Towards an enterprise architecture framework for community policing

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Abstract. The activities of policing and community policing may be considered fundamentally different from the processes that occur within business organisations; however, at a high-level both groups still require people, systems and processes in order to effectively carry out their functions and achieve their goals. Therefore, through the identification of community policing (CP) stakeholders, the activities, processes and information flows and the governance, training and management procedures all carried out under CP's remit we are able to understand the current state of play within CP, how we might wish CP to be in the future and the processes that need to be put in place to get there. Using an Enterprise Architecture approach we provide an initial formal description of CP, its interdependencies, relationships, principles and guidelines in order to lay the groundwork for a fully featured CP model in Europe.

1   Introduction

Community Policing (CP) is a concept which aims to develop a closer relationship between the police and the communities they serve in order to build better a better community environment for all. As opposed to normal policing methods, CP is inherently considered to be a more proactive approach compared to the reactive state of many policing activities, it requires citizen involvement and is decentralised [3]. Therefore, the tactics, tasks and strategies that are employed for CP must be with the aim of improving and working together with the community. In this paper, we present an Enterprise Architecture approach to modelling CP that can be used as a springboard to understand the current state of CP in Europe and provide a foundation to build towards a future vision of CP.

2   Unity

Unity is an EU Horizon 2020 funded project that aim to enhance the relationships and communication channels between the police and the communities they serve. To this end Unity aims to identify CP best practices, and use these practices to develop tech-

nological solutions to improve the communication between police and communities and as a foundation for the development of police training and awareness around CP.

Unity began the project with four high-level goals for CP: Trust, Information Sharing, Prevention and Accountability. Through further background research and a number of interviews with existing CP stakeholders these have evolved into four important CP concepts:

- Working together, cooperation and collaboration between police and external groups;
- Building relationships of trust, confidence and understanding between police and external groups;
- Building relationships of trust, confidence and understanding between police and external groups;
- Addressing local needs and issues, both proactively and reactively.

These concepts provide us with an initial framework and a set of high-level concepts from which the rest of the project is able to build out from.

3   Enterprise Architecture

Enterprise Architecture (EA) as defined as ``The fundamental organization of a system, embodied in its components, their relationships to each other and the environment, and the principles governing its design and evolution'' [1]. We can consider the fundamental organisation of a system to be CP and its structure. The components are the stakeholders involved in CP as well as the processes, procedures, tools and technologies required to carry it out, their corresponding relationships and those to their environment (such as the local communities and wider society). The principles that govern the design of CP include existing practices, laws, societal norms and expectations, and CP communication methods. Furthermore, it is not the aim when constructing an architecture framework to simply understand what is happening in CP now, an architecture framework also helps to facilitate the process of moving from where it is now towards the vision of how CP should be in the future. Thus, the EA constitutes a formal description of an organisation's components, functions, and structure, the interrelationships and, consequently, their dependencies upon one another.

Within Unity we are using the Open Group Architecture Framework (TOGAF) [4] in order to construct our models. TOGAF is built upon the idea that in order to understand the system we are observing we need to understand its business architecture, applications architecture, data architecture and the technical architecture. In order to gather the information that is required to build the architecture there are a certain amount of information about the existing system we need to understand. This information includes:

- Who are the stakeholders?
- What are the main tasks, processes and procedure?
- What are the information flows, and what information is exchanged?

- What are the communication channels?
- In which locations does the system arise?
- What are the governance structures and performance indicators?
- What is the functionality of existing technology and information systems?
- What is the extent of training in these areas?

Using existing research, research conducted within the Unity project with CP stakeholders across Europe and building on current EA models of policing we are able to begin answering these questions, identifying the areas in which these methods are deficient or require an update to incorporate modern technologies and methods into their processes and move towards a new and updated model of community policing.

4 Towards an Enterprise Architecture for Community Policing

The aim of defining an EA for CP is to provide a clear vision for Unity and, by extension, CP in Europe of how CP can move from its existing state (current operating model) towards a state which embodies the best and most effective practices within Europe for CP (target operating model).

4.1 Mapping of Core Tasks to Outcome Areas

As mentioned above, we began Unity with four high-level goals (Prevention, Information Sharing, Trust and Accountability). Our first task within the development of the current operating model was to realise where the core tasks as identified through interviews with police and communities within eight European Countries (UK, Belgium, Croatia, Estonia, Germany, Finland, Macedonia and Bulgaria) carried out in another component of the project, mapped to each of these outcome areas. In this initial sift, 57 possible core tasks within CP were identified. They are then mapped to one or more of the four outcome areas. The results of this mapping is then displayed in Fig. 1. This mapping provides us with an overview of key tasks within CP and also highlights how many of these tasks do not just map to a single outcome area but, in fact, impact upon multiple CP concepts.

4.2 Police Activities Glossary link to CP

We have used the Police Activities Glossary (PAG) as an initial framework to map the tasks and processes identified within Unity. The PAG [2] was developed by the National Police Improvement Agency to standardise the roles and responsibilities that exist within UK policing. The next step in our modelling process was to take the PAG and map our previously identified core tasks to the PAG. The PAG is broken down into three main areas (managing the organisation, fight crime and protect people, and business support) and then divided into smaller subsections.
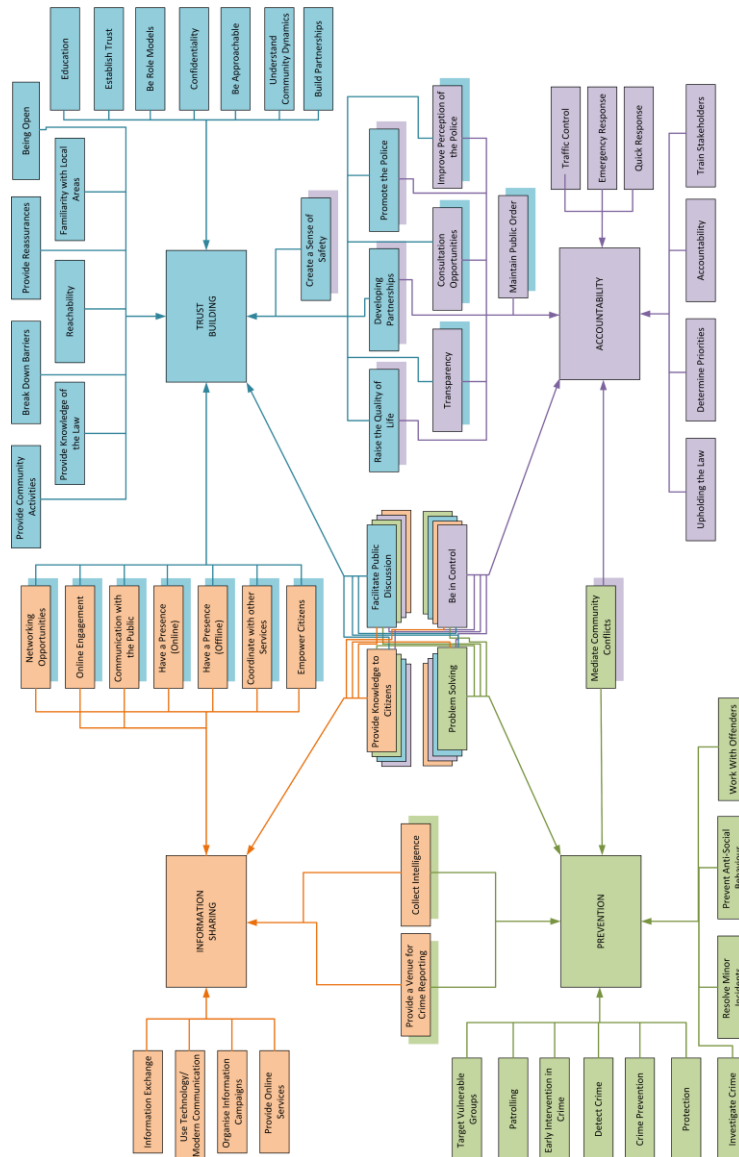
Fig. 1. Mapping of the four Unity outcome areas to the core tasks identified in the research

For example, fight crime and protect people is then divided into manage public engagement, protect the public, deal with incidents, bring offenders to justice, and support operational services. Each of these subsections is then further sub-divided. It is at this third level that we then map the core CP tasks identified within the research to these third tier activities. These are shown in Fig. 2.
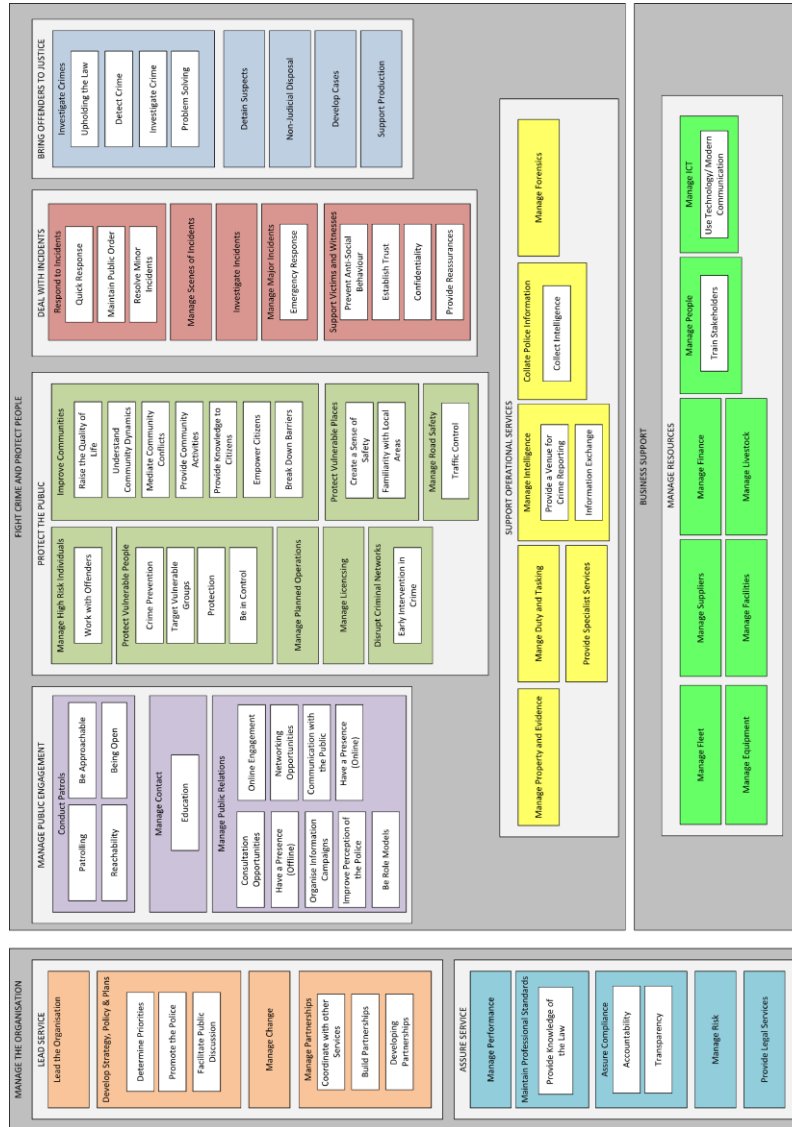
Fig. 2. Mapping of the Unity core tasks to the Police Activities Glossary

4.3 Stakeholders and Communication Channels

Information was also gathered on CP stakeholders and their CP communication channels. In Unity, stakeholders consist of: police, community members and groups, and intermediaries. Police members may include officers, community policing officers (such as PCSOs in the UK), police volunteers and support staff all who may come into contact with the CP process. Communities may include young people, migrants,

geographic communities, victims of crime, offenders, various subcultures and, even, virtual communities that have no fixed location. Part of the CP process also involved intermediary organisations who may provide a bridge between the communities and police, or they may have reason to interact with the CP process directly. These intermediaries can be as diverse as specific community groups, support groups, local businesses, health and other social services, the education sector, and other blue light services. Many of these stakeholders will, or have the potential to be, involved in the majority of core CP tasks. In some tasks the police may be the instigator of the process and in others the CP process will be initiated due to a particular need, requirement or incident within the community.

A vital component of successful CP is ensuring that the communication channels between the police, citizens and intermediaries are always open and bi-directional. Within Unity's research a number of communication channels have been identified including traditional direct communication methods such as telephone, and face-to-face meetings, and new media communications such as websites, email, and social media. The police may also disseminate information through posters, notice boards, TV, public groups, education visits, lectures, neighbourhood watch, and other community meetings. By identifying both stakeholders and communications channels we can begin to figure out between who and through what mediums communication does or does not flow between the police and the communities they serve, identifying bottlenecks, inefficiencies, and where technologies such as mobile applications and social media may be well placed to improve and contribute to the CP process.

5   Discussion

In this paper, we have demonstrated how, within Unity, we are working towards developing an architecture for community policing. The next stages will require further analysis of existing data obtained through the Unity project from the police, intermediaries and communities to facilitate the refinement and expansion of the models for the communication and information flows for the core tasks. This will enable us to develop a clear vision and model for CP in the future.

References

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