

Preface

The field of decision support systems is one of the most enduring in the information systems domain, having emerged in the 1960s, at the beginning of the history of information systems as an area of research, from the pioneering work of Simon, Keen, and Scott Morton amongst many others. Through five decades, this field has continued to attract considerable and increasing attention from researchers and practitioners, under a range of banners.

Back in 1991, Teng and Galletta (1991) conducted a survey of IS researchers which showed 32% of respondents listed DSS as their area of research, with a further 22% listing artificial intelligence and 21% database management systems. These three areas, which totalled 281 mentions out of 845 valid responses, were actually the top 3 IS research areas listed by Teng and Galletta. In more recent times, Arnott and Pervan's (2006) comprehensive review of the DSS field yielded 1093 research papers published from 1990 to 2004 in 14 major journals, the key journals in a broadly defined IS research area. These papers represented 15.2% of all papers published in the 14 journals.

These statistics present a view of DSS as a core area of the IS domain and one with a dynamism well illustrated by the strength of such international groupings as the AIS Special Interest Group on Decision Support, Knowledge and Data Management Systems (SIG DSS), the Working Group 8.3 of the International Federation for Information Processing (IFIP) on DSS and the EURO Working Group on DSS (EWG DSS). Needless to say, researchers from these groupings form a large proportion of the contributors to this encyclopedia. Nevertheless, as evidenced by the wide scope of the contributions presented in the encyclopaedia, and the range of backgrounds and expertise of their authors, the area of DSS can now successfully claim to integrate groundings from a wide range of disciplines, ranging from Operations Research, to Management and to Social Psychology, with excellent, insightful and sometimes fascinating results.

Notwithstanding the debates about the best vehicle to study the way organisations work and what kind of systems to develop to support their needs, as illustrated in Morgan's (1986) superb *Images of Organisations*, we stand firm in our belief that thinking of organisations as decision making entities and the systems to support them as decision support system is a perspective that has served our discipline very well. Though no perspective should ever be adopted in an exclusive fashion and to the detriment of other equally valid perspectives, we will continue to preach the wide adoption of decisions and decision support artefacts as objects of study, now and in the future. In passing, we will smile knowingly when colleagues greet us with their usual joke: "*But DSS is dead at the stage!*" or "*DSS! It's just like flogging a dead horse!!*" As this encyclopaedia illustrates, the DSS horse is not only alive and well, it is prancing around the field; or has it even jumped the fence to conquer new pastures.

However, the success of the DSS field is also one of its weaknesses: as the area has grown and knowledge from an increasing number of domains is brought to bear on the problems that must be studied, it becomes increasingly difficult to maintain a complete vision of DSS and all its latest developments. Already, it is arguably the case that a researcher would struggle to keep a handle on all requisite knowledge to be able to understand or review all the DSSs papers produced in a year. For instance, it becomes difficult to keep pace with developments in Multi-Criteria Decision Making or in the modelling of uncertainty on the one hand, as well as with our

increased understanding of the role of emotions in human decision making or with the latest ideas of how to study Recognition-Primed Decision Making. Furthermore, for students of DSS, young researchers and practitioners who want to train themselves to be worthy of the *DSS specialists* label, it is increasingly difficult to know what to learn and what skills to practice.

This encyclopaedia project is born out of these observations that the diversity in our domain requires a source of information that does justice to the growth of DSS in recent years, offers the theoretical basis for researching and developing DSSs and provides visibility on the topics where research should be directed in the future. Of course, no single book can meet all the requirements for such an ambitious target, but we hope that this encyclopaedia of *Decision Making and Decision Support Technologies* will contribute to the formalisation of the DSS area in its current, diversified form. Repository of formal DSS knowledge, reference for the research carried out to date, instructional manual, springboard for future research, this book should help students, researchers, consultants and managers alike in their learning and experimentation with DSS concepts and artefacts.

In sourcing the material hereby presented, we have appealed to a broad range of constituencies of researchers and practitioners worldwide both within the specialised groups which explicitly work on DSS and in the wider IS community. Response was excellent from this all quarters. This led to the submission of over 200 proposals from which, after a lengthy reviewing process, 110 entries were selected and finalised. In classifying the material and to facilitate browsing through the 110 entries, we have relied on the authors of the contributions to provide each a keyword which best captured the essence of their contributions. These keywords were used to create the thematic table of contents (see Contents by Keyword) which was added to this encyclopedia in addition to the alphabetical table of contents of the paper titles. It is proposed that this provides a straightforward way to navigate the 1000 or so pages of the two volumes of this encyclopedia, either in leisurely fashion, following no particular sequence, or in a more orderly fashion, to meet a specific research, learning or teaching need. The Key Terms listed at the end of each contribution, compiled by each contributor, should also be an extremely valuable resource as they represent over a thousand terms and definitions pertaining to our discipline which students may be finding difficult to grasp and for which there may be no obvious source of a recent definition. Definitions, of course, can be difficult to agree upon, but the whole point of this broadly contributed compilation effort is precisely to offer a broad spectrum of perspectives on DSS topics, such that the glossary featuring in these pages should be a true representation of what DSS researchers around the world think is important in the area.

In concluding this preface, let us wish that these volumes represent an authentic, fresh and useful book (in the words of one of our editorial board members) that adds value to the domain, solves the problem of finding clear sources of information for the DSS researchers of the future and provides fresh impetus to pursue the study and development of DSS artefacts that support people and organisations as they make their decisions.

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