

News and Views Abstracts*

A.S. CARRIE and S.K. BANERJEE

“Approaches to implementing manufacturing information systems”

OMEGA International Journal of Management Science **12**, No 3, pp 251–259 (1984).

Since computers lie behind almost all aspects of new technology, industry now has the chance to develop true integrated Manufacturing Information Systems. This paper examines the developments in this direction which new technology makes available and why companies should embrace them. Case studies are presented in which the progress achieved and problems encountered by three companies in realising their manufacturing information system are discussed. General conclusions are drawn from them and recommendations for successful implementation are put forward. (Journal abstract)

M. BLUMBERG and D. GERWIN

“Coping with advanced manufacturing technology”

Journal of Occupation Behaviour **5**, 113–130 (1984).

Computer-aided manufacturing is aimed at revolutionising batch production by increasing control over this uncertain mode of manufacturing. As computerised equipment becomes more sophisticated it becomes less compatible with the socio-technical systems of most firms. The paper then looks at the problems created by the mismatch of humans and technology taking evidence from case studies of five firms in three nations that have recently acquired computerised production systems. The paper concludes that attention must be given to the effects of new technology on management and suggests that social scientists must work with engineers to design new equipment that fits with existing socio-technical systems

CRISIS FACING UK INFORMATION TECHNOLOGY

London, NEDO, 1984 [Information Technology Economic Development Committee Report]

Information technology is not just the basis on which new industries are being built and old industries transformed. It is fundamentally changing – for good or ill – the whole of our society, and this report addresses the issues facing the UK IT industry in the light of our overseas competitors having pulled ahead

Contents

The challenge

Why we in the IT EDC consider that the UK IT industry is facing a crisis

Our report to the NEDC

The full text of the IT EDC report to the National Economic Development Council, presented by our Chairman, Professor John Ashworth

What we are doing to help

The IT EDC's own programme of work to help UK companies identify how their markets will develop:

0 The User Panel

0 The Long Term Perspectives Group

The response to our 1983 recommendations

We reprint the main recommendations of our last report, and publish the response they received from government, a supplier, a union and a user. The government position is given in detail in a paper prepared by the Department of Trade and Industry.

Available from NEDO, Millbank Tower, Millbank, London SW1P 4QX (U.K.) (price £3.00).

G. RADL

“EMNID has done research on how the user regards his video screen”

BIT, (January, 1984).

Reports on a survey undertaken by the Bielefeld Market and Opinion Research Institute EMNID in 1982/83 which recorded the positive and negative opinions of VDT users and non-users. The results show that ‘stress through video-screen work’ is caused much less by the video-screen than through its bad reputation

V. WILLIAMS

“Employment implications of new technology”

Employment Gazette **92**, No 5, 210–215 (May, 1984).

The introduction of new technology offers the prospect of greater wealth and the possibility of increased employment opportunities in the economy as a whole concludes this article. Based on a review of existing literature it sets out to establish the effects on employment so far and the possible impact within the decade.

J. ENQVIST

“Good-bye to group assembly”

Working Environment 14–17 (1984).

After a ten year period, Swedish automaker Saab-Scania has abandoned its group assembly production method and introduced a new assembly line where robots do the heaviest jobs. The company believe that the new system will do away with stress and load injuries in female workers and they will make productivity gains. The only immediate drawback to the line is the creation of less interesting jobs.

B. PEARCE

Health Hazards of VDTs?

(Chichester, John Wiley, 1984)

Based on the proceedings of three one-day meetings held in Loughborough in 1980 and 1981 sponsored by HUSAT (Human Sciences and Advanced Technology) Research

* The Editor is indebted to the Work Research Unit of the U.K. Department of Employment for their permission to reprint the abstracts from the Information System News & Abstracts (1984).

Group, this book records the contributions of leading authorities to the emotive debate on the safety, health and quality of working life of the users of 'new technology'. Issues covered include reports on facial rashes among VDU operators, ergonomic problems, occupational stress, job design and VDU operation and trade union demands.

Available from John Wiley & Sons Ltd, Baffins Lane, Chichester, Sussex (U.K.). (Price £16.50/\$26.50).

HUMAN FACTORS AND INFORMATION TECHNOLOGY

(London, National Electronics Council, 1983)

This report identifies a number of ways in which design which fails to take proper account of human factors restricts the effective and widespread use of new technology. The report looks at the following in detail; the potential of IT, the inhuman factors of IT, the challenge of IT, the science of ergonomics, how to introduce IT effectively, ergonomics at work, and then makes several recommendations on ways to promote successful use of IT.

Available from National Electronics Council, 99 Gower St, London WC1 (U.K.)

"INDUSTRIAL RELATIONS, NEW TECHNOLOGY AND DIVISIONS WITHIN THE WORKFORCE"

Industrial Relations Journal 15, No 3, 36-44 (1984).

Based on research carried out by the New Technology Research Group at an independent television company between 1980-1982, this case study suggests that the introduction of new technology can cause conflict and rivalry between different sections of the workforce, or even between those staff belonging to the same trade union. The article traces the origins of these divisions and shows their influence on their course and outcome of negotiations

IT SKILLS SHORTAGES COMMITTEE

The Human Factor - the supply side problem

(London, Department of Trade and Industry, 1984)

In this its first report, the committee assesses the demand for and supply of IT skilled manpower at graduate level; and proposes an outline plan of action to deal with any shortfall. (Report summary edited)

Available from Department of Trade and Industry Library, telephone 01-212 6189 free of charge.

M. GEORGE and H. LEVIE

Japanese Competition and the British Workplace

(London Centre for Alternative Industrial and Technological Systems, 1984).

A short guide for trade unionists, shop stewards and members, which outlines the industrial relations scene in Japan. The authors also look at the importation of Japanese management and production techniques into Britain by highlighting the development of quality circles in British industry and draw out the most important features for trade unionists.

Available from CAITS, Polytechnic of North London, Holloway Road, London N7 (U.K.) Tel. 01-607 7079. Price - £1.50 (or reduced price for bulk orders).

"JOBS AND TECHNOLOGY"

Economist 290, No. 7334, 67-68 (24 March, 1984).

Companies in industrial nations are emerging from recession slimmer and more productive. They are now making the profits needed to invest in new labour saving technology and the article asks whether employers and employees are ready to accept the consequences of job loss?

P. SENKER

Learning to use microelectronics: a review of empirical research into the implications of microelectronics for work organisation, skills and industrial relations

(University of Sussex, Science Policy Research Unit, 1984)

Focuses on the problems involved in the introduction and use of microelectronics in the British economy by reviewing detailed, published UK case studies. Concentrates on the engineering industries, but also deals with printing and other manufacturing industries, and draws on research carried out since the mid-1970s which is concerned with organisational, manpower, skills, and industrial relations issues at individual firm and plant level.

Available from Science Policy Research Unit, University of Sussex (U.K.). Price unknown.

I. McLOUGHLIN et al

Managing the Introduction of New Technology

(University of Southampton, New Technology Research Group, 1983)

This paper reports some findings from a major research programme being conducted by the New Technology Research Group (NTRG) at Southampton University. The overall aim of this research is to make a contribution to the now growing body of empirical data on the introduction of new technology into work organisations. Since 1981 three detailed case studies have been conducted; two of which, the introduction of a computer information system for controlling freight operations in British Rail and the introduction of Electronic News Gathering (ENF) equipment in an independent television company, are the subject of the following discussion. As we will show, these two case studies offer insights into the process of managing the introduction of new technology, particularly with respect to the development of managerial strategies.

M. WARNER

Microprocessors, Manpower and Society

(Gower, October 1984)

This book deals with a major problem facing advanced economies, namely the challenge of the 'chip'. It ties the problems of new technology, manpower and society down to specific research contexts covering Industrial Robots (IR), Flexible Manufacturing Systems (FMS), Computer Aided Design (CAD), as well as a range of other applications. The focus of the study is the role of management and workers in coming to terms with applications of advanced technology in contemporary industrial society. (Book abstract).

Published by Gower Publishing Company Ltd, Gower House, Croft Road, Hampshire GU11 3HR (U.K.) (£21.50).

H.J. OTWAY and M. PELTU

New Office Technology Human and Organizational Aspects

(London, Frances Pinter, 1983).

The effectiveness of new office technologies will depend on how the human and organizational aspects of innovation are managed. This book is a collection of papers which look at various aspects of new technology in an office environment and its impact on the roles of secretaries and managers.

Published by Frances Pinter (Publishers) 5 Dryden St, London WC2 (U.K.) (Price £15.00).

T. WEBB

"New technology: a union view"

Industrial Society 66, 13-14 (March, 1984).

Puts forward the view that trade unions are willing to accept new technology so long as the need for consultation, new

technology agreements are recognised, and for the government to support training and re-training to prevent skill shortages in the computer and electronics sector.

R. GRANTHAM

"New technology – a union view"

IR Digest **12**, No 2, 10–11, 19 (May 1984).

'Computers should assist human beings, not subordinate the human to the machine': five years after APEX led union acceptance of microelectronics, the general secretary of APEX, reports on the union's current thinking which covers the impact of new technology on job design, job skills, training and health and safety.

M. WARNER

"New technology, work organisations and industrial relations"

Omega – International Journal of Management Science **12**, No 3, 293–210 (1984).

This paper argues that the effects of the new microprocessor technology such as FMS, CAD/CAM, CNC systems and so on, on industrial relations are relatively indeterminate, given that new production systems may permit a range of organisational and manpower solutions. Examples are cited from a number of cross-national empirical studies, relating to selected countries in Western Europe. The first deals with the impact of technology on industrial democracy: the second, with the effect of skill-polarisation and hence on employee involvement. The problems of assessing casual relations are then discussed and the paper concludes that whatever the impact of technology on industrial behaviour, the impact of formal participative norms appears to be greater.

R.G. SELL

"New technology and the effects on jobs"

From Human Factors in Organisational Design and Management edited by H.W. Hendrick and O. Brown (Elsevier Science Publishers, 1984) pp. 353–359.

This paper looks at the effects on the jobs that people do of new technology and, in particular, that of developments in Information Technology and other computer advances. It makes the point that with the same technology change there are usually options which can either improve or degrade jobs: the degree of involvement of the employees in the change process can also affect the success with which the change is carried out (book abstract)

R. BANBURY and S. BAKER

"Order line at Freemans"

Industrial Participation 6–10 (Summer, 1984)

This presentation from an IPA Conference describes how the mail order company, Freemans introduced computers in a way that improved customer service, productivity and the quality of life at work for their employees

F.K. FOULKES and J.L. HIRSCH

"People make robots work"

Harvard Business Review **62**, No 1, 94–102 (Jan–Feb., 1984).

Explores the personnel issues faced by many US companies when introducing robots and looks at some of the approaches they adopted. Although the article focusses on robots many of the issues raised are applicable to the introduction of automation into the work environment.

T. LUPTON

Proceedings of the 1st International Conference on Human Factors in Manufacturing (3–5 April 1984, London.) (Bedford, IFS 1984).

The papers at this conference reflected the extent to which companies had begun to concern themselves with the 'people aspect' of high technology manufacturing. These companies were very diverse in the scale of their operations and the nature of their business. The papers also brought out the amount of documentation and research being undertaken which is based on numerous industrial cases.

"ROBOTS"

Labour Research **72**, No 11, 281–282 (November, 1983).

Examines the implications of the growing use of robotics for trade unionists.

S. ROTHWELL

"Supervisors and new technology"

Employment Gazette 92, No 1, 21–25 (January, 1984).

Research at Henley has explored the effect of implementation of new technology on the management of people and the organisation of work in a wide range of companies and industries. The author looks at the impact on supervisors who are most vital to the successful implementation of change.

S. ROTHWELL and D. DAVIDSON

Technological Change, Company Personnel Policies and Skill Deployment

(Sheffield, Manpower Services Commission, 1984)

Report of research started in 1981 which explored the introduction of new technology in office and factory environments and its effect on manpower utilisation. Case studies were carried out and two themes of particular interest were identified for study (1) socio-technical design and (2) effects of new technology on supervisors.

Published by MSC, Moorfoot, Sheffield, S1 4PQ (U.K.)

TECHNOLOGICAL DEVELOPMENT IN BANKING AND INSURANCE: THE IMPACT ON CUSTOMERS AND EMPLOYEES: UNITED KINGDOM

(Dublin, European Foundation for the Improvement of Living and Working Conditions, 1984. [EF/84/54//EN])

Reports on an investigation into the effects of technological development on areas of private and working life. This report presents the results of research in the UK in the banking and insurance industry and covers the following areas – background to insurance and banking industry, use of new technology, the introduction and impact of technology on job content, supervision, remuneration, trade union attitudes, women and new technology, and the effects on employment and quality of working life (see below).

TECHNOLOGICAL DEVELOPMENT IN BANKING AND INSURANCE: A CONSOLIDATED REPORT ON THE IMPACT ON CUSTOMERS AND EMPLOYEES

(Dublin, European Foundation for the Improvement of Living and Working Conditions, 1984 [EF/84/50/EN])

Presents the most significant data from the four countries studied – West Germany, France, Italy and the United Kingdom, on the effects of new technology in banking and insurance; and is a companion document to report EF/84/54//EN. [See previous abstract].

Both reports are available from European Foundation, Loughinstown House, Shankill, Co Dublin (Eire).

T. NUKI

'The effect of micro-electronics on the Japanese style of management'

Labour and Society 8, No. 4, 393-400 (Oct.-Dec. 1983).

Considers the impact of micro-electronics upon the seniority system and the system of permanent employment, on trade union structure, and on the Japanese organisation such as quality control circles, in which human contact plays a primary role

M. MEAD

'The effects of technology - a guide to the literature'

Work and People 9, No. 3, (1983).

In recent years, a huge amount of material has been published on the impact of technology on society in general and on the workforce in particular. Hence it was necessary to limit items in this bibliography firstly by place and then by time. Consequently, this guide is concerned primarily with literature dealing with the effect of technology on Australian employment and employees, or appearing in Australian publications. One or two items published overseas but considered relevant to the Australian situation have also been included.

"THE IMPACT OF TECHNOLOGY ON LABOUR"

American Labour No 6, 10-16 (October, 1983).

The first in a three part study on the impact of technology in the American printing and publishing industries.

"THE IMPACT OF TECHNOLOGY ON LABOUR"

American Labour, No 7, 16-21 (March, 1984).

Second of a three part study on the impact of technology on manpower requirements in major US Industries. The first part looked at printing and publishing industries (January, 1984, p2) and this second part looks at the metal industry.

I.P. McLOUGHLIN, ET AL

The Introduction of Computerised Freight Information System in British Rail; TOPS

(University of Southampton, New Technology Research Group, 1983)

This Report documents the findings of a study of the implementation and operation of the TOPS (Total Operations Processing System - a computer information system to improve management control of freight operations) system conducted by the New Technology Research Group (NTRG) of the University of Southampton in 1981-2. The objectives of the research were to investigate, through a retrospective study of the system's implementation and a study of its current operation, the following issues:

- (1) The Management Strategy for the introduction of TOPS involving,
 - (a) the investment decision and reasons for introducing TOPS
 - (b) the approach to implementation and industrial relations
 - (2) The implications of the TOPS system for management control of railway freight operations.

Findings on the first issue are reported in Chapters 1 and 2, and on the second in Chapter 3. Appendix I contains a detailed discussion of the configuration and operation of the TOPS system. Appendix II outlines the research strategy and methods used in the study. The main findings of the study are summarised in the conclusion and some of the implications of the research for organisational theory indicated.

Published by University of Southampton, New Technology Research Group, Southampton (U.K.).

T. LUPTON

The management of change to advanced manufacturing systems

Foundation for Science and Technology Lecture, October 1984. [Given at the Royal Society, London 3, U.K.).

Proposes ways in which advanced manufacturing technology can be effectively introduced into industry and explores reasons for adopting a socio-technical approach which expends resources on involving the workforce.

A. BURNS et al

'The miners and new technology'

Industrial Relations Journal 14, No 4, 7-20 (Winter, 1983).

In this article the authors develop a theoretical framework for the analysis of issues raised by the new technology and report on research undertaken for the National Union of Mineworkers into automation in coal mining. Alternative strategies are introduced which may be considered by the NUM to cope with new technology in the pits.

J. DEARDEN

'Will the computer change the job of top management?'

Sloan Management Review 57-60 (Fall, 1983).

In this paper, the author contends that many of our assumptions about the computer are wrong, particularly our perceptions about how the computer affects the top manager's job. He concludes that although a top manager may find the personal computer interesting it will not alter the way he or she does the job.

WOMEN AND NEW TECHNOLOGY

(London, Trades Union Congress, 1984)

This discussion document raises the issue that women workers are more likely to suffer through the introduction of new technology into the work environment. It also calls for unions to make greater efforts to involve women members who may be affected by the new technology.

Available from, TUC, Congress House, Great Russell St, London WC1B 3LS (U.K.) (Price £0.35).