

Vacant master thesis

The new frontier of IT innovation and digital transformation

Motivation

Organizational automation using Information Systems (IS) and Information Technology (IT) has been a research topic for a long time. This development will be taken to the next level by the current trend towards “digitization” or “digital transformation.” Digital and disruptive developments, like big data, industry 4.0, the Internet of things, smart cities, smart car, and smart metering, can change value chains and business models fundamentally. Owing to the rapidly changing environment, IT functions perceive a need to be innovative and to maintain the pace towards new IT/IS product and service developments. Currently, many IT functions are merely supportive functions with a reactive mode towards business departments that require new or adapted IT/IS services and products. This implies that IT functions often focus on their service-providing character, using the paradigm “plan, build, run” or “source, make, deliver,” which represents standardized IT processes, instead of being an innovation partner at the same level as the business functions. Consequently, most IT functions cannot currently keep track of the fast-moving environment and face challenges when they have to drive IT innovations that support transformation in terms of digital value chains or business models.

This master thesis is offered as part of the research program “IT Innovation and Transformation Management (InnoTrans).” The InnoTrans project aims to develop a reference design for innovative IT functions in terms of a new paradigm with an organizational and process-oriented perspective. Furthermore, InnoTrans is a joint endeavor of the University of Duisburg-Essen (SITM chair), the University of Bayreuth (Prof. Dr. Nils Urbach), and the University of Munich (Prof. Dr. Lars Brehm). The detailed focus of the master thesis will be discussed after a joint meeting with Prof. Dr. Ahlemann and the project team.

Application

The topic is open to master students only. Interested students can apply for this thesis by submitting a current transcript of their records and a motivational letter to sekretariat.sitm@uni-due.de with “Master thesis InnoTrans” in the subject line **until 25.09.2015**.

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Vacant master thesis

Development of a methodical and didactic model to increase executives' IS security awareness

Motivation

Today, the digital business drives new opportunities for economic success, but also challenges traditional approaches to IS security. Security threats and risks change as organizations adapt to the new realities of digital business. IS trends and topics, like cloud computing, Bring Your Own Device (BYOD), Internet of Things (IoT), and building successful Identity Access Management (IAM) programs in a digital business world, as well as new threads like social engineering," are evolving especially fast and challenging the traditional IS security understanding and mechanisms. Organizations' techniques and technologies should therefore be mature in their breadth and effectiveness in order to maintain appropriate levels of security for people, applications, data, and infrastructure. IS security programs have to rapidly adjust to the new reality and assimilate new technologies in order to avoid exposure to a multitude of external threats.

As security awareness should be part of the corporate culture, it is especially important that top managers and board members are fully aware of potential IS security risks. The goal of this master thesis is to develop a well thought out didactic concept to increase executives' awareness in the areas of security, business continuity, compliance, and risk. The student has to develop a two-day training seminar concept that is well grounded in scientific and practical literature from various disciplines. In the context of this thesis, insights from educational research, as well as from the IS literature, might be relevant. The thesis has to include close collaboration with a renowned German IT security firm to ensure that the concept is highly applicable.

Application

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Vacant master thesis

Building a design theory for IS risk assessment and security compliance

Motivation

Today, the digital business drives new opportunities for economic success, but also challenges traditional approaches to IS security. Security threats and risks change as organizations adapt to the new realities of digital business. IS trends and topics, like cloud computing, Bring Your Own Device (BYOD), Internet of Things (IoT), and building successful Identity Access Management (IAM) programs in a digital business world, as well as new threads like “social engineering,” are evolving especially fast, challenging the traditional IS security understanding and mechanisms. Organizations techniques and technologies should therefore be mature in their breadth and effectiveness in order to maintain appropriate levels of security for people, applications, data, and infrastructure. IS security programs have to rapidly adjust to the new reality and assimilate new technologies in order to avoid exposure to a multitude of external threats.

In this context, risk assessment is one of the most important activities of Information Security Management (ISM). Risk assessment is a structured and systematic procedure that depends on the correct identification of threats and an appropriate assessment of the risks arising from them. Nevertheless, current research lacks appropriate recommendations for a structured and effective risk assessment from a holistic perspective. Consequently, the objective of this thesis is to develop guidelines for effective IS risk assessments, from a strategic point of view, in the form of a design theory. This theory’s requirements and principles need to be elicited from and evaluated through interviews with IS practitioners and experts. The thesis requires close collaboration with a renowned German IT security firm in order to ensure that the guidelines are valid and highly applicable.

Relevant literature

- Gregor, S. and Hevner, A.R. (2013). Positioning and Presenting Design Science Research for Maximum Impact MIS Quarterly, 37 (2), 337-355.
- Hevner, A.R., March, S.T., Park, J. and Ram, S. (2004). Design Science in Information Systems Research. MIS Quarterly, 28 (1), 75-105.

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Application

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