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Trends

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What do managers need to know about IS/IT, MIS and DSS?

In the academic field of Information Systems, we have repeatedly asked the question "What do managers need to know about IS/IT, MIS and DSS?" All of us know that managers cannot know everything about Information Systems and Decision Support Systems. We also know that Information Systems specialists and IS managers cannot know everything about DSS, MIS and IS/IT either. So what does a broad group of line and staff managers need to know about IS/IT, MIS and DSS?

Our DSS, Computing and IT knowledge and skill needs are constantly evolving. We all need to continually learn new concepts and new skills. Some new requirements build on previously learned materials; others force us to change dramatically and to "un" learn what we had learned.

A report from the Commission on Physical Sciences, Mathematics, and Applications titled "Being Fluent with Information Technology" (1999) provides a contemporary perspective on this general question. Check URL http://www.nap.edu/books/030906399X/html/.

I agree with the authors that people and especially managers need three types of knowledge about Information Technology. They label these as intellectual capabilities, fundamental concepts, and contemporary skills. The report provides details on each knowledge area. I'll try to summarize the three types with a focus on knowledge needs of managers.

Managers need to develop the ability to apply information technology in complex and sustained situations and to understand the consequences of doing so. Some intellectual capabilities needed include the ability to:

1. engage in sustained reasoning about IT including defining a problem, formulating a solution, and planning, designing, executing, and evaluating a solution,
2. manage complexity,
3. test a solution,
4. "debug" and cope when technological tools fail,
5. organize and navigate information structures and evaluate information,
6. collaborate on IT tasks,
7. use technology appropriately when communicating with others,
8. expect the unexpected,
9. anticipate changing technologies, and
10. think about information technology abstractly.

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Managers need to learn the foundations on which information technology and applications are built. Some key fundamental concepts include:

1. computers,
2. information and decision support systems,
3. networks,
4. digital representation of information,
5. information organization,
6. modeling and abstraction,
7. algorithmic thinking and programming,
8. universality (any computational task can be performed by any computer),
9. limitations of information technology, and
10. societal impact of information and information technology.

Skills refer to the ability to use particular hardware or software resources to accomplish information processing tasks. Managers need current or contemporary skills including:

1. using a PC and basic operating system features,
2. using a word processor to create a text document,
3. using a graphics and/or artwork package to create illustrations, slides, or other image-based expressions of ideas,
4. connecting a computer to a network,
5. using the Internet to find information and resources,
6. using a database system to set up and access useful information,
7. using a spreadsheet to model simple processes or financial tables,
8. using a computer to communicate with others, and
9. using instructional materials to learn how to use new applications or features.

In my opinion, managers need to be fluent and proficient in the use of Information Technologies and especially in capabilities, concepts and skills related to DECISION SUPPORT SYSTEMS.

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