

# **What Does Your Company Really Do?** **Data Fusion in the Era of Knowledge Management**

**An Editorial**

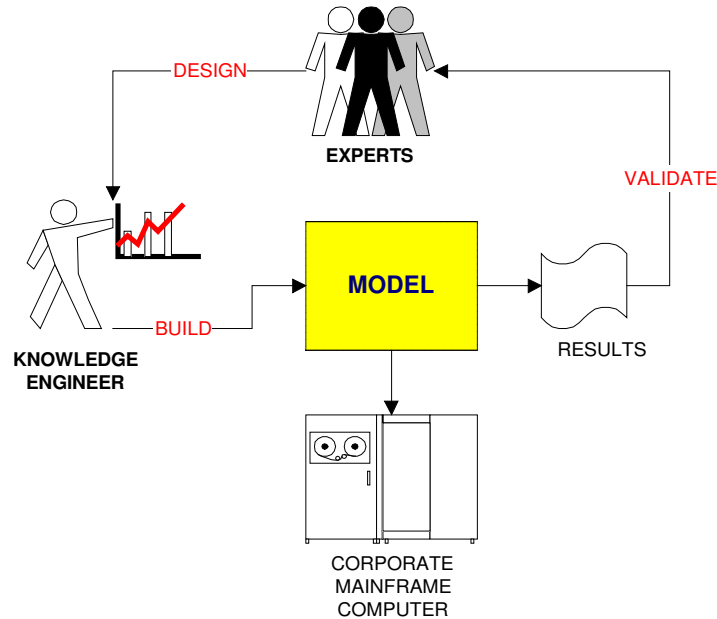
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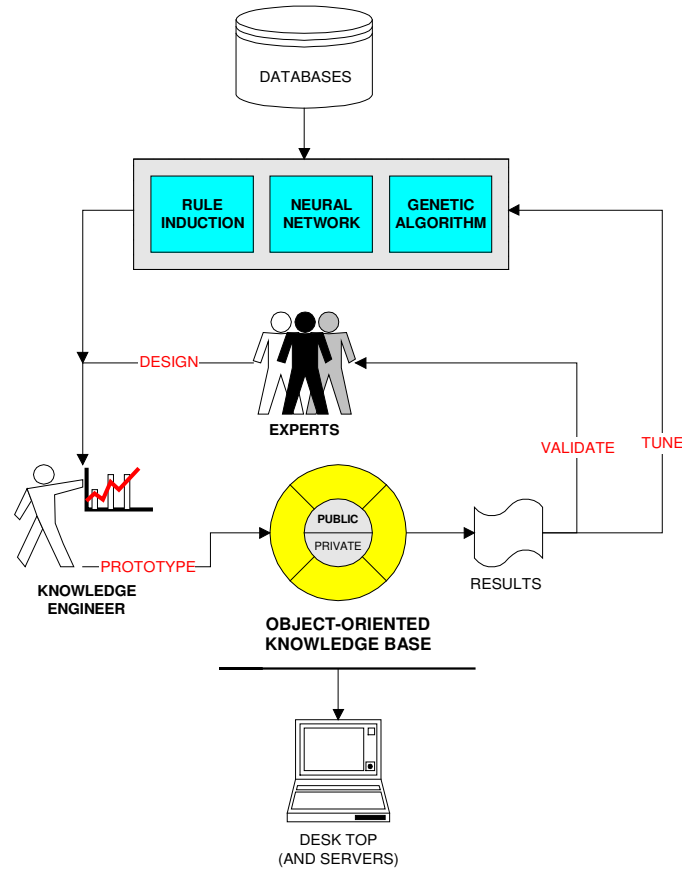
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There is an old – and occasionally forgotten - aphorism in the computer business: **GIGO** or Garbage In, Garbage Out. This warning was, at one time, the first thing a young computer scientist or systems analyst learned and its warning guided their approach to building as well as using computer models. In the AI business, GIGO was generally translated into “Don’t trust the experts!” An apparently wise move when corporate models were, as Figure 1 illustrates, built almost solely from a collaboration between the knowledge engineer and (often reluctant) subject matter experts.



**Figure 1.** The Old Way of Building Models

Modeling and similar intelligent application construction today is remarkably different. Today’s analyst combines the experience of experts with the knowledge buried deep in a corporation’s operating history. Machine learning technologies are used to “prime the pump” – providing both the expert and the analyst with a core understanding of how a business process actually works. From a fusion between experts and the machine, knowledge engineers, as shown in Figure 2, employ many advanced computational intelligence methods to refine their models.



**Figure 2.** The New Modeling Methodology

These new data modeling techniques are now routinely combined with powerful object-oriented design methodologies as well as the centralization of enterprise intelligence in Data Warehouses and Data Marts. As a result, they are giving corporations a new and more robust focus on Knowledge Management. An increased awareness that *knowledge* is both the core sustaining asset of any thriving organization as well as a highly perishable commodity has brought more and more corporations back to their earlier Artificial Intelligence roots. But these evolving expert systems are no longer relatively simple and isolated. Instead, they form parts of intelligent and fully integrated business process models supplemented with knowledge discovery or data mining engines. And they are emerging as dynamic, adaptive components of the corporation's strategic knowledge infrastructure.

The fusion of machine learning techniques with conventional knowledge acquisition from subject matter experts (SME's) solves many of the problems in modern knowledge base development. Intelligent systems based on behavior patterns from large, inter-connected corporate repositories provide a firm development foundation and reduce (but do not eliminate) the problems with Garbage In, Garbage Out. Thus data mining, the discovery of knowledge, has become a key component in serious knowledge management programs. And...

## What Does Your Company Really Do?

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Knowledge Management – the preservation and exploitation of the corporation’s core intelligence – is **the** challenge for the next millennium. It is important for two crucial reasons. First, to discover and model what a company is really doing. Second, to change an organization’s business model to meet the severe challenges imposed by the pervasive, over-whelming influence of the World Wide Web. Future corporations will prosper or stagnate depending on the effectiveness and scope of their knowledge management programs.

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