

Richard Bergin reflects on the impact of John Steward's CHDS thesis, "Applying Technology Acceptance Research to Information Systems Implementation in Fire Service."

By Richard Bergin

John Steward's thesis, "Applying Technology Acceptance Research to Information Systems Implementation in Fire Service" nicely illustrates how existing theoretical models and a thread of research can be extended and applied to better explain and predict phenomena in Homeland Security as a field of study. In most cases, a theoretical model is rarely accurate, generalizable, and simple at the same time. Researchers are often told to pick two of those three criteria. When a theoretical model from cognitive sciences, at the level of the individual, is applied to a particular phenomenon in Homeland Security it is often generalizable to an extent, sometimes simple, but in many cases is not as accurate. These limitations provide an opportunity for further research that seeks to increase the level of explanatory accuracy of a particular theoretical model. The level of accuracy is often increased by modifying some causal mechanisms or links among variables in a theoretical model and by extending or adding new independent variables that seek to further explain the variation of key dependent variables such as an individual's decision to adopt a particular technology in Fire Services.

Homeland Security Professionals often encounter problems, such as limited adoption of new technologies in their organizations and then start to inquire as to what is inhibiting technology adoption or acceptance. After reviewing the literature and considering their own experiences, and those of the people with whom they work, the HLS professional may notice that existing theoretical models and related research threads have limited accuracy in terms of predicting a phenomenon such as technology acceptance in a particular environment or discipline such as Fire Services. This sparks further inquiry and an opportunity to extend a body of knowledge and a related theoretical model. John Steward discovered an explanatory gap across three threads of literature related to technology acceptance in Fire Services. John also discovered that a large portion of the variance in the decision to accept technology in Fire Services was being driven by the level of technology self-efficacy, facilitating conditions around the use of that technology, and the role of particular social influence mechanisms related to establishing social norms within a work culture.

Once a theoretical model is extended, the next step is to complete an empirical investigation that examines how well the model fits the environment it is being tested in or in this case how accurate the theoretical model is when applied to Fire Services. When an HLS professional is constrained, in term of time or access to data, he or she may develop a set of thought experiments as a preliminary means for testing model accuracy. John used two thought experiments that uncovered a link between facilitating conditions and self-efficacy. This allowed him to further refine his extended theoretical model to better explain and predict technology acceptance in his organization and, with possible further empirical testing, his extended model may be generalizable to other Fire Service organizations. John Steward's thesis research illustrates how existing theoretical models can be extended, validated in terms of accuracy, and applied to better explain and predict phenomena in Homeland Security as a field of study.

About the Author

Richard Bergin is a Lecturer at the Naval Post Graduate School. Over the past twelve years he has been teaching for the Information Sciences Department and the Center for Homeland Defense and Security and has acted as a thesis advisor for over one hundred master's theses. He came to NPS from the University of Southern California (USC) Marshall School of Business where he was an instructor in the information systems undergraduate and graduate programs. Bergin's research and teaching are focused on technology management, technology strategy and policy, economics of technology, and technology for Homeland Security areas at NPS. He has co-authored prior work in the *Journal of Organizational Computing and Electronic Commerce* and in the *Cognitive Systems Research* journal. Prior to his academic assignments, Bergin founded and served as CEO of Internet Productions, a software application development company that specialized in offering innovative e-commerce applications. Bergin has an extensive background in operations and production management. He worked in the aerospace industry as a systems analyst and a senior planner. He also worked in the internetworking industry as a production manager and has implemented a number of enterprise resource planning systems and total quality management programs. Richard Bergin earned his Bachelor of Science degree in Business Administration and a Master of Science degree in Information and Operations Management at the USC Marshall School of Business. He also received a Master of Science in Management Information Systems at the Claremont Graduate School. He may be reached at rdbergin@nps.edu.

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