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L. Bergman (Eds.)

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Preface

The CAiSE '90 conference is the second of a series of Conferences on Advanced information Systems Engineering. The location of each of the future annual conferences will be chosen to be in one of the four Nordic countries.

The first conference in the series was arranged in Stockholm in 1989. The initiative to arrange the conference was taken by Professor Janis Bubenko of Stockholm University and SISU, the Swedish Institute for Systems Development. Even if the first conference was given a fairly restricted publication outside of the Nordic countries, the number of submissions from other countries were high. This indicated a need for this type of conference in the international research community. So we decided to make the conference a truly international event.

The calls for papers have been widely distributed in Europe for the CAiSE '90 conference. The program committee was chosen among very well reputed European researchers in the field of information systems engineering, and from key professionals in Nordic industrial companies and consultancy companies. This gave very encouraging results. The quality of the submitted papers were as good as could reasonably be expected. We are very satisfied, indeed, with the quality that we have achieved for the conference. There is also a very good international spread of the authors, who come from ten different countries. This gives a very good basis for future arrangements.

The CAiSE conferences try to ride two horses simultaneously. On the one hand, they are scientific conferences, where papers are chosen in the usual way: each submitted paper is reviewed by three members of the program committee, and chosen according to the ratings given. These papers are published in the conference proceedings. On the other hand, they are also conferences of invited speakers, who treat subjects that are known to be of central importance to the advanced practitioner. These presentations will only partly be supported by papers, which are usually not written within the deadlines for the submitted papers. Most experiences show that it is difficult to have the invited contributions fully documented in time for printing of the proceedings. We have consequently decided to publish only abstracts of the invited papers in the proceedings.

The program committee has made great efforts to compose a program of submitted papers and invited presentations that is appealing both to the advanced practitioner and to the information systems engineering researcher. It is our hope that the two groups of people can find a fruitful intersection of interesting topics and presentations in the CAiSE '90 conference.

The CAiSE '90 conference program could not have been created without the efforts of the authors, and of the program committee members, who have donated their time to the conference. They deserve our deepest thanks.

The editors

Bo Steinholtz Arne Sølvberg Lars Bergman

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Chairman's message

It is a great pleasure for me to welcome the participants of CAiSE '90 to Stockholm and Electrum. We are proud to be your hosts for the second year. We also very much appreciate the international response to the conference, in terms of paper submissions as well as attendance.

CAiSE '90 has several objectives. The first one is technology and knowledge transfer between research and business and industry in the field of information systems engineering. This two-way transfer is achieved by presenting current high-quality research as well as experiences and ideas from advanced applications in business and industry. The second objective is to improve communication between the research and the business and industry communities. We hope the structure of the conference program will effectively contribute to this objective. The third objective is to stimulate increased communication and exchange in this field within the Nordic countries (while doing our best at being international).

The CAiSE '90 conference program looks very promising and encouraging in all these respects. In my opinion, it is one of the few conferences to strike a good balance between scientific contributions and contributions from business and industry. CAiSE is also the first truly international conference series on information systems engineering in the Nordic countries.

I would like to thank all the people, worldwide, who made this possible by contributing interesting and high quality papers. Credit must also be given to our colleagues on the program committee, who have devoted much of their time to reviewing. A special acknowledgement and thanks should be given to the program committee chairman Professor Arne Sølvberg, the program coordinator Dr. Bo Steinholtz, and the organizing committee chairman Mr. Lars Bergman. Together with staff from SISU they have skillfully managed the complex conference development process.

CAiSE is an annual Nordic conference event in the area of information systems engineering with sites alternating between the Nordic countries. Next year's event will take place in Trondheim, Norway. CAiSE '91 will be hosted by the Norwegian Institute of Technology. I am sure you will find Trondheim a beautiful city full of hospitality and excellent facilities for professional as well as leisure activities. I am looking forward to seeing you all in Trondheim in 1991.

Janis Bubenko jr
General Chairman

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CASE in the '90 s

Anthony I. Wasserman
(Invited speaker)

Interactive Development Environments, Inc.
595 Market Street, San Francisco, CA 94105, USA

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Abstract

Modern CASE tools have now been commercially available for about five years, and have shown to improve the quality of software projects and the productivity of software designers. Most of these tools address a specific task within the software development life cycle, without giving significant attention to how they fit into a suite of integrated tools in a comprehensive software development environment. As the next generation of CASE tools emerges over the next couple of years, integration of tools will be a central issue.

This talk addresses some of the characteristics of these forthcoming CASE environments, including *integrated life cycle support, emerging standards, tool integration, distributed CASE, software reengineering and object orientation and reusability.*

Examples are taken from various products, research projects, and standardization efforts to present the likely future direction in CASE environments. This presentation emphasizes the above technical issues, giving secondary attention to organizational and managerial issues associated with the introduction and successful use of CASE within organizations.

Anthony I. Wasserman is founder and President of Interactive Development Environments (IDE), developer of the Software through Pictures® integrated CASE environment, and is regarded as a pioneer of the CASE industry. Before starting IDE, Tony was a University of California professor. He was the founder and first elected Chairman of ACM's Special Interest Group on Software Engineering (SIGSOFT).

He has edited seven books and written many articles on software engineering and software development environments. He is co-editor of the best selling tutorials, Software Design Techniques, and editor of Software Development Environments, both published by IEEE Press. He is a co-developer of the Object-Oriented Structured Design notation. Wasserman received his Ph.D. degree in Computer Sciences from the University of Wisconsin – Madison. He is a member of ACM and the IEEE Computer Society. Wasserman is also a recipient of the IFIP Silver Core award.

CASE in Action: IEF at Nykredit

Jørgen G. Nielsen
(Invited speaker)

Nykredit,Tiendeladen 7
DK-9000 Aalborg, Denmark

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Abstract

The need for application development productivity and application adaptability to business changes leads to the search for new tools and methods. The formation of a new organisation gave Nykredit the challenge and opportunity to introduce new methods and new tools. Nykredit selected the method IEM, Information Engineering Methodology, in 1987 and the supporting I-Case-tool IEF, Information Engineering Facility, on Christmas Eve the same year. The first application was developed during 1988 and put into production in February 1989. We have now started the re-engineering of the central part of our main applications using IEM and IEF. The challenges are two-fold:

- Educational: Setting up a decent educational programme re-indoctrinating the old staff of programmers.
- Technical: Make the product operational in our environment. Set up the right procedures for development, testing and installation. Co-existence with old applications and procedures.

We still believe that we made the right decision and are determined to continue the effort of converting old applications and people to the new religion: Information Engineering and I-Case-tools. To us, the use of tools and method has already demonstrated a much higher degree of productivity and responsiveness to changes.

Jörgen G. Nielsen is manager of the technical department in the EDP-company within the Nykredit Corporation, one of the largest financial institutions in Denmark. The department is technically responsible for all aspects of the Information Systems Engineering process, from strategy to selection of methods, tools and techniques, and for proper software implementation, maintenance and operations. Prior to his involvement with Nykredit, Jörgen G. Nielsen spent 20 years with IBM Denmark as a Systems Engineer, supporting large customers in the system software and application development area. He holds a M. Sc. degree in Mathematics and Computer Science from the University of Copenhagen.

FOUNDATION - CASE Tools for the Success of the French Stock Exchange

Filippo De Capua
(Invited speaker)

SICOVAM, 5 Rue du Centre
93 167 Noisy le Grand, France

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Abstract

When the French Stock Exchange decided to renovate its procedures and systems, in order to compete with the biggest worldwide exchanges, a large project was set up. Numerous participants were involved in the project (banks, brokers, service providers, vendors, ...).

The presentation will show how the use of FOUNDATION helped deliver a quality system within deadlines and budget. It will present measurements of that quality. It will also explain how FOUNDATION helped SICOVAM maintain quality and control of its developments during its growth from a 2 Mips site to an 80 Mips site. The presentation will also summarize some of the issues implementing CASE in the development system's and production groups.

Filippo De Capua is DP Manager (Directeur Informatique) of SICOVAM (Société Interprofessionnelle de Compensation des Valeurs Mobilières). SICOVAM manages the central database of the French Stock Market. It is a company of 350 people. The Data Processing Department represents 100 people, plus an important number of subcontractors. Filippo De Capua joined SICOVAM in 1988 to manage the rapid growth of the DP Department (now 2 3090-200) and the implementation of the brand new back office system of the French Bourse (RELIT).

A Common Repository and Information Model - A Base for Integration of Development Tools

Christoph Engeman
(Invited speaker)

IBM Switzerland
8048 Zurich, Switzerland

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Abstract

This presentation will address the potential benefits of AD/Cycle, announced in September 1989 by IBM, for its users.

AD/Cycle intends to 'industrialize' the application development and maintenance cycle over the lifetime of applications. AD/Cycle is the CAD/CAM of Information Systems for application development.

The presentation will present the AD/Cycle Concept and some highlights of the Repository Manager/MVS upon which AD/Cycle is based.

Chris Engeman joined IBM (Switzerland) 1971 as a System Engineer at the Bern Branch office, where he supported various customers for several years. After an assignment at the World Trade System Center in the Boeblingen Lab, where he had world-wide responsibility for supporting IBM's database products, he returned to the Field System Center in Zurich. There he gave second level support to the Swiss customers and IBMers in the Database/Data Communication area. With the announcement of DB2 his primary responsibility was the implementation and support of this software at the country level. Today, Chris Engeman is the person responsible in the IBM Field Support Center Zurich for AD/Cycle and Repository Manager/MVS. During the first three months of 1990 he was a resident of the Country Introduction Center La Hulpe (Belgium) to install RM/MVS. In this residency he worked with early code of RM/MVS to establish a base for enabling customer workshops.

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Experiences with the use of CASE-tools in the Netherlands

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and

H.E. van Dort

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Abstract

In April of 1989 the working group "Experiences with the use of CASE-tools" of the Dutch User Group of Structured Development Methodologies conducted an inquiry into the use of CASE-tools among 834 Dutch organizations. This paper presents the most interesting results of this survey. The results are grouped into five major sections: the characteristics of CASE-tool users, the selection criteria for CASE-tools, the implementation in organizations, the actual usage of CASE-tools and future expectations for the use of CASE-tools.

1. Introduction

The Dutch User Group of Structured Development Methodologies (in Dutch: "NGGO") was established at the end of 1985 to be a forum for organizations that use structured methodologies, like those published by Yourdon (1989), Ward and Mellor (1986) and Hatley and Pirbhai (1987). Since the outset, many NGGO-members have been very interested in CASE-tools. The NGGO produced a report that contained an overview of the characteristics of the main CASE-tools on the Dutch market (NGGO, 1988).