

Property Marking System

**Use-Case Study:**

How national retail chain-stores can combat ORC-related theft and realize significant ROI

Using

Visible and Non-Visible marking of

Store-level Inventory.



**Inventory Shrinkage and Organized Retail Crime**

(Partially excerpted from the NRF 2011Organized Retail Crime Survey. To read the whole report, [click here](http://www.nrf.com/modules.php?name=News&op=viewlive&sp_id=1132&parent_id=950&peer_rev=0&nrf_or=0))

Organized retail crime (ORC) is a growing problem throughout the United States affecting a wide range of retail establishments including supermarkets, chain drug stores, independent pharmacies, mass merchandisers, and convenience stores among others. Such retailers suffer from inventory shrinkage – that is, the disappearance of stocked inventory from the store or distribution center environment. This is a long and well-documented aspect of operating retail stores.

ORC is separate and distinct from petty shoplifting in that it involves professional theft rings that move quickly from community to community and across state lines to pilfer large amounts of merchandise that is fenced and sold back into the marketplace. Petty shoplifting is typically considered to be items stolen for personal use or consumption.

Organized Retail Crime gangs (ORC) have increasingly been engaged in illegally obtaining retail merchandise through both theft and fraud in substantial quantities. These crime rings generally consist of the “suppliers” – who methodically steal merchandise from retail stores (shoplifting) or trailers (cargo theft) – and “distributors”, e.g. - fence operators who convert the product to cash by selling the product.

These groups often steal thousands of dollars’ worth of merchandise at a time with the intent to resell it for profit. Many times, unsuspecting consumers purchase these items from pawn shops, swap meets, flea markets and street vendors. In recent years, crime rings have also swarmed the internet with intentions to unload their stolen goods through online marketplaces, classified ads or through their own websites. This practice is referred to as e-Fencing.

Recent years have seen a spike in such activity. Reported financial losses related to shrinkage are staggering. According to Congressional testimony and industry experts, organized retail crime losses total an estimated $15-30 billion per year. A survey conducted annually over the past 6 years by the National Retail Federation has seen a consistent rise in the number of retailers reporting this type of issue, with greater than 90% of retailers having been victimized in 2011.

The most popular items targeted by these groups are goods in high demand commanding up to a near-retail resale price. In general, criminals target items such as designer clothing, handbags, lingerie and accessories. Grocery and drug stores are targeted for infant formula, over-the-counter drugs, razor blades and high-end health and beauty aids. At electronics and general merchandise locations, items range from batteries to the latest “i” devices. Stores are targeted for gift cards using fraudulent tender or return.

**ORC Theft: A National Epidemic**

*As Showcased by a FraudFighter Customer*

(note – in an effort to maintain the anonymity of our customer, we have refrained from revealing specific information that might identify who they are to industry insiders or others with knowledge of their operations)

**Problem Identification**

One of FraudFighter’s large, international chain-store operator customers has approached us with a problem. They are being heavily victimized by inventory shrinkage as the result of organized retail crime rings. Certain categories of relatively high-value, non-perishable branded products are being systematically stolen from their stores. The shrinkage is extensive – in some specific product examples, the thefts represent as much as 5% - 9% of all the product stocked at store locations.

This retailer operates thousands of store locations across North America, and the annual losses experienced from this problem are staggering – numbering in the tens-of-millions of dollars and likely to reach the $100M mark if left unchecked

In cooperation with law enforcement, this company’s loss prevention task force has been performing investigations – conducting “buys” of the most commonly stolen items at swap meets, in independent stores, and in online marketplaces such as eBay and CraigsList.

As expected, they found that much of the inventory disappearing from their store shelves were reappearing in these channels. In some cases, the seller was directly involved in the theft and was part of the ORC group, but in others, the resellers were unsuspecting victims themselves – having bought stolen merchandise from seemingly genuine distributors of the products.

One major problem faced by the ORC task force at this company was the inability to specifically identify inventory as their own. Much of the product being stolen could just as easily have come from one of their competitors in the marketplace. Thus, when successful investigations resulted in arrests and the seizure of stolen property, it was not easy to determine to whom the stolen goods should be returned.

A secondary issue involves the desire of the ORC task force to conduct “sting” operations. That is, the ability to track specific lots of inventory to determine where and how the goods are being stolen. For example, they want to know if the goods are disappearing from the distribution centers (DC), from the transportation company carrying the goods from the DC’s to the stores, from the store before the goods have been stocked on the shelf, or from the store directly off the retail shelving.

Properly organized, such “sting” operations will enable the company to identify potential “inside” operators. – i.e., employees who are members of organized crime who have been planted in the company to aid in the theft of the inventory. Also common is the “subversion” of previously honest employees through cash payments, or via threat of physical harm.

**Current Solution**

In an effort to address this need, the retailer went about sourcing potential asset-tagging solutions. Ultimately, they settled on a type of passive RFID “sticker” which had a store-number printed on the label. This way, they could potentially stop the theft as the product was boosted out the door because the electronic asset control systems in their stores could detect the RFID. However, if the criminals were able to successfully circumvent the RFID detection system, (which they so often are able to do) then the product would have their company name and store number printed on the product for later identification.

This solution, while helpful, exhibits a number of shortcomings and issues:

1. The labor involved at the store level to affix the labels to the products is costly, time consuming, and was often shirked or ignored by store level employees
2. The RFID label is expensive on a per-unit basis
3. The label is readily visible to customers and prospective thieves
	1. As a benefit, this visible marking may serve as a deterrent to theft because the thieves do not want to steal inventory that can obviously be identified as having been part of the chain-store inventory. The resellers of the property will devalue such “obviously stolen” property and the thief will not earn as much money for his effort.
	2. As a problem, making the mark visible means that the thieves know of the asset tag, and are able to attempt removal of the tag in order to circumvent the point raised in 3.(a). If they can remove the label, then the goods are resalable at full “black market” value.
		1. Another issue with visible marking of products with the RFID labels is the “disfigurement” of the branded product, since the RFID label may obscure or otherwise lessen the impact of the manufacturer’s branding, or may make it impossible to read important product information, such as ingredients, or directions for use.

The company came to FraudFighter and asked whether our product development department could devise a potential solution that would overcome the issues associated with the RFID labels.

**Proposed New Solution**

FraudFighter has engineered a system that indelibly marks inventory for the purposes of both discouraging theft and for positively identifying items as belonging to a particular store in the event of theft.

FraudFighter’s unique solution is achieved through the marking of products with either visible (“overt”) or invisible (“covert”) identifiers that can be readily recognized by store investigators.



The solution is achieved through the design of unique, customized “stamps” that are designed to meet specific customer needs. In the case of our customer, they wish to have the store number and the company initials imprinted on their inventory. This means each of their thousands of stores will eventually need to be provided with a stamping set that is unique and applicable only to that store.

The process for applying the mark to the product is simple. A large “marker pen” barrel holds the FraudFighter AsseTag ink, and the employee simply “stamps” the product with the nib of the ben barrel. The process is fast – much faster than the time it takes to peel a label off a sheet and affix the label to the surface of a product.

The visible marking serves the purpose of deterring theft. Visible markings which cannot be removed without damaging the packaging make the resale value of the stolen goods considerably lower. Much of what is stolen from our customer’s stores gets resold at small, independent retail stores. If the packaging is damaged, then these independent store owners are less likely to buy the stolen goods from the criminals. The FraudFighter solution involves the use of inks that cure to a point of indelibility which will exhibit extreme resistance to chemical and mechanical efforts to remove the mark. Thus, even if the criminal is able to finally remove the mark, he or she will have damaged the packaging of the product and reduced its resale value.

Invisible markings serve two entirely different purposes. First, since law enforcement routinely makes large-scale seizures of stolen goods in the course of their criminal investigations, the invisible markings enable retailers to examine and “identify” goods that are recovered. By marking the goods with marks that can be clearly related to a specific store location, the retailer can both lay claim to the goods and return them to inventory, and use the information about which stores the goods were stolen from to aid in investigating how the goods were stolen in the first place.

Secondarily, the invisible marks can be used to run “sting” operations. By marking specific inventory with a customized mark to indicate very clearly where it was located, it is possible to determine where in the distribution chain goods are being stolen, and by whom. Because the marks are non-visible, criminals are unaware that the merchandise they are stealing is marked and traceable.

In the case of the visible marking inks, a variety of colors are available. Identification of these marks by store investigators is a simple matter of recognition. The invisible markings require activation by a non-visible light source. The most commonly available form of this activation is to utilize UV-fluorescent ink compounds that can be viewed only with a proper UV light source. However, if a customer required it, inks could be designed that would only activate using more exotic fluorescents, such as long-wave infra-red light. Solutions can also be developed that would require the viewer to wear special filter-lenses in combination with unique light sources in order to see the covert markings.

**An Analysis of Costs and Expected Return-on-Investment**

**Labor Savings**

According to our customer, they have a need in some stores to “mark” as many as 8,000 products per month, or more, per store. The implication of this statement being that they may require as many as 100,000 “marks” in any given year in order to provide coverage of the broad range of products that are targeted by ORC gangs. This is the required number of marks “per store”.

We were told by our customer that the current solution they have in place requires an average of 5.6 seconds per-product to install the RFID label.

Testing on a broad range of items in our lab showed that marking products using the AsseTag would require, on average, only 1.3 seconds. The difference between 5.6 and 1.3 seconds is 4.3 seconds per product. This seemingly insignificant number adds up to real dollars, however, when applied across tens of thousands of products.

If one assumes only 50% of the “worst case” scenario – that is, in a given year, a store may need to mark only 50,000 products (instead of 100,000), then the time savings provided by the AsseTag system is approximately 60 hours per year. At an “assumed” cost of labor of $8 per hour, this comes to $480 per year in labor.

**Materials Savings**

RFID labels are not cheap, by any measure. Even purchased in volume, our customer says that 10,000 piece rolls of the labels were costing $0.0195 each unit. Under the above scenario where we assume 50,000 products labeled per year, this means that an annual cost for the labeling materials would total roughly $1000 per store. Pricing for the AsseTag system on a “per mark” basis will be considerable less than this – offering savings of 50% or more, depending upon the specifics of each store’s needs.

**Asset Recovery Savings**

Estimating how much will be saved via asset recovery is a difficult task. We were told that certain targeted products in our customer’s stores experienced around 7% shrinkage, when averaged nationally. We were also told that this was a roughly $80,000,000 per year problem for them. Thus, it would take very little in the way of asset recovery to justify the investment into a system that will genuinely allow the company to identify and claim its inventory when there is an asset seizure.

Working with our customer, we have determined that it is likely that as much as $1000 per year, per store, will be recovered using the “covert” marking system. In fact, this is a conservative number.

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| --- | --- | --- | --- | --- | --- | --- |
|  | **Number of Marks** | **Seconds per mark** | **Hours per annum** | **Materials Cost per Mark** | **Annual Materials** | **Assets Recovered** |
| “current” system | 50000 | 5.6 | 77.5 | 0.0195 |  $ 975.00  | virtually none |
| AsseTag® | 50000 | 1.3 | 18 | 0.009 |  $ 450.00  | $1,000  |
|  | Per Store Savings |  | $480.00  |  | $ 475.00  | $1,000.00  |

As summarized in the above table, the annual investment of $450 can produce a return of $1955 per-store for this customer. This is greater than a 4-to-1 ROI ratio.

When multiplied across thousands of stores, the argument for making this investment is easily justified by the terrific ROI.

**Intangible Benefits**

Thus far, we have discussed the hard-dollars savings that can be realized from the AsseTag implementation. However, a full benefits analysis would not be complete if we did not discuss some of the intangible benefits that may be realized through implementation of the program.

In general, any time crime is reduced in a store location, there are a set of run-on benefits that occur as a result of the new security measures. For example:

* Soft Costs Savings:
	+ Investigative Time
	+ Internal Loss Reports
	+ Inventory Audits
	+ Police Reports
* Safer Store Environment
* Corollary Crime Reduction

The dollar value of the above benefits are difficult to measure. In the case of “soft costs” it is possible for a retailer to analyze how many hours of staff time is spent investigating shrinkage, filing loss reports, conducting inventory audits and communicating with local law enforcement. So, a dollar return in any reductions of this time can be evaluated.

Perhaps less obvious are the positive results that occur any time a retail store makes their location less attractive to criminals. If the criminals are not hanging around in and about the store location, then the environment for both customers and employees becomes safer.

Similarly, as the AsseTag marking system becomes known among the ORC community, the members of the gang will stop targeting the stores for theft. As this happens, other, corollary crimes (such as counterfeit payments and return receipt fraud) will decrease.

Current Status and Summary

Our customer has ordered enough AsseTag product to conduct a trial in 50 of their stores. Both visible and non-visible marks will be utilized, and the customer has specified that individual stamp-head designs be made for each of the 50 stores. Thus, the stores will be able to mark their inventory with a store-specific mark which will enable the ORC task force to identify exactly which store location the goods are being stolen from.

FraudFighter has perfected the techniques to produce such store-level stamp designs at a cost-structure that can produce remarkable ROI. We have also produced ink formulations capable of resisting common solvents and detergents, and which also resist “mechanical” removal – e.g. via abrasive scrubbing.

This remarkably simple solution we believe has the capacity to make significant inroads towards the reduction of what has rapidly become a national crime problem affecting US retailers with nearly $30Billion a year in losses.

If you are interested in learning more about this solution and how it could potentially be used in your business, please give us a call, 800-883-8822, or [click here](http://central.fraudfighter.com/download-the-assetag-roi-case-study?hsCtaTracking=7538cdcb-fee9-417f-888a-d12963ce5657|ceb4f7a4-0cc7-4057-924e-e2239883c96c) and fill out the inquiry form.