

SDI performance from an organizational perspective

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As Spatial Data Infrastructures become more widespread, the assessment of their performance gains importance. An organizational perspective could contribute to a quality improvement of these assessments.

By analyzing a number of definitions that are widely used in the scientific literature on SDI², it becomes clear that most definitions of SDI include the notion of spatial information sharing, access and use. Nedovic-Budic came to the same conclusion (Nedovic-Budic et al., 2008). The specificity of an SDI seems to lie in the facilitation and coordination of the exchange, sharing and use of spatial data. Therefore, an SDI can be defined in a broad sense as “a collection of initiatives to facilitate and coordinate the exchange, sharing and use of spatial data.”

The exchange and sharing of spatial data is not an aim in itself. For that reason, the use of the exchanged and shared data is added to the definition. As Nedovic-Budic argues, an SDI is only as good as it serves the needs and demands of the organizations and processes involved (Nedovic-Budic et al., 2008). Public management literature describes how the use of performance indicators have shifted from a primary focus on inputs and processes to outputs, and finally, outcomes (Pollitt et al., 2008). More specific, there is a growing attention for the SDI-outcomes in literature on SDI assessment. For example, Giff and Crompvoets stress the need to evaluate the performance of an SDI through the relationship between inputs, outputs and outcomes (Giff & Crompvoets, 2008).

SDI-evaluation methods are often based on the assumption that there is one, well-defined SDI at stake, of which the performance must be assessed. This is problematic for two reasons. (1) In practice, organizations are often confronted with a menu of different SDI-initiatives, ranging from comprehensive frameworks to very specific guidelines, from which each of them composes his own “à la carte” meal. This makes it hard to assess the real outcome of one (collection of) SDI-initiative(s). (2) SDI-evaluation from the viewpoint of a specific SDI-initiative could be called “organization-neutral”, in the sense that it tends to ignore the organizational setting in which the outcome has to be realized. Yet, to assess the performance of SDI-initiatives, an understanding of their alignment and integration with business processes is crucial.

Therefore, instead of looking at the outcomes from the viewpoint of a specific SDI-initiative, a change of perspective is proposed. The organization and its actual practice of spatial data sharing, exchange and use, is taken as the standpoint from which the outcome of various SDI-initiatives can be assessed. The business process is taken as the elementary unit of analysis, based on the modern socio-technical systems approach of organizations and their mutual relations (de Sitter et al., 2000; Van Hootegem, 2000; van Amelsvoort, 2000). A business process is the way in which organizations create products, services or policies. A business process consists of workflows which transform inflow of resources into outflow of products, services or policies (Desmidt & Heene, 2005). The outcome of the various SDI-initiatives is regarded as their combined effect on the performance of these business processes. Business process performance is defined as the capacity of the process to meet the demands coming from the environment in which the process takes place (like demands for efficiency, flexibility, reliability etc.)

² Executive Order of US (1994), Australia New Zealand Land Information Council (1996), GSDI (1999), Groot & McLaughlin (2000), Canadian Geospatial Data Infrastructure (2003), Williamson (2003), Wytzisk & Sliwinski (2004), Masser (2005), Van Loenen (2008).

So, from an organizational viewpoint, SDI performance should be evaluated in three successive steps. (1) In a first step, the level of sharing, exchange and use of spatial information by the business processes is analysed. (2) In a second step, the impact of this spatial information sharing, exchange and use on business process performance is assessed. (3) And, only in a third step, the contribution of the different SDI-initiatives to the exchange, sharing and use of spatial data, and ultimately, to business process performance, is evaluated.

Although this three step method could never replace certain internal (for example technological) assessments of specific SDI initiatives, the strength of this approach is that the SDI outcome is evaluated from the viewpoint of the organizations and business processes, which the SDI was setup to support in the first place.

This change of perspective on SDI performance puts the proof of the pudding back in the eating.

Reference

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