

PRINCIPLES AND ATTRIBUTES: CONFUSION OF TERMS AND MEANINGS

By Jon Blunt

With Mike Hammer, Jim Champy, chairman of Computer Science Corp.'s Consulting Group, is one of the originators of Principle Based Architecture (PBA). The framework of principles, models, standards and inventories that they developed is widely used. (80% of respondents to the TiAC IA survey have developed principles.) It was interesting, then, to see Jim revisiting these ideas in a recent interview in *Information Week* (February 6, 1995, pp. 57-58).

In the interview, titled "Management's New Mandate," Jim discussed his new book, *Reengineering Management: The Mandate for Leadership*. About Information Architecture he said:

"We need principles, not rule books. Ten years ago, Mike [Hammer] and I did a research project on the principles of developing an IT architecture. If you go into great detail on the architecture, it won't work. You have to set in place principles to capture the values of the business enterprise."

And at the end of the article he gives an example of the effective use of principles:

"Culture exists independently of organizational structure. It's a set of deeply held beliefs in an organization. I saw a marvelous example of this in [automaker] Saturn Corp. When it set up a new plant, there was no 100 page contract with the unions. Instead, there was a set of statements, principles of how they were going to operate. We have to replace policy manuals with principles of behavior."

Now, though principles are widely used and are often the starting point for IA projects, they don't always meet with universal success. Initial enthusiasm dies off and the principles never get integrated into everyday work.

Also, these are not the only principles in the IA space. Various system design methodologies emphasize principles. I remember one meeting where the systems consultants and the IA team went through their sets of principles trying to find some correlation between concepts such as "orthogonality" and "data belongs to the corporation".

Even though the Saturn example has nothing directly to do with IA, I found it interesting. Here principles do not anchor standards, they replace them, and reading between the lines, Champy appears to be arguing the same for the principles in IA. He seems to be saying that you don't need bureaucratic rules if you have clear, shared principles.

The principles the systems consultants were using were quite different. Each of their principles – orthogonality, inheritance, etc., (they had an OOP headset) – was not only clearly defined but also measurable. They were descriptions of desirable attributes of concrete work output. Most information architects do not have such clear mandates and deliverables, and IA principles are often only assessable through qualitative measures such as surveys and case studies. The systems consultants became frustrated as it proved impossible to map the IA principles into the requirements-based framework they were using.

At a very fundamental level, the two groups had greatly different understandings of what principles are. The systems consultants saw principles within an engineering discipline. They moved easily between talking about principles and quality. Their principles represented, at a high level, attributes of the final product.

The information architects had a different use for their principles: they were malleable rules to help set direction. They were not easily captured in any design. Rather, they existed outside the system as a tool for evaluating how well the solution fit the total problem.

At the same time, a lot of work goes into defining these IA principles, and they often have a profound effect on system planning, development and organization. Since the principles are “outside” the system design, it is difficult to gauge the quality of the work in developing them. Are they consistent? Are they useful to this organization? Are they good enough? Is an alternative set demonstrably superior? Usually these questions are only addressed by the comfort level of the management team in signing off on them.

I came across the consequences of this issue recently at an organization that was about to let a contract for the development of a technical architecture to support their business architecture. Originally there had been a champion of the plan who had a very personal vision of the structure of the business architecture. However, that individual had moved on to manage a major project and had given up the architecture project. The team which had taken over was unsure of how to evaluate the earlier work or set goals of their own. They were particularly uncomfortable with the prospect of having to talk through the business architecture in a pre-bid meeting with the companies interested in taking on the technical architecture.

What struck me from reading the Saturn example was that the use of principles Jim Champy described could never be divorced from the people and the process. As described, the goal is to never develop a rule book, but rather to replace the rule book. As new situations arise, the principles must be continuously reinterpreted. In practice, once an issue is addressed and resolved, similar cases can be managed by reference to the earlier decision. The principles then are *future oriented* and intended to deal with *unknown and unknowable conditions*.

By contrast, the principles of the systems consultants were viewed as universal, but reducible to design rules. As this process is pursued, human judgment is replaced by objective standards. For example, one of the goals of structured programming is often stated as ego-less coding. The correctness of the system replaces the creativity of the programmer.

We are learning that this mapping is often not easy. Some design problems are better served by using fuzzy rather than exact logic. The type of principles that we use in systems design are often not representable on a precise scale but fall easily into magnitudes — very, moderately, slightly extendible. This fuzziness, however, is very different from the IA principles that often deal with classes and bifurcations rather than scales, enterprise, local, and private systems.

These insights can be helpful when approaching an IA project. The initial work of IA is often to create an umbrella under which ideas can be tested and new approaches introduced into the organization. The charter that creates the umbrella maps very closely to the Hammer/Champy concept of principles. However, once work starts on developing solutions, an early step has to be the development of a set of design principles, or goals, against which solutions will be judged. It does not appear that one set of principles will do that job.

Neither is the second set of principles the famous standards that the PRISM framework discusses. Our expectation of standards is that they should be crisp and unambiguous. Moving from IA principles direct to standards is often too big a leap. If the standard has to be changed, the fall-back is to a new investigation of the issue. This was the basic issue the new information architecture team was tackling in the earlier example. If a standard was questioned, they could not articulate an objective valuation of it and why it had been selected over others in terms of their own principles. The design principles used by the system architects provide just this framework.