1987

FROM DATA ENTRY TO DATAFLOW~

THE NEW OPPORTUNITIES

Spectrum Data Services runs two ROCC data entry systems supporting 40 terminals in total.

THE Information Technology revolution of the 1980s began as technology-induced change that was characterised by microcomputers invading the home, the workplace, and almost every kind of business and social activity. With these microcomputers came enhanced telecommunications and together micros and telecoms created new products and services and generated a myriad of knock-on effects in our culture and society.

One of those effects was to focus attention on the value of information in its own right and preeminence of information as a strategic resource in an 'information society.' The idea of information having value was not new. For centuries the value of knowledge and 'know-how' has been widely accepted. What was new were the realisations of how valuable information was and the fact that many businesses were information businesses in that one of their most important assets was the information that was held in the organisation. This asset showed up on no balance sheet. Strategic management recognised the asset could not be fully exploited because of the location and method of storage and 'ownership' of information within the organisation. Many organisations are showing signs of 'frozen information assets syndrome' the prognosis for which is growing enfeeblement through loss of profitability and market share. Left to itself, it can be terminal.

The syndrome is slow to develop. Early signs are breathlessness when trying to react quickly with new systems; the heavy medication needed to maintain old systems; more resources going into the old than into the new until finally little resource goes into tomorrow; proliferating growths on the system in order to meet short-run objectives but inevitably with no long-run plan only a future aspiration to surgery; little or no growth of the system.

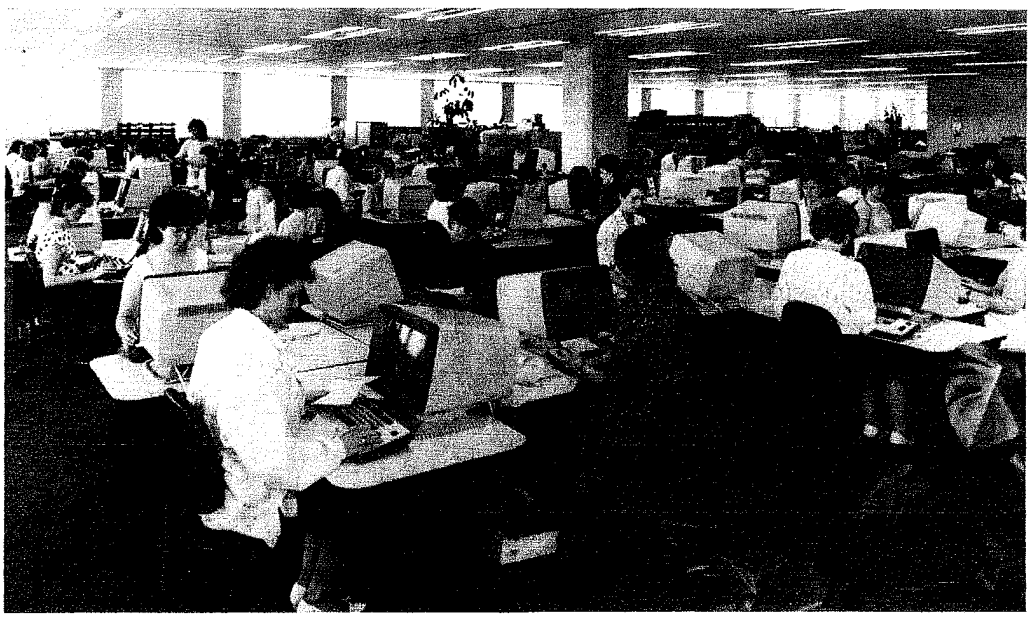
It could be argued that most organisations who put their data processing systems into computers in the 1960s and 1970s suffer already from the syndrome. The data processing systems were built to displace clerical labour, to speed and lower the cost of transactions, to optimise efficiencies in stocks or processes and to give management information about their business or organisation. In doing all these things, data processing systems have been brilliantly successful and they will continue to be needed. What they cannot do however is change easily into information processing systems. Any longstanding data processing system is a mixture of applications development spanning many years, with often different programming languages and techniques, different file structures and data management techniques and varied telecommunications techniques. Keeping them working at all requires great management and technical skills.

Most systems operators would like to redevelop their systems provided that the budgets were available, that some proven techniques and methodologies were available, that the right kind of hardware and system software would be available at a time when their conversion was completing and that they could find a way of keeping existing systems going in the meantime. Each of these considerations is a non-trivial problem and it is unlikely that any good solutions actually exist at the present time.

It also seems unlikely that corporate operational management can be persuaded to part with large sums for futuristic conversion development when the last tranche of technology – personal computers and mega-MIPS – has hardly been digested, assimilated or has yet to yield tangible returns.

Further, the techniques and methodologies are in embryonic form with Structured Systems Analysis and Design Methods – coherent but incomplete and not yet proven.

The formidable task of processing travel related documents and associated records of data entry falls to three ROCC 2830 processors, connected to 78 workstations which are installed at the Peterborough headquarters of The Thomas Cook Group Limited.



In addition, hardware and system software are consolidating into fewer varieties proving that Von Neuman is not dead yet. New intelligent knowledge-based systems (IKBS) have not yet appeared to offer realistic alternatives. Networking is still messy and performance is poor. The best hope for the future could be networked Von Neuman/IKBS, but when and how?

And in the meantime keeping everything functioning, meeting the day-to-day deadlines and delivering the growing information volume consumes increasing resources at the systems and programming levels at a time when future development resources are either unavailable or too expensive.

The bad news is that the solutions aren't available off the shelf but the good news is that many people are beginning to recognise the problems and the issues. Because of the magnitude of the issues, different groups of people view them from different perspectives and from different backgrounds. One of those groups of people is data entry people.

"Data entry people."

Data entry people is a generic description for people who carry a plethora of job titles – information officers, data preparation managers/supervisors, data entry managers/supervisors, data control managers/supervisors, data collection managers/supervisors, lead operators, controllers, schedulers and many more. No two jobs with the same job title are similar. No two people with the same job title have similar qualifications or training. There is no standardised method for identifying these individuals as a group – except as data entry people.

Data entry people were bred from the production end of data processing. A production controller in a factory would work with 'just-in-time' or 'integration of processes' just as much as a data entry manager. Data entry began as a central function in the room next to the computer. Data entry professionals developed skills in job scheduling and data control, in forms design, in planning, programming, documenting systems to achieve maximum productivity and in motivating staff to achieve that productivity on a continuing basis. They also developed skills in other methods of data capture besides keyboarding, in inter-departmental cooperation and data movement and in managing the change process as new applications were introduced. In short, they developed skills in ensuring that data would be where it was supposed to be, ready for the next process, in the right state and on time. Their functions encompassed the physical side of data-oriented systems.

The data processing systems themselves as manifested by the mainframe applications were processing-oriented systems and, in the main, continue to be so. But the world of information processing will be concerned with data-oriented systems not processing-orienting systems because information is relevant data not necessarily processed data. Such a differentiation between data-oriented and processing-oriented systems lies at the heart of the new structured system methodologies.

Given that systems designers embrace the new methodologies over time to develop new systems, there will emerge the need for a new type of professional to operate at the physical interface while the systems designer deals with the logical structures. This professional needs special skills. The managerial job task could be stated as:

"Defining in the light of prevailing circumstances, the tasks of collecting, verifying, validating, moving, controlling and delivering the flow of data and information by electronic and other systematic methods within an organisation, between organisations and between organisations and their customers; defining the most cost effective methods of completing these tasks;

defining the resource requirements; deploying the resources and getting the task completed through people".

"Dataflow Management."

This job task is called Dataflow Management. One part of the dataflow manager's job is to look at application needs from the viewpoint of the user and to interface with the systems designer at the physical/logical interface. In this task, the dataflow manager uses dataflow technique – a two-stage process at the beginning of the structured systems design method.

The first stage is dataflow charting or diagramming which provides pictures of information flows through systems and between systems and the outside world. The second stage is a method of structuring data logically.

Both stages are reliant upon physical application systems and the output from these stages is used in the overall system development process to help identify the user's need accurately and to verify that it is being met. The output is also used as an aid in the planning of the project and as a standard reference for future use.

Dataflow technique however is in its infancy as a commercial method. Data entry on the other hand is a widely established method which embraces many areas that will be subsumed by dataflow. If data entry can be professionalised and developed into basic dataflow, a talented body of people will become available, in due course, for working with the information systems of the future.

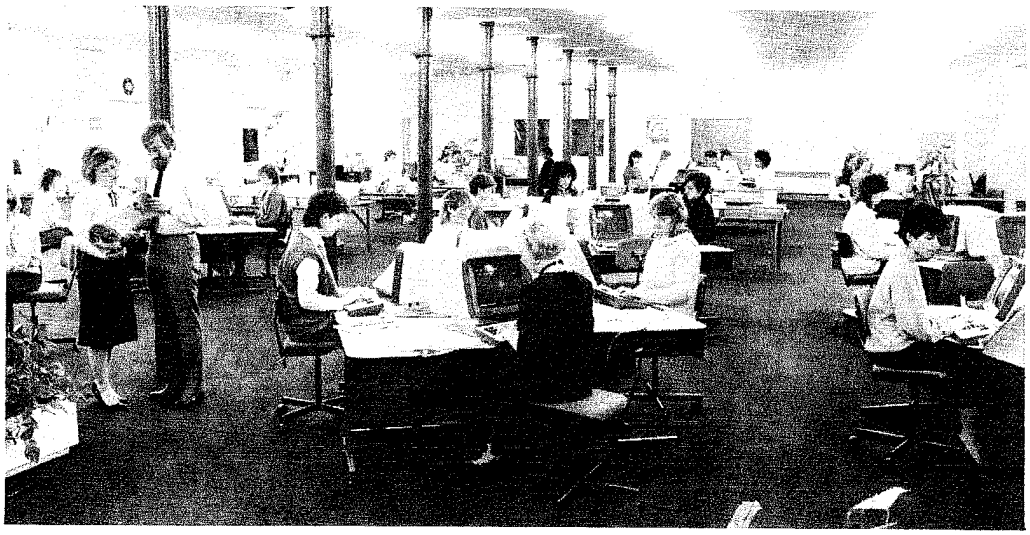
The development of dataflow management can thus be seen as a two-stage process. Firstly the establishment of basic dataflow management from the base of data entry management and secondly the growth of advanced dataflow management in pace with the evolution of dataflow techniques.

Some people will perhaps be concerned with whether there is a sufficient corpus of knowledge or depth of skills to make dataflow an entity and not just a sub-set of computer operations management, or a sub-set of systems analysis or a sub-set of network management. One of the problems with revolutions is that it is difficult to draw the boundaries until the dust has settled. There is a sufficient corpus of knowledge in data entry alone to support a Data Entry Management Association in the United States of some 10 years standing and well over 1000 member companies. The US DEMA operates a certification programme which is recognised by member companies and others as indicative of management training, competence and achievement in data entry. The basic skills level of dataflow management would be encompassed within a developed version of DEMA's certification programme.

The advanced dataflow programme, dependent as it is on emerging techniques could be supported by academic and professional research in order to provide usable commercial tools which could be the basis of an advanced certification programme. Research into these programmes at the conceptual level has been completed and the projects are achievable.

The great new opportunities are, therefore, to move data entry onwards through the next decade by professionalising data entry people and subsuming data entry into dataflow in a planned, organised and coherent fashion. Such courses of action will only appeal to those with long-term interests who wish to make a secure and satisfying career in a vital sector of information processing.

With security and satisfaction, could well come some improved recognition of the importance of those who work at the production end of the information systems. As we move from processing-oriented systems to data-oriented systems, it would be appropriate for data people to have the chance to grasp the new opportunities and the personal challenges and career development challenges they offer. For organisations, the opportunity is there to participate in evolving standards of competence and skill which will be vital in the future.



The duplexed ROCC 2830 linked to 48 workstations installed at Thermawear, Bingley, has to cope with a considerable workload at peak periods but it just keeps coming back for more.

There is no way that data entry people can grasp these opportunities as a group unless they are organised as a group. That is why the leading organisation for pursuing professionalisation will be the ROCC Computers Users Association. The task has to be done by the people in the profession or it has no legitimacy. Until there is an independent professional institute or association, the users association will serve as the focus for this activity backed by the resources, contacts and influences of ROCC Computers Ltd.

To make the first move we need your support. Come and join the Dataflow Movement. Help to set up the Professional Standards Group within the users association and let us create a new future. Your future is in your own hands.

Michael J. Aldrich
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chairman, ROCC Computers Ltd