BANKING INDUSTRY EMPLOYEES AND TECHNOLOGICAL CHANGE

Norman F. Dufty, Lawson K. Savery and Geoffrey N. Soutar

The introduction of new technology has been of concern to banking unions but the chances of them effectively influencing such decisions are determined by the importance attached to the issue by members and their willingness to undertake industrial action. This paper reports a study which attempted to examine this issue by investigating union members' experiences with various types of new technology, their attitudes towards those technologies and various aspects of their work lives and also their willingness to undertake industrial action over the introduction of new technology into their workplace.

Keywords: Australian banking, technological change, Australian Bank Employees' Union, discriminant analysis

INTRODUCTION

One of the major aspects of working life in Australia in the last quarter of a century has been the impact of new technology. Despite its pervasive effects it was of little importance to unions until the 1970s, when it was noted that technological changes "were not confined to increasing automation in mining and manufacturing but were affecting employment and work throughout the economy."[1] Nowhere were these changes more apparent than in banking, where the computer-based technologies, which were typical of this period, were significantly affecting the types of jobs employees carried out and were also influencing the types of promotion and employment prospects available within this sector.

The introduction of the new technology has been of concern to banking unions but the chances of them effectively influencing such decisions will depend upon "the suasion and pressure they can bring to bear on management",[2] which will be effectively determined by the importance attached to the issue by members and their willingness to undertake industrial action. The present paper outlines a study which attempted to examine this issue by investigating union members' experiences with various types of new technology, their attitudes towards those technologies and various aspects of their work lives and also their willingness to undertake industrial action over the introduction of technology into their workplace.

In order to place the present situation into historical perspective, the next section examines the introduction of various forms of technology

into banks in Australia, followed by an examination of the union's response to these technological changes. The remaining three sections deal with the present study of members of the Western Australian Division of the Australian Bank Employees' Union (ABEU), the results obtained and some tentative conclusions which arose from the analysis

TECHNOLOGICAL CHANGE IN THE BANKING INDUSTRY

Ledger machines were introduced at some head offices and city branches as early as the 1930s and their use had extended throughout the industry by the 1950s. The first machines prepared statements and were used in conjunction with manually posted ledgers. The dual post system could be used to post either ledger or statement sheets; alternatively, the side-by-side system could post both simultaneously. The result of their introduction was to halve the number of staff and to feminise the area. Women used adding machines to balance transactions, deposit child endowment and other social security payments and other routine work.[3] The next step was the advent of the proof machine which was, in effect, a compact group of adding machines which sorted cheques, recorded all totals on tape and ensured that the totals of cash, cheques and sundries balanced with the totals on the deposit slips.

Computerisation was a more radical change, which eliminated ledger machinists and exchange clerks, centralising these functions in electronic data processing (EDP) centres. All major banks had introduced such centres by the 1970s, shifting a lot of work formerly performed in the branches to head offices. Information was recorded and transmitted to the central computer direct from the branch and tellers no longer proved their own work. Balances were checked at the teller's terminal and the teller became more responsible for selling the bank's various services. Within the EDP centres the work force is divided between the few highly paid and skilled areas (systems analysts and programmers) and the routine jobs of machine operators. The main activity is the clearance operation, performed by electronic cheque sorting machines staffed almost entirely by women.[4]

Word processors have had dramatic effects in displacing typists in other areas of banks' clerical work. However, it could be argued that word processing is not categorically different from typing and that it is more in the nature of a supplementary skill added to skills already possessed by a typist.

In 1974 credit cards were introduced and the centralised magnetic tape exchange (CEMTEX) was established, although at first this was limited to customers' operating computer systems which could

produce the appropriate tapes. Two years later CEMTEX was extended to Western Australia.

The advent of automated telling machines (ATMs) has significantly altered the teller's job. Public preference for the machines can be observed outside many banks where there is a queue for the ATM even though, inside the bank, there are tellers available with no customers at the counter. The result is that the teller is employed to handle the more difficult and complex transactions, accentuating a trend towards tellers selling the bank's services. The development of electronic funds transfer systems has made inroads into jobs which could be classified as junior clerical or machine work as well as those of more senior staff engaged in bills and securities work.[5]

SWIFT, which is a system of making international payments replacing bank drafts and the like, has also had employment ramifications, reducing the need for bank staff specialising in this area.

Teller terminals have aided the tellers by providing direct access to such things as customer accounts and exchange rates. However, the more recent introduction of counter terminals has by-passed the teller to some extent by enabling the customer to access information on his or her account and the transactions can be completed on the terminal display screen without the need for the customer to fill out forms.

In the near future a number of other technologies, such as point of sale electronic funds transfer, remote banking by home computers and videotext services, are likely to spread. In 1984 Westpac announced that it was introducing the world's first national electronic banking system. In the same year there was debate over the introduction of a Federal Cheques Bill which would eliminate the need to process banking paper through the clearing system and which would legalise the processing of cheque data electronically. It seems that bank employees are likely to see even further changes in technology over the next few years, especially as the Australian Government has significantly deregulated the financial sector bringing even more competition into the marketplace.

It is difficult to determine the extent to which the new technology has resulted in deskilling. Without doubt, some of the jobs eliminated are the routine tasks which were created by the earlier phases of mechanisation. The introduction of the ATMs, as noted above, has raised the level of skill required in the teller's job by taking care of the routine money withdrawal function. On the other hand, the automation of jobs currently needing specialist skills (overseas bill processing or the lending of secured consumer finance) has resulted in declines in the skill level of many of those who remain in the branch banking system.[6] The banks' view is that the new technology will result in the ". . .lessening of routine processing operations in the

daily activity of bank officers, with more staff being freed for direct customer services",[7] but the union has yet to be convinced of this. Some answers to the question may come from the survey outlined in this paper.

UNION RESPONSE TO TECHNOLOGICAL CHANGE

Even the typewriter was not without its opponents. The *Australian Banker* of February 1927 carried the comment that "ever since the nimble typewritten sheet began to replace the stiff, stodgy, pompous old passbook there have been complaints from the conservatively minded". However, with the introduction of the new ledger machines came the alarm that this would lead to the displacement of male clerks. As early as 1930 the *Queensland Banker* said:

> A number of young ladies are being trained to work the machines, and the male ledger keepers will soon be booking their passages to, at the best, the smaller country branches, or alternatively will be looking for a new job.[8]

Another view was that the new technology brought a relief from tedium. As one article suggested, "no longer shall we hunt the elusive account that was out of order; no longer shall we have those pleasant little evening parties on Monday night 'hunting the difference'. . .".[9] On the other hand, there were calls to stop the new machines. The Tasmanian secretary of the union wrote to the Federal Council in 1933 to ". . .ask what action is necessary to stop such an unfair practice, as it is considered that the installation of these machines will mean further retrenchment of staff".[10]

Encoding was introduced in 1962, and in that year, the first bank computer was installed, by the State Savings Bank of Victoria. In the context of union pressure for shorter working hours and additional annual leave, the union adopted a positive attitude towards technological change. Giving evidence to an enquiry into technological change conducted by the New South Wales Industrial Commission the union said that "nothing but good can come from automation provided that it is handled properly".[11] However, there is ample scope for disagreement on the meaning of "handled properly".

With further computerisation and the introduction of on-line terminals for tellers, a decade later the union became concerned once more and resurrected earlier proposals for joint consultation. The banks agreed to the establishment of institutional sub-committees which were to be advised of any new or changed processes in time for adequate investigation, consultation and representation. However, the banks made it clear that these sub-committees could not delay the planned changes nor alter them. The banks' promise of no

retrenchments and retraining opportunities allowed the union to accept the ultimatum.[12] All this had little impact on the union in Western Australia. Thus, the only recognition of technological change in the Division's annual report for 1971/72 said:

> In the years ahead we will be more and more involved in technological change and the Association must give an independent lead in the consideration of this matter.

Union disquiet and opposition began to grow. However, by 1974/75 the Western Australia Division of the union, in its annual report stated, somewhat apologetically, that it was ". . .given an opportunity to take part in the planning and development insofar as it affects our members".

The ABEU, in conjunction with the Commonwealth Bank Officers' Association, made a detailed submission to the Australian Government's Committee of Inquiry into Technological Change (usually known as the Myers Committee) in May 1979. One of the unions' major concerns was the employment effect of the new technologies. The private banks, through the Australian Bankers' Association (ABA), responded by producing a booklet painting a much more optimistic picture than the unions' predictions. It was expressly stated that there were ". . .no grounds for any fears of staff redundancy"[13] and that, despite the labour-saving nature of the technologies, the substantial growth in the volume of transactions would ensure that ". . .the growth rate in banking employment. . ." would be ". . .comparable to earlier periods of expansion".[14]

However, it was obvious that the new technologies would reduce the number of staff below the number which would have been needed using the old manual systems. This was reflected in the private banking industry employment figures. From 1967 to 1975 employment rose by 46 per cent. In the next eight years it went up by 13 per cent but between 1983 and 1984 the number of employees actually fell by 142.[15] In the event, there were no redundancies and the annual recruiting rate has remained at a reasonable level. For example, Westpac, with 2500 employees in Western Australia, recruited 341 new staff in 1985 and the Rural and Industries Bank, with 2300 employees, recruited 719. A recent survey also shows little fear of technology-induced redundancies.[16] Only 2 per cent of administrative centre staff felt that this was likely and the figures for branch managers and other full time staff were 7 per cent and 14 per cent respectively.

The union (at that time the Australian Bank Officers' Associaton [ABOA]) made vigorous attempts in the mid - 1970s to discuss the future of the industry with the banks. These moves were strongly supported by the Australian Concilliation and Arbitration

Commission and by the Fraser Federal Government (politically a conservative government) but ". . .all propositions for genuine discussions and sharing of information were rejected out of hand by the private employers".[17] However, the limited consultation afforded by some banks, whilst not regarded as 'genuine' by the federal union and its officers, was welcomed in Western Australia. The Division's annual report for 1976/77 noted that:

> . . .the willingness by some of the major banks to consult with the ABOA on the future of the industry and the likely impact of probable technological innovations, is a welcome and refreshingly realistic attitude.

The softer line of the Western Australian Division of the union was probably due to the fact that employment in the banking industry was rising in the State and there seemed to be little to worry about. It was also obvious that the major battles, if there were to be any, were going to be fought at the federal level. The conservative nature of the local leadership may also have played a role.

By May 1977 the more militant federal union had lost patience and the Federal Executive passed a resolution which said, *inter alia,*

> All banks be advised that from this date, should any bank introduce, or advise the Association of its decision to introduce, any substantial change in organisation or methods of carrying out work in the industry without having consulted ABOA in the planning stages, the Association may instruct its members not to perform any work connected with the new organisation or method of working and will enforce this ban by every method available to it.

The union then began a publicity campaign highlighting the evil consequences of technological change. This was successful to the extent that a union survey in 1979 suggested that members were almost as prepared to take industrial action over technological change as they were over wages and salaries.[18] The banks countered with the production of the publication referred to above.[19] The crunch came in 1979 when the Bank of New South Wales (now Westpac) advised the union that it was going to introduce ATMs but, because of the confidentiality aspects, the union could not inform its members. This incident virtually compelled the union to thrash out a comprehensive policy on technological change at its 1980 biennial Federal Conference. This linked the introduction of new technology with a reduction in working hours in one form or another and insisted on meaningful consultation procedures.

In 1981 further unsuccessful attempts were made to establish consultative procedure with the Bank of New South Wales and in August 1983 the three major private banks — the ANZ, the National and Westpac (the result of a merger between the Bank of NSW and the

CBA) — were approached on this issue. All rejected the union's request.[20] During September and October 1983 the unions held stop-work meetings on the issues of new technology and bank take-overs and in November the Full Bench of the Concilliation and Arbitration Commission commenced hearings on the dispute. Arising from these proceedings the banks gave certain limited undertakings, agreeing to discuss with the union any employment effects of the introduction of technological change but rejecting any ideas that either the union or the Commission could block any such change. In March, 1984 the union's biennial Federal Conference endorsed the structures that had been established. The union's current policy is to push for a clause in the award providing for full consultation with employees and the union at least two years before the introduction of any changes — whether related to new technology or not.[21]

THE STUDY

The data in the present study were obtained from a sample of 50 per cent of the members of the Western Australia Divison of the ABEU early in 1985. A total of 1024 respondents returned useable questionnaires, a response rate of 34 per cent, and after removing those who did not answer the section on technological innovation a total of 886 respondents remained. The biographical characteristics of the sample are shown in Appendix A. The measurement of the technological experience was achieved by measuring the level of contact with a series of bank related technologies. These various technologies are shown in Table 1.

Since it was felt that people's views of technology could be affected by their work experiences, respondents were initially grouped according to their experiences with these technologies using a clustering algorithm developed by Milligan and Sokal.[22] This algorithm was chosen because of its availability and because it could cluster the large number of respondents. The clustering procedure partitions a set of multivariate observations (in this case, a set of items measuring technology experience) into a given number of clusters on an iterative basis, such that the final partition minimises an appropriate goodness of fit criterion. The number of clusters was varied from 3 to 10 to determine the most appropriate number using the point biserial correlation coefficient as suggested by Milligan and Mahajan.[23] It was found there was no real improvement in the criterion used beyond 7 groups. Consequently the 7 group solution was used in the subsequent analysis.

Because the cluster analysis enabled distinct groups to be identified it was decided to use discriminant analysis to examine the difference between the groups.[24] Initially, discriminant analysis was used to

determine how the groups differed on the technologies experience questions.

The discriminant analysis procedure was then also used to determine if the obtained bank technologies experience groups differed over such factors as a set of biographic variables, a set of quality of working life variables, and their willingness to take industrial action over new technology.

TABLE 1

Respondents contact with technologies (percentages)

Technology	frequent	occasional	Contact in the past but not now	not at all
Encoding machines	27	18	23	32
Word processors	9	11	5	75
On-line terminals	57	17	2	24
Off-line terminals	15	11	8	66
VDUs	45	18	5	32
CEMTEX	17	13	8	61
Mini/micro computers	7	8	4	81
Microfiche	53	18	5	24
SWIFT	10	16	4	70

RESULTS

Initially the overall contact of respondents with the various types of technologies was examined, and the results are shown in Table 1. It can be seen that most respondents have had some contact with at least one form of bank technology and most people have been exposed to on-line terminals, microfiche and VDUs. A further examination of this point is available by inspecting the number of different technologies to which respondents have been introduced or used. The results of this analysis can be seen in Table 2.

TABLE 2

Exposure to Different Numbers of Technology
(Percentages)

Number of Technologies	Frequent Contact	Occasional Contact	Had Contact in the Past but not now
0	15	3	2
1	18	9	6
2	22	14	9
3	20	22	17
4	16	23	22
5	5	15	19
6	2	8	12
7	1	4	8
8	1	1	3
9	0	1	2

Most respondents have not been exposed to a majority of the types of technology included in the survey, although 85 per cent have had frequent contact with at least one technology. What patterns of exposure are common should be determined by the cluster analysis which was undertaken in a subsequent stage of the analysis.

Questions were asked about the impact of technology. Nearly half the respondents (47.7 per cent) reported an increase in their control and less than a fifth (17.9 per cent) a decrease. The majority (68.2 per cent) said that technology had made their job more interesting and only one in eight (12.9 per cent) that it had decreased their interest and that it had increased their range of skills (63.6 per cent) rather than decreased them (19.7 per cent). Nearly half the members (46.2 per cent) said that it had increased their knowledge of banking rather than decreased it (18.8 per cent). More respondents (36.2 per cent) said that it had decreased the level of boredom rather than increased it (28.6 per cent). On the negative side, 40.0 per cent of the respondents said that their job had become more repetitive rather than less (28.8 per cent) and that the noise level had increased (39.8 per cent) rather than decreased (21.2 per cent).

There were mixed feelings on the amount of warning given about technological change — nearly a quarter of the respondents (23.4 per cent) reporting little or no warning and just over a third (35.0 per cent) a reasonable amount. Views on the degree of consultation about technological change were more definite — over half the members (53.3 per cent) said that there had been little or no consultation and not many (17.5 per cent) said that consultaion had been significant

(7-9 on the 9 point scale). Although there was a greater desire for consultation than had been experienced this was not as great as might have been anticipated — nearly a third (29.9 per cent) of the respondents did not want much consultation and a little over a third (38.8 per cent) wanted a lot of consultation.

As might have been anticipated, there were inter-occupational differences (significant on a chi-square test on the 5 per cent level) in those reporting frequent contact with the various technologies with the exception of CEMTEX. Data processing staff had the highest percentages with frequent contact in the cases of encoding machines (55.6 per cent), on-line terminals (81.1 per cent), off-line terminals (32.7 per cent), VDUs (60.8 per cent) and micro-computers (21.6 per cent). Typists had the highest level of contact with word processors (32.6 per cent), managers' assistants with microfiche (61.3 per cent) and supervisors with SWIFT (25.8 per cent).

There was no significant inter-occupational differences on some dimensions as far as the impact of new technology was concerned. The highest level of increased control was reported by the typists (60.0 per cent) and the lowest by accountants (41.0 per cent). An increase in repetitiveness was reported by 60.8 per cent of the bank officers compared to 26.1 per cent of the managers and these two groups were also at each end of the scale in saying that their level of boredom had increased (35.6 per cent compared to 20.3 per cent). More of the data processing staff (80.5 per cent) said that the new technology had increased their knowledge of banking than the managers (39.4 per cent) and these two groups were the most divergent when it came to perceiving increased noise levels (53.5 per cent and 34.2 per cent respectively).

As might have been expected, managers received the most warning about technological change, 49.3 per cent scoring 7-9 on a 9 point scale. The managers' figure for consultation was much lower, 26.0 per cent, but it was still the highest. The responses on desired consultation were rather surprising in that the data processing staff had the lowest wish for consultaion, 28.4 per cent being in the top third, whereas the highest figure was for the typists, 52.1 per cent.

Obviously, different banks have introduced the various technologies to differing degrees. Rural and Industries Bank employees had the highest level of contact, measured in terms of the percentages with the frequent contact, with respect to word processors, off-line terminals, VDUs, CEMTEX and micro-computers. National Bank respondents had the most contact with on-line terminals and Westpac respondents with microfiche, encoding machines and SWIFT. These inter-bank differences are explored in more detail below. Despite these differences the responses to the questions on the impact of new technology were similar.

Further, a higher proportion of females than males (40.7 per cent to 23.6 per cent) found that technological change had increased the level of boredom. On the other hand, their reaction on other dimensions was more positive than that of the males: 83.9 per cent found that it increased their level of interest compared to 65.7 per cent for the males; on the range of skills the comparison was 81.0 per cent to 60.0 per cent; and on increasing their understanding of banking, 56.6 per cent to 41.2 per cent.

DETAILED ANALYSIS

The overall analysis outlined above gave the general responses to technology. The problem of isolating the impact of particular technologies lies in the fact that a large number of respondents have experienced, both current and past, a number of different technologies. In an attempt to overcome this problem a K-means clustering algorithm developed by Milligan and Sokal[25] was used to group together those respondents who have had similar technology experiences. As noted above, there was no real improvement in the goodness of fit beyond seven clusters, with the point biserial correlation coefficients varying between 0.35 and 0.55 while the correlation for the seven group solution was 0.50. Consequently, the seven group solution was used in the subsequent analysis.

In order to determine differences between the technology experiences of the seven obtained groups a discriminant analysis was undertaken comparing the groups' experiences over the nine types of technology. Three significant discriminant functions were obtained, which together explained 81 per cent of the variation in the data.[26] The structural correlations between the three functions and the nine technologies are shown in Table 3. As can be seen from Table 3 the first function seems most related to on-line terminals and VDUs, while the second function seems most related to the use of microfiche and CEMTEX. The third function appears most related to computer related technologies [VDUs, micro-computers, word processors]. Interestingly, VDUs loads about equally across the three functions, suggesting that they are a common part of most of the new technology.

Inspection of the data, particularly that relating to the dominant technologies in each of the three functions, enabled a judgment to be made of the extent of the involvement of each of the clusters with the major technologies in each function. The data are shown in Table 4. From the table it seems that groups 2 and 3, which comprises 7 per cent and 18 per cent of the sample respectively, have had very similar experiences in that they have had very little exposure to the new technology. A comparison between the two groups suggests that the

TABLE 3
Structural Correlations — technology contact

Technology	Function 1	Function 2	Function 3
Encoding machines	0.25	−0.02	0.02
Word processors	−0.02	−0.04	0.44
On-line terminals	0.90	−0.01	−0.11
Off-line terminals	0.08	−0.01	0.38
VDUs	0.40	0.31	0.48
CEMTEX	−0.05	0.55	0.24
Mini/micro computers	0.01	−0.03	0.42
Microfiche	−0.01	−0.71	0.37
SWIFT	−0.05	0.08	0.20

only difference is in their relative contact with CEMTEX, group 2 having the greater exposure to this technology. Groups 5 and 7, which form 15 per cent and 24 per cent of the sample respectively, also seem to have similar experiences, with high exposure to terminals/VDUs and microfiche/CEMTEX technology but little acquaintance with other computer related technology. Group 4, which constitutes 11 per cent of the sample, has had the highest level of experience of all groups across the various forms of technology, while group 1, which contain 9 per cent of the sample, has also had exposure to terminals/VDUs and computer related technologies but little contact with microfiche/CEMTEX. Group 6, contain 16 per cent of the sample, has had experience only with terminals/VDUs.

TABLE 4
Groups' contact with technologies

Group	Terminals VDUs	Microfiche CEMTEX	Computers — related
1	High	Low	Moderate
2	Low	Moderate	Low
3	Low	Moderate	Low
4	High	High	Moderate
5	Moderate	High	Low
6	High	Low	Low
7	High	High	Low

In an attempt to determine if these differences in exposure to technology could be explained by a number of work and organisational variables, a discriminant analysis was undertaken which examined such group differences. In this case the variables included in the analysis were:

Satisfaction with technological change in the person's job;
The bank in which the person was employed;
The person's job classification [management, teller or bank officer, typist or data processing staff, service staff];
Respondents' feelings about a number of aspects of their job [see Appendix B];
Respondents' attitudes towards a number of aspects of new technology see Appendix C];
Respondents' attitudes towards the same aspects of their present job; and
The degree of warning, re-organisation and consultation associated with the introduction of the new technology.

The discriminant analysis revealed two significant functions which, together, explained 77 per cent of the variance in the data. Further, an analysis of the F statistics on the Mahalanobis distance between the various groups suggests that all are significantly different from each other at least at the 1 per cent level.[27] The structural correlations between these two functions and those independent variables which were important are shown in Table 5.

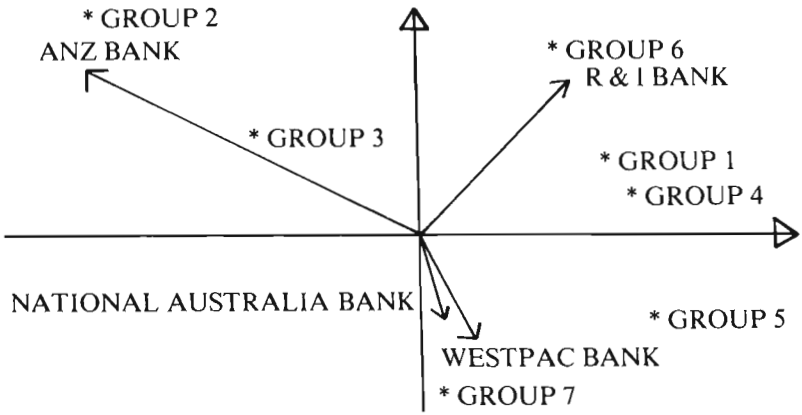
TABLE 5

Structural Correlations — Background Variables

Background	Function 1	Function 2
ANZ Bank Dummy Variable	−0.90	0.33
R & I Bank Dummy Variable	0.50	0.86
Westpac Bank Dummy Variable	0.14	−0.54
National Australia Bank Dummy Variable	0.03	−0.28

From Table 5 it can be seen that the functions are related most closely to the various banks included in the analysis. Thus the first function seems almost to be an ANZ function, while the WESTPAC seems to be related to the second function. The R & I bank seems to be related to both functions, although somewhat more to the second.

The other variables included in the analysis are much less important in explaining group differences. The various groups and the structural correlations can be placed into the 2-dimensional space created by



these discriminant functions to display these results graphically.[28] The results obtained in this case are shown in Figure 1. From Figure 1 it can be seen that respondents from groups 2 and 3, which had the lowest exposure to technology, were most likely to come from the ANZ bank, while groups 1, 4 and 6, which have had the greatest exposure to technology, are most likely to have come from the R & I bank. Respondents from groups 5 and 7, which had exposure only to on-line technology, are most likely to have come from Westpac. This can be seen in Table 6, which shows the proportion of each group coming from each bank, which do not add up to 1.00 because some respondents were employed by credit unions.

Figure 1: Group Space with Background Structural Correlations

TABLE 6
Proportions of each 'technological' cluster from each bank

	Bank[a]			
Cluster	**ANZ**	**Westpac**	**National**	**R & I**
1	.13	.33	.11	.40
2	.96	.04	.00	.00
3	.51	.32	.09	.08
4	.05	.39	.13	.41
5	.00	.54	.33	.13
6	.00	.00	.03	.97
7	.06	.64	.28	.02

(a) Proportions do not add to 1.00 as some respondents were employed in Credit Unions.

TABLE 7

Structural correlations — technology clusters — background variables, excluding employing organisation

Variable	Function 1	Function 2
Service Staff	.72	−.21
Increase in interest through technology	.56	−.07
Bank Teller	−.31	.08
Increase in skill through technology	.43	.76
Increase in repetition through technology	.03	.36

The impact of the various banks was so strong that it was felt they may have hidden some other differences between the various groups. Consequently, a further analysis was undertaken in which the respondents' employing organisation was excluded. Once again two significant functions were obtained but, in this case, the proportion of variance explained by the two functions was only 18 per cent. The structural correlations obtained are shown in Table 7. The first function seems related to increases in interest and skills through technology and to service staff (who make up only 2.4 per cent of the sample), while the second function appears to be related to repetition and skills. Once again the seven clusters can be placed into the derived space. The results obtained are shown in Figure 2.

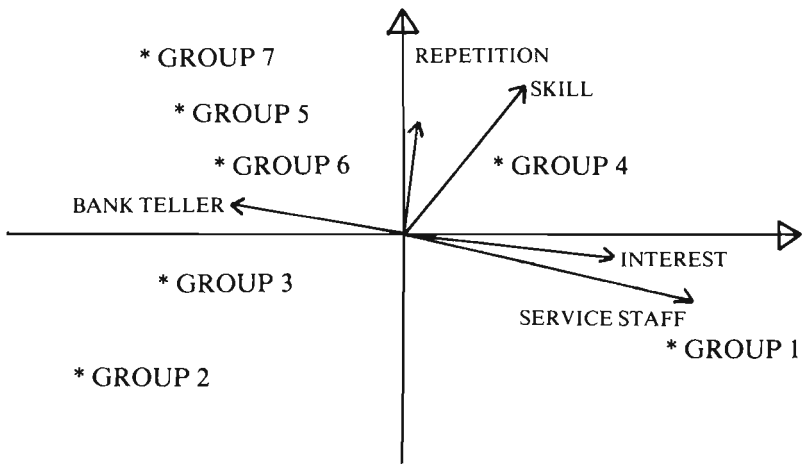


Figure 2: Group Space — Non Bank Structural Correlations

From Figure 2 it looks as if there are very few differences between the groups. Indeed, when F statistics were computed to determine the statistical significance of group differences it was found that only groups 1 and 2 can be distinguished from each other. Respondents from group 1, which has had a high exposure to computer related technologies, contains a higher proportion of service personnel, and has gained increased skills and interest through technology. Group 2 respondents, who have had little experience of technology, perceive that it has reduced the range of skills they can use.

Experience with the different technologies did not appear in any of the discriminant functions. As a further check on the relationship between the overall reaction to new technologies — increased skills, increased interest, etc. — a series of step-wise multiple regressions were run using these dimensions as the dependent variables and experience with specific technologies as the independent variable. In no case did the explained variance exceed 10 per cent, confirming the absence of inter-technology differences on the quality of work life variables.

The final analysis undertaken was to determine if the seven groups were willing to undertake different types of industrial action when confronted by new technology. In particular, respondents were asked if they would be willing to participate in overtime bans, cheque handling bans, stop work meetings or strikes or if they would refuse to use the new technology. In no case was there a significant difference between the various groups. Further, when the overall proportions willing to participate in the various forms of action were determined it

TABLE 8

Preparedness to Take Industrial Action, by Issue and Tactic

Tactic	Percentages Issues			
	Pay	Hours	New Technology	Increase in Part Time Work
Overtime Bans	22.6	14.8	7.9	10.4
Cheque Handling Bans	10.0	6.2	6.3	4.4
Stop Work Meetings	27.7	17.8	12.9	13.5
Refusal to Use Machines	6.5	3.7	9.3	3.1
Strike	22.8	11.8	6.6	7.0
Total	89.6	54.3	43.0	38.4

was found that only a small minority would participate. Thus it would seem that new types of technology introduced have not been seen as sufficiently important to cause respondents to consider industrial action. Members' views on their willingness to take industrial action on various issues are shown in Table 8.

It appears, therefore, that members are less prepared to impose overtime bans, have stop-work meetings or strikes on the issues of new technology than with respect to the other issues mentioned.

Also of interest is that it is ABEU policy that employees should receive some of the benefits of technology and the question arises as to how this should be distributed between shorter hours and higher pay. More than a third of the members (35.6 per cent) wanted an even split but many more (41.6 per cent) were more interested in higher pay than shorter hours (22.8 per cent).

CONCLUSIONS

While most respondents had been exposed to some sort of new bank technology few people have had contact with mini/micro computers and word processors. Interestingly, groups which had been identified as having different exposures to the new technologies were very similar in satisfaction with technological change and feelings about their job. In fact, the major items which discriminated between the groups was the bank for which the person worked. The ANZ bank employees had the least experience of new technology while those with greatest exposure were likely to be employed by the Rural and Industrial Bank of Western Australia.

The results of the survey also suggest that the quality of work life in Australian banks has been improved by the introduction of new technology. It appears that the various technologies are in widespread use and not narrowly confined to specific job categories. This ubiquity makes it difficult to examine in detail the quality of work life effects of particular technologies. The use of cluster analysis and other statistical techniques suggests that the employing bank is the main feature which distinguishes the clusters, implying that attitudinal and occupational variables are of relatively little significance. Regression analysis also indicates that the impact of one technology vis-a-vis another is minimal.

The concern of the union has been with the employment effect of technology and its influence on the career prospects of their members. These aspects were not investigated by this survey. However, it seems certain that the new technologies will slow the rate of expansion of employment. The changes occurring as a result of the new technologies have altered the employment structure of the industry, leading to the widespread employment of women and contributing to

the increase in the part-time work. A global interpretation of this is difficult — it reduces the number of long-term career jobs but provides opportunities for part-time employment for some people, such as women with family responsibilities, who would otherwise be excluded from the work-force. In addition, it is difficult to measure the benefits to the banking public by the provision of out-of-hours service through the ATMs or the instant feed-back of customer account status through counter display terminals. However, it might be expected that they are positive.

The data suggests that the members of the ABEU in Western Australia are not inclined towards industrial action on the technology issue and their attitude towards militancy is lower on technology than on other issues which may concern them. This is very likely due to the lack of any reduction in the quality of work-life caused by technology and the absence of traumatic employment effects, such as redundancy.

APPENDIX A

Biographical Characteristics of Respondents
(expressed as percentage of the sample)

Age	Percentage	Sex	Percentage
Less than 20	12.2	Females	31.4
20-29	43.5	Males	68.6
30-39	23.9		
40-49	15.1		
50 or More	5.3		

Education Level	Percentage	Bank	Percentage
Finished secondary school	63.6	Westpac	33.7
Technical education courses	6.6	R & I	28.5
Degrees	4.2	ANZ	19.0
Professional qualifications	4.1	National	18.3
		Credit Unions	0.5

Present Position	Percentage	Marital Status	Percentage
Bank officer or Teller	35.0	Married	59.6
Managers	23.0	Single	38.5
Accountants	14.1	Divorced	1.9
Manager's assistants	9.3		
Supervisors	6.3		
Data processing staff	5.3		
Typists	4.7		
Service staff	2.4		

Geographical Location	Percentage	Type of Prior Occupation	Percentage
Suburbs of Perth	43.3	Straight from school	75.3
Inner city	30.4	Another non-bank job	18.3
Country	17.3	Another bank	5.4
Regional centres	9.0	Housewife	1.0

Political Affiliations	Percentage
Liberal-Country Party	51.1
Australian Labor Party	27.9
Swinging Voters	21.0

APPENDIX B

Respondents' feelings about a number of aspects of their job

When I finished work I generally feel that I have achieved something.

I only work in my job because I need the money.

I'm always being told how to do my work by my supervisor.

My work involves considerable scope and variety.

If I stopped work I would really miss the friends I have made here.

When I'm at work I can't wait until it is time to go home.

APPENDIX C

Respondents' attitudes towards a number of aspects of new technology

Degree of control over job.

Level of interest in job.

Feeling of repetition in job.

Range of skills used in job.

Level of boredom in job.

Understanding of banking.

Perception of noise in job.

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