An Abstract of a Dissertation Proposal Submitted to Nova Southeastern University in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

An Empirical Study of Privacy Risk Assessment Methodologies in Cloud Computing Environments

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Companies offering services on the Internet have led corporations to shift from the high cost of owning and maintaining stand-alone, privately-owned-and-operated infrastructure to a shared infrastructure model. These shared infrastructures are being offered by infrastructure service providers which have subscription, or pay-on-demand, charge models presenting compute and storage resources as a generalized utility. Utility based infrastructures that are run by service providers have been defined as "cloud computing" by the National Institute of Standards and Technology.

In the cloud computing model the concerns of security and privacy protections are exacerbated due to the requirement for an enterprise to allow third parties to own and manage the infrastructure and be custodians of the enterprises information. With this new architectural model there will be new hybrid governance models designed to support complex and uncertain environments. The cloud also requires a common infrastructure that spans what were separate computing silos into a dynamically integrated cross-domain integrated and multi-tiered distributed system. Privacy and security policy awareness during provisioning and computing orchestration with regards to data locality across domains and jurisdictions must be able to obey legal and regulatory constraints.

Commercial use of the Internet for electronic commerce has been growing at a phenomenal rate while consumer concern has also risen about the information gathered about them. Concern about privacy of data has been rated as the number one barrier by all industry types.

The purpose of this dissertation is to empirically determine if existing privacy assessment instruments adequately assess privacy risks when applied to cloud infrastructures. The hypothesis is to determine if existing instruments adequately assess privacy risks in cloud computing environments. This study will determine if the hypothesis is true or false by empirically comparing several privacy assessment instruments against cloud provider's environments.