Zones of Influence
Detection and Anticrime R&D

In this session, you will learn:

1. The Zones of Influence criminological theory
2. Research conducted for retailers by the LPRC
3. RFID data visualization and analysis
Background

• Founded in 2001 by 10 leading retailers and Dr. Read Hayes
  – Founding retailers include Target, Walmart, OfficeMax, CVS, Home Depot, Beall’s, Gap, and Barnes and Noble
  – Prior to forming, no academic resource for research and innovation in loss prevention
  – Idea sharing wasn’t formalized – predominately one on one interactions once or twice a year at trade shows or shorter-term committees
  – Industry relied heavily on research conducted in-house which sometimes lacks academic rigor (grounded and systematic).

Getting Involved

• LPRC StoreLabs
  – Use one of your own locations for your corporate innovation center.
  – Test LP solutions and get feedback from your own customers and associates as well as the shoplifters that visit your stores
• LPRC Innovation Lab
  – You and your team can visit Gainesville, FL for meetings as well as to check out some of the latest and greatest LP technologies at LPRC HQ
• LPRC Working Groups and Action Teams
  – Have monthly conversations with industry experts who are trying to decipher LP issues happening across many retail verticals
  – Collaborate to create projects you and other retailers will work on
  – Learn something new!
• LPRC Impact conference
  – Join 200+ LP industry professionals to learn about how retailers use LPRC Research and engage in conversation about the future of LP.
Research

• To date the LPRC has conducted over 120 real world loss prevention research projects for retailers and partners
  – Range from small sample qualitative interviews to nationwide randomized controlled trials
  – Evaluated LP technology such as ePVMs, package wraps, shoplifter deterrent signs/labels, benefit denial technology, video analytics, parking lot protection, supply chain, and much more
  – Working with members to analyze data and develop statistical models.

• Developed and enhanced theories in the field of criminology
  – See It, Get It, Fear It
  – Situational Crime Prevention
  – Crime Prevention Through Environmental Design
  – 5 Zones of influence

The LPRC/UF R&D Strategy
The LPRC/UF R&D Strategy

The LPRC team and its R&D efforts are concentrated to maximize retailer member effectiveness.

LPRC working groups, Innovation Lab, Impact Conference, Knowledge Center, and projects are aligned to support the LPRC R&D Strategy.

The LPRC/UF R&D Strategy articulates that retailers reduce crime attempts by:

a) Influencing offender decisions via people, space design, and technologies,

b) Environmental changes include making a considered crime too risky, too difficult, or not worth it

c) To accomplish this, deterrent cues must be noticed, recognized and “feared”

   a) See/Get/Fear
The LPRC/UF R&D Strategy

Further, the **LPRC/UF R&D Strategy** articulates that retailers require more and better:

a) **Situational awareness** via sensors (better detection/diagnoses) and,

b) **Combined, targeted, focused interventions** (better treatments)

   a) These sensors and actions are then deployed in concentric zones to more effectively deter and mitigate crime and loss threats and events.

The LPRC/UF R&D Strategy

**Zone 1** - *Specific points or assets*
The LPRC/UF R&D Strategy

Zone 2 - Specific interior category areas

Zone 3 - Store entry and overall interior
The LPRC/UF R&D Strategy

Zone 4 - Parking lot entry and interior

Zone 5 - Cyber and surrounding built/social communities
The LPRC/UF R&D Strategy

To this end, the LPRC’s 2016 research and working group agenda and timing, based on members surveys and the LPRC Strategy, is:

Situational Awareness
The first key focus for the LPRC and UF Innovation Lab is early problem detection, better problem and offender definition, and instant notification that place managers, and LP/AP team members, need to more rapidly know what’s happening, who’s involved, and have the ability to make more rapid, informed responses.

High-impact Action
The second key focus for the LPRC and UF Innovation Lab is automatic and/or manually-activated, focused deterrent or handling protocols the LPRC has helped develop or improve. Place managers and LP/AP team members need the ability to make more rapid, precise, cost-effective and high-impact responses.

The LPRC/UF INNOVATION LAB – OUR TESTING GROUNDS

Complete Integration:
The iLab’s main focus this year it to obtain true integration across the multiple zone-focused systems we use on to enable managers to more rapidly know about and address threats.

Actionable data:
A second key focus for the lab is to provide easily used data in and for the 5 zones of influence.

• These initiatives incorporate combined solutions deployed in the 5 zones of influence being placed in the lab today.
• Whether new technology or old the information, the data are collectable and readily used.
SOLUTIONS TO HIGHLIGHT

– Zone 1-
  • See it / Get it/Fear it - with a personalized approach

– Zone 2-
  • Specified in-aisle notifications

– Zone 3-
  • ePVM with integrated facial detection
  • Exit ePVM integrated with EAS/sounds

– Zone 4-
  • “Weaponizing” music
  • Body-worn video/tracking

LPRC/UF R&D Strategy

ZONE 1 SPECIFIC INTERIOR POINTS OR ASSETS
ZONE 2 SPECIFIC INTERIOR CATEGORY AREAS
ZONE 3 STORE ENTRY AND OVERALL INTERIOR
ZONE 4 PARKING LOT ENTRY AND INTERIOR
ZONE 5 CYBER AND SURROUNDING PHYSICAL COMMUNITIES
Bloomingdale’s Innovation Store

• Take a scientific approach to testing new AP technology
• Devising new ways to look at information collected from technology
  – Does technology work?
  – Is it impacting shoppers?
  – How do associates like it?
• Looking at new video technology, point protection technology and RFID
• Using the Zones of Influence ideology we tested:
  – Zone 1 – 3 alarm tags and RFID
  – Zone 2 – ePVMs in stockrooms and in the entryway to fitting rooms
  – Zone 3 – Cameras with loitering time, path analysis, Wide Dynamic Range and Forensic Capture capabilities. Downward vs at an angle facing people counting cameras
  – Zone 4 – Exterior 360 degree cameras with digital zoom
  – Zone 5 – Social media monitoring/investigations

RFID

• Bloomingdale’s Innovation store to have 100% RFID tagged inventory.
• Integrated RFID with IP cameras
• Sensors at customer entrance, associate entrance and fitting rooms.
Items Lost by Day

- RFID loss information assists us in:
  - LP Staffing
  - LP Staffing locations
  - Associate staffing in high risk departments

Items Lost by Department

- Identified High risk departments
  - 827 – Women’s shoes
  - 804 – YES Denim
  - 808 – Sutton Activewear
  - AP can now be stationed at high risk departments
Items Lost by Time

- Graph high risk departments by time of day.
- AP to do “hot spot” patrolling routes
  - Station AP in select departments from 2-8
  - Focus on associate bag checks from 8-10

Investigations with RFID

- RFID events linked to IP cameras
  - Each event has a corresponding 10 second video
  - Conduct “shallow dive” investigations takes ~30 seconds
  - Events requiring a deeper dive sent to store AP.
- Group all events in one minute time intervals throughout the day.
Investigations with RFID

- Quantify the number of events for every minute of the day
  - Identify spikes in the count of events
- Find corresponding UPC and find the event in the RFID dashboard
- Color coded for associate and customer entrance events

- Link loss event and UPC data with pricing information
- Investigate high value events
- Look at events occurring outside business hours
- RFID information contains description of product to detect open carry events
Investigations with RFID

- Link loss event and UPC data with pricing information
- Investigate high value events
- RFID information contains description of product to detect open carry events
- Analysis of this data led to a booster apprehension, several BOLOs and 2 dishonest associate cases.

Challenges

- Store level compliance
  - Only about 80% items RFID tagged
  - Associates not correctly scanning EPC
- False positives
  - Discarded RFID tags in trash
  - Racks of clothing from fitting room
Zones of Influence

To recap on today’s takeaways...
1. Criminology theory should guide your own company’s research.
2. Sharing research through venues like the LPRC provides a good foundation for your own research and development initiatives.
3. Data can yield impactful results, know how to work with it.

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