Teknowledge

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March 26, 1982

CIA
ORD/ISRD
Washington, DC 20505

Dear

STAT

STAT

Thank you for your interest in the Teknowledge Executive Briefing, "Knowledge
Engineering in the 1980's." This one-day seminar provides executives and
senior technical personnel with an introduction to the concepts of knowledge
engineering and knowledge systems.

Knowledge systems are computer systems capable of "reasoning" about complex
problems and suggesting or implementing expert-level solutions. Recent advances
in Artificial Intelligence have made it possible for business and industry to
exploit this technology, as described in recent articles in Business Week
(3/8/82) and Technology (Jan/Feb 1982).

The Executive Briefing assesses the power of knowledge engineering and pinpoints
areas of particularly high impact. In addition to surveying the state of the
art and directions of progress forecast for this decade, the Briefing covers
such important practical topics as:

    identifying applications that have a high probability of success

    selecting qualified personnel

    acquiring appropriate hardware and software tools

    managing knowledge systems development

Teknowledge is planning to present this program five times this year. Enclosed
is a brochure describing the Executive Briefing in more detail. To reserve a
place or for further information, please call   Director of Educational STAT
Services, at (415) 327-6600.

Sincerely,

STAT

Director/Technical Marketing

Chairman of the Board   Engineers and Scientists: Randall Davis   S. Jerrold Kaplan   A. Carlisle Scott
and Senior Scientist: Avron Barr   Robert S. Engelmore Ingeborg M. Kuhn   Edward H. Shortliffe
Edward A. Feigenbaum   James S. Bennett   Peter E. Friedland   Douglas B. Lenat   William van Melle
Principal Scientist: Harold D. Brown   Michael R. Genesereth Hisako Penny Nii
Bruce G. Buchanan   William J. Clancey   Frederick Hayes-Roth

Teknowledge™

Knowledge Systems and Services: Applied Artificial Intelligence

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Executive Briefing:

Knowledge Engineering in the 1980's

The Executive Briefing provides a snapshot view of the power and potential of the first commercial application of **Artificial Intelligence:** Knowledge Engineering and Knowledge Systems.

Objectives of the Briefing:

- to introduce executives and senior technical personnel to the concepts of knowledge engineering and knowledge systems

- to help participants assess the utility of knowledge engineering and pinpoint areas of particulary high impact

- to outline costs and strategies for initiating knowledge engineering efforts

Additional Background Information

"Artificial Intelligence: The Second Computer Age Begins," *Business Week*, March 8, 1982, pp. 66–75.

"Expert Systems: Programming Problem-Solving," *Technology*, January/February 1982, pp. 62–73.

"AI: More Than a Science," *Datamation*, September, 1981.

Knowledge Engineering and Knowledge Systems

Knowledge engineering is the process of achieving real-world problem-solving performance from computer systems by incorporating the knowledge, experience, and judgment of human experts into those systems. This is done by organizing a large body of knowledge about a specific application area in the form of a knowledge base. The entire computer system, including its knowledge base, is called a knowledge-based expert system or simply a knowledge system.

Knowledge systems can be used in several different ways:

to provide intelligent, reasoned assistance to human practitioners in a particular application area — as in the interpretation of sonar reflections;

to take actions based on solutions or assessments made by the system — like controlling a respiratory ventilator in a critical care ward;

to teach people about the specific application area — such as instructing field engineers to use sophisticated electronic equipment.

About Teknowledge

Significant developments in Artificial Intelligence have made it possible to use computers to solve complex commercial problems. Teknowledge is among the first companies to place Artificial Intelligence technology at the service of business and industry. Developing computer systems through *knowledge engineering*, Teknowledge constructs *knowledge systems* capable of *reasoning* about complex problems and suggesting or implementing expert-level solutions.

The founders and staff of Teknowledge are pioneers in this emerging technology with experience dating back to the mid-1960's. They represent about one third of the world's high-level expertise in the design and development of knowledge systems.

Teknowledge services include commercial briefings and tutorials, knowledge engineering software tools, and custom knowledge system development.

Teknowledge

The Speakers:

Edward A. Feigenbaum

A founder of the knowledge engineering field and a pioneer in Artificial Intelligence research, Dr. Feigenbaum is a Professor of Computer Science at Stanford University, where he directs the Heuristic Programming Project, a laboratory of 50 computer scientists engaged in knowledge engineering research since 1965. He was Chairman of the Computer Science Department of Stanford University from 1976 to 1981, President of the American Association for Artificial Intelligence from 1980 to 1981, and consulting editor of the McGraw-Hill Computer Science Series from 1965 to 1979. He is also a member of the Cognitive Science Society (currently a member of the governing board), American Psychological Association, and the American Association for the Advancement of Science. He has been the winner of the award for the Outstanding Technical Contribution of the 1978 National Joint Computer Conference. Dr. Feigenbaum is Chairman and Senior Scientist at Teknowledge.

Frederick Hayes-Roth

Dr. Frederick Hayes-Roth is a widely recognized authority on knowledge systems and applications of Artificial Intelligence. He has held faculty appointments at MIT, Stanford University and Carnegie-Mellon University. For the past four years he directed a multi-million dollar research program in Artificial Intelligence for the Information Sciences Department of the Rand Corporation. He was principal designer of Hearsay-II, the first 1000-word continuous speech understanding system, the ROSIE system for programming knowledge systems, and many knowledge systems for military decision-making. He is the co-editor of the principal reference on rule-based programming, *Pattern Directed Inference Systems.* In addition, he has published numerous articles in such journals as Communications of the ACM, Computing Surveys, IEEE Transactions, Cognitive Science, and Pattern Recognition. Currently, Dr. Hayes-Roth is Executive Vice President of Technology at Teknowledge.

Comments from Participants:

"Excellent introduction to knowledge engineering technology and a compelling argument to get started."
Edward C. Taylor, TRW

"A good calibration of the state of the art and a realistic evaluation of future potentials."
Edward Laskowski, Bendix Corporation

"Good introduction to AI and review of current opportunities."
Pierre Fischer, ADI

"Excellent snapshop of AI and its future"
Walter Natzic, Aaron-Ross Corporation

Supporting Materials:

Participants will receive extensive supporting material including an overview of Artifical Intelligence, a copy of Pamela McCorduck's entertaining history of Artificial Intelligence — *Machines Who Think,* a compendium of organizations currently involved in related research activities, a bibliography of the field and a set of complete notes on the briefing.

Partial List of Past Participants:

ADI
Aaron-Ross Corp.
Amoco Production Co.
Bendix Corporation
Control Data Corporation
ESL
Elf Aquitaine
Fujitsu Laboratories
General Electric Co.

HDR
Hitachi, Ltd.
Honeywell
NCR Corp.
Naval Research Laboratory
Shell Development Corp.
TRW
WICAT Systems

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Syllabus of the Executive Briefing

Morning
Introduction and Overview:
What is Knowledge Engineering?

MYCIN: A Family of Examples

Signal Understanding: A Second Kind of Knowledge System

High-Impact Areas: A Review of Existing Knowledge Systems

Afternoon
Knowledge Engineering: How a Knowledge System is Built

Future Development: Expected Applications in the 1980's

Management Considerations: Costs and Strategies for Knowledge Engineering

A reception will follow to provide an opportunity for informal discussions with the speaker and other Knowledge Engineers.

Locations and Accommodations:

Registrants should contact the appropriate hotel directly for room reservations.

May 3, 1982
Dallas, Texas
The LaBaron Hotel
(214) 634-8550

June 14, 1982
Washington, D.C.
The Key Bridge Marriott
(703) 524-6400

September 13, 1982
Chicago, Illinois
The Hyatt Regency – Woodfield
(312) 885-1234

October 4, 1982
Boston, Massachusetts
The Hyatt Regency – Cambridge
(617) 492-1234

November 15, 1982
San Francisco, California
The Holiday Inn – Palo Alto
(415) 328-2800

Registration and Information

For further information on program content, registration, accommodations or to reserve a place at the Executive Briefing please call Dina Barr, Director, Educational Services at 415-327-6600, or mail the enclosed registration card. To insure a place, a deposit of $100 is required. The deposit is refundable if cancellation is received at least two weeks prior to the program.

Make checks payable to:
Teknowledge
525 University Ave.
Palo Alto, CA 94301.

Fee

The price of the Executive Briefing is $750 per attendee which includes the one-day presentation, supporting material, a catered lunch and reception.

Teknowledge

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