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Valuing intellectual capacity in the police

Intellectual
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police

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Abstract Presents a case study of intellectual capital within the police service of the UK. Describes the acquisition and maintenance of intellectual capacity through five mechanisms and explores the ways in which the utilization of intellectual capacity is reported. Makes two contributions to the emerging debate on intellectual capital. First, differentiates intellectual capital as an investment in the stock of knowledge from intellectual capacity as the flow or utilization of that knowledge. Second, emphasizes the difference between the (instrumental) value of intellectual capital in pursuit of purposes and the (representational) value of intellectual capital as contained in published reports. Concludes that intellectual capacity is essential for the police to prevent and detect crime, and to maintain public order, road safety and the confidence of the public. Despite the limitations of traditional accounting measures, the paper argues that those who report performance should value intellectual capital rather than be concerned with reporting its value through financial or quantitative metrics.

Introduction

This paper is a study of intellectual capital in policing. Intellectual capital (IC) encompasses the intangible knowledge and competence base that provides the capacity for organizational performance. Proponents of IC suggest that it is more important than the financial assets of an organization.

Much of the literature (e.g. Mouritsen, 1998; Petty and Guthrie, 2000; Bukh *et al.*, 2001) now accepts the distinction made by Edvinsson and Malone (1997), Stewart (1997) and Sveiby (1997) between three dimensions of IC: human (developing and leveraging individual knowledge and skills), organizational (internal structures, systems and procedures) and customer (loyalty, brand, image, etc.).

However, two elements of IC have been raised in the literature: its management and its measurement. The management of IC is concerned with collecting, storing and disseminating knowledge, whereas measurement is concerned with reporting metrics that reflect a valuation of IC. These separate notions do not recognise the reflexivity between measurement and management, between intellectual capital (as a stock) and intellectual capacity (the flows or utilisation of that capital). An emphasis on stocks implies that we only value (in instrumental terms) that to which we can ascribe some representational (i.e. numeric) value. This paper suggests that valuing and valuation in accounting reports are not identical. In taking this focus, this paper differentiates intellectual capital from intellectual capacity, following the definition of knowledge as a "capacity to act" which is contextual (Sveiby, 1997, p. 37).

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This paper also suggests that the management of IC is worthy of study by accountants in order to understand the context in which valuation and reporting are undertaken. The issue of value (as opposed to valuation) is especially important in the public sector, where annual reports do not have the same focus of attention as in private sector firms and tend more towards glossy public relations documents than providing any mechanism for accountability. Edvinsson and Malone (1997, p. 174) argued that by focusing on processes rather than financial results, IC measurement "vaults the traditional chasm between for profit and nonprofit institutions".

In the public sector the preferred method of accountability is through constraints on public spending, the publication of non-financial performance measures (often as "league tables") and an inspection regime. However, the failures of public services (for example, there have been many highly publicised cases of medical negligence, inadequate educational standards in schools and complaints against the police) have emphasised qualitative aspects of public sector performance that are not adequately addressed by metrics.

The present case study of IC in policing is concerned with the context of the management of IC and how intellectual capacity is reflected in diverse reports of its utilization and failure. The paper is arranged as follows. First, the paper introduces the literature on IC. Second, it briefly describes the research methods. The third section provides a case study of intellectual capacity in the police and how it is acquired and maintained. Fourth, the paper considers how that intellectual capacity is represented through a variety of published reports. Finally, the paper draws some conclusions from the case study for the broader study of IC.

The management and measurement of IC

Edvinsson and Malone (1997, p. 11) defined IC as "the hidden dynamic factors that underlie the visible company". Stewart (1997, p. 68) defined IC as "formalized, captured and leveraged knowledge". Edvinsson and Malone (1997) were more concerned with reporting and valuation, to the extent of calculating a financial value for IC and a coefficient of efficiency in using it. Stewart (1997) left the issue of measurement to an appendix and was primarily concerned with methods by which IC could be leveraged. Sveiby (1997) separated management and measurement in his treatment of IC.

IC is of particular interest to accountants in increasingly knowledge-based economies in which the limitations of traditional financial statements erode their value as a tool supporting meaningful decision making (Guthrie, 2001). Bassi and Van Buren (1999) argued that the management of IC was hampered by the lack of sound methods for measuring stocks of IC.

The disclosure of information about IC as an extension to financial reporting has been proposed by Rylander *et al.* (2000) and Rennie (1999). Petty and Guthrie (2000, p. 158) focused on "the legitimacy conferred upon intellectual capital through rendering it visible by including explicit IC measures and statements in the company annual report". Petty and Guthrie (2000) called for

experimental and analytical research to determine the best way to report IC in terms of both content (metric choice) and decision-usefulness.

Different measures of IC have been discussed by Edvinsson and Malone (1997), Stewart (1997), Sveiby (1997), Mouritsen (1998), Bontis *et al.* (1999), Petty and Guthrie (2000), Liebowitz and Suen (2000) and Allee (2000). These normative approaches can be contrasted with the argument by Bontis (2001) that the metrics suggested in various models were too firm specific and that no one set of indicators could encompass the variety of international and industry settings.

Pursuing the theme of differences, Allee (2000) argued that the “conversation” around intellectual capital reinforces existing mindsets by treating the enterprise as a closed system: “The real power of intangibles lies not in the commonalities they reveal, but in the differences they illuminate” (Allee, 2000, p. 30). Allee emphasised the role that IC plays in larger economic, social and environmental systems and speaks of “expanding the domains of value”. Allee argued that intangible domains of value are wealth and assets in their own right, without having to “contort” to a return on investment (ROI) or other financial measure. This argument is consistent with that of Mouritsen (1998), who contrasted Economic Value Added (EVA)TM[1] with IC. According to Mouritsen (1998, p. 480), while the first is concerned with calculation, the second is concerned with visualisation. IC “cannot see a bottom line but rather a set of interrelated sets of talk structured by loosely associated sets of figures, digits and visualizations”.

This broader perspective of IC reporting than the accounting concern with metrics was discussed by Bukh *et al.* (2001), who argued that IC statements were about knowledge-management activities, rather than about knowledge. Bukh *et al.* (2001) did not accept a “bottom-line” indicator of the value of IC but rather that the IC statement discloses aspects of the firm’s knowledge-management activities. Bukh *et al.* (2001, p. 99) defined the IC statement as a collection of “metrics, sketches/visualisations and stories/narratives . . . The metrics show that management is serious about intellectual capital, and that it can be held accountable . . . The sketches/visualisations construct a certain ‘wholeness’ in the organisation of metrics . . . while the story/narrative suggests how the legitimacy of the intellectual capital statement is created”. Bukh *et al.* (2001) argued that IC statements were relevant not because of any mathematical logic but because they support a broad story about the identity of the firm.

In adopting a Habermasian perspective, O’Regan and O’Donnell (2000) argued that accounting has focused on capturing and representing items which cannot be fully objectified. O’Regan and O’Donnell (2000, p. 124) proposed that IC – which they argued was created in communicative interaction – offered the possibility for a paradigm shift in response to the “commercial realities” which were forcing accounting to reconsider its epistemological and conceptual framework.

The police case study used in this paper emphasises the importance of valuing IC as opposed to valuation using the concept of wholeness through sketches/visualisations and stories/narratives (Mouritsen, 1998; Bukh *et al.*, 2001). This reflects the importance of leverage (Stewart, 1997) and capacity and

context (Sveiby, 1997) in IC management. These distinctions may enable a better understanding by accountants as to what is important in measurement and reporting and reflects the importance of both metrics and decision-usefulness (Petty and Guthrie, 2000).

Research methods

This paper arose from a study of the training and development of police officers and its impact on operational policing. The study was undertaken in the UK between 1996 and 1999, during which time the author held a senior management position in police training. This position provided access not only to the detail of training and development activities, but also to the relationship between training and development and various aspects of operational policing.

Data collection, which took place by a combination of participant observation, interview and documentary research, was a combination of ethnographic and action research. The study took place primarily within one police force, supplemented by ongoing contacts with other police forces and the national police training organization, and by attendance at national meetings concerning police training. The study also utilised the extensive documentation that is in the public domain about policing[2] and a review of published policing plans and annual reports of police forces.

Although the data collection took place while the writer was employed, this paper should not be dismissed as merely employment experience, any more than any ethnographic study. The analysis of these data has taken place after the writer left the organisation, in which the range of evidence was contextualised, arranged into patterns and triangulated, and through which alternative explanations were considered (Yin, 1994).

Intellectual capital in the police

Policing in England and Wales takes place through 43 police forces, which in total consume nearly £7.5 billion per annum of public funds, of which 85 per cent are employment-related costs for 124,000 police officers and 57,000 civilian support staff (CIPFA, 2000).

The need for skills and knowledge in police officers was summed up by a Home Affairs Committee (1999, para 8, p. viii) Inquiry into police training and recruitment:

Police officers need a wide range of skills: they need to know the law; they need to be able to deal with all kinds of people, often in difficult and even violent situations; they need to be able to document their actions and other evidence accurately so that it can be presented in court if necessary; they need to be able to use restraint and self-defence techniques and apply first aid effectively and safely; they need to act with integrity and impartiality; they need to be able to demonstrate creativity in the way they approach investigations; they need to be sensitive to the rights of victims, witnesses and relatives.

In a national inspection of police training, HM Inspectorate of Constabulary (1999, para 12, pp. 5-6) noted the environmental pressures on police officers and the important role of training:

As we approach the new Millennium, policing is becoming more and more complex. The pace of change is increasing; all forces are going or have gone through a restructuring process; established practices are being subjected to critical analysis; new technology and equipment is being introduced; the volume of new legislation is growing and operational performance is subjected to constant scrutiny. All this against a background of rising demand for services, a requirement on each force to find ongoing efficiency savings, the challenges of policing an increasingly diverse society and the high expectations of better informed communities.

Most people would agree that policing is concerned with reducing crime, either through preventive or detective work, maintaining public order, ensuring road safety and responding to calls from the public for assistance. IC in the police can be categorised as human (the knowledge and skills of its staff) and organizational (the knowledge base in the form of policies and procedures, contingency plans and computerised databases). Customer capital, given the involuntary nature of police customers (whether as suspects, witnesses or victims) and the monopoly position of the public police force in each geographic area, is limited to the support of the general public necessary for policing to be effective in the community.

What is important about intellectual capital as it applies to policing is the implicit importance, not of the investment in the stock of intellectual capital, but of the flow – the utilization of that stock in pursuing the purposes of policing, i.e. intellectual capacity. The concern of this paper is with the utilisation of that intellectual capacity. In the next section, this paper describes the acquisition and maintenance of IC in policing.

Acquisition and maintenance of IC

The structure of intellectual capacity in the police can be understood in terms of generalist and specialist roles, each with unique knowledge and skills. The generalist role is complex because of the diversity of incidents a police officer may attend in a single shift: e.g. a sudden death, a shoplifter, a burglary, a domestic dispute, youth antisocial behaviour. Examples of specialist roles include pursuit drivers, firearms officers, dog handlers, CID investigators, fingerprint experts, intelligence analysts, communications operators, etc. The diversity of roles within the generalist role and the specialisation of roles are a core feature of police IC, and this influences the mechanisms of acquisition and maintenance and subsequently the utilization of IC.

Based on data collected, five mechanisms can be identified for the acquisition and maintenance of IC in policing:

- (1) training and experience;
- (2) knowledge sharing;
- (3) organizational knowledge structures;
- (4) hierarchical redundancy; and
- (5) amortisation.

Each represents a combination of human and organizational capital.

Training and experience

While every police incident can be unique as a result of the different factors involved, certain core skills and experience assist police officers to perform their roles. For example, every sudden death requires investigation to determine whether there are grounds for suspicion or whether the death arose from natural causes. To cope with such an incident requires knowledge of the law and the procedures to be followed. However, this is insufficient as officers need also to be equipped with competencies in communication and interpersonal relations to ensure that enquiries are made in a tactful manner, bearing in mind the needs of those in grief.

The initial acquisition of IC in the police is through training and experience. Training provides the knowledge and skills necessary to encompass the generalist and specialist roles of policing. Initial training for police officers takes place through a 15-week course followed by a further nine weeks during the two-year probationary period. Post-probation specialist courses can last from a week (interview skills) to five weeks (advanced driving). Some specialisations require mandatory re-certification to ensure that skills are kept current. Training follows a model known as KUSAB, in which knowledge, understanding, skills, attitude and behaviour are all deemed important.

The application of training to practice takes place for the probationer constable following initial training, through attachment to a tutor constable or tutor unit. Tutors work with probationer constables before they are certified as ready for independent patrol. The tutor's role is to ensure that new officers are able to apply the skills learned in formal training and are exposed to the diversity of policing practice prescribed by National Police Training, the Home Office body responsible for establishing common minimum standards of police training. Tutor constables and police trainers are experienced and capable officers who have an interest in and aptitude for training. They receive extensive trainer training and develop their own technical and motivational skills during their tenure, which often precedes their own promotion.

Experience also comes from officers' line managers (sergeants) who review the work of constables and may require them to continue certain lines of enquiry or improve the collection or presentation of evidence in accordance with the requirements of the Crown Prosecution Service (CPS).

The reward for demonstrating knowledge and skills is promotion and/or transfer to favoured (often specialist) postings, and the recognition that comes from successful arrests (i.e. those that lead to convictions). Sanctions include disciplinary proceedings for failing to carry out duties in accordance with regulations and policy. Commendations or criticisms of officers by the courts also act as a powerful motivation for the acquisition of knowledge and skills.

Knowledge sharing

Much of the knowledge gained by officers in the performance of their duty is capable of being shared. The most common method of doing so is the briefing, which takes place at the beginning of each shift and provides a forum for

learning and information exchange. Mentoring is also increasing in popularity among some police forces, not just for fast-track officers[3] but also for those undergoing management training as a consequence of promotion to Sergeant and higher ranks. On an informal basis, the canteen provides a similar method of exchanging stories and reflecting on experience. As police officers generally work individually or in pairs, there is little opportunity other than the briefing or canteen to share knowledge. The police ethos places a strong emphasis on individual performance within the team because of the need to rely on peers for support in situations that may threaten personal safety.

Knowledge is also gained from debriefing operational incidents, a routine feature of post-incident evaluation, similar to the after-action review that takes place in the military. For firearms and public order incidents in particular, there is a close link between training and operations. Experienced trainers are routinely assigned as tactical advisers to operational incidents. This enables them to stand back from decision making while advising scene commanders. Following resolution of each incident, the debriefing process encourages learning, which often results in the development of training programmes to take account of that learning. Where officers use force (batons, CS spray), a "use of force" form is completed and reviewed both for health and safety reporting and by tactical trainers to improve self-defence and restraint techniques.

Knowledge sharing also takes place between police forces at regional and national levels under the auspices of the Association of Chief Police Officers (ACPO). For example, experience gained by one force in handling animal rights protesters quickly spread to other forces through this method. Similarly, one force developed a safer method of pursuit and containment of vehicles refusing to stop which was made available to other forces. At a national level, the National Crime Faculty (NCF) has a dual role in training and crime support and provides expertise to forces in serious or series crime investigations.

Organizational knowledge structures

Despite training and experience and knowledge sharing, police officers are, by the nature of their jobs, exposed to situations that are unexpected, often violent and sometimes emotional. To help them cope with novel situations, forces publish contingency plans, policies and procedures. Contingency plans are developed for a wide range of incidents, for example bomb alerts, aircraft crashes, chemical spillages, kidnaps, etc. as a result of knowledge sharing following debriefing, or arising from knowledge sharing at a national level. By this method, the reflected experiences of a small number of officers can be made available to all police officers.

In policing, organizational knowledge is stored in paper-based manuals (for example the *ACPO Emergency Procedures Manual*, the *NCF's Murder Investigation Manual*, or the Home Office's *Manual of Guidance* for case preparation). It is also contained in policies (such as when to use certain types of force, vehicle pursuit guidelines, etc.) and in training programmes. These are supplemented by the Police National Legal Database (PNLD), a computerised

system that enables local access to police “products and processes” including legal definitions and points to prove for each offence, powers of arrest, etc. Some individual forces also hold local data on intranet services.

Information is also stored on individual force computer databases used for command and control (recording of incidents and the deployment of officers to those incidents), crime management (from crime recording through custody records to case preparation for prosecution) and criminal intelligence (gained from informants and surveillance activity). Incident management and crime information systems support officers by providing data about patterns of incidents (as to type, location and suspect if known), while criminal intelligence provides background information about serious offenders to assist in targeted operations. For example, a national Football Intelligence Unit collates data on football hooligans, while criminal intelligence at force and national levels enables surveillance operations against known criminals.

The Police National Computer (PNC) is a service for all police forces that contains records of convictions of all offenders and provides access to the Driver & Vehicle Licensing Agency’s (DVLA) vehicle registration records. Substantial data are also stored to support major investigations using the HOLMES computer system (Home Office Large/Major Enquiry System). Forensic data are held on national systems for fingerprint identification (NAFIS), shoeprint recognition (SICAR) and the national DNA database.

Hierarchical redundancy

Despite the organizational knowledge contained in contingency plans, policies and databases, the utilization of IC takes place in every operational incident, whether crime or non-crime. Officers apply their training and experience and take advantage of knowledge sharing and organizational knowledge structures as they resolve incidents. There are, however, substantial redundancies built in to policing to cope with incidents, “just in case” they are needed.

The first level of redundancy for police officers is via radio to their control room, where controllers will have experience to bear, independent from the scene itself. This is often valuable to the police officer faced with a difficult situation. An example of this is a high speed pursuit, which must (by policy in most forces) be controlled by a duty Inspector, who may override officers at the scene and call off a pursuit where the Inspector considers there is too much danger to continue it. The second level of redundancy is by the control room to a call-out roster of specialist officers and advisers, as would be required for a serious crime investigation, aircraft crash, riot, chemical spillage, firearms incident or hostage negotiation.

In the case of a serious incident such as these, a command structure is put in place that is common to all police forces, with responsibilities assigned to each of bronze (immediate scene), silver (local area) and gold (resource deployment) levels of command. This demarcation follows the rank hierarchy where the bronze function is typically carried out by a Chief Inspector, silver by a

Superintendent, and gold by an Assistant Chief Constable (Commander in the Metropolitan Police Service).

Hierarchical redundancy provides a cascading form of IC management, in which local knowledge and tactical decisions cascade up while more strategic decision making and deployment decisions cascade down.

Amortization

However it may be acquired, IC is amortised through the loss of individual skills and through external change. Police officers often change posts within their police force every few years. This is either due to promotion, career development, retirement or tenure policies that result from a fear of deskilling generic police skills. As many police posts are specialist ones, the transfer of officers loses skills to that specialism, which have to be replaced by training and experience. Similarly, the effluxion of time degrades skills that are not commonly used, leading to a greater reliance on organizational knowledge structures and hierarchical redundancy.

Skills are also amortised through legislative, policy and technological change. These changes are frequent as crime has a high political profile. Significant changes to police practice in terms of IC have taken place since the election of the Labour Government in 1997. Examples include the application of health and safety legislation to police officers; the development of DNA technology; a new orientation to collaboration with local agencies for crime prevention (the Crime and Disorder Act); and the planned introduction of a new public safety radio communications system (PSRCS). Not least, however, has been the increasing political and public attention on the level of investment in policing and the returns from policing in terms of levels of crime, detection rates and other non-financial aspects of police performance, which is the focus of the next section.

Through these five mechanisms, IC is routinised into the operation of policing and forms a stock of knowledge, an intellectual capacity able to be utilized in pursuit of organizational purposes. The utilization of this intellectual capacity is examined through the reporting of IC.

Reporting: the utilisation of IC

The utilisation of IC can be seen in formal reports produced by police forces, in published cost of training data, in reports of police performance and the publicly reported failures of police IC. Each are described in turn.

Formal police reports

The Police Act of 1996 requires police forces to produce an annual report which assesses “the extent to which the local policing plan . . . has been carried out” (sec. 9). The policing plan itself is required to identify the priorities, the financial resources and the allocation of those resources, together with performance targets established both nationally and locally (sec. 8). Beyond this, the content of the plan and annual report is not specified.

A review of the content of 39 policing plans and annual reports (a 91 per cent response rate from a population of 43 police forces) revealed that little explicit attention was given to intellectual capital, despite the practice of policing being almost completely knowledge based. Despite immense differences between forces in the depth of coverage, the emphasis was on national and local objectives (primarily crime-related), and progress in relation to efficiency savings and best value plans. This reflected the importance of current developments in the regulatory environment (for a detailed analysis, see Collier (2001)). Attention was also given to high profile topics such as race relations (following the Macpherson (1999) report on the murder of Stephen Lawrence). There was limited financial information provided in these reports. Financial information was limited to expenditure analysis and no force included a balance sheet in their published documents. There were, however, extensive statistics on performance as measured by best value performance indicators.

Intellectual capital was represented implicitly in descriptions of new systems and human resource initiatives. These included strategies to reduce employee sickness and medical retirements. Several forces reported progress towards Investors in People accreditation, improvements to training strategies and the implementation of a national performance appraisal system. Only one force described a "knowledge management" strategy that highlighted the importance of both the quality and dissemination of data. However, all forces, as required by legislation, provided details of complaints made about police officers and how those complaints had been resolved.

Although they can be dismissed as mere legitimating devices, many forces place value in obtaining external recognition for their work towards developing the skills of their staff and for programmes of continuous improvement. Investors in People, Chartermark and (the EFQM) Business Excellence model are important to many forces, and the pursuit and attainment of these awards is usually heralded in the annual reports of those forces.

Reporting the cost of IC

The cost of experience, knowledge sharing and developing organizational knowledge structures is difficult to measure as it is primarily an opportunity cost, largely inseparable from the activities of day-to-day policing. However, one cost that can be estimated is the cost of training, which has received wide publicity within the police service and attention by government. The annual cost of training police officers nationally is about £500 million (Home Affairs Committee, 1999). This is almost 7 per cent of the national police budget. The cost drivers of this training are the legal, procedural and technological changes that affect police officers and the frequency with which police officers change between specialist roles (due to promotion, transfer, tenure or retirement).

Estimates by individual forces suggest that about one third of the cost is the provision of training and two thirds the "abstraction" cost of police officers, i.e. the opportunity cost of time spent in training, during which police officers are unable to perform their normal duties. The opportunity cost element has

received most attention within police forces. While the public may rightfully expect better training, they also expect high visibility policing and fast response to incidents. Local police commanders routinely express concern about their ability to meet the demand for police services, when the average number of training days for post-probation police officers is between ten and 12 per annum (HM Inspectorate of Constabulary, 1999). This equates to 6-7,000 police officers in training nationally at any one time.

During an HMIC inspection of training (HM Inspectorate of Constabulary, 1999), police forces were asked to calculate a return on their training investment. No force could do so. Some forces had detailed information about the cost of training and all forces had detailed non-financial performance information, but none could relate one to the other. They were unable to show, at a macro level, the benefits that should result from training.

While the cost of training and abstraction is visible, able both to be counted and reported, to produce such reports may not be politically helpful because of the high cost of training, both financially and in terms of public satisfaction with the number of police officers and their visibility. Making a cause-effect link between the cost of training and its application to measurable performance is problematic. However, the reportable cost of the training element of IC (a representational value) is different from the value the public places on the IC of police officers as they carry out their duties (an instrumental value).

At a macro level, the recent proposals by the Public Services Productivity Panel (2000) for an efficiency index may impact the calculation of a return on the training element of IC. The efficiency index proposal is for a weighted average of best value performance indicators, predominantly those concerning levels of crime, divided by the cost of providing police services. The purpose is to compare cost/performance between forces. The PSPP intention is for this information to be reported and used to shift resources between functions. Despite the limitations in such a measure, if such an index was constructed, improvements in performance could be related to the investment in training. This may lead to suggestions about whether an investment in IC through training has delivered performance improvements (as measured by the efficiency index). Taken to its logical conclusion, this could result in shifts of resources from those functions that encourage the acquisition, maintenance and utilization of IC, with detrimental consequences in terms of qualitative factors that could flow from such a shift in resources.

The cost of knowledge sharing and the maintenance of organizational knowledge structures is less apparent than training costs although it could be measured, again primarily in opportunity cost. The cost of hierarchical redundancy is also high in the maintenance of a rank structure and levels of command that may be under-utilised at times, yet become critical resources during major incidents or investigations. Despite the relative rarity of plane and rail crashes, riots by extremist groups or similar events, these incidents do occur and the danger in reducing levels of rank hierarchy may be in the degree to which these incidents can be properly managed in the future.

Between 1980 and 1997, Her Majesty's Inspector of Constabulary (1998) reported that, despite a national increase in police officers from 114,000 to 127,000 (an increase of 11 per cent), the number of chief officers fell from 254 to 209 (an 18 per cent reduction), while superintendents reduced from 2,161 to 1,367 (a drop of 37 per cent) and inspecting ranks fell from 8,615 to 8,136 (a 5 per cent fall). These figures suggest that policing may have suffered a similar fate to many private and public sector organizations in reducing middle management. The figures also suggest that the level of command resilience may have been higher than was necessary.

Similarly, while the cost of computer databases can be calculated (in terms of equipment, software, maintenance and updating costs), the investment in the data itself is impossible (or at least impractical) to measure. This is because of the subjectivity involved in making judgements about the value of organizational knowledge contained in a criminal intelligence database or a stolen property register. Its value is not in the capital stock but in the capacity to use that stock to generate results in terms of arrests, prosecutions, returned property, etc. Consequently, more important than the cost of acquiring IC is how effectively police officers utilise that IC in the pursuit of organizational purposes.

Reports of police performance

IC is applied towards improving the results of policing. Performance is measured by non-financial performance indicators, which emphasise levels of crime and rates of detection. These are the principal reported outcomes of the utilization of IC. Crime statistics are regularly published, both through the level of crime reported by the police to the Home Office, and through the British Crime Survey. In addition, the Audit Commission, and more recently Best Value legislation, requires that performance indicators be published annually by each police force. League tables of comparative performance are published annually in the press by the Audit Commission. Although these measures are dominated by levels of crime and rates of detection, speed of response, maintaining public order and road safety are also important, as is the level of public satisfaction with policing.

A review of annual reports by the Association of Police Authorities (1998) emphasised the comparison between performance achieved and targets. Some national statistics are illustrative[4]. The number of "999" calls increased by 38 per cent between 1993/1994 and 1996/1997 (from 5.3 million to 7.3 million per annum) while public satisfaction with the "999" call service fell only 0.9 per cent to 86.9 per cent. This in part may reflect a shift of resources from high visibility patrol to call management. Violent crime increased from 116 per cent per 100 officers in 1980 to 271 in 1996, while rates of detection increased from 83 to 179 per officer. This may suggest improved efficiency or effectiveness in crime fighting. Assaults against police fell from 18,000 in 1989 to 15,488 in 1996/1997, perhaps partly a result of improved self-defence and restraint training. Despite

their limitations, these statistics may suggest some positive outcomes from IC in the police.

However, the same statistics also highlight failings. Public satisfaction with police services remained constant between 1994/1995 and 1996/1997 for victims of burglary and road traffic accidents, but fell from 90 per cent to 78 per cent for victims of violence. This may suggest a focus on detection at the expense of victim support. The percentage of crimes detected for homicides, wounding and aggravated burglary all fell slightly between 1988 and 1996, although the number of crimes increased dramatically. These figures may suggest that police may not be keeping up with increases in demand. The proportion of stop searches (police officers can stop and search persons reasonably suspected of having committed an offence) that led to an arrest reduced from 16 per cent in 1988 to 11 per cent in 1996. This may suggest a re-training need, the reliability of criminal intelligence or a lack of judgement. Again, despite the limitations of these statistics and other contributing factors, these figures suggest that the utilization of IC has been less successful in some aspects of police work.

The relationship between police IC and performance measures is notoriously difficult to judge because of the socio-economic causes of crime and the actions of other agencies (health, education, social services, etc.), none of which would appear to have any experience in measuring IC. The police service has a fixed budget, irrespective of the demand for its services, and so increases in demand may be reflected in quantitative or qualitative performance (or both). Despite this, there is an expectation that the level of funding on policing will be matched by performance as measured by league tables (Audit Commission, 1999; Home Office, 1999).

More important, however, from a qualitative perspective, is the value of avoiding poor practice and the "negative reporting" in unwelcome publicity that can be seen as the failure of IC.

Reporting failures of IC

Perhaps the most significant form of reporting is that generated by the failure of IC. The failure of IC is reflected in negative publicity and the consequent loss of confidence and trust by the public.

There have been substantial concerns about policing over the last 30 years. Concern about violation of the rights of suspects in the 1970s led to a Royal Commission in 1981 and subsequently to the Police and Criminal Evidence Act (PACE) of 1984. PACE remains the single most important regulator of police powers and responsibilities (Reiner, 1992; Police Foundation and Policy Studies Institute, 1994).

The urban riots of the 1980s[5], the miners' strikes during the late 1980s, and the anti-poll tax demonstrations of the early 1990s raised questions about the methods used by the police. There have been highly publicised miscarriages of justice resulting in the overturn of convictions[6], and the West Midlands Serious Crime Squad was disbanded in 1989 after allegations of serious

malpractice. Cases such as these led to a further Royal Commission in 1991 (Reiner, 1992; Police Foundation and Policy Studies Institute, 1994).

In 1989, after the death of 96 football spectators at the Hillsborough stadium, Lord Justice Taylor in his report cited:

The main reason for the disaster was the failure of police control (Taylor, 1989, para. 278).

Both the Home Affairs Committee (1999) inquiry and the HM Inspectorate of Constabulary (1999) inspection of police training referred to earlier in this paper took place against the background of publicity surrounding the Stephen Lawrence murder enquiry. The Macpherson report (1999) was a seminal criticism of policing and concluded that the failure of the Metropolitan Police Service, in its inquiry into the murder of Stephen Lawrence in 1993, was due to:

... a combination of professional incompetence, institutional racism and a failure of leadership by senior officers (Macpherson, 1999, para. 46.1, p. 317).

Similarly, a report by the Police Complaints Authority (PCA) (1999) reviewed almost 250 deaths in police custody that had occurred over the previous five years. The report highlighted the failures of training of custody officers, the need for greater care and supervision of prisoners in custody who were at risk, and the need to learn lessons as a result of those deaths that had occurred to avoid recurrence.

Both the Macpherson and PCA reports brought IC to the forefront of importance for the police service, because of the substantial investment in human and organizational capital and the high profile failures of IC in these cases. However, the apparent failure of IC in policing also leads to a loss of confidence and trust in the police. While this paper has been primarily concerned with human and organizational capital, these failures, and the perceptions of performance reported in crime statistics, also contribute to a depreciation of customer capital.

These high profile criticisms provide an additional perspective to that given in published crime statistics and non-financial performance indicators. The failures of IC reflected in public criticism of the police may be the result of a lack of training, deskilling, inadequate experience, failure to unlearn obsolete knowledge or skills, failure to use organizational knowledge structures, inability to cope with demand or inadequate supervision. Over-specialisation may lead to a loss of generic policing skills and specialisation itself can cause difficulties in the integration of diverse activities.

This paper now considers the acquisition and maintenance of police IC and its reporting as they relate to the literature on IC.

Discussion

The literature review in this paper identified the importance of a wholeness in understanding IC, which could take place through sketches/visualisations and stories/narratives (Bukh *et al.*, 2001). Such a contextual understanding of the

management of intellectual capacity in the police enables a better understanding of what is important in measurement and reporting.

This paper has distinguished intellectual capital (as a stock of knowledge) from intellectual capacity (as the flow of knowledge), arguing that the value of, and the utilisation of the knowledge base is more important than a valuation exercise. The acquisition and maintenance of IC in the police has been described through the mechanisms of training and experience, knowledge sharing, organizational knowledge structures, hierarchical redundancy and amortisation. Each is a sketch or narrative of police IC.

In the police, training is based on the “reflective practitioner” (a development from the experiential learning cycle of Kolb (1984) in which officers learn through a critical analysis of their own and others’ experience. The extensive investment in training has not been quantified in terms of benefits. The problem of conversion of benefits into financial metrics is reflected in the literature on return on investment in training which is outside the scope of this paper. However, it emanates largely from the fourth level of the training evaluation model proposed by Kirkpatrick (1973), i.e. translating changed behaviour brought about by training into business results. There are difficulties at the fourth level, especially in identifying cause-effect linkages between training and results and quantifying improved performance, despite methods proposed by writers such as Philips (1991) and Polesky (1998). These difficulties reflect the same problems highlighted by recent research concerning links between IC and business performance (Bontis, 1999).

Knowledge sharing takes place through a “spiral of knowledge” in which the “tacit and often highly subjective insights, intuitions and hunches of individual employees” (Nonaka, 1991, p. 97) become explicit and embedded in knowledge structures. Much of this sharing takes place through what the military call “after action reviews” (see for example Dwyer *et al.* (1999)). The literature on organisational knowledge and memory is also beyond the scope of this paper. It is concerned with models of information acquisition, sharing and utilization (e.g. Daft and Weick, 1984; Shrivastava and Grant, 1985; Huber, 1991; Nevis *et al.*, 1995) and institutional mechanisms that enable or impede the stocks and flows of organizational learning (Crossan *et al.*, 1999). Popper and Lipshitz (1998) emphasised the mechanisms that mediate learning in organizations into learning by organizations. However, an over-reliance on explicit organizational knowledge structures at the expense of implicit individual knowledge can lead to the failure of IC, as has been suggested occurred with the Hillsborough stadium disaster. Similarly, the impact of hierarchical redundancy and the amortisation of IC have been suggested as the causes of the failure of IC identified by the Macpherson and PCA reports.

The management of IC is concerned with the utilization of intellectual capacity. This paper has argued that the cost of – or investment in – the acquisition of knowledge and skills has no value. No stock of capital – whether in the form of human, organizational or customer value – can be carried

forward over time. Consequently, value lies in the flows, the utilization of intellectual capacity in the pursuit of organizational purposes.

Each sketch or narrative of police IC described in this paper provides the context in which metrics can be reported and interpreted. There are non-financial metrics contained in policing plans and annual reports and information about the cost of (or investment in) training. Many data are hidden, such as the cost of knowledge sharing, the maintenance of organisational knowledge structures and the cost of hierarchical redundancy. As Edvinsson and Malone (1997), Stewart (1997), Sveiby (1997) and others have shown, metrics may be developed and may even be converted into monetary terms. However, despite the diversity of measures described in the literature, there is no agreement as to what constitutes the value of IC.

This paper suggests the rejection of the pre-eminent concern with valuation. Following Allee (2000), this paper has expanded the domain of value from the measurable, arguing that intellectual capacity is valuable, irrespective of whether it can be valued and reported in financial or even quantitative terms. This more holistic portrayal of police IC (following Bukh *et al.* (2001)) may suggest the beginning of a paradigm shift in accounting that seeks a balance between the measurable and the more enabling possibilities of human knowledge (O'Regan and O'Donnell, 2000).

Conclusion

Knowledge-based organizations, particularly those in the public sector, are dependent on IC. Despite the importance of visibility and metrics (Petty and Guthrie, 2000), this paper suggests the rejection of the pre-eminent concern with valuation, arguing that while IC (in instrumental terms) is valuable, valuing IC (in representational terms) for policing is problematic. This reflects the general criticism of objectification in accounting reports (O'Regan and O'Donnell, 2000). The rational economic paradigm in which accounting is most commonly associated is not concerned with capacity, only with sustainable and measurable performance. By contrast, IC is concerned with competence enhancement and an orientation to future organizational performance (Mouritsen, 1998).

This paper has argued that value lies in the flows, the utilization of intellectual capacity in the pursuit of organizational purposes – in the case of the police, to prevent and detect crime, and to maintain public order, road safety and the confidence of the public. This paper has argued that the practice of accounting needs to recognise the reflexivity between the management and measurement of IC, between knowledge management and knowledge itself (Bukh *et al.*, 2001). The narrative or story proposed by Bukh *et al.* (2001) can provide the context (Sveiby, 1997) in which the available metrics can be reported and interpreted.

This paper has made two contributions. First has been to differentiate intellectual capital as the investment in a stock of knowledge from intellectual capacity as the flow or utilization – the leveraging (Stewart, 1997) of that

knowledge in pursuit of organizational purposes. The study has described five mechanisms for the acquisition and maintenance of IC in policing and described the utilization of IC as it is reflected in reporting the cost of IC, reports of police performance, and reports of the failure of IC.

The second contribution of the paper has been to emphasise the difference between the (instrumental) value of IC in pursuit of purposes and the (representational) value of IC as contained in reports. In particular, this paper has demonstrated the ways in which police IC is represented in various reports, from the cost of IC to crime statistics and league tables, and from external recognition to reports of the failure to utilise IC.

Given the competition for resources in the public sector, IC deserves more attention and could be a focus of public policy, given the link between the utilization of police IC and reported police performance.

Notes

1. EVA is a trademark of Stern, Stewart and Co.
2. Particularly reports of the Home Office, HMIC, Audit Commission, APA, and CIPFA.
3. The Police Accelerated Promotion Scheme
4. Extracted from Her Majesty's Inspector of Constabulary (1998).
5. In Brixton, West Midlands, Liverpool, Tottenham and Wapping.
6. Cases such as the Guildford Four (1989), the Maguire Seven (1990), the Birmingham Six (1991) and the Tottenham Three (1992).

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