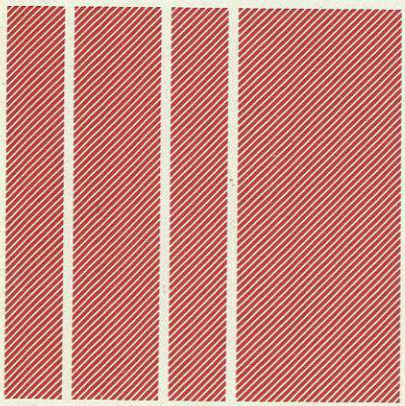
Conference Programme



Management Conference

Davos, Switzerland

24-27 May 1982

The Butler Cox Foundation

Management Conference

Hotel Belvédère, Davos
24 — 27 May 1982

Contents

Introduction

The eleventh Butler Cox Foundation management conference will be held at Davos in Switzerland between 24 and 27 May 1982. Davos is one of the premier skiing resorts in Switzerland, and the conference sessions will be held in the purpose-built convention centre in the town. Accommodation has been arranged at the 5-star Hotel Belvédère, which is situated about 250 metres from the convention centre. The skiing season is, of course, finished by the end of May, and spring weather conditions can probably be expected at that time of year. However, it is not unknown for snow to fall at the end of May, so delegates should be prepared for winter weather as well as spring weather.

The Hotel Belvédère has its own swimming pool, solarium and massage parlour. There are also several tennis courts adjacent to the hotel.

This document describes the overall conference programme that we have organised. It also provides a synopsis of each presentation that will be made and a biography of each speaker.

Purpose of the conference

The purpose of this conference is to enable member organisations to examine and discuss the key issues raised by advances in information technology. The conference will address a broad range of issues that the senior manager needs to be aware of in order to successfully plan into the next decade.

The conference will examine the way in which the information technology industry as we know it is likely to evolve. The nature of such changes will increasingly interact with and result in changes in the broader social environment. As new concepts in both hardware and software are applied, the increasing pervasiveness of information technology will result in increasingly complex social and commercial requirements. It is this complexity which must be tackled so that constraints to continued development can be overcome.

These issues will be addressed at the conference during two and a half days of presentations and discussions. On each of the days, invited speakers will make a formal presentation and then participate in a panel session to conclude the day. Each session is of sufficient duration to allow specific discussion with individual speakers, and the panel sessions provide the opportunity for wider discussion and comparison of ideas.

The Belvédère

The conference programme

The keynote address for the conference will be given by David Butler, and several well-known speakers will then address particular issues raised by the widespread proliferation of information technology. Each of the speakers has been selected and briefed so that the conference as a whole will identify the ways in which the emerging opportunities for economic, commercial and social progress may be exploited.

From the programme set out in this document you will see that we have arranged for several eminent speakers from the fields of sociology, computing, telecommunications and management to participate in the conference. We are confident that the programme will be of value both to senior executives responsible for long-term organisational, budgetary and product planning as well as those with responsibility for the information systems function.

All the conference sessions will be in English, and simultaneous translation into French and Italian will be provided.

Delegate entitlement

Each member organisation is entitled to send up to three delegates to this international conference, and each delegate pays only for the accommodation and meals at the Hotel Belvédère. We have arranged a conference package with the hotel which covers all of these items for the duration of the conference. At the back of this document you will find details of the package and a registration form for the conference. Please complete this form and return it to us as soon as possible.

The Conference Programme

Monday 24 May

1800-1900	Registration	
1930-2030	Cocktail party	
Dinner	No formal arrangements have been made for dinner. The conference package includes table d'hôte dinner at the Belvédère Hotel.	

Tuesday 25 May

0830-0900	Registration	
Session A 0900-0930	Conference opening **The impact of information technology**	David Butler, Butler Cox & Partners Limited
Session B 0930-1100	**The Information Society: positive action**	Edward de Bono Independent consultant
1100-1130	Coffee	
Session C 1130-1300	**The Information Society: a structural definition**	Marc Porat, North Star Communications
1300-1430	Lunch	
Session D 1430-1600	**Information economics**	Gordon Thompson, Bell Northern Research
1600-1630	Tea	
1630-1730	Panel discussion	
1800-1900	**Film: "The Information Society"**	
Dinner	No formal arrangements have been made for dinner. The conference package includes table d'hôte dinner at the Belvédère Hotel.	

Wednesday 26 May

Session E 0900-1030	**Alternative futures**	Earl Joseph, Sperry Univac
1030-1100	Coffee	
Session F 1100-1230	**The factory of the future**	Raj Reddy, Carnegie-Mellon University
1230-1400	Lunch	
Session G 1400-1530	**Computer factors in human systems**	Philip Kraft, University of New York State
1530-1600	Tea	
1600-1700	Panel discussion	
2000 for 2030	Conference dinner	

Thursday 27 May

Session H 0900-1015	**Implementation of information technology**	Bengt Rosenberg, A/B SKF
1015-1045	Coffee	
Session I 1045-1200	**Limits to growth**	Louis Pouzin, INRIA
1200-1300	Panel discussion	
1300-1315	Conference conclusion	David Butler, Butler Cox & Partners Limited
1315-1430	Lunch	
1430	Delegates depart	

Session A Tuesday 25 May: 0900-0930
The impact of information technology

David Butler Butler Cox & Partners Limited

During the remainder of the present century and as far beyond that as we can see, we may suspect that two major trends which have already become apparent will continue to develop. First it seems unlikely that the cost/performance improvements in all branches of information technology will cease or markedly slow down. If so, we can expect ever more effective means to be available for creating, transmitting, receiving, storing, retrieving and displaying all kinds of information including speech, data, text and images. The second major trend is that the industries which supply the user of information — mainly the computer industry, the communications industry and the office products industry — are going to become increasingly hard put to define and respect the traditional market boundaries of their industries. In other words, the much-debated 'convergence of technologies' will be a continuing and developing reality. What will be the impact of all this technology? 'I only ask for information', said Dicken's Miss Rosa Dartle. I doubt if her wildest dreams could have envisaged the avalanche of information we may be unleashing.

Acknowlegement: ("Britain and the Information Society" by David Butler, The British Computer Society Annual lecture for 1981)

David Butler is Chairman and co-founder of Butler Cox & Partners Limited and of its research group the Butler Cox Foundation.

After attending Mill Hill School Mr Butler won an open scholarship to Keble College, Oxford, where he read Greats.

He entered data processing in 1962 as a trainee programmer. After working as a systems analyst and programmer he joined the Urwick Group as a consultant/researcher. From 1970 to 1976 he filled a number of senior posts with a well-known American consulting firm. Butler Cox was set up in early 1977.

He is a Vice-President of the British Computer Society and has won two national prizes for essays on computing. He has published over a hundred articles in magazines and newspapers and is an occasional radio and TV broadcaster. He has lectured widely in Britain and abroad and led the UK team which presented viewdata at the White House, Washington D.C. He is the author of "Britain and the Information Society".

Session B Tuesday 25 May: 0930-1100
The Information Society: positive action

Edward de Bono Independent consultant

In this session, Edward de Bono will identify some of the underlying forces which combine and conspire to shape and develop paths into the future.

There is much to be said for being realistically gloomy about the future and not much to be said for being irresponsibly cheerful. Yet Dr. de Bono will contend that the future can and will be positive.

This positive view of the future is not fully supported by present trends, as the increase in crime threatens the fabric of society and on a world-scale we continue to use up energy and material resources at a fast rate. It seems that bit by logical bit Western societies have built up a Frankenstein monster which is beyond control. Does there come a point at which power and complexity take over and the world system hastens, out of control, to inevitable disaster? Changes in the technology of communication increase complexity by allowing the development of feedback loops. Changes in power increase complexity by extending the ripples of effect that spread through society.

By great good fortune, and just in time, there is to hand a device that can rescue society from the mess of complexity. That device is the computer. The benefits of the computer will not be seen if they are simply used — as they currently are in the main — to save us from the inefficiency of our current ways of doing things. The advantage of the computer is that it allows business and society to develop totally different systems of organisation. We have to use the computer to reduce rather than to increase complexity.

Unfortunately, society cannot depend on the computer experts to provide the ideas for they are, with exceptions, reasonably unimaginative. This is no fault of their own for in a rapidly expanding field a spurious orthodoxy quickly develops: 'define the problem, find the standard solution, apply it'.

In this provocative session, Edward de Bono will contend that we must approach the future through new attitudes and perceptions as the quality of life in the future will be determined by the quality of our thinking.

Born in Malta, Edward de Bono later proceeded as a Rhodes Scholar to Oxford and has held faculty appointments at the universities of Oxford, London, Cambridge and Harvard.

He is author of 22 books which are in the general area of thinking and especially the thinking concerned with change and innovation. Dr. de Bono is the originator of the term 'lateral thinking' which is now officially part of the English language with an entry in the Oxford English Dictionary. The books have been best-sellers in Japan, Germany and the USA.

Dr. de Bono has lectured extensively throughout the world. His instruction in thinking has been sought by such corporations as IBM, Shell, Unilever, Bank of America, Westinghouse, Northern Telecom, ICI, Prudential, Marsh McLennan, Ciba-Geigy, Monsanto, General Dynamics and many others.

He has made two TV series: 'The Greatest Thinkers' in 13 parts and a 10 part series for the BBC 'de Bono's thinking course'.

He is the founder and director of the Cognitive Research Trust at Cambridge which runs what is the largest programme in the world for the direct teaching of thinking as a subject in schools. Several thousand schools are involved world-wide and 100,000 teachers have been trained in Venezeula which has put the material into every school.

Session C Tuesday 25 May: 1130-1300
The Information Society: a structural definition

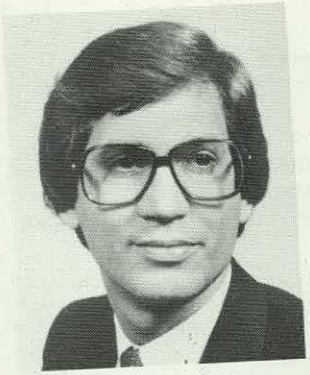
In this session Marc Porat will identify the features which will characterise the future 'information society'. He will discuss the issues regarding two information sectors and how they fit together in an overall picture.

He will advocate that the 'primary information sector' will consist of those companies actively concerned with the promotion of information technology and its associated services. The 'secondary information sector' will consist of those companies who utilise the technology and the associated services but whose primary business function is oriented in other directions.

In his presentation, Mr. Porat will discuss the significance of information as a utility: how to obtain, use, package, sell and protect it.

The session will identify the new information tools precipitating the changes in society and will conclude with a discussion of the problems inherent in 'the information society'.

Marc Porat North Star Communications Inc.



Marc Porat is an associate director of Program on Communications and Society at Aspen Institute for Humanistic Studies and a principal of his own company. He has been principal investigator on major studies in communications and information policies for many organisations. He is the United States' representative and consultant to the Computer, Communications and Information Policy Group of the OECD.

He has written on "The Information Economy" and has developed a TV documentary on "The Information Society".

Session D Tuesday 25 May: 1430-1600
Information economics

Gordon B. Thompson Bell Northern Research

In this session Gordon Thompson will contend that there is little hope that mere fiscal or monetary policies will produce good and lasting solutions to the world's ubiquitous economic problems. Nor would a return to abundant and cheap energy be a solution, for beyond rising energy costs lie the limitations of other resources and environmental pollution. He will argue that we must learn to shift more and more of our transactions away from exchanges of tangible goods towards exchanges of ethereal goods, where such exchanges involve little or no energy, but yet are perceived as creating wealth.

Although intangible goods are not new, a mass consumption of intangible or ethereal goods is new. While an ethereal good is appropriable, it is not expropriable and it can be copied at a cost that is less than the cost of a bona fide version. Under this definition, a book is more likely to behave as a tangible good than as an ethereal one as the cost of copying on a Xerox machine is generally higher than the cost of purchasing.

Behaviour differences with respect to the theft of ethereal and tangible goods clearly illustrates the difference between the goods. While newspapers carry full page advertisements for sophisticated ethereal goods burglar tools: video cassette recorders and audio tape decks, such advertisements for tangible goods burglar tools are a sure route to jail. The practice of ethereal goods theft is so common and acceptable that a fundamental difference between tangible and ethereal goods must exist. Consequently, it seems more complex, network oriented systems will be required if the full socio-economic benefits of the new technology and ethereal goods are to be realized.

If an economic system is to deal adequately with ethereal goods, it must not only arrange for the author to receive an adequate reward for his efforts, but must also incorporate mechanisms for aiding in the determination and dissemination of the use value of the ethereal goods he and others have created. This is probably a new source of social synergy and the significant wealth creating mechanism of any viable "Information Society".

Gordon Thompson graduated from the University of Toronto in 1947 with a degree in Engineering Physics. He joined the Northern Electric Company, forerunner of Northern Telecom, where he was involved with the design and development of commercial electronic communications equipment and systems.

In 1963 he joined Bell Northern Research and began to question how decisions were made about the new technology. This led to an expanding examination of the relationship between information technology and society. His current position is that of Manager, Communication Studies.

He has published 40 or more papers on the subject of communications and the future, including the well-known paper "Memo from Mercury". He holds 13 Canadian and 11 American patents

Session E Wednesday 26 May: 0900-1030
Alternative futures

In this session, Earl Joseph will examine the ways in which information technology is likely to diversify through its products, services and applications.

He will consider the hardware and software issues of future architectures, general purpose programs and compilable programs. He will also consider the systems alternatives presented by synergy systems, ethnotronic systems, code-spliced and transmitted systems, knowledge-based computers and parameters programmed systems.

The session will conclude with an examination of the future impacts that these alternatives might have on society, office automation, jobs and energy productivity.

Earl C. Joseph Sperry Univac

Earl C. Joseph, obtained a degree in mathematics from the University of Minnesota in 1951 and has been at Sperry Univac since then.

Since 1963, when he was appointed Staff Scientist he has been researching the future. Previously, his roles included systems manager, project manager, and he has directed, managed and performed the systems design, logic design, programming, and applications of a number of computers.

In his present position, he researches the future and advises management at all levels on future technology, including the design, impact, application, social impact, management of future computers, artificial intelligence, and alternative futures for Univac and society. As a *Staff Futurist*, his current forecasting efforts are directed towards futures research, strategic management, future computer design, and long-range planning activities. The activities include the study of alternative futures for: microprocessor systems, smart machines, data processing, food and farm automation, defence systems, factory automation, socially desirable futures, economic/financial systems, education, medicine, communications, artificial intelligence systems, knowledge based systems, expert systems, and much more.

He holds three computer patents; is one of the creators of Ethnotronic Science; a creator of a language to describe alternative futures; is the system architect of five major computer systems; has co-authored over 30 books; and published over 150 papers.

Among his many other activities, Earl Joseph is an Adjunct Professor at the University of Minnesota designing and teaching graduate level courses on the future; on the instructional staff of Metropolitan State University and a (former) Futurist-In-Residence at the Science Museum of Minnesota.

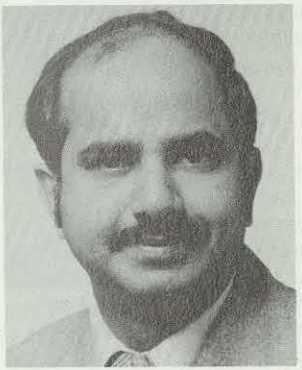
Session F Wednesday 26 May: 1100-1230
The factory of the future

Raj Reddy Carnegie-Mellon University

Professor Reddy will discuss aspects of the Factory of the Future. In particular, he will discuss issues of sensor intensive factories, smart sensor technologies, intelligent motion, and intelligent logistic support.

The Factory of the Future will require the use of smart sensors which can do intelligent interpretation of usually voluminous sensor data in the presence of error, noise, and uncertainty, and which can make use of all of the sources of information, including context, task, and environment. This kind of sensor will be used in sensor intensive flexible machining centers which can produce different types of parts and can be automatically reprogrammed to produce parts on demand but which also can automatically detect tool breakage, tool wear, or vibration intensity and then correct for those things. He will discuss robotics in which intelligent assistance will be provided to improve productivity in areas such as material handling, assembly, inspection, and packaging.

The concept of functional design which is independent of specific technology, i.e. the replacement of outdated components with functionally equivalent components having the same interface characteristics, is an important area for work in this decade. A fully-automated factory would rely on intelligent logistics support, i.e. information supplied by systems that sense the continuously-sent status of all orders and all resources, including not only raw materials and tools but personnel, and then make intelligent decisions regarding planning.



Dr. Reddy is a Professor of Computer Science and Director of The Robotics Institute at Carnegie-Mellon University. He received a Ph.D. degree in computer science from Stanford (1966) and had previously attended the University of Madras, India and the University of New South Wales, Australia.

His research interests in computer science are in the areas of artificial intelligence, man-machine communication and signal understanding systems. In particular, he is working on speech input to computers, visual input to computers, robotics, graphics, distributed sensor networks, and computer architectures. He is the author of over 75 papers and technical reports in these areas.

His current activities in Robotics include research towards the factory of the future and autonomous mobile robots capable of operating in hazardous environments such as undersea exploration, nuclear rescue, space manufacturing, and mining.

Dr. Reddy is a Fellow of the Acoustical Society of America and was the program chairman for the International Conference on AI (IJCAI-77) and the general chairman for IJCAI-79.

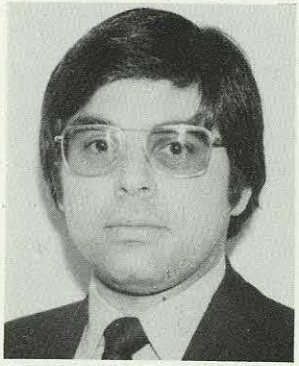
Session G Wednesday 26 May: 1400-1530
Computer factors in human systems

This session will examine the application of "Human Factors" research to computer-based work. Special attention will be paid to: the structural differences between traditional and computer-based workplaces and to the development of management control strategies.

Like Scientific Management, Human Factors research seeks to minimise unpredictable human behaviour. Its main approach is to simplify work into discrete, standard and measurable sub-tasks. Unlike Scientific Management, Human Factors techniques are directed at intellectual rather than manual work. Scientific Management techniques are used in nearly all manufacturing workplaces. By contrast, Human Factors research has not been widely applied. Its failure is due in part to its novelty, but the cause is also political. Efforts to design "idiot-proof" systems often provoke employee opposition. Two well-known examples are the resistance of software specialists to structured design methods and the hostility of clerks to office automation.

The session will conclude with a discussion of recent attempts to apply Human Factors techniques without provoking worker opposition.

Philip Kraft State University of New York



Philip Kraft is Associate Professor of Sociology at the State University of New York at Binghamton, where he teaches in the Graduate School and the School of Advanced Technology. He is a specialist in the sociology of computer occupations.

Mr Kraft's publications include "Programmers and Managers: The Routinization of Computer Programming in the United States" (Springer Verlag-New York), as well as several articles on workers and computerisation. He is currently directing a three-year study of women in computing occupations.

Session H Thursday 27 May: 0900-1015
Implementation of information technology

The rapid development of new hardware, software and applications causes a dramatic change in the use of information technology in most organisations. New products aim at new areas as well as at traditional areas in a more economic way. Vendors regard most employees as potential customers and act accordingly, while central DP people focus their attention on their internal environment. Step by step, the technical environment becomes more complex and more extensive, the number of people involved is quickly growing and their interests are to an ever-increasing extent diverging; this creates a very complex co-ordination environment. However, firm co-ordination is a prerequisite for an efficient use of information technology and this contradiction must be managed in one way or another.

National and international companies face, in general terms, the same problems when they co-ordinate development, implementation and operation of information systems. However, in multinational companies most problems are much more obvious and of greater magnitude.

During this session some of the more important technical and social areas which require co-ordination in order to obtain and successfully use information technology will be examined. Experiences and examples of how this co-ordination is carried out within SKF will be presented.

Bengt Rosenberg A/B SKF

Bengt Rosenberg is presently responsible for the development and co-ordination of methods and standards for systems development, telecommunications, hardware and basic software within the SKF Group. He is also in charge of co-ordination and implementation of office systems.

He joined SKF in 1964 and has held a number of management positions within SKF. His responsibilities have included organisational and administrative development, system development and administrative services.

He graduated in Mechanical Engineering at Chalmers University of Technology in Gothenburg.

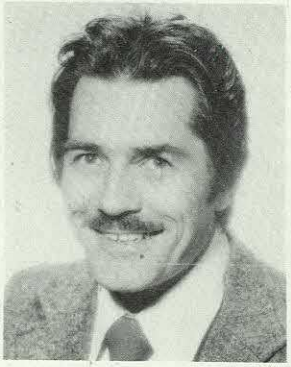
Session I Thursday 27 May: 1045-1200
Limits to growth

Louis Pouzin INRIA

In this session, Louis Pouzin will examine the major obstacles facing the information industry in the 1980s.

These obstacles range from system design issues to social acceptability. Mr. Pouzin will discuss human interface mismatches, examining human perception versus computer perception; communication gaps/deterrents such as network access, terminal incompatibility, unstable software and the need for increased systems support and standardisation.

The general social issues he will discuss are those of regulation and unemployment which are of particular significance in the European (as opposed to the American) context.



Louis Pouzin is Director of Pilot Projects at INRIA. He has managed many large software projects including CTSS as part of project MAC at MIT and Meteor, a real-time operating system for the French weather bureau. He joined INRIA in 1972 as Director of Cyclades, an experimental computer network linking universities and research centres in France.

see over for registration details

Registration for the conference

To register for the conference please complete the form opposite and return it to Butler Cox & Partners Limited, preferably by Friday 30 April 1982.

We will acknowledge receipt of each registration.

Accommodation

Delegates to the conference will stay at the Hotel Belvédère in Davos. We have arranged for an accommodation package on behalf of conference delegates which includes accommodation and breakfast for the nights of 24, 25 and 26 May. It also includes lunch on 25, 26 and 27 May and dinner on 24 and 25 May. (The conference dinner will be held in the evening of 26 May.)

The conference cocktail party on 24 May, refreshments during the two-and-a-half days of the conference and the conference dinner, are provided by the Butler Cox Foundation as part of the conference.

The total cost of the accommodation package is SFr. 442.50. This amount (together with additional charges incurred by the delegate, such as telephone calls and bar charges) should be paid direct to the Hotel Belvédère at the end of the conference.

Travel

Delegates should make their own way to the Hotel Belvédère in time for the cocktail party on 24 May at 7.30 pm. Davos is situated about 140kms to the south-east of Zurich, and Zurich airport is the nearest international airport to Davos. Delegates may travel by train from the airport to Davos, but it is not a direct service and the journey time is about 3 hours. Alternatively, we have arranged for private coaches to be available to transport delegates from Zurich airport to Davos on 24 May (journey time about 2 to 2½ hours). The coaches will leave Zurich airport at 2.45 pm, and a Butler Cox Foundation representative will be at the airport to meet delegates who wish to use this service. Coaches will also be available on 27 May to transport delegates from Davos to Zurich airport. The coaches will leave the Hotel Belvédère at 2.30 pm, and should arrive at Zurich airport by 5.00pm. A charge of approximately SFr.12.00 will be made for each coach journey and this amount will be collected from each delegate on the coach. Please tick the appropriate boxes on the registration form if you will be using the coach services.

In addition, some national groups of members may be able to arrange for block bookings for flights to Zurich airport. Any such arrangements will be made by your local Foundation office, and, if such an arrangement has been made for your country, details are contained on a separate sheet distributed with this document.

Companions

Delegates are invited to bring their wives or husbands with them to the conference. The cost of the companion's package is the same as the delegate's package (SFr 442.50), and includes accommodation and all meals for the duration of the conference. This amount should also be paid direct to the Hotel Belvédère.

Companions are invited to join the delegates for the cocktail party on 24 May, for lunch on each day of the conference, and for the conference dinner on 27 May.

In addition, if there is sufficient demand, we will ensure that a programme of activities is organised for companions.

Registration form

Please register me for the management conference and book hotel accommodation on my behalf to cover the period commencing in the evening of 24 May and ending after lunch on 27 May.

I understand that if this booking is not cancelled on or before 14 May 1982, any resulting costs incurred by Butler Cox & Partners Limited will be invoiced to my organisation.

Member Organisation _____

Delegate Name _____

Position _____

Address _____

_____

_____

_____

_____

Telephone _____

Telex _____

I will be accompanied by: _____

_____

_____

Please book the companion's package on his/her behalf.

Signature _____

Travel

Please tick the appropriate boxes below

☐ I will make my own way to and from the Hotel Belvédère, Davos.

☐ I will travel on the special private coach leaving Zurich airport at 2.45 pm on 24 May (cost approximately SFr.12.00, payable on the coach).

☐ I will travel on the special private coach leaving the Hotel at 2.30pm on 27 May (cost approximately SFr.12.00, payable on the coach).

☐ I wish to participate in the special block booking air travel to Zurich airport (see separate sheet for details).

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