

Conceptual Modeling: A Key to Quality Information Systems

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Abstract

Computational devices, communication systems and storage devices are becoming commodities. Moore's law is still valid, and price/performance for the equipment decreases by the month. Computers will be so deeply engrained in the fabric of our societies that they will seem to have disappeared as distinct devices. Software, humans and all kinds of intelligent artifacts will be interwoven in information systems of interacting, autonomous subsystems. One of the great challenges ahead is to manage technical complexity. Another is to be able to easily change, in our human societies, what we do and how we do it. Low ability to master technical complexity together with low ability to change our ways, spells disaster. We need to have systems that can evolve as the needs and desires of individuals and organizations evolve. We need to build our societies such that they can change as new technology makes new developments possible.

It is difficult to forecast the future. We will, nevertheless, speculate about current trends and tendencies and about possible consequences. The quality issue is central. As humans and computers increasingly act together, semantic and pragmatic quality issues become more important. One consequence seems to be that information systems of the future to a larger degree than contemporary systems must carry with them an explicit model of the world that they operate in, a model of what the data that they carry stand for. The modeling aspect is discussed both with respect to information repositories, information dissemination, and to information processing in knowledge intensive work.