: Why are decision support case studies important?

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Case studies help us understand decision support. Both teaching and research case studies serve a useful purpose in advancing the field. A good teaching case can share challenges faced in design, implementation, and use. A good research case study can generate hypotheses for further testing and document "best practices" and use cases. Even short case study examples and vendor reported case studies enrich our courses and help explain the breadth of the decision support phenomenon.

In general, a research case study presents a systematic description, explanation and analysis of a specific instance of a category or sub-category of objects or artifacts. Decision support artifacts are especially important to study. Software systems can vary greatly and each specific artifact we investigate informs our understanding of what is possible, what has worked and been effective, and what might work in a different context.

A case study is one type of qualitative research method. A case study researcher often uses both observation and systematic investigation to gather data and then the case write-up documents and summarizes what was found. Ideally a researcher needs access to observe the decision support capability in use, access to documents, and also access to ask questions of both developers and users.

Schell (1992) argues "As a form of research, the case study is unparalleled for its ability to consider a single or complex research question within an environment rich with contextual variables". He defines three characteristics of an empirical or research case study: 1) investigates a contemporary phenomenon within its real-life context; 2) the boundaries between phenomenon and context are not clearly evident; and 3) multiple sources of evidence are used, cf., Yin, 1984.

Wikipedia.com notes "A case study involves an up-close, in-depth, and detailed examination of a subject (the case), as well as its related contextual conditions." (cf., https://en.wikipedia.org/wiki/Case_study). In general, decision support case studies should be "key" cases that are "chosen because of the inherent interest of the case or the circumstances surrounding it".

WhatIs.com defines a case study in a business context as "a report of an organization's

implementation of something, such as a practice, a product, a system or a service. The case study can be thought of as a real-world test of how the implementation works, and how well it works." As an example, WhatIs.com explains the content of a case study of an organization's deployment of a new business intelligence (BI) platform. It "would involve an exploration of each stage of the implementation, lessons learned along the way and the ultimate effects."

A Google search on the key words "decision support case study" suggests the case study is a popular research method for this phenomenon. The search returned about 43,100,000 results. Cases studies were reported for systems serving many diverse purposes including: clinical decision support (CDS), risk management, capacity planning, flood forecasting, technology selection, veterinary decision support, investments, land use planning, and scheduling to name a few of them.

Can we generalize from case studies?

Decision support case studies provide a description of a software artifact and its context of use, and an implementation case study can identify what didn't work and sometimes reasons why failure occurred. A case study can also help identify design patterns and best practices in terms of design methods, implementation processes, and deployment and ongoing use of a decision support capability. Also, case studies of the same or different systems at various stages in the software life cycle can help piece together the longitudinal interaction of software systems and decision makers. So we may be able to generalize some case study findings.

Decision support case studies are important because "good" ones provide detailed information about how software/hardware systems are impacting decision making in an actual organization. The decision support phenomenon becomes more concrete and the rich context can be shared along with technical details and observational notes.

References

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