

# **Retail Crime: Prevention through Crime Analysis**

John Burrows

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**Crime Prevention Unit Papers**

The Home Office Crime Prevention Unit was formed in 1983 to promote preventive action against crime. It has a particular responsibility to disseminate information on crime prevention topics. The object of the present series of occasional papers is to present analysis and research material in a way which should help and inform practitioners whose work can help reduce crime.

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## Foreword

A recent report by the Home Office Standing Conference Working Group on Shop Theft laid considerable emphasis on the need for retailers to introduce preventive measures based on detailed analysis of the crime problems they were facing. This too was the message of an earlier volume in this series (CPU Paper No. 5), which looked specifically at theft by shop customers.

The present report draws on the experience of a large retailer — the Dixons Group — who have implemented this strategy in a bid to tackle not only theft committed by customers at their stores, but a great many more of the crime problems familiar to other retail companies. It offers a convincing case for other retailers to apply the principles of 'crime analysis' to their problems, as well as practical — step by step — advice as to how they should do so.

This report is illustrative of the progress being made in developing ways of analysing crime problems and of devising preventive measures. It also demonstrates the growing willingness to exchange ideas and information in an endeavour to control crime. John Burrows, formerly a member of the Crime Prevention Unit, now works with the Dixons Group where he is Group Security Adviser. It is pleasing to see the development of such a systematic and imaginative approach to crime within a major company, and the willingness of Dixons to share, through this publication, its experiences with others in the retail sector.

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JOHN BURROWS

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## CHAPTER 1: INTRODUCTION

Few retailers doubt that crime is an expensive fact of life, and is a concern that has to be taken into account in all aspects of their operations. It is not only expensive but can be painful, for those in retailing are occasionally also subject to violence. Moreover retailers are increasingly aware that they are not only the victims of crime committed by 'outsiders' — such as customers or burglars — but by their own employees.

### *The Extent of Retail Crime*

It has proved difficult to gauge the size of this problem. The Home Office Working Group on Shop Theft (Home Office, 1986) carried out a survey of larger retailers, accounting for nearly one quarter of all retail trade, which indicated that losses in 1985 which they *knew to be specifically attributable to theft* amounted to £6.5m. But the national estimate which can be derived from these results — that overall losses might be in the region of £26-30m per annum — is without doubt an underestimate<sup>1</sup>. The Association for the Prevention of Theft in Shops (APTS), for example, has estimated that losses from shoplifting alone are in the region of £1 billion annually.

There are a number of reasons why it is difficult to achieve an accurate assessment. It is partly due to a reluctance to report offences to the police. The reasons why retailers do not uniformly report specific crimes are wide ranging: for example, there may be no lead as to the 'culprit' and local decisions tend to take the individual offender's circumstances into account (e.g. retailers are known to show leniency towards the very young or old 'shoplifter': see Burrows and Lewis, 1987). On a more general level, the retailer may be dissatisfied with the time taken, and eventual outcome of police referrals (Home Office, 1986)<sup>2</sup>, and many are clearly reluctant to publicise the extent to which they suffer from theft and fraud committed by their own employees: management is often concerned that this will be seen as evidence of poor supervisory control (see Levi, 1986), or will act as a stimulus to others. To add to the difficulties, there is the problem that the crimes which retailers *do* report to the police are not distinguishable from other crimes held on police records (the offence of theft from a shop being the notable exception)<sup>3</sup>.

The main reason, however, is that retailers themselves simply do not know about the true extent of their losses from crime. This point was driven home forcibly to the Working Group on Shop Theft when they attempted to elicit exact information: less

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(1) See, for example, the recent report on customer and staff theft in Marks and Spencer ('Down the Drain'). The Director of Store Operations is quoted as saying that losses amounting to £1 to a week were the equivalent of M and S "trading for one month of the year just to pay for theft and loss".

(2) Since the establishment of the Crown Prosecution Service (CPS), the final decision to proceed with a prosecution of course falls to CPS officers. However, the police still decide whether or not a case initially requires referral to the CPS.

(3) Burglaries, for example, are simply classified according to whether they are committed against 'dwellings' or 'non-dwellings' and the offence of theft by an employee does not furnish details about types of employment involved. A further problem is that police forces are not required to record the extent of losses incurred by fraud offences.

than one in five of the major retailers they approached were able to provide this (see Home Office, 1986 p 18). It was equally evident in the fact that those who were able to respond to this survey were only able to attribute 11% of their 1985 losses to *known* instances of crime. The remaining 89% of 'unidentified' loss represented an average 0.9% of their turnover: though of course because all losses come straight off the bottom line of a company's profitability (comprising the handling and cost price of the goods *as well as* lost profit margin) the real cost is much more significant.

The financial costs are only one side of the problem: there are also important human and social costs associated with this crime. As well as facing personal attack or intimidation as the 'guardians' of their own (or their employees') interests, those working in retailing have to put things in order — and liaise with the police — after burglaries and other non-personal incidents. The anxiety and fear this creates is naturally carried forward into their personal lives. The impact is quite often not restricted to the individuals directly involved: it is known that some retail outlets — newsagents, local post offices and so on — act as important focal points within neighbourhoods, where conversations about crime can affect residents' perceptions of the locality (Shapland and Vagg, 1985).

#### *Prevention through Crime Analysis*

The retailer who is concerned to tackle the problem of crime is faced with some difficult options. There are a variety of methods he might pursue: these could range from the implementation of more comprehensive staff training or supervision; could encompass the installation of technologically advanced controls (CCTV, 'tagging systems', alarms, etc. ); and might even include modification of merchandising, sales or distributive procedures. The payoff from any of these methods is uncertain. But, in a competitive environment, the effort and expenditure devoted to prevention and control is bound to require some reasonable assessment of the dimensions of the initial problem and what remedial action will achieve.

One way of moving towards this goal is to apply what has come to be labelled as the technique of crime analysis. The logic of crime analysis derives from a range of well documented cases demonstrating that a good proportion of criminal incidents occur at certain locations or times, or in particular circumstances<sup>4</sup>. These crimes can often be separated from other, more randomly distributed, incidents. They generally follow patterns because each 'trouble spot' offers opportunities to those inclined to offend: thus shoplifting is perceived to be easier in certain vulnerable areas of a shop,

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(4) Much of the recent work of Home Office researchers underlines this basic point. At a broad level, the British Crime Survey (Hough and Mayhew, 1985) for example, has emphasised the different risks of burglary to houses in different areas and studies of police records have shown how incidents are patterned against particular targets (see Ramsey, 1982). In addition, specific research has highlighted, for example, how burglary risks within small areas are affected by occupancy or surveillance levels (see Winchester and Jackson, 1982), how car thefts are affected by the vulnerability of different makes (Burrows, 1979) or the presence of steering column locks (Mayhew, 1976) or how crime within concise areas like shops (Ekblom, 1986) or hospitals (Smith, 1987) is directed at specific locations at specific times.

burglaries are committed at branches where security is poor or at times when the chances of apprehension are deemed to be low, and theft by staff occurs because administrative or procedural practices are lax. The purpose of crime analysis is to identify these weaknesses, in order to block the opportunities.

There are four steps in the preventive process (these are discussed by Ekblom, 1986, in the context of shoplifting incidents):

- (a) Crime analysis: defining the problem
- (b) Identifying means of preventing it
- (c) Implementing the chosen strategy
- (d) Evaluation (is the response effective?)

It goes without saying that the type of activity involved at each stage will vary widely according to the characteristics of the 'presenting' problem. Thus shoplifting may be assessed either by routine monitoring of stock control records, by specific experimentation at certain sites, or by analysis of those incidents where offenders are caught (or by a combination of these methods). And of course any investment in prevention (and subsequently, any evaluation of its impact) is bound to be dictated by the size and seriousness of the problems identified by these analyses.

Following an earlier report in this series on the need for crime analysis to tackle the problem of shoplifting (see Ekblom, 1986) this report attempts to make the case for applying similar methods to a wider range of retailers' problems: from theft by staff themselves to burglaries. Its primary objective is to highlight the sort of issues which crime analysis in a retail environment might want to address and — in doing so — to offer practical advice on methods of collecting, recording and analysing data. Although every attempt has been made to cover a wide range of the crime problems experienced by retail outlets, the report focusses on the loss of stock and cash from shops and distribution networks, and does not deal with equally important areas such as computer fraud. It is primarily based on a system established in two electrical retailing chains — Dixons Limited and Currys Limited — that form part of the Dixons Group of companies.

#### *Structure of the Report*

Chapter 2 presents a more detailed case for applying crime analysis techniques to the problem of retail crime. Chapter 3 then outlines the wide variety of operations covered by Dixons and Currys — ranging from the problems of distribution to over 900 individual branches, through their sales operations, and on to the need to provide a customer delivery service for larger goods — and explains the broad principles of the computerised system which they use to record and analyse reported crimes. Chapter 4 looks at some of the issues that need to be addressed in each sphere of operations and how information on each can be accumulated and analysed. Chapter 5 offers advice on establishing computerized databases.

## CHAPTER 2: THE CASE FOR CRIME ANALYSIS

In responding to the challenge of crime, most retailers would accept the wisdom of the adage that 'prevention is better than cure'. They would be right to do so, and not simply in token terms. Substantial criticisms can be made of policies aimed at 'cures' for retail crime.

First, it is clear that most crime is not committed by a distinct or finite criminal fraternity — who might, in time, be detained and dealt with by the police and courts — but by a much wider sector of the population. Looking specifically at shoplifting, for example, various studies have suggested that at least 1.5% and perhaps as many as 8% of customers going into shops take something without paying (see Murphy, 1986 for review). Though not a numerically large percentage, extrapolating these results to a sizeable department store — dealing at any time, say, with 1,000 shoppers — means that between 15 and 80 of these shoppers are likely to be removing something without payment. Few will be caught and fewer still referred to the police. Whilst it is true that a very large number of almost all types of crime generally remain unreported or unrecorded (see Hough and Mayhew, 1983 and 1985), evidence from official statistics of *known* crimes also shows that crime is an activity not restricted to a few aberrant individuals: recent studies have suggested that nearly 1 in 3 (30%) males will have at least one conviction for a 'standard list' offence by the time they reach the age of 28 (Home Office, 1985)<sup>1</sup>.

Despite this wide involvement in criminal activity (albeit often on a petty scale) the chances of catching the perpetrators of crime are small. This is simply because those involved do all they can to avoid being caught, and there are countless opportunities during the retailer's trading day for them to do so. A similar point has been recognised for some time as a major constraint on conventional deterrent policing and has been supported by the large body of research which has shown that increasing police patrols does not reduce crime (see Clarke and Hough, 1984 for review). It applies with equal force in the retail environment. Research interviews with known offenders have also shown that the low chances of apprehension are well appreciated by those involved in crime (see, for example, Bennett and Wright, 1984).

Finally, even if retailers were able to identify and pass on to the police those responsible for their losses, criminologists have thrown serious doubts as to whether the criminal justice system — in isolation — can provide any effective 'cures' to prevent re-offending. Different treatments — prison, detention centres, probation (or different regimes with each) have proved little better than one another in reducing recidivism (see Brody, 1976 for review). Indeed, the evidence shows that the likelihood of continued offending increases as the offender becomes more deeply

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(1) As well as excluding offences which do not come to the notice of the police, these 'standard list' offences exclude most summary motoring offences, and other summary offences such as drunkenness or prostitution. This Home Office bulletin points out its findings are "not out of line" with Farrington's (1981) estimate that over 40% of males would eventually be convicted of an indictable offence at some time in their lives.

involved in the criminal justice system (see Home Office, 1987). Moreover unless the numbers of offenders sent to prison increased dramatically (at impossibly high cost), research has indicated that the simple act of 'incarcerating' offenders has little impact on overall levels of crime (see Brody and Tarling, 1980).

But are the prospects for preventive action any brighter? The purpose of this report is to suggest that they are, especially so if preventive action is based on rigorous analysis of each retailers' particular problems and their strategies tailored accordingly. This process — crime analysis — can point to the more obvious solutions as well as aiding the development of innovative (and, occasionally, cost free) preventive strategies. The application of such analysis is aimed at complementing the work of the police and other criminal justice agencies in combating crime, by fostering a philosophy of 'self help' amongst retailers.

Crime analysis can also be used to gauge whether existing security expenditure is being put to best effect. Even leaving aside the cost of insurance, retailers spend vast sums on preventive measures: on security hardware (from door locks to closed circuit television); on in-house security personnel; and on the services of the private security industry. Indeed, retailers are amongst the principal users of the services provided by this large — and apparently rapidly proliferating — industry<sup>2</sup>.

The process is essentially aimed at reducing the opportunities available to commit crime. The case for it is that customers or staff are not simply either 'law abiding' or 'dishonest', but may be tempted and subsequently triggered into committing criminal acts by the opportunities presented by particular environmental conditions. Crime analysis enables retailers to address the *situation* in which crime occurs rather than being concerned to understand complex questions of how psychological and social factors affect the *motivation* of the potential offender. Specifically, research has shown that an individual requires both an occasion to take a certain course of action, and the inducement (the appropriate conditions — where the perceived risk of being discovered is low) to do so. Reducing opportunities and increasing risks of discovery can therefore be powerful means of prevention.

This logic can be applied to most decisions to engage in crime (see Mayhew *et al*, 1976), but it is not restricted to criminal activities alone: Clarke (1983) cites many examples from other walks of life. It is argued here that the critical analysis of crime in retail settings is a necessary prerequisite to identifying the points at which thieves take advantage of the opportunities offered to them, and to successfully blocking these.

This argument is both simple and familiar to those in retailing: familiar, in that retailers are routinely concerned with increasing both the occasion and the inducements to purchase their goods. As styles of retailing have developed (see Walsh, 1978) in such

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(2) There are no centrally held statistics. A 1979 Home Office discussion paper on the industry did however note that some 80,000 people responding to the 1971 census recorded that they were employed in private security functions: at this time the regular police force numbered 97,000 (Home Office, 1979). Only a proportion are employed directly by security organisations.

a way as to make goods increasingly accessible to the buying public, most recognise that this has involved a calculated risk. Unfortunately for retailers, this 'buying public' includes those likely to be tempted by the opportunities retailers have afforded for theft, as well as those who are not. As there is little prospect that current styles of merchandising will change significantly, critical thinking is required to reduce the inherent risks. There is a commercial tightrope to be trodden: between adventurous and successful merchandising on the one hand, and that which is too adventurous, leading to substantial losses from theft, on the other.

A similar delicate balance exists on the non-sales side. How are retailers to provide operating procedures that will ensure the fast and efficient movement of goods from warehouses to their shops, and indeed within them, without sacrificing accountability and allowing blatant opportunities for staff to steal?

If it is pursued successfully, crime analysis offers substantial dividends to the retailer. Put briefly, it offers straightforward commercial advantage. In the public sphere, the strength of the case for crime analysis is diminished somewhat by the prospect of crime displacement: the possibility that more committed offenders — denied opportunities to commit crimes in one area or at specific times — will divert their attentions to other areas or times. To the extent they do so, they remain a 'problem' to the police and other criminal justice agencies. But, while this likelihood underlines the need for the retailer to be constantly on the lookout for alternative circumstances in his own stores which may be exploited, it assumes little significance for the retailer who may successfully persuade offenders to target his competitors instead!

#### *Case Study: Preventing Credit Card Fraud*

As crime analysis has not been widely applied in the retail trade, any assessment of its impact must be deferred. However, one area where crime problems have been subject to an analytical approach for some time is within the cheque and credit card companies. The peculiarities of their business — particularly the fact that they bear practically all the losses resulting from fraud, but have to rely on others (largely retailers) to 'police' transactions on their behalf — make it a necessity that they invest heavily in prevention rather than detection.

Barclaycard's Fraud Prevention Department — for example — have the responsibility of monitoring frauds committed against any one of approximately 9 million Visa holders, and they currently expect to have about 1,000 of these cards reported lost or stolen each day. Three-quarters of these frauds take place in the retail trade, which means they have to focus carefully on this area to protect their customers and business interests.

Some of the analyses regularly carried out by Barclaycard illustrate the sort of approach taken:

*\* The number of frauds committed against individual merchants is monitored closely.* This information is primarily used to reward or penalise merchants according to their performance (by determining both the 'floor limits' Barclaycard will impose on each, and their dealer charge). The figures have also yielded other useful patterns, such as instances where shopkeepers have regularly accepted transactions on stolen cards because they have been in collusion with the fraudster. (On an individual basis, Barclaycard pay £50 rewards to those who recover cards on their behalf — to the tune of £809,000 last year).

*\* Card holders' patterns of usage are monitored.* This information is often used to identify unreported theft: customers who only irregularly use their Visa cards but who then suddenly appear to have embarked on a 'spending spree' are frequently found to have had the card stolen.

*\* The value of frauds is carefully monitored.* This information is employed to inform preventive action, and to bring to the attention of retailers. In fact, the average value of a fraud is around £30 (it is believed that thieves think that higher value transactions have to be checked by the retailer).

*\* Analysis shows where frauds are committed in departmental and other larger stores.* Again this is for use in determining whether special precautions (e.g. the installation of 'readers' that transmit card details direct to Barclaycard headquarters) are necessary. It also assists training programmed: retailers are frequently warned that the first 'strike' committed by the fledgling fraudster is often in the perfume department of larger stores: because this is invariably on the ground floor, and staff are perceived to be 'locked' behind a large counter, making escape easier.

*\* Fraud is monitored 'by dealer class'.* Again this highlights the need for special precautions and serves to educate retailers. Supermarkets and garages frequently top the list, largely because they tend to employ younger, more inexperienced staff and staff turnover is high.

As well as performing this sort of analysis, the fraud department at Barclaycard are routinely involved in studying patterns of fraud against their counterparts overseas (particularly in the US) in order to assess whether preventive action is required in advance at home. Similarly, they engage in considerable experimentation. For example, to combat the theft of cards in transit in the post (which account for about 20% of those lost), they have mounted experiments in high risk areas which require customers to pick up their cards from a local bank. In other areas, there have been experiments to assess whether pre-mail shots ('a card will arrive in the next X days') or post-mail shots ('your card should have arrived X days ago') prove effective. In addition, some 64 different types of envelope are used to disguise card renewals sent through the post.

Whilst these analyses and enquiries may seem an integral part of proper management of the theft problem, they are far more sophisticated than those practiced in many other parts of retailing. This is, of course, to be expected given that their business (even more than that of the retailer) depends so heavily on balancing 'acceptable' against

'unacceptable' risks. However, in Barclaycard, they have proved their worth by reducing fraud losses as a percentage of the company turnover. Moreover, in 1985, they were instrumental in actually reducing the gross fraud loss overall: a considerable feat when set against a 5% annual increase in turnover, and the increasing spiral of other forms of crime (Home Office, 1986: paras 35/36).

### *Summary*

The logic underpinning crime analysis is certainly not new. Indeed, it might be seen as doing nothing more than applying sound management principles in the security field: that strategy should be based on detailed and reliable analysis of the problems faced. On the other hand, this logic can constitute a significant departure from common practice in much of retailing: where security resources are diverted without careful consideration of the consequences<sup>3</sup>, expenditure is often allowed without proper evaluation of its impact, and a premium is placed on making arrests rather than instituting preventive programmes. Above all, it marks a rejection of the anachronistic idea that 'security issues' can somehow be divorced from routine commercial decision making.

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(3) See, for example, Ekblom's comments on the 'diminishing returns' of deploying store detectives to apprehend thieves (Ekblom, 1986).

## CHAPTER 3: THE DIXONS GROUP

The aim of this chapter is to describe, in broad terms, something of the retail operations of Dixons Ltd. and Currys Ltd: how they are organised, the crime problems they face and the means by which crimes are reported and recorded. The main purpose in doing so is to allow other retailers to identify problems common to their own operation, and to put in context the subsequent discussion of the crime analysis database.

### *Retail Activity*

The two companies are electrical retailers selling relatively 'high ticket' items, mainly in small to mid-size (one to four thousand square foot) high street locations. The network of stores is large — Dixons Ltd. currently comprises some 330 stores and Currys Ltd. some 400 — and is spread across the entire country. In addition, Currys run a chain of over 50 'superstores', which are very much larger and are generally located on the periphery of major towns. The merchandise stocked in each chain has many similarities: both sell 'brown goods' — TVs, video recorders, microwaves and so on. But whereas Currys stores also stock large 'white' merchandise, like fridges and washing machines, Dixons specialise in smaller electrical goods like cameras. Together, the two chains achieve the highest sales per square foot in the high street.

Branches receive most of their goods through deliveries from central warehouses. By and large, the content of each delivery is dictated by each branch's sales record, which are monitored at head offices. The warehouses (one serving all Dixons branches; two serving Currys branches) are similar to those operated by other chain store retailers: they handle goods received from suppliers (often in container form), store them and distribute them across the branch network. With the exception of peak periods like the 'run-up' to Christmas — when deliveries increase to match turnover — most deliveries are made on a weekly basis. 'Trunking' arrangement (i.e. the movement of goods to local depots, and then on to branches) are used in connection with deliveries to more distant locations.

In addition to these warehouse operations, Currys Ltd. has a series of stock or distribution centres which provide a customer delivery service for larger stock items. Each centre services a designated number of branches. Again, these operations broadly correspond to those used by other retailers merchandising larger goods (particularly the multiples).

The wide geographical distribution of the branch network militates against central control. Central control is strong in certain areas — such as merchandising policy, supply etc — and is exercised through regional teams (four in Dixons, six in Currys) which monitor sales, day to day operations, personnel selection and training, and other

issues. Set against this, individual branch managers are allowed considerable discretion: both companies place considerable weight on the operational autonomy of individual branches in achieving sales, and offer branch teams substantial advice and incentives to match or improve on sales targets set by the centre.

### *Crime Problems*

Like any large retail organisation, there are a range of opportunities both for 'outsiders' aiming to steal goods from each company, and for company staff intent on doing likewise. Problems are exacerbated to the extent that both Currys and Dixons trade in some of the most 'desirable' goods available in the market place: items which are of high value (but not as easily traceable as many other high value goods like jewellery), many of which can be easily concealed on the person (especially tapes, films, batteries, etc.) and which can either be used for the thief's personal enjoyment or can be readily sold to others.

The problems are wide ranging. For example:

- \* burglary risks are high: not only at high street branches, but against 'out of town' warehouses, stock centres, and superstores.
- \* shoplifting is a problem, particularly in high street locations: although smaller stock on open display is vulnerable, larger items can also be stolen. As well as the theft of stock, the branches are at risk from all the fraudulent activities well known in the high street: cheque and credit card frauds, frauds against their own credit arrangements, etc.
- \* another problem, shared in equal degree with other retailers, is staff theft (both of cash and stock). In several respects the scope for 'backdoor theft' is greater than that in other, larger, shops — both because of the absence of extra 'layers' of senior management on site, and because of the high degree of autonomy vested in branch managers (to match prices being offered by other high street competitors, for example).
- \* lorries carrying high value loads from the warehouses have to be protected against hi-jack as well as staff theft. In addition, smaller vehicles delivering goods direct to customers can be subject to attack or to 'tailgate' thefts when drivers are making deliveries.
- \* staff in certain areas can be subject to threats of violence by youths. Less frequently, they experience actual violent attacks either in the branches themselves or when banking the day's proceeds.

In short, the problems faced represent an amalgam of those experienced — to a greater or lesser degree — by other retailers. Yet despite the frequency with which crimes are

reported to the centre, neither company is able to attribute more than a small proportion of their total losses to specific instances of theft: a problem shared alike with others (see Home Office, 1986). The lion's share remains 'unexplained'.

### *Crime Recording*

A recurrent theme in this report is that the principles of 'crime analysis' should not be restricted to *known* instances of crime. It is clearly important to draw as much information as possible from those cases that do come to light. But to achieve a more complete picture, the process should encompass specific investigation or research in areas where crimes are likely to be under-recorded.

All incidents of crime that do come to notice in Dixons or Currys are reported by 'phone to the Security Departments located at the head office of each company. Details are recorded on 'Security Reports' and circulated to relevant parties — including stock audit (for adjustment of branch stock), insurance companies and the security officers located in each region (who will investigate).

The introduction of security databases, aimed specifically at improving each department's facility to perform crime analyses, required that these reports should be entered direct into a computer. One of the priorities was to ensure that — instead of simply extracting the 'bare bones' of each incident to meet the direct needs of audit, investigating officers, and so forth — considerably more detailed information had to be elicited from those with direct experience: the branches themselves. To meet this need, 'menu-type' programmes have been developed which broadly mean that — rather than completing a pre-printed form, akin to a police crime report — those receiving reports pose a different series of enquiries depending on the characteristics of the incident that is being reported<sup>1</sup>. The assumption that separate types of crime have to be singled out and subjected to specific enquiry is axiomatic to crime analysis procedures: this is simply because potential criminal activity — in any environment — is so wide-ranging that incidents have to be separated if meaningful enquiries are to be made about each. Another underlying principle of this system — and an important one in developing similar databases — is that information that might direct future policy or action *has* to be elicited immediately from the victim (or his closest representative) or it is effectively 'lost'. (A more detailed description of the configuration of the system is provided in Appendix 1.)

Chapter 4 discusses the sort of issues raised by the different kinds of crime problems outlined in this chapter, and gives an indication of the type of information that might be required to resolve them. Chapter 5 returns to the process of setting up and initiating a crime database.

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(1) Thus a report of a break-in prompts a series of questions about how perimeter security was overcome, whether alarms activated, and so on. In contrast a report of a shoplifting prompts entirely different questions about the type of display, the area of the shop from which the goods were taken, suspect details and so forth.

## CHAPTER 4: DEFINING THE PROBLEM

The purpose of this chapter is to focus on the first stage of the crime analysis process: to highlight some of the questions which need to be addressed and the information that might be required to throw light on these.

### *Key Issues*

The discussion deals primarily with the analysis of crimes that do come to the notice of the retailer. This does not, of course, mean that such statistics are intrinsically the best source of information: in most instances, stock control data is likely to give a more comprehensive account of what has been lost and will be a more desirable substitute. On the other hand, it is appreciated that in many retail companies stock control data are not yet sufficiently detailed to identify either specific areas of loss, or to separate crime losses from those produced by poor administrative procedures.

This said, the question of whether recorded crime statistics give an *accurate representation of true levels of crime* should be paramount. Each retailer is best placed to judge this question for himself. Retailers records of burglaries, for example, are likely to be reasonably accurate: simply because entry to retail premises will generally be forced; the resulting damage will require repair; and the administrative requirements for audit will demand a record of any stock stolen (a stark contrast to domestic burglaries, for example, which are significantly under-recorded in police statistics: see Hough and Mayhew, 1985). In contrast, cases of shoplifting are likely to be under-recorded. This may happen to a limited extent in smaller, closely supervised, retail environments (such as those where counter service is provided) or those where electronic article surveillance (EAS) systems operate and may deter. At the other extreme, shoplifting may be grossly under-estimated in larger stores selling smaller, easily concealable merchandise.

It will be noted that the discussion that follows frequently refers to the need to collate details of *how* particular incidents were carried out with details of the *environment* in which the incident took place. For example, to derive appropriate preventive strategies, it is important to know whether the type of goods merchandised, the displays, or the supervision levels in certain sections of a department store make them more vulnerable to theft by customers.

In practical terms, this information may be collated in one of two ways. The necessary environmental details can be elicited each time an incident is reported: a solution which may be necessary when the targets 'at risk' are too numerous to be conveniently categorized or are mobile (such as company vehicles). Doing this, however, can prove time consuming and less than comprehensive. Alternatively, the environmental or descriptive detail of each target 'at risk' (i.e. different levels in a department store, different types of vehicles on a distribution network, and so forth) can be collated and recorded in advance. The latter system has been employed in the Dixons Group database where all incident reports are filed with reference to a branch number: the

computer is then able to link these to a comprehensive ‘inventory’ — held within the database — which records key details about the layout, design and security features of each store.

Another basic, but nonetheless frequently overlooked, consideration is that recording systems should log all attempted offences (i.e. those that proved unsuccessful) as well as those that led to loss. Although it is notoriously difficult to gauge the impact of preventive action (for how can one measure something that hasn’t happened?), the ratio of attempts to completed offences provides one useful indication. It follows that systems should provide facilities to record what contributed to the failure of any criminal incident, so that the strengths of existing procedures or barriers are properly identified.

### **Defining the Problem**

The sections below set out some — but certainly not all — of the issues that an elementary system of crime analysis will need to address. Needless to say, there is a common core of questions which will need to be raised in all circumstances: such as details of when and where the incident occurred, the amount of loss or damage, or details of any suspects. These questions are not reiterated under every heading: they are nonetheless raised in places where illustration of their different use might prove instructive.

#### *Burglary*

Retailers spend large sums aimed at protecting their premises overnight and at other times when they are not trading: expenditure is directed not only at ‘perimeter’ protection (like grilles and alarm systems) but also at more costly services (like external CCTV or guards). Analysis should be aimed at evaluating the benefits derived from such expenditure, identifying systems or procedural practices that may reduce risk, and at deriving lessons for future development. The questions might include:

\* When do incidents occur?

Alarm systems can provide a reasonably concise record of when burglaries occur. Where stores are frequently attacked, establishing an appropriate preventive strategy can depend heavily on identifying high risk times: for example, unsophisticated attacks committed around pub closing times might indicate a need for the provision of guards at this time. The information is likely to be essential if police surveillance or intervention is required (indeed more sophisticated attacks may often be carried out to coincide with times when local police shifts change!).

\* How was entry effected?

Information should be elicited with a view to identifying the weak spots of the exterior of each store: at a certain cost, protective devices are available to reduce each

and every vulnerability. Any additional expenditure should be directed by proper reference to known loopholes, rather than on a 'chance' basis.

\* What was the contribution of existing security hardware?

Equally, existing hardware needs to be evaluated: if this failed, did it do so because of 'operator failure' (for example, shutters being left unlocked) or because the hardware was subject to a type of attack or level of force it was unable to deal with? One points to the need for training — or the design of 'failsafe' locking procedures — the other to more stringent standards on equipment.

\* Did alarms operate properly?

While it is important to examine alarms as part of the general security hardware, it is equally essential that 'false' activations should be properly analysed<sup>1</sup>: if only because it seems sensible to assume that the police will be unlikely to respond with equal speed to activations on systems known to have been faulty in the past.

This aside, most retailers will appreciate the difficulties involved when the police refuse to provide continuing cover, as well as the associated cost (of the restoration of this cover, continuing to meet insurance requirements in the interim, etc).

\* What was the cost of each incident?

In the case of burglary, the cost of repairing damage (and providing interim cover) can sometimes outweigh the losses of any stock. Any assessment of alternative means of protection should include consideration of repair costs.

\* Are incidents opportunist or well-planned?

Although judgments are bound to be subjective, the details outlined above should contribute towards a reasonable assessment about what type of preventive action is called for. Opportunist offences could perhaps be prevented by better lighting, the removal of more desirable stock items from shop windows at night, or by similar straightforward remedial action. Well-planned attacks may require the installation of more sophisticated equipment (such as CCTV recording facilities triggered by alarm activations) aimed at physically identifying the perpetrators.

#### *Theft by Customers*

There is a considerable body of research that has established that many more people take things from shops than is commonly assumed. 'Following studies' — where

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(1) Typically, some 97-99% of alarm activations recorded by police forces are classified as 'false'. Although it is impossible to provide an accurate breakdown of the causes, it is generally accepted that roughly 40% of false activations are due to operator error, a similar proportion to system failures, and that the remaining 20% are attributable to non-criminal incidents (e.g. drunks leaning against a window!).

shoppers have been followed at random to see if they pay for the goods they remove — carried out in the US have indicated that between 1 in 7 and 1 in 15 remove items without payment<sup>2</sup> (see Astor, 1969 and 1971). The only comparable study in the UK (Buckle and Farrington, 1984) suggests a lower figure — 1 in 56. Nonetheless, when considered in the context of the number of shoppers visiting a retailer during any one day's trading, even this lower figure has serious implications.

First and foremost, the research, implies that the number of arrests of shoplifters made by retailers represent the tip of the iceberg. For these reasons, the lessons derived from recorded incidents should be treated with caution. Equally, it suggests that the losses many retailers attribute to shoplifting may be grossly under-estimated: even though the value of stolen items recorded in 'following studies' has proved relatively low. In the Dixons Group, it has been necessary to carry out specific data collection exercises to try to gauge the true extent and characteristics of shoplifting offences.

Various experiments have been carried out, using different methods, at branches chosen to provide a reasonable representation of the chain as a whole. One of the most effective methods has been to inconspicuously label goods available on open displays (using different markers to denote different types of merchandise, and means of display) and require sales staff to remove and log these labels when making sales. Regular counts of the goods on display are then compared with the sales records. Although it requires careful planning and supervision (and strict discipline amongst staff in participating stores) these exercises serve to identify what types of goods are stolen, the specific times when goods disappear, and which displays are most vulnerable. Other methods might include balancing till-based sales data against stock audit counts (a method which might not satisfactorily exclude 'staff' thefts) or drawing on the lessons provided by known shoplifters (see, for example, Price Waterhouse, 1986 or alternatively the methods used in Bennett and Wright's interviews with burglars, 1983).

The second major lesson from research is that one long-established means of preventing shoplifting — the provision of plain clothes store detectives — is only likely to have a limited impact on the problem. The 'following studies' have repeatedly shown how few of those removing items without payment are actually seen by store detectives (Astor 1969 & 1971). There is, in addition, the danger that the presence of detectives can allow ordinary staff to 'switch off looking for crime. Finally, Ekblom's (1986) study of shoplifting in the HMV shop in Oxford Street (a store which at that time employed the greatest proportion of store detectives — per square foot of sales space — in this premier shopping area) has served to demonstrate the limited returns detectives can achieve. Even on the lowest estimates of the total number of shoplifters (and assuming the peak efficiency of store detectives in processing each arrest), he suggested that this particular store would need to employ 17 times its usual number of store detectives to have a capacity to arrest all the shoplifters likely to enter

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(2) The word 'theft' is avoided quite deliberately: as Murphy (1986) points out, theft requires 'intent' and the courts decide this.

the store on any day. This points to the need both to augment store detectives' contribution, either by increasing their visibility (posting notices or deploying them as uniformed guards) or by raising staff awareness of the problem; it also underlines the importance of looking at alternative preventive strategies, such as store layout and display methods.

Important questions are:

\* Which merchandise is stolen most often?

This is the most fundamental question and answers will generally have to be provided by stock control exercises. It is likely that experimentation is necessary: for even the most rigorous stock control system (for example, one that was able to isolate theft losses from 'other shrinkage') would be unable to separate any losses attributable to staff theft from customer thefts.

\* Where do losses occur?

Are specific areas of the shopfloor particularly vulnerable? If so, attention should be focussed on why this is the case (prevention might hinge on the removal of an obstruction that impedes observation, means of 'rechannelling' customers through the shop, etc). Alternatively, particular types of display may suffer disproportionate losses and may require design modification. In clothes shops, fitting room procedures deserve repeated scrutiny.

\* When do losses occur?

Rates of loss are likely to fluctuate at different times of the day or days of the week: these may prove to be times when staff are stretched (Bank Holidays, Saturdays or times when children leave schools and 'pour into' local shops) or when staff/customer ratios are at their lowest. More vulnerable displays may need to be specially protected (or removed) at these times.

\* Do different methods of merchandising affect rates of loss?

Alternative methods may be found for displaying vulnerable goods. Experimentation can establish simple rules: for example, whether audio tapes sold in different pack sizes suffer different risks, or if clothes hung from hangers facing different ways are less likely to be removed 'en masse'. At a more sophisticated level, new designs can be tested: for example, smaller items may be less vulnerable if sold from custom-built dispensers rather than open 'bins', or if they are given a large card backing.

\* Can methods of stealing be distinguished?

If widely practised methods of stealing can be identified (either from store detectives records or by specific observation), these should at least be brought to the attention of staff. Other obstacles can also be put in the way of the thief. If price labels are

removed by thieves, then this needs to be made more difficult. 'Bag parks' may be necessary to combat thieves who use their own bags; or bag sealing methods used if thieves make legitimate purchases only to secrete additional items in the retailer's own bag.

### *Theft by Staff*

Retailers have long debated how far their theft losses are attributable to customers or staff. While police statistics for 1986 show that average loss for each theft by a customer is much *lower* than those from staff thefts (see Home Office, 1986) — and that the total known losses from 'employee theft'<sup>3</sup> far outweighed those from customers — nearly all observers recognise that these figures may be totally unrepresentative of the huge numbers of offences that do *not* come to retailer's notice (or even of those that are dealt with internally by retailers). There is no reliable means of establishing the appropriate balance. While undoubtedly those seeking to prevent crime should recognise the wide range of opportunities which staff may have to steal, it should not be assumed that losses will therefore automatically outweigh those inflicted by sheer numbers of shoplifters<sup>4</sup>.

Staff integrity should of course feature as the central tenet of preventive action. But to achieve this aim, thought has to be given to devising foolproof systems for controlling stock and cash — systems that will not only avoid offering staff the temptation to steal (thus keeping 'honest staff honest') but provide the means of identifying those who submit to the temptation. Apart from implementing systems checks, most large retailers rely on: pre-employment reference checks; fostering high staff awareness through training and the maintenance of clear rules; and establishing procedural practices — from enquiries by regional security staff, 'test shopping'<sup>5</sup>, to staff searches — aimed at identifying wrongdoers. Underpinning this effort, it is important to ensure that those frauds or thefts which do come to light will not be viewed as isolated instances, but as an indication of loopholes that others are bound to have found and exploited. As such, they should be removed.

\* Who committed the theft?

Information on the age and sex of known offenders can be put to a variety of uses: it might suggest that the company should ensure a particular mix of employees at each department or shop (so that high risk groups are better supervised); it could suggest

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(3) It should however be noted that the offence of 'employee theft' (Home Office Category 41) also includes theft by employees outside retailing; set against this, it excludes *frauds* committed by employees.

(4) Calculations made by Peter Berlin from the 1986 Price Waterhouse Shrinkage Survey of US retailers (Price Waterhouse, 1986b), for example, suggest that for employee thefts to outweigh customer thefts, the dollar value of each employee theft would have to be 20 times greater than those per shoplifting incident. Berlin thought this was improbable. This estimate was however based on retailers' subjective assessments of the proportion of employees and customers who stole goods (calculated at 6.7% and 45% respectively).

(5) Test shoppers are commissioned by many retailers to visit them various outlets — as normal (or even difficult) customers — and to report back on the service they received and the standards they observed.

the need for more thorough pre-employment screening of particular groups; it might even need to be considered in formulating a company-wide employment policy.

\* How were goods removed?

The methods by which goods are removed can vary widely: for example, stock may be hidden in clothes or bags when staff leave at the end of the day, may be secreted outside the premises (for example, in rubbish) for later collection, or simply removed by those who could appear to be performing 'normal' duties (such as helping a customer to his or her car). Each requires different safeguards.

\* Do incidents involve collusion with 'outsiders'?

Separate provision may be required to monitor thefts by this particular means. They can range from the relatively simple — for example the friend of the salesman who receives additional goods to those legitimately purchased or any other favours (discounts, the 'replacement' of goods bought elsewhere, etc.) — to the more audacious: such as the deliveries which are dispatched to a bogus customer via a particular carrier. Checks and balances may be required to counter them.

\* When did theft(s) take place?

As the point above suggests, it should not be taken for granted that staff will only steal at their departure each evening. Times when staff take lunch or tea breaks may figure regularly — or particular days (such as those when the manager or cashier are away).

\* Were efforts made to 'cover' for the stolen goods?

Not infrequently, those carrying out thefts (particularly if they are in a position of authority or intend to continue the practice) will attempt to conceal the loss in order to avoid inevitable enquiries when their branch or department is next audited. Identifying the means by which they do this (for example, by claiming particular items on a delivery never arrived) can prove to be an invaluable means of detecting other offenders.

\* How was cash taken?

Just as with the theft of stock, there are a variety of means — each involving different degrees of sophistication (or levels of access to the till) — which can facilitate the theft of cash. Indeed the simple removal of cash is probably the least attractive, given that the failure to 'balance the till' at the close of business should prompt immediate investigation. Details of each method — from the underringing of a purchase to the more complicated transaction (such as those involving credit agreements etc.) need to be collated.

### *Theft through Distribution Networks*

Merchandise moving through any retailer's distribution network is subject to a range of threats: from short warehouse deliveries by suppliers to vehicle thefts. In general terms, the threats can be sub-divided into two main types: threats by 'outsiders' (which can either be in the form of burglaries of warehouses and other stock holding centres, or thefts from vehicles) and those by staff (those working in warehouses etc. or those manning vehicles).

There are a number of factors that tend to make the distribution sector particularly vulnerable to theft. First, goods in transit are inevitably protected by fewer physical barriers than those in fixed premises. Indeed, given that warehouses are generally situated well away from residential areas or main thoroughfares, they are probably themselves more vulnerable than high street stores. Second, drivers and others handling goods in transit are subject to less supervision — and thus face greater opportunities to steal — than their counterparts elsewhere.

Probably the main factor, however, is that difficulties can be faced in establishing accountability at all stages of the distributive process. One of the cornerstones of any preventive strategy must be to determine precisely who is responsible for what stock at any one time. Difficulties arise where goods are checked into vehicles inaccurately, where a driver may be required to make multiple 'drops' and others may need to have access to 'his' load, and if deliveries are not checked off the vehicle at the time they are received. There can be similar difficulties establishing accountability in warehouses themselves, particularly if they are asked to act as 'holding' bases for stock that has been transferred to the books of the retail outlet: unsuccessful deliveries, damaged goods and so forth. In short, procedures and controls must be exacting.

\* Do procedural loopholes encourage staff theft?

In view of the difficulties outlined above, special attention deserves to be given to the 'inducements' faced where staff — particularly drivers — are known to have stolen goods. Providing drivers with stock that is plainly *not* accounted for by stock handling procedures — for example any stock which has no accompanying paperwork — is clearly offering an unnecessary temptation to steal.

\* What is the background of the offender?

Apart from the criteria of routine significance (age, sex, etc.), length of service may be important. Temporary drivers are frequently needed to meet unanticipated demands in distributive activity. But, given that losses may not be identified immediately, the inducement to steal is particularly attractive to the 'temp'.

\* Where do vehicle thefts occur?

Information is required at two levels. Clearly it is necessary to establish if vehicles operating in particular *geographical areas* of the country are subject to unusual risks.

At another level, it is important to ascertain if particular *stages* of the driver's routine prove more hazardous: such as overnight stops or times when vehicles are left unattended for customer deliveries.

\*How and when are such thefts committed?

These sort of details should dictate preventive action: needless to say, the response to attacks on vehicles parked overnight in a 'secure' enclosure will be quite different from those against drivers and their crews who are making deliveries.

#### *Violence to Staff*

Although the actual numbers of violent crimes committed against those in shops, and other elements of the retail trade, are probably small (there is no reliable means of establishing numbers), many shop staff are familiar with incidents which the police will classify as 'intimidation': from the threat uttered by the dissatisfied customer, to the crowd of youths who openly steal goods knowing their numbers will prevent anyone intervening. At a more serious level, retailers can experience problems when dealing with customers caught stealing. They also share the risks experienced by anyone who has to routinely handle and transport valuable goods or large quantities of cash<sup>6</sup>.

A recent report by the Health and Safety Executive on the subject of violence to staff (Poyner and Warne, 1987) has strongly recommended the use of crime analysis methods in tackling these problems. Although the main recommendations of this report are aimed at those staff subjected to greatest risk (such as those working in licensed premises, or on buses) it is nonetheless important that retailers should establish a means of collating basic details about violent incidents. In doing so, it is advisable to define what constitutes violence in order to establish concise guidelines about *what* should be reported. Unless this is done, there is the danger that standards will vary and those in locations where violent abuse and threats are relatively more commonplace — such as poorer areas of the inner city — will see little justification in reporting 'minor' incidents. Alternatively, the issue may require systematic enquiry amongst staff in areas deemed to be facing greatest risks.

Some key points are:

\*Who hit/abused whom?

What correlation can be drawn between the aggressor and his/her victim? Were these of the same — or widely different — ages, the same sex or ethnic background? Did they know each other in any way?

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(6) Indeed there is a school of thought that retailers are increasingly subjected to violence because banks and other major cash handlers have done so much to protect themselves from attack

\* What led to the incident?

If there was a dispute that triggered the incident, what was this about: complaints about goods, about the service provided — or did staff perhaps try to intervene and prevent a suspected shoplifter? The information can either point to recommendations for reducing 'friction', or perhaps better training in handling difficult incidents.

\* What was the level of violence?

This information is essential to establish the seriousness of the problem. Linked to data about where incidents occur, it could point to the need for better protection, more effective means of summoning assistance, or simply the deployment of 'bigger' staff at regular flashpoints.

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This chapter has deliberately focussed on the type of information that might be required to perform detailed crime analysis. It has not sought to provide a comprehensive review of information requirements: these will vary considerably according to the characteristics of each retailer. If the list nonetheless appears formidable, it has to be borne in mind that these requirements can be tailored, and that the recording — and subsequent analysis — of details of any incident can be done speedily if these are entered directly into a computerised database. The main argument against restricting data collection is a practical one: details not committed directly to record are not easily recalled when their relevance becomes more apparent (those reporting incidents forget, or cannot be traced). Moreover the value placed on recorded incidents should take into account the fact that these will often represent a small proportion of other similar, and perhaps even more costly, incidents which go unnoticed.

Little emphasis has been placed on the *solutions* which might result from crime analysis. This is primarily, of course, because this report has aimed to suggest the type of information required to address problems, but it also reflects the fact that there is a sizeable literature and a number of periodicals which offer ways and means of combating retail theft (see, particularly, Home Office 1983a). But whereas ideas are not in short supply, it will often require major changes to establish that crime problems deserve to be the subject of analysis. The principal contribution of crime analysis — as Ekblom (1986) has pointed out — is to offer guidance as to *which* of the wide range of ideas, security products or services (most of which are well known to those in retailing) are appropriate *in which circumstances*. In short, the process is primarily aimed at selecting the area, times and circumstances where preventive action should be directed.

## CHAPTER 5: ESTABLISHING A SYSTEM

This chapter offers a few words of practical advice to those retailers wishing to develop systems that will record and collate data of the sort outlined in Chapter 4. It then suggests that crime analysis systems need not only be restricted to dealing with those crimes that have come to the retailer's attention, but can be enhanced to take into account 'inferential' data that might identify hidden crime.

### *Data Collection and Analysis*

Although there is a growing body of literature recounting the lessons learnt from either *retrospective* analysis of crime records (see, for example, Laycock's 1985 study of burglaries recorded by the police) or specific *one-off* surveys (e.g. Smith's 1987 survey of hospital employees), little attention has been given to ways and means of establishing systems that *routinely* collect and process the sort of detailed information that is required. Indeed, the first generation of crime analysis systems developed by the police has tended to rely on the reappraisal of data collected with other purposes in mind<sup>1</sup>. Establishing a system capable of receiving and processing a substantial amount of information on a day to day basis imposes different requirements.

Systems will almost certainly need to be computer-based where the details of crime incidents have to be subject to routine, but not necessarily standardised, enquiry. Data capture may either involve staff entering details of crimes — as they are reported — directly on to a computer, or by the more lengthy procedure of encoding and then entering existing paper reports. Either way, the advantages of computer-based systems — which allow the analyst to reassemble data in a different format, to compare different data sets or variables against each other, and so forth — are important if the process is to successfully identify patterns or trace causal relationships. The falling costs of personal computers makes this a feasible alternative for even the smaller retailer.

Chapter 3 highlighted two major priorities for any system if it is to be capable of performing routine crime analysis:

- (1) to obtain information from those with a close knowledge of the incident *as quickly as possible*. Direct entry of information to the database is certainly a useful means of achieving this.
- (2) the need to cull *detailed* information about each incident and to design *different enquiries* for different types of crime.

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(1) The primary constraint on the police is of course that they have first to meet the legal and statistical data requirements set by the Home Office and other agencies: this should not however preclude officers directly providing information that can be used to shape preventive strategies. The implementation of the Metropolitan Police's Crime Report Incident System (CRIS), which will provide facilities to analyse crime reports at some 2,000 terminals located in London's police stations, will represent the largest scheme aimed at utilising this information in an operational role (see Police Review, 1987).

A detailed guide to the techniques of collecting crime information and analysing it for patterns has been produced by Ekblom (1988). Nonetheless, there can be no blueprint capable of meeting the individual needs of all retail stores. Those who choose to adopt approaches used by others should ensure that systems can be modified or expanded to meet their own particular requirements. In this sense, each retailer has to develop a *prototype*: unless the planning and introduction of the system (and the training of those involved in its use) is progressed meticulously, it is judicious to expect the teething problems associated with any new arrangement. At the very least, it is important to maintain tried and tested paper-based procedures for recording crimes until such a time as the new system has been subject to extensive trials (or to run these side by side for an interim period).

#### *Formulating a System Specification*

The starting point for any development is a comprehensive specification, detailing what the system is designed to achieve, how this will be done and the expected payoffs. This is an important stage even for systems which are likely to involve little change in operating procedures (and which are not going to be the subject of critical questioning by the finance director approving the expenditure!). It assumes even greater significance as the number of interested parties grows (from those reporting and recording incidents, to the recipients and users of the system), more radical changes in established operating procedures are envisaged, or if any software development is to be sub-contracted out. In these circumstances, the user needs to be precise in specifying details such as what will be required from those registering and receiving reports, computer response times, installation dates and so forth. This specification should be the subject of a detailed consultation exercise before it is finally approved.

The key issues which should be considered in drawing up a specification are considered in Appendix 2. These include:

- What information is needed and what value will it have?
- How should each incident report be structured?
- What will reporting procedures be?
- What performance criteria are required from any computer?

#### *Extending the Scope of Crime Databases*

Retailers devising databases, like police forces engaged in the same exercise, may have good grounds for suspecting that the crimes they record are not a true reflection of those that do *not* come to their notice. They may also feel constrained in that, although a crime analysis system will provide a much more reliable means of developing future policy, it may not be an effective means of pinpointing where they may *currently* be subject to fraud and theft.

Systems can, however, be enhanced so as to highlight areas that require immediate investigation. Police forces do this by developing crime intelligence systems (through the office of the divisional collator) to help them engage in proactive investigation rather than reactive — fire fighting — activities. Retailers, too, can follow this lead and supplement data about *known* crime with that which *might* provide indications of criminal activities. Just as police intelligence systems demonstrate their principal advantages in a finite area — namely in matters affecting those whom they have previously dealt with (i.e. offenders and suspects) — the main strength for retailers is in investigating malpractice by staff.

It falls beyond the remit of this report to discuss this dimension in detail. One or two examples can however help illustrate the sort of approach envisaged:

- \* One of the main indicators that something may be awry (although not a precise means of indicating *where* the fault may lie) is that the profit margin of a branch or department is falling below the normal, or its own previous, level.
- \* Another may be that the 'stock turn' is declining: in other words that the sales achievement of any unit does not match the deliveries it has received. Investigation may indeed reveal that stock is building up: alternatively, the additional deliveries may have been organised to sustain substantial thefts.
- \* Numbers of 'till reversals' may be another important indicator. Although it is necessary to provide a function on the till to cater for stock which is returned by customers, it can provide an opportunity for staff to buy back fictitious stock and pocket the refund money.
- \* Patterns of 'delivery discrepancies' could also be important. Again, most stores require a means of notifying a warehouse of any shortfall or extra stock they may have received, but there is again a possibility that bogus reports can be raised — which will enable staff to conceal a theft. Alternatively, the absence of any discrepancy reports may indicate another problem: that stock is not being checked at all, or that 'extras' are noticed but not reported.

In short, the aim is to investigate 'exceptional' trading patterns that might reveal theft or fraud.

It is always important to maintain a strict demarcation between known crimes and indicators of possible criminal activity like these. However, provided this is done, the data can be integrated into one system, and the same principles can be applied to the assembly and analysis of data. Information gained from stock audit systems (for example, about areas of highest shrinkage, products most liable to be lost etc.) should be drawn into the analysis. In addition, retailers should be keen to exploit to its full potential the information that can be derived from electronic point of sales (EPOS) computers — for example about till voids, discounting procedures, etc.

## **CHAPTER 6: SUMMARY**

Crime analysis techniques have been strongly advocated as central to modern policing. They are a means of making the most efficient use of an expensive public resource (Home Office, 1983b) and can prove to be an essential tool in targetting preventive action (Joint Departmental Circular, 1984). The value of this approach has been demonstrated in a series of diverse situations, and the lessons apply equally well to retailers considering how to tackle their own crime problems.

This report has sought to provide practical advice to assist those retailers who wish to apply these techniques. By doing so retailers will be in a stronger position to identify the precise nature of their crime problems, to explore how these might be tackled, and to assess the effectiveness of remedial action they might adopt. The need for this sort of approach is the more pressing given that there are severe limitations to some security practices adopted in retailing — such as the arrest of shoplifters and their referral to the police — but also because of the potential payoffs offered by detailed reappraisal of administrative or procedural practices, or by the glamorous technological systems on offer in the market place.

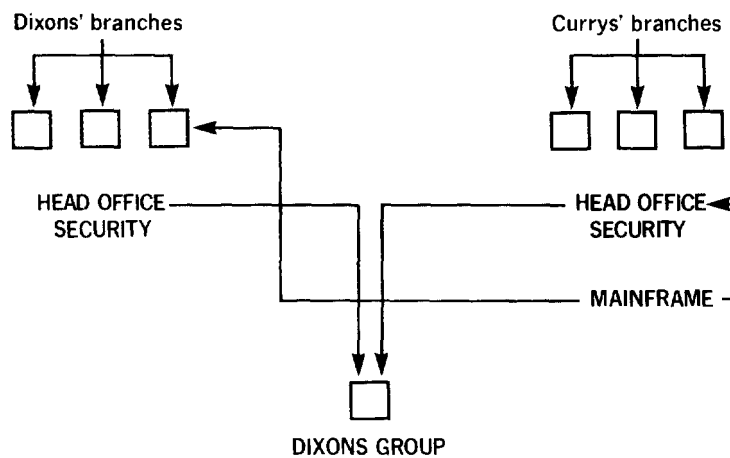
The message offered is, in many respects, a mundane one: security considerations should be subject to the same standards of rigorous analysis as other aspects of retail management. The collection and analysis of reliable information on security issues is an important first step in this direction.

## APPENDIX 1

### DIXONS GROUP DATABASE

The broad structure of the security database operating in the Dixons Group is laid out below:

#### (a) Hardware configuration



The day to day operating procedure is as follows:

1. Individual branches telephone through details of any crime to their respective head offices.
2. Security department staff receive these calls on any one of a series of workstations (networked together) and put to the branch staff the relevant enquiries which are fed to them by the software programme (see below).
3. Each company system operates as a 'stand-alone' entity, capable of taking in reports, producing printed summaries, producing routine analysis and of special interrogation. (In time, other Dixons Group companies may adopt similar reporting procedures).
4. Data from both companies is downloaded onto a central Group computer (for analysis of inter-company patterns, overall trends, etc.)

#### (b) Software

There are two major components to the data system:

1. *The security report.* A set of menu-driven enquiries which pose questions to those reporting criminal incidents.
2. *The branch database.* A file providing details about the environment, physical design and protective devices of each branch (or warehouse).

These two files are capable of being interrogated alone (e.g. to establish how many burglaries of a particular type have been committed in a specified period) or in tandem (e.g. to establish how many occurred in specific locations).

The crime file is obviously in most frequent day-to-day use. The screen enquiries record details of where and when all incidents occurred; the type of incident and the methods used by the offender (there are different questions according to the incident 'type'); the details of property stolen (here direct access to mainframe product lists speed up recording); a short precis of events; details of suspects/offenders and what follow-up action is required.

The branch database requires less frequent update. In addition to information about fixed premises (encompassing details of security hardware in use), it also incorporates details of branch personnel and assembles trading details that can provide possible indications of criminal activity: for example, stock audit results, till discrepancies, etc.

## APPENDIX 2

### KEY ISSUES IN DEVELOPING A SYSTEM SPECIFICATION

Central points are:

\* What information is required?

The step by step approach that was discussed in Chapter 4 will help to identify the ideal information requirements for specific types of crime. This process can be assisted by 'sample searches' of existing crime reports to identify likely sub-categories of data: thus every 'Xth' burglary report can be scanned to see the main points of entry, the main methods of entry, etc.

The danger of this process is that it can yield many more data 'fields' than the respondent (the person reporting the crime) can reliably provide and the system can process. While it is important not to reject information that might point to innovative preventive strategies at an early stage, the next important question therefore is to assess the *feasibility* and *reason* for eliciting that information from the respondent. If the respondent is only likely to be able to provide reliable information in selected cases, there is no reason to collect it: here it is often useful to apply the computer analyst's 'GIGO' dictum ('garbage in, garbage out'). Equally if, once collected, users cannot foresee to what use the information will be put, it should be discarded.

\* How should each incident report be structured'?

Decisions about the format of each crime enquiry should be influenced by the type of crime the retailer mostly experiences; by current methods of handling reports, with which staff will be familiar; and by direct experience of the way in which those reporting criminal incidents typically recount what has happened.

Taking these priorities separately, it is clear that the reporting format should aim to encompass most, if not all, criminal incidents affecting the retailer: only a small minority should fall outside these categories. In most circumstances, the main headings will be broadly similar (encompassing shoplifting, theft by employees, burglary, incidents involving violence) but sub-categories may vary widely according to each retailer's requirements (for example, thefts by staff may be sub-divided to distinguish theft of goods, of cash, etc; or to distinguish those committed by shop floor staff from those by distribution staff; or to separate those committed by staff of different rank, etc).

Reference to earlier means of reporting is essential to avoid misunderstandings that might arise if different meanings are applied to similar labels or terms, and indeed to enable comparisons to be made between reports on a new system and those recorded before its introduction. Finally it is axiomatic that reports should attempt to start at the logical 'beginning' (when and where did the incident happen?), fill in details of what happened, and end with details of any suspects arrested, how they were dealt with, etc.

For the purposes of subsequent analysis, the reports should of course attempt to allocate as much information as possible to pre-coded fields. This is unlikely to eliminate the need for a narrative section where the 'story can be told': indeed some software programs now provide "free text retrieval" package to enable users to search such narrative accounts for common words or phrases. The need for the expansion or modification of pre-coded fields should also be borne in mind: not only because users are likely to identify data categories initially overlooked, but also because those committing crimes will inevitably adopt new methods to overcome obstacles in their way.

\* What will reporting procedures be?

As a general rule, it will be expedient to utilise and build upon established reporting routines, unless these prove thoroughly impractical. Thus any new system that proposes to completely abandon a long-standing procedure where 'reporting' branches or departments of a store are used to completing pre-printing crime reports (and perhaps replace this with a telephone reporting method) is likely to face perhaps unnecessary difficulties (e.g. staff unused to questioning over the phone, etc).

The advantages of asking those reporting incidents to complete a 'boxed' report form are that they are able to cull a more considered assessment of what took place than the immediate phone-in. Moreover, report forms can be expanded or changed at little additional cost; and details can be subsequently entered directly on to 'off the shelf' spread-sheet computer programs (like Lotus 123). The disadvantages are that questions posed on a pre-printed report can be liable to different interpretation, and that — unless lengthy and very complicated — they cannot embrace the amount of detail that might be requested by someone operating a computer at the other end of the phone. Here software programs can be written for the operator to be guided to different questions according to the nature of the incident that has been reported (see, for example, the Dixons Group system described in Appendix 1).

\* What volumes of data will be held on computer? What performance criteria must be met?

In assessing the hardware needs of any computer system (particularly the question of whether the system should be micro, mini or mainframe based), the developers need to be aware not only of the amount of information likely to be recorded on each and every criminal incident, but details about the number of cases that the user wants to hold 'on record' at any one time. In addition, the user should specify details of how quickly the system should respond in carrying out particular operations: for example, it is probably essential that response time should be fast when entering details recounted from someone at the other end of a phone, but speed may not be essential for subsequent analysis of reports, etc.

\* Do reports have to be circulated?

In most larger retail companies — as in the police service — there is generally a requirement that paper reports of some (if not all) criminal incidents be circulated both to those needing to take action on their contents, and to those requiring them 'for information only'. Copies may be required by auditors (to account for stock loss), by those dealing with insurance (for claims purposes) or simply by senior management who wish to be informed of major incidents.

Inevitably, those who have been used to seeing short, succinct, accounts of criminal incidents will not wish to see much of the more detailed information that is elicited for crime analysis purposes. There is no need for them to do so: the computer software should separate those items of information that are of interest and leave the remainder 'hidden'.

\* What analysis should be available?

Again, those developing software for any crime analysis system should be given specific details of what type of analysis may need to be performed. In some circumstances it may be sufficient to provide facilities to identify and list incidents of particular type(s), committed at particular times or locations, etc. In others, the statistical tests and routines available from most social science software packages may be required. Needless to say, there is no use at all eliciting information that cannot subsequently be retrieved and made use of.

\* What are the training requirements for system users?

The introduction of a crime analysis system will at the minimum require consultation with, but perhaps formal training of, three groups: those reporting criminal incidents, those recording these, and those likely to utilise data provided by the system.

To deal with each: those *reporting* incidents will need to be advised about how to complete new kinds of reports or that they need to be equipped with more comprehensive details when phoning through a report. Those *recording* incidents occupy a key position in determining the standard of information entered into the computer: they require training on how the system will work, what interpretation to put on different questions, and so forth. A system manual may be necessary to ensure that common conventions are used consistently. Finally, there is little advantage in providing a system that is not fully utilised: so *staff who are likely to benefit from data analysis routines*, etc. available in the system (from directors to regional security personnel) need to be made aware of the facilities and encouraged to use them.

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