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IFIP – The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is about information processing may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

Arthur Tatnall (Ed.)

Reflections on the History of Computing

Preserving Memories
and Sharing Stories



Springer

Volume Editor

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Editorial

Introduction to the *Survey* Subline of the IFIP AICT Series

This volume constitutes the first issue in the *Survey* subline of the IFIP Advances in Information and Communication Technology (AICT) series. Each AICT Survey is intended to provide a compendium of related articles on the development of some aspect of information and communication technology.

It is appropriate that this initial AICT *Survey* issue should address various aspects of computing history. IFIP's Working Group 9.7 of IFIP Technical Committee 9 on ICT and Society has a long and successful history of promoting the documentation of various aspects of ICT history throughout the world. This volume not only provides articles that describe historical events and developments in ICT, but also makes the case for studying our history.

Our intention is that other working groups or technical committees within IFIP will produce additional *Survey* volumes for the IFIP AICT series. We are pleased to inaugurate this additional way that IFIP can contribute to the dissemination of information about various aspects of ICT.

A. Joe Turner
IFIP AICT Editor-in-Chief

Preface

There is a tendency among many people, some of whom are historians, to consider that history is about things that happened a long time ago: that it is about wars, kings, politics, nations and such things. This book is about the history of computing, which is a comparatively recent phenomenon, as computers as we now know them came into being less than 70 years ago. We should then question why a study of the history of computing is important. The study of history is often justified by use of the famous quote from George Santayana who wrote that: “*Those who cannot remember the past are condemned to repeat it*”. Are there particular computing mistakes made in the past that we should try to avoid in the future? The only way we will know the answer to this question is to study our history.

Another reason for studying history, of computing or anything else, is that it gives us an opportunity to hear some fascinating stories that, as well as being of interest, may just be relevant to our future lives. In the final chapter of this book John Impagliazzo writes of how he taught the history of computing to his computer science students, and how it can: “*produce interesting excursions on technical subjects*” and so complement their studies in computing.

This book has 22 chapters written by people who find the history of computing to be a compelling topic. Many of the authors were actually involved in the events they describe, while the others write of things they have studied carefully and find particularly interesting. Most of the authors are members of IFIP (International Federation for Information Processing) Working Group 9.7 – History of Computing. All the articles were peer reviewed before final acceptance.

Most of the articles in this book cover the period from the 1940s to the 1990s, but one goes back to look at Italian computing machines from the first century (clearly not computers as we now know them) to the 20th century. A number of articles concern early electronic digital computer hardware of the late 1940s and early 1950s involving machines such as CSIRAC, LEO and the Ferranti Sirius. At the other end of the spectrum a couple of articles discuss the use of microcomputers in schools and homes in the 1980s.

The authors of many of the articles were present at the time and took part in the events they describe. Their articles represent reflections on their experiences of this time. Are they then necessarily an accurate representation of exactly what happened then? Are they precisely correct in regard to dates and times? Does this matter? Few historians have exactly the same view of past events, but by being written by those who, in many cases, took part in these events, the articles in this book are very different to those written by academic historians. The title of the book was chosen for this purpose. The book does not try to cover the whole range of computing history, just those parts the authors were involved in or find particularly interesting. It represents their reflections on this history.

The articles cover a wide range of computing-related topics. One article, *Early Italian Computing Machines and their Inventors* by Silvio Hénin, looks at some of the pre-history of digital computing. Several articles, namely *Australia's WREDAC: It Was Rocket Science* by John Deane, *Remembering LEO* by Frank Land and *Information Technology in Italy: The Origins and the Early Years (1954–1965)* by Corrado Bonfanti, describe specific early computer systems; their construction, their use and their users. Software, programming and operating systems are discussed in the following papers: *A Possible First Use of CAM/CAD* by Norman Sanders, *Micro Programming* by Herman Spanjersberg, *History of Data Centre Development* by Rihards Balodis and Inara Opmane, *The History of Computer Language Selection* by Kevin Parker and Bill Davey and *The Impact of the Y2K Event on the Popularity of the Pick Database Environment* by Stasys Lukaitis.

Another group of articles looks specifically at the people involved in the theory, design and use of these computers: *Roberto Busa (1913–2011), Pioneer of Computers for the Humanities* by Corrado Bonfanti, *From the History of Russian Computer Science* by Yakov Fet and *Hungarian Scientists in Information Technology* by Győző Kovács. Two articles provide personal reflections on their authors' own computing careers: *Experiences and Reflections* by 'Bud' Lawson and *Looking Back* by Martha Crosby.

Computer education is important and aspects of university computing curricula are a topic of interest with articles including: *Information Systems Degrees in Australia: The Genesis* by Audra Lukaitis, Stasys Lukaitis and Bill Davey, *Evolution of Computer Science Education in the Purview of Free Education* by Nandasara S.T. and *Evolution of Computer Education in Spain: From Early Times to the Implementation of the Bologna Agreement* by Ramon Puigjaner and, as mentioned earlier, John Impagliazzo's article on *My Fascination with Computing History*. School and home computing in the 1980s is also a topic of interest with two articles: *Computing for the Masses? Constructing a British Culture of Computing in the Home* by Tilly Blythe and *Reflections on the History of Computer Education in Schools in Victoria* by Arthur Tatnall and Bill Davey covering some of this topic.

A couple of articles deal with conservation of computing technology and *Institutional Nostalgia – Museum Victoria's Cabinet of Computing Curiosities* by David Demant and Arthur Tatnall and *The Changing Face of the History of Computing: The Role of Emulation in Protecting Our Digital Heritage* by David Anderson, Janet Delve and Vaughan Powell discuss this topic.

The articles in this book cover the history of computing only up to the 1990s, but what significant events occurred after that time? The answer is that there were many, but that this is for future historians to investigate. I hope that you find the articles in the book both interesting and informative. These reflections really do represent some important preserved memories and are stories that ought to be shared.

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