

## Data Mining – Beyond Point of Sale Monitoring

*Barry Vincent former Head of Security for Supply Chain and Distribution with Tesco the UK's largest supermarket, and currently Non-Executive Director for Intrepid Security, puts the case for the benefits of enterprise wide data mining in compensating for dwindling loss prevention budgets, how it can effectively reduce losses and bring about a significant change to the culture of loss prevention for retailers*

During times of a downturn in the economy 'acquisitive' crimes such as theft and fraud increase – this is the conclusion according to research carried out by the UK Home Office during the recession of the early 1990's.

As loss prevention and security professionals we may feel that this is a glimpse of the blindingly obvious, but without entering into a treatise about what makes people commit crime it is fairly safe to assert that in the current economic circumstances some people who suddenly find their jobs are insecure, their income is potentially reducing or under threat and their usual lifestyle is unsustainable, are more likely to succumb to temptation and exploit opportunities to steal or commit fraud. This tendency is all the more likely given that we have emerged from a prolonged period of economic growth fuelling a consumer- driven society with high expectations, in which we were used to a regular income, easily attainable credit and increasingly more desirable things to spend our money on. The British Prime Minister Harold MacMillan's famous remark that 'we have never had it so good' is probably more appropriate in describing the last 15 years than it was at the end of the 1950's, the decade he was referring to!

### **Reduced resources for loss prevention**

It is also an unfortunate reality that despite what the Home Office research tells us about the prospect of an increased threats and crime in the current climate, retail companies will invariably look to reduce costs to accommodate declining sales revenue and falling profits. Unfortunately loss prevention and security often becomes a 'soft' target when it comes to making such economies, and as a consequence LP departments find themselves having to restructure or 'downsize' at a time when they probably need *more, not fewer* resources to tackle the demands of an increasing workload. The inevitable outcome is that loss prevention teams are required to 'sweat' their assets more and more, and to work harder to achieve their objectives.

Loss prevention departments will not be alone in feeling the impact of budget cuts at this time. Faced with reducing budgets in other areas of the business, retailers will inevitably have to consider other staffing cuts, the consequences of which are the probability that general compliance with operational policies will deteriorate, and their people will be working under greater pressure resulting in an increase in procedural errors and an overall rise in losses due to shrinkage. This somewhat depressing scenario points towards an inevitable downward spiral of increasing losses to the business that may only be corrected when the economy turns the corner and budgets can be restored. But does it have to be like this? Does the outcome of a company's traditional reaction to the economic downturn inevitably have to lead to increased losses, or is there an opportunity to reduce losses through finding ways to enable staff to work smarter rather than just harder?

**'Intelligence-led' approach**

In the world of retail over the past few years the European ECR Shrinkage Group has championed what I would describe as an 'intelligence led' approach to reducing shrinkage. It carried out research with retailers and manufacturers across Europe and identified four key areas where shrinkage occurs, through supplier fraud; process failure; external customer theft and staff theft. Its' research identified that theft and fraud made up about 75% of total shrinkage, whilst failure in processes e.g. compliance errors or failure to correctly manage the handling and sale of products, made up the rest. As an aside, it is worth mentioning here that their ECR's original estimate of internal theft at around 24% was considerably less than the figure identified by American researchers, and the European experience is that their figures are now being revised upwards more in line with the US. I believe that this has significant implications both for the need for, and the importance of data mining.

In order for companies to be truly effective in reducing losses the ECR Group recommended a systematic approach of mapping and measuring risks and identifying root causes of loss in the four key areas, and gathering and analysing this data as part of an ongoing process. It developed the 'hot' concept to describe high risk areas of retail operations i.e. vulnerable products, specific locations and particular people. By collating accurate and relevant data about the product lines that are of high risk whether by theft, damage, waste etc, locations where losses occur, and the people and processes that may lead to errors or opportunities for loss etc. and analysing this information companies could focus their resources more effectively and concentrate on specific activity to reduce shrinkage. The ECR Road Map approach to shrinkage is now widely accepted, and retailers have adopted many of its' recommendations, introducing a range of initiatives to reduce shrinkage. However, the success of this approach depends on a number of factors, including not only a company-wide commitment to loss prevention but also, and equally as critical, ensuring the proper measurement of their losses and the collection of credible and accurate data. Despite achieving some success, largely at the store end of their operations, with e.g. better inventory processes, better product protection measures and collaboration with suppliers to improve product security for high risk products etc, many companies have still not yet developed systems that can effectively collect and analyse data in respect of the breadth of their operations and have therefore been limited in the impact on reducing losses.

**Point of Sale Monitoring**

A significant development in recent times has been the investment in computer based technology to monitor activity at Point of Sale (POS). Using analysis of POS data has helped to detect both operational errors e.g. pricing and keying mistakes, as well as potential dishonesty by staff during till transactions. There is no doubt that for most retailers POS monitoring has become a key tool in reducing loss by inhibiting staff dishonesty, providing a forensic trail for detecting fraud at the tills and catching dishonest cashiers, and especially shedding light on the practice of 'sweethearting' (collusion between staff and customers), the true extent of which is largely uncertain. However, for many retailers POS monitoring has become synonymous with data mining despite its' impact being limited purely to 'front end' data and activity. POS monitoring does not address those areas of loss from shrinkage further back along the supply chain where operational processes and people's behaviour are not subjected to the same level of scrutiny. It is in these areas that losses may be as

significant as at point of sale, but in general are areas where it is often difficult for loss prevention teams to penetrate and few meaningful data about loss generating activity is available.

Arguably, it is in these areas of the supply chain (from supplier to the backroom of the store) where there are easier opportunities for staff theft and fraud, and the lack of compliance with operational policies that contribute significantly to shrinkage. Supply chain and distribution networks are often seen as so complex and operating with such a high tempo to meet 'just in time' requirements that in many instances lip service is paid to the processes and procedures designed to ensure the security and integrity of the products passing through them to stores. In such an environment efforts to maintain the disciplines of effective security often go unenforced by the operators, so that for example, the integrity of security seals on vehicles, the checking of deliveries from suppliers in distribution centres, receiving arrangements at stores and the handling of faulty and damaged goods or 'reverse logistics' among other measures, go by the board.

In these circumstances loss prevention tends to become loss reaction, where only the most significant incidents are reported and followed up, and few data collected that could consistently help to limit losses. How many companies collate the information that can identify their best or worst performing suppliers beyond their capability to deliver on time? How many identify those individuals in their own distribution centres who make most or fewest mistakes in goods receiving, and use this information so that better supervision can be given to some, and better performing staff matched to receive suppliers whose deliveries are problematic? In my experience few companies have a data mining capability in the key areas of their supply chain particularly in respect of delivering and receiving, and in their wider logistical and warehousing functions.

It is even less likely that companies will have visibility of loss data in another critical area of their business, that of the purchasing activities of their buyers. This is an area where there are significant opportunities for corporate fraud, where inappropriate and unregulated relationships with suppliers can often lead to significant and costly fraudulent activity. Generally problems in this area are only brought to light through a 'whistleblower' or a supplier who has become disgruntled with the buyer, rather than through effective day to day management of buyers' activities using appropriate monitoring tools. Why do we think that checkout operators are more capable of making errors or committing fraud, and warrant close monitoring when there are just as many, if not more opportunities, for buyers in collusion with suppliers to commit fraud with significantly greater potential losses to the company involved?

### **The benefits of Enterprise-wide Data Mining**

Such comprehensive enterprise wide solutions capable of reducing loss through effective data mining are not commonly deployed, or widely available in the UK. Many companies are reluctant to consider introducing such systems because of the potential disruption to their IT systems or the perceived high costs involved in developing such a solution when the Return on Investment (ROI) is uncertain. In my opinion, this is a somewhat short-sighted view of the broad range of benefits that data mining can bring to a company across their business to improve their bottom line. Companies do not need to make large investments in developing their own data mining solutions, as there are a number of innovative 'off the shelf' data mining solutions available that have very minimal impact on existing IT systems, and at the same time can achieve a swift and significant ROI. Of all of the

solutions that I have researched, the *Profitect* suite of software solutions stands out as the leader in this field. Its capability to provide end-to-end monitoring and management of all supply chain activity, and the level of granularity of data it achieves, is unsurpassed. It empowers the entire organization to identify all loss, not just fraud, and while doing so also instructs through best business practices, the correct steps to resolve the problem and is usable at all levels. By building into the software the company's own business rules and procedures, compliance is improved, opportunities to identify loss generating activity are increased and a reduction in losses becomes inevitable. Importantly, these outcomes are ongoing and sustainable. I have found *Profitect's* products to be flexible offering an end-to-end enterprise wide solution or, for those companies that already have systems covering some aspects of their operation, it can provide individual business unit modules to complement existing arrangements.

### **Getting the grease to the squeak**

Surely, at a time when loss prevention teams are bracing themselves for a difficult and demanding few years and with retailers generally tightening their belts, companies must start to recognise that an investment in data mining technology across the breadth of their whole operation, not just at point of sale, is essential. Such investment offers a real opportunity to make a significant impact on shrinkage, and having a system in place that gathers and analyses accurate information about loss generating activities and incorporates exception reporting is the key to improving compliance, getting the 'grease to the squeak', and providing managers with the capability for effective intervention to stem losses in a timely and appropriate manner.

I am sure that loss prevention professionals would agree that there is no better time for companies to invest in effective data mining tools. Tools that will not only help them make optimal use of limited and in some cases declining loss prevention resources, but also to encourage the development of a genuine business -wide culture of loss reduction and where managers at all levels, not just in loss prevention, share the accountability for reducing losses with the necessary capability to reduce theft, fraud or error and significantly improve the company's bottom line.

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