



SURESH MOTUPALLI

OBJECTIVE

Ph.D in Management of Information Systems, to specialize in Knowledge Management

A REFLECTION — PRELUDE TO MY PROFESSIONAL GOAL

We are letting ourselves think that the Computer has revolutionized the industry, or anything else for that matter. The computer is just a precursor of the real revolution to come. To me it looks as if the stage is just being set for something really momentous to happen... Perhaps the Big Beast?

However exaggerated this may sound, from the perspective of Information Science, what remains is that Systems, especially the interactive, are becoming the all-pervasive, changing the way we learn, how we work and every aspect of the way we live. And it is imperative that Expert Systems and the like, will have become more the rule than the exception to our lives.

The issue is not whether there is going to be a revolution or not but how far are we from that revolution?

The computer metaphor is mostly to be blamed for the present pace in development. Framing the basic direction of thought for human endeavour in the field, it is inhibiting the perception of the machine as a real extender to the human mind, which it is.

Logicians, Pylyshyns¹, Psychologists, Interface Designers and Knowledge Engineers now have Logic Programming and Object-Oriented programming tools to transcend conventional approaches, open new vistas and give new meaning to the machine.

I believe that systems should work towards abstracting the difference between programming and retrieving

KNOWLEDGE MANAGEMENT

Knowledge Engineering is an involved, multi-disciplinary field. One way of looking at it is: The way it is practised and perceived by some today: The Knowledge Engineer requires to have expertise in not only Logic Programming and Information Science but expertise in the domain in consideration as well. Fortunately, it is not confined this way since neither does a Domain Expert desire to associate with any highly complex computer tool and system design etc, nor will the computer specialist

¹ Named after Pylyshyn, the Analogical Reasoner

take the pains to become knowledgeable in the domain under consideration². The computer specialists who has now assumed responsibility over Knowledge Engineering has neither the interpersonal skills to elicit the Knowledge from the Domain Expert nor is he familiar with the Cognitive Psychology of the user and the techniques which go into Interface design, both of which are paramountly important to Expert, Decision Systems and the like.

I believe a Knowledge Manager is someone who has to have a holistic perspective, who will define a domain's problem in terms of what the expert(s) believes, identify required faculties for a pragmatic solution and appropriately departmentalize these faculties, in terms of eliciting the Expert(s)'s Knowledge, creating an Expert Model and then converting that model to a pseudocode which will then be understood and used by logic programmers to develop a running Expert system. Unfortunately most of these systems don't reach the user due to poor Interface Design, which I believe is as important a faculty, as coding the system.

The multifarious faculties, the Knowledge Manager associates with, range from Domain Expertise and Psychology to Logic Programming and Interface Design. But availability of these faculties does not always ensure their coordinatability. The Knowledge Manager should be able to harness' and cohere these faculties efficiently, to attain a dynamic system, while at the same time being productive.

But systems developed can have dire straits while being moved into the real world. This gives rise to yet another faculty requirement - someone in a capacity to relate and associate the work, to its marketability, economic and other real world aspects, who would in the first place decide in which domain to Knowledge Engineer and finally market & sell it. So indeed there exists a need for Managers with capabilities to direct and manage Knowledge Engineering work. And the Ph.D in Management of Information Systems, I believe, is just that program catering that need.

I believe after the course of study I will be in a capacity to define and direct Knowledge Engineering work, be it at the Research-oriented academic level or at the implementation-oriented commercial level - A chance to be present at the cutting edge of technology; An opportunity to become a phenomenon in the age to come. As a finale to my goal, I will seek to harness a tremendous potential in my home country and spearhead myself Internationally. Ironically enough, I believe the incentive for the Knowledge Engineer comes from the inherent problem faced by them - " Not, how or where to apply, but where first, to apply?"

²The best approach to Knowledge Engineering is developing Analog Domain Shells which work interactively with the expert, which builds itself. But before such an abrupt transition, a lot of orientation seems essential

³Some ethics here please - Knowledge Engineers do not capitalize (a common misconception), they harness and tap mental energies for use by future generations to come, before it disintegrates or goes underutilized

CURRENT DOMAIN INTERESTS

Towards Totally Integrated Environment (TIE) — *I believe TIE is the generic scope for most current Fields of Research be it CIM, CAD, CMC, MIS, DBMS, KBS, or Project Management. At this point I will seek to capitalize on my Mechanical Engineering faculty, which has now long vegetated, to further my interests. As SUB DOMAINS of TIE applications, I would like to consider:*

- Mechanical Engineering: *Automatic Monitoring of Systems and Machines, Factory Layout, Design & Manufacturing*
- Medical : *Monitoring Heart Patient, Diagnosing and Prescribing medicine for Cardio Vascular Diseases*
- Business : *Automated Operations & Decision Making in Financial Advising Stock Exchange*
- Consumer : *Home Management*

To Information Systems:

- *TIE is essentially an Expert Interface of Man, group, systems, databases, machines which would abstract the distinction of one from the other.*
- *TIE would standardize system components*
- *TIE would abstract programming and retrieval*
- *TIE would link associated systems automatically with Expert Systems*
- *TIE would integrate man-group-systems-machines-databases*
- *TIE would promote packaging of several systems for a specific Domain*

TIE is only an initial conceptualization from the fact that there are many Interfacing applications perceivable and techniques available for the same ⁴I would also like to consider more pragmatic doctoral work.

NEVERTHELESS ARE MY GOALS REALISTIC BASED ON MY ABILITIES AND INTERESTS?

With undergraduation in Mechanical Engineering ⁵ I had the opportunity to view industry with that expanded understanding, which I believe is serving me as a prerequisite for what I am planning for my doctoral study. And the graduate courses⁶

⁴Please turn to Bibliography

⁵Please turn to the diverse course work transcript on page

⁶The grades however are not very encouraging. They do not really reflect my abilities, since I was then experiencing extreme financial crisis. Recommendations from professors who are teaching me this semester and whose subjects are directly related with my program, are enclosed

I had taken in Information Science provided that essential "Know-Why, How and What initiative", motivating me to pursue my goal.

PROLOG HACKER

Having accomplished considerably in Logic Programming ⁷ and in related work, I seek to reinforce myself, more now than ever before, to cater to the high standards and demands of my goal.

ON BEING INTROSPECTIVE

I believe that to be successful, one has to have full control over his resources and exploit them to the maximum extent. But first, he has to gauge those potential resources before channeling himself.

My strengths Imaginative, extremist, innovative, resourceful, creative, optimistic, versatile, amalgamative, ambitious and poor grades⁸ inspirors⁹ are among my other resourceful assets.

My weakness Feeling of Inadequacy, procrastinative, extremism, pessimism.

What I seem to give problems at hand A holostic approach and working dynamically through the intricacies

Success Keys Interest, Positive Thinking

AESTHETE

The diversity of my credentials in Art', go to prove, my ability as an Artist, and I believe, enhance my potential to pursue any goal which interests me.

Kowalski wrote in his book on Aesthetics, "At various periods in our lives most of us engage in some sort of artistic activity, intuitively or deliberately, with varying degrees of success. But only someone with artistic capability can create artistic values of social interest."

So indeed, I am cutting my coat according to my cloth.

⁷Please refer to section on Projects and Papers

⁸I believe that everyone has a phase in life when pride alone, had triggered and brought out the best in him

⁹Please turn to excerpts of writings of Kant and Alexander Pope on page (An ex-Arts Club's letter head)

¹⁰Please turn to pages certificates of merit