ABSTRACT

The building of public safety network (PSN) infrastructures for the purposes of facilitating communication, sharing of information, and collaboration among first responders has been identified as a key policy goal in the aftermath of events such as the September 11th terrorist attacks and Hurricane Katrina. Early analysis of professional and academic literature in conjunction with prior empirical research indicates that there is a great variety in the types of systems being developed under the rubric of “public safety network,” as well as the services these systems deliver. As part of an ongoing National Science Foundation-sponsored project, we have developed a taxonomy of PSNs to bring conceptual clarity to our research and to the domain at large, which we present in this poster.

Categories and Subject Descriptors
K.4.3 [Organizational Impacts]

General Terms
Measurement, Design

Keywords
Public Safety Network Infrastructures

1. INTRODUCTION

Recent events in the United States such as the September 11th terrorist attacks and Hurricane Katrina have caused policymakers at all levels of government to examine the capabilities and preparedness of first responder agencies. In particular, there has been significant emphasis placed on the developing of systems of information and communications technologies (ICT) to facilitate communication, sharing, and collaboration among first responder agencies [1]. This emphasis on the creation of public safety networks (PSNs) for interorganizational collaboration is designed to correct decades of isolated, ad hoc, and poorly supported ICT development practices among first responder agencies in the United States [1].

Initial analysis of the professional and academic literature, as well as prior empirical research, indicates that there is great variety in types of systems being developed under the rubric of “public safety network” and the types of services delivered [2]. This variety includes technological feature sets, organizational infrastructures, governance practices, jurisdictional scope, and institutional environment. One key commonality is that all involve multiple agencies, meaning they may span governmental levels (i.e., federal, state, local), functions (e.g., police, fire, justice) or geographies (i.e., multiple counties, states or communities).
collaboration where many agencies participate in an activity that is centrally managed or controlled, but otherwise operate independently. For example, PSNs may share dispatch services or subscribe to a common data service.

At levels four and five of the taxonomy we hypothesize that PSNs achieve a collective benefit beyond that obtained by the individual agencies. At level 4, multiple organizations are collaborating by sharing a common communications infrastructure; Project SAFECOM is an example of this level of collaboration. At Level 5, the highest degree of collaboration occurs; here multiple individual organizations have coalesced to not only develop a technological infrastructure for sharing information, but to collaborate on the management and governance of the network as well. Level 5 PSNs may share an incident management system or adopt common data standards and sharing rules. We hypothesize that level 5 collaborations will be the most robust systems as well.

3. EMPIRICAL EVALUATION
We are currently gathering descriptive data about a large number of PSNs at the state and local level, while also producing detailed case studies of a smaller number of these initiatives. In Table 1 we summarize our empirical findings across three case studies of ongoing level 5 PSNs. These include ARJIS, CAPWIN and JNET. ARJIS is collaboration among local, county, state and federal law enforcement agencies in the San Diego region. The Capital Wireless Integrated Network (CapWIN) is a collaboration of police, transportation, emergency management, fire, military and homeland security agencies in the greater Washington, D.C. area. JNET is a collaboration in Pennsylvania initiated by executive order and implemented and managed at the state government level by the Pennsylvania State Police and the Office of Information Technology.

4. CONCLUSION AND FUTURE WORK
Public safety is a complex institutional milieu comprising interdependent sets of agencies at multiple levels of government, influenced by a wide array of factors such as federal policies, funding sources and technology vendors. PSNs are likely to exhibit common infrastructural elements, suggesting some aspects of a dominant design. The exact arrangements and details vary due to the degree of multi-agency collaboration, as outlined in this taxonomy. From our preliminary study of existing level 4 and 5 PSNs, we have established that these multi-agency collaborations usually involve policing activity, have a shared governance structure, involve a technology infrastructure that is intended for routine operational (and possibly emergency) use, and support the communication and information sharing needs of its user agencies. Upon further study, it will become clear if the particular characteristics of the local agency-specific milieus and arrangements have a larger, or lesser, contributing effect on the ultimate design of PSNs and their governance than do common institutional factors.

5. REFERENCES


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ii 301F IST Building, University Park, PA 16801. 011-814-865-4450. ssawyer@psu.edu; mtyworth@psu.edu.

iii 175 Forest Street, Waltham, MA 02452 USA. 011-781-891-3153. jfedorowicz@bentley.edu; mlmarkus@bentley.edu; cwilliams@bentley.edu.