

# Multi- and Interdisciplinary SDI Research in Practice: Challenges and Pitfalls

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## Abstract

Since 1 September 2007, a team of researchers of Katholieke Universiteit Leuven and Vrije Universiteit Brussel (Belgium) started the project SPATIALIST: Spatial Data Infrastructures and Public Sector Innovation in Flanders. This project looks at SDI-development from a multi- and interdisciplinary perspective considering the disciplines of geomatics, law, economics, sociology, and public administration. The main objective of this four-year project (funded by the Institute for the Promotion of Innovation by Science and Technology in Flanders) is to determine the technological, legal, economic, organisational and public administrative requirements for the further development of the Flemish Spatial Data Infrastructure.

In order to guarantee a comprehensive research about the Flemish SDI-development, input from many disciplines, i.e. interdisciplinary and multi-disciplinary research is needed. The former is very difficult to execute but the latter is quite feasible, and often very necessary.

In order to understand why interdisciplinary research is so difficult, we must ask what it is that distinguishes one discipline from another. Most important are the concepts that the discipline uses. To appreciate this point, we could suggest implementing the following experiment. Ask a few leading economists to write down the 10 most important concepts in economics. Then ask a few leading sociologists, psychologists, lawyers, public administrative scientists, and geo-information scientists to do the same thing. It is very likely that there is almost no overlap in the lists of concepts. The concepts that you think are important do not appear on their lists, and vice-versa. This discordance makes true interdisciplinary research (a blending and fusion of concepts) unlikely.

The next most distinguishing feature of a discipline is the questions it seeks to answer. Again, ask representatives from the different sciences “What are the most important, the most central, the most enduring questions in your domain?” and wide differences in the answers will be apparent across the disciplines. There may be a little more overlap of questions than concepts, but basically the different disciplines have different interests. One can imagine that disciplines are like maps; different maps answer different questions. Suppose you are planning a trip to Girona, Spain. You would almost surely want a map that shows the roads and highways, cities and towns, the locations of airports, and so on. But you might also be interested in hiking, camping and fishing, so you would also want another map — a topographical map which shows altitudes, the location of lakes, rivers, and campgrounds. It is also possible that you would want to consult a meteorological map to learn about expected temperatures and precipitation, and one can imagine still other maps (e.g., one showing places of historical and cultural interest). One map is no “better” than another; they simply serve different purposes. The same is true of disciplines. They attempt to answer different questions, all of which may be relevant.

In addition to differences in concepts and questions, the disciplines also differ in their methods. To oversimplify, economists are good at building models, at econometrics, and at teasing inferences from “natural experiments.” Psychologists are masters of the controlled experiment, while sociologists and public administration scientists have expertise in survey research. Interdisciplinary research thus far has largely taken the form of borrowing methods. One professor in public administration might tell his students, “We have some good questions, but if you want to learn how to answer them, go take the econometrics sequence.”

Many sociologists have begun to import econometric methods. Some economists have made considerable investments in survey research and others have been conducting controlled experiments. The exchange of methods is no doubt useful, but so long as the disciplines employ distinct concepts and address different questions, true interdisciplinary research will remain elusive.

Multidisciplinary research, on the other hand, is very feasible and often necessary. It involves policy analysts drawing on the results of studies from several disciplines and integrating these results. This approach will usually provide more understanding and contribute to better decisions than would be possible through reliance on a single discipline.

The main challenge of the SPATIALIST-project is to clarify the key concepts, questions and methods that are relevant for SDI-developments and integrate them accordingly into a multi- or interdisciplinary approach. However, it is anticipated that there may well be pitfalls along the way. This workshop aims to help to overcome these pitfalls.