1   Introduction and Key Goals

ACM and AIS established a joint task force responsible for developing MSIS 2016, a revised version of the master of science model curriculum in Information Systems (IS), in fall 2014 based on a review and recommendation by a preliminary evaluation task force. The members of the joint task force are Sue Brown (University of Arizona; representing AIS), João Alvaro Carvalho (Universidade do Minho; AIS), Brian Donnellan (Maynooth University; ACM), Eija Karsten (Åbo Akademi University; AIS, co-chair), Jun Shen (University of Wollongong; ACM), Bernard Tan (National University of Ireland; AIS), Mark Thouin (University of Texas at Dallas; ACM), and Heikki Topi (Bentley University; ACM, co-chair).

The task force started its work in January 2015, and it is planning to complete the MSIS 2016 revision by December 2016. The MSIS 2016 project is based on the strong history and tradition of master's level curriculum recommendations in IS, including (Ashenhurst 1972), (Nunamaker, Couger, and Davis 1982), MSIS 2000 (Gorgone and Gray 2000) and MSIS 2006 (Gorgone et al. 2006).

This document is the task force's first deliverable made available for public review. It has four main goals:

1. It will inform the global IS and computing education communities of the task force's composition, history, goals and schedule (see Section 5.1 for the schedule).
2. It will outline the key elements of the direction in which the task force is currently moving with its work and state the principles that the task force has chosen as the foundation for revising the curriculum.
3. It will solicit feedback from the IS community regarding all aspects of the task force's work, with a specific focus on the key changes proposed to the underlying principles and architecture of the degree.
4. Together with the feedback that the community provides, this document will form a basis for the task force's future work.

The task force is acting on behalf of the Information Systems community, and one of its key responsibilities is to ensure that the richness of the voices of the global IS community is represented appropriately in the MSIS revision process. At the same time, the task force will be willing to make compromises and accept that not all views can be incorporated in the final curriculum simultaneously.

2   Why an MS in Information Systems?

There are multiple stakeholder groups for whom the existence and continued well-being of master's degrees in IS is important. Those groups include students, graduates/alumni, employers/recruiters, the departments and schools offering the degrees, and society as a whole. Students who are interested in developing professional competences beyond those provided by a bachelor's degree in IS or in another computing discipline benefit from a master's degree in IS as a well-defined credential that leads to a set of competences respected and valued by employers. MSIS graduates benefit if the image of their degree stays current and its identity strong. Employers benefit from graduate degrees in IS because these degrees produce graduates who are ready to join project teams addressing real organizational problems or opportunities immediately after graduation. For the organizational units offering MSIS (or equivalent) degrees, they are an

excellent mechanisms for giving students a highly valued set of professional capabilities and thus, providing value to both students and employers. At the societal level, graduate degrees in IS address the continuing shortage of professionals who are able to identify and implement the best connections between business problems and opportunities and the technology capabilities that can be used to address them.

The most important factor driving the value of graduate level programs in IS is, however, that human ability to produce computing-based technologies far exceeds human capability to apply these technologies to appropriate organizational and individual contexts in a way that leads to increased value. Master's programs in IS provide environments in which the students can gain the skills and knowledge that are needed to start a successful career in demanding IS roles of planning, enabling and managing of solutions that enable digital transformation. These roles require integration of in-depth domain knowledge with strong understanding of digital technologies.

Pervasiveness of computing technologies is undeniable, and computing solutions are increasingly deeply embedded in products and services that have an impact on a wide variety of aspects of our lives. Transportation technologies, robotics in manufacturing, health care technologies, highly integrated computing and communication tools, commerce platforms that are available everywhere – the number of examples of technology solutions that are significantly changing human lives is increasing every day. Mastery of technology is not sufficient for fully understanding the potential and the risks of computing-based solutions. In addition to in-depth command of technology, it is essential that professionals responsible for digital technology solutions understand human behavior, organizational structures, business constraints and opportunities, ethical implications of technology applications, etc. A master's degree in IS prepares professionals who are able to deliver technology-based solutions addressing the most relevant problems and taking advantage of the most important opportunities.

Well-implemented master's degrees in IS with a shared identity also serve IS as an academic discipline and community. The professional contributions of the graduates of IS programs collectively form a significant component of what the discipline offers to its stakeholders (together, of course, with the impact of its research output over time). Educational output at the master's level is not inherently more valuable for the field than bachelor's degrees, but graduate degrees have the potential to be more effective in communicating the distinctive contributions of the field. This is particularly valuable in communicating the value and the identity of the IS discipline to prospective employees who might still not have a clear understanding of what IS graduates can offer. High-performing master's degree graduates and a well-defined integrated understanding of the key elements of a master's degree can be very effective in telling the story of IS.

One of the reasons a master's degree in IS can offer a very important additional qualification compared to a bachelor's degree is that many undergraduate degrees in IS (particularly those offered in business schools) are limited to a relatively small number of courses (such as six to eight) in the major. This type of an undergraduate degree does not make it possible to develop deep, specialized technical or managerial skills related to digital transformation. It does, however, form a good foundation on top of which a master's degree can build competences that demonstrate better what the IS discipline can offer than an undergraduate degree does.

The value of a graduate degree in IS can also be demonstrated by evaluating IS in the context of other computing degrees. As discussed, for example, in the CC2005 Overview Volume (Shackelford et al. 2006), IS as a discipline has a significantly stronger focus on organizational

level issues and the integration of domain expertise and computing than any other computing degree type (such as Computer Engineering (CE), Computer Science (CS), Information Technology (IT), or Software Engineering (SE)). CE and CS are clearly focused on computing only, SE introduces concerns of human behavior typically at a project level, and IT is primarily concerned about humans as users and sources of security threats. Although all disciplines recognize the importance of requirements specified by humans, IS degrees (particularly at the master's level) are specifically focused on supporting human goals at individual, organizational, and societal levels. Information Science is related to both IS and CS, and it shares areas of interest with both. It is, however, not one of the computing disciplines identified as such by, for example, CC2005.

Finally, it is also important to recognize that there is no one single model of a master's degree program in IS. As discussed in Section 6, the structure and content of these programs vary significantly depending on the region and the country. Still, many of the general reasons underlying the usefulness of these programs are the same: everywhere in the world, organizations and individuals are working to determine how to best use digital technology to advance their goals.

3   Assumptions Underlying an MSIS Degree

The revision of the MSIS model curriculum is based on the following assumptions regarding the MSIS degree:

1. MSIS is a **professional practice master's degree** that focuses on the development of specialized competences in IS. In addition, an MSIS degree can provide a foundational preparation for academic research; the programs choosing this emphasis typically require a research thesis. An MSIS degree focuses on the development of competences **that are aligned with a specific domain of practice** (such as business, health care, law, government, education, etc.).

3.1   Degree entry conditions and pre-program leveling experiences

2. An MSIS degree is **based on a completed undergraduate degree** that provides a foundation in the core IS topics, as defined in IS 2010. The length of the prior undergraduate degree in IS may vary depending on the national or regional educational system (for example, in many European countries an undergraduate degree can be three-year degree, leading to a two-year master's).
3. It is possible for those without an undergraduate degree as specified in #2 above to enter an MSIS degree program. This will, however, require additional coursework **that provides the equivalent of an undergraduate background in the IS topics specified below**. These courses are often called bridge courses, foundations courses, or pre-program leveling courses. The topic areas are as follows (together with the references to IS 2010):
    a. Foundations of Information Systems (IS 2010.1)
    b. Data and Information Management (IS 2010.2)
    c. IT Infrastructure (IS 2010.5)
    d. Systems Analysis & Design (IS 2010.6)
4. An MSIS degree **requires foundational studies in its specified domain of practice as a program prerequisite**.