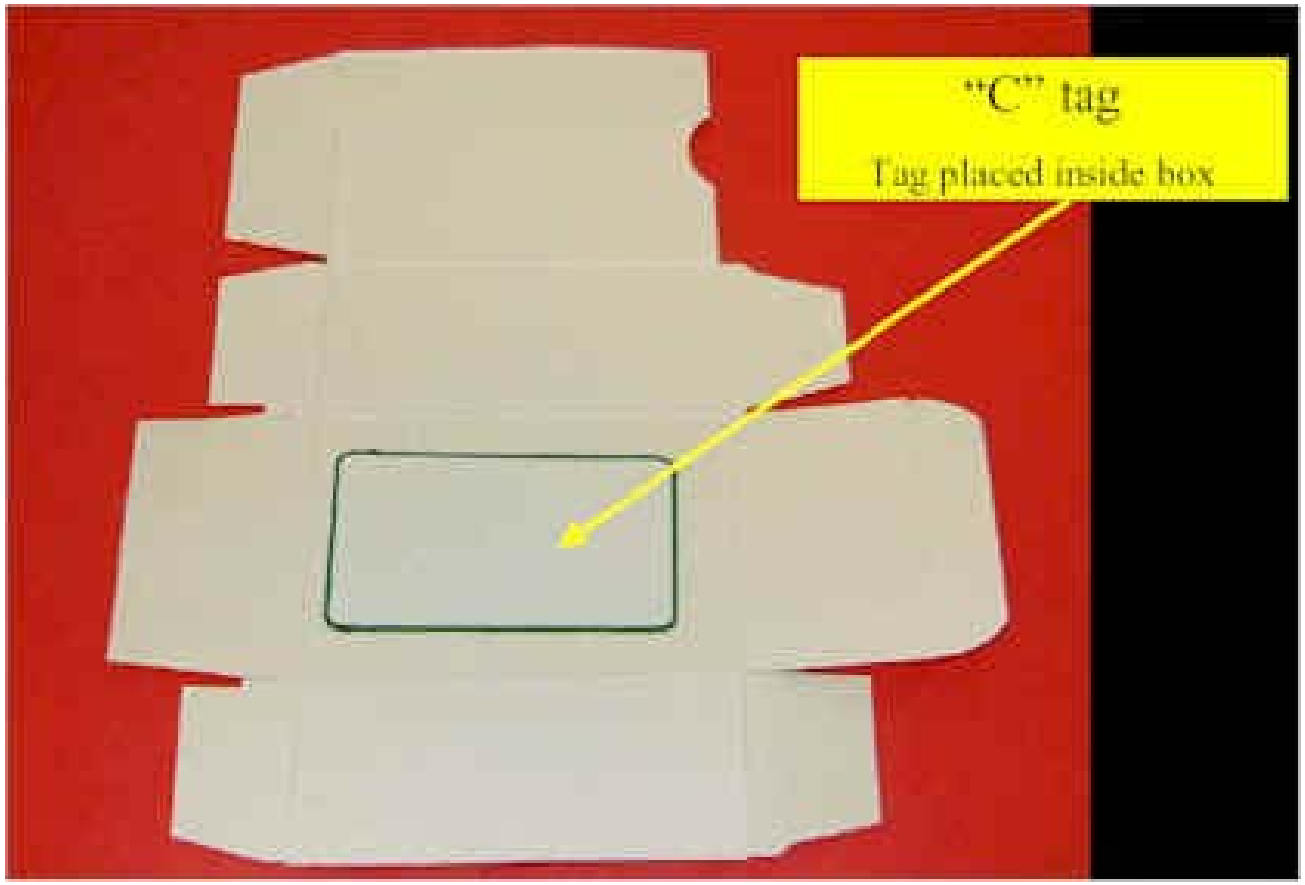


Alien/RAFSEC "C" tag

Used on:

Bar Soap, Paper Products

Not if it’s sandwiched in cardboard



6” Alien/RAFSEC “C” tag inside a box

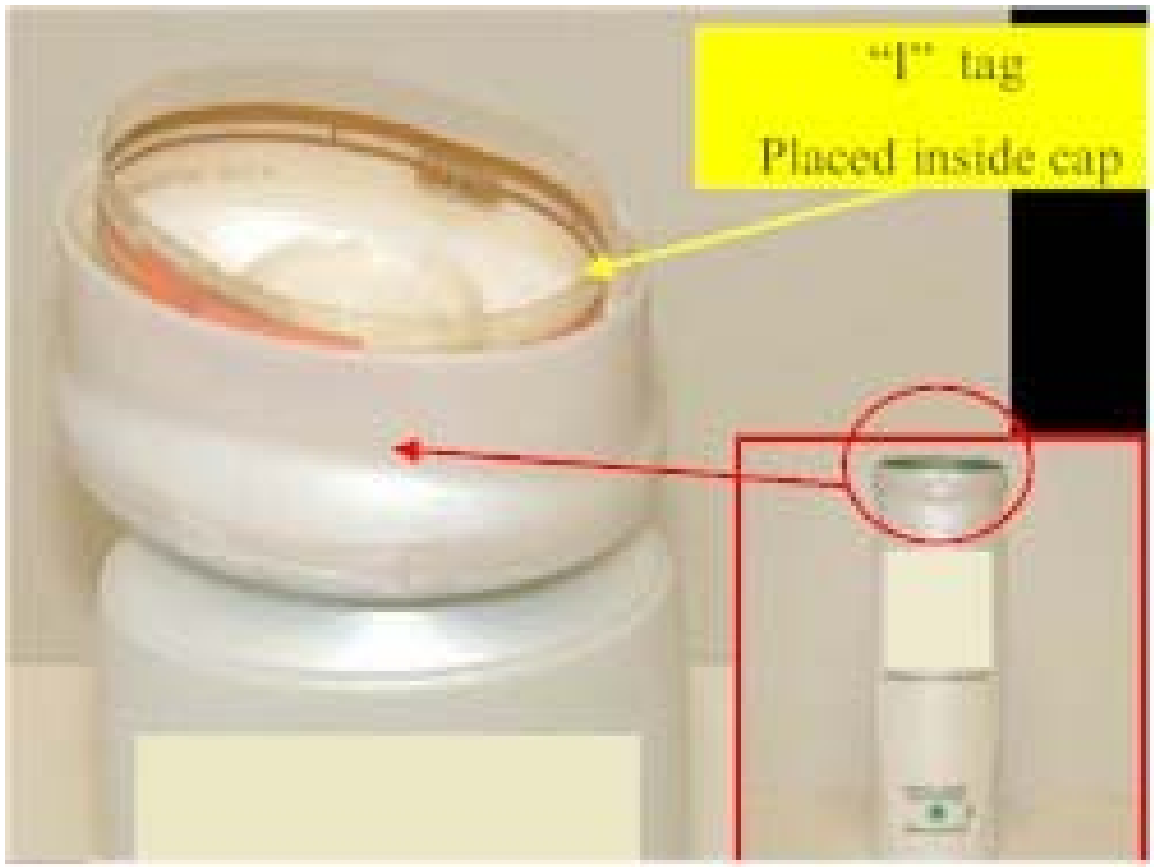
Hidden Tags
This 6-inch tag has a ~17-foot read range

Alien/RAFSEC “I” Tag

Used on:

Cases, Shampoo Bottle, Aerosol Cans

Invisible when “placed inside cap” – an inaccessible location on this flip-top Pantene shampoo



Alien/RAFSEC “I” tag in lid of Pantene shampoo bottle

Another big tag (4.5”)

4.5 inches

Used on:

Cases, Dog Food, Coffee Cans

Alien/RAFSEC “S” Tag

Invisible when “placed between layers of paper”

Alien/RAFSEC “S” Tag in Purina Dog Food Bag

It would be easy to hide this RFID chip

…if the antenna were made of conductive ink

"With these things you could literally tag a pack of chewing gum." - Jeff Jacobsen, Alien Technology

"Alien envisions [conductive] ink being mixed with regular packaging ink to create antennas on boxes of cereal and other disposable packaging…"

Tags left active

"P&G and other companies…suggested they want to keep RFID tags active after checkout, rather than disabling them with so-called 'kill machines'.…The companies also want to match the unique codes emitted by RFID tags to shoppers' personal information."

- Wired, April 5, 2004
  Reporting on statements made by Sandy Hughes in Chicago at the RFID Journal Live conference, April 2004

Source: http://www.wired.com/news/privacy/0,1848,62922,00.html

Combined with individual tracking and profiling…

RFID-enabled loyalty card blank by Matrics

Tags hidden in loyalty cards…

METRO’s “Payback” loyalty card

X-ray confirms the hidden RFID chip and antenna

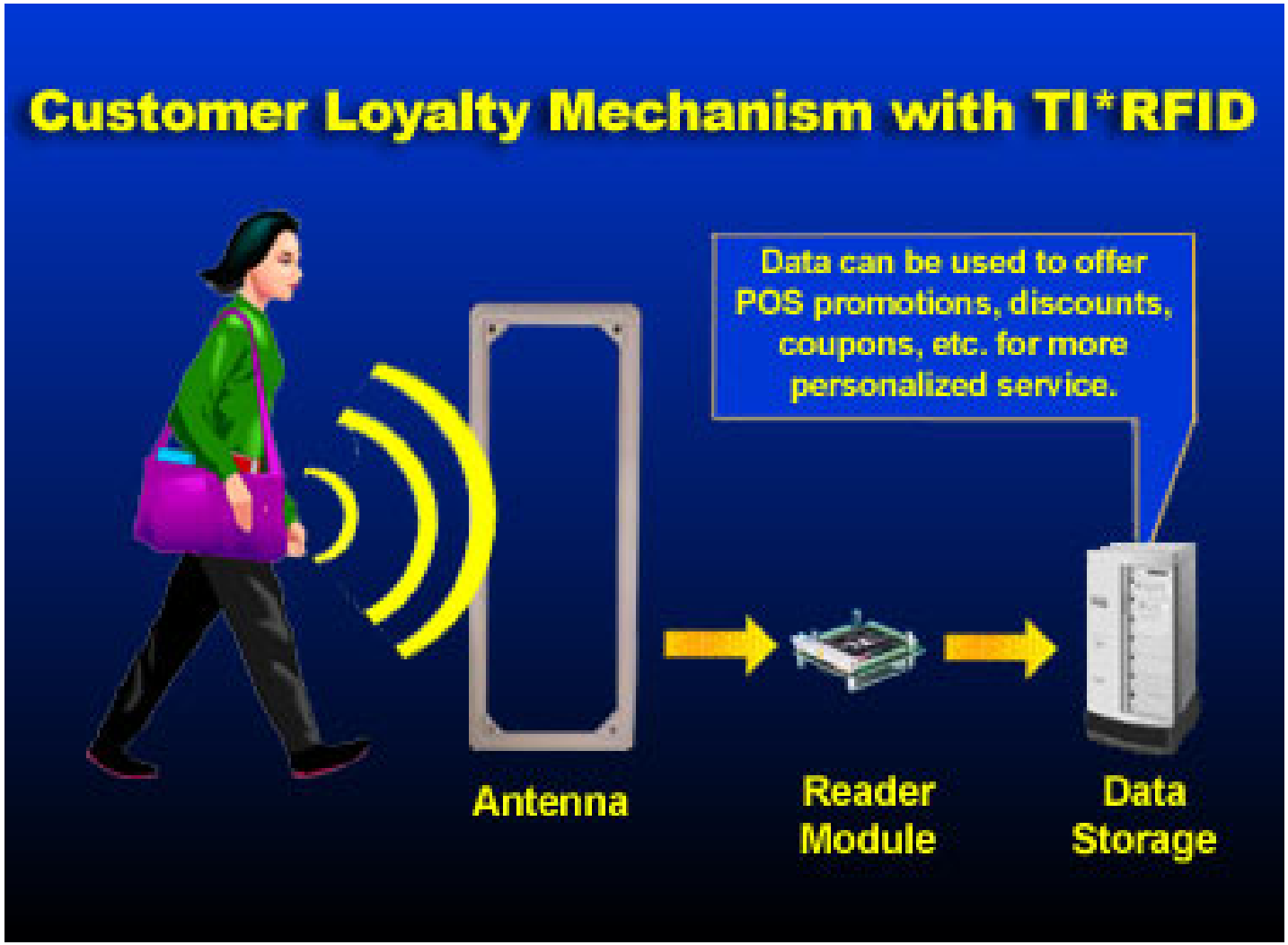
METRO Group

The Spirit of Commerce

Like they did at the "Future Store"

The RFID industry's flagship "Future" store had hidden RFID tags in its loyalty cards. For details of how CASPIAN uncovered the scandal and rocked Germany, see the 12-page special report at: http://www.spychips.com/metro/scandal-payback.html

Ubiquitous readers



Texas Instruments advises retailers to scan customers' loyalty cards right through their purse or wallet

Source: http://www.ti.com/tiris/docs/solutions/pos/loyalty.shtml

In doorways…

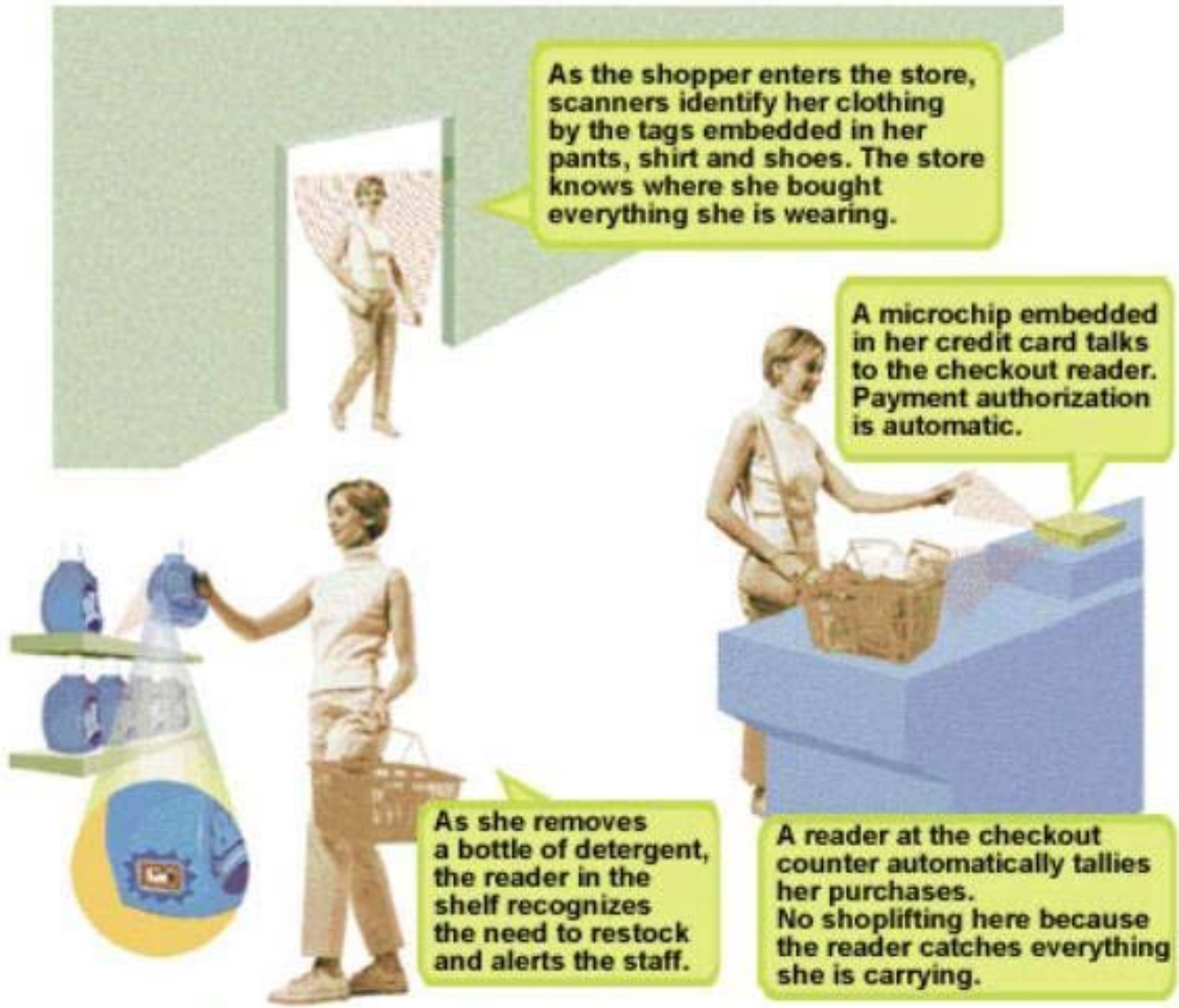
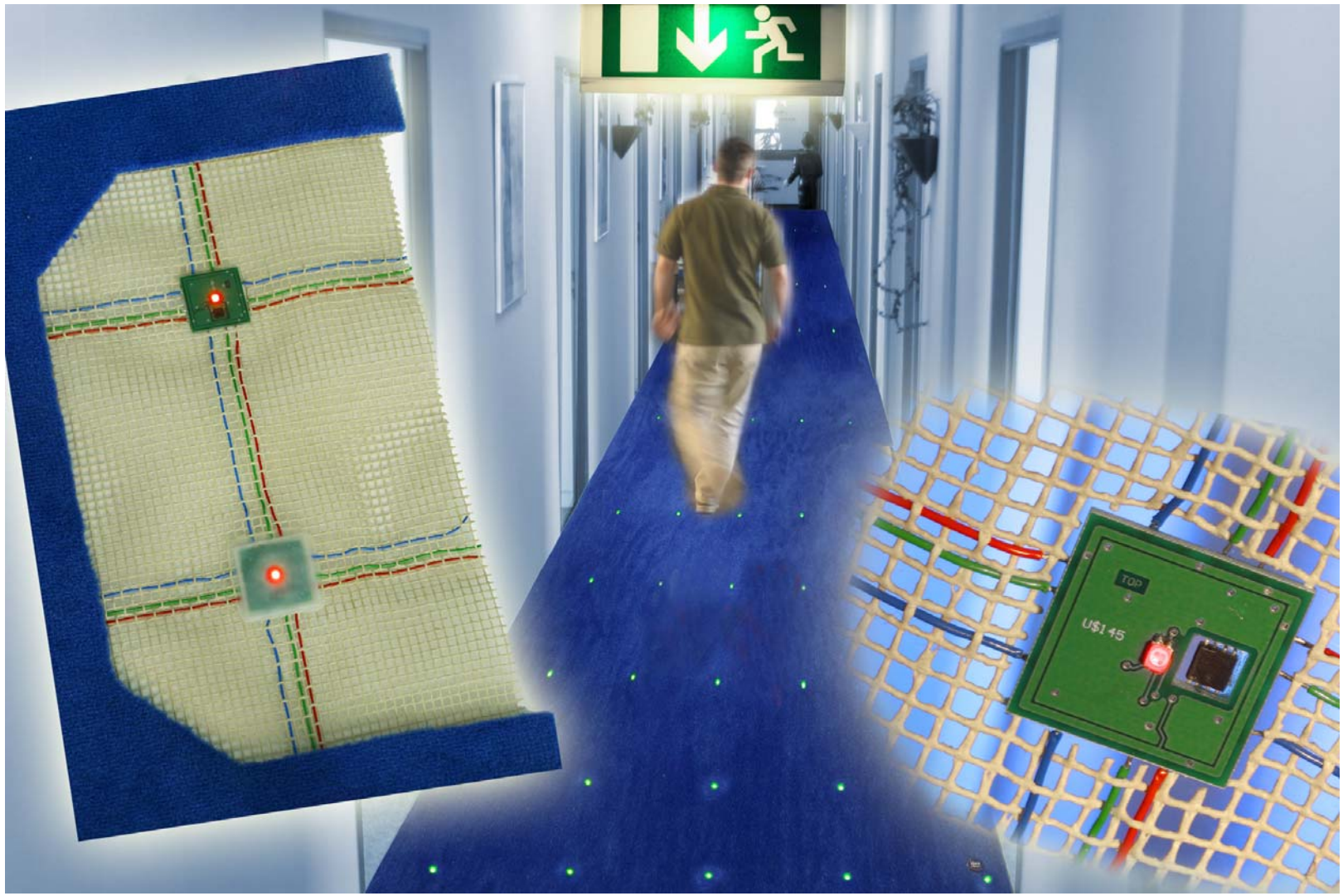


Illustration by Lisa Knouse Braiman for Forbes

Image source: Copytag

http://www.copytag.com/2001/active/apps-articles-1.html

In flooring



And the association of purchase data with unique tag numbers

"Much of the power of this technology will come from…associating RFID code fields of interest to the store in a database"

- NCR

Candidates for associating with the tag include:

- **Date of purchase**
- **Names of individuals**
- **Date of sale**
- **Price of sale**
- **Warranty**
- **Many other possibilities**

-NCR, **'RFID in the Store: 50 ideas for revolutionizing the Store through RFID'**.p. 36

“Marginal service” and “high prices” for the “unattractive customer”

Marty Abrams “advises chief privacy officers and other senior executives…[on] information management strategies for customer, consumer and employee information.”

- Maximization “means marginal service and high prices designed to drive the unattractive customer somewhere else…”
- “In other words, CRM facilitates customized pricing and customized service based purely on what the data and models tell you about the potential profitability of the customer”

Sources: http://www.hunton.com/profiles/lawyer_profile.asp?id=8728 and http://www.hunton.com/pdfs/article/Double_Edged.pdf

And you get:

"Shopper #99673, Katherine Albrecht, just walked in. Her purchase history tells us she's not a valuable customer, so spit in her eye."

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But you could also get:

"Item 308247 is a cherry Chapstick. It's registered to Katherine Albrecht. Her purchase history tells us she's not a valuable customer, so spit in her eye."

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P&G says to trust the retailers

"P&G said retailers selling its goods can be trusted to guard consumers' privacy…even if they decide to match their personal information with the serial numbers from the RFID tags."

-Wired, April 5, 2004

Reporting statements made by Sandy Hughes in Chicago at the RFID Journal Live conference, April 2004

Source: http://www.wired.com/news/privacy/0,1848,62922,00.html

But the retailers can’t be trusted.

Introducing

Path Tracker™

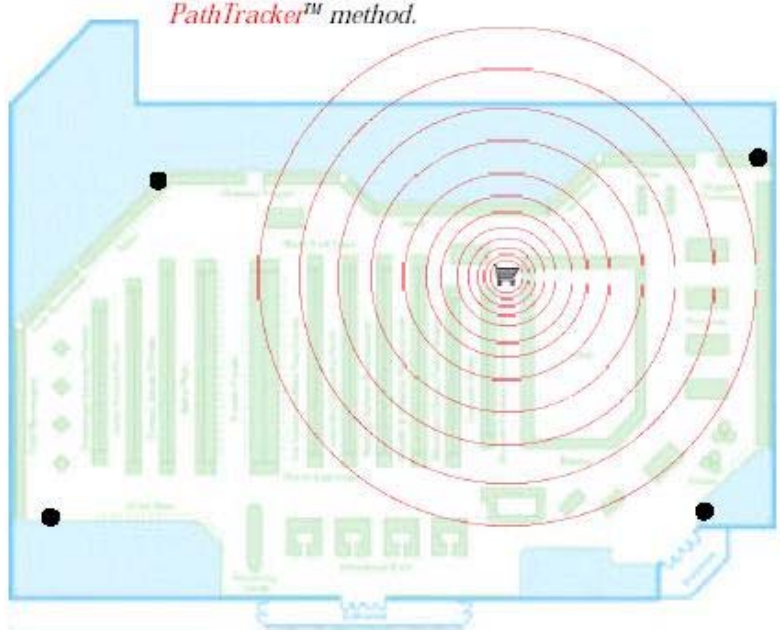
Understanding how consumers shop will help target promotional spending, improve understanding of impulse purchases and triggered purchases, assist in plan-o-gram development, category and store design and other category management issues.

Sorensen Associates the in-store research company™

The Way It Works

PathTracker™ records the coordinates of a shopper from the time they enter the store and select their shopping cart or basket until check out. Using state-of-the-art technology, the path taken and stops made (location and duration), become a database for *each shopper tracked.* In addition, the path data can be tied to the shopper's actual purchases.

Each shopping cart and basket is fitted with an emitter that sends a uniquely coded signal to an array of antennae every four seconds. Using differential-time-of-arrival technology and triangulation, the location of each shopper is determined. Statistical analysis of the emerging path of the shopper provides the foundation of the PathTracker™ method.



Sorensen Associates the in-store research company™

Overview Of Method

PathTracker™ uses state-of-the-art technology to provide quantitative understanding into how consumers behave at the point-of-purchase.

As shoppers enter the store and select their shopping cart or basket, tracking begins. Although visual observation is possible,the Sorensen method focuses on the movement of the shopper as evidenced by the movement of her cart/basket. Using state-of-the-art technology (Local Positioning System or LPS), the position of the cart/basket is tracked continuously as it proceeds through the store. The speed of the cart,as well as every pause is tracked continuously.

The path taken and stops made (location and duration), become a database for each shopper tracked. Through statistical and graphical analysis a total picture of store traffic, as well as the activity of individual shoppers emerges.

In addition, every actual purchase made can be tied to the specific shopper's path,allowing analysis on a specific brand and item level.

Who's doing this? **Everyone.**

Here's just part of Pathtracker's client list

SUPERMARKETS

A&P
Albertson's
Bi-Lo
Bigg's
Carnival
Cub Foods
Dahl's Food Markets
Dominick's Finer Foods
Farmer Jack
Food Lion
Fry's Food Stores
Genuardi's
Giant Foods
Hen House Markets
Hy-Vee Food Stores
IGA Supermarkets
Jewel Food Stores
King Soopers
Kohl's Food Stores
The Kroger Co.
Meijer's
Minyard's Food Stores
Pavillion's
Pick 'N Save Stores
Price Chopper
Rainbow Foods
Randall's Stores
Sack 'N Save
Safeway Stores
Schnuck's Markets

HEALTHFOOD

Bread & Circus Stores
Fruitful Yield
Harry's Farmers Markets
Hi-Health Stores
Lassen's Health Foods
Nature's Pantry
PCC Natural
Wild Oats Markets
Whole Foods

CONVENIENCE STORES

7-11 Stores
Arco AM/PM
Circle K Stores
Citgo Food Marts
Chevron Food Marts
Exxon
Holiday
Shell Food Mart
Sunoco A Plus
Texaco Food Marts
White Hen Pantry

HOME IMPROVEMENT

The Home Depot
Lowe's
True Value Hardware
Specialty Stores

DRUG & DISCOUNT

CVS
Eckerd's Stores
Long's Drug Stores
Osco Stores
Rite-Aid Stores
Walgreen's Stores

MASS & CLUB STORES

Wal-Mart Stores
K-Mart Discount Stores
BJ's Wholesale Club
Sam's Club
Target

YOUTH & CHILDREN

Daycare Organizations
Colleges & Schools Nationally
Skating Rink/Park

ELECTRONICS

Best Buy
CompUSA
Office Depot
Office Max
MicroCenter
Staples

OTHER

Consider the effort already being expended to watch consumers:

Source: IBM “Peoplevision.” Online at:
http://www.research.ibm.com/peoplevision/2Dtrack.html

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Tracking our movements on the road

Tracking people via the “Verichip” implant

RFID will be abused.

Consumers wonder who's guarding the henhouse?


The ONLY CHIP I WANT IN ME IS A
Dorito
NO CHIPS A-HERE
STOP SPY CHIP

Auto-ID Center's Confidential Documents

PR strategies:

- **Pacify consumers**
- **Convey inevitability of RFID**
- **Rely on consumer apathy**

The Internet of Things

how intelligent tagging is about to change the world

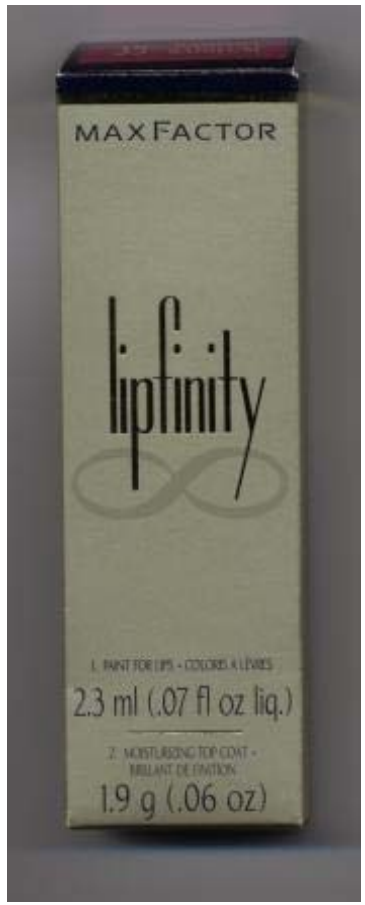
P&G and Wal-Mart tested the technology on unsuspecting shoppers

P&G, Wal-Mart store did secret test of RFID

BY HOWARD WOLINSKY Business Reporter

Shoppers in a suburban Tulsa, Okla., Wal-Mart were unwitting guinea pigs earlier this year in a secret study that two of America's largest corporations never expected you'd know about.

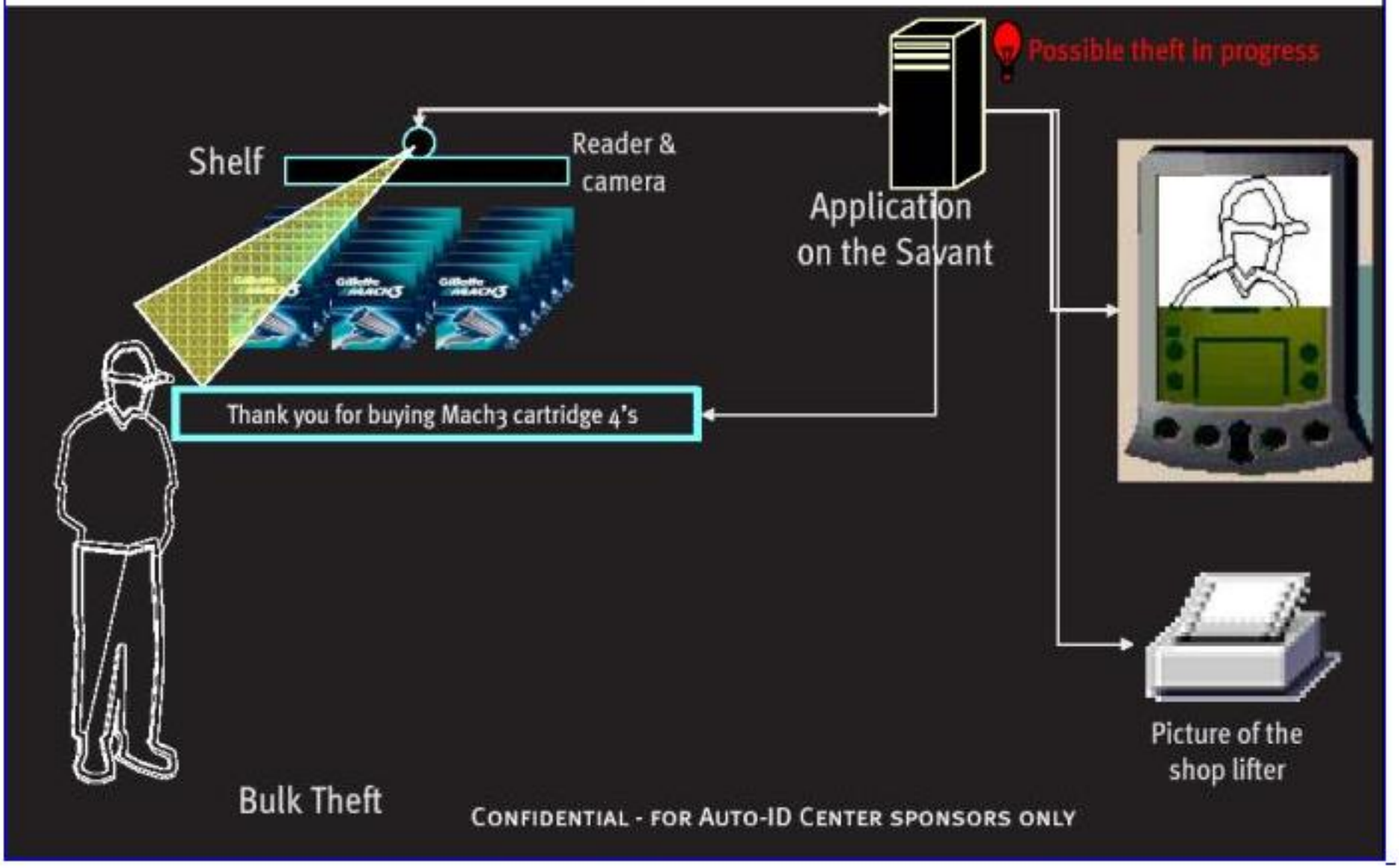
In the study, uncovered by the Chicago Sun-Times, shelves in a Wal-Mart in Broken Arrow, Okla., were equipped with hidden electronics to track the Max Factor Lipfinity lipstick containers stacked on them. The shelves and Webcam images were viewed 750 miles away by Procter & Gamble researchers in Cincinnati who could tell when lipsticks were removed from the shelves and could even watch consumers in action.



Source: http://www.suntimes.com/output/lifestyles/cst-nws-spy09.html

Wal-Mart also conducted secret item-tagging trials with Gillette

RF Enabled Shelf: theft prediction & deterrence at shelf



For more details see: www.BoycottGillette.com

Rheinberg, Germany February 28, 2004


The ONLY CHIP I WANT IN ME IS A
Dorito
NO CHIPS A-HERE
STOP SPY CHIP

Does voluntary self-regulation work?

Does voluntary self-regulation work?

No.

Fair Information Principles Ignored

Direct Marketing Association member companies surveyed:

NOTICE: 62% gather personal information without telling customers

CHOICE: 74% use customers' personal data without asking permission

(n=365)

Source: Milne, George R. and Maria-Eugenia Boza (1998), "A Business Perspective on Database Marketing and Consumer Privacy Practices," Marketing Science Institute Working Paper No. 98-110. Cambridge, MA: Marketing Science Institute.

As cited in: Milne, George R. (2000) "Privacy and Ethical Issues in Database/Interactive Marketing and Public Policy," Journal of Public Policy and Marketing 19 (Spring), 1-6.

Read Range 915 MHz Tags

Mfgr	Type	Frequency	**Read Range**	Comments
Transponder Technologies Intellitag 500	Passive	915 MHz	**11 feet**	"Read range up to 3.5m (11.48 ft) using unlicensed 915 MHz reader with one antenna; read range up to 7m (22.96 ft) with two antennas"
Telenexus	Passive	915 MHz	**15 feet**	"Telenexus has developed a reader and antenna for the 915 MHz long-range RFID system...with a read range of over 15 feet. The tag is a low-cost passive transponder."
Alien	Passive	915 MHz	**17 feet**	"The maximum freespace read range of these emulator tags is 5 meters, consistent with the performance of other known UHF passive tags."
iPico	Passive	915 MHz	**66 feet USA licensed** **20-26 feetUSA unlicensed** **3 – 7 feet EU**	Read range "depends on reader configuration and tag enclosure.30 W EIRP (USA site licensed):> 20m4 W EIRP (USA unlicensed): 6-8m500 mW ERP (Europe): 1-2m"
Matrics/Savi	Passive	unspecified	**33 feet**	"The first product to come from the collaboration will be a handheld device that reads Matrics' passive EPC tags…The unit will be able to read passive tags from up to 33 feet (10 meters) away"