Providing Explicit Knowledge in an Experience-driven Culture: Levels of Professionalism in Intelligence Analysis and Its Role in the Law Enforcement Knowledge Management Apparatus

By

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This thesis is submitted in partial fulfilment of the requirements for the award of the degree of Doctor of Criminal Justice of the University of Portsmouth
Declaration

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award.

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I dedicate this work to you My Beloved Family.
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Abstract

The efficient and ethical management of knowledge and intelligence increasingly is seen as vital to the success of law enforcement agencies in the Information Age. Those agencies have invested significantly in new and emerging information technologies, and hired analytical experts to develop collected information in order to be knowledge-led. Despite these efforts, the take-up of putatively new policing models, such as intelligence-led policing (ILP), has been quite modest. This study addresses the question of why it seems to have proved so difficult for law enforcement agencies to capitalise on these innovations. This analysis is largely based on case studies of the police organisations of Denmark and of Finland. The study explores the political, organisational, and social settings of both police organisations to better understand police cultures, the policing models operated, the police’s crime reduction and prevention strategies, and the information technology they used to achieve their goals. This analysis is undertaken against the background of a drive to professionalise both the policing and police intelligence and analysis disciplines that have been characteristic of policing in developed economies in the modern era. The practical implementation of intelligence work is assessed in the context of the Socialisation, Externalisation, Combination and Internalisation (SECI) knowledge management model. Semistructured interviews and survey questionnaires were used to collect data from the countries under research; thus, the chosen methodology for this study is the mixed method.

The study identifies police cultures in which experiential knowledge and a faith in traditional policing methods tend to buttress resistance to the implementation of ideas and concepts based on research and explicit knowledge and skew the knowledge roles and processes of the law enforcement agencies studied. This also limits the impact of knowledge and intelligence management and significantly undermines professionalism in roles such as police information management, intelligence and analysis. The research also drills down into the theoretical foundations of police intelligence work and presents an updated intelligence definition of law enforcement. It introduces a definition that
acknowledges that intelligence in law enforcement is produced as a consequence not only of fast mental processes in the experience-based knowledge domain but also of slower processes using diverse analytical methods in the explicit knowledge domain. The author argues that the law enforcement community’s acknowledgement of this fact can assist in developing intelligence doctrine and in pointing the way to more effective and more ethical intelligence practice.
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>COMPSTAT</td>
<td>Crime management business model, acronym allegedly coming either from Compare Stats or Computer Statistics</td>
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<tr>
<td>COP</td>
<td>Community-Oriented Policing</td>
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<tr>
<td>DIKI</td>
<td>Data, Information, Knowledge, Intelligence</td>
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<td>DIIK</td>
<td>Data, Information, Intelligence, Knowledge</td>
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<tr>
<td>EBP</td>
<td>Evidence-Based Policing</td>
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<tr>
<td>EUROPOL</td>
<td>The European Union Agency for Law Enforcement Cooperation</td>
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<tr>
<td>IAU</td>
<td>Intelligence and Analysis Unit</td>
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<td>ILP</td>
<td>Intelligence-Led Policing</td>
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<td>LE</td>
<td>Law Enforcement</td>
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<td>NBI</td>
<td>National Bureau of Investigation (Finland)</td>
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<td>NIM</td>
<td>National Intelligence Model</td>
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<td>NPB</td>
<td>National Police Board (Finland)</td>
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<tr>
<td>PCB</td>
<td>Police, Customs and Boarder Guard</td>
</tr>
<tr>
<td>POP</td>
<td>Problem Oriented Policing</td>
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<tr>
<td>SARA</td>
<td>Scanning, Analysis, Response, Assessment</td>
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<tr>
<td>SECI</td>
<td>Socialisation, Externalisation, Combination, Internalisation</td>
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<tr>
<td>UBP</td>
<td>Unit Beat Policing</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
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<td>VCM</td>
<td>Volume Crime Management</td>
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Introduction

The interest in this research derives from the researcher’s professional background as both police officer and intelligence analyst. Indeed, the researcher has been able to observe the law enforcement professional world from different perspectives at national but also at international level. It became clear to the researcher, particularly when providing training courses on intelligence analysis to law enforcement agencies across Europe, that, despite the hype around knowledge-based policing models such as Intelligence-Led Policing, Predictive Policing and Evidence-Based Policing, the practical business model of law enforcement has hardly changed since the beginning of the ‘policing-era’. An inconceivable gap seems to exist between the management hype on being knowledge-led or intelligence-led and the practical everyday work of the frontline police officers. Thus, the researcher was constantly wondering why knowledge and intelligence are such difficult subjects for law enforcement.

Indeed, this was one of the researcher’s major motivations to conduct research on this given topic, as law enforcement is challenged by its increasingly dynamic, complex and wide-ranging tasks (Seba & Rowley, 2010, p.623; Luen & Al-Hawamdeh, 2001, p.312). The law enforcement community’s capability to succeed with these contemporary tasks arguably requires it to develop knowledge about criminals, finance, infrastructures and communities (Harfield, 2008b, pp. 486-487). Policing should, therefore, be seen as an activity commanded by knowledge (Collier, 2006, p.109). Certainly, organisations ideally enhance their learning through accumulated knowledge of collected information that is managed through information technology (Brown & Brudney, 2003, p.31). This information surely provides enhanced opportunities for pre-emptive action to support investigations and judicial prosecutions (Stanier, 2013, p.124). Law enforcement investments in information technology have, therefore, increased to collect, store and analyse information in order to produce intelligence (Gerspacher & Lemieux, 2010, p.68; Chan, 2001, p.140). The notion is that enhancing the intelligence function can make the delivery of policing services more cost-effective by targeting limited resources towards
selected risks (Stanier, 2013, p.124; Innes, Fielding, & Cope, 2005, p.42). Therefore, information technology has become the bedrock of most police processes and systems (Darroch & Mazerolle, 2012, p.22). This intelligence task is, ultimately, also linked to knowledge management issues (James, 2013, p.7).

Nevertheless, studies indicate that law enforcement organisations are not properly structured to generate and use knowledge to the fullest extent. Often missing are an adequate knowledge management structure (Coleman, 2008, p.319) and a knowledge management strategy (Seba & Rowley, 2010, p.622). Indeed, proper implementation of knowledge and intelligence structures requires a motivated and enlightened leadership (Darroch & Mazerolle, 2012, p.14; McGarrell, Freilich, & Chermak, 2007, p.152) who will ensure that intelligence is in every part of the organisation (McGarrell et al., 2007, p.152). The challenge is that any meaningful change is likely to be strongly resisted within law enforcement agencies that have strong organisational traditions (Weisburd, Shalev, & Amir, 2002, p.105); therefore, advances that do not require radical organisational changes and are more of the supportive type, such as technical and/or administrative improvements, will be more easily adopted (Darroch & Mazerolle, 2012, p.4; Braga & Weisburd, 2006a, p.17). It is also important to note that organisational culture has an impact on knowledge management systems (Ciganek, Mao, & Srite, 2010, p.63).

The increased information collection and storage have also increased the need for analytical capacity to analyse this data (Martin, 2010, p.145; Scheider, Chapman & Schapiro, 2009, p.701; Innes et al., 2005, p.54). Many law enforcement agencies, therefore, have started to employ analysts to collect, map and analyse the collected data (Tilley, 2010, p.188). These analysts often act as ‘knowledge brokers’ (Quarmby & Young, 2010, p.25) who try to make conclusions with partial, vague, and potentially deceptive information (Heuer, 2005, p.75). As Cope (2004, p.188) explains: ‘Essentially analysts are information translators, whose role is to review information and provide reliable intelligence in a practical and operational format’. There are generally two types of analysts. Strategic analysts focus on providing overviews for strategic
interventions, whilst operational analysts aim to guide law enforcement’s operational responses (Cope, 2004, p.188). The expectations of the analysts’ backgrounds often vary depending on the status of the post, that is, whether they are civilians or sworn police officers. Thus, the intelligence analyst profession, particularly in law enforcement, remains underdeveloped (Evans & Kebbell, 2012; Quarmby & Young, 2010, p. 247) despite the fact that the quality of any analysis strongly depends on the analysts’ competence and effectiveness (Evans & Kebbell, 2012, p.205; Cope, 2004, p.195).

Indeed, the overall aims of this research are to examine how intelligence analysis is finding its place in the policing context and to understand its role in the law enforcement knowledge management apparatus.

There are three main objectives to approaching to this question.

- Firstly, it is important to understand the contemporary policing setting and the state of play of its knowledge structures, systems and definitions to comprehend how knowledge, intelligence, and analysis are understood in a law enforcement context.
- Secondly it is essential to understand the impact of organisational knowledge concepts, such as professionalism and culture, in order to recognise the conditions under which intelligence analysis operates.
- Lastly, it is essential to comprehend and evaluate the practical role of intelligence analysis in the law enforcement knowledge management apparatus.

Accordingly, this research addresses these specific research questions:

- What is the state of play of intelligence analysis in the contemporary policing context in terms of structures, systems and concepts?
- What is the status of professionalism and organisational culture in relation to intelligence analysis?
- How does intelligence analysis serve the law enforcement knowledge management apparatus in practice?

This research begins to address these questions by systematically examining the available literature from a wide range of disciplines, such as criminology, knowledge management, philosophy, information management, occupational culture and sociology. The literature review is in two major parts to assist comprehension, especially when using such a large number of disciplines: ‘The
Although similar themes can be found in both of these parts, the first part’s focus is on the general literature related to knowledge management. The second part’s aim, then, is to understand knowledge management in the policing context.

The methodology chapter that follows explains the research design and notes the ethical considerations. Three findings chapters then follow. The first aims to explore the policing context and the knowledge- and intelligence-related structures, systems and concepts. The objective is to answer the first research question and provide the setting for the remaining findings chapters. The next findings chapter addresses the second research question by exploring the levels of professionalism related to intelligence analysis in the police organisations under study; it also explores the cultural setting in which the intelligence analysis operates. The final findings chapter uses Nonaka and Takeuchi’s (1995) Socialisation, Externalisation, Combination and Internalisation knowledge management model to address the third research question by observing the organisational knowledge conversions. The discussion chapter that follows further examines these findings, using the research questions’ same three-tiered structure. Lastly, the conclusion chapter discusses the answer to the overall aim of this research to further argue the nature of the original contribution of this research to knowledge. The conclusions chapter also identifies limitations of this study and possible future research areas.
2 Literature review

This chapter presents the available research literature on two levels. The aim of the first part, with the heading ‘The science of knowledge management’, is to generally examine the concept of knowledge from different viewpoints, from philosophical to practical. This section also identifies different knowledge roles in an organisation and explains Nonaka and Takeuchi’s (1995) classical SECI knowledge management model. It further discusses organisational culture and professionalism, two quite debated but arguably important knowledge management concepts. This first part concludes by introducing the role of management in the knowledge management context.

The second part of the literature review, under the heading ‘Knowledge in law enforcement’, next addresses these same knowledge-related areas from a law enforcement perspective. Its aim is to identify how the concepts of knowledge, intelligence, and analysis are understood in a law enforcement setting. This is done by first exploring the evolution of policing models towards the knowledge-based model, followed by an examination of the concept of knowledge in operational policing and a discussion about the status quo of intelligence and analysis in policing. The practical aspects of information and intelligence management in law enforcement are then considered, followed by an elaboration of the level of professionalism related to intelligence analysis in law enforcement and the police culture aspects to intelligence. The last part of the literature review compares relevant policing literature to the SECI knowledge management model to identify what is known on the different knowledge management phases in policing.

2.1 The science of knowledge management

2.1.1 Philosophical foundation of knowledge and intelligence

Aristotle separated the intellectual virtues into episteme, techne, and phronesis. Episteme is considered scientific knowledge, which explains why it is found in the word epistemology. Techne is technical knowledge and can be found in the word technology. Phronesis is the most important of all the virtues (Flyvbjerg, 2004, pp.284-285), as it introduces ethics and values into practice (Flyvbjerg,
Interestingly, this separation is also found in the modern characterisation of knowledge as *explicit, implicit* and *tacit*. Koenig (2012) identified explicit knowledge as tangible (similarity with episteme); implicit knowledge can be made explicit (similarity with techne), while tacit knowledge is extremely difficult to make tangible (similarity with phronesis). Some scholars argue that all knowledge is rooted in tacit knowledge (Nonaka, Kodama, Hirose & Kohlbacher, 2014, pp.139-140). Indeed, this tacit knowledge is linked to intuition, which is built cumulatively on an individual’s past experiences (Eraut, 2004, p.253). It is also the knowledge-type preferred by the police (Gundhus, 2012).

Another important aspect of knowledge is its relationship to information and data. This is often described as the ‘knowledge hierarchy’ in the information and knowledge literature. The implicit assumption in this hierarchy is that data is used to create information and information is used to create knowledge (Rowley, 2007, pp.163-164). An alternative viewpoint is the ‘reversed hierarchy’ in which knowledge comes first, followed by information and data (Tuomi, 1999, p.4). Indeed, as Nonaka et al. (2014, p.139) have argued, knowledge is information in context and involves the knower’s capacity to define a situation and act accordingly (Nonaka, von Krogh & Voelpel, 2006, pp.1181-1182). What, then, is intelligence? The Oxford Dictionary (Soanes & Stevenson, 2008) defines intelligence as:

- The ability to acquire and apply knowledge and skills
- A person with this ability
- The gathering of information of military or political value.

Rønn and Høffding (2013, p.697) and Brown (2007, p.337) have argued, thus, that intelligence is linked with information and knowledge. This definition also links intelligence to resources and to individual capacity. However, when it comes to the context of practice, the Oxford definition links intelligence only to the military and politics, not to policing.

The limited literature in relation to law enforcement intelligence views it as the end product of an analytical process (Brown, 2007, p.338). Rønn and Høffding (2013, p.714) have argued that the epistemic status of intelligence is a product, thus anchoring intelligence to the frame of explicit knowledge. Intelligence is
also seen as collected raw data (Rønn & Høffding, 2013, p.699) and actionable knowledge (Ratcliffe, 2008, p.98). Innes and Sheptycki (2004, p.6) have noted that, in relation to the notion of actionable knowledge, intelligence is ‘bits of data that, when combined and viewed together with relevant background knowledge, may be used to produce intelligence’. Ratcliffe (2008, pp.96-99) introduced the Data, Information, Knowledge and Intelligence (DIKI) continuum, in which intelligence comes after knowledge in this hierarchy. Conversely, there are arguments for another type of knowledge hierarchy in which intelligence is located between information and knowledge. Intelligence is a precursor of knowledge for advocates of that approach (Rønn & Høffding, 2013, p.707).

2.1.2 Knowledge assets and the SECI knowledge management model

Knowledge is a critical asset and a key resource of any organisation (Hung, Durcikova, Lai & Lin, 2011, p.416; Yang, Fang & Lin, 2010, p.232), as its competitive advantage is rooted in knowledge the organisation possesses and/or can obtain (Yang et al., 2010, p.231). Different types of knowledge exist in an organisation. Firstly, an organisation possesses bureaucratic knowledge, such as structures, systems, policies and procedures (2006, p.109; Snowden, 2002, pp.104-105). Secondly, an organisation possesses professional knowledge (von Krogh, Nonaka & Rechsteiner, 2012, p.242; Yang et al., 2010, p.232; Snowden, 2002, pp.104-105) that receives its power from claiming unique forms of expertise not shared with other occupational groups, according to Eraut (2003, p.14). Organisations also possess the private, tacit knowledge of individuals, such as values, skills and experiences (von Krogh et al., 2012, p.242; 2006, p.109; Yang et al., 2010, p.232). This informal experience- and value-based knowledge is also called cultural knowledge, as it is acquired through participation in social activities (Eraut, 2004, p.263; Snowden, 2002, pp.104-105). For example, in the case of policing, a police officer is in constant social interactions with colleagues, supervisors and the public (Charman, 2017, p.95). Finally, an organisation also possesses uncharted knowledge for which there is no experience and expertise; thus, a need exists for innovation and learning (Snowden, 2002, pp.104-105).
These knowledge assets are often categorised as ‘hard’ and ‘soft’. The hard assets in this division comprise information technology and other knowledge management tools (von Krogh et al., 2012, p.249; Nold, 2011, p.88; Albers, 2009, pp.2-3) that act as enablers to knowledge management initiatives (Alavi & Leidner, 2001). Soft assets, then, include organisational culture, values, trust, and routines (von Krogh et al., 2012, p.249). Nonaka and Takeuchi (1995, pp.152-156) further divided the individuals in an organisation who are responsible for generating both tacit and explicit knowledge into these categories:

- ‘Knowledge operators’ interface with tacit knowledge and are often the front-line employees.
- ‘Knowledge specialists’ interface mainly with explicit knowledge and mobilize well-structured, explicit knowledge in the form of technical, scientific and other quantifiable data, the kind of knowledge that could be transmitted and stored in a computer.
- ‘Knowledge engineers’ facilitate all knowledge conversion and could be seen as the team leaders.
- ‘Knowledge officers’ are responsible for the total organisational knowledge-creation process at the organisational level and are often senior management.

Nonaka and Takeuchi’s seminal work introduced one of the most influential knowledge management models to illustrate knowledge exchanges of tacit and explicit knowledge in an organisation (1995, p.62). The SECI model popularised knowledge management in the 1990s (Snowden, 2002, p.101); its identifier is an acronym for the modes of ‘Socialisation’, ‘Externalisation’, ‘Combination’ and ‘Internalisation’.

In the ‘Socialisation’ mode, someone’s tacit knowledge is transferred into the tacit knowledge of another person through, for example, apprentices’ work (Nonaka & Takeuchi, 1995, pp.62-64). This is typical in the policing context in which narrative is arguably an important medium to transfer knowledge and meaning (van Hulst, 2013). Tacit knowledge, by its very nature, is more resource intensive to share than is explicit knowledge (Hauk, Kim, Lee, & Kim,
Social capital is the key facilitator of organisational knowledge sharing (Hauk et al., 2013, p.358). Social capital, as defined by Lesser (2000, p.48), is ‘the ability of actors to secure benefits by virtue of membership in social network or other social structures’. Thus, relationships among individuals impact organisational knowledge creation, making it also fragile (Nonaka et al., 2006, p.1186). The people in organisations often have little contact with people outside their particular area (Brooks, 2006, p.38), which further intensifies the challenge to tacit knowledge sharing due to hierarchies and conflicts against the group interest (Nonaka et al., 2006, p.1188). Trust is needed for individuals to interact and share knowledge (Nold, 2011, p.85). Indeed, this is especially true in the police culture, in which trust is essential (Cancino & Enriquez, 2004, p.328).

In the ‘Externalisation’ mode, tacit knowledge is converted into explicit knowledge through writing, for example (Nonaka & Takeuchi, 1995, pp.64-67). Police officers often receive information from the public in the policing context, which they turn into explicit knowledge (Manning, 1992, p.359). This knowledge should be easily accessible to the right people at the right time (Nold, 2011, p.87). Information technology facilitates the collection, storage, processing, and distribution of information or knowledge (Brown & Brudney, 2003, p.31). The challenge is that it is difficult to predict the information/knowledge needs of an organisation due to its rapidly changing environment (Brown & Brudney, 2003, p.34). Another aspect of information systems is that they often rely on culturally shared knowledge (Tuomi, 1999, pp.5-6); thus, this technology will be unable to facilitate information sharing if organisational silos and/or mistrust exist (Nold, 2011, pp.85-86).

In the ‘Combination’ mode, explicit knowledge, such as database content, is reconfigured into new explicit knowledge (Nonaka & Takeuchi, 1995, pp.67-69). This is the main task of the analysts in the policing context (Evans & Kebbell, 2012). Providing real-time access to the organisational databases stimulates knowledge accumulation (Brown & Brudney, 2003, p.31). Nevertheless, tacit/implicit knowledge is also needed to make sense of a document stored in a computer system (Tuomi, 1999, pp.5-6). Thus, a need exists for an effective
knowledge base, as the lack of organisational knowledge can hinder this analytical task (Williams & Godson, 2002, p.314). Normatively, professionals need to constantly adjust and renew their explicit knowledge by using tacit experience to keep up-to-date in the changing, real-world environment (Taylor et al., 2013, p.481). A challenge is that tacit knowledge has an impact on hypothesis generation through assumptions and personal biases (Eraut, 2004, p.253). Indeed, these types of biases are common in the intelligence context (Herbert, 2006, p.669). Time pressure is particularly challenging, as its drives towards an intuitive approach that entails rapid interpretation and decision making at a more superficial level (Eraut, 2004, p.261).

Finally, in the ‘Internalisation’ mode, explicit knowledge enriches an individual’s tacit knowledge base through ‘learning by doing’ (Nonaka & Takeuchi, 1995, pp.69-70). This individual learning process is the basis for organisational learning (Wang & Ahmed, 2003, p.9) enabling organisations to achieve superior performance (Brown & Brudney, 2003, p.31). The reports produced by analysts in a policing environment are studied by management to make better decisions (Ratcliffe, 2008, p.111). The challenge is that, though individuals might learn, the organisation might still repeat dysfunctional activities (Brooks, 2006, p.261). This type of routinisation, as Argyris argued (1977, p.113), locks most organisations into single-loop learning in which tasks are conducted in similar, predictable ways. The way knowledge is transferred also has an impact. Logos (clarity, logic), pathos (gaining sympathy and empathy) and ethos (legitimacy) together shape the persuasiveness of any communication. The knowledge provider’s credibility is also assessed, in addition to the logic and data (Van De Ven & Johnson, 2006, p.804).

### 2.1.3 Organisational culture and knowledge management

The SECI model was later updated with a fifth mode called ‘Phronesis’ as the factor that promotes the synthesis of tacit and explicit knowledge and incorporates value judgments into the knowledge-creation process to create meaning out of the context (Nonaka et al., 2014, p.139). Values, beliefs and meanings are also the basis for an unregulated culture, which is based on the individuals’ shared experiences. This cultural knowledge is then shared through
social activities (Eraut, 2004, p.263). Steinwachs (1999, p.194) saw cultural knowledge as a pattern of shared values that influences individuals to think and act in a similar fashion. Although no consensus exists on the general theory of organisational culture (Rai, 2011, p.786), it has been argued that organisational culture contains deep-seated and enduring values at the most fundamental level (Sinclair, 1993, p.64). In this regard the literature on the police culture’s sense of mission, celebration of masculinity, suspiciousness, isolation, cynicism, pessimism and secrecy is often identified as the deep-seated values of the police officers (Loftus, Goold & MacGillabhui, 2016, p.632). Nevertheless, an entire organisation’s culture might differ from the culture of its distinct professional group that holds particular values and beliefs (Charman, 2017, p.56).

The terms *knowledge* and *culture* are, nonetheless, two of the most difficult attributes of organisational dynamics to understand (Nold, 2011, p.86). Albers (2009, p.5) suggests that:

*Culture is one of the most critical elements of implementing knowledge management. An ideal knowledge management culture is characterized by trust, openness, teamwork, collaboration, risk taking, tolerance for mistakes, common language, courage, and time for learning.*

Organisations in which miscommunication and mistrust are prevalent are, thus, not equipped to share, use, or create new knowledge, and their knowledge management initiatives will often be unsuccessful (Ciganek et al., 2010, pp.54-55). Another element of organisational culture relates to organisational routines, which can hamper information interpretation and act as a sort of organisational bias (Brusoni & Rosenkranz, 2014, p.150). These organisations tend to overly rely on problem solving by using past experience. A tendency for knowledge hoarding and secrecy exists that can blind the organisation to the new and changed circumstances, especially in organisations in which the cost of knowledge creation is high (Snowden, 2002, p.105). Organisational culture thus facilitates or hinders the utilisation of a knowledge management system and knowledge creation (Ciganek et al., 2010, pp.54-55) and is the main barrier to implicit knowledge sharing and to exchanging expertise (Seba & Rowley, 2010, p.623). Indeed, as professionals need to be educated and socialised into the
occupational domain (Schinkel & Noordegraaf, 2011, p.69), the organisational culture can act as the key enabler of or barrier to learning (Nold, 2011, p.90). This challenge is further amplified by the different professions with their own subcultures that exist in an organisation (Brooks, 2006, p.247) This is also the case in policing (Hendriks & van Hulst, 2016, p.173; Skolnick, 2008), but it also illuminates how police occupational culture is linked with the discussions on police professionalism (Gundhus, 2012).

2.1.4 Professionalism and knowledge

Professional experts in an occupational domain are individuals with advanced knowledge, skills, and abilities who form a profession’s elite (Taylor et al., 2013, p.479). Professions were defined historically as the privileged class of occupations and were characterised by expertise, merit, and peer supervision (Bacon, Groundwater-Smith, Nash & Sachs 2000, para 9). Some professions are also recognised by law or by legalised institutions (Pitman, 2013, p.131). Evetts (2013, p.787) distinguishes two different forms of professionalism in knowledge-based work: organisational and occupational professionalism. Organisational professionalism is characterised by hierarchy, processes and controls. The practitioners in occupational professionalism have more collegial authority, autonomy, discretionary judgement and trust. Organisational professionalism has been dominating the ethos of the police work and new forms of management are based on hierarchical authority in the policing context (Gundhus, 2012, p.189).

2.1.5 Challenging role of management

Strong leadership is essential for successful knowledge management. Leaders need to define a clear direction for the organisation and create an environment for knowledge sharing (Albers, 2009, p.5). Leaders have a high impact on the organisational members, affecting both organisational processes and outcomes, such as organisational learning (Brusoni & Rosenkranz, 2014, p.149). Nonaka & Takeuchi (1995, pp.154-156) argued that the essence of leadership is to promote the previously identified SECI process. Leaders should enable knowledge creation, control it (Nonaka et al., 2006, p.1192). Indeed, a key quality of leadership is the ability to encourage and stimulate different
professional groups to harvest their knowledge and foster creative ideas (von Krogh et al., 2012, pp.270-271). According to Goh (2002, p.29), managers should stimulate effective knowledge transfer in an organisation by

- ensuring trust
- developing a cooperative culture
- developing a strong organisational learning culture
- facilitating effective communication in an organisation
- ensuring employees’ skills and competence
- balancing formal and informal knowledge sharing, and
- maintaining an effective rewards system.

Thus, depending on how they use and implement knowledge, managers can have a strong impact on their organisations. Organisational learning acts as the link between management decisions and organisational routines in this sense (Brusoni & Rosenkranz, 2014, p.150). Still, the relationship between knowledge and decision making is not simple. Good decision making is critically dependent on how the decision is framed by the decision makers in the light of their situational understanding (Eraut, 2004, p.262). Indeed, Bennis and Thompson (2002, p.62) have argued that true leadership involves finding meaning from the unplanned and, often, the most negative events and learning from them. Nevertheless, many managers cannot articulate how their organisational strategy is linked with their intellectual resources and capabilities in order to transform organisational objectives into action (Yang et al., 2010, p.231). Furthermore, time pressures limit knowledge systems use; even when they are used, an expectation exists of an immediate reward (Eraut, 2004, p.262). Therefore, when the problem is easily defined and solutions are well known, decision makers place greater confidence in automated technology and information. When the problem context lacks structure and the certainty of outcomes is low, decision makers tend to rely on tacit, intuitive knowledge (Brown & Brudney, 2003, p.33). Indeed, management may overly rely on their past experience and, thus, avoid new knowledge creation (Lyles, 2014, p.134). Nevertheless, informational complexity can overwhelm human cognitive abilities and could create biases (Verfaillie & Vander Beken, 2008, p.537). Thus, managers may also misperceive a complex situation and solve the wrong problem by not challenging their own assumptions (Lyles, 2014, p.134). The
possibility also exists for management to selectively interpret and use knowledge as it serves their purpose (Van De Ven & Johnson, 2006, p.804; Brooks, 2006, p.4).

2.2 Knowledge in law enforcement

2.2.1 Policing and the evolution of knowledge-based models

‘Policing’ is a universal social control process that occurs when there is at least the potential for conflict, deviance, or disorder (Reiner, 2010, p.8). The use and management of intelligence has continually evolved in a random and disorganised way in the policing world (Stanier, 2013, p.81). The use of intelligence started to increase through community and problem-oriented policing models in the late 1970s (Reising, 2010, p.2). Especially in the 1980s, political, societal and organisational changes added impetus to the transition towards a community-policing model (Coleman, 2008, p.312). Community-oriented policing (COP) was born out of a reaction against conventional reactive policing that focused on crime control through response, deterrence and apprehension (Fielding, 1995). Indeed, COP is founded on a shared responsibility between the police and their community, focusing on prevention and the officers’ accountability for finding solutions to community problems (Adams, Rohe, & Arcury, 2002, pp.401-2). These societal changes naturally stimulated other new policing philosophies, paradigms and models that sought to respond to crime and disorder (Maguire & John, 2006, p.82). One of the most known, along with COP, is problem-oriented policing (POP), which aims to identify, understand and solve the problems causing citizens to repeatedly call police for service (Reising, 2010, s. 7). Both the POP and COP models essentially emphasise the use of systematic problem-solving processes (Scheider et al., 2009, pp.706-7).

The New York Police Department (NYPD) gained the attention of police leaders and scholars during the early 1990s through its implementation of a crime analysis, intelligence and managerial accountability crime prevention program known as COMPSTAT (Silverman, 2006, p.281). Similar to the COMPSTAT model is reassurance policing, which bases its priorities according to people’s perceptions of safety; thus, it is not based on orthodox crime analysis (Maguire
& John, 2006, p.75). The so-called Volume Crime Management (VCM) model aims to enhance the process of volume crime investigations by ‘bringing offenders to justice’ with the development of a core investigative doctrine (Maguire & John, 2006, pp.76-77). The largely undefined Predictive Policing model falls into a similar category; it is still mostly an analytical challenge for analysts and computational scientists (Haberman & Ratcliffe, 2012, p.14).

Evidence-Based Policing (EBP), also currently popular (Dawson & Stanko, 2016), is dedicated to improving society by utilising high-quality scientific evidence to understand what works best to reduce crime and disorder (Braga, 2009, p.113). Sherman (2013, p.383) identified three core principles that shape EBP. Firstly, policy should use research to target its resources. Secondly, police should test its method for these targets to determine what works best to reduce harm. Thirdly, police should track these activities to generate an audit trail for assessing the deliverables. EBP’s ideology is similar to POP’s in this sense, as it incorporates science and research into policing practice (Lum, Telep, Koper & Grieco, 2012, p.64).

The Intelligence-Led Policing (ILP) model has been dominating UK police practice, along with EBP and COP and discourse for the past 20 years (Bullock, 2013, p.125). Indeed, criminal intelligence gathering was not systematically performed before 1990 but was used mainly on a case-by-case basis to support investigations (Ratcliffe, 2011, p.264). ILP’s aim is to improve the information management process that allows law enforcement to better understand their crime problems and to best allocate their available resources to control crime (Ratcliffe & Guidetti, 2008, p.111). The ILP model was seen as a way to try to meet the demand for the police to be more effective and efficient (Ratcliffe, 2011, p.264). The pressure to manage risks has also caused considerable changes in the business of policing. The breakdown of national boundaries has also facilitated the increase of transnational crime and favoured ILP’s further implementation (Ratcliffe, 2011, p.265). Police forces around the world have taken on many of the ILP tenets, such as buying equipment, hiring staff, and designing organisations for improved effectiveness and efficiency (Alach, 2012, p.75). In fact, the events of September 11th 2001 increased interest in ILP
(Ratcliffe, 2011, p.267), which was perceived as a ‘strategic, future-oriented, and targeted methodology’ that related well to the perspectives of many key decision makers (Maguire & John, 2006, p.68). Policymakers saw in it the means to rationalise police practices and improve effectiveness and efficiency (Alach, 2012, p.79; James, 2003, pp.47-49). ILP reflects the view that police priorities and decisions ought to be based on founded facts and knowledge about the criminal environment (Rønn, 2013, p.55). Therefore, ILP can be considered the contemporary business model for law enforcement knowledge management (Glomseth, Gottschalk, & Solli-Sæther, 2007, p.106; Collier, 2006, p.115).

Nevertheless, ILP has been criticised for creating confusion over authority, causing misalignment with policy, having a tendency towards technocracy, using a micro-managerial approach, showing a lack of attention to decision-making, and having pseudo-scientific pretensions (Alach, 2012, p.88). Furthermore, critics see ILP as a pseudo-objective methodology that hides the existing randomness in policing by giving a false appearance of producing reliable and objective intelligence/knowledge (Rønn, 2013, p.58). Critics see that there is little hard evidence that ILP has led to improvements in police effectiveness anywhere (Alach, 2012, p.88), despite claims of successful implementation of ILP (Darroch & Mazerolle, 2012, p.17). James (2013, p.7) has argued that often the challenge in implementing ILP is that those being asked to implement it were ignorant of the intelligence craft, along with a constant shifting from one model to another in a bid to meet public expectations. Indeed, Coleman argued (2008, p.317) that any new approaches will ultimately fail if not implemented as an organisational strategy that links resources, skills and competencies with the opportunities and risks created by its external environment (Gottschalk, 2009a, p.273; Bell, Dean, & Gottschalk, 2010, pp.344-345). A proper intelligence strategy could provide a framework for structured problem solving (Gottschalk, 2009, p.276).

### 2.2.2 Knowledge and operational policing

Knowledge has entered into the language of operational policing (Ratcliffe, 2008, p.96), and any lack of a clear conceptual framework to support the
capture, storage, retrieval, transfer and application of knowledge will have negative consequences in crime prevention (Ekblom, 2005, p.62). There are two types of knowledge in law enforcement. One is experience-based, tacit and intuitive ‘street knowledge’, which refers to the competence and skills of law enforcement officials. The other is analytical and explicit knowledge that includes documented crime threats, trends and statistics (Gundhus, 2012, p.186; Luen & Al-Hawamdeh, 2001, pp.313-314). With intelligence becoming increasingly important in policing, officers’ roles have shifted towards knowledge work (Cope, 2004, p.197), although this is not a new concept in law enforcement. Indeed, for investigators to catch criminals they need to first capture the knowledge provided by forensics, intelligence, victims, witnesses and suspects (Dean, Fahsing, Glomseth & Gottschalk, 2008, p. 341). Martin (2010, p.144) has described that investigators will use intuition/tacit knowledge to pick up clues to solve the case. This reactive, case-based work also requires the use of procedural steps in which the investigator needs to be proactive and use communication, creativity and risk-taking to maximise possibilities for good results (Dean et al, 2008, pp.342-343).

However, this case-related knowledge is insufficient for providing knowledge for the whole policing domain, as the focus is often on individual cases rather than the overall phenomenon (Williams & Godson, 2002, p.314). Indeed, law enforcement agencies should possess wider knowledge of crime problems, crime prevention methods and how to implement these in practice. Knowledge of partnerships and an understanding of how to effectively target and distribute resources are also important (Ekblom, 2005, pp.58-59). The challenge is that law enforcement agencies find it difficult to move beyond the reactive approach due not only to a reluctance in law enforcement to take action until a crime is committed but also to the difficulty of justifying action against future challenges when there are already many existing problems, challenges and cases to deal with (James, 2013). The lack of a clear strategy and a reluctance to combine the areas of social science research, intelligence and law enforcement also exists (Williams & Godson, 2002, p.314). One of the main reasons for this is the tensions and dilemmas between the tacit, experience-based “street’ knowledge
and the analytical and abstract explicit knowledge promoted by management and intelligence analysts (Gundhus, 2012, p.186).

2.2.3 Intelligence and analysis in policing

Intelligence has always been a controversial subject in law enforcement due to its rigidity and exclusivity (Deukmedjian & de Lint, 2007, p.252). Nowadays, collecting and using intelligence appears to be an acceptable part of democracy’s “dirty work” (Innes, 2006, p.229). As previously mentioned, law enforcement intelligence is often confused with national security and/or military intelligence (Rønn & Høffding, 2013, pp.695-696; Brown, 2007, pp.336-337), whose dominant intelligence paradigm has an institutional basis (Sheptycki, 2008, p.179). Although no consensus exists regarding what intelligence in policing is (Alach, 2012, p.76; Corkill, 2009, p.66), it can be argued that law enforcement intelligence is a subset of intelligence (Corkill, 2009, p.66). Nevertheless, law enforcement agencies do not seem to recognise a consistent and standardised theory of intelligence (Breakspear, 2013, p.692). This thesis argues that having a standardised and accepted definition of intelligence would assist practitioners to understand the overall strategies and the proper role of law enforcement in this information era (Scheider, et al., 2009, p.696; Harfield, 2008a). Such a definition also would improve the general public’s understanding of intelligence and enhance auditing of intelligence functions (Breakspear, 2013, pp.688-689; Stanier, 2013, p.61). Thus far, however, it seems to have proved impossible to arrive at a definition that all can accept.

Nonetheless, there have been many attempts to define intelligence. For example, Brown (2007, p.340) defines intelligence as ‘*information which is significant or potentially significant for an enquiry or potential enquiry*’. Intelligence is also seen as a product of the process of combining information and analysis (Ratcliffe, 2008, p.95), thus making ‘sense’ of a dearth of information (Coyne and Bell, 2011, p.23). Breakspear (2013, p.688) argues that intelligence represents ‘*a corporate capability to forecast change in time to do something about it*’. These definitions are not necessarily mutually exclusive; however, they illustrate the general lack of a consensus on law enforcement intelligence (Corkill, 2009, p.64).
Law enforcement intelligence is often conceptually organised around a process called the intelligence cycle, despite the lack of a definition, and applied according to four levels: criminal, crime, community and contextual. ‘Criminal’ relates to the activities of a known suspect or offender; ‘crime’ relates to a specific crime or series of crimes; ‘community’ relates to information from a community; and ‘contextual’ relates to the wider social, cultural or economic factors that may impact on crime or levels of offending (Innes et al., 2005, pp.43-44). Thus, though intelligence is perceived ambiguously, it is frequently applied to proactive crime-controlling strategies, including the use of crime mapping, pattern analysis and problem-oriented approaches to policing problems (James, 2003, p.46).

This type of analysis in law enforcement has evolved to respect the need for an intelligence-led, problem-oriented and evidence-based approach to tackling crime (Chainey, 2009, p.58). In relation to this, Eck (2006, p.123) argued that good problem-solving policing should embrace theory, systematic measurement, comparison, and analysis. Certainly analysis is the scientific approach to problem solving by relying on deductive and inductive reasoning (Carter & Carter, 2009, p.317; Scheider et al, 2009, p.698). Analysis involves a set of systematic processes that aim to identify patterns and correlations between crime data and other relevant information sources for the purpose of supporting decision making that informs the design, allocation and prioritising of police activity (Chainey, 2009, p.57; Cope, 2004, p.188). In this sense, the analysts are essentially information translators tasked to review information and provide reliable intelligence in a practical and operational format (Cope, 2004, p.188).

The analytic process thus provides integrated meaning and knowledge derived from diverse, raw facts (Carter & Carter, 2009, p.317). Obvious parallels exist between intelligence analysis and criminological research (Cope, 2004, p.199), and there are demands for increased collaboration between analysis units and academics (Braga & Weisburd, 2006b, p.149) who can bring strong analytical techniques and habits of thought to law enforcement (Tilley, 2010, p.189). Successful analysis adds value to the evidence itself, to institutional knowledge,
to fellow intelligence professionals, to the process, and to the institution or unit itself (Moore, Krizan & Moore, 2005, p.211). Indeed, the police knowledge is often contextual and subjective, while analysis is conducted out of context to develop overviews of crime problems (Cope, 2004, p.202, but the main aim of intelligence is, ultimately, to serve the decision-making process (Rønn & Høffding, 2013, p.699; Phillips, Caless & Bryant, 2007, p.443).

2.2.4 Organisational aspects of information and intelligence management

Organisational and structural aspects of the police shape the nature of the information ultimately submitted to intelligence systems (Bullock, 2013, p.132). A priori, different views of knowledge (and intelligence) lead to different perceptions and strategies of knowledge (and intelligence) management in organisations. When knowledge is seen as an object, organisations focus on building and managing knowledge stocks: when it is seen as a process, the organisational focus is on knowledge flows and processes for creating, sharing, and distributing knowledge. When knowledge is seen as a capability, then the organisational focus is on building core competencies, know-how, and intellectual capital (Alavi & Leidner, 2001, p.110).

In UK law enforcement, the modern intelligence structure in policing originates from the Unit Beat Policing (UBP) model introduced in 1967. UBP established the local intelligence system; at its heart was the collator, an individual tasked with collecting and evaluating information collected by patrol officers, a significant milestone in the development of ILP (James, 2013, p.2). As the challenges of the information age proved too great, due to the availability of affordable information management technologies, policing began to recognise and embrace the opportunities for more effective information collection and management. The typical lone 'collator', with their paper and card-based intelligence records, was increasingly seen as inadequate (Stanier, 2013, p.72).

Indeed, information technology enhanced intelligence capabilities (Cotter, 2015, p.4; Ratcliffe, 2011, p.264), and nowadays intelligence units manage information and knowledge through information and communication technologies (Innes et al., 2005, p.43). These systems are designed to capture
and store police-relevant information and, more importantly, their configuration ultimately shapes the decisions to formally capture, submit and store information by the police officers (Bullock, 2013, p.133). Thus, the process of capturing information at the street level should be easy to use and manage, or the information management process will invariably fail (Bell et al., 2010, p.348). However, as Stanier has argued (2013, p.129), law enforcement often fail to optimally use existing technology and embrace new technology in support of the information sharing process. Technology has indeed been shown to be a major impediment to progress in the intelligent application of knowledge in policing (Collier, 2006, p.114-15; Sheptycki, 2004).

The issue here is that the improvement of intelligence capabilities primarily focuses on the further development of digital information networks (Cotter, 2015, p.4). Nevertheless, in order to understand the knowledge and intelligence transfer, it is also important to understand the content and context; thus, knowledge and intelligence management is more than information technology (Snowden, 2002, p.102). Indeed, the bureaucratic boundaries of police organisations often cause institutional frictions and a digital divide of the information, along with data duplication (Sheptycki, 2004). Lemieux (2008, p.230) has argued that the traditional vertical organisation of a police organisation is an obstacle to carrying out knowledge-based policing; Braga & Weisburd (2006b, p.147) have argued that the hierarchical organisational structures in policing inhibit innovation, creativity and problem solving. Though there are strong arguments for flattening the organisational hierarchy to increase creative problem solving (Reising, 2010, p.6), the lack of a clear hierarchy and chain of command can be challenging for police officers to accept (O’Neill & McCarthy, 2014, p. 145; Weisburd et al., 2002, pp.103-104).

### 2.2.5 Professionalism of intelligence in law enforcement

Law enforcement have paid scant attention to the core competencies and characteristics of a successful analyst (Evans & Kebbell, 2012, p.205). The available literature is limited on the professionalism of law enforcement analysts; nevertheless, several academics have tried to identify the characteristics of an effective intelligence analyst, who is often seen as a
problem solver with a curious and critical mind. This person also has initiative, an ability to communicate and collaborate, skills to research and reason, and a wide ranging knowledge (Evans & Kebbell, 2012, p.217; Quarmby & Young, 2010, pp.236-238; Herbert, 2006, p.680; Moore et al., 2005, pp.206-207). This wide range of knowledge is important, as intelligence analysts should understand how intelligence fits into their organisations both structurally and functionally (Evans & Kebbell, 2012, p.217). Creating influential intelligence and, thus, generating knowledge, relies on an understanding of the broad environment in which criminal intelligence analysts operate (Quarmby & Young, 2010, p.241).

Knowledge shapes the construction of analytical products and how police officers view them (Bullock, 2013, p.138). Analysts have lacked the knowledge to identify and conceptualise the operating context in some cases (Coyne & Bell, 2011, p.33; Cope, 2004, p.191), which illustrates the importance given to experiential knowledge within the policing environment (Bullock, 2013, p.138). Nevertheless, working as an analyst in law enforcement is a real challenge, as the analysts often receive inadequate instructions in their work, receive limited information for analysis, and have an ambiguous role and position in the police organisation (Cope, 2004, p.194). Furthermore, there is often lack of talent management, career pathways and training for analysts (Stanier, 2013, p.132).

Indeed, Marrin (2008, p.139) has argued that intelligence analysis lacks the systemic formal knowledge and standards for education and entry into this profession. Herbert (2006, p.679) has argued that intelligence analysis, unlike many mature professions, lacks an agreed, unified methodology and the experts necessary for regulating one; therefore, the standards for intelligence analysis training are variable (Stanier, 2013, p.137; Quarmby & Young, 2010, p.38). Regardless of the absence of these standards, many of the central methods used to analyse crime data are similar to the established research methods in the social sciences (Innes et al, 2005, p.40). However, compared to science and business, the data used in intelligence analysis are enormously complex and multivariate. Thus, the intelligence analyst can be considered as an explainer of epistemic situations (Herbert, 2006, p.680), someone whose
main task is to work with information and knowledge (Quarmby & Young, 2010, p.25). These tasks are highly sensitive to change and exacerbated by digitalisation and include both repetition of past actions and scanning of new information or knowledge inside and outside of the organisation to create new knowledge (Chen & Edgington, 2005, p.281).

If the literature is scarce on intelligence analysis, it is practically absent when it concerns managers of intelligence. Implementing intelligence is only possible through capable leadership (Darroch & Mazerolle, 2012, p.24) and that management must have a strong role in establishing effective crime reduction by changing the organisational boundaries (Darroch & Mazerolle, 2012, p.15). Management is also responsible for the problem identification and response formulation on the given topic (Boba & Crank, 2008, p.385). Ratcliffe (2005) has found difficulties exist in identifying a clear decision-making structure for intelligence management, along with a lack of understanding of ILP at the leadership level. In some cases, law enforcement analysts rely on authoritative leadership who manage by exception, whilst analytical tasks would require leaders who stimulate, motivate and inspire their staff (Darroch & Mazerolle, 2012, p.11). Another major challenge is that the relevant training on knowledge management for leaders and managers is often absent (Coleman, 2008, p.316) with the result that analysts often have uninspiring management and poor leadership (Stanier, 2013, p.132).

That lack of knowledge about analysis can be extended to the wider police workforce (Cope, 2004, p.194). Indeed, at the police officer level any lack of training on analysis also leads to unrealistic expectations of intelligence and analysis (Cope, 2004, p.194). Furthermore, Gundhus (2012, p.191) has argued that knowledge producers and users in law enforcement are in transition, which has consequences for the professionalism of the police officers. The challenge in this is that police officers view intelligence roles often as office work not requiring warranted powers (Stanier, 2013, pp.135-136). Certainly the police officers still see themselves as experts in crime fighting, in contrast to ‘knowledge workers’ and information brokers (Gundhus, 2012, p.183). Thus, the analytical approach is contrary to traditional police practice (Cope, 2004, p.200).
Indeed, these changes in policing paradigm challenge the understanding of police professionalism and traditional police culture (Davies & Thomas, 2003, pp.683-684).

2.2.6 Police culture and intelligence

The research literature on police culture describes it as predominantly being prone to masculine hegemony, racism, prejudice, discrimination, exclusion (Charman, 2017, p.128), danger, authority, suspicion, skepticism, cynicism and mistrust (Skolnick, 2008, pp.36-37). Several of these characteristics have even been found across a wide variety of jurisdictions (Waddington, 1999, pp.295-296), although there are arguments implying that the police culture is far more moderate than these mentioned characteristics (Scripture, 1997, p.174). Nevertheless, the police are said to have an exaggerated sense of mission and to crave work that has excitement (Loftus et al., 2016, p.632).

Police culture is argued to be the result of interactions of police officers within the socio-political context (Chan, 1996, p.110); thus, as Waddington (1999, p.297) has argued, ‘the fundamentals of policing is the source of police culture’. For example, the maintenance of order fosters conservatism. Furthermore, the police are often a socially isolated community with a strong group loyalty (Westmarland & Rowe, 2016, p.2; Paoline, Myers & Worden, 2000, p.579), which can also be traced back to the use of coercive authority towards citizens, making police officers more at ease with each other (Loftus et al., 2016, p.632; Waddington, 1999, p.298).

Police culture is also shaped by a command and control disciplinary approach (Westmarland & Rowe, 2016, p.12), which may have also influenced the development of a punishment-centred blame culture (Westmarland & Rowe, 2016, p.12; Waddington, 1999, p.301) that creates a ‘lay-low’ and ‘cover-your-ass’ attitude in police organisations (Paoline et al., 2000, p.578). This closeness and hierarchical culture then makes it difficult for the police organisations to adapt their strategies and structures to environmental changes (Coleman, 2008, p.311; Kelling & Moore, 1989), thus inhibiting innovation, creativity and problem solving (Braga & Weisburd, 2006b, p.147).
The challenge in these arguments is that police culture has been mostly researched among uniformed police officers (Loftus et al., 2016, p.629; O’Neill & McCarthy, 2014, p.155) and largely ignores the diversity to be found in distinctive subcultures (Skolnick, 2008). For example, there is a void of research on police management culture (Charman, 2017, pp.138-139). Nevertheless, increasing numbers of academics are addressing this issue and providing different viewpoints to the discussion of police culture. These studies indicate that different working cultures exist in police organisations, from a traditional culture to a more open minded and pragmatic working culture (O’Neill & McCarthy, 2014). Indeed, as Hendriks and van Hulst (2016, p.173) have argued, policing cannot be positioned as a single cultural typology, as it is actually a cultural coexistence. Furthermore, there is no replacing of the old culture in policing; rather, the new practice enlarges the cultural range.

Certainly the nature of the work impacts how the subculture develops as was identified in the study concerning covert surveillance work (Loftus et al., 2016, p.630). Similarly, the intelligence subculture is also shaped by broader environmental factors, such as the culture of the decision-makers whose unwritten rules, expectations and norms can influence how intelligence analysis is produced and disseminated (Marrin, 2007a, p.404). Nevertheless, there are tensions and dilemmas among these different subcultures, such as the mainly experience-based and intuitive-knowledge culture of uniformed police officers versus the analytical and abstract-knowledge culture of intelligence analysts (Gundhus, 2012, p.186). Police organisations are characteristically defensive about organisational boundaries (Darroch & Mazerolle, 2012, p.15), so these new knowledge regimes are often met with resistance due to the threat they pose to the perceived meaningful professional practices (Gundhus, 2012, p.189). The conflict between these subcultures can also result in friction on information sharing in the police organisations (Stanier 2013, p.123; Sheptycki 2004). Thus, traditional police culture does not provide adequate support for intelligence implementation (Darroch & Mazerolle, 2012, p.25).

Knowledge-sharing initiatives can also be hindered by the “knowledge is power” culture (Seba & Rowley, 2010, p.623; Goh, 2002, p.25). This ‘knowledge is power’ mentality, coupled with the failure to see the big picture,
can create *intelligence hoarding* and *information silos* in which individuals keep information (Sheptycki, 2004, pp.320-321). This nonreporting is also caused by the ‘need to know culture’ that overwhelms intelligence work (Cope, 2004, p.193). Intelligence officers in this scenario have reservations about inputting sensitive intelligence information into a formal digital system accessible by officers, even without a need to know. Trust plays a significant role in facilitating information flow and information exchange in the digital network (Cotter, 2015, p.10). Indeed, there are several examples of tacit knowledge being held by police officers and not being converted into explicit knowledge (Collier, 2006, p.114).

As Gundhus’ study (2012, p.187) has indicated, implementation of knowledge-led policing encourages resistance by the street-level police occupational subculture. There is huge resistance reported in police organisations to work in the area of information management, which is considered a passive, paper-moving task. This view goes against the perception of meaningful and mobile police work of ‘bandit-catching’ with the excitement in the hunting (Gundhus, 2012, p.183). This working culture, which emphasise arrests, leads then to unrealistic expectations of intelligence and analysis (Cope, 2004, p.194). Old organisational routines also hinder the formation of an intelligence function in law enforcement (Gundhus, 2012, p.183). Indeed, routines are fundamental in law enforcement occupational culture, which can hinder any changes (Loftus, 2010, pp.16-17)

### 2.2.7 Knowledge (and intelligence) management in law enforcement

Law enforcement generally accept that managing information, intelligence and knowledge is essential for organisational performance (Seba & Rowley, 2010, p.623). Intelligence has certainly been an important part of law enforcement knowledge management throughout its evolution, although not openly acknowledged until lately (Coyne & Bell, 2011, p.29). As a fluid concept, intelligence can serve different needs of the law enforcement community. Indeed, Sheptycki (2017, pp.5-6) divides police intelligence users into seven distinct areas:

- criminal intelligence
• public order intelligence
• serious and organised crime intelligence
• counterterrorism and political crime intelligence
• community security and safety intelligence
• multi-agency coordination intelligence and
• managerial and business intelligence.

Nevertheless, law enforcement strategies for knowledge (and intelligence)
management are argued to be incomplete, which can impact coordination,
benchmarking, and improvement (Seba & Rowley, 2010, p.623), yet several
policing models exist for capturing information and knowledge that are seen as
practical tools intended to steer the organisational mindset from reactive
towards proactive (Deukmedjian & de Lint, 2007, pp.245-246). These models
have, furthermore, tried to conceptualise the analysis process within policing.
The most influential model is COMPSTAT (McGarrell et al., 2007, p.145), which
relies on effective analysis, relentless follow-up, and organisational
accountability (Carter & Carter, 2009, p.320). Though the COMPSTAT model is
mostly incident-based and focuses on incident suppressions, this model is an
attempt to combine an accountability structure and strategic problem solving
(Boba & Crank, 2008, p.384). The model also builds upon the strengths of
traditional policing related to information-gathering capability and to the
hierarchical command and accountability structure (Boba & Crank, 2008,
p.391). Some other examples include the SARA model, whose acronym comes
from Scanning, Analysis, Response and Assessment (Reising, 2010, pp.7-8).
However, critics see that law enforcement are often prone to these types of
simple step-by-step quick fixes to avoid the slow and frustrating solution
refinement identifiable in other fields (Tilley, 2010, p.189). Still, research has
shown that these models’ standards are rarely met by police officers (Reising,
2010, pp.3-4) due to inadequate implementation strategies (Tilley, 2010, p.190).

The National Intelligence Model (NIM) (Ratcliffe, 2008, p.98), designed to
support the Intelligence-Led Policing approach in the UK (Flood & Gaspar,
2009, pp.52-53), is another influential model designed for knowledge
management. NIM was designed as a business process model to introduce
intelligence into the policing business plan (Carter and Carter, 2009, p.311). In
this sense NIM can be considered a framework for operating the intelligence
strategy; it is an information-led deployment system that uses analytical products to coordinate resource allocation. NIM operates at different police organisational levels. Level One operates at the basic command unit or small force, Level Two at the force or region and Level Three at the national or international level (Bullock, 2013, pp.127-128). NIM has been described as a pyramid (James, 2003, p.48), which theoretically enables coordinated law enforcement activity along the continuum of criminality from Levels One to Three (Harfield, 2008a, p.67). Indeed, the formal ILP concept is to gather information and process it into intelligence through analysis to identify priority areas and use this knowledge to make decisions about allocating resources (Alach, 2012, p.82; Carter & Carter, 2009, p.317; Ratcliffe & Guidetti, 2008, p.112). Its decision-making structure is, thus, the ILP feature that makes it notable (Ratcliffe, 2005, p.440). In this sense the ILP reflects the view that priorities and decisions should be founded in facts and knowledge about the criminal environment (Rønn, 2013, p.55).

Though ILP is novel in its surface layer of processes and procedures (Alach, 2012, p.88), a lack of clarity exists not only about its mission, goals, and objectives but also about how it should be implemented and used strategically (McGarrell et al., 2007, p.143). Furthermore, there have been organisational dilemmas in the NIM between the local and national levels, leading to a negative impact on intelligence strategy implementation (Bell et al., 2010, p.345; Harfield, 2008a, p.71). Explanations given for this relate to the police culture, overdominance of performance indicators, and silo thinking that hinder the information flow between the levels (Maguire & John, 2006, pp.83-84). There are also arguments that implementation of the ILP in the UK met ideological resistance (James, 2013). Nevertheless, as intelligence and knowledge become interlinked, Nonaka and Takeuchi’s SECI model (1995, pp.62-69) can provide another viewpoint for law enforcement practices related to intelligence management. Thus, the known practice of intelligence management in law enforcement is discussed next, using their model, under the chapters Socialisation, Externalisation, Combination and Internalisation.
2.2.7.1 Socialisation - from tacit knowledge to tacit knowledge

Two principal methods of sharing information exist in the criminal intelligence network. It is done either formally via an information network or informally via interpersonal social networks (Cotter, 2015, p.6). Intelligence officers prefers to share information informally to ensure reliability, timeliness, security and to avoid unwanted police action (Cotter, 2015, p.8). Especially tight professional groups, such as informant handlers in the police, have difficulties sharing their information outside their group (Gundhus, 2012, p.184). Informal social networks are, thus, often used to circumvent problems associated with information sharing via formal information networks (Cotter, 2015, p.5). The members of a social network must trust their counterparts in order to share information (Cotter, 2015, p.10; O’Neill & McCarthy, 2014, pp.150-151; Innes, 2006, p. 236), which can be achieved by working directly with other intelligence officers (Cotter, 2015, p.10). Reputation is another key information driver in a social network (Cotter, 2015, p.2). Professional networks can be built through training courses, conferences and meetings in addition to working with each other. Maintaining these networks is challenging, for example, when a person changes the unit or leaves (Cotter, 2015, p.10). The police organisations often ignore these horizontal connections and informal relations despite the importance of these social networks (Sheptycki, 2017, p.4).

These informal networks can be a real challenge for intelligence analysis tasks, as the information shared in these social networks is often not systematically recorded. This can undermine the intelligence process (Cope, 2004, p.199). The cultural underpinning is that police officers often consider as practical only information for incident-led and short-term police work. Thus, they are unconcerned with quality assurance or building causal understanding in long-term processes. Furthermore, as the experience-based knowledge is not systematically managed and aligned with the theoretical perspective, it is less useful beyond case-by-case solving (Gundhus, 2012, p.186).

2.2.7.2 Externalisation – from tacit knowledge to explicit knowledge

The nature of intelligence is shaped by the process through which it is generated (Bullock, 2013, p.134). An essential part of the intelligence process is
collecting raw information that may be used in the analysis (Carter & Carter, 2009, p.317). The information that law enforcement analysts work with is collected from a range of open and closed sources (Innes et al., 2005, p.43). Information from surveillance teams, covert human sources and wiretaps are examples of closed sources (Bullock, 2013, p.137; Corkill, 2009, p.63). Due to cultural bias in law enforcement, closed sources are traditionally considered more valuable (Innes et al., 2005, p.43), although these traditional intelligence methods have achieved only limited penetration in closed communities such as migrants (Innes, 2006, p.229). Therefore, police have also taken another approach and openly engage with various communities to establish contacts with people who can provide information (Bullock, 2013, p.134; Innes, 2006, pp.233-234). The challenge is to connect with the right people who have real knowledge of those with the potential to commit crimes (Innes, 2006, p.234).

Crime incident reports and calls for police service (Bullock, 2013, p.137; Corkill, 2009, p.63) can also be used to support the intelligence function (Bell et al, 2010, p.348). Police officers are, thus, an important source of primary information for analysis (Cope, 2004, p.193), provided they record the information received accordingly (Cotter, 2015, p.12). In fact, Gottschalk (2009b, pp.152-154) identified at least 16 different information sources for analysis. Indeed, all types of information may contribute to the development of intelligence (Corkill, 2009, p.63). Some of this information will be acted on immediately. The rest will be assessed, ‘sanitised’ and potentially entered into the intelligence system to be used together with other data (Bullock, 2013, p.130).

The need for intelligence to be entered into the system by the front-line officers has also resulted in an information overload, because the officers storing the information cannot assess its usefulness (Bullock, 2013, p.136; Innes et al., 2005, p.43). Noise relates to the low value of processed information circulating in the intelligence system; together with the analysts’ secondary duties, noise can create an intelligence overload and paralyse the intelligence process (Sheptycki, 2004, pp.315-316). There is also underreporting of information caused by limited training and inexperienced front-line officers (Bullock, 2013,
Furthermore, police officers are often biased by their experienced-based practices, which they use to assess and filter the information ultimately shaping the nature of the information incorporated in intelligence systems (Bullock, 2013, p.131). A real risk arguably exists in replicating these biases in the intelligence systems, as inputting intelligence reports into the digital system is considered time consuming and secondary to traditional intelligence activities, such as conducting surveillance or acquiring source information (Cotter, 2015, p.7). This often results in underreporting, or non-recording and non-reporting, as information is not processed into the system (Sheptycki, 2004, pp.317-318; Stanier, 2013). A lack of understanding of legislation also prevents information sharing by police officers (Stanier, 2013, p.126).

Information collection should also be focused, as it is essential to identify variables that support crime analysis (Carter & Carter, 2009, p.317). Organisational priorities can also frame the nature of the information submitted to intelligence systems (Bullock, 2013, p.133). In this case the danger is that data collection for a prioritised area can result in a defensive data concentration on this given topic, which can become a self-fulfilling prophesy in making decisions about future priorities (Sheptycki, 2004, pp.321-322). Therefore, defining the data-collection efforts and the necessary routines allowing the organisation to continuously read the environment is not an easy task. The challenge is that organisations that do not benefit immediately are less inclined to invest in collecting quality data (Brown & Brudney, 2003, p.34).

2.2.7.3 Combination – from explicit knowledge to explicit knowledge

Tasking ensures that analysts know more precisely what is expected from the requested analytical product. This requires relationship management by the analyst (Nicholl, 2009, p.66-67). Analysts can then provide valuable support to operations (Harfield & Harfield, 2012, p.168) or look at the information from a broad perspective to identify trends and patterns in order to assist in developing preventative strategies (Ratcliffe & Sheptycki, 2009, p.252). Police databases are the primary sources of the data used to compile these analytical products (Cope, 2004, p.193). However, these databases often generate information in different formats, making it difficult for the analysts to use the data (Bullock,
Analysts therefore still spend considerable time simply evaluating and processing data rather than conducting any analysis (Innes et al, 2005, pp.43-44). Furthermore, this can also be challenging to the quality of the analytical products, as the quality of analysis is integrally linked to the quality of the stored information. As a result the focus might be on what had happened to delivery of statistical summaries of crime data (Cope, 2004, p.193). The police systems may also have limited availability of information within those systems (Bullock, 2013, p.131; Stanier, 2013, p.80), resulting in linkage blindness when analysts fail to link crime series due to inadequate or insufficient data (Sheptycki, 2004, pp.314-315).

Nevertheless, the increasing volume of information used in intelligence expands also the need for critical thinking (Quarmby & Young, 2010, pp.26-27) to avoid cognitive biases. More structured ways of thinking have a significant potential to enhance the effective management of uncertainty (Kebbel, Muller & Martin, 2010, p.95). Indeed, Kahneman (2011, pp.20-21) has identified that people use two modes of thinking. The first is fast, automatic and more effortless experience-based thinking. The second is slow, rational and requires more effort. The second mode is preferred in the context of critical thinking, as the fast-thinking process is ‘gullible and biased’ (Kahneman, 2011, p.81) Quality analysis would then undeniably require a synthesis of a range of information sources with proper time to reflect on their relationship with one another (Cope, 2004, p.197). This is a challenging task even from the physical viewpoint, as cognitive reasoning consumes a lot of energy (Kahneman, 2011, p.43). Nevertheless, analysts are repeatedly encouraged to become methodic thinkers free of biases (Herbert, 2006, pp.666-667). It is important to note that intelligence analysis cannot be objective in an absolute sense. Furthermore, biases can also be useful when inferring meaning from incomplete data (Marrin, 2007a, p.409).

These analysis results are then presented in different types of intelligence products (Corkill, 2009, p.66; Cope, 2004, p.191), which should trigger some type of law enforcement action to prevent or mitigate crime (Carter & Carter, 2009, p.318). Indeed, these analytical products are being disseminated to
management who are operating in different levels so they can make resource allocation decisions (Bullock, 2013, p.127). Analysis is also often used to define intelligence gaps to articulate intelligence requirements (Carter & Carter, 2009, p.317), which then fuel the tasking process (Bullock, 2013, p.130). Intelligence analysis reports can include historical generalisation, pattern recognition, inferences, statistical analysis, educated guesses, and an indefinite number of other strategies (Herbert, 2006, p.669).

Different intelligence products should serve the specific purpose of informing their users of how crime issues can be tackled (Chainey & Chapman, 2013, p.476). For example, intelligence products can try to understand social determinants of victimisation or offending factors that facilitate the development of crime (Bullock, 2013, p.138). Uncertainty is part of the intelligence production process, as the information collected rarely provides analysts with a complete picture of what is happening (Marrin, 2012, p.897). A tendency exists amongst operational officers to treat analysis products as full and objective accounts of the problem to be tackled despite this (Innes et al., 2005, p.52). Nevertheless, the analytic products are mostly used to describe the historical organisation of crime and the routines of the offenders so as to provide officers with the right information to disrupt the offending (Bullock, 2013, p.138; Cope, 2004, p.196).

2.2.7.4 Internalisation – learning and using explicit knowledge

Intelligence is considered a critical element in effective decision making (Corkill, 2009, p.62), as it enables decision makers to optimise their responses (Corkill, 2009, p.66; Dean & Gottschalk, 2007). The purpose of intelligence analysis is wise management of epistemic complexity, as decision makers are often flooded with information relating to an impending decision (Herbert, 2006, p.680). The extent to which a criminal intelligence analyst is able to deliver ‘knowledge’ and ‘understanding’ to a decision maker provides a measure of the value of the intelligence function (Quarmby & Young, 2010, p.27; Herbert, 2006, p.680). The challenge is that the organisational emphasis is often on acquiring rather than using information (Collier, 2006, p.115). Indeed, the use of this ‘academic type’ of explicit knowledge is challenging in a law enforcement
environment that values experience- and intuition-based knowledge more (Gundhus, 2012, pp.178-179).

The impact of analytical products, then, varies as a result of the organisational context, the officers’ positions and roles in the organisation and their understanding and attitudes towards analysis (Bullock, 2013, p.139). Integrating the intelligence into decision making requires some aspect of proximity, such as organisational relationship, frequency of contact, and delivery mechanisms (Marrin, 2007a, p.411). Analytical products are also only one of many knowledge sources of the decision makers (Bullock, 2013, p.139; Marrin, 2007a, p.410), giving managers the option to choose the information that might be closer to their preference (Marrin, 2007a, p.410). Managers might also want the analytical results to back up their initial ideas (Marrin, 2004, p.666). Thus, even if intelligence analysis is considered to be relevant to the decision maker, it is not guaranteed to be influential or useful (Marrin, 2012, p.909).

This suggests that it is important for the intelligence analysis function to develop its products and services to match stakeholder expectations (Coyne & Bell, 2011, p.23). It is also important to note in this sense that police officers are some of the key consumers of intelligence products (McGarrell et al., 2007, p.152). However if the intelligence product is coming from an analysis department, which is not inherently associated with the core police service, it may be easily ignored (Ratcliffe, 2005, p.447). Many police officers also lack an understanding of the analysis concept (James, 2013; Carter & Carter, 2009, p.311), which also affects their acceptance of these products.

3.1 Summary of the literature review

This chapter presented the available research literature on two levels. The first part under the heading ‘The science of knowledge management’ generally examined the concept of knowledge from different viewpoints. Firstly, it explored the philosophical foundation of knowledge and intelligence. Secondly, it then presented organisational knowledge assets and the SECI knowledge management model, followed by organisational culture and knowledge management as well as the concept of professionalism and its relation to
knowledge. Lastly, this first part also explained the supervision role in managing knowledge.

The second part of the literature review, under the heading of ‘Knowledge in law enforcement’, addressed these same knowledge-related areas from the law enforcement perspective. Firstly, it discussed the evolution of policing models towards a knowledge-based model to provide the context for knowledge in law enforcement. This discussion was deepened from the operational perspective, followed by a discussion of the status quo of intelligence and analysis in policing. It also discussed the practical aspects related information and intelligence management in law enforcement. Secondly, it elaborated on the level of professionalism related to intelligence analysis in law enforcement and the police culture aspects of intelligence. Lastly, this part of the literature review compared the available policing-related literature to the SECI knowledge management model to identify what is known about the different aspects of knowledge management in policing.
3 Methodology

3.1 Research setting

The main lines of inquiry were established to comprehend the contemporary policing context from the viewpoint of intelligence analysis and how it contributes to law enforcement knowledge management. This research thus needs to take note of the different aspects of knowledge management not only to examine how the concept of intelligence and analysis are understood in law enforcement but also to understand the state of play of the knowledge management structures and systems. Professionalism and culture are integrally linked to organisational knowledge, so this thesis would be incomplete without also exploring these knowledge concepts. As professional doctorate research, this thesis has an inherent need to link theory and practice together by understanding the practical role and implications of intelligence analysis in the knowledge management apparatus. Indeed this practical focus coincides with the professional profile of the researcher, which consists of working at the patrolling field, as an investigator in variety of crime areas, and as a financial intelligence officer. Additionally the researcher has a wide variety of analysis related roles both national and international level - especially when working at Europol. At Europol the researcher also managed several analysis courses aimed for analysts, managers and investigators from different countries. Furthermore the researcher has received extensive range of education from basic police training to post graduate academic qualifications. Given this background, this research addresses the specific research questions:

- What is the state of play of intelligence analysis in the contemporary policing context in terms of structures, systems and concepts?
- What is the status of professionalism and organisational culture in relation to intelligence analysis?
- How does intelligence analysis serve the law enforcement knowledge management apparatus in practice?

After settling on these questions, the researcher felt a profound need to understand how best to conduct this study. As the professional observations of the researcher are that law enforcement intelligence analysis is confronting similar challenges in different countries it was considered important to reflect
this in this study; therefore, a decision was made to use two European countries for this study. Although the researcher’s acquired experience indicates similar challenges exist, using two countries might also reveal something new or at least provide a different perspective. Furthermore, two countries reinforce triangulation for the analysis and provide wider access to the data. At this point it is important to highlight that the researcher has not been involved in creating any policies, before and during this study, in neither of the countries. Although the researcher has provided analysis training to officials coming from these countries, the content of these courses were build on general level focusing on basics of intelligence analysis, which is universally ablicable to all law enforcement around the globe.

Access to data is vital with any research - especially in the context of law enforcement. The background of the researcher provided good probability to gain access to Finnish police, but also his professional experience had generated a good contact in Denmark. These two countries were, thus, obvious choices for this study. Additionally, these two countries have many similarities that facilitated conducting this research throughout the process. Indeed, these countries have around the same number of inhabitants (Eurostat, 2017a), around the same number of crimes recorded by the police (Eurostat, 2017b), and a similar number of police officers (Eurostat, 2017c) and police departments. Indeed, Denmark has 12 police departments, excluding the Faroe Islands and Greenland (Police Denmark, 2018), whereas Finland has 11 police departments (Police Finland, 2018).

### 3.2 Research paradigm

Scientific examination can be described as a set of philosophical and metatheoretical norms concerning ontology, epistemology, methodology and the research methods (Gelo, Braakmann, & Benetka, 2008, p.269). These terms are the ‘basic tools’ of research and assist, for example, in understanding the research assumptions and recognising others’ and our own research positions (Grix, 2002, p.176). Ontology is a starting point of all research and, after this is settled, the epistemological and methodological positions logically follow. Ontology is, then, about what we may know, and epistemology is about
how we come to know what we know (Grix, 2002, p.177). Ontology considers the nature of social phenomena: are they relatively inert and beyond our influence, or are they very much a product of social interaction (Bryman, 2012, p.6)? Epistemology concerns the question of what is or should be regarded as acceptable knowledge in a discipline (Bryman, 2012, p.27). Derived from the words episteme (knowledge) and logos (reason), epistemology focuses on the knowledge-gathering process (Grix, 2002, p.177). There are two contrasting epistemological positions: ‘positivism’ and ‘interpretivism’, the latter also known as constructionism. Positivism advocates the application of natural science methods (Grix, 2002, p.178), whilst interpretivism argues that social properties are constructed through interactions between people (Robson, 2011, p.24).

Methodology, then, refers to the planning, structuring and executing of the research to meet the scientific criteria (Mouton & Marais, 1996, p.15). It is the logic of implementing scientific methods in the study of reality (Grix, 2002, p.179; Mouton & Marais, 1996, p.15), particularly when investigating the potentialities and limitations of particular techniques and procedures. As the term suggests, methodology is the science and study of methods (Grix, 2002, p.179). The debate on research methodology focuses on what the source and nature of knowledge about the social world are supposed to be. This has led to the development of research paradigms into two distinct, opposing epistemologies using terms such as positivism versus relativism, objectivism versus subjectivism, and quantitative versus qualitative (Wagner & Okeke, 2009, pp.61-62). Grix (2002, p.180) argued that the methods themselves should be seen as free from ontological and epistemological assumptions and should be guided by the research questions, yet this is often not the case. Indeed, a researcher’s orientation in ontology, epistemology, and methodology often leads to a preference for a particular research method (Gelo, Braakmann, & Benetka, 2008, p.269).

So what is the status of these ontological, epistemological and methodological items in this research? The researcher’s ontological position leans more towards constructionism, which, according to Bryman (2012, p.33), asserts that the social actors modify social reality, which continuously changes. Knowledge
is, thus, indeterminate. Regarding the epistemological position, the researcher is a pragmatist, who, according to Robson (2011, p.28) prefers moderate and common-sense versions of philosophical dualism based on how well they work in solving problems. Thus, different, even conflicting, theories and perspectives can be a useful way to gain an understanding of the world. Here, the researcher’s law enforcement background is visible, as it gives the impetus to be closer to practice. The researcher firmly believes knowledge needs to be linked with reality. Therefore, the researcher has a flexible approach to the research paradigm and in the investigative techniques, viewing the research as a ‘holistic endeavour’ (Robson, 2011, p.171).

How then have the biases of the researcher been mitigated? Firstly, the extensive range of academic disciplines, with previously unfamiliar knowledge, explored for this research acted as a balance against any preconceived notions. Secondly, the researcher used a technique called Key Assumptions Check to critically plan the research and the data collection questions. Thirdly, the selection of a specific research methodology that aimed for strengthening triangulation acted as a mitigating factor for biases. Indeed, taking note of these and the research questions the mixed-method strategy, with its primary philosophy of pragmatism (Burke, Onwuegbuzie, & Turner, 2007, p.113), is the one most suitable for this research. As this is also an evaluation research study, with the purpose to study the effectiveness of using existing knowledge to inform and guide practical action (Clarke & Dawson, 1999, p.35), the use of the mixed-method approach is further justified (Miller & Fredericks, 2006, p.578). Furthermore, the mixed-method approach is increasingly recognised as the third major research paradigm along with the quantitative and qualitative methodologies (Burke et al., 2007, p.112).

Indeed, both quantitative and qualitative paradigms have recognised strengths and weaknesses and, ideally, should be used in combination (Carr, 1994, p.720). The physical science approach related to the quantitative paradigm (Johnson & Onwuegbuzie, 2004, p.14) certainly aims to verify if observed phenomena and their systematic relationship confirm the prediction made by a theory (Gelo et al., 2008, pp.271-272). Thus, the researcher maintains a
detached and objective attitude towards the research subject in quantitative research in order to understand the facts (Carr, 1994, p.717). It is then possible for the researcher to surpass individual differences and identify patterns and processes in real life situations (Robson, 2011, p.83). The data collected is often considered precise, unambiguous, hard, numerical, and ordered (Sayer, 2010, p.118; Carr, 1994, p.718) and, thus, is considered more reliable than qualitative research (Carr, 1994, p.719).

Conversely, the qualitative purist rejects positivism and sees that research is time, context and value bound and that it is impossible to fully differentiate causes and effects (Johnson & Onwuegbuzie, 2004, p.14). Qualitative approaches, therefore, tend to comprehend the personal perspectives, experiences and understandings of the individual actors (Gelo et al., 2008, p.272). In this sense qualitative research can contribute to understanding the context in which crime occurs and criminal justice is administered by providing rich and detailed data to enrich the numerical, quantitative data (Noaks & Wincup, 2004, p.14). The strength of the qualitative approach is, thus, its ability to probe for underlying values, beliefs, and assumptions in a broad and open-ended fashion (Yauch & Harold, 2003, p.472).

The process of combining both qualitative and quantitative methodologies is also one aspect of using triangulation to increase the findings’ validity (Noaks & Wincup, 2004, pp.8-9). The mixed-methods research study thus attempts to consider multiple viewpoints, perspectives, positions, and standpoints (Burke et al., 2007, pp.112-113). Indeed, quantitative methodologies test theory deductively from existing knowledge, whilst qualitative researchers are guided by certain ideas and perspectives regarding the subject to be investigated and develop their theory inductively (Carr, 1994, p.716). Therefore, the aim of this mixed-method approach is to balance not only the use of structured data collection methods with less structured methods but also to balance the involvement of the researcher towards research subjects (Axinn & Pearce, 2006, pp.25-26). Indeed, using the strengths of both approaches can help to minimise the weaknesses embedded in these classical paradigm approaches. The research world is increasingly interdisciplinary, complex and dynamic, so it
is especially seen as a necessity for researchers to complement one method with another (Johnson & Onwuegbuzie, 2004, pp.14-15). Furthermore, as an evaluation research study, the issues here need to be examined from several perspectives to find the causal linkages between activities and outcomes (Clarke & Dawson, 1999, p.5), another reason for advocating the use of the mixed-methods approach.

3.3 Data collection methods

Several options were available when starting this project for how to conduct the data collection. Indeed, observation methods are an important tool, as they can produce unique sources of insight and introspection. However, the intensive nature of this method generally prevents it from being used to study a large number of people due to time and resource constraints (Axinn & Pearce, 2006, p.8). Ethnographies also require a great deal of access to the field being studied and a great deal of researcher involvement in gathering, organising and analysing observations (Neyland, 2007, p.2). This research was conducted in two different countries, while the researcher lived and worked in a third country, so significant time and proximity challenges existed relative to using this method. Furthermore, language issues would have prevented using this method in Denmark; thus, this method was unsuitable for this research from a practical viewpoint. The focus groups, in which respondents interact with one another when formulating responses, similar to semistructured interview questions (Axinn & Pearce, 2006, p.7), would have been similarly challenging to organise due to the distance, time and costs. Hence, the researcher did not select this method.

The historical and archival methods were also strong options for this study, along with document analysis to evaluate and interpret documents (Bowen, 2009, p.27), in order to have a more rigid data triangulation. The intention was to evaluate the official policies and documentation made by the organisations to better understand their operational context and to verify findings or corroborate evidence from other sources (Bowen, 2009, pp.29-30). However, this also would have not worked, given the available resources and, yet again, the language barrier in Denmark. The topic of intelligence is also often under tight
information security, which would have further hindered the practical application of this method. Also, as the researcher knows, trust is important for law enforcement thus face-to-face interviews works better in acquiring knowledge. Therefore, given the identified challenges in these methods, the chosen qualitative method for this research was semistructured interviews, which can be conducted on an individual basis and, thus, provide a good balance of flexibility and validity in relation to data collection. Indeed, Axinn and Pearce (2006, p.6) have stated that this method allows respondents to change the course of the conversation and bring up new issues that the researcher had not preconceived. Semistructured interviews are also a familiar method for the researcher who as an investigator has interrogated several people in crime investigation related professional setting. The challenge of the semi-structured interview technique is that it might drift away from the subject if the interviewee is not guided properly, but also if there is too much guidance this might introduce interviewer biases.

One of the mitigating factors for these interview related challenges was to use survey questionnaires to collect data. Also, as semistructured interviews are quite intensive and demanding to carry out with large numbers of respondents (Axinn & Pearce, 2006, p.6), the researcher could obtain multiple responses on the topic and to save time by using survey questionnaires (Vogt, Gardner, & Haeffele, 2012, p.29). The advantage of this type of numerical data is that it also facilitates comparisons between groups and allows a determination of the extent of agreement or disagreement between respondents (Axinn & Pearce, 2006, p. 4; Yauch & Harold, 2003, p.473). Another advantage is that this method provides anonymity, which is important for law enforcement setting. The challenge of this method is to make it understandable for the respondent. The five point Likert scale was used in the survey questionnaire, as this study wanted to measure respondents’ views on the impact, beliefs, policies, and/or practices around this topic to explore possible differences across the groups (Vogt et al., 2012, p.30). The Likert scale made it possible to measure the participants’ attitudes around this topic (Vogt et al., 2012, p.63; Bryman, 2012, p.166; Robson, 2011, p.94) and, thus, to build a more complete picture (Robson, 2011, p.303). Indeed, the survey responses complemented the
detailed context gathered through the interviews (Noaks & Wincup, 2004, p.14). Furthermore, as the interview questions and the survey statements reflected the same issues, these two methods counterbalanced each other’s weaknesses (Axinn & Pearce, 2006, pp.25-26). Moreover, this combination of two methods, known also as triangulation, then increased the validity and enhanced the rigour of this research (Vogt et al., 2012, p.111; Robson, 2011, p.158).

3.4 Collecting the data

Empirical data were collected using purposive or judgement sampling to select persons with special expertise or roles (Bowling, 2009, p.208; Marshall, 1996, p.523). The researcher’s contact points in both countries provided a list of possible participants whom the researcher approached to recruit to this study. The researcher aimed for having a balanced list of participants covering the three key roles of analyst, investigator and manager. Also the aim was to have balanced geographical/police department coverage in both of the countries. As there were quite a number who refused to participate, the snowballing sampling method was also used to identify participants proposed by the interviewees (Bryman, 2012, p.424). This ensured the right contacts and profile but also provided a larger geographical coverage that included staff from different police departments. Thus, this also supported the aim to interview different staff roles in different police departments to increase the validity of this research. The recruitment was done via email, which contained the invitation letter, information package and consent form. The participants were invited to read the documentation and return the filled-in and signed consent form to the researcher via email as a scanned copy. The semistructured interviews were targeted to match the aims and objectives of this research and were thematically organised into

- intelligence, analysis and knowledge in law enforcement
- information management
- knowledge conversion
- on knowledge workers
- organisational issues

Appendix II shows the full interview schedule. In order to mitigate any insider role effect or power distance related distorsion when responding to the interview
questions the researcher did not highlight his professional role and status to the majority of the participants, who did not know the researcher in advance. To mitigate these effects among the participants, who knew the researcher in advance, the information on voluntary participation were emphasised. Additionally the atmosphere during the interview was kept casual and any guidance to the minimum.

As a result of this process, 13 interviews comprising five different police departments, national police, national police board and the police college were conducted in Finland. In Denmark, 11 interviews were conducted among four different police departments and in the national police. The conducted interviewees covered the key roles of patrolling officer, investigator, analyst and manager (see Table 3.1). The majority of the interviews were conducted over the phone, Skype of Facetime due to the geographic distance. Few face-to-face interviews were also conducted. All of the interviews were recorded. English was used as the language among the Danish participants. Finnish language was used among the Finnish participants. Appendix IV presents these questions. These recorded interviews were then transcribed. The Danish interviewee responses were directly transcribed into English, and the Finnish responses were first transcribed into Finnish and then translated into English. The researcher did his utmost to ensure that the meaning and the concepts were not lost in the Finnish to English translations.

<table>
<thead>
<tr>
<th>Semi-structured interviewees</th>
<th>Finland</th>
<th>Denmark</th>
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<tbody>
<tr>
<td>Role</td>
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<tr>
<td>Manager</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Analyst</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Investigator</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Patrolling officer</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>11</td>
</tr>
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</table>

Table 3.1. The number of semistructured interviewees and their roles per country

The surveys (see Appendix III) were also thematically organised into

- intelligence, analysis and knowledge in law enforcement
- information management
The survey collection in Denmark was mostly conducted in the analysis conference organised by the Danish police in October 2016. The researcher participated in this conference and invited the Danish participants to complete a paper copy of the survey to be returned to the researcher, resulting in 57 responses altogether. The researcher also requested the Danish contact point to collect additional surveys via email to boost up the response rate, resulting in an additional 10 responses. Thus, 67 responses were received from Denmark. Out of these, two responses were rejected due to not fitting or an unclear professional role. Therefore, 65 responses were used in this research, of which 38 came from analysts, 19 from managers and 8 from investigators. The responses from senior management and management were combined together in this calculation (see Table 3.2). In the paper-based collection, 17 empty values appeared in 7 surveys, which were marked as ‘Neutral’ in the used set. One survey had a Neutral/Disagree response marked on one of the statements, which was also translated into ‘Neutral’. Appendices VII-VIII present these results in detail.

The survey questionnaire collection in Finland was conducted via the online survey tool provided by Google Docs. The researcher also translated the survey questions into Finnish (see Appendix IV). The Finnish National Police Board (NPB) tested the link to the online survey to ensure it functioned properly and that there were no data protection-related issues before the online survey was disseminated. The link to this survey was disseminated via email through the registries of the police departments and National Bureau of Investigation after the NPB’s approval was received. The aim was to target certain dedicated groups of investigators, management and intelligence staff. After a reminder was sent to extend the deadline, 123 responses were received from Finland. One response was rejected from the final set, as it was the only response received from a patrolling officer. The responses from senior management and management were also combined together in Finland. Therefore, out of 122 responses, 21 came from analysts, 19 from management and 82 from
investigators (see Table 2). The fields in the online survey were marked as ‘Mandatory’; thus, no empty or unclear values appeared in the responses. Appendices V-VI present the results of these survey responses.

<table>
<thead>
<tr>
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<th>Finnish survey respondents</th>
<th>Danish survey respondents</th>
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<tr>
<td>Analysts</td>
<td>21</td>
<td>38</td>
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<tr>
<td>Managers</td>
<td>19</td>
<td>19</td>
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<tr>
<td>Investigators</td>
<td>82</td>
<td>8</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>122</strong></td>
<td><strong>65</strong></td>
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Table 3.2. The number of survey respondents per country

3.5 Analysis

The qualitative and quantitative methods were used separately, independently, and in parallel, as previously indicated (Robson, 2011, p.165). The interview questions and the survey statements were synchronised to reflect the same issues and counterbalance the weaknesses of the concerned methods (Axinn & Pearce, 2006, pp.25-26). The aim was to ensure the quality of the in-depth answers and obtain multiple responses around the topic through a self-administered survey questionnaire to save time (Vogt et al., 2012, p.29). The analysis of the interview data broadly followed Robson’s (2011, p.476) thematic coding analysis phases of data familiarisation, code generation, theme identification, constructing thematic networks, and integration and interpreting data. The transcribed interviewee responses were firstly coded manually, by using the text-highlighting feature in MS Word, when going through the text in several iterations. The aim was to identify similar themes between the different interviewee responses by allowing the codes and emerging themes to steer this formulation. The researcher considered using NVivo to assist in this task, but as the transcribed texts were in two different languages the decision was not to use this software in order to avoid false findings and mistakes. Nevertheless this slow manual work assisted in identifying themes, which were then firstly clustered together and then reallocated into three different chapters for further synthesis. The synthesis and meta-analysis of the text in these chapters resulted the need to adjust and reorganise the text also between the chapters as the analysis progressed. Thus the analysis of one chapter had to be done in conjunction with the other thematic chapters. Therefore, the text analysis of the
three findings chapters was actually moving forward in parallel. The interpretation of the interview responses was the most time-consuming part of this analysis phase (Yauch & Harold, 2003, p.472).

The results of the interviews were then synthesised and compared with the survey results to assess how well they are in conjunction. The survey statements were placed under relevant themes. Descriptive statistics (see the Appendices) were used, and the average was calculated from the answers of the different groups in the two countries for comparison purposes (Robson, 2011, p.126). The survey contained the five point Likert scale on which the average calculation was based. The researcher used descriptive statistics to summarise the data for quick, accurate and honest communication (Hanneman, Kposowa, & Riddle, 2012, p.5). The descriptive statistics were complemented with the interview results, as the relative weakness of these statistics is that they cannot capture the subtleties and complexities of individual human behaviour (Robson, 2011, p.83); thus, they are considered quite primitive tools for explanation (Sayer, 2010, p.133). Critics have also argued that it is highly dubious to translate statistical association into causality. The reliability of quantitative research also suffers if the data have been stripped from the natural context (Carr, 1994, p.719). Thus, context-dependent actions might be unsuitable for quantification; however, if this is done, the interpretation of the results should be done extremely cautiously (Sayer, 2010, p.119). Therefore, the comparison of the survey results was conducted against the interviewee responses. The multistrategy design thus followed a sequential exploratory design in which emphasis would be given to the qualitative data collection, and the findings would be integrated during the interpretation phase (Robson, 2011, p.165).

3.6 Ethical considerations

As the author of a professional doctorate study, the researcher is drawn to the statement of the first page on the ‘The concordat to support research integrity’ by Universities UK (2016) stating: ‘All those engaged with research have a duty to consider how the work they undertake, host or support impacts on the research community and on wider society”. This is particularly true in this
research. Conducting a study in an area in which the researcher is professionally engaged has a specific meaning in terms of credibility. Indeed, this indicates the researcher needs to maintain the highest integrity professionally as well as in this study, otherwise this research is pointless and useless.

There were certainly several ethical considerations to take into account. The first relates to potentially compromising situations in which the participants may reveal something about their organisation that could have consequences for their future work in the organisation. Their responses were made anonymous to avoid any harm to them and to respect this concern raised by many of the interviewees. Specific attention was given to statements that could have revealed the identity of the interviewee, such as specialists or managers who are low in numbers among the staff, to mitigate this. The police departments where the interviewees worked are not identified to further protect their anonymity and to avoid possible identification due to the low number of any given role in the department. Then comments that could have compromised the identity of the interviewees were presented in a way to protect their anonymity.

In relation to the surveys, the amount of data collected by using the survey mitigated the risk of identification through the nominal variables, as the individual answers are part of the mass information. This was also one of the reasons to exclude some of the survey responses, as the demographics related to their specific role of these respondents would have made it possible to discover their identity.

This study also has a possible reputational risk towards the countries and organisations under study. As this is an evaluative research study, there will, most likely, be findings that can be seen as undesirable and that might reflect negatively on the researched institutions and/or countries. This particular concern was also raised by the Ethics Committee; the researcher was thus asked to take specific attention and inform the countries of this risk in writing. This was carried out as expected. In Denmark the researcher provided information on this to the organisation; in Finland this was part of the standardised written procedure when applying for permission to perform this
study in the Finnish police. It also needs to be highlighted that studies in other countries support the overall ethos of this study; thus, these countries under study are not alone with these findings. Furthermore, as both countries are engaged in improving the intelligence analysis processes, this study can also assist these organisations to improve their processes accordingly.

Participation in this study was purely voluntary and, from the ethical viewpoint, this was a success, as several potential interviewees refused to participate. Due to different sampling techniques, as previously explained, the contact points in each of the countries were unaware of the persons participating in this study. Furthermore, as previously mentioned, a written informed consent was acquired from each interviewee. As most of the interviewing was conducted via phone, Skype or Facetime, the participants were requested to scan the signed version of the consent form and send it via email to the researcher. Additionally, all possible information from the ethical viewpoint was provided to the possible participants of the survey questionnaire. The information sheet was either provided separately for the participants, as in the case of paper-based responses, or it was integrated into the online survey. The data collection in this regard was also completely voluntary. The collected data is kept in the personal, password-protected computer drive of the researcher and not stored in any outside server. The hard copies were also kept safe in a locked filing cabinet. The transcripts will be similarly kept safe.

Another ethical consideration is related to the insider role. This role confusion is also amplified by the fact that the researcher has been providing intelligence analysis courses to the law enforcement staff in these countries. The researcher was during the research in a senior role at Europol and before this study he had been part of the Finnish police. In order to mitigate the role conflict the researcher did not highlight these professional facts to the possible participants. Instead the researcher's role was highlighted when contacting the organisations under study to mitigate any role conflict issues. Written documentation and written consent forms were also collected from the interviewees. This approach was a success from the ethical viewpoint, which could be seen when recruiting the interviewees. Challenges certainly existed in finding and convincing staff to
participate in this study; thus, it can be concluded that this ethical consideration was mitigated very successfully.

Lastly, given that this research is conducted in an area that is relatively confidential by its nature, a risk exists of revealing tactical and technical knowledge about the functioning of the law enforcement. The obviously sensitive information was not included in this thesis to mitigate this risk, and when this was relevant for the findings, it was discussed on a very general level to avoid any unwanted disclosure of police tactics. Other than this, there is no foreseen knowledge of risks or burdens in this study when it comes to ethics.
4 Findings I: Exploring the context

This chapter addresses the first research question: ‘What is the state of play of intelligence analysis in the contemporary policing context in terms of structures, systems and concepts?’ The chapter thus provides an understanding of the context in which intelligence analysis operates by exploring the policing model of these two countries, followed by exploring how crime management strategies are implemented. Then, it discusses the information management systems and, lastly, the concepts of knowledge, intelligence and analysis. By doing so this chapter contributes to the overall aim of this study to comprehend the policing context from the viewpoint of intelligence analysis. The implementation of the crime management strategies also provides insight into how the organisation applies knowledge. Furthermore, this chapter contributes to the overall aim by, firstly, examining the systems related to knowledge management, followed, secondly, by elaborating how the concepts of knowledge, intelligence and analysis are understood.

4.1 Policing approaches and the organisational structures for intelligence

The respondents were generally clear that the Finnish the police operate a standard model of reacting to events. There have been considerations and an attempt to manage crime differently and change the thinking towards Intelligence-Led Policing (ILP). Several interviewees (FI05-FI06,FI08-FI10) stated that Community-Oriented Policing (COP) was also on the agenda; however, it has practically evaporated from there and is mostly conducted in social media. The National Intelligence Model (NIM) has also been on the agenda in Finland and, similar to the original model, every police department in Finland established their own Intelligence and Analysis Unit (IAU) a few years ago to focus on collecting, validating, processing, organising and disseminating information. Additionally, an intelligence cooperation structure exists at the national level in Finland, a sort of national fusion centre, where the intelligence generated by the police, customs and border guard (PCB) can be managed nationally. Several interviewees (FI03,FI07,FI12) in Finland also stated that the
operational centres, which provide support to the patrolling officers, can act as the link between the intelligence units and the patrolling officers.

Nevertheless, the results in adopting the intelligence concept have been modest so far. Several reasons were put forward for this:

- The ILP concept is considered too fancy and difficult for the police who require practicality [and] the support for Intelligence-Led Policing is missing in every level (FI04, Analyst).
- Unfortunately substantial part of the leadership do not have adequate understanding of the Intelligence-Led Policing (Survey respondent, Analyst, Finland).
- There is a severe lack of resources, which prevents the development of new crime prevention measures (Survey respondent, Investigator, Finland).

Additionally, one interviewee (FI05) identified that the lack of general agreement on the policing model by the leadership has led to the lack of agreed definitions and terminology for analysis, ultimately diminishing its role in policing. The lack of a clear legal framework on intelligence was also seen to hinder the adoption of the intelligence concept. But also:

- The leadership have no understanding what we really want to do with all of this information (FI09, Manager).

This might be a bold statement; however, this claim is supported by other findings that indicate a variance in working standards between police departments on ILP-related standards.

The Danish police have similarly been mainly operating through the classic reactive policing model of ‘dealing [with] the matters that are in front of us (DK02)’. Nevertheless, several Danish interviewees (DK01, DK03, DK10) identified that there are developments to adopt a more ILP approach (Rønn, 2013, p.55) to save resources and be successful in the complex policing environment, along with having a Danish National Intelligence Model. As a sign of this in Denmark, all of the police departments also established their own IAU a few years ago to collect, validate, process, organise and disseminate information. Another IAU exists in the Danish National Police that manages the information and intelligence on a national level. Nevertheless, these changes have had a limited impact on adopting the intelligence concept in Denmark:
Intelligence is absolutely necessary and logic way to work [...]. We have some difficulties because the Danish police has been working on its own way for so many years and like a big tank ship we have to turn and it takes so much time (DK06, Analyst).

Intelligence is highly needed for Danish police [...]. But it causes some challenges, because we have been working like we have been doing for several years – without using analysis that much in police work (DK08, Analyst).

Thus, it takes time to adopt new routines (Gundhus, 2012, p.183). There were also some reasons provided by the Danish interviewees for the modest ILP results:

The challenge is that as intelligence is much more abstract concepts it is not satisfying way to work for many people. This is due to the fact that the whole organisation builds on very pragmatic and practical work (DK05, Analyst).

The problem is to get [ILP] implemented due to lack of resources and management understanding (DK01, Manager).

Indeed, as several interviewees (DK01, DK04-DK06, DK09) stated, there are difficulties in comprehending and adopting new intelligence- and knowledge-based policing approaches in the police departments. As a result many of the police departments in Denmark have false perceptions about working Intelligence-Led when instead they are working in quite the old-fashioned way.

We have a lot of talks about Intelligence-Led Policing and Problem-Oriented Policing etc. The problem right now is to get it implemented. Also [there is] a gap [in senior management level] between what they think is the level of implementation [and] what is the actual level of implementation (DK01, Manager).

This also indicates the overall challenge in changing routines and working cultures within the Danish police organisations. Indeed, the practical implementation is the challenge:

In practice [...] you discuss [strategy] with our police district top management and they are more receptive for strategic products and working on knowledge base [however what] tend to happen [is] that [...] they send the strategy down and then half of what you want to happen happens (DK04, Analyst).

Thus, working routines and cultures are challenging for leadership. Nevertheless, there is a major Intelligence-Led Policing project on-going in Denmark to implement a knowledge-based approach in the Danish police.
4.2 Crime management strategies

The National Police Board in Finland develops the national strategies that are then approved by the Ministry of Interior; the different crime management strategies are essentially very much the end product of this political guidance. The crime management strategy includes theme-based focus areas for the organisation. However, there is a limited use of intelligence analysis when defining the crime management strategies, as the strategic analysis was identified (FI03,FI05,FI11) as being inadequately understood, developed and coordinated among the Finnish police. As one interviewee (FI05) further identified, the strategic crime management practice in Finland does not use scenario building, which would help to guide the police work. The whole crime management strategy is leaning more towards the patrolling field, anyway.

[Crime management strategies] are more useful among the patrolling area where it is more functional. It is easy for the chiefs of police departments to search the crime records database and the emergency response database to find out where the events have occurred and what time in order to guide resources to these places in the future (FI10, Analyst).

Moreover, the visibility of crime management strategies in the investigative section seems to be quite non-existent as one interviewee identified, saying ‘I cannot say that [crime management strategies] are visible in any way (FI11)’.

Moreover, an analyst confirmed the understanding of statistics as strategic analysis in the Finnish police:

We have this strategic analysis function here where crime statistics, for example, on burglaries are queried in order to understand when and where these have taken place (FI12, Analyst).

Nevertheless, these strategies are guiding the work of the intelligence and analysis units at both local and national levels. These units are tasked to coordinate the implementation of the defined strategies and follow the decided focus areas. The challenge, as stated earlier (FI05), is that the national strategies do not take note of the differences between the police departments, causing challenges in implementing the crime prevention strategies at the local level. Another challenge identified is the lack of visibility of the crime management strategies in the investigative work. In relation to this, the
management would need to improve communication on the aims and objectives of the different strategies to improve the staff’s knowledge of these. There are some strategic areas, such as traffic, that remain mostly the same over time. But the national crime prevention strategies are not necessarily so clear to the police staff – sometimes not even to the police managers. These qualitative findings match the survey results on the statement, ‘We have clear, agreeable and manageable organisational crime reduction strategies, objectives and priorities’. The Finnish respondents definitely disagreed with this statement with the average of 3.22. Out of the three professional groups, the management was the most positive and agreeable with the average of 2.95, although almost half (47.37%) of them remained neutral towards this statement. Conversely, the investigators were the most negative with the average of 3.33 and with 23.17% in agreement with this statement. The analyst’s average was 3.05 with 33.34% in agreement.

The police in Denmark have recently adopted a new structure for national strategic analysis, one that informs strategic focus areas in relation to identified crime tendencies for police to tackle instead of monitoring specific crime cases. More importantly, strategic analysis is produced for the first time in some police districts to define priorities at the district level. Denmark also uses scenario building to develop crime management strategies. The survey respondents’ views of the statement, ‘We have clear, agreeable and manageable organisational crime reduction strategies, objectives and priorities’, was slightly positive with the average answer of 2.87. The management were the most positive professional group with the average of 2.74. The investigators were close to this with the average of 2.75. The analysts were most negative with the average of 3.14. Still, among the Danish management, 26.32% were in disagreement and 26.32% neutral with this statement. The comments from the interviewees match these figures. The investigators have expectations of using the intelligence to better prioritise the selection of criminal cases (DK07) to avoid wasting resources on unsolvable cases. However, from the analysts’ viewpoint (DK01, DK03-DK04), this was seen as challenging due to inadequate management attention, persistent organisational culture and routines, lack of authority of the analyst, lack of resources, and lack of understanding of the
intelligence concept. Therefore, ultimately many of the police departments are not working intelligence-led and as a result, for example, the investigators were seen to have the authority to decide what they want to investigate (DK04).

4.3 Information management systems

Databases used by the Finnish police are separated from each other, making the information dispersed and fragmented. The majority of the Finnish interviewees (FI02-FI06,FI08-FI09,FI12) felt that this fragmentation of information was unhelpful. The systems cannot find commonalities between the different databases, making the cross checking of data between the different systems a challenge (Sheptycki, 2004). The information will also not reach easily to the right persons; thus, the information management is a problematic area. Ideally, there would be only one system where all the police information is managed.

Additionally, no standardised processes exist around information management in the Finnish police. Some departments have developed their own systems to share information more efficiently, but these models are different throughout the police. A relatively new observation system has been introduced that, for example, allows patrolling officers to collect observations and information and store it in a separate database for the Intelligence and Analysis Units (IAUs) to validate and facilitate. This can be done without reporting a specific crime. Emails are also still used to report these observations, and electronic platforms are also used where information and intelligence is collected and shared around certain themes. These platforms are also used to share intelligence products.

All of the staff, in principle, have the same access rights to the databases; thus, anyone can search and collect data from different databases and sources. This was also visible in the survey responses, as the average response to the statement, ‘I have sufficient access to the information I need for my work’, was very positive with the score of 1.77. Nevertheless, from the legislative perspective, individual police officers can only access data that is relevant for their work, and access limitations exist on some of the databases that are under very strict legal auditing. The staff that usually work at the IAUs or are otherwise performing intelligence- and analysis-related tasks can access these databases.
Additionally, the users who should have access to the intelligence systems have been carefully assessed due to the recent public scandals, which as also significantly suppressed the number of users of these systems. In relation to the observation database, every police department can store its observations into this database however all police departments have view access to the available data nationally.

The legal aspects of information sharing were not seen as an issue, as the average answer to the statement, ‘I am fully aware of the legal aspects of information sharing”, was 2.2. Thus, the respondents seem to be quite well aware of the legal aspects of information sharing, yet these interviewees (FI03-FI05,FI09,FI12) identified issues in relation to legislation that inhibits proper data management. Furthermore, in Finland there were comments indicating that the legal requirements to process data in the systems are too high (FI07,FI10,FI12). The differences in the data lifecycle between different systems were also seen as problematic (FI12). However, these interviewees (FI03,FI07) also stated that the legal threshold to store data in the observation database is quite low and, as the legal concept of observation is relatively new in the Finnish police, there might be a gap in legal knowledge among the police personnel who are using this new system. Nevertheless, the local IAUs should validate data stored by the police officers, so there should be no major legal difficulties for the police officers to store the data. There is also an initiative to adjust the legal framework concerning police information management and storing personal data to better meet the contemporary needs of the police, taking into account the latest data protection standards. These interviewees (FI12,FI13) also stated that the legislation around information management mostly concerns police management, who should have proper knowledge of the rules and regulations, since they are ultimately responsible for ensuring that legal requirements are met.

The Danish police also have a quite significant number of different kinds of databases that are separate from each other, making the information dispersed and fragmented. These Denmark interviewees (DK01-DK02,DK04-DK06,DK08-DK09) identified the need to have one system where all the information could be stored and managed. Compared to Finland, the average answer to the
survey statement, ‘I have sufficient access to the information I need for my work’, was more negative in Denmark with the score of 2.86. That could be because the system in Denmark was built so that the national police have access to all information provided by the local police departments, whilst the local intelligence and analysis centres can only see their own local information. This was considered a major issue, as the operational analysis is mostly done at the local/regional level, and without proper access, the different police departments are targeting the same person without knowing this. Nevertheless, this situation is likely to improve in the future with the implementation of a new analytical platform with more extended access to this system. The aim is to integrate several databases together with the ability of analytical tools to work with the data. However, as one Danish interviewee (DK03) identified, the integration of the databases is not going to be easy and might take years.

Moreover, there is also a system in use in Denmark that enables the patrolling officers to store observations and information at the IAUs for validation and further facilitation. This can be done without reporting a specific crime and has been in use for a few years. Despite this possibility, emails were also in wide use when reporting observations within the organisation. The legal issues around information sharing were not an issue in Denmark, as the average answer was 2.1 to the statement ‘I am fully aware of the legal aspects of information sharing was. These Danish interviewees (DK07, DK10-DK11) also identified the patrolling officers and investigators as not having any legal challenges in relation to information management, yet legislation inhibits proper data management to some degree. For example, the different rules related to the data lifecycle between different systems were seen as problematic by many interviewees (DK07-DK08, DK11). As further stated:

‘This causes many legal issues within the new systems, which aims to integrate different kind of datasets and sources. Many of these datasets have their own legal framework to comply with (DK03, Analyst).

This is undoubtedly a challenge for any organisation integrating databases together. Nevertheless, initiatives exist to adjust the legal framework to better meet the contemporary needs.
4.4 Knowledge domains

According to these Finnish interviewees (FI01, FI04), the Finnish police prefer experience-based, tacit knowledge.

_Theoretical and academic knowledge is not much appreciated by a regular police officer [...] thus sometimes there is a sort of disdain towards theoretical knowledge (FI01, Manager)._ 

Nevertheless, these interviewees (FI06, FI13) stated that there is also a need for, and the possibility to use, explicit, written types of knowledge. This was also supported by the answers to the survey questionnaire statement, ‘Theoretical, academic type of knowledge is mostly not needed in practical police work’.

Respondents generally disagreed with this statement with the average answer of 3.47. However, several interviewees (FI01, FI04, FI06, FI13) identified that the understanding of research and knowledge should be better integrated within the police.

_The academic analytical knowledge and expertise should be improved and connected with police profession (FI01, Manager)_

Indeed, considerations were given to hiring staff with academic backgrounds to work with analysts having a police officer background.

_There have been discussions to combine a civilian background staff with analysts having a police officer background. The advantage of having the police officer background is the understanding on the police culture however this might limit the thinking as well. The practical work at the police is very much based on the sharing of the tacit knowledge and experience (FI04, Analyst)._ 

These Danish interviewees (DK05, DK07, DK09) also stated that their police have a clear preference for experience-based, tacit knowledge (Gundhus, 2012).

_Information needs to be enriched with information, however this is a challenging [...] as it is quite abstract and the whole police organisation builds on very pragmatic and practical work (DK05, Analyst)._ 

_Police work is mostly still based on biased gut feeling (DK09, Analyst)._ 

There is also a need for, and a possibility to use, explicit knowledge, despite this (DK06). This was also supported by the answers to the survey
questionnaire statement, ‘Theoretical, academic type of knowledge is mostly not needed in practical police work’. On average the Danish respondents disagreed with this statement with the score of 3.69. This is in line with the interviewee who stated that, ‘Danish police is not so experience based any more’ (DK03). This is also in line with these interviewees (DK04-DK05,DK09), who stated the need to better integrate the academic type of knowledge into the practical police experience, as both types of knowledge are essential to police work.

Indeed, as identified, the key is to work closely together to gain the benefits of these different skills, knowledge and experience. The combination of a systematic, academic type-knowledge, together with the practical experience of the police officers, is an enormous benefit for the organisation. These interviewees (DK04,DK05) stated that the academics can identify knowledge gaps in the organisation and make the analytical findings and process more valid.

*The police officers have experience but the academics have a systematic way of approaching to this knowledge and ‘that’s where it really connects’ (DK05, Analyst).*

*The key is then to work close together to get the benefits of these different skills, knowledge and experience (DK09, Analyst).*

Apparently, this connection knowledge connection is taken seriously by the Danish police, as several interviewees (DK02-DK03,DK05,DK09) indicated that the organisation have been hiring analysts with an academic background to bring in the new perspectives and ideas from academia to the police.

### 4.5 The perception of intelligence

The majority of the Finnish interviewees (FI01- FI05,FI09-FI10) stated that the definition of intelligence is poorly recognised and understood (Alach, 2012, p.76). This has had a negative impact on the implementation of intelligence in the Finnish police.

*Lack of common understanding of the terminology has had negative impact to the whole development of the intelligence function (FI02, Manager).*
There is some definitions related to intelligence and analysis but these have not been implemented properly in the daily work (FI04, Analyst).

The fact that we do not have agreed definition on the intelligence hinders the criminal intelligence work (FI03, Analyst).

As [...] there is no common terminology] it absorbs part of the efficiency that could be gained (FI02, Manager).

The general idea of intelligence was also linked ‘to the idea of collecting it from different sources (FI03)’ and of it being secretive work (FI04, FI08). Several interviewees (FI01, FI03, FI08) also identified intelligence as something that guides and acts as the foundation for the investigations. These interviewees (FI02, FI04-FI05, FI10) stated that the definitions are important to improving standards and definitions in intelligence and to working the same way.

Furthermore, several Finnish interviewees (FI03, FI05, FI09-FI10) raised the issue of inadequate and dysfunctional legislation in relation to intelligence. One of the major problems identified is the lack of definition in the legislation.

Nevertheless, the attitude towards intelligence seems to be quite positive, according to the survey responses to the statement, ‘The concept of intelligence in law enforcement is practical and needed’. The average answer to this statement was 2.26.

Several Danish interviewees (DK01-DK04, DK09) similarly identified the difficulties in understanding what intelligence is in the police (Corkill, 2009, p.66).

Many police officers don’t know what intelligence is. They don’t know how to define intelligence versus investigation (DK01, Manager).

The intelligence term has so many different interpretations and only the people really working with the intelligence can actually define intelligence. [...] There is a big need to make clear the whole intelligence term in the Danish police (DK02, Analyst).

The whole concept and understanding of intelligence in Denmark is very vague. Actually nobody talks about intelligence instead people are talking about investigation and front line officers. [...] And there are so many definitions on intelligence (DK03, Analyst).

Nevertheless, work is currently undereway to establish the intelligence doctrine of the Danish Police by describing the concepts of intelligence, intelligence
cycle and intelligence sources. The journey of change takes time as indicated by one of the interviewee who stated that ‘In the last 10 years so many things have changed. [Intelligence] is going forward (DK03)’. This more positive attitude of the Danish interviewees was also visible in the Danish responses to the statement, ‘The concept of intelligence in law enforcement is practical and needed’, with the very positive average answer of 1.17. Several Danish interviewees (DK02, DK05-DK08, DK10) also clearly stated that intelligence is very much needed, and most of the staff is generally ready to acknowledge intelligence as the way for the future.

4.6 The status of analysis

The majority of the interviewees (FI02-FI05, FI07, FI09, FI12-FI13) stated that there are no clear and common definitions and understanding of analysis in the Finnish police. Some furthermore stated (FI04-FI05) that the aims, function and role of analysis are not clear for everyone.

The fact that we do not have agreed definitions on analysis hinders the criminal intelligence work. (FI03, Analyst).

We are missing certain definitions. These definitions would be needed though there is thinking in using common sense, but this creates the variation in how the analysis is performed (FI02, Manager).

Analysis - beautiful idea. Perhaps somewhere in the future it will come true (Survey respondent, Investigator).

Despite these comments, the average answers to the statement, ‘The aims, objectives and function of analysis in law enforcement is clear’, indicate that the survey respondents appear to accept this survey statement. The average Finnish answer was 2.67. A closer look at the answers reveals that 40.24% of the investigators and 52.63% of the management agreed with this statement. Indeed, as these interviewees (FI01, FI05) stated, analysis is seen as a support mechanism for the investigations, and the Finnish police are good at making case analyses of specific investigations or phenomena.

Currently the reputation of analysis is that it is only linked to the detection of crime series and serious crime (Survey respondent, Manager).
These notions tightly link analysis in Finland with the investigation process. This is logical, as there seemed to be a lack of vision among the leadership on what to do with all the available information, as one interviewee (FI09) identified. Given that, a perception exists (FI03) that some of the management considered analysis a complete waste of time.

Nevertheless, the need for analysis is not questioned openly, and the collection and processing of information to make conclusions out of this (Chaney, 2009, p.57) is seen to be more important than ever. Therefore, it is interesting to note that the average answer to the statement, ‘Our analytical products and services are well-defined and standardised’, was slightly negative. The average answer in Finland was 3.25. Only 33.33% of the analysts agreed with this statement and even fewer, 21.05%, agreed among the management. The investigators were the most negative with only 13.41% agreeing. These figures correspond well with the views of these interviewees (FI02-FI03, FI05, FI10, FI12-FI13), as many of them stated that in Finland there are no established standards for intelligence reports. Many interviewees (FI01-FI02, FI09, FI12-FI13) indicated that, despite this, there are similar products produced in different IAUs, such as periodic strategic reports. Indeed, there were strategic products covering different areas of crime prevention. Ad hoc reports are additionally produced in relation to specific crime phenomena. The joint PCB intelligence centre also produces different national strategic reports and different ad hoc reports. Nevertheless, one interviewee (F102) stated that ‘there should be standard structure on the products for the manager to understand what is what’. The reports’ standards obviously vary between the different IAUs, and a clear need exists to improve this.

Several Danish interviewees (DK01-DK02, DK04-DK05, DK10) also stated that no clear and commonly understood definitions and awareness exist for analysis.

The analysis concept is not well established and understood in the Danish police (DK02, Analyst).

There is not yet established analysis at Danish police (DK04, Analyst).
Nevertheless, the survey respondents were more positive about this, as the average answers to the statement, ‘The aims, objectives and function of analysis in law enforcement is clear’, were slightly positive with the score of 2.69. However, only 37.5% of Danish investigators and 57.89% of Danish management agreed with this statement. Thus, there are still variations in understanding of the aims, objectives, function and role of analysis in Denmark, and the police were generally seen to be unprepared for analysis.

The police have also the tendency to react to certain crime areas very quickly, which cuts out the analysis phase (DK04, Analyst).

The investigators are placed in pedestal and the investigators don’t have big fate in analysis (DK03, Analyst).

Nevertheless, the necessity for analysis has increased in the increasingly complex world within the law enforcement domain. These interviewees (DK01, DK03-DK04, DK08) stated that analysis is becoming more crucial within the police.

The awareness [of analysis] is growing and police officers know that they cannot ignore analysis when the crimes are getting more complex (DK03, Analyst).

Most of the people are ready to acknowledge intelligence and analysis type of work (DK08, Analyst).

The level of knowledge on strategic analysis slowly increasing in the organisation (DK04, Analyst).

It is interesting to note, therefore, that the average answer to the statement, ‘Our analytical products and services are well-defined and standardised’, was slightly negative in Denmark with the average answer of 3.09. Only 26.32% of the analysts agreed with the statement, while 26.32% of the management agreed. The investigators were the most positive with 37.5% of them agreeing. These figures also do not correspond with the statement made by these interviewees (DK01-DK03, DK06, DK09) that there are standards for reports established in 2014, so the police can produce them the same way in all police departments. These results do match with the argument of one interviewee (DK02), who stated that ‘not using these standards has no consequences and as a result there are 12 police districts producing these reports their own way’.

Nevertheless, these interviewees identified similar reports, such as periodic
reports, for various topics. Additionally, a lot of ad hoc analyses are also conducted. This standardisation work was continuing during this research, and new templates were being developed for investigative reports, analysis reports, patrol briefings and judicial reports. Furthermore, new strategic analysis reports are coming out at the local and national level to establish priority areas on which to focus.

4.7 Summary of Findings I

These findings indicated that the standard model of policing still dominates the ethos of the law enforcement work in both countries. Both countries have made serious attempts to implement an ILP-like approach; nevertheless, these findings indicated that the ILP is considered too abstract, which makes its implementation a challenge in a pragmatic and practical police culture. Furthermore, this culture, along with its deep-rooted routines has been an obstacle to implementing ILP. Proper terminology has also been missing in relation to ILP. The challenges in adopting knowledge-based concepts were also visible in both countries’ fragmented information systems. Indeed, these systems do not properly support analysis work, further indicating the immature level of ILP implementation.

These findings further illustrated how crime management strategies in Finland are not based on analysis. The further implementation of strategies is also a challenge, as even the managers are unaware of the organisational strategy in some cases. Thus, the nature of the work is to react to events. Although Denmark is a bit more advanced in using analysis to formulate strategies, the findings also indicated some challenges in implementing them. Indeed, as the findings indicated, experience-based knowledge is the dominating doctrine in these organisations, providing partial clarity about why it is difficult to implement crime management strategies. The general agreement that more academic type of knowledge is needed is not visible in these organisations. Indeed, there is no common agreement on the intelligence concept. The more explicit type of knowledge work that should be conducted through analysis is also inadequately established in these organisations. The analysis doctrine is largely underdeveloped.
5 Findings II: Professionalism and the impact of police culture

This chapter addresses the research question: What is the status of professionalism and organisational culture in relation to intelligence analysis? By doing so this chapter explores two vital, yet abstract, organisational knowledge concepts of professionalism and culture, thus providing the central contribution to the overall aim of this research. It does this by, firstly, identifying the level of professionalism on intelligence and analysis at the organisational level. Secondly, it examines the level of the intelligence and analysis professionalism of the analysts, management and police officers, each in its own, specific section. Thirdly, it discusses intelligence analysis training. Lastly, it examines the findings related to organisational culture.

5.1 Organisational information and intelligence management

Several Finnish interviewees (FI02-FI03, FI10, FI12) stated that the local Intelligence Analysis Units (IAUs) perform extensive information management at the police departments. These units should not only know what is going on in their respective police departments but should also facilitate the information from the local level to the national level and follow the defined strategic focus areas. The Police, Customs and Boarder Guard (PCB) Intelligence and Analysis Centre further coordinates the strategy implementation. They particularly coordinate the daily national briefings when all the local intelligence and analysis units participate to discuss topical national issues. Compared to the local level, the focus of the PCB at the national level is more strategic, and the PCB Centre maintains the national situational awareness, aiming to produce intelligence on crime, criminality, trends, phenomena, threats, and crime series. The national level also produces target selection in relation to serious crime.

These interviewees (FI02-FI05, FI12) identified that the local IAUs’ structure, function and tasks vary from one police department to another. The departments essentially are not respecting the given policies and guidelines. The information management model, such as collecting and processing crime and criminal-related information, also varies between the local departments. One interviewee (FI04) stated that there is a general lack of understanding of the benefits of a standardised information management model. Several
interviewees (FI04-FI05, FI09) also identified variances not only in the resources but also in the differences in the management set-up between the IAUs. Few units have full-time managers, and most managers are busy managing other functions as well.

Several interviewees (FI03-FI04, FI06, FI08-FI09, FI13) additionally identified that the level of professionalism for intelligence and analysis is higher at the national level than at the local level. The intelligence and analysis work is also often seen as a sort of secretive and classified undercover work kept separate from the basic police work. Thus, two interviewees (FI03, FI09) identified that the IAUs’ tasks are unclear, causing confusion on how to use this function. These findings correspond well with the responses to the statement, ‘The division of tasks between investigators and analysts are clear in our organisation’. The average answer was 2.85. Despite this slightly positive average, only 47.62% of the analysts, 35.37% of the investigators and 47.36% of the management agreed with this statement. Furthermore, others (FI03, FI09) stated that the functioning of these units often depend on individual staff members’ personal interpretations and how they understand their unit’s role. Thus, the lack of standards and definitions for intelligence and analysis reduces these units’ effectiveness (McGarrell et al., 2007, p.153), which also impacts how others perceive a particular IAU. Then, depending on the IAU’s reputation, this will have either a positive or negative impact on, for example, finding staff for these units. There seems to be a willingness to improve this situation despite this rather grim picture. For example, an interviewee (FI13) stated that one department in Finland has the vision to build an intelligence unit that would centralise the knowledge, skills and expertise on information collection and management from different information sources.

Several Danish interviewees (DK02, DK04, DK10) similarly stated that the IAUs should perform the more extensive information management at the local police departments and facilitate this information towards the national level (Bullock, 2013, pp.127-128). The IAUs should also follow the defined strategic focus areas. The aim of the Danish National Police at the national level is to concentrate only on strategic analysis and coordinate the knowledge sharing, not to conduct investigative support. It would also educate and develop
collection methods. Several Danish interviewees (DK02-DK03,DK10) identified that the level of knowledge and understanding of intelligence and analysis and the overall professionalism is higher at the national level than at the local level, anyway.

Other Danish interviewees (DK02,DK04-DK05,DK09) also stated that the local IAUs’ structure, function and tasks vary from one police department to another. Furthermore, the information management model, such as collecting and processing crime and criminal-related information, varies between the local departments, along with producing and using analytical results (Bell et al., 2010, p.345). Others (DK01-DK02,DK09) similarly stated that a division exists between the different professional police groups who are unaware of what the other professional groups are doing. Indeed, the Danish police were considered by one interviewee (DK02) to be professionally quite divided, creating challenges for having an efficient organisational knowledge management setup. For example, the patrolling officers’ lack of knowledge demotivates them from registering the information needed for analysis. Indeed, in Denmark the average answer to the statement, ‘The division of tasks between investigators and analysts are clear in our organisation’, was 3.2. Only 28.95% of the analysts, 25% of the investigators, and 26.32% of the management agreed with this statement, indicating an unclear task division. Nonetheless, extensive work is being carried out in Denmark to enhance the understanding of the intelligence analysis work by the other professional groups through workshops and seminars. The challenge is to implement this in their daily work due to persistent working routines.

5.2 The professionalism of the analysts

Several Finnish interviewees (FI02-FI05,FI08,FI12) stated that the role and function of the analysts working in the different IAUs varies, and they are performing a wide variety of tasks. Most analysts are tasked to manage situational awareness and, thus, are tasked to daily filter the local events and reported crimes in the strategic focus areas that are then reported in the national daily briefing. Analysts are also working to detect crime series, although one interviewee (FI11) argued strongly that this should be done by the
investigative teams where they are mostly detected. Then, depending on the
police department, the analysts perform quality control for the stored data,
receive and record crime reports, use crime reports to identify trends and
phenomena, and balance the workload between investigative teams. The
analysts are also receiving regular requests to provide statistics. They often
have their own area of responsibility to monitor and coordinate.

On top of these tasks, the analysts are also used to support on-going
investigations through different actions, analytical methods and products. These
include, for example, the analysis of itemised billings, providing geographical
information and/or monitoring open sources such as social media. They can be
retasked to support another case when their support is no longer needed, as
they have no responsibility over cases. Thus, several interviewees (FI03,FI05-
FI07,FI10,FI12) identified that the analysts have a supporting role towards
investigators and patrolling officers. These analysts’ skills were contested,
however, by some interviewees (FI01,FI10) who claimed that the organised
crime units, which produce their own analysis, are producing at better quality
analysis than the IAUs’ analysts. Indeed, criminal intelligence in Finland has
historically been conducted by the drugs units, as previously stated, and some
departments have case analysts working within the investigative teams to make
conclusions and reports out of the criminal investigations. Yet, as someone else
(FI08) further indicated, some departments have no one conducting any case
analysis despite it being seen as beneficial also from the IAU viewpoint; that is,
to have someone providing support to the investigation from beginning to end.

The analysts’ job descriptions and tasks are undefined and un-unified in the
Finnish police and, as previously stated, a wide variety of tasks and differences
exists between the IAUs’ analysts when conducting these tasks. For example,
some departments occasionally deploy analysts with a police background to
conduct traditional police tasks (FI03-FI04). When observing the survey
respondents, the researcher noted that they were slightly positive to the
statement, ‘I know what I can expect from an analyst in our organisation’ with
the average score of 2.84. This wide variety of tasks performed by the analysts
also corresponds to the answers to the statement, ‘The analysts are essential to
our organisation’. In Finland the average answer to this statement was 1.97.
Despite these positive figures, several interviewees (FI03-FI04) and survey respondents stated that currently the ‘real’ intelligence analysis work at the Finnish police is conducted by only a few persons and a few functions.

This claim was actually corroborated by statements (FI02-FI03, FI10) that no requirements exist for educational background and experience for the staff working in the analytical field. Analyst recruitment standards certainly vary, as the desired experience, education and personality of an analyst were seen to be dependent on the task. Nevertheless, most of the operational analysts in Finland have traditionally been police officers who have operational backgrounds, such as investigations, which has then been supplemented with specialised analysis training and learning on the job. Some interviewees (FI01-FI02, FI05-FI06, FI12) suggested some ideal analyst characteristics. An ideal operational analyst would need to have motivation and a passion for evaluating, searching and clarifying things. This person should also have wide experience in investigations with an investigator’s intuition and imagination and not be routinised. The person would also need to understand how to manage information, conduct analysis and draw conclusions by using standard methods.

Several interviewees (FI02, FI05, FI13) stated that there have been discussions in Finland to have civilian background analysts in order to combine their skills with analysts who have a police officer background (Evans & Kebbell, 2012). Currently, only a few analysts with a civilian background are working at the police. Although one interviewee (FI04) reasoned that a police background can limit analytical thinking, this interviewee also estimated with other interviewees (FI02, FI13) that the advantage of having a police officer background is the understanding it provides of the police culture. Furthermore, the analysts’ police experience gives them the justification to speak with the voice of a police officer. Nevertheless, a civilian analyst was seen by one interviewee (FI04) to bring in different and more strategic views, knowledge and experience from academia, overcoming a police officer’s biases. Another interviewee (FI01) also stated that analytical expertise cannot be gained through the police profession, and it is a challenge to find a person who has both a statistical analysis and a police background. Nonetheless, one of the interviewees stated,
It could be cheaper to train an experienced police officer [...] instead of hiring outside from the university [...]. The reason being that the university people would need to undergo police education, at least in short version, in order for them to learn the police working culture (FI05, Manager).

There were also views that the analyst tasks and role should determine the expected experience and educational background.

Maybe an operational analyst should have better understanding on police tasks, but in strategic analysis this might not be needed (FI13, Manager).

Indeed, other interviewees in Finland (FI02, FI05) had a similar view that the strategic analyst would not require a police or investigator background. These interviewees stated that a strategic analyst would especially need to have an ability to understand the influencing factors in society and criminality in order to interpret the situation, and this person would need to have advanced knowledge, ability and skills to analyse information, formulate conclusions and produce logical recommendations. Some units in Finland also considered it important that the analyst would have university-level studies in statistics in order to draw conclusions out of numbers. Nevertheless, the strategic analyses were seen to be in poor condition in Finland, as there are hardly any qualified strategic analysts in the police departments. There is often someone in the IAU who produces statistics for the police chief, which is called strategic analysis, although it was not considered strategic analysis by these interviewees (FI03, FI05, FI11). Another element in this debate also relates to the acceptance by the organisational hierarchy of analytical findings produced at the constable level. Indeed, some interviewees (FI05, FI06, FI10) indicated that management have difficulties accepting analytical findings written at the lower organisational levels. Thus, it would be pertinent to have a more senior analyst role who would understand the leaderships’ needs and be able to convey the findings at the equivalent hierarchical level.

Nevertheless, the overall challenge in this debate is that hardly any standards exist in the analysis discipline; thus, the reality is that often the analysts only receive a little advice for performing some sort of analysis, and the rest they need to learn by themselves. Certainly no clear analyst profession exists in the
Finnish police, or the professionalism is in a very early stage. There have been some discussions about having a defined analyst career path, but this has not advanced any further. Currently, the only possibility for analysts to advance in their careers is to move from the local to the national police. Yet the average answer to the statement, ‘I think the analysts have good career opportunities in our organisation’, was slightly in agreement with the score of 2.76. Interestingly, 57.14% of the analysts agreed with this statement but only 23.17% of the investigators agreed with it. These figures indicate that an analyst’s career prospects are not that clear to the staff at the Finnish police.

The Danish IAUs also employ most of the analysts, who work on building a bigger picture of different areas by using the collected data. Similar to Finland, Danish analysts have a wide variety of tasks. They produce a tactical analysis that is used to open up an investigation. Then they receive requests to provide statistics for the senior management, as well as to respond to different questionnaires and enquiries by other institutions on specific areas. Analysts also support ongoing investigations through different actions, analytical methods and products, such as analysing itemised billings, providing geographical information and monitoring open sources. A Danish interviewee (DK03) stated that the aim in Denmark is for analysis to be really close to the investigation so the analysts can provide something useful for the investigator. Thus, analysis is seen to be firmly placed in the investigative process. The dilemma in this, as these interviewees (DK01, DK03, DK08) stated, is that analysts are easily misused for tasks other than analysis. Indeed, other interviewees (DK01, DK08, DK11) stated that the analysts with a police background are also occasionally deployed to conduct traditional police tasks, though others (DK07, DK10) stated that the analysts can be more efficient in working with information and providing charts to the investigations. The average answers to the survey statement, ‘I know what I can expect from an analyst in our organisation’, were positive in Denmark with 2.72, thus, overall slightly agreeing. Furthermore, this wide variety of tasks performed by the analysts also corresponds to the answers to the statement, ‘The analysts are essential to our organisation’. The average answer to this statement was 1.86. Analysts are clearly needed.
Similarly, there is no clear analyst profession in the police in Denmark, or the professionalism is in its early stage. There have been some discussions to have a defined career path for the analysts, but so far this has not succeeded (Stanier, 2013, p.132). There is the possible career step for an analyst to move from the local to the national police. Despite the slightly positive score of 2.7 by the survey respondents to the statement, ‘I think the analysts have a good career opportunities in our organisation’, only 36.84% of the analysts and 25% of the investigators agreed. Furthermore, there are no clear requirements for educational background and experience for the staff working in the analytical field. The desired experience, education and personality of an analyst were seen to be task dependent. Nevertheless, one interviewee (DK09) identified some important characteristics, stating that an analyst should have an open mind, eagerness to go further and to think differently, a willingness to develop information, and analytical perception. The rest can be learned. Another interviewee (DK05) also saw that personality traits are important, and not all academics are good at taking note of the special context in which they operate in the police. Furthermore, networking and social skills were seen as important by another interviewee because,

*If [the analyst] don’t know anything about people, [s/he is] going to fail because there is so much trust between, there are so many social relations in getting information out of the head of people* (DK02, Analyst)

Communication skills are also needed to communicate with the investigators in a practical way without using difficult academic language. Thus, analysts need also to be humble towards the investigators when delivering intelligence.

Similar to Finland, most Danish operational analysts have traditionally been police officers with an operational background, such as investigations. This has then been supplemented with specialised analysis training and learning on the job. One Danish interviewee (DK01) stated that the educational level of police officers in Denmark is higher nowadays, and many young police officers have an academic degree. Having both police and academic education were seen as a very good combination, as these bring in different skills and perspectives. Such police officers have the potential to be hired as analysts quite early in their careers. Nevertheless, several interviewees (DK01,DK06) stated that recruiting
operational analysts in the Danish police has been a challenge, as the police culture demotes an operational analyst’s work.

As a result, the Danish police recently started to hire outsiders, civilians with no police background, as analysts. The aim is to find the right profile for the unit’s actual needs, such as having open source expertise. Another interviewee (DK03) also stated that it was important for analysts to be able to move between investigation and analysis. The challenge there is that the analysts recruited from outside lack knowledge of the police organisation. The outsiders’ advantage is that they can bring in new perspectives and ideas and can help identify these knowledge gaps in the organisation. Using a civilian background is not new in Denmark. Indeed, most of the strategic analysts have an academic background, which is also an expectation for this post. But the actual academic discipline varies: It can be political science, sociology, anthropology, etc. Most strategic analysts are, in fact, hired outside from academia, so the analysts have different backgrounds.

5.3 The professionalism of management

Many Finnish interviewees (FI01, FI04-FI06, FI12-FI13) stated that the management have an important role in intelligence analysis success. Indeed, the management should guide, respect, trust and support the intelligence unit’s work.

*The role of the direct line management is to keep the intelligence function ongoing and act as the mediator between the senior management and the analysts. [Also] to make sure that the analysts stay within certain framework (FI06, Analyst).*

Furthermore, these interviewees (FI02, FI08, FI12-FI13) stated that the management should ensure that the policies and standards for information management processes, such as collection and storage of data, are used to the fullest. The management must also ensure that the staff feel motivated, satisfied, supported and trusted. Moreover, due to the scarce resources, the management also must be able to prioritise work. However, the average answers to the statement, ‘*Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning*’, showed that the respondents slightly disagreed with this
statement. The average answer to this statement in Finland was 3.22. Only 28.57% of the analysts agreed with this. This figure was even smaller with the investigators, as only 17.07% of them agreed with this, and only 47.37% of the Finnish management agreed with this statement.

Indeed, one interviewee (FI05) identified that only three local IAUs have a full-time manager devoted solely to the unit, despite experience that shows these are the best-functioning IAUs. Another interviewee (FI06) stated that this confirms the importance of a dedicated manager who should act as an enabler and a mediator between the senior management and the analysts. A dedicated manager who understands about leadership is in a much better position to convince senior management and the rest of the organisation of the necessity of analysis. This is vital, as the lack of understanding, appreciation and support of intelligence analysis and the analysts was identified as visible at every level of the police organisation. The challenge these interviewees (FI02-FI05, FI09-FI10) identified is that the police managers’ involvement in and understanding of intelligence and analysis varies greatly. Indeed, when the management have an inadequate understanding of the intelligence analysis concept as a decision-making tool, they often do not considered it as something useful (Stanier, 2013, p.132). Then, they prefer to keep working as they have always done when they do not know what to ask or how to task the analysts. Still, there is strong support from the management to have analysts in the organisation, as indicated by their responses to the statement, ‘The analysts are essential to our organisation’. Among the management, 68.42% agreed with this statement. The management similarly claimed to know what to expect from the analyst, as 68.42% agreed with the statement, ‘I know what I can expect from an analyst in our organisation’. Although these are quite strong figures, some interviewees (FI02-FI03, FI06, FI10, FI13) stated that the management’s involvement in and understanding of intelligence and analysis varies greatly.

Furthermore, these interviewees (FI04-FI06, FI09) felt that the management of the Finnish police do not properly direct analysis. This can also be seen from the reactions of the management to the survey statement, ‘I think the analysts have a good career opportunities in our organisation’. Only 47.37% of the management agreed with this. Similarly, only 47.37% of the management
agreed with the statement, ‘The division of tasks between investigators and analysts are clear in our organisation’. Nevertheless, improvements are foreseen in Finland, as many managers have now received awareness of ILP and are eager to try to utilise intelligence in practice.

The Danish interviewees (DK01-DK02,DK04,DK06) also identified management’s key role in the success of intelligence and analysis. A significant number of interviewees certainly identified that management’s role is extremely important in guiding, respecting, trusting and supporting the intelligence unit’s work. They also provide resources to the intelligence analysis function. The management must be able to communicate clearly and clarify any rumours. Furthermore, legal compliance monitoring is an important task for management to ensure the analysts stay within the legal framework. They also act as a link between the analytical assignments, strategic context and stakeholders’ expectations. For example, managers should also encourage other managers to use the intelligence services, monitor several issues and communicate the work to the senior management (von Krogh et al., 2012, pp.270-271). The core or essence of the matter is that the management should certainly be able to make decisions based on intelligence and analysis.

Yet when looking at the average answers to the statement, ‘Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning’, the respondents slightly disagreed with the average score of 3.05. A closer look at these responses shows that only 23.68% of the analysts, 37.5% of the investigators and 36.84% of the management agreed with this. Furthermore, as indicated by the responses to the statement, ‘The division of tasks between investigators and analysts are clear in our organisation’, the task division between analysts and investigators is not clear to the management, as only 26.32% of the management agreed with this statement. Over half of the management similarly do not know what to expect from the analysts, as 47.37% of the management agreed with the survey statement, ‘I know what I can expect from an analyst in our organisation’.
These figures also correspond with these interviewees’ statements (DK01-DK04, DK09) that there is a lack of understanding, appreciation and support for intelligence analysis and analysts in the organisation. Furthermore, there are often high expectations and false perceptions, especially among the senior management, towards the actual level of implementation of intelligence and analysis within the organisation. One interviewee (DK04) stated that only one third of the Danish police department heads are actually engaged in this type of policing approach. This was supported by another interviewee’s statement (DK05) that only around five of the 12 police departments use the IAUs as originally intended. The rest of the departments are conservative and back old-fashioned police work. Indeed, being in charge of an intelligence and analysis unit is not a desired position among management; instead, they want to be in charge of an investigative team. The preceding figures also correspond with these interviewees’ statements (DK01-DK02, DK04, DK06, DK08-DK09) that there is great variation in the police managers’ involvement in and understanding of intelligence and analysis. This also depends on the unit where they work, as the operational units tend not to understand the intelligence concept. The management at the local level have even less understanding. Similar to Finland, these Danish interviewees (DK01-DK03, DK09) specified that the management in Denmark have an insufficient understanding of the intelligence analysis concept as a decision-making tool.

There is still quite strong support from the management, despite these challenges, to have analysts in the organisation, as indicated by the responses to the statement, ‘The analysts are essential to our organisation’: 94.74% of the Danish management agreed with this statement. Furthermore, 52.63% of the Danish management agreed with the statement, ‘I think the analysts have a good career opportunities in our organisation’. Indeed, these interviewees (DK04-DK05, DK07-DK08) stated that the situation has slowly improved among the management, who have become more accepting towards analysis. The new generation of managers, especially, have a better understanding of what analysts can contribute. Older managers are more conservative and have difficulties understanding the benefits of analysis. The management must be motivated and educated about intelligence and analysis to support it.
5.4 The professionalism of the police officers

The majority of Finnish interviewees (FI01, FI04, FI06-Fl08, FI11-FI12) identified that police officers, both investigators and patrolling officers, are the providers of the information for analysis. This collection is either done under certain themes or the police officers are asked on an ad-hoc basis to observe and collect information. Additionally, intelligence is collected through the patrolling officers’ assignments, for example, to domestic crime situations and public behaviour disturbances. Information is also increasingly collected via the Internet or through police liaison officers who can collect information on different crime areas and events. On average the responses to the survey statement, ‘In the context of intelligence analysis process our patrolling officers and informant handlers can be seen as the collectors of information’, slightly agreed with the score of 2.85. The analysts were most positive about this statement with 57.14% agreeing. Only 36.84% of the investigators and 36.84% of the management agreed with this.

These interviewees (FI01, FI04, FI06, FI09, FI12) stated that the patrolling officers and investigators have an important role in ensuring that the quality, accuracy, relevancy of the information and data are as high as possible. However, this was considered a challenge, as there is not enough understanding of the importance of the quality of the classifications among the police officers. The quality of the information they process into the systems varies, thus creating challenges for the analysts. Nevertheless the responses to the survey statement, ‘The information processing standards (i.e. how to store data into our systems) and rules (such as data protection) are clear to me’, correspond with the interviewee statements. Only 43.90% of the Finnish investigators agreed with this. At the same time, 52.44% of the investigators disagreed with the statement, ‘It is easy to use our organisation’s information systems’. These interviewees (FI08-FI09, FI11-FI12) stated that ordinary police officers have insufficient understanding of the intelligence and analysis discipline and why information must be collected. Indeed, the responses to the survey statement, ‘The aims, objectives and function of analysis in law enforcement is clear’, corroborated this, as 59.76% of the Finnish investigators disagreed with this. Thus, the police officers’ awareness must be improved in order for them to
understand the importance of information gathering for analysis. Another interviewee (FI13) also indicated that nowadays the investigators should know the basics of intelligence and analysis to be more efficient. Some of the investigators are already conducting basic analysis and using the systems accordingly. Indeed, in some departments the investigators are educated in basic analysis and information management. Nevertheless, several Finnish interviewees (FI05, FI08, FI12) indicated a wish for the investigative teams to have more dedicated analysts to save investigative resources.

The role of the patrolling officers in relation to the intelligence process seemed to be more established in Denmark. One patrolling officer stated it clearly, ‘Patrolling officers are supposed to gather information and bring it further into the systems’ (DK11, Patrolling officer). Indeed, other interviewees (DK04, DK06, DK10) also identified that police officers, both investigators and patrolling officers, are the ones who should provide the information to the analysts. Similar to Finland, this information collection in Denmark can be based on the police officers’ own observations and initiative when performing their own routine tasks. This collection can also be conducted under certain themes, or the police officers can be asked by the analysts to collect information on specific targets. The Danish survey respondents were also more positive than the Finnish respondents about the survey statement, ‘In the context of intelligence analysis process our patrolling officers and informant handlers can be seen as the collectors of information’. The average answer of the Danish respondents was 1.72, and 94.74% of the Danish analyst agreed with this statement. Moreover, 75% of the Danish investigators and 84.21% of the Danish management agreed with this.

The patrolling officers and investigators in Denmark are seen to have an important role in ensuring that the quality, accuracy, relevancy of the stored data are as high as possible. This is also challenging, as there is lack of understanding of the importance of the data quality among police officers. The quality varies in relation to the information police officers process into the systems, creating challenges for the analytical work. Lack of routine was identified as the reason: ‘there is a willingness to do this however this needs constant reminding’ (DK08, Analyst). The survey questionnaire responses to the
statement, ‘The information processing standards (i.e. how to store data into our systems) and rules (such as data protection) are clear to me’, showed that 87.5% of the investigators agreed with this statement, indicating that processing standards are mostly clear. However, 50% of the Danish investigators disagreed with the statement, ‘It is easy to use our organisation’s information systems’. Thus, the processing standards are not an issue, but the systems should be easier to use.

These Danish interviewees (DK01, DK02, DK05, DK10-DK11) indicated that the ordinary police officer has insufficient understanding of the intelligence and analysis discipline and why information must be collected. These Danish interviewees (DK08, DK10) also identified that a lack of understanding among police officers is why valid information is necessary. As a result, police officers tend to act on information and intelligence that is not assessed, verified and validated. The responses to the survey confirm these views. Of the Danish investigators, 62.5% disagreed with the statement, ‘The aims, objectives and function of analysis in law enforcement is clear’. Several interviewees (DK06, DK09-DK11) indicated the need for awareness raising on analysis among the police officers. However, it was further stated that the existing working routines of the police officers are difficult to change, even when this awareness is provided. The willingness to use intelligence is also missing among police officers. Nonetheless, the understanding of intelligence concepts is slowly improving, and the younger generation, especially, is more open to using the intelligence concept. One explanation given for this was that the level of education of police officers is higher nowadays, so their mind-set is readier for this.

5.5 Training on intelligence and analysis

According to one interviewee (FI05), the capacity building in Finland on intelligence and analysis was somewhat random and mostly absent up until 2016. Since then an introduction to crime intelligence has been included as part of the basic police education for all ranks. A general introduction to the ILP and intelligence functions and some definitions are included at the basic bachelor’s level of police education. A similar training package is also delivered in the petty
officers’ training for future team leaders to know how to utilise intelligence. There is also an optional course at the master’s level. Still, no standardised training model exists for intelligence analysts in Finland, though there is a demand to develop more systematic intelligence and analysis education.

In order to improve criminal intelligence we should firstly pay attention to training. We don’t have standardised model on intelligence training. We might must have a specific educational path to analysts (FI04, Analyst).

The responses to the survey statement, ‘I have had plenty of training opportunities on the intelligence analysis process, the analytical methods and software’s used in our organisation’, support these claims. The average answer to this statement was 3.67. Only 42.86% of the Finnish analysts agreed with this statement. The situation is even more challenging among the other professional roles, as only 9.76% of the investigators and 10.53% of the management agreed with this statement. Thus, it is quite clear that there is a lack of training opportunities on intelligence and analysis in Finland (Stanier, 2013, p.137).

These interviewees (FI02-FI04,FI10,FI12-FI13) explained that there have been some training opportunities for analysts in the past. Still, the training opportunities have been inadequate for several years, even for the analysts; therefore, some of the analysts have not received any training on analysis. Most of the analysts, in fact, are self-taught. These interviewees (FI02-FI05,FI09-FI10,FI12-FI13) also stated that the analysis training is inconsistent and lacks standardisation and harmonisation. There is a similar absence of management training on intelligence and analysis, which is an issue, as the management need this type of training in order to understand it and improve its usage in the decision-making process. Moreover, the management need training on the ILP principles in order to proceed with the intelligence-led approach.

Some attempts have been made to include intelligence- and analysis-related concepts into the training for the new analysis system. The notion is that the police officers would receive training modules on analysis along with the software training by including these concepts in the training. However, this is a challenge, as even the general training on IT systems and analysis tool is viewed as inadequate. Everyone receives basic training on the police systems,
despite that, yet the advanced features of the systems are not properly used without further training. Furthermore,

*The IT systems are forgotten within the district and there is no one who is responsible in these as in some other areas such as use of force. It gives the impression that within the police there is no needed to provide this type of IT training (FI07, Patrolling officer).*

*Mostly it is like we provide an IT tool for the staff and inform that there are instructions within the system on how to use it without providing any training (FI09, Manager).*

The result is that the users try to learn these themselves with the help of some tips from their colleagues. Indeed, these interviewee findings correspond with the responses to the survey questionnaire statement, ‘*I have had plenty of training opportunities on information management (i.e. how to collect, store and share information through the systems) in our organisation*’. The average answer in Finland was 3.14, and 52.38% of the analysts, 26.83% of the investigators and 36.84% of the management agreed with this statement.

Similarly, the responses to this same survey questionnaire statement were more negative in Denmark with the average answer of 3.21. Indeed, only 34.21% of the Danish analysts, 25% of the investigators and 15.79% of the management agreed on adequate information management training opportunities. Instead, these interviewees (DK05-DK06) stated that training on IT systems and analysis tools has been mostly inadequate, and the users have had to try to learn the systems by themselves with the help of some tips from their colleagues. The situation is similar in relation to the training on intelligence and analysis. The answers to the survey statement, ‘*I have had plenty of training opportunities on the intelligence analysis process, the analytical methods and software’s used in our organisation*’, indicate quite clearly the lack of training opportunities on intelligence and analysis. The average answer to this statement was 3.36 with only 28.95% of the analysts, 12.5% of the investigators and 10.53% of the management agreeing with this statement. These interviewees (DK01,DK05-DK06,DK09) identified some training opportunities for the analysts in the past that were either provided by the police organisation itself or by a third party, such as an international law enforcement organisation or a private company. As a result, the analyst trainings are not
adequately aligned, harmonised and standardised (Quarmby & Young, 2010, p.38). The different courses and training providers also make it a bit obscure. Nevertheless, the most pressing issue is that training opportunities for the analysts have been inadequate for several years; therefore, some of the analysts have not received any training on analysis.

In relation to management, these interviewees (DK01, DK03) expressed the importance and the need for the management to have training on intelligence and analysis in order to understand it and use it in the decision-making process. Such training is not provided, despite its importance. Currently, it is mostly a self-learning process. Just as there is no proper career path for the analysts, there is also no proper possibility for a manager to have worked as an analyst. Nevertheless, the Danish Police have been investing quite significantly lately in management awareness. In 2017 they were ‘running crash courses (DK03)’ on ILP for all the managers in the analysis units. There is also an initiative to train the managers ‘so that they would know what an analyst can actually do [and] what a difference they can make in an investigation (DK03)’. Moreover, there has been an improved focus on capacity building for analysis since 2016 after the Danish Police decided to be more intelligence-led. The Danish Police College has been working on a proper model for analyst education. Additionally, there have been several seminars, conferences and workshops on intelligence and analysis organised for the Danish police officers and analysts. The adoption of a new analysis system has also meant that all the police officers are receiving training modules on analysis along with the software training.

5.6 Organisational working culture

The majority of these interviewees (FI02, FI04-FI10, FI11, FI13) considered that the Finnish police organisation is very conservative, static and functioning with the underlying notion that the police organisation should continue to work the way it has always done (Waddington, 1999, p.297).

Routines are very strong at police […]. And when you try to talk about Intelligence-Led approach there is immediate resistance towards this concept (FI04, Analyst).

The older generation of management were also considered more conservative and reluctant to accept and understand the benefits of analysis.
There is an older generation, the old school guys, who want to work the way they have always done. Thinking that they never needed analysis in the past (FI03, Analyst).

The police organisation was also considered quite hierarchical (Coleman, 2008, p.311) by several of the interviewees (FI01,FI04-FI05,FI09-FI10), which was also confirmed by the the survey respondents' disagreement with the statement, ‘I consider my organisation to be non-hierarchical, dynamic and future oriented’. The average score was 3.67. One interviewee (FI03) further stated that the organisational dynamics between the local police and the national police are incompatible. Local police departments are also often very hierarchical, conservative, static and strict in their structure, as this statement further indicated,

Some of the senior management considers police to be an ‘obedience organisation’ – you don’t question, you just act accordingly (FI06, Analyst).

The national police are seen as much more open, flexible, agile, non-hierarchical, non-authoritarian and adaptable to change. These interviewees (FI02-FI03,FI05,FI10,FI13) also indicated that the new generation of managers is bringing in new ways of working. But also:

There is a constant resource cuts therefore the organisation cannot cope anymore with static leadership style, thus there is a pressure to be more dynamic and flexible in the future (FI05, Manager).

Therefore, the culture has been changing to encourage new ideas and new ways of working (O’Neill & McCarthy, 2014). The survey respondents also confirmed this, as the average answer in Finland to the statement, ‘I can easily present new ideas and experiment new solutions to identified problems in our organisation’, was 2.65. Nevertheless, as these interviewees (FI03-FI04,FI07-FI10) indicated, having new ideas accepted in the organisation is not easy. They must be supported by the right people to move the idea forward, as management support is especially essential. The ideas also must be justified and presented well. Nevertheless, implementing new ideas also depends on the department and the unit due to the different working cultures both between and within the police departments. These interviewees (FI04,FI11,FI13) also stated
that it is easier to present new ideas and make changes at the higher levels of the police organisation.

Coupled with the acceptance of new ideas is the tolerance for mistakes. Regarding this, these interviewees (FI01, FI06-FI08, FI13) identified that the organisational atmosphere is relatively open to small mistakes, which can be tolerated and are seen as part of a learning process. As long as the legal requirements are respected, this is even desirable so that the fear of making mistakes would not paralyse the organisation (Paoline et al., 2000, p.578). Nevertheless, the tolerance for mistakes still depends on the line manager. The tolerance for mistakes is still not an easy topic in the Finnish police, despite those interviewee statements. This is evident when noting the survey responses to the statement, ‘Our organisation tolerate honest mistakes and see them as improvement opportunities’. The average answer was 3.2. Around 35% of the respondents had a neutral opinion and around 35% of them disagreed with it; the rest were positive.

Communication is another controversial issue in the Finnish police. The survey responses to the statement, ‘Communication on different issues - even conflicting and difficult ones - is easy in my organisation’, were slightly negative with the average score of 3.27. However, there was a clear difference between the professional roles. The analysts were the most positive about this statement, with the average of 2.86. The investigators were the most negative with the average of 3.4. This topic’s difficulty is also illustrated by the average number of neutral answers at 37%. These interviewees’ (FI04, FI06, FI11) statements around communication indicated that basic communication works quite well. There is no problem communicating between the different hierarchical levels in theory, but in practice there is a certain threshold between the hierarchies, depending on the management. The communication between the senior management and the police officers especially does not function properly (Westmarland & Rowe, 2016, p.12). The challenge is that different information needs exist at different organisational levels. Senior management prefers more strategic communication, whilst the investigators or patrolling officers prefer operational communication. These interviewees (FI05, FI11, FI12) also identified that there are communication and cooperation gaps between
different units and departments. Nevertheless, the interviewees also stated that communication between colleagues they know is easy, which is also applicable towards the management.

Furthermore, another interviewee (FI02) stated that communication relates to trust, which is generally at a good level at the police. The survey respondents confirmed this who provided the average answer of 2.04 to the statement, ‘I have full trust to my colleagues in our organisation’. Nevertheless, personal relationships play a significant role in trust; thus, the analysts have tried to reach out to the other parts of the organisation. Trust builds up slowly by working together, as was further stated. Trust is especially essential in the area of serious crime, as source handlers and serious crime investigators generally have difficulty trusting people, so some police officers have a tendency to keep information and not share it openly.

Nevertheless, information sharing also relates not only to the personality and willingness of the investigators but also to their understanding of the value of actively sharing this information. One interviewee (FI02) stated that the culturally inherited model in Finland has meant that their information and sources have been viewed as the personal property of the individual police officers. This has traditionally allowed them to accomplish a certain status they want then to uphold. Organisational competition also plays a role, but the group cohesion around an investigation also rejects the outside world and any outsiders. Nevertheless, this type of ‘knowledge is power’ culture is slowly becoming extinct with management’s intervention. As previously indicated, the situation seems to be improving through the establishment of the IAUs and the PCB Intelligence Centre, which enable everyone to work more closely together, even at the national level. The merging of the police departments has also increased cooperation, and management has also simultaneously made sure to promote a new type of cooperative thinking within the departments to build trust.

Some interviewees (DK04, DK06, DK11) similarly considered the Danish police organisation to be very conservative and static; that is, it was functioning with the underlying notion that the police should continue to work the way they have always done. The survey respondents also confirmed this with the average
score of 3.48 for the statement, ‘I consider my organisation to be non-hierarchical, dynamic and future oriented’. These interviewees (DK04-DK06, DK10-DK11) explained that the Danish organisational working culture among the police officers encourages upholding routines and resisting change (Kelling & Moore, 1989). For example, Danish human source handlers, who mainly work in the area of drugs and organised crime, have difficulty collecting other crime area-related information. The lack of new routines also hinders the police officers from storing and sharing information with the analysis unit. This type of conservatism was also associated with the older generation of police management who are often reluctant to understand the benefits of analysis. These interviewees (DK04, DK07) see the young generation being more accepting of the intelligence-led policing approach. New ways of working can also be adopted through the new generation of managers.

The police organisation was also seen as quite hierarchical, which was considered problematic in implementing intelligence-based policing strategies. Nevertheless, differences were reported on the organisational dynamics between the local police departments and the national police. The local police were seen to be very hierarchical, conservative, static and strict in their structure, whereas the national police are seen as more open, flexible, agile, non-hierarchical, non-authoritarian and adaptable to change. Implementing new ideas depends also on the department and/or the unit, but this is generally not easy, and the right people’s support is needed, especially from the management. An idea also must be well justified and presented. Nevertheless, the survey respondents were quite positive about presenting new ideas, as the average answer to the statement, ‘I can easily present new ideas and experiment new solutions to identified problems in our organisation’, was 2.59. However, the survey respondents were not as positive about tolerance of mistakes. The average answer to the statement, ‘Our organisation tolerate honest mistakes and see them as improvement opportunities’, was 3.09. Several interviewees (DK03, DK05-DK07, DK11) identified having a working atmosphere where small mistakes can be tolerated and seen as a learning process, despite this slightly negative figure.
Furthermore, these interviewees (DK05, DK08, DK11) identified that official communication is conducted through the hierarchy. There is generally no problem in communicating between different hierarchical levels; however, management often does not share the relevant information further with their staff or their own line management. Therefore, intelligence shared in different meetings does not always reach the right stakeholders. Communication and cooperation gaps were also identified not only between the different local police departments but also between the national police and the local police departments. Indeed, it was stated that the local police departments are largely ignoring the national level, because too much information is coming from the national level. The local departments also slightly mistrust the national police. Therefore, there is generally a lack of feedback in the organisation. The survey respondents to the statement, ‘Communication on different issues - even conflicting and difficult ones - is easy in my organisation’, also confirmed the communication challenge. The average answer to this statement was slightly negative with the score of 3.15. This topic’s difficulty is also illustrated with an average number of 28% neutral answers.

Nevertheless, there is general trust within the organisation, as illustrated by the average answer of 2.16 to the statement, ‘I have full trust to my colleagues in our organisation’. The investigators were the most positive professional group with the score of 1.88, according to the survey results, and the least positive were the analysts with the score of 2.41. These figures correspond with the majority of the interviewees’ views (DK01, DK03-DK04, DK06, DK08-DK10), who stated that trust exists in the organisation. They also correspond to these interviewees’ (DK02-DK03, DK07, DK11) views that a high level of trust exists between police officers. However, these interviewees (DK02-DK03, DK07) further indicated there is mistrust towards the ‘outsiders’, or the analysts with civilian and/or academic backgrounds (Westmarland & Rowe, 2016, p.2). Indeed, it was noted that hiring outsiders raises conflicts among the different professional backgrounds in the Danish police. Misunderstandings and biases often exist among the police officers towards other professionals with an academic background, but it is also the other way around. This clash of cultures and mindsets was indicated as a real barrier in intelligence work in Denmark, as
the new professional staff is seen to overtake some of the tasks of the police officers and as a threat to the police officers’ existence.

Having personal contacts to receive and share information among the organisational layers, silos and groups was seen as important among the interviewees (DK05-DK06, DK08, DK10-DK11), as the communication is difficult on a large scale and trust challenges exist among the different professional groups. One interviewee (DK04) stated that ‘the analyst would must be able to cut across the hierarchy [...] then it might work.’ This way the intelligence can be shared, and the all-important feedback can be provided.

Indeed, communicating among colleagues you know is easy. Thus, one interviewee (DK01) stated that sharing information with analysts is not a problem for the investigators but must be done through personal contacts. Therefore, the analysts must reach out to the police officers on a personal level to gather their information, as police officers tend only to trust other professionals to whom they can relate.

*We spent some time telling the police officers at the patrol level on how we saw it. And sometimes we got some quite good discussions with them […]. And then we can use their input to qualify our project (DK08, Analyst).*

Personal relations play a significant role in trust, and one interviewee (DK07) stated that when the analyst is respected, then the analysis results are taken seriously and respected. Therefore, another interviewee (DK02) indicated that the analyst must be part of the same pack and use the same language to gain trust. Thus, it is important to avoid too complicated academic language when communicating with the investigators, as this creates communication barriers. The theoretical language must be translated into operational police work. However, as stated, it takes time for the investigators to trust and appreciate the analysts. The cooperation between investigators and analysts depends on their mutual working experience and interaction. Common experiences and interactions build trust. It is, thus, common to use trusted contacts with whom the police officers only share information. These interviewees (DK02-DK03) stated that the source handlers, especially, have difficulty trusting people, with
the result that they have a tendency to keep information to themselves. Culture is an important aspect of information sharing, as,

There is also a misconception among management to think that by having a technical solution the organisation is intelligence-led and ignore the whole cultural part being intelligence-led. Because in the end the data must be stored into the system by a police officer, analyst or source handler. (DK02, Analyst).

Indeed, management have a pivotal role in information sharing. This interviewee (DK04) further stated that management are intervening in this type of ‘knowledge is power’ culture, which is slowly becoming extinct.

5.7 Summary of Findings II

The IAU’s set-ups are different among the different police departments in both countries. Indeed, differences exist not only in how they are managed but also in staff roles and responsibilities. Furthermore, the information management models differ among the police departments. The analysts also have a variety of different tasks in both countries that also vary among the police departments. There are no clear career paths for analysts. Standards related to their expected education or experience are also missing in both countries, although both countries have held discussions on the career path for analysts and what could be their expected background. Denmark is a bit more advanced in this, as they started hiring analysts with a civilian background to the analyst positions. The level of professionalism of management in the intelligence and analysis disciplines is low in both countries; thus, they are not engaged properly in the intelligence process. The professionalism of police officers was also low in this regard, although more clarity exists about their role in the intelligence process in Denmark. Still, both countries have a significant shortage in intelligence analysis-related training in all of these professional groups.

Regarding organisational culture, the police organisations in both countries were identified as being conservative, static, routinised and hierarchical, although differences exist between the national and local levels. Generation also has an impact on this: New ideas and tolerance for mistakes are controversial topics and depend on the person’s organisational position and line management. Communication is also controversial and impacted by hierarchy.
and trust. The Danish police officers, especially, show mistrust towards the analysts with no police background.
6 Findings III: Practical application of knowledge

This last findings chapter seeks an answer to the research question: How does intelligence analysis serve the law enforcement knowledge management apparatus in practice? The researcher pursued the answer to this question by using the Socialisation, Externalisation, Combination, Internalisation (SECI) knowledge conversion model and presenting the intelligence practices of these countries under the sections Socialisation, Externalisation, Combination and Internalisation. By doing so this chapter contributes to the overall aim of this research by exploring the practical role of intelligence analysis and its implications for law enforcement knowledge management in practice. It also contributes to the understanding of the practical implications law enforcement practice has for intelligence analysis.

6.1 Socialisation – fixing organisational pathologies

Several Finnish interviewees (FI04, FI06-FI07, FI10) identified that different professional groups (Skolnick, 2008), such as patrolling officers, hold a lot of information and knowledge, which fragments the information. Moreover, some interviewees (FI07, FI10) stated that pertinent information tends not to move easily among the professional groups, since the management is often the only link among them. Therefore, information and knowledge often stay within the respective team, unit or department. As a result, personal relations and social networks are very important factors in information and intelligence sharing: They enable it to be exchanged more flexibly and quickly.

Information is fragmented into so many places […]. So often the information sharing is based on personal relations of the staff to know the right persons (FI13, Manager).

In practice the old truism is true. Exchanging knowledge, information and intelligence is not between organisations, but between persons (FI08, Investigator).

Another interviewee (FI03) stated that it is about trusting and respecting the other person enough to share information and accept the intelligence they provide (Cotter, 2015, p.10). Therefore, people will not easily share information even with a person officially appointed and tasked to work with this information. The officers still must know this person before they share any information.
There will be no information sharing or at least a delay without this personal contact. Thus, a need exists to establish social networks in order to facilitate information exchange, especially as no systematic management attention is given to social relations and networking by the police organisation.

*The police organisation has been waking up to understand the importance of networking and socialisation too late, which has prevented to identify valuable contacts, experience and information (FI02, Manager).*

Actually establishing contacts and building networks is often a quite sporadic and individually driven exercise. Training courses, seminars and conferences were, thus, seen as important networking platforms. Yet,

*However as there are only one or two places [annually] available for each of the department, therefore the networking is not so extensive. So there is no systematic approach to this (FI10, Analyst).*

Additionally, these seminars are usually held only for a specific professional group; thus, networking beyond this professional group is limited. Nevertheless, the survey results show that willingness exists to share professional knowledge and experience. Indeed, the average answer to the statement, ‘*I make sure to share my professional knowledge and experience with my colleagues via social events, meetings, presentations and/or trainings*’, was very positive with the score of 2.15.

These interviewees (FI03,FI12) identified that the Intelligence and Analysis Units (IAUs) aim to develop social networks and establish a wide range of contacts to gather knowledge. The IAUs are naturally involved in different matters and in contact with a wide range of stakeholders, so they act as a sort of information funnel for the police departments. This also facilitates the departments’ ability to find the right contacts, which was difficult before the IAUs. Meetings are also a way to collaborate and exchange information among different teams and groups. Tasking of information collection on certain topics is also easier for the analysts through these meetings. Furthermore, all the IAUs participate in the daily national intelligence briefing led by the National Police Board (NBI). The aim of that meeting is to keep all departments updated on the national situation.
These interviewees (FI01, FI06, FI11) also identified that an enormous amount of tacit knowledge exists with people, and the practical work at the police is very much based on sharing this silent, tacit knowledge and experience.

*Police is a craftsman profession, you can have the basic knowledge at school, but ultimately you can only learn it through work (FI05, Manager).*

However, there seems to be no standardised model for sharing tacit knowledge, although,

*This type of knowledge makes it also difficult to have a systematic process to manage it and with more systematic process as we might lose something. Tacit knowledge must be transferred silently (FI01, Manager).*

Indeed, the model used to transfer tacit knowledge, identified by the interviewees (FI01, FI05), has mostly been used by detective partners or in patrolling teams, such as a more experienced detective and a novice working together. Tacit knowledge is also exchanged through different events, such as courses and seminars, as previously indicated; this knowledge conversion is also more self-initiated and done voluntarily.

Some Danish interviewees (DK01-DK02, DK09) identified the existence of different professional groups (Hendriks & van Hulst, 2016, p.173) dividing the Danish police.

*Danish police is really divided. […] Often people have no idea what other different professional part of the organisation […] is doing (DK02, Analyst).*

Indeed, when information and knowledge is held in these different social communities, it becomes fragmented. Furthermore, interviewee (DK10) stated that the pertinent information is often changed among the teams by their management, but then this is not further shared with their staff. Therefore, intelligence shared in the different meetings is often not reaching the right people. Another interviewee (DK05) identified that the information- and knowledge-sharing process among the police departments is similar, making it challenging to share large-scale information among police departments. Therefore, it is essential to know the right persons from another police department with whom to exchange information and intelligence. Personal
relations and social networks are very important in information and intelligence sharing within law enforcement; they enable it to be exchanged more flexibly and quickly.

A lot of the important information that could lead to valid intelligence is mostly something that is going on from individual to individual (DK02, Analyst).

It is ultimately about trusting and respecting the other person enough to exchange information. It is easier to reach the right people working on a specific area to resolve problems, share and receive intelligence or gain more contacts when you have personal contacts. One interviewee (DK10) stated that the network size affects the amount of available information; e.g., large networks have more information available. Furthermore,

It is part of how long you have been [working] there and who do you know (DK11, Patrolling officer)

Thus, the analysts must establish social networks and relationships throughout the organisation to gain the needed information. These networks also assist in reporting the analytical work through personal interactions, and the analysts can provide the all-important feedback to the police officers, as the formal process is often inadequate. Many interviewees (DK02, DK06, DK08) considered this a good model, as it also builds up relations, resulting in good discussions for further information sharing and enhancing the police officers’ understanding and motivation to collect and register information, as this interviewee indicated:

If we need information about something, then we ask the people. It is easy for us to go them and ask (DK11, Patrolling officer).

Nevertheless, this kind of feedback is quite time consuming and there is often no time for this, as police work is performed in a high-paced environment.

A generic understanding exists about creating a network of personal contacts to exchange information despite this obstacle, although establishing contacts and building networks is a quite sporadic and individually driven exercise developed slowly over time through working relations. The longer the working period, the larger the network and the fewer the role conflicts among different professional groups. Indeed, there is no systematic management attention given to social relations and networking. Nevertheless, one interviewee (DK03) claimed that
the Danish police are generally improving at socialisation and networking, as several seminars, conferences and training events are available about intelligence.

Indeed, training courses, seminars and conferences were seen an important networking platform; however, networking itself is not planned and is a rather underestimated side effect of these events. Nonetheless, the survey results indicate that a generally positive attitude exists for sharing professional knowledge and experience at different types of social events. The average answer to the statement, 'I make sure to share my professional knowledge and experience with my colleagues via social events, meetings, presentations and/or trainings', was very positive with the average score of 2.17. These interviewees (DK05,DK09) reported the lack of a standardised model to exchange this, although an enormous amount of tacit knowledge is available in the organisation. Denmark has no national morning briefing but established information exchange groups exist in a specific area with the aim of using these types of social networks more systematically and formally.

Furthermore, as these analysts without police experience stated (DK03,DK05), they could learn more from the police context if they were close to the investigators. The challenge is that traditionally the Danish police are not used to working on cross-collaborative teams in which different professionals with different skill sets are working on the same task. That would be beneficial for the organisation, nevertheless. More interaction between analysts and investigators is occurring nowadays, and the analysts are receiving tacit knowledge, which is often done through stories (van Hulst, 2013) as this interviewee indicated:

_There are a lot of those anecdotes from the senior officers who have been in the game for some time and they tell successful case stories and what worked in that particular case to be used for the current case (DK05, Analyst)._ 

These interviewees (DK02,DK03,DK05,DK10) further reported that the police officers’ and analysts’ personality traits and how social, open and communicative they are affect how information and knowledge is shared with someone. Furthermore, the analysts must be humble towards the investigators.
Indeed, one interviewee (DK02) indicated that an analyst’s social skills are very important. Thus, personality traits impact social network development. It can take some time and perseverance for an analyst to establish contacts and build relationships. Actively reaching out and working with the police officers in operational matters are good ways to do this. The analysts must prove themselves to the investigators and relate to them in a way they understand, using the same language.

6.2 Externalisation – the challenge of collecting and storing data

6.2.1 Tasking and requesting information collection

The survey responses in Finland to the statement, ‘Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning’, slightly disagreed with the average score of 3.22. The management responses to this statement were slightly more positive with the average of 2.95. Nevertheless, only 47.37% of the management agreed. Indeed, these interviewees (FI04,FI13) stated that there are no systematic national information collection plans and models. Thus, the police departments often have their own way to collect data, yet police officers still regularly receive requests to observe and collect information in relation to some themes, trends and phenomena. The information collected at the local level mostly relates either to a public event or to a criminal investigation. Some Finnish local police departments have even developed their own special information request template to identify information holders in the organisation. Incoming information, collected through the police officers’ routine tasks, dictates the IAUs’ work. Other sources, such as police informants, surveillance teams, liaison officers and other authorities, also provide information. The Internet is also increasingly used as an information source. Intelligence gaps still exist despite all these options.

The average responses in Denmark to the survey statement, ‘Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning’, were largely neutral with slight disagreement in the average score of 3.05. The management itself agreed more with the average answer of 2.84, although only 36.84% agreed
with this statement. Thus, the majority of the management is not involved in the tasking and planning process, according to these figures. Denmark is similar to Finland with no systematic national information collection plans and models, either. The police departments have their own way of establishing data collection, and few local police departments in Denmark have started to formulate data collection plans. This has not been without challenges:

_The analysts have tried for the past 6 to 8 months to make collection plans for the patrolling officers, human source handlers and the investigators without success. The analyst are not getting anything back (DK06, Analyst)._  

Danish police officers are regularly requested to observe and collect information in relation to some themes. This request can come via the hierarchy or via IAU emails. Furthermore, these interviewees (DK06,DK08) identified that in Denmark the analysts have specific annual objectives and targets that their data collection efforts must focus on. Danish analysts can also task the source handlers to collect certain types of information. It is generally challenging for the investigators to accept this, as they are not accustomed to being told what they should be focusing on. Indeed, as an investigator stated, ‘_police officers are wondering why an academic, straight out of school, is telling them how to do their job (DK07)_’.

Indeed, the analysts’ ability to task the source handlers is new, and the police officers have difficulty accepting this; thus, the actual ability to task was not fully implemented. There are also police officers who are in contact with the general public and who can provide good intelligence on certain topical themes and/or people who are threats to others. The use and collection of this open source information varies between police departments, as there are no common standards.

### 6.2.2 Collecting and storing

According to these Finnish interviewees (FI03-FI04,FI06-FI07,FI09,FI11-FI12), the IAUs should, in principle, electronically receive the information from the police officers into an observation database. However, this is often not considered a priority and, thus, is not done immediately. Therefore, these are often not done after the mandatory registrations of the crime, due to the general
rush related to the police officers’ lack of time and resources. The result is that the patrolling officers often do not store their observations systematically in the system. The average answer of 2.85 to the survey statement, ‘I systematically share and store any crime related information (such as tip-offs) in my possession into our organisations information systems for further use’, supports this claim. Only 45.12% of the investigators agreed with this statement, despite this slightly positive average score. There seems to be no major issue related to the legal aspects of storing data, as indicated by the average answer of 2.2 to the statement, ‘I am fully aware of the legal aspects of information sharing’. Indeed, 70.73% of the investigators agreed with this. Still, these interviewees (FI03-FI05) identified that information is kept in the pockets, emails and heads of the individual police officers. Finland’s practice to mitigate this issue is that the information can also be sent via email to the IAU. The rationale is that at least the IAU has the possibility to utilise this information, even though the information is not so well shared this way.

Moreover, a working culture also exists for sending information directly to the investigators:

_There is no systematic processing of data into the systems - when we know that the information is needed somewhere then we share this information with the different stakeholders (FI08, Investigator)_

This is not a very efficient way of working. Indeed, this interviewee (FI01) identified that the police officers have difficulty estimating the usefulness of the collected information (Bullock, 2013, p.136). The information fits well into the case in some instances, but the information is often indeterminate. The police officers were also considered to have too much power to decide what information is processed into the systems and how (FI09). Furthermore, the patrolling officers (FI12) were identified as lacking an understanding of the importance of the quality and availability of information. Other interviewees (FI09,FI12) identified that the issue was the database quality, in which the patrolling officers and investigators have a major role. However, an understanding of information quality, accuracy and relevancy is often missing among the police officers, and the classifications of the collected data are not sufficiently performed. Thus, as mentioned earlier, the quality and validity of the
data varies. The amount of information is quite massive, so the classifications should be done accurately in order to be able to conduct analysis. Poor quality information causes considerable challenges for the analysts, because they cannot trust the data’s quality (Bullock, 2013, p.137).

These Finnish interviewees (FI09-FI10) furthermore stated that the standards for information sharing and processing vary at both the organisational and individual levels. The processing is a challenge for police officers, as they must take so many different things into account, but unclear definitions also create challenges for storing information in the system. Additionally, the systems are not supportive in this sense, as there are only a few mandatory fields in the systems that must be filled in when processing data. Otherwise, this system works randomly. The information categories to choose from should also be clarified and made more understandable for the people recording the data in the systems. Additionally, there are insufficient quality checks performed on the processed information. Nevertheless, the average answer of 2.54 to the survey statement, ‘The information processing standards (i.e. how to store data into our systems) and rules (such as data protection) are clear to me’, gives quite a positive indication of the users’ knowledge of information processing standards.

As stated:

In relation to the IT systems I think they are fine – there are no big issues […]. The issue is more on the current legislation and how to use these different acts in collecting information and intelligence (FI11, Investigator).

Moreover, several factors were identified that have an impact on the sharing and storing of information and knowledge, factors related to the personality, understanding and willingness of the police officers to be active and share information. Police officers who lack knowledge of information management and intelligence will find their motivation hindered regarding collecting and storing information in the systems. Culture, routines, time and energy also influence how much an officer is willing to store data. Lack of control was identified as an issue, as ‘there are no consequences for not sharing information’ [thus] it is easier not to process anything’ (FI10). Strict interpretation of legislation and cumbersome information management policies were also seen to hinder the
storing of the information in Finland. These related to the recent public scandals within the Finnish police that have hindered police officers’ initiative for searching and sharing information, as they fear they are doing something illegal and, thus, mistrust the information systems.

This interviewee (FI05) also identified feedback as important. People will not store data in the systems in the future if it takes them a lot of time to store data in the systems without receiving anything in return. Thus, feedback increases the police officers’ motivation to store data and be more focused in their information collection activities. However, people experience difficulties in providing and receiving feedback. Consequently, when comparing these views of the interviewees with the investigators’ responses to the statement, ‘I know how information stored in our systems will be used by the organisation’, it can be noted that quite a number of investigators do not have a full understanding of this, as only 53.66% agreed with this statement.

All information in Denmark should be received electronically from the police officers, who should report the information by storing their observations in the database. However, after the mandatory and prioritised registrations of information, coupled with the general rush of the police officers, these are often not done (Sheptycki, 2004).

> [Information storage] depends on how long you have been working and if it is part of your routine and do you feel that you have the time and energy (DK11, Patrolling officer).

Furthermore, the average answers to the statement, ‘I systematically share and store any crime related information (such as tip-offs) in my possession into our organisations information systems for further use’, were positive in Denmark with the score of 2.02. In Denmark 75% of the investigators agreed with this statement. The legal aspects related to information sharing are also not a significant issue, as the average answer to the statement, ‘I am fully aware of the legal aspects of information sharing’, was 2.1, with 75% of the Danish investigators agreeing with this. The Danish interviewees still also identified that information is kept by the police officers for themselves without sharing. Thus, the staff working in the Danish IAUs also try to collect the information through personal contacts.
The IAUs, as identified earlier, have a central role in collecting, validating and processing new data in the systems and distributing it further to the different stakeholders. One Danish analyst (DK08) identified, in relation to this, that the validation process is a challenge for the analysts and that, therefore, the same person who originally obtained this information should actually do this. The whole validation concept also seems to be vague for the police officers.

Validation is still a challenge at the local level due to the lack of understanding of how important it is to validate intelligence to get multiple sources in regards you have to use it for specific purposes (DK04, Analyst).

Furthermore, these Danish interviewees (DK04, DK06) also identified a strong routine and working culture in which information is traditionally sent directly to the investigators, thus bypassing the IAUs and the whole validation process. However, the patrolling officers were seen to lack an understanding of the importance of quality and information availability but also had too much power to decide what information is processed in the systems and how. This has a negative impact on the quality and validity of the data, and it is difficult to conduct analysis when the classifications are not done properly.

I would like to improve awareness and importance of the intelligence gathering. [...] Every police officer in Denmark should have an understanding why valid information and why intelligence is necessary. And why quality is necessary (DK09, Analyst).

The police officers’ lack of knowledge of information management and intelligence hinders their motivation to collect and store information in the systems. The police officers’ culture, routines, time and energy influence how much they are willing to store data. The lack of management control and the importance of feedback were also similarly identified in Denmark. The police officers must see the benefits of storing the data immediately; otherwise, they will stop storing it. Many interviewees (DK02-DK03, DK06, DK10-DK11) stated that feedback increases the police officers’ motivation to collect and store data. Nevertheless, there are difficulties providing and receiving feedback in the Danish police. Certainly when comparing these interviewees’ views with the investigators’ responses to the statement, ‘I know how information stored in our systems will be used by the organisation’; it can be noted that quite a number of
investigators still do not have a full understanding, given that 62.5% agreed with this statement (Stanier, 2013, p.129).

These Danish interviewees (DK08-DK10) certainly identified that database quality is an issue. The challenge is that whilst the patrolling officers and investigators have a major role in relation to the quality, accuracy and relevancy of the data, they are often missing the necessary understanding. Thus, for example, the classifications of the collected data are often not sufficiently performed; therefore, the analysts cannot trust the data’s quality. Nevertheless, in accordance with the survey responses to the statement, ‘The information processing standards (i.e. how to store data into our systems) and rules (such as data protection) are clear to me’, there seems to be no issue with the standards, as the average answer was 2.42. Indeed, these interviewees (DK02,DK07,DK11) stated that the police officers are quite used to using the systems they need in their work. The younger generation is more able to use these.

6.3 Combination – producing intelligence

6.3.1 Intelligence tasking

As mentioned earlier, the average answers in Finland to the statement, ‘Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning’, were slightly negative. Only 28.57% of the Finnish analysts agreed with this. Many interviewees (FI01,FI03,FI05,FI08,FI10,FI13) also stated that tasking by the management is unstructured, unclear or non-existent. Many managers have no knowledge of or interest in analysis; thus, they are keen to maintain the old routines. Nevertheless, the situation looks a bit different when noting the answers by the possible users of intelligence, such as investigators and management, to the statement, ‘Police should not waste its resources on generating statistics, charts, reports and theories’. On average the answers in Finland were negative at 3.58; 57.32% of the investigators and 73.68% of the management disagreed with this. These figures correspond well with these interviewees (FI03-FI05,FI09), who indicated that a need exists to educate the management on tasking and asking for analytical products. There is also a clear
need to educate the investigators as well who, as some interviewees (FI10, FI12) stated, are accustomed to ask for different services from the IAUs on an ad-hoc basis and to dictate the daily work of these units.

The average answers in Denmark to the statement, ‘*Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning*,’ were also slightly negative, and only 23.68% of the Danish analysts agreed with this. The Danish management approach to tasking and planning is quite unstructured, overly defined or non-existent, similar to Finland. Their understanding and interest in analysis is low, so they are keen to maintain the old routines. These interviewees (DK02-DK03) stated that there are managers who request analytical support, but they are often the same ones. This interviewee (DK06) stated that, in terms of tasking, the analysts are still receiving too many requests to provide statistics, figures and numbers when no analysis is required. Nonetheless, analysis is mostly seen as important, as indicated by the negative average answer of 3.81 to the statement, ‘*Police should not waste its resources on generating statistics, charts, reports and theories*’. Particularly interesting is the finding that 75% of the investigators and 78.95% of the management disagreed with this. Overall, these survey figures related to tasking and reports correspond well with some interviewees’ claims (DK01-DK03, DK08) that the management must be educated to understand the intelligence process and what analytical products to request. The investigators must also refine their understanding and expectations of analysis, especially in those situations, identified by one interviewee (DK02), in which the analysts are only tasked to make charts for the investigators (Cope, 2004, p.194).

### 6.3.2 Using systems to find and combine-

Some interviewees (FI10, FI12-FI13) reported that analysis in Finland is mostly based on the information in the regular police systems, such as the crime records. Every police officer can then search and collect data from these different basic databases, although restrictions exist for some of the national systems.
As a team leader I go through daily the information on the available databases and the daily reports in order to build a situational picture [...] if it seems that we cannot manage to collect the needed information then we are in contact with the intelligence analysis unit (FI08, Investigator).

Some challenges occur when using the systems, as indicated by the average answer of 3.25 to the statement, ‘It is easy to use our organisation’s information systems’. The clear discrepancy between the analysts and investigators is shown in their average answers: 2.76 for the analysts and 3.39 for the investigators. The management’s score also showed a slight disagreement with the score of 3.21. Some interviewees (FI03, FI05, FI08-FI09) indicated that a vast amount of data is available in the different systems; however, it is difficult to manage, analyse and use it when it is scattered among many systems. This makes the cross checking of entities a challenge, and the inadequately classified information also makes it difficult to use when searching and querying the databases to perform an analysis.

The results gained through the statistical systems varies raising questions on the reliability of the information and how much it can be used when making decisions (FI01, Manager).

This also affects how much of the data can be used in decision making.

Nevertheless, the analysts are still conducting analyses, as indicated by their average answers of 2.14 to the statement, ‘I often use different analytical techniques to the data and information stored in our systems to create a new awareness on a given topic’. However, this interviewee (FI02) identified that the lack of defined standards for the analysis discipline creates variations in how this analysis is conducted. Interestingly, 21.95% of the investigators and 21.05% of the Finnish managers were also positive towards this statement, indicating a wider use of analytical techniques. Indeed, some interviewees’ statements (FI04, FI09-FI10) confirmed that some investigators are using analytical techniques in their investigations.

The analysts mostly perform analysis on crime series and support on-going investigations by providing different visualisations or by analysing itemised billings, according to several interviewees (FI05-FI07, FI12-FI13). The IAUs also spend a lot of time and resources to search and filter information for the national
morning briefing. One interviewee (FI11) who criticized the usability of the intelligence the IAUs provided also expected it to contain more relevant action recommendations and not just some semi-accurate tips. Several interviewees (FI10, FI12) identified that the issue is often solved before an analysis would be ready to provide such recommendations, due to the high tempo at the local police to handle the investigations, meaning there is no time to produce these types of products. Two interviewees (FI02, FI10) also identified that the emphasis is often on the analysts organising the information into specified summaries. Indeed, two more interviewees (FI03, FI11) stated that a significant amount of working time is spent on making statistics for the senior management without including any form of analysis, conclusions or findings.

These statistics are often produced to understand the number of open cases within the investigative teams to help balance their workload. One interviewee (FI03) also stated that statistics can help to understand the current situation, but they are far and away from being a strategic analysis. Furthermore, another interviewee (FI01) stated that crime is such a multidimensional topic that the IT systems alone cannot provide the answers. Thus, analysis is needed to find the answers. The challenge is that,

\textit{Strategic analysis is less coordinated and not necessarily well understood. The long term focused and aimed activity is missing (FI05, Manager).}

Thus, strategic analysis is underdeveloped in Finland. Part of the problem is also that the police mostly use it for their own information collection; thus, the more extensive social knowledge is missing in the analysis.

Access to this information in Denmark depends on where the personnel are organisationally located. Access restrictions to the data exist, so the IAUs can only access their own information, but the national police can access all the available information. Vital information is often missing due to this, and the different police departments may target the same person or group as a result. Additionally, the databases of the Danish police have an inadequate amount of information available for conducting analysis, such as target profiling, which creates significant intelligence gaps for analysis. Indeed, using the information systems is not that simple, according to the survey respondents. The average
answers in Denmark were 3.21 to the statement, ‘*It is easy to use our organisation’s information systems*’. The analysts agreed slightly more with the average score of 2.81. The investigators were the most critical with the average score of 3.5, but the management also slightly disagreed with the average score of 3.32.

Indeed, many Danish interviewees (DK01, DK04-DK06, DK10) also identified that an enormous amount of data is available but is difficult to manage, analyse and use, as the information is scattered around many systems. Thus, the data needs to be searched and collected from different databases, and with the information often inadequately classified, this is even more challenging. Moreover, the analysts often must manage a cumbersome process whereby the relevant data must be firstly exported from one system and then imported again to another system before they can start conducting any analysis (Bullock, 2013, p.137). Furthermore, the structure and format of the data varies between the systems, so the data cannot be used for analysis directly. Thus, the analysts must spend a lot of time modifying the collected data into the same format so they can used it for analysis, which considerably reduces the time for the actual analysis. The new system is expected to improve this situation for the analysts.

Still, the analysts were most positive towards the statement, ‘*I often use different analytical techniques to the data and information stored in our systems to create a new awareness on a given topic*’ with an average answer of 2.3. Furthermore, 37.5% of the investigators and 31.58% of the management agreed with this, indicating the usage of analytical techniques in their work.

Nevertheless, these Danish interviewees (DK07, DK10) identified that the analysts are considered to be more efficient when working with different kinds of data and providing charts for the investigators. The analysts can also find important, previously unknown phone numbers or other new paths in the investigation. Furthermore, two Danish interviewees (DK03-DK04) identified that the work of the analysts is to try to collect the information from different sources to make the analysis and produce intelligence for the police officers and to instruct them, for example, to work on certain identified targets. The challenge is the lack of available information in the systems. The analysis process is also time consuming: Just building target profiles can take several
months by a group of analysts. However, with the police being such a high-paced environment, the management wants quick results and recommendations; therefore, the time for analysis is inadequate. The tendency is often to react to crime issues very quickly, which cuts out the analysis phase. Furthermore, the analysts are also performing some case-specific analysis, while simultaneously remembering that their main goals from other areas are to build a bigger picture using the collected data. One Danish interviewee (DK06) also identified that a significant amount of working time is spent on making statistics for the senior management, which are often compiled without any form of analysis to formulate conclusions or findings.

6.3.3 Analytical reporting

The majority of the Finnish survey respondents reported that analytical outputs are accepted in the organisation. Indeed, the average answer was 3.58 to the statement, ‘Police should not waste its resources on generating statistics, charts, reports and theories’. The management were even more accepting of this statement with the average score of 3.89. The investigators also seem to accept the idea of having someone producing statistics, charts and reports with the average answer of 3.45. Furthermore, all three professional groups seemed to be familiar with producing different types of reports and documents. The average answer was 2.28 to the statement, ‘I am used to produce different types of reports, documents and/or material to capture crime related information for our organisation’.

Indeed, as mentioned earlier, the IAUs in Finland produce local situational reports on different projects, maintain lists of wanted persons, and provide summaries of the on-going investigations. Additionally, the IAUs receive constant requests from senior management to produce different kind of memos and other strategic products. The PCB Intelligence Centre at the national level produces the situational report after the morning briefing to keep everyone updated. The PCB Intelligence Centre also produces and facilitates other intelligence reports for the senior management for strategic decision making. These reports are also distributed to the local intelligence units that use the relevant parts in their weekly reports. These Finnish interviewees (FI01-
FI02, FI04,) identified that the production of crime statistics for the management is also an important task of the intelligence units at both the local and national levels.

The analysis in these reports was contested by some interviewees (FI05, FI10-FI11). One person (FI05) further stated that typically the analysis is understood to have the same data in a new, understandable format with limited analysis. The issue here is that the lack of a common understanding and standardisation of intelligence and analysis causes variations in analysis. Both the Finnish interviewees (FI06, FI12-FI13) and survey respondents expressed the critical view that there is quite often a tendency in the organisation to make reports for the sake of reports.

Reports are important if there is some kind of analysis conducted with conclusions and recommendations. However […] there is an attitude to produce reports without having any idea, aim and usability of these reports (Finnish Survey Respondent, Analyst).

The local intelligence and analysis units were thus seen as superficial actors who produce all kinds of reports that have limited impact on the operational work. Furthermore, two Finnish interviewees (FI03, FI05) were critical of the strategic analysis, which was said to be in very poor condition due not only to the lack of qualified strategic analysts in the police departments but also to an underdeveloped strategic analysis concept. Thus, the statistics are often seen as strategic analysis, although two interviewees (FI03, FI05) stated that these are far and away from being a strategic analysis.

A general acceptance exists in Denmark for the output of the analysis. The average answer to the statement, ‘Police should not waste its resources on generating statistics, charts, reports and theories’, was a positive 3.81. Of the professional groups, management firmly disagreed with the average response of 3.95. The investigators also generally accept the idea of having someone producing statistics, charts and reports with their average answer of 3.5. All three Danish professional groups are familiar with producing different types of reports and documents, as shown by the average answer of 2.39 to the statement, ‘I am used to produce different types of reports, documents and/or material to capture crime related information for our organisation.’ Nevertheless,
there are different ways to use the collected data and several products that can be provided to the management or to the police officers. The product type in Denmark varies from individual charts to reports containing these charts. The most commonly used products include link charts and event charts. Telephone analysis is also a typical product. Then there are periodic reports, which highlight the current situation in the crime area. Analytical products are also connected to a specific investigation, and target profiles of criminal groups are produced to help decide on and select the next operational target for the police to focus on. Statistics are also produced. Nevertheless, a Danish interviewee (DK02) identified that often the analysis is left out from analysis reports, so they only contain descriptive figures and numbers. However, there are actual strategic analysis products produced in Denmark that analyse the crime development from different perspectives in order to produce a national strategic plan with recommended focus areas. These strategic products should then be connected to the investigations. Many of the products are geared toward decision making on the management level, although the aim is to have the products serve both management and investigators. Nevertheless, there is no strict framework for producing analytical products, and though standard templates and guidance are available, there are no consequences if these are not used. Thus, all 12 police districts produce reports in their own way in practice.

6.4 Internalisation – the usage of intelligence

6.4.1 General usage of intelligence products

The Finnish police officers are eager for new knowledge as indicated by the average score of 1.72 to the statement, ‘I am eager to discover and experience new things in order to use this new knowledge in my working practice’. No major differences occurred among the professional groups in the responses. Nevertheless, two interviewees (FI05-FI06) stated that challenges occur in utilising the intelligence. The primary one is that the working culture, where analysis results have not typically been used, is a challenge. The decision-making framework or process on how to use intelligence was also considered inadequate. Indeed, the lack of knowledge of intelligence products and what to
expect from them hinders their usage for making decisions. Nevertheless, some interviewees (FI02-FI03,FI05) identified that the need for the written type of analytical products and knowledge is acknowledged, and analytical products are increasingly used to make decisions to steer police activities (Corkill, 2009, p.66). For example, two interviewees (FI01,FI03) explained that the situational report produced after the national morning briefing is used by management to make decisions for tackling the new emerging threats. The morning briefing has also improved the availability of intelligence, thus improving its usage. This has also allowed a quick reaction on issues affecting multiple departments, although one person (FI04) criticized that the tasking of the different units on the issues identified in the analytical reports is missing, because no one is taking the responsibility. Indeed, the interviewees (FI02,FI03,FI06,FI13) identified that some reports, such as strategic reports, are not really used at the working level, as they are often considered to be too wide and lacking focus. Furthermore, utilising operational analytical findings and recommendations is also challenging due to the lack of resources. This is part of the long-running question on how to transfer well-done analysis into action in Finland.

The average answer in Denmark to the statement, ‘I am eager to discover and experience new things in order to use this new knowledge in my working practice’, was even more positive with the score of 1.44. No major differences occurred among the professional groups in Denmark. Nevertheless, as in Finland, the interviewees (DK04,DK06,DK08) identified that challenges occur in utilising intelligence due to the working culture and routines, where analysis results have not been typically used. Two Danish interviewees (DK02,DK07) stated that often the police officers must see proof that intelligence can work before they will take it seriously (Gundhus, 2012, pp.176-177). The lack of knowledge about intelligence products and what to expect from them hinders their usage in this sense. Nevertheless, the need for the written type of analytical products and knowledge is also acknowledged in Denmark, and analytical products are increasingly used to make decisions and steer police activities.
6.4.2 Intelligence products in decision-making

The average answers in Finland to the statement, ‘Our analytical products are important for the organisational decision making process’, were slightly positive with the average score of 2.8. The management were the most positive professional group and, interestingly, the analysts were the most negative professional group towards this statement. Some interviewees (FI02-FI03,FIO5,) stated that the explanation for this difference can relate to the conceptual understanding among the management that analysis is a decision-making tool for leadership. Nevertheless, some interviewees (FI02-FI03,FIO10) further explained that there are many managers who are unaccustomed to working with the analysts and have difficulty understanding how they can use analytical products in practice. The managers will keep working in the old-fashioned way if they are not engaged in or convinced about analysis. Thus, the usage and understanding of the value of the analytical reports varies among the managers up to the senior management level. One person (FI02) stated that every police department chief has a different understanding about these products, especially at the local level.

Moreover, the management often consider that these analytical products’ findings and recommendations are either very general or absent. Some interviewees (FI05-FI06,FIO10) also stated that often the old fashioned thinking is that a low-ranking police officer conducting analytical work cannot write recommendations to the police department chief. Nevertheless, attempts have been made to change this culture so analysts can provide recommendations, but if the leadership is going to use the analysis results, these must be delivered to them by a management-level analyst. Therefore, it might be challenging to implement intelligence into a decision-making framework and make the cultural changes in the organisation also at the management level. However, interviewee (FI05) stated that improvement is also expected in the understanding of the intelligence and analysis concept as the management changes over time. The younger management generation is both more open to the intelligence concept and willing to use it, but it takes a long time to implement change like this.
The average answers in Denmark to the statement, ‘Our analytical products are important for the organisational decision making process’, was more positive with the average score of 2.11. However, two interviewees (DK02,DK08) indicated that, in reality, many managers are unaccustomed to working with analysts and have difficulty understanding how they can use the analytical products in practice. Some interviewees (DK07-DK08) stated that most leaders are ready to acknowledge the analysts’ work and that, nowadays, intelligence is even considered to be the foundation for police work among Danish management. The public pressure that demands documented and valid knowledge from the police has also made the management more willing to accept the strategic analysis products. The managers will keep working the old-fashioned way, despite these developments, if they are not engaged or convinced about analysis. Thus, the use and understanding of the analytical reports’ value varies between managers up to the senior management level (Bullock, 2013, p.139). For example, in Denmark one interviewee (DK04) estimated that only one third of the 12 police departments heads are motivated and engaged in knowledge-based policing approaches. There is no real motivation for the police departments to use analysts.

We have people collecting on intelligence and trying to put together the different sources of information and try to make analysis […] but the management have difficulties to implement these (DK04, Analyst).

One interviewee (DK02) observed that this is also very individually based in Denmark and depends on the ability of a single analyst to establish good relationships with the management. Two interviewees (DK02,DK08) also stated that analytical findings were often used by the management only if the findings corresponded with their personal views on the issue (Marrin, 2007a, p.410). Furthermore, there is also often a reluctance to relinquish control to the analyst. Thus, management often do not appreciate recommendations and, in some cases, even discourage the analyst from making any recommendations, as not following those recommendations might harm the managers if their decision is wrong. Therefore, the analysts are often tasked to produce an analytical report that would fit into management’s view and their predefined decision.
The main problem we have in the police it’s the leaders, because some of the seem to be scared about using our products because sometimes people will tell them what to do or recommend to do and I believe some of them are afraid of leaving the decisions up to us (DK08, Analyst).

Additionally, the analysts are generally not positioned close to the managers, so they lack the necessary influence with these decision makers. Therefore, it is a challenge to implement intelligence into a decision-making framework and make the cultural changes in the organisation also at the management level. However, the interviewees have also the observed positive changes, and the understanding of the intelligence concept is improving, along with the impact of analysis, with changes in the management. The younger management generation is more open to the intelligence and analysis concept.

6.4.3 Intelligence products for operational staff

The analytical products were not as important for the Finnish investigators, as only 34.15% agreed with the statement, ‘Our analytical products are important for the organisational decision making process’. Nevertheless, one interviewee (FI04) indicated that the usage of the products varies greatly on the operational level. Moreover, these interviewees (FI02,FI11,FI12) and one survey respondent stated that the utilisation of operational products is at such a low level that it raises questions as to whether or not these are needed in operational work. The challenge for the Finnish investigators, due to their workload, is their lack of time and resources to read and react to these different analytical products. Those in the volume investigation domain especially stated that, for their work, there is very limited added value to the intelligence and analysis work. The problem relates also to the type of analysis provided to the operational staff:

*I would personally like to provide real analysis to them and not only statistics. But in practice we don’t provide this type of analysis (FI12, Analyst).*

A team lead of a volume crime investigation also confirmed this:

*The feeling is that if someone is tasked to provide analysis this is more statistics than analysis. […] But the interpretation and conclusions of these figures are very limited (FI11, Investigator).*
This was echoed by a patrolling officer:

_We have this electronic platform where there are analytical reports available. There are statistics available on who are committing crimes and mug shots. But these are not useful for the patrolling officers (FI07, Patrolling officer)_.

Indeed, these Finnish interviewees (FI08, FI10, FI11) indicated that a need exists for proper analyses so the investigators can build their investigations. The analysts are often expected to provide clear recommendations for the investigations and how to best proceed in arresting the targets. The investigators need analytical products on itemised billings and crime series, as they lack the skills and resources to perform that themselves. Moreover, the volume crime investigation team lead (FI11) wanted the intelligence analysis to be more connected to the investigators’ work to avoid the current practice in which uncertain intelligence and tips are sent to the investigative teams with instructions to validate them. Another investigative team lead (FI08) from the serious crime area wanted the IAUs to independently follow the operational environment more closely, which would release investigative resources for something else. Indeed, the needs of the volume crime investigations and the serious crime investigations are different. Another stakeholder domain for the IAUs is the patrolling officers, who sometimes need target-specific intelligence when planning special actions or events. Certainly, there are many expectations of the IAUs, which hold a lot of information. The issue at the local IAUs is that the work tempo is so fast at the operational level that there is limited time to conduct analysis; thus, the analytical results remain quite modest, as there is no possibility for the analysts to go as far analytically as they would like to.

In Denmark 62.5% of the investigators agreed with the statement, ‘_Our analytical products are important for the organisational decision making process_’. One Danish interviewee (DK05) similarly stated that the products’ usage varies on the operational level. Furthermore, the analytical products produced by those analysts with only an academic background were considered theoretically useable, but their translation into the operational police work is often challenging (DK02). The preference is for experience-based knowledge; thus, the arguments made by an analyst with a purely academic background are not considered as valuable. Indeed, police officers are very biased toward
everything that comes from another professional with an academic background. One interviewee’s experience exemplifies this:

There are a lot of people who will never see what good an analyst brings. One officer said that when has an analyst last solved a crime? And I think that is still there and it will be there for many years (DK04, Analyst)

Sometimes the analysts generate different results than the police officers expect, which is further challenging to their acceptance of analytical results. Additionally, the investigators are educated to be independent, and they also have a lot of autonomy in practice to decide whether or not to acknowledge the analytical findings. Yet, the police officers often tend to act on intelligence that is either not verified, validated or is vague, so in this sense there are strong routines among the investigators that are difficult to change. Therefore, the investigators often have difficulty accepting an analyst’s knowledge-based view. They have the power, in practice, to change the strategy by deciding to focus on different targets than the analysis identified. As one of the analysts stated,

The Danish Police is very good at knowing what they know thus the on-going investigations will dominate the awareness of the staff and they will have their own initiative towards the group being investigated. (DK05, Analyst).

Therefore, (DK04) stated, the department heads would need to be deeply involved in implementing strategies to put more pressure on the police officers to implement the strategy and intelligence findings. This can be challenging, as one investigator stated that it would

Eliminate the initiative and make the investigators ‘dumb police officer’ who just waits for orders coming from above (DK07, Investigator).

Indeed, new target profiling reports are being produced in which the analysts give instructions to the investigators with recommendations to pursue designated targets. This is quite hard for the investigators, as they are not used to being told what they should work on. Thus, personal relations can be important in this regard, as intelligence is taken seriously if the analyst is respected. The analysts need to build trust and relate to the investigators and prove themselves to the investigators before the investigators will take the analysts seriously. Only then can the investigators accept the theoretical
analyses and hypotheses the analysts provide. The translation of analytical products produced by analysts with only an academic background into operational police work is quite challenging for those analysts without both police and academic backgrounds. Sometimes the academic language is too complicated, which creates a communication barrier, as police officers only want something practical they can react to. Nevertheless, some analytical products, such as link charts and event charts, are commonly used and acknowledged by the investigators, for example, when conducting a telephone analysis. Background information is also collected from the open sources for a specific person. Thus, analysis is definitely used as an investigative tool, but it also depends on the investigators. Additionally, as with the managers, the investigators’ understanding of the intelligence concept is improving, as the younger generation is more open to this concept.

6.5 Summary of Findings III

The findings illustrated how the information and knowledge is fragmented into different social and professional groups in both countries. It is difficult to exchange information between these groups or provide feedback without the help of personal contacts, which highlights the importance of networking. Trust is imperative in these interactions, yet no systematic approach exists for establishing these exchanges, which are frequently the unintended side product of seminars and trainings. Nevertheless, established methods do exist for exchanging tacit knowledge in the police, such as partnering a more senior police officer with a junior police officer. This could be further extended to more cross-collaborative work across professional groups.

Management is not systematically engaged in intelligence tasking in either country. Collection plans are either missing, like in Finland, or it is challenging to make them function. The Danish analysts also have challenges in tasking police officers. Intelligence is not stored systematically by the police officers in these countries due to their working cultures, persistent routines, and time constraints. The police officers’ lack of knowledge about information management and intelligence also negatively impacts the storage of information and data quality. Lack of management control was seen as facilitating this issue in both
countries. Lack of feedback was also having a negative impact. Validation was also identified as a challenge in Denmark, whilst the legality related to how to collect data was an issue in Finland. It was also observed in Finland that the police officers often have difficulty estimating the information’s usefulness.

Management is also not involved in the tasking of analysts in both countries. Old routines hinder this, together with the management’s lack of knowledge. The fragmented information systems are challenging to use for analysis from the usage viewpoint, and the data quality is also an issue for analysis. Furthermore, the high working tempo often cuts into the analysis time; therefore, analysts often organise information into summaries. Statistics seem to dominate strategic analysis in Finland, raising the argument that it is not functioning properly. Interestingly, investigators are using analytical techniques in both countries and, furthermore, analytical outputs were seen as positive. This could be linked to the familiarity of all professional groups with producing reports. Still, the actual analysis in the produced reports is contested in both countries.

The general attitude towards learning and discovering was good in both countries, but difficulties still exist when using the reports. No culture and routine exist for report use in these countries. Management in both countries were positive about analysis reports but are unaccustomed to using them. The lack of knowledge of analysis by the users impacts this. Sometimes the management are also reluctant to acknowledge analysis due to their own routines and fear of losing control. Police officers in Finland did not consider analytical reports that important, as they are mostly statistics, which do not match the needs of the operational work that has different needs in different areas. The analytical products were seen as more important by the Danish investigators. The issue of using them also depends on who has produced them, as the analysts’ backgrounds also play a role in this, with academics considered as less credible. The investigators, who are quite independent, can decide whether to accept and implement the findings or not. Personal relations also matter in this.
7 Discussion

This chapter discusses the previously mentioned findings under three sections. The first section examines the findings identified in the ‘Exploring the context’ chapter. The second section then continues to explore the ‘Professionalism and the impact of police culture’ chapter, whereas the third section reviews the findings from the chapter ‘Practical application of knowledge’.

7.1 Scene 1: Exploring the context

The findings in the Exploring the context chapter certainly illustrate that the standard, reactive policing model still dominates how the police operate in these countries, despite efforts to introduce different policing approaches such as the Community-Oriented Policing (COP), Problem Oriented Policing (POP) and Intelligence-Led Policing (ILP). These findings indicate that one of the main reasons for this is that ILP is perceived as too abstract a concept for the police organisations to operate with. Indeed, the lack of definitions and terminology related to intelligence and analysis demonstrate the gap between theory and practice in ILP implementation. These findings coincide with other intelligence-related research (Alach, 2012; Corkill, 2009; Sheptycki, 2008). This research, by combining the policing and philosophical discussions of knowledge, further clarifies the research literature on policing and why it is inherently difficult to implement a knowledge-based policing approach in law enforcement. Indeed, the experience-based knowledge, found deeply embedded in the standard policing model, must be taken onboard when designing more explicit, knowledge-based policing practices. Therefore, it is unsurprising that these countries lacked the proper management vision, understanding, and aspiration towards knowledge-based policing. Indeed, as James (2011) also identified, a lack of support for and understanding of ILP in these countries seemed to exist at every management level. Given these findings, it also understandable why a lack of agreement on the policing approach exists within the Finnish police management and also why routines and old ways of working still dominate how the Danish police work.

Nevertheless, both countries have had serious efforts to integrate intelligence into their policing practices; thus, these countries cannot be blamed for not
making an effort. Indeed, a National Intelligence Model (NIM) has been on both
countries’ agendas, with the result that every police department now has an
Intelligence and Analysis Unit (IAU) to collect, process, validate and
disseminate information. Finland has even established a national fusion centre
that aims to combine the intelligence from the police, customs and boarder
guard. These certainly follow the same development pattern as the UK
identified in the literature (see James, 2013; Stanier, 2013; Reising, 2010;
Harfield, 2008; Maguire & John, 2006; Fielding, 1995). Nevertheless, from the
organisational design viewpoint, these findings also illustrated why it is
important to have a common understanding of the concepts related to
information, knowledge, intelligence and analysis. Indeed, a lack of
understanding of these concepts can negatively impact the role and functioning
of the information management units. In this regards both countries lacked
proper information management structures and processes, which further
suggests that these organisations are not fully aware of the nature of
information, knowledge and intelligence and analysis. This is another addition
that this research can provide to the ILP- and NIM-related literature.

Coleman (2008, p.317) stated that new policing approaches will ultimately fail if
not implemented as an organisational strategy. It was interesting to note in this
sense that the national crime prevention strategies and use of strategic analysis
varied between these countries. The usage of analysis in the Finnish national
crime management strategies is limited and mostly based on statistics on
reported crimes. The local differences are also not reflected in these strategies,
and no scenarios used to assist the anticipation of future trends and
developments. The rationale for this seems to relate to the inadequately
understood and developed strategic analysis concept that lacks coordination.
The Finnish findings coincide with Williams and Godson’s (2002, p.314)
argument about the reluctance to combine the areas of social science research,
intelligence and law enforcement. Therefore, strategic analysis seems to be
more developed in Denmark, according to these findings. Indeed, a new
structure for strategic analysis was recently adopted there to define priorities.
They are also using scenarios to anticipate the future and some of the local
police departments are also conducting strategic analysis.
Nevertheless, the implementation of these crime reduction strategies seems to be quite challenging in both countries. There is inadequate understanding of these strategies among the staff in Finland due to lack of communication and visibility. More importantly, the vast number of the management who do not have adequate clarity and understanding about these strategies are a major hindrance to implementing strategies in the organisation. It is difficult for managers to communicate the strategy when they do not understand this in the first place. Denmark’s situation was similar, as more than half of the management do not fully understand the organisational crime management strategies. Indeed these findings in both countries correspond with Yang et al.’s (2010, p.231) argument, which stated that many managers cannot articulate how the organisational strategy is linked with their resources. Arguably, the police departments are not working intelligence-led if the management are not committed to the strategy. Thus, in light of these findings, the level of strategic analysis and the processes related to implementing strategies can provide quite a reliable understanding of the level of ILP implementation in an organisation. This is an interesting finding that contributes to the strategy related to research that provides a different perspective on the role of strategic analysis in measuring how knowledge-based an organisation is. The overdominance of experience-based knowledge can obviously be connected to the difficulties in creating and implementing a strategy in the police context. It is as if forward thinking and preparedness is not important to the police. In this sense, this research has opened up a new perspective on the strategy implementation in law enforcement connected to the area of strategic leadership and business design.

Moreover, these findings indicate that the information management systems in these countries were also failing to support the intelligence function properly. The information in these countries is definitely fragmented into several databases, matching Sheptycki’s (2004) and Stanier’ (2013) findings. Neither country seems to have defined and standardised information management models or processes, which arguably is a major hindrance for efficient knowledge management in these organisations. This also confirms Alavi and Leidner’s (2001) argument. Both countries still had a system in place in which
all the police officers can store their observations to facilitate intelligence collection. This highlights the issues, as both organisations want to collect information and intelligence, but the further utilisation of this information is not considered properly.

The access to information was not seen as an issue in Finland, but in Denmark there were access restrictions observed that cause duplication of work and waste of resources. Indeed, as Brown and Brudney (2003, p.31) indicated, real-time access to the organisational databases stimulates knowledge accumulation. It is encouraging to see that there are on-going projects in both countries to improve their information management, as new analysis systems are being introduced into these organisations. The risk in this, as Cotter (2015, p.4) has argued, is that often the improvement of intelligence capabilities primarily focuses on the further development of digital information networks and ignores the needed development in other areas. With these observations, these findings enrich the discussion of information management systems within the policing domain. It is, arguably, possible to observe the level of the knowledge-based approach in a policing institution by studying its information management system.

Furthermore, Nonaka et al. (2006, p.1193) have argued that the nature of knowledge transforms organisations. These findings demonstrate that these police organisations under study are operating two types of knowledge domains similarly, as Gundhus (2012, p.184) and Luen and Al-Hawamdeh (2001, pp.313-314) also identified in their studies. Nevertheless, out of these two knowledge domains, the more dominant one, and the one the police officers desire, is the experience-based knowledge domain. Conversely, the analysts are more accustomed to the explicit knowledge domain when producing new knowledge by using diverse raw facts. The findings have furthermore indicated that explicit knowledge should be better integrated into the practical, experience-based police work. Thus, the combination of both knowledge domains is the key to success, although, as Dean et al. (2008, p.341) also identified, explicit knowledge work is not a new concept in law enforcement, as the investigators have had to capture the knowledge provided by forensics, victims, witnesses and suspects for their cases. The difference when compared
to intelligence analysis, as Williams and Godson (2002, p.314) stated, is that this case-related, explicit knowledge is insufficient for providing knowledge for the whole policing domain, as its focus is often on individual cases rather than the overall phenomena. Indeed, there is more knowledge to be developed in a police organisation than just crime investigations, and intelligence analysts can play a significant role in this. This study was able to further assist the understanding of the difficulties associated with changing the policing model from experience-knowledge based to explicit-knowledge based by exploring the theoretical foundation of knowledge and researching this in the context of law enforcement. Drilling down on the fundamentals of knowledge whether seen as explicit (episteme) or implicit (techne), also provides increased understanding of some of the cultural issues discussed later. This conflict between the knowledge domains and the impact of an overdominance of experience-based knowledge provides a contribution to knowledge in at least the fields of philosophy, police culture and policing.

Nevertheless, these findings have furthermore indicated that intelligence is not a well-established concept in the law enforcement domain. Intelligence is insufficiently recognised and understood in these countries, which definitely has a negative impact on its implementation, corresponding with the arguments made by an armada of scholars (see, for example, Rønn & Høffding, 2013; Breakspear, 2013; Alach, 2012; Corkill, 2009; Sheptycki, 2008; Brown, 2007). The positive finding is that the intelligence concept is generally accepted among the police staff. How, then, to improve its implementation? Arguably, it all starts with a proper definition. Thus, it was identified not only in Finland but also by Rønn and Høffding (2013, p.699), that intelligence often relates to the idea of collecting raw data from different sources. Rønn and Høffding (2013) also identified intelligence as an analytical product, thus anchoring it to the explicit knowledge domain. So which one is it? Analysis, according to Chaney (2009, p.57) and Cope (2004, p.188), is a systemic process aiming to identify patterns and correlations between crime data and other relevant information. Furthermore, according to Carter and Carter (2009, p. 317), analysis can provide integrated meaning and allow knowledge to be derived from diverse raw facts. It was quite clear in both countries that the police officers often want to
react quickly to information and disregard any analysis phase. Nonaka et al. (2014, pp.139-140) argued that all knowledge is rooted in tacit knowledge; thus, it is understandable that the police officers rely mostly to their own experience-based knowledge. This debate further clarifies why both organisations have had difficulties implementing analysis and related processes. There seems to be no common understanding of what analysis actually is in the policing context. Furthermore, this research has strengthened the argument that all knowledge is rooted in tacit knowledge. Police officers were keen to perform their own analysis in a situation, collecting and placing pieces of information into their own, experience-based knowledge domain, and to act accordingly. This further explains why the current organisational structures and systems that were built to harvest this experience-based knowledge have failed. Police officers, who are action-driven, are accustomed to interpret stimuli intuitively against their own personal knowledge and react accordingly. If the police officer does not recognise the received stimuli, they are easily ignored. Therefore, this research provides an interesting perspective for future studies related to police education, culture and management studies. It also contributes to the scarce literature on law enforcement analysis.

Indeed, it is important to take note of both the tacit and explicit knowledge domains when defining and standardising law enforcement intelligence and analysis. Following this separation of knowledge domains and the notion of Ratcliffe (2008, p.98) that intelligence is actionable knowledge leads to the argument that law enforcement has two types of intelligence. The first type is the tacit knowledge-driven intelligence analysis process in which a single piece of information is connected to the personal, experience-based knowledge of the police officers only through a mental process. The analysis is conducted through a fast mental process and acted on accordingly in this case. The second type of intelligence entails the explicit knowledge-driven intelligence analysis process conducted by analysts using different analytical methods. Thus, the multiple pieces of information are rationally combined before being connected into the appropriate tacit knowledge domain for conclusions and recommendations. Recognising intelligence as a two-tiered concept could, arguably, assist in improving the implementation of intelligence-led approaches.
in the law enforcement domain. This separation can also assist in fine tuning the intelligence definition for law enforcement like this:

*Law enforcement intelligence is actionable knowledge derived either by integrating data or information into experience; or by integrating multi-varied set of data or information by using diverse set of methods and implementing this into existing tacit or explicit knowledge.*

This updated definition then takes specific note of the two distinct analytical processes, fast and slow, both aiming for action. This also resembles the notion of ‘*Thinking, Fast and Slow*’ introduced by Kahneman (2011) in his best-selling book, in which fast thinking relies on intuition and experience, whilst slow thinking is founded on methodical and rational reasoning.

This finding on intelligence in the law enforcement, seen as a two-tiered process, might be the most important argument in this research. It contributes directly to the literature debate on what intelligence is in law enforcement. By doing so it clarifies and opens up a new way of understanding intelligence in the law enforcement domain and assists in designing knowledge-based policing approaches in which intelligence would be better understood and integrated into the policing model. This is also an important foundation for understanding the issues involved in designing the policing model, designing organisational information systems and structures and understanding what analysis is and how it should be understood. It also takes note of the two different knowledge domains, experience-based and explicit-based, and by doing so also acknowledges that both are needed in the law enforcement domain. This updated definition could certainly be understood through the Chinese philosophical concept of ‘*yin and yang*’, which describes how seemingly opposite forces may actually be complementary; thus, both are needed to succeed.

**7.2 Scene 2: Professionalism and the impact of police culture**

The findings in the *Professionalism and the impact of police culture* chapter illustrate that the IAUs in both countries have a central role in managing information for the police departments. Variations still exist between how these units are functioning, as the findings indicated, but there is also a lack of
standard information management models and processes in these countries. Furthermore, the division of tasks between the investigators and analysts remains unclear, although the analysts were generally regarded as essential in both countries. In the light of these findings, the professional knowledge base on analysis, as discussed in the literature (von Krogh et al., 2012, p.242; Yang et al., 2010, p.232; Snowden, 2002, pp.104-105), was ambiguous. An identified career path, standardised job description, and expected experience and education for the analysts were all missing, as Evans and Kebbell (2012, p.205) similarly identified in their study. The level of ambiguity, in relation to these intelligence analysis units, corresponds well with the ambiguity around the concepts of knowledge, intelligence and analysis. It is difficult to comprehend and design the scope of the IAUs when the theoretical foundations related to definitions and knowledge concepts are missing. These findings, thus, contribute to the literature around NIM implementation, but it simultaneously provides a contribution to the literature related to knowledge management, such as enterprise architecture, which are often not discussed in the literature, especially from policing point of view.

There had been discussions in Finland to hire civilian analysts, but this had not yet been implemented. Denmark was more advanced in this regard, as they have already started to hire analysts with different backgrounds outside of the police. Still, the level of analyst professionalism is in a very early stage in both countries, as their role, function and tasks varied between the IAUs, and analysts are tasked with responsibilities that do not relate to analysis. The analysts with a police background are particularly often used for normal police duties in both countries. The implementation of case analysis that supports an ongoing investigation varied among police departments, although it was identified as an important task for analysts in these countries. The quality of such an analysis in Finland was considered as being higher in the serious crime units where it has been mostly performed. Denmark is placing a lot of focus on empowering the civilian analysts to work for the investigators and assist the investigations. These findings indicate that according to Nonaka and Takeuchi’s (1995, pp.152-153) definition, the analysts can arguably be considered as ‘knowledge specialists’, despite the lack of professionalism. This study thus fills
the void in research concerning the professionalisation of analysts in law enforcement. Interestingly, this research also provides a better understanding of the analyst’s place in the law enforcement domain. Indeed, by looking into the two types of knowledge regimes discussed in the previous chapter and the proposed intelligence concept, what should be expected from an analyst is more understandable. This research, thus, assists in understanding what to take into account when establishing career paths for analysts and what could be expected from analysts in terms of their educational background and experience.

Furthermore, these findings also support Nonaka et al.'s (2006, p.1192) notion, which argued that leadership is about enabling knowledge creation, not controlling it. These findings also indicate that the knowledge roles of ‘knowledge engineers’ and ‘knowledge officers’, as classified by Nonaka and Takeuchi (1995, pp.152-153), are not properly understood in these countries. The important role of the management in the knowledge domain, also identified in the literature (see Darroch & Mazerolle, 2012; Goh, 2002), and their involvement in the intelligence and analysis process, was identified as inadequate in both countries. One of the major reasons for this was the management’s low level of knowledge on this topic; thus, their expectations towards this function are unclear. The positive finding is their strong support for analysis. This coincides with other research (Darroch, 2012) and enriches this area as well, which is also lacking research. Interestingly, this research confirms that, despite all the hype around knowledge-based policing, the management is still quite unaware of what this means. This is also a clear obstacle to implementing knowledge-based policing models if the level of professionalism on intelligence and analysis is low among management. It is obvious the case that they do not know what to demand or how to use intelligence and analysis. This finding contributes to the literature around police management in this sense, as well.

The findings in regard to the police officers shows that they were seen to have an important role in data management by ensuring the data’s quality, accuracy and relevancy. The role of the police officers in collecting and processing information was more established in Denmark than in Finland. However, a lack
of understanding of the information management and the importance of data quality was still identified in both countries. The usage of the information systems was also identified to be a challenge. Nevertheless, these police officers can be characterised as ‘knowledge operators’ in accordance with Nonaka and Takeuchi’s (1995, pp.152-153) knowledge role classification. Similar to the managers, a clear lack of understanding of intelligence and analysis exists among the police officers. This was identified as a generational issue in Denmark. Additionally, the need for the investigators to understand and conduct basic intelligence analysis was identified in Finland. Certainly in this sense, the investigators, who are solving crime cases as Dean et al. (2008, pp.342-343) explained, can be characterised as ‘knowledge specialists’ in accordance with Nonaka and Takeuchi’s (1995, pp.152-153) knowledge role classification.

The findings indicate that the knowledge roles identified by this study differ between the police officers on the street and the investigators. In this sense the role of the police officers is to obtain and record information from their operational environment, whilst the investigators have another knowledge role. Indeed, having the same knowledge specialist role as the analysts is another major clarification in understanding the nature of the work of both roles. Having a better understanding of this provides possibilities to further clarify which part of the knowledge/intelligence creation process the analyst should be engaged and which part should be left to the investigators.

The case analysis requests by the investigators in this domain make much more sense. Crime investigation is, arguably, the oldest knowledge process in policing; therefore, it is very familiar to police officers and police organisations. Thus, when the professionalism (expert knowledge base) is low in relation to intelligence analysis, arguably another similar professional domain with a more developed expert knowledge base can overshadow it. It is easy in this case for the underdeveloped law enforcement intelligence analysis domain to be overshadowed by the well-developed criminal investigations domain. As such, these findings directly contribute to the scarce literature on law enforcement intelligence analysis professionalism.
Regarding professionalism, these findings, particularly the survey findings, strongly indicate the lack of capacity building in both countries for information management, intelligence and analysis. There are practically no training opportunities for investigators, management and the majority of analysts. The challenge is that lack of training on analysis for police officers leads to unrealistic expectations of intelligence and analysis, as Cope (2004, p.194) argued. Missing training standards also highlight yet again the lack of professionalism on this topic and correspond with Stanier’s (2013, p.137) and Quarmby and Young’s (2010, p.38) arguments. Williams and Godson (2002, p.314) also argued that this will continue to hamper law enforcements’ ability to tackle crime and disorder, as effective anticipation requires an effective knowledge base. If the law enforcement profession wants to be knowledge-led, it surely needs to have knowledge to succeed.

Lastly, this findings chapter also explored the organisational culture aspects. Marrin (2007a, p.404) argued that an intelligence culture is shaped by broader environmental factors, such as the culture of the decision makers and other stakeholders. Regarding this, the police in both countries were seen as very conservative, static, hierarchical and routinised. Not only the older generation of staff but also the local police departments were associated with these characteristics. Therefore, both organisations have a strong preference for organisational professionalism, as Evetts (2013, p.787) introduced. These findings show that this old way of working has a negative impact on implementing intelligence and analysis based work. These findings correspond with Lemieux (2008, p.230) who argued that the traditional vertical police organisation is an obstacle to carrying out knowledge-based policing. These findings also correspond with Gundhus (2012, p.181) and Loftus (2010, pp.16-17), who argued that old organisational routines hinder the formation of the intelligence function in law enforcement. These finding also correspond to Braga and Weisburd’s (2006b, p.147) argument that hierarchical organisational structures in policing inhibit innovation, creativity and problem solving. On a positive note, the culture was seen to be slowly changing in both countries. Indeed, new ideas seemed to be more accepted nowadays, although that also depends on the unit. Mistakes and communication still seemed to be challenges.
in these countries, which seemed to be hindered by the hierarchy and was identified in Finland as the different information needs between management and staff. This is, yet again, another interesting addition to the literature related to organisational culture, police culture and the professionalisation of police organisations. This knowledge era we are living in arguably has an impact on the policing domain. Given this study’s findings, there is an interesting discussion to be held on the different knowledge roles within policing and the understanding of how to professionalise these roles more systematically. This could further assist in implementing knowledge-based initiatives, as it seems, in light of these findings, that police culture has been able to resist most of these knowledge-based initiatives.

Another main finding relates to trust, which plays a significant role in both organisational culture and information sharing. Nold (2011, p.85) identified that trust is an essential element of organisational culture in order for individuals to interact and share knowledge. Indeed, the findings indicated that police officers use trusted contacts with whom they share information, which corresponds with O'Neill and McCarthy’s (2014, pp.150-151) arguments. This was particularly visible in Denmark, where mistrust exists towards civilian analysts with no police background. This clash of cultures identified in Denmark among the different professional groups shows that the staffs’ personal contacts play an even more important role. Thus, mutual working experience is important for building trust, as Cotter (2015, p.10) also identified. It is essential, therefore, to create synergies among these professional groups, as Coyne & Bell (2011, p.33) and Brooks (2006, p.247) also argued. Another important point came from a Danish interviewee, who stated that the police are often driven to have technical solutions to these issues and ignore the cultural aspects of information sharing. Thus, overall this chapter supports Aristotle’s notion, introduced by Flyvbjerg (2004), that phronesis is an important factor in the knowledge domain. Cultural ethics and values have a significant impact on knowledge management. The last part of this section confirmed how the police culture has resisted implementing information- and knowledge-related models into policing. Experience-based knowledge is built on learning by doing and sharing knowledge among people in a trusted context. The police work is built inside
closed groups; thus, it should be no surprise that the police culture resists the new culture of ‘need to share’ instead of ‘need to know’.

7.3 Scene 3: Practical application of knowledge

The findings illustrated in the ‘Practical application of knowledge’ chapter, under the section of Socialisation, indicated the challenges that exist in managing tacit knowledge that is isolated within the different social and professional groups, corresponding to Sheptycki’s (2004) and Stanier’s (2013, p.123) arguments. Therefore, it is essential to have social networks for flexible and fast information exchange. Large networks also mean more information and knowledge. The findings indicated, furthermore, that management often become the bottleneck to facilitating the information and knowledge exchange between the social groups, which amplifies the need for the staffs’ personal relationships and social networks. The analysts, therefore, need to reach out to different stakeholders to collect information and knowledge. Thus, the analysts are essentially then assuming the role of ‘knowledge operator’. In this sense the analysts are trying to harness the narrative culture of the police by conducting face-to-face interactions in order to collect information using the reciprocal approach. At the same time, the analysts must assume the role of ‘knowledge operator’, which is an important finding, as there were no traces in the research literature of this issue being examined from this viewpoint. Indeed, the advantage of viewing the roles from a more neutral perspective helps to neutralise the cultural, professional, functional and organisational aspects that often blur people’s perceptions as their strong biases kick into the discussion.

Trust is the key ingredient in functional networks, so establishing social networks takes time and requires stability in the working environment. Personal characteristics play a vital role in this self-initiated process. Opportunities to work and meet other people through meetings, training courses and seminars are also needed. Indeed, Nonaka et al. (2006, p.1186) identified that knowledge creation is a fragile process; thus, relationships among individuals impact organisational knowledge creation. Limited research is available about trust in the police organisation; thus, this is an interesting area to which this research also contributes. Indeed, trust was raised throughout this research on several
occasions and, thus, can be considered a very important and key success factor for implementing anything in the law enforcement context.

Another interesting finding came from Denmark, where the analysts also often provide feedback, which is scarce in the police organisation. Feedback is a significant motivator for sharing information, so not only are the analysts also assuming the role of the management, but they are also acting as a ‘knowledge engineer’ in this sense. Indeed, Cotter (2015, p.5) identified that informal social networks may be relied upon to circumvent problems associated with information sharing via formal information networks, for good and bad. These findings also indicated that law enforcement personnel are mostly willing to share knowledge only face-to-face. In this regard these social networks then facilitate the sharing of tacit knowledge, which lacks official organisational coordination. This research also opens up a different viewpoint not only on the analyst’s role confusion but also on the lack of management engagement in this area.

This research also highlights the important aspects of the social networks within the law enforcement community by providing a different perspective on the organisational dynamics. Although mentoring is used to transfer tacit knowledge from older to younger staff, the peer level knowledge transfer is coincidental and self-initiated. The knowledge transfer between professional groups similarly seems to lack structure, as it is also coincidental and self-initiated. This lack of attention could relate to the costs and difficulty associated with sharing tacit knowledge, which Hauk et al. (2013, p.357) identified; thus, this research finding corresponds with the research conducted in other areas in relation to knowledge management. Nevertheless, this research also highlights the age-old method of partnering more senior police officers with junior police officers to transfer tacit knowledge. This old way of working might need some new adjustments; for example, introducing more matrix-like organisational structures to policing. This is another interesting contribution to the literature, as it provides a profound justification for this.

The Externalisation section also indicated that management is not really engaged in the intelligence process; actually, in fact they were mostly absent in
the tasking process. Indeed, models exist to identify management’s role (Ratcliffe, 2008) in the intelligence process, but the actual research on this is quite scarce. Standardised collection plans and models are largely missing as a result, though this should be a focused activity, as Carter and Carter (2009, p.317) also identified. Instead, the analysts are turned into ‘knowledge engineers’, because they must again assume management’s role and task the police officers to collect data on certain themes. Against this notion, it is, thus, no surprise that the police officers have difficulty accepting this. Nevertheless, the confusion over the knowledge roles arises again in these findings, thus providing another viewpoint on the relations between analysts and police officers.

Furthermore, this research again highlights the need for management in the intelligence process. A clear need exists to task and oversee the information sharing, as a significant number of the police officers are not storing their information systematically. This is considered a secondary task, which is only done if there is time and energy. The information at hand it is often shared directly with the investigator if the police officer manages to recognise its usefulness; the investigator can then act on this immediately. This is also another finding related to the police culture and organisational dynamics. Gundhus (2012, p.184) explained that this relates to the fact that the police officers consider only information for incident-led and short-term police work to be practical.

The further challenge in this is that the police officers have too much discretion to decide not only what information they store in the systems but also how they store it. Therefore, the data classifications are often inadequately done, as the incident short-term police work overruns the quality assurance, as Gundhus (2012, p.184) also indicated. Furthermore, the lack of understanding of information management and intelligence hinders the information processing. A lack of professionalism related to knowledge roles is quite visible in these research findings. Having this confusion over knowledge roles makes it challenging for the management to task and control information storage. Thus, the decision making regarding this is transferred to the level of the police officers. Indeed, lack of management control and feedback were identified as
obstacles in both countries. Brown and Brudney (2003, p.34) identified that if the benefits of data collection are not immediately visible, organisations are less declined to invest in it. This study confirms the lack of management professionalism in relation to intelligence, thereby providing a new perspective in the management literature.

Next, the Combination section illustrated the difficulty in relation to the fragmented information systems that cause challenges to performing analysis, similar to what Innes et al. (2005, pp.43-44) identified. The varied structure and content of the databases were also considered a challenge for analysis in Denmark, similar to what Bullock (2013, p.131) and Stanier (2013, p.80) indicated in their studies. This finding also confirmed some of the previous findings on information pathologies (Stanier, 2013; Sheptycki 2004). It also highlighted how the systems are built to endure the standard policing model and not to support more holistic, knowledge-based initiatives. Another major challenge for analysis is the high-paced environment of the police, which reduces the time for performing the analysis. This police culture-related finding is important for understanding when to implement knowledge-based initiatives in law enforcement. Eraut (2004, p.261) explained that time pressures drive the intuitive approach when conducting interpretations and decision making; thus, these findings highlighted yet again the dominance of the experience-driven police culture.

Nonetheless, the interesting aspect is that around one fifth of the investigators in Finland and one third in Denmark are already using analytical techniques in their work. This is a group in the police who should be utilised when implementing intelligence analysis, as they can assist in changing the professionalism and culture. This is a significant finding in this research, as it also identifies the possibility and need to look beyond the professionalisation of the analysts and managers. Indeed, Gundhus (2012, p.189) explained that the distinction between knowledge producers and users is in transition, which has consequences for police professionalism. This important discovery provides not only an idea of how to organise operational analysis at the investigator level but also a justification as to why analysis should be introduced into the investigators’ educational curriculum.
The analysis standards must be created before this is possible to avoid variations in how analysis is conducted. Indeed, analysis should be developed to restrain the significant role of statistics in the analytical work in both countries. The data quality would also need attention to achieve this. Indeed, Cope (2004, p.193) explained that poor quality information in the systems inevitably limits analytical insights and increases the production of statistical summaries. These findings, coupled with the high-paced and short-term, incident-led working culture, further confirm that these police organisations also treat knowledge largely as an object and information access similar to what Alavi and Leidner (2001, p.10) explained in their study. Therefore, these findings also confirm that the standard policing culture has a major influence on how information is understood and, ultimately, resists any changes towards knowledge-led policing.

Nevertheless, these findings show high acceptance of analytical reports, especially among the management. This could relate to the finding that all of the professional groups are used to produce explicit knowledge in the form of reports and other documents, such as the investigative dossier. However, there are issues with the varied standards for analytical products. Indeed, as these findings indicated, there seemed to be a lack of focus in the analytical reporting, which is quite different from Chainey and Chapman’s (2013, p.476) argument that different intelligence products should serve the specific purpose of informing how crime issues can be tackled for a particular task. This finding arguably confirms the lack of standards and agreed methodology for producing analysis. Certainly, this lack of focus is also an indication of the status of intelligence, which is shaped by the process through which it is generated (Bullock, 2013, p.134). Alavi and Leidner (2001, p.110) indicated that different views of knowledge (and intelligence) lead to different perceptions and strategies of knowledge (and intelligence) management in an organisation. In this case this finding confirms the immature nature of law enforcement analysis in these countries.

Next, the Internalisation section highlighted the difficulties in using the intelligence due to cultural constraints, such as routines and lack of knowledge about intelligence and analysis, especially among the management. This
Internalisation section provided an interesting perspective from which to understand intelligence as something that organisations can use to learn. This is clearly not well developed in these countries, thus highlighting the dominance of the experience-driven police culture. Indeed, Gundhus (2012, pp.176-177) explained that the use of this ‘academic type’ of explicit knowledge can be challenging in law enforcement, which values the experience- and intuition-based knowledge more. The findings in Denmark certainly indicated that the management has a tendency to accept analytical reports only if these correspond with their personal experience, which matches Lyles’ (2014, p.134) argument. Therefore, the analysts can be tasked to produce an analytical report that would fit into the view of the management and their predefined decision, which corresponds with Marrin’s (2007a, p.410) arguments. Brown and Brudney (2003, p. 33) identified that when the problem context lacks structure and the certainty of outcomes is low, decision makers tend to rely on tacit, intuitive knowledge. This can have a negative impact on the public confidence in policing, as uninformined decisions have an impact on the quality of the operational service (Stanier, 2013, pp.83-84). Thus, structured decision making, which has not been properly evaluated in the policing domain, could be one approach to providing an evidence base and audit trail for the decision-making process as well as ensuring consistency of judgments (Kebbel et al., 2010, p.94). These are interesting contributions to the management literature related to policing, as the whole domain of police management decision making based on available intelligence is scarcely researched; thus, this study provides a small contribution to fill this void.

The findings then showed that differences among the investigators existed between these countries regarding the usage of analytical products. That is, these products were less important to the Finnish investigators than to the Danish. However, the Finnish findings indicated that the analytical reports sent to the investigators often contain only statistics or summaries of information; thus, their purpose and content might be inadequate for the investigators. Indeed, as identified in Denmark, the analysts are often tasked by the investigators to provide visualisations. Furthermore, as identified in Finland, the analytical needs of the investigators often relate to handling itemised billings.
and crime series. Thus, very practical information management-related support for the investigations is needed from the analysts. The investigator in these instances arguably then performs the actual analysis in order to proceed with the case. Indeed, as identified in Denmark, the investigators often have difficulty accepting the analytical outcomes produced by a person with a professional background other than law enforcement. It was also stated in Denmark that the investigators are very autonomous and have wide discretion to decide whether to acknowledge the analytical findings or not. Personal relations also affect this, so if the investigators respect the analyst, they are more likely to accept the findings. In summary, these findings highlight the knowledge role confusion between the analysts and investigators. Indeed, with the investigators also having a knowledge specialist role, their expectations of analysis revolve around their investigation-related knowledge role. Thus, they mostly appreciate their investigation-related case analysis support. Nevertheless, given the previously identified challenges, it could be argued that this is not the optimal use of analytical capacity. Indeed, the findings also call for improving the professionalism of the investigators in relation to basic analysis. The investigators could perform most of the analysis tasks needed for the investigations themselves just by raising their skills and knowledge of analytical techniques. This is one of this study’s major findings, something that has been scarcely discussed, if at all, in the research literature.
8 Conclusions

The overall aim of this research was to examine how intelligence analysis is finding its place in the policing context and understand the role it plays in the law enforcement knowledge management apparatus. What were the outcomes of this research?

8.1 Results of the research

Firstly, this research clearly confirmed that the standard model of policing with its reactive approaches to crime still dominates the law enforcement discourse in the countries researched, although there is a clear desire in both to be more knowledge-led. Nevertheless, these countries’ success in implementing Intelligence-Led Policing (ILP) and National Intelligence Model (NIM) structures, together with strategic crime management, has been modest. Nevertheless, this research was able to pinpoint competing knowledge paradigms in the police organisations under study by looking deeper into the theoretical discourse on knowledge, intelligence, and analysis. Experience-based, intuitive and tacit knowledge undeniably dominate the law enforcement ethos. This dominance is also visible in the way intelligence is understood as a piece of information or data that can be acted upon immediately.

Indeed, this ‘fast intelligence’ often dominates the law enforcement intelligence domain, as police officers are keen to discover a piece of information they can connect to their tacit knowledge and act accordingly. Nevertheless, police officers occasionally have difficulty assessing the relevance of a piece of information. Arguably, this is because they have not acquired the necessary experience needed to interpret that specific piece of information. This highlights the organisational risk of relying only on the personal knowledge of the police officers and not properly designating and demanding unrecognisable information be reported to the ‘slow intelligence’ process. This risk has somewhat materialised already in both countries. The registration of information is considered a secondary duty; intelligence and analysis are mostly out of the management’s focus; and, due to the workload and time pressure on the staff, the police officers keep a considerable amount of information to themselves or do not properly share the information. Indeed, the findings indicated that there is
still nonreporting and nonrecording of information by the police officers, and the reporting that is done is often recorded with low quality. Furthermore, the unclear knowledge role of the police officers and their low level of professionalism in relation to information management, intelligence and analysis further amplify this problem. Indeed, their role as a knowledge operator is an important part of the knowledge management apparatus and should be better acknowledged and enforced. Thus, it is crucial for them to receive the necessary training opportunities. Certainly these findings indicate that the findings of Stanier (2013) are still current after five years of his study.

The competing explicit knowledge paradigm, produced by the ‘slow’ intelligence process through methodological analysis of information and data, continues to be an enigma for law enforcement. This is especially true of knowledge/intelligence that is unconnected to any specific investigation. Moreover, the findings strongly indicated that analysis is mostly missing from the analytical reports; instead, the reports often contain information in a new format or as statistical figures and visualisations. Arguably, because the tacit knowledge domain is fast, the analysts are trying to cope with the organisation’s ‘fast’ intelligence-related expectations and provide value quickly. This naturally cuts time from the thinking process and explains why the analysts were mostly performing information management-related activities and not creating new, explicit knowledge. It’s no wonder, then, that the reports they produce hardly contain any analysis and actionable knowledge. The result is that the analysts only manage information for the police officers and try to provide it in a concise and easily adjustable format so it can be easily connected to the police officers’ experience-based knowledge. Thus, the analysis might eventually happen, but only in the police officers’ minds.

This role confusion and the mistaken expectations of analysis were also visible through the analysts’ immature level of professionalism. Indeed, there were no career paths, standardised expectations for education and experience or defined roles and tasks for the analysts. The Socialisation, Externalisation, Combination, Internalisation (SECI) model further illustrated the multiple knowledge roles of the analysts who try to gather and facilitate information exchange (knowledge operator), formulate new knowledge (knowledge
specialist), initiate the information collection, task the police officers and maintain their motivation with feedback (knowledge engineer). This also further exemplifies the immature nature of the knowledge management structures in law enforcement. When the level of professionalism related to knowledge is low, the boundaries between the knowledge roles are also low.

Nevertheless, explicit knowledge is acknowledged, mostly as part of the investigative outcomes. Indeed, investigators also have the ‘knowledge specialist’ role, as they formulate explicit knowledge through the pretrial investigation record. The investigator is, arguably, one of the oldest ‘knowledge specialist’ roles in this sense, and the investigation is one of the oldest knowledge processes in the police. This would certainly explain why the analysts are often most appreciated when they are supporting the investigators and acting as a sort of ‘case analyst’. With the analysts and investigators both having the ‘knowledge specialist’ role, it makes sense why the case analysis is the most understood and desired form of analysis in the police. However, there are also other knowledge creation tasks for the analysts that do not fit for the investigators. The tasks for these knowledge roles need to be specified for the betterment of the overall knowledge management discipline to avoid further role confusion between the investigators’ and analysts’ roles. Doing this also reveals the need to further develop the investigators’ professionalism in relation to knowledge creation. The investigations are, arguably, becoming more complex to manage due to the expansion of data, information and sources. Thus, the investigators would benefit from more training on systematic research methods and analysis. There already seems to be a group of investigators who are using analytical techniques from which the best practices could then be harvested. In this way the investigators are not then seen as direct customers of the analytical products, since they can perform the needed visualisation and manage the complex data sources themselves for their investigations. Instead, both the analysts’ and investigators’ knowledge specialist roles would produce explicit knowledge for management decision making and external stakeholders such as the prosecution service or policy makers.

None of this will be possible without the management, who seem to have considerable knowledge gaps in their understanding of intelligence and
analysis. Their knowledge roles of ‘knowledge engineer’ and ‘knowledge officer’ imply that they should be the ‘primus motor’ of these types of knowledge initiatives, but the findings indicate the opposite, as their presence was largely absent in the intelligence process. Indeed, after observing the underdeveloped role of strategic analysis (especially in Finland) and the challenges in implementing strategies, it seems that a void of ‘knowledge officers’ exists in these organisations. This further explains why the analysts have needed to manage all of these different knowledge roles, with varying success. Therefore, the management group, including senior management, urgently needs to raise their understanding and involvement in intelligence and analysis if they want to improve knowledge/intelligence-led initiatives. Converting explicit knowledge into new knowledge is difficult if there is no management to guide and demand the knowledge process and issue relevant intelligence questions. Currently, there is a lack of decision-making frameworks and processes to ‘internalise’ analytical products for informed decision making. Another challenge is that some of the management prefer to use their own experience-based knowledge and routines when making decisions, which creates controversy in relation to their expectations and use of analytical products. Their lack of intelligence and analysis knowledge seemed to be a key reason for this.

This confusion over the theoretical foundation of intelligence in law enforcement has, arguably, had a negative impact on the development of proper professionalism for the intelligence and analysis professions in these countries. It has also negatively impacted the whole knowledge management process, which is visible in the variations in the knowledge structure, roles, tasks and functions between the intelligence and analysis units. The role confusions related to intelligence and analysis in the organisation exemplified this. The information management models vary or are absent in these countries; the information in the systems is fragmented; and the tacit knowledge is fragmented into different social, professional and organisational groups. The vicious cycle is completed when no training opportunities exist among all of the professional groups on information-, knowledge- and intelligence-related topics. The risk is that this information and knowledge fragmentation will hinder or even block
effective knowledge creation in these organisations if these are not managed well.

How this should be improved then? Modelling of analysis education and the background of the analysts at the law enforcement should be linked with the different knowledge needs/levels of the organisation. Thus analysts supporting senior management should have master level academic qualifications preferably on social science related discipline and have further training on management, strategic planning, business intelligence, strategic planning, key performance and impact assessments but also threat and risk analysis. The analysts supporting the middle management level would benefit bachelor level academic qualifications and have training on threat and risk analysis. Individual analysts at this level should also specialize into a specific analysis methodology such as social network analysis or geographical profiling. If they do not have police background they would benefit targeted police related training courses as well. Then at the investigative level there should be case analysts supporting an investigation from the beginning. These analysts would ideally be trained out of investigators as they would require good understanding of the investigative process. Courses they would need are basic data integration and analysis techniques such as mapping, link charting, process charting and event charting. Furthermore all mentioned levels and police officers would need information management training. These courses should be built on separate modules with the length of the courses ranging from 16 hours to 120 hours.

Acknowledging these two knowledge paradigms of tacit and explicit knowledge arguably makes it clear that are also two intelligence paradigms. Following this logic and using the introduced and updated intelligence definition to match this view can assist in the design of more coherent intelligence-led processes, business ontologies and intelligence services and products for law enforcement purposes. This intelligence definition will also assist in improving the overall intelligence doctrine in law enforcement. Thus, it will further help to understand how the knowledge-led structures and processes will need to be built. Understanding these two levels of intelligence processes will, arguably, assist in developing the standards for intelligence training, services and products. Doing so can move the whole analysis profession forward. Refining these knowledge
processes can then improve the professionalism in relation to intelligence and analysis, and the analysts can be better positioned and tasked to produce the meaningful and needed actionable knowledge known as intelligence. However, the law enforcement organisational culture presents the greatest challenge to ‘explicit’ knowledge-led aspirations. According to these findings, that culture is conservative, hierarchical, static, change resistant and an obstacle to intelligence and analysis. Thus, the type of organisational professionalism that is characterised by hierarchy and control will continue to hamper the knowledge-led initiatives if it is not suppressed. Trust plays a significant role in sharing information; thus, honest and efficient communication is one important key ingredient for gaining trust. Therefore, in light of these findings, it can be concluded that understanding the police culture, and especially its dominant tacit knowledge domain, is an important element for succeeding with any knowledge-led approaches in law enforcement.

This research indicated a lack of proper knowledge management in these countries, yet this research also specified that a strong knowledge-positive culture and curiosity exist in the police, laying a good foundation for developing knowledge-led approaches. Having clear knowledge roles, structures, processes and definitions in place ensures there will be a good chance to succeed with this. What should also be addressed is that the organisation has different knowledge needs. Identifying these will also serve as the basis for determining what kind of new knowledge the analysts are expected to produce and where. Nevertheless, the police culture is quite deeply entrenched, so this will require firm management attention to succeed.

Then the question is can these findings be generalised? Firstly the literature used in this study is mostly coming from United Kingdom and United States and many of the findings of this research are comparable to these studies. Furthermore the experience of the researcher, who worked at Europol as an analyst and senior analyst with numerous European law enforcement agencies, coincide with these findings. Europol is a platform, a nexus, for the law enforcement to work together and exchange knowledge and best practices. Therefore the researcher had a unique view to see what the state of play of law enforcement intelligence analysis and knowledge management are around 40
countries. Additionally acting as the course manager and a trainer in numerous analysis courses, which were provided to the European law enforcement and beyond, the researcher observed that law enforcement mentality is fixed on here and now, not why and how.

Certainly the law enforcement culture holds similar traits in the western society. Therefore it is no wonder that the researcher has this experience on intelligence analysis and knowledge management from many other law enforcement agencies around the world. Indeed it can be argued, based on this experience, that there are challenges in many countries to adopt any other policing model than the standard model of policing. Similar elements hinder this progress as in the countries in this study: cultural constraints, information management related challenges, lack of definitions and understanding related to intelligence, analysis and knowledge. Also legislation plays a critical role in many countries as law enforcement is only allowed to react to incidents. Nevertheless the cultural element is the most critical as law enforcement adheres strongly for incident based routines, which will continue to drive the focus of these organisations even if any hindering legislation is changed.

Though it might prove difficult to change the legislation for the benefit of operational work all law enforcement organisations can use strategic analysis to support their strategic planning. Yet long term strategic thinking continues to be a real challenge for law enforcement in many countries compared to other intelligence disciplines (such as military or national security). In addition to the cultural challenges this type of strategic thinking is more challenging for law enforcement, as it needs to understand the complexities of the society where it operates. This is not an easy task as there is an overwhelming web of causalities to be understood, which is a considerable challenge even for academia. When looking like this it makes sense why law enforcement wants to focus on incidents instead of trying to understand the strategic picture. This argument provides also understanding why these knowledge concepts and definitions lack any real standardisation and the rationale behind the choice of of having organisational and information management related structures that do not properly support intelligence analysis and knowledge management.
Given this foundation it is no surprise that there is a lack of professionalism on intelligence analysis in many countries. There are isolated attempts to professionalise analysis and there are some law enforcement agencies where this is more advanced. Nevertheless, it is not uncommon that in countries, with multiple law enforcement agencies, one of these agencies have professional standards for analysis and others not.

Furthermore the experience of the researcher supports the general applicability of these findings to the third research question as well. Indeed as the law enforcement is often focused on ‘catching the bad guy’ it does not consider how different roles contributes to this process. Indeed ‘catching the bad guy’ is a knowledge process – although law enforcement officers do not often acknowledge this. This means that there are different elements and roles contributing to this process, which is far for being clear to law enforcement. Thus similar confusion exists in many countries on what kind of knowledge role is linked to a certain professional role.

8.2 Limitations

Like most studies, this one also has limitations. Firstly, covering a relatively wide area of disciplines has limited the in-depth discussion of each discipline. The researcher tried to find the most commonly agreed-on concepts and/or the most respected authors, but this might not be the case in each of the different disciplines. Secondly, this study was conducted in two relatively small and similar countries, which can limit the generalisation of these findings to a more global scale. Another limitation relates to language, which at times caused challenges in interpreting the findings. For example, there was, at times, a need for a contextual meta-analysis to translate the meaning from Finnish into English. The transcriptions of some recorded interviews given by participants with more limited English skills were also a challenge, as the core or essence was difficult to understand. This limitation also expands to the usage of the surveys, as the abstract survey questions allow room for interpretation. Indeed, researching abstract concepts such as knowledge and intelligence is already a challenge, even when using one’s own native language.
8.3 Contribution to knowledge

The contribution to knowledge by this thesis is manifold. Firstly, knowledge management as a discipline has not been extensively researched for the law enforcement domain. The researcher experienced difficulties finding articles on knowledge management in law enforcement: none could be found even when combining the terms intelligence analysis and knowledge management. This research also tested Nonaka and Takeuchi’s knowledge management model with its later added cultural dimension and found it a very useful, practical and workable model to be used for a knowledge management-related topic like intelligence. Indeed, as the knowledge and intelligence concepts are interlinked, the model could also be called the Intelligence Management Model and change the different knowledge roles to intelligence roles. This model can certainly be used to test just how much a particular law enforcement organisation is knowledge/intelligence-led to assist in the improvement developments.

Secondly, this research also went deeper into the theoretical foundations of law enforcement intelligence and was able to provide an updated definition for law enforcement intelligence. This contribution to knowledge has a very significant impact, as it can help to redesign law enforcement’s information and knowledge processes. Indeed, by understanding this division of intelligence, the social networks that are full of knowledge can be better utilised via organisational structures and processes to enhance intelligence work. Then, in relation to the slower intelligence process the analysts conduct, the possibilities in relation to machine learning and artificial intelligence can be taken more seriously within law enforcement to develop proper information management processes and platforms with powerful computing to reinforce the analytical function.

The new definition, along with the SECI model, can also assist in properly defining the law enforcement analyst’s roles and the tasks. Indeed, the law enforcement analyst profession lacks attention, and this research filled some of these knowledge gaps. This was truly successful, as understanding the different intelligence levels and the tacit knowledge-driven police culture can assist in defining the knowledge/intelligence roles and better link these into the already established law enforcement roles. Moreover, the debate over an analyst’s
academic background versus a police background can be seen differently when noting the two different knowledge domains used in law enforcement. Nevertheless, this can help to shape the knowledge-led approach, along with the need to improve the professionalism of police management, patrolling officers and investigators.

This research also provided a unique knowledge set on how police culture impacts the knowledge-led approaches, thus explaining why the ILP initiatives have had so many difficulties succeeding. Therefore, the change-resistant routines in these cultural settings need a special focus from management to increase success. Indeed, these findings can be turned into practical objectives to change the standard reactive policing model towards Intelligence-Led Policing or another knowledge-led policing approach. They can, therefore, serve as practical guidance if the law enforcement community wants to become knowledge-led.

8.4 Future research opportunities

This research revealed several new avenues for future research. Firstly, the whole theoretical foundation of law enforcement intelligence could benefit from more in-depth research to further develop the law enforcement intelligence doctrine. Secondly, police culture studies in relation to intelligence would be highly beneficial to further understand the areas to consider when engaging in a change management process to become more knowledge-led. Research on the professionalism of the intelligence discipline among the diverse roles of law enforcement would also bring the intelligence and analysis domain further along. Furthermore, the topics of organisational business ontology and the processes around knowledge management in law enforcement would be interesting research tasks for someone in the enterprise architecture domain. There is also the whole capability development of law enforcement in relation to intelligence and analysis. The research indicates a huge need exists for this; thus, it could be a very interesting research avenue to produce standards on education for intelligence and analysis. Lastly, by going through the different policing models, it might be interesting to investigate these from their main information source viewpoint. It seems that many of the different policing
models are designed around the information sources they use, such as community information (Community-Oriented Policing), crime events (Problem-Oriented Policing) or closed information sources (Intelligence-Led Policing). In this multi-source, information-rich world, a need arguably exists to combine all of these models and their sources to formulate a holistic, all-source policing model and bring law enforcement properly into this knowledge era (Dawson & Stanko, 2016).
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Appendices

Appendix I: The interviewee roles per country

<table>
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<th>Code</th>
<th>Role</th>
<th>Background</th>
<th>Police Department</th>
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<td>Senior Manager</td>
<td>Post graduate education</td>
<td>PD 4</td>
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<td>Manager</td>
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<td>PD 5</td>
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<td>Analyst</td>
<td>Police officer, police education</td>
<td>PD 2</td>
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<tr>
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<td>Analyst</td>
<td>Police officer with academic education</td>
<td>PD 2</td>
</tr>
<tr>
<td>FI05</td>
<td>Manager</td>
<td>Police officer with academic education</td>
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<td>Police background</td>
<td>PD 2</td>
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<td>Police officer with academic education</td>
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</tr>
<tr>
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<td>Manager</td>
<td>Police officer with academic education</td>
<td>PD 1</td>
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<tr>
<td>DK04</td>
<td>Analyst</td>
<td>Civilian with academic education</td>
<td>PD 3</td>
</tr>
<tr>
<td>DK05</td>
<td>Analyst</td>
<td>Civilian with academic education</td>
<td>PD 1</td>
</tr>
<tr>
<td>DK06</td>
<td>Analyst</td>
<td>Police officer, police education</td>
<td>PD 4</td>
</tr>
<tr>
<td>DK07</td>
<td>Investigator</td>
<td>Police officer, police education</td>
<td>PD 5</td>
</tr>
<tr>
<td>DK08</td>
<td>Analyst</td>
<td>Civilian with academic education</td>
<td>PD 5</td>
</tr>
<tr>
<td>DK09</td>
<td>Manager</td>
<td>Police officer, police education</td>
<td>PD 1</td>
</tr>
<tr>
<td>DK10</td>
<td>Analyst</td>
<td>Police officer, police education</td>
<td>PD 1</td>
</tr>
<tr>
<td>DK11</td>
<td>Patrolling officer</td>
<td>Police officer, police education</td>
<td>PD 4</td>
</tr>
</tbody>
</table>
Appendix II: The interview schedule

**Intelligence, analysis and knowledge in law enforcement**

1. How would you describe the concept of intelligence in law enforcement? Is it functional and needed in law enforcement? What should be improved, if any?
2. How would you describe the aims, objectives, and function of analysis in law enforcement? Is it needed? What should be improved, if any?
3. What are the advantages and/or disadvantages of police officers personal and practical experience compared against research type of theoretical knowledge in the context of law enforcement? Is theoretical/academic type of knowledge needed in law enforcement?
4. How are the organisational crime management strategies, objectives and priorities developed? Are these clear, agreeable and reachable? How are these implemented in the daily work? What should be improved, if any?

**Information management**

5. Can you describe how crime and criminal related information is managed in your organisation?
6. Are there limitations on who can access to certain information? Please describe.
7. Are the systems easy to use and are the standards of information processing well defined? Is the legal framework around information management clear?

**Knowledge conversion**

8. Sharing personal experiences and knowledge in an organisation could be done for example by means of meetings, training sessions and/or social events such as team building. Is the staff in your organisation encouraged and willing to share their personal experiences and knowledge gained through their work? Please describe.
9. How is crime/criminal related data, information and knowledge collected? What initiates the collection, who collects the information, what kind of sources are used, how is the value of information assessed, and how is it documented/stored?
10. What is done with all of the collected and stored information? How is it used? And by whom? Is there a systematic process, specific methods and software’s used to work with the data?
11. How is the intelligence analysis findings shared and used in your organisation? Do you have specific intelligence products? Please describe.
On knowledge workers

12. What is the role, tasks and position of the analysts in your organisation? Do you consider these appropriate? Is there a need for analysts in law enforcement? Please justify.

13. What is the anticipated educational background, professional experience, characteristics and career opportunities of the analysts in law enforcement?

14. How do you see the role of patrolling officers, investigators and other front line employees in the intelligence process? Comparing against analysts, is the division of tasks clear between these roles or do they overlap? Please describe.

15. What is the role of management and senior management in the intelligence/analysis process? Is there a systematic tasking/planning/direction phase for the intelligence/analytical work? Is intelligence analysis products used to guide decision making? Please describe.

16. How is the training and capability building of staff on information management, analysis methods and intelligence organised? Is there training opportunities on these topics for all staff – including management? Please describe.

Organisational issues

17. How well new ideas are accepted in the organisation? Are staff encouraged to find and experiment new solutions to identified problems? Are mistakes tolerated?

18. How would you describe the status of trust in your organisation? How would you improve this?

19. How is the communication done in your organisation? How easy it is to bring up different issues – even conflicting and difficult ones?

20. How would you describe your organisation? Do you consider your organisation to be dynamic, future oriented and change oriented? Or is it more static, conservative and habitual? Also is it hierarchical and departmentalised, or is it more matrix type flexible organisation? Or something else, what?
Appendix III: The survey questionnaire

Survey Questionnaire

(0)23 9284 3933

Study Title: Law enforcement intelligence analysis: How does this knowledge management service survive in the crossfire of occupational culture and changing policing models?

Name of researcher: Mr. Juha Syrjä
Thesis supervisor: Senior Lecturer Dr Adrian James

Invitation

Thank you for reading this. I would like to invite you to take part in my research study by completing this questionnaire. It is entirely up to you whether you participate.
however your responses would be greatly valued. This online survey is forwarded to you by your organisation contact person based on my indication on the potential respondents. If you are reading this you might have personal knowledge on the topic, which I am exploring through this study.

My study aims to examine how to better establish, encourage and enable intelligence analysis to be utilised in law enforcement context. Through this survey I want to gather your perceptions on the issues relevant for my research topic. I neither need your name nor any identifying details; the questionnaire can be completed anonymously and all reasonable steps will be taken to ensure confidentiality. In case of online survey it is important to note that the researcher will not collect and keep any IP addresses or similar data, which could identify the online respondents. Moreover such data will not be made publicly available or used in any ways to identify the respondents.

The responses from completed questionnaires will be collated for analysis; once this is complete the original questionnaires will be retained for later use such as auditing or another study. The completed hard copies of the questionnaires will be stored in locked filing cabinet and the electronic results will be stored under a password protected private folder. The responses to this questionnaire remains anonymous, so if you wish to learn more about the results of the research you can send me an email indicating this. The contact details can be found in this survey and in the invitation letter attached to this survey.

**Questionnaire instructions**

This questionnaire will seek your perceptions on topics which include several statements.

**First** please select your current role in your organisation. After this please indicate what other roles you might have had throughout your career. Then please select your educational background by selecting all the matching items. Then finally please indicate your age group and your gender.

After this you can find 30 statements divided under separate headings. Please select the one which best matches your evaluation. Please fill in all the statements. You can:

- **SA** = strongly agree;
- **A** = agree;
- **N** = neutral;
- **D** = disagree;
- **SD** = strongly disagree

with these statements.

In the end of this survey is a text box, which you can fill in additional comments. Please **do not include any information, which is operational or confidential** in nature as it violates the data protection rules and thus cannot be accepted.
### Your current role is:

<table>
<thead>
<tr>
<th>Role</th>
<th>Please select</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Manager</td>
<td></td>
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<tr>
<td>Manager</td>
<td></td>
</tr>
<tr>
<td>Investigator</td>
<td></td>
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<tr>
<td>Analyst</td>
<td></td>
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<tr>
<td>Patrolling Officer</td>
<td></td>
</tr>
<tr>
<td>Something else, what? [text box]</td>
<td></td>
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</tbody>
</table>

### Educational background

<table>
<thead>
<tr>
<th>Type</th>
<th>Please select</th>
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</thead>
<tbody>
<tr>
<td>Vocational (police officers)</td>
<td></td>
</tr>
<tr>
<td>Vocational (civilian)</td>
<td></td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td></td>
</tr>
<tr>
<td>Master’s Degree</td>
<td></td>
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<tr>
<td>Doctorate</td>
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<tr>
<td>Other, what?</td>
<td></td>
</tr>
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</table>

### Age

<table>
<thead>
<tr>
<th>Option</th>
<th>Please select</th>
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<tbody>
<tr>
<td>&lt;29</td>
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<td>30-39</td>
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<td>40-49</td>
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<td>50-59</td>
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<td>60&gt;</td>
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</table>

### Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Please select</th>
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<tbody>
<tr>
<td>Male</td>
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</tr>
<tr>
<td>Female</td>
<td></td>
</tr>
</tbody>
</table>

### Intelligence, Analysis and Knowledge in Law Enforcement

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The concept of intelligence in law enforcement is practical and needed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The aims, objectives and function of analysis in law enforcement is clear.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Theoretical, academic type of knowledge is mostly not needed in practical police work.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>We have clear, agreeable and manageable organisational crime reduction strategies, objectives and priorities.</td>
<td></td>
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</tbody>
</table>

### Information Management

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I systematically share and store any crime related information (such as tip-offs) in my possession into our organisations information systems for</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
further use.

I know how information stored in our systems will be used by the organisation.

It is easy to use our organisation’s information systems.

I have sufficient access to the information I need for my work.

The information processing standards (i.e. how to store data into our systems) and rules (such as data protection) are clear to me.

I am fully aware of the legal aspects of information sharing.

I have had plenty of training opportunities on information management (i.e. how to collect, store and share information through the systems) in our organisation.

<table>
<thead>
<tr>
<th>On Knowledge Conversion</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am used to produce different types of reports, documents and/or material to capture crime related information for our organisation.</td>
<td></td>
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<tr>
<td>I am eager to discover and experience new things in order to use this new knowledge in my working practice.</td>
<td></td>
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<tr>
<td>I often use different analytical techniques to the data and information stored in our systems to create a new awareness on a given topic.</td>
<td></td>
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</tr>
<tr>
<td>I make sure to share my professional knowledge and experience with my colleagues via social events, meetings, presentations and/or trainings.</td>
<td></td>
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<tr>
<td>Our analytical products and services are well-defined and standardised.</td>
<td></td>
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<tr>
<td>Our analytical products are important for the organisational decision making process.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>On Knowledge Workers</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know what I can expect from an analyst in our organisation.</td>
<td></td>
<td></td>
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<tr>
<td>The analysts are essential to our organisation.</td>
<td></td>
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<tr>
<td>I think the analysts have a good career opportunities in our organisation.</td>
<td></td>
<td></td>
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<tr>
<td>In the context of intelligence analysis process our patrolling officers and informant handlers can be seen as the collectors of information.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>The division of tasks between investigators and analysts are clear in our organisation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Police should not waste its resources on generating statistics, charts, reports and theories.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have had plenty of training opportunities on the intelligence analysis process, the analytical methods and software’s used in our organisation.</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisational Culture and Strategy</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
</table>

179
I can easily present new ideas and experiment new solutions to identified problems in our organisation.

Our organisation tolerate honest mistakes and see them as improvement opportunities.

I have full trust to my colleagues in our organisation.

Communication on different issues - even conflicting and difficult ones - is easy in my organisation.

I consider my organisation to be non-hierarchical, dynamic and future oriented.

If you wish to add any additional comments, please write these below. Please **do not include any information, which is operational and/or confidential** in nature as it violates the data protection rules and thus cannot be accepted.

[Text box]

Thank you for completing the questionnaire!

If you have any concerns regarding this research please contact me or my thesis supervisor in the first instance. You can also contact the University of Portsmouth, Institute of Criminal Justice Studies in relation to your concerns. The contact details of are:

- Researcher: Mr Juha Syrjä up468667@myport.ac.uk
- Thesis Supervisor: Senior Lecturer, Dr Adrian James Adrian.James@port.ac.uk
- University of Portsmouth, Institute of Criminal Justice Studies (ICJS) +44 (0)23 9284 3933 or icjsapplications@port.ac.uk
- Director of Institute of Criminal Justice Studies: Professor Steven Savage steve.savage@port.ac.uk

If you are not entirely happy with a response, please contact University of Portsmouth Complaints department on +44(0)2392 843642 or by email at complaintsadvice@port.ac.uk.
Appendix IV: Translated survey questionnaire statements - from English to Finnish.

Rikostiedustelu, -analyysi ja -tieto (ymmärrys) poliisitoiminnassa

1. Rikostiedustelun toimintamalli on käytännöllinen ja tarpeellinen.
2. Rikosanalyyssin tavoitteet ja toimenkuva ovat minulle selvät.
3. Teoreettista ja tyyliään akateemista tietoa ei yleensä tarvita käytännön poliisityössä.
4. Poliisilla on selvä, yksimielisesti hyväksytty ja hallittavissa oleva rikosten vähentämiseen tähtäävä strategia, tavoitteet ja painopistealueet.

Tiedon hallinta

5. Tallennan systemaattisesti poliisin tietojärjestelmiin kaikki haluunni saamani tiedot (kuten vihjeet) mahdollista tulevaa käyttöä varten.
6. Tiedän kuinka tietojärjestelmiin tallennettua tietoa käytetään organisaatiomossani.
7. Poliisin tietojärjestelmät ovat helppokäyttöisiä.
8. Minulla on pääsy tarvitsemiini tietojärjestelmiin.
9. Tiedon tallentamisen standardit (oikea tallennusmuoto ja luokittelut) ovat minulle selvät.
10. Tiedonkäsittelyn laillisuusvaatimukset ovat minulle selvät.
11. Minulla on ollut hyvin mahdollisuuksia saada tiedonhallintaan ja tietojärjestelmiin liittyvää koulutusta.

Tiedon jakaminen

12. Olen tottunut kirjoittamaan / tuottamaan erilaisia rikoksiin ja rikollisuuteen liittyviä raportteja, dokumentteja ja/tai materiaalia.
13. Olen hyvin halukas kokemaan uusia asioita ja löytämään uutta tietoa ja tapoja toimia joita voin sitten höydyttää työssäni.
15. Pidän huolen siitä että jaan ammatillisen tietoni, taitoni ja kokemukseni kollegailla erilaisten sosiaalien tapahtumien yhteydessä (esim. kokouksissa ja koulutuksissa).
16. Rikosanalyyssituotteemme ovat hyvin määriteltyjä ja standardoidut.
17. Rikosanalyyssituotteemme ovat tärkeitä päätöksentekoa tukevassa prosessissa.

Tietotyöläisistä

18. Minulle on selvää mitä voin ammatillisesti pyytää ja odottaa analyyykikolta.
19. Analyyykit ovat erittäin tärkeitä poliisin organisaatiolle.
20. Analyyykkoilla on hyvät uramahdollisuudet poliisissa.
21. Rikostiedusteluanalyysiprosessissa järjestyspoliisilla ja järjestelmällisellä tiedottajatoiminnalla on samankaltainen tiedonkerääjän rooli.
22. Rikostutkijan ja analytyikan välinen rooli- ja tehtäväjakso on selvä.
23. Yleisesti ottaen päällystö on voimakkaasti mukana rikostiedustelun ja -analyysin tehtävänannossa ja suunnittelussa.
25. Minulla on ollut runsaasti koulutusmahdollisuuksia rikostiedustelun ja -analyysiprosessista sekä poliisin analyysimetodeista ja -ohjelmista.

Organisaatiokulttuurista

26. Minun on helppo ehdottaa uusia ideoita työssäni ja testata niitä käytännössä.
27. Tahattomien virheiden sieto on hyvää organisaatiossamme ja tällaiset virheet nähdään lähinnä oppimismahdollisuuksina.
28. Luotan vahvasti kollegoihini.
29. Kommunikointi - jopa vaikeiden ja ristiriitaisten asioiden - on helppoa organisaatiossamme.
30. Poliisi on organisaationa joustava, dynaaminen ja tulevaisuuteen orientoitunut.

Vapaa kommentti - Huom! Ei turvaluokiteltua tietoa
## Survey Statements - FI

<table>
<thead>
<tr>
<th>Statement</th>
<th>All</th>
<th>Analysts (n=21)</th>
<th>Investigators (n=82)</th>
<th>Management (n=19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The concept of intelligence in law enforcement is practical and needed.</td>
<td>2.26</td>
<td>1.86</td>
<td>2.34</td>
<td>2.32</td>
</tr>
<tr>
<td>2. The aims, objectives and function of analysis in law enforcement is clear.</td>
<td>2.67</td>
<td>2.1</td>
<td>2.85</td>
<td>2.58</td>
</tr>
<tr>
<td>3. Theoretical, academic type of knowledge is mostly not needed in practical police work.</td>
<td>3.47</td>
<td>3.62</td>
<td>3.44</td>
<td>3.58</td>
</tr>
<tr>
<td>4. We have clear, agreeable and manageable organisational crime reduction strategies, objectives and priorities.</td>
<td>3.23</td>
<td>3.05</td>
<td>3.33</td>
<td>2.95</td>
</tr>
<tr>
<td>5. I systematically share and store any crime related information (such as tip-offs) in my possession into our organisations information systems for further use.</td>
<td>2.85</td>
<td>2.43</td>
<td>2.9</td>
<td>3.05</td>
</tr>
<tr>
<td>6. I know how information stored in our systems will be used by the organisation.</td>
<td>2.61</td>
<td>2.24</td>
<td>2.73</td>
<td>2.53</td>
</tr>
<tr>
<td>7. It is easy to use our organisation’s information systems.</td>
<td>3.25</td>
<td>2.76</td>
<td>3.39</td>
<td>3.21</td>
</tr>
<tr>
<td>8. I have sufficient access to the information I need for my work.</td>
<td>1.77</td>
<td>1.52</td>
<td>1.88</td>
<td>1.58</td>
</tr>
<tr>
<td>9. The information processing standards (i.e. how to store data into our systems) and rules (such as data protection) are clear to me.</td>
<td>2.54</td>
<td>2.18</td>
<td>2.68</td>
<td>2.84</td>
</tr>
<tr>
<td>10. I am fully aware of the legal aspects of information sharing.</td>
<td>2.2</td>
<td>2.05</td>
<td>2.23</td>
<td>2.21</td>
</tr>
<tr>
<td>11. I have had plenty of training opportunities on information management (i.e. how to collect, store and share information through the systems) in our organisation.</td>
<td>3.14</td>
<td>2.52</td>
<td>3.35</td>
<td>2.84</td>
</tr>
<tr>
<td>12. I am used to produce different types of reports, documents and/or material to capture crime related information for our organisation.</td>
<td>2.28</td>
<td>1.67</td>
<td>2.37</td>
<td>2.58</td>
</tr>
<tr>
<td>13. I am eager to discover and experience new things in order to use this new knowledge in my working practice.</td>
<td>1.72</td>
<td>1.52</td>
<td>1.68</td>
<td>2.16</td>
</tr>
<tr>
<td>14. I often use different analytical techniques to the data and information stored in our systems to create a new awareness on a given topic.</td>
<td>3.09</td>
<td>2.14</td>
<td>3.3</td>
<td>3.21</td>
</tr>
<tr>
<td>15. I make sure to share my professional knowledge and experience with my colleagues via social events, meetings, presentations and/or trainings.</td>
<td>2.15</td>
<td>1.86</td>
<td>2.22</td>
<td>2.21</td>
</tr>
<tr>
<td>16. Our analytical products and services are well-defined and standardised.</td>
<td>3.25</td>
<td>3.1</td>
<td>3.27</td>
<td>3.32</td>
</tr>
<tr>
<td>17. Our analytical products are important for the organisational decision making process.</td>
<td>2.8</td>
<td>2.67</td>
<td>2.91</td>
<td>2.47</td>
</tr>
<tr>
<td>18. I know what I can expect from an analyst in our organisation.</td>
<td>2.84</td>
<td>2.14</td>
<td>3.13</td>
<td>2.37</td>
</tr>
<tr>
<td>19. The analysts are essential to our organisation.</td>
<td>1.97</td>
<td>1.48</td>
<td>2.12</td>
<td>1.84</td>
</tr>
<tr>
<td>20. I think the analysts have a good career opportunities in our organisation.</td>
<td>2.76</td>
<td>2.43</td>
<td>2.85</td>
<td>2.68</td>
</tr>
<tr>
<td>21. In the context of intelligence analysis process our patrolling officers and informant handlers can be seen as the collectors of information.</td>
<td>2.85</td>
<td>2.43</td>
<td>2.9</td>
<td>3.11</td>
</tr>
<tr>
<td>22. The division of tasks between investigators and analysts are clear in our organisation.</td>
<td>2.85</td>
<td>2.71</td>
<td>2.93</td>
<td>2.68</td>
</tr>
<tr>
<td>23. Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning.</td>
<td>3.22</td>
<td>3.24</td>
<td>3.27</td>
<td>2.95</td>
</tr>
<tr>
<td>24. Police should not waste its resources on generating statistics, charts, reports and theories.</td>
<td>3.58</td>
<td>3.9</td>
<td>3.45</td>
<td>3.89</td>
</tr>
<tr>
<td>25. I have had plenty of training opportunities on the intelligence analysis process, the analytical methods and software’s used in our organisation.</td>
<td>3.67</td>
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<td>26. I can easily present new ideas and experiment new solutions to identified problems in our organisation.</td>
<td>2.65</td>
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<tr>
<td>27. Our organisation tolerate honest mistakes and see them as improvement opportunities.</td>
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<td>28. I have full trust to my colleagues in our organisation.</td>
<td>2.04</td>
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<td>29. Communication on different issues - even conflicting and difficult ones - is easy in my organisation.</td>
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<td>30. I consider my organisation to be non-hierarchical, dynamic and future oriented.</td>
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## Appendix VI: The Finnish survey responses in percentages

<table>
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<tr>
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## Appendix VII: Danish survey questionnaire averages

<table>
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<tr>
<th>Survey Statements - DK</th>
<th>All</th>
<th>Analysts (n=38)</th>
<th>Investigators (n=8)</th>
<th>Management (n=19)</th>
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</thead>
<tbody>
<tr>
<td>1. The concept of intelligence in law enforcement is practical and needed.</td>
<td>1.17</td>
<td>1.05</td>
<td>1.25</td>
<td>1.21</td>
</tr>
<tr>
<td>2. The aims, objectives and function of analysis in law enforcement is clear.</td>
<td>2.69</td>
<td>2.54</td>
<td>3</td>
<td>2.53</td>
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<tr>
<td>3. Theoretical, academic type of knowledge is mostly not needed in practical police work.</td>
<td>3.69</td>
<td>3.73</td>
<td>3.75</td>
<td>3.56</td>
</tr>
<tr>
<td>We have clear, agreeable and manageable organisational crime reduction strategies, objectives and priorities.</td>
<td>2.87</td>
<td>3.14</td>
<td>2.75</td>
<td>2.74</td>
</tr>
<tr>
<td>4. I systematically share and store any crime related information (such as tip-offs) in my possession into our organisations information systems for further use.</td>
<td>2.02</td>
<td>1.97</td>
<td>1.88</td>
<td>2.21</td>
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<tr>
<td>5. I know how information stored in our systems will be used by the organisation.</td>
<td>2.18</td>
<td>1.92</td>
<td>2.63</td>
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</tr>
<tr>
<td>6. It is easy to use our organisation’s information systems.</td>
<td>3.21</td>
<td>2.81</td>
<td>3.5</td>
<td>3.32</td>
</tr>
<tr>
<td>7. I have sufficient access to the information I need for my work.</td>
<td>2.86</td>
<td>2.59</td>
<td>3.25</td>
<td>2.74</td>
</tr>
<tr>
<td>The information processing standards (i.e. how to store data into our systems) and rules (such as data protection) are clear to me.</td>
<td>2.42</td>
<td>2.43</td>
<td>1.88</td>
<td>2.95</td>
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<tr>
<td>8. I am fully aware of the legal aspects of information sharing.</td>
<td>2.1</td>
<td>2</td>
<td>2.25</td>
<td>2.05</td>
</tr>
<tr>
<td>9. I have had plenty of training opportunities on information management (i.e. how to collect, store and share information through the systems) in our organisation.</td>
<td>3.21</td>
<td>2.95</td>
<td>3.38</td>
<td>3.32</td>
</tr>
<tr>
<td>10. I am used to produce different types of reports, documents and/or material to capture crime related information for our organisation.</td>
<td>2.39</td>
<td>1.97</td>
<td>2.63</td>
<td>2.58</td>
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<tr>
<td>11. I am eager to discover and experience new things in order to use this new knowledge in my working practice.</td>
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<td>1.43</td>
<td>1.38</td>
<td>1.53</td>
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<tr>
<td>12. I often use different analytical techniques to the data and information stored in our systems to create a new awareness on a given topic.</td>
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<td>2.3</td>
<td>2.63</td>
<td>2.84</td>
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<td>13. I make sure to share my professional knowledge and experience with my colleagues via social events, meetings, presentations and/or trainings.</td>
<td>2.17</td>
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<td>14. Our analytical products and services are well-defined and standardised.</td>
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<td>3.19</td>
<td>2.88</td>
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<td>15. Our analytical products are important for the organisational decision making process.</td>
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<td>2.3</td>
<td>2.13</td>
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<td>16. I know what I can expect from an analyst in our organisation.</td>
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<td>2.88</td>
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<td>17. The analysts are essential to our organisation.</td>
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<td>18. I think the analysts have a good career opportunities in our organisation.</td>
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<td>2.84</td>
<td>2.75</td>
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<tr>
<td>19. In the context of intelligence analysis process our patrolling officers and informant handlers can be seen as the collectors of information.</td>
<td>1.72</td>
<td>1.65</td>
<td>1.63</td>
<td>1.89</td>
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<td>20. The division of tasks between investigators and analysts are clear in our organisation.</td>
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<tr>
<td>21. Our management is actively and systematically involved in directing the intelligence analysis process - for example through tasking and planning.</td>
<td>3.05</td>
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<td>22. Police should not waste its resources on generating statistics, charts, reports and theories.</td>
<td>3.81</td>
<td>3.97</td>
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<tr>
<td>23. I have had plenty of training opportunities on the intelligence analysis process, the analytical methods and software’s used in our organisation.</td>
<td>3.36</td>
<td>3.14</td>
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<td>24. I can easily present new ideas and experiment new solutions to identified problems in our organisation.</td>
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<td>2.76</td>
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<td>2.41</td>
<td>1.88</td>
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<tr>
<td>27. Communication on different issues - even conflicting and difficult ones - is easy in my organisation.</td>
<td>3.15</td>
<td>3.08</td>
<td>3.25</td>
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<td>28. I consider my organisation to be non-hierarchical, dynamic and future oriented.</td>
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## Appendix VIII: The Danish survey responses in percentages

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</table>
Appendix IX: Favourable opinion of the Ethics Committee

10 October 2016

Dear Juha Syrja

<table>
<thead>
<tr>
<th>Study Title:</th>
<th>Law enforcement intelligence analysis: How does this knowledge management service survive in the crossfire of occupational culture and changing policing models?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethics Committee reference:</td>
<td>16:17:07</td>
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</tbody>
</table>

Thank you for submitting your documents for ethical review. The Ethics Committee was content to grant a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, revised in the light of any conditions set out in the attached document.

The Ethics Committee provides a favourable ethical opinion with the following requirements:

1. Participant information includes the potential risks for participants with regard to potentially compromising situations with regard to their role and future work opportunities.
2. Participant information must include the statement that participants should not disclose confidential or sensitive information about their employing organisation. In connection with this, it must also be written in the participant information that if such information is revealed it can not be included in the data analysis and if it poses a breach of organisational guidelines or poses a risk to any person, such information will be brought to the attention of the appropriate professional. This is a limit to the confidentiality and anonymity that can be offered by the researcher.
3. Contact details for the FHSS Research Ethics Committee should be included.
4. Host organisations must be clearly informed (in writing) of any potential reputational risks and how these will be mitigated.

There is no need to submit any further evidence to the Ethics Committee; the favourable opinion has been granted with the assumption of compliance.
The favourable opinion of the EC does not grant permission or approval to undertake the research. Management permission or approval must be obtained from any host organisation, including University of Portsmouth, prior to the start of the study.

Documents reviewed

The documents reviewed by The Faculty of Humanities and Social Sciences Ethics Committee.

<table>
<thead>
<tr>
<th>Document</th>
<th>Version</th>
<th>Date</th>
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<tbody>
<tr>
<td>Application Form</td>
<td>1</td>
<td>18.09.2016</td>
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<tr>
<td>Participant Information Sheet(s) (list if necessary)</td>
<td>1</td>
<td>18.09.2016</td>
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<tr>
<td>Consent Form(s) (list if necessary)</td>
<td>1</td>
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<td>Invitation Letter</td>
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<td>18.09.2016</td>
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<td>Supervisor Email Confirming Application</td>
<td>1</td>
<td>17.09.2016</td>
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<td>Interview Questions / Topic List</td>
<td>1</td>
<td>18.09.2016</td>
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<td>Principal Investigator’s Response to the Ethics Committee</td>
<td>1</td>
<td>18.09.2016</td>
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<tr>
<td>Letter to Finnish organisation</td>
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<td>06.04.2016</td>
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<tr>
<td>Letter to Danish organisation</td>
<td>1</td>
<td>06.04.2016</td>
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<tr>
<td>Approval from Finnish Police</td>
<td>1</td>
<td>10.08.2016</td>
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<tr>
<td>Approval from Danish Police</td>
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<td>26.08.2016</td>
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Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements set out by the University of Portsmouth
After ethical review

Reporting and other requirements

The enclosed document acts as a reminder that research should be conducted with integrity and gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Notification of serious breaches of the protocol
- Progress reports
- Notifying the end of the study

Feedback

You are invited to give your view of the service that you have received from the Faculty Ethics Committee. If you wish to make your views known please contact the administrator ethics-fhss@port.ac.uk

Please quote this number on all correspondence – 16:17:07

Yours sincerely and wishing you every success in your research

***************

Chair

Dr Jane Winstone

Email: ethics-fhss@port.ac.uk
Enclosures: “After ethical review – guidance for researchers”

Appendix 1

After ethical review – guidance for researchers

This document sets out important guidance for researchers with a favourable opinion from a University of Portsmouth Ethics Committee. Please read the guidance carefully. A failure to follow the guidance could lead to the committee reviewing and possibly revoking its opinion on the research.

It is assumed that the research will commence within 3 months of the date of the favourable ethical opinion or the start date stated in the application, whichever is the latest.

The research must not commence until the researcher has obtained any necessary management permissions or approvals – this is particularly pertinent in cases of research hosted by external organisations. The appropriate head of department should be aware of a member of staff’s research plans.

If it is proposed to extend the duration of the study beyond that stated in the application, the Ethics Committee must be informed.

If the research extends beyond a year then an annual progress report must be submitted to the Ethics Committee.

When the study has been completed the Ethics Committee must be notified.

Any proposed substantial amendments must be submitted to the Ethics Committee for review. A substantial amendment is any amendment to the terms of the application for ethical review, or to the protocol or other supporting documentation approved by the Committee that is likely to affect to a significant degree:

(a) the safety or physical or mental integrity of participants
(b) the scientific value of the study
(c) the conduct or management of the study.
A substantial amendment should not be implemented until a favourable ethical opinion has been given by the Committee.

Researchers are reminded of the University’s commitments as stated in the Concordat to Support Research Integrity viz:

- maintaining the highest standards of rigour and integrity in all aspects of research
- ensuring that research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards
- supporting a research environment that is underpinned by a culture of integrity and based on good governance, best practice and support for the development of researchers
- using transparent, robust and fair processes to deal with allegations of research misconduct should they arise
- working together to strengthen the integrity of research and to reviewing progress regularly and openly

In ensuring that it meets these commitments the University has adopted the UKRI Code of Practice for Research. Any breach of this code may be considered as misconduct and may be investigated following the University Procedure for the Investigation of Allegations of Misconduct in Research.

Researchers are advised to use the UKRI checklist as a simple guide to integrity.
Appendix X: Declaration of ethical conduct of the research

FORM UPR16
Research Ethics Review Checklist

Please include this completed form as an appendix to your thesis (see the Research Degrees Operational Handbook for more information)

<table>
<thead>
<tr>
<th>Postgraduate Research Student (PGRS) Information</th>
<th>Student ID: 4988067</th>
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<tbody>
<tr>
<td>PGRS Name: Juha Matti Syija</td>
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<td>Department: ICJS</td>
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<td>First Supervisor: Professor Steve Savage</td>
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<td>Start Date: 01/10/2013; Progression for Part 2: 01/10/2015</td>
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<td>Study Mode and Route: Part-time</td>
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| Title of Thesis: Providing Explicit Knowledge in an Experience-driven Culture: Levels of Professionalism in Intelligence Analysis and Its Role in the Law Enforcement Knowledge Management Apparatus |
| Thesis Word Count: 49,952                      |

If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University’s Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study.

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

UKRIO Finished Research Checklist:
(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee report or see the online version of the full checklist at: http://www.ukrio.org/what-we-do/code-of-practice-for-research/)

- **a)** Have all of your research and findings been reported accurately, honestly and within a reasonable time frame? [ ] YES [ ] NO
- **b)** Have all contributions to knowledge been acknowledged? [ ] YES [ ] NO
- **c)** Have you complied with all agreements relating to intellectual property, publication and authorship? [ ] YES [ ] NO
- **d)** Has your research data been retained in a secure and accessible form and will it remain so for the required duration? [ ] YES [ ] NO
- **e)** Does your research comply with all legal, ethical, and contractual requirements? [ ] YES [ ] NO

Candidate Statement:
I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s).

Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC): 16:17:07

If you have not submitted your work for ethical review, and/or you have answered ‘No’ to one or more of questions a) to e), please explain below why this is so:

[ ]

Signed (PGRS): [ ]
Date: [ ]

UPR16 – April 2018