Data – Process Division Revisited

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Abstract. Most of today's information systems analysis presupposes that the data – process distinction is rooted in the business domain. A more thorough examination, though, reveals this view to be mistaken. A clarification is in order, as this misconception affects the interoperability of systems, too. We suggest that the clarification involves both ontological and epistemological analysis.

Introduction

Each community comes up with paradigms, which shape this community's view of its domain of interest. New paradigms are brought forward, when the existing ones are no longer fruitful. Once a new paradigm gets accepted, it is no longer the subject of, but background to, research. New information is then accommodated by adjustments to the paradigm until the cumulative effect of the adjustments undermines its effectiveness, leading to the need for a new paradigm.[1]

Current wisdom on business information systems regards the data – process distinction as determined by the business domain. Insight gained by re-engineering commercial legacy systems reveals that distinction to be a design decision, taken during system development, independently of the business domain.

Data or Process

Reverse engineering a clear picture of the business domain from information, coagulated in large running application systems, provided the starting point for the analysis to be reported on. Following the old philosophical tradition rather than emerging computing literature, ontology is taken as concerned with the things out there; e.g. the objects in the business domain themselves. Epistemology on the other hand copes with what is known in the framework of (the) ontology; e.g. (so to say) by an information system.

If the business domain alone defined an information systems ontology and the framework for the epistemology, no design decision would be necessary, how to implement a particular piece of information with regard to data and process. The business domain should provide clear guidance. In reality, this turns out not to be the case. Take the simple example of a number of financial transactions and their total. That

total can either be stored as a data item or calculated when requested. Neither the ontology nor the epistemology of the business domain direct the decision, though.

References

1 Kuhn, T.: The Structure of Scientific Revolutions. The University of Chicago Press. Chicago: 1996.