

ENTER THE ASX COMPUTER POLICE

HOW AN ELECTRONIC EYE SPOTS THE VILLAINS

by JIM BERRY and GREG YANCO

When players break the rules, the reputation of the market suffers. The stock exchange's new computerised surveillance system will quickly detect market rorts and weed out illegal operations.

Since the reorganisation of the Australian Stock Exchange (ASX), much greater emphasis has been given to market surveillance. A new ASX division was created early in 1989 to monitor the market and to detect and investigate any unusual activity.

Where an unusual movement cannot be explained adequately by the information immediately available to the exchange, the new Surveillance Division will normally liaise with the Companies Division with a view to querying the company involved. If it appears there has been a breach of the securities industry legislation, or the listing or business rules of the ASX, then a report is sent to the NCSC or to the exchange's Companies Division or Membership Division.

It is expected that effective surveillance will reduce the temptation to engage in unacceptable market behaviour, and therefore its incidence. This will ultimately enhance the quality and reputation of the markets provided by the ASX.

Historically, surveillance of the equities markets in Australia has been divided among the stock exchange Companies and Membership divisions, the NCSC and the various state corporate affairs commissions. When the exchanges were reorganised into the ASX in 1989 it was acknowledged that the new body had the necessary experience to provide effective surveillance of markets; indeed, it had a responsibility to do so.

The US regulators had come to a

similar conclusion some years earlier and since 1981 the exchanges in that country have provided effective surveillance for the US Securities and Exchange Commission. The ASX surveillance systems are based largely on the North American model.

The development of monitoring systems started in early 1989. The short-term goal was to have a system up and running which would detect and investigate unusual market movements and to refer possible breaches, in as much detail as possible, to the NCSC. One objective was to establish an immediate awareness of surveillance activities in the market.

A small team with relevant experience in market regulation, surveillance and investigation was formed, with the backing of the necessary computer-based tools. Several off-the-shelf software products, providing decision support, text-retrieval, communications and graphics, were useful almost immediately, and their effectiveness has since been steadily improved.

Access to news and real-time market information was essential; traditional market services and company announcements were supplemented by general news services which could give additional supportive information. We wanted to avoid wasting the time of market participants with queries which could be

Jim Berry, ASIA, is manager of the ASX Surveillance Division and Greg Yanco is the division's project leader. The authors wish to thank Professor R. Austin of Minter Ellison for his contribution.

answered readily with information directly accessible by the ASX.

The Surveillance Division's systems now consist of a local area network of IBM-compatible 386 and 286 PCs, a real-time monitoring system known as "SOMA" (surveillance of market activity) and the software already mentioned.

The SOMA system was developed in 1985 by the Sydney and Melbourne exchanges. Throughout last year, the surveillance team worked with the programmers to incorporate improvements and to integrate SOMA with our other systems. At its present stage of development, SOMA reacts to exceptional movements using the exchange's real-time reporting signal relating to price and volume over certain time-frames and parameters.

At present many SOMA "kickouts" are inconsequential, while some significant exceptions might well be overlooked. In developing the system, the aim is not only to decrease the number of exceptions but to increase the quality of the "kickouts". It is intended to incorporate changes to allow the users, the surveillance analysts, to alter parameters daily to account for macro and micro-economic factors.

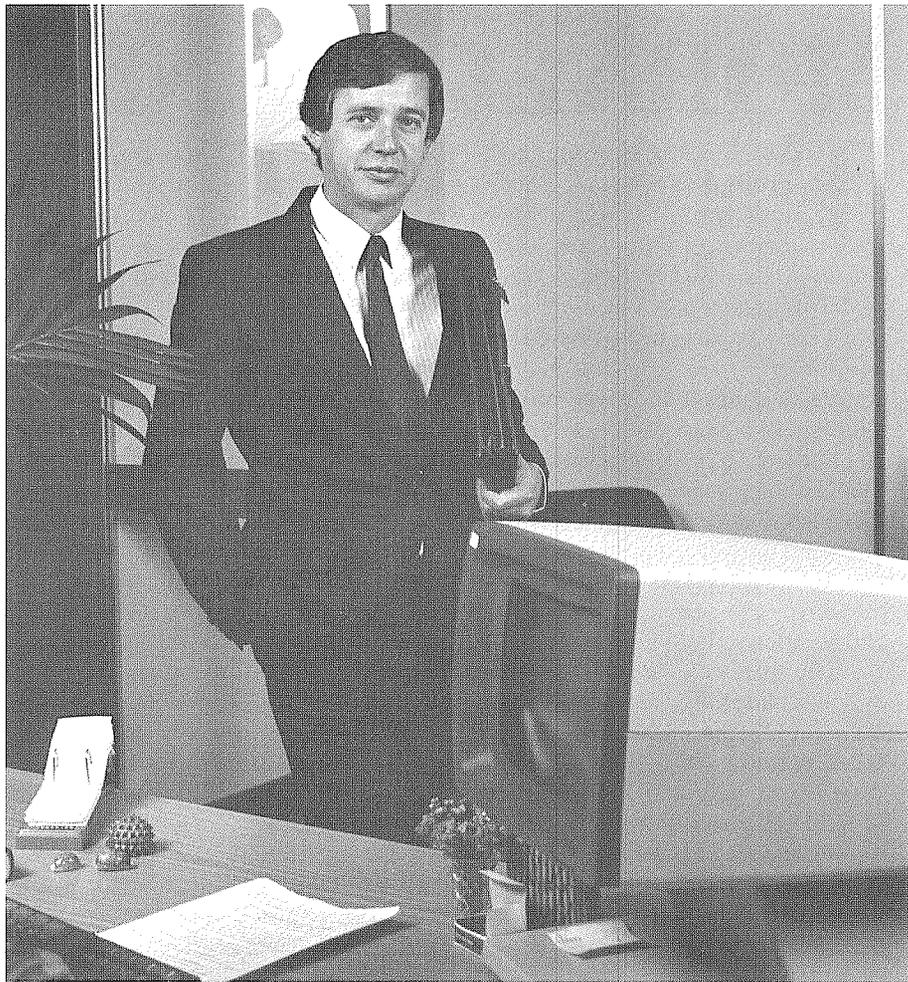
The medium-term goal is to further reduce unusual market movement "kickouts" which do not merit closer investigation, and to catch more subtle anomalies not currently exposed by the system. More specific aims are to report on creeping price rises, to investigate the use of expert systems in developing rule-based parameters and possibly to use pattern-matching detection techniques to highlight a variety of market abuses.

In the long term the goal is provide a fully integrated, real-time surveillance and investigative system to monitor unusual market movements. All systems are being designed to be driven by the surveillance analysts.

Effective though they will be, these computer systems are merely an aid to the professional staff in the division. Referrals to the ASX or NCSC/ASC occur only after careful studies by surveillance staff. These include market analysts, who conduct initial inquiries, and investigative analysts, who carry out detailed investigations.

Pro-active surveillance

Unusual market movements are examined by a market analyst, who calls on publicly available information to



Jim Berry. . . the goal is to catch subtle anomalies not currently exposed by the system.

determine whether the movements can be adequately explained. Where a matter needs further explanation, the opinions of contacts in the industry may be sought (contacts range from ASX employees and senior members to brokers' research and dealing staff). In some cases the company involved may already have contacted the ASX to express concern at movements in its share price. If no such approach has been made, information about the price movements may be referred to the relevant ASX division, which may then query the company.

In some cases, a pattern of trading may emerge which suggests the possibility of market manipulation. In such a case, a surveillance analyst would assess whether a detailed investigation was necessary. This would entail a study of the circumstances of the company to establish whether any motives existed for any irregular activity. In some circumstances, after further investigation, a recommendation could be made to the Companies Division to suspend the company's shares pending clarification of the position.

Reactive surveillance

The role of the Surveillance Division includes the analysis of trading in securities which are the subject of announcements and may be price-sensitive, typically in a takeover. An inquiry into a price-sensitive situation might be called for, for example, if an issuer delays an announcement, for any reason, and an insider trades during that delay.

An investigation starts when an opinion is formed that trading in a security may have involved a breach of the securities legislation.

Surveillance maintains its own database of trading on all ASX equity and derivative markets (SEATS and trading floor) which provides raw trading information in a form suitable for analysis. Summaries of trading show which brokers were involved, on a day-to-day or intra-day basis. The data may focus on certain types of trades, such as "specials" or overseas trades, on time periods or on individual brokers.

Information about issuers and associated entities comes from ASX