Consortium Computing in Banking: Databank Systems Limited New Zealand 1966 to 1976

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Introduction

By the mid-1960s computers were starting to be widely used in banking in Europe and the USA. In the UK the most labour intensive processes were the first to be computerised, daily transactions from bank branches were punched onto paper tape then sent to a computer centre where master files were updated overnight and customer statements were sent back to the branches in the morning. However at this stage systems were limited and many transactions, such as cheques drawn at other branches were still handled manually. In the USA banking computer systems were more advanced, with the development of magnetic ink character recognition (MICR) systems for processing cheques [1]. Despite the fact that New Zealand was a small country with a population of under three million at the time and only five trading banks there was a growing demand for banking services and the second highest per capita cheque usage in the world [2].

Computing in New Zealand started in 1961, when the first computer, an IBM 650, arrived and was installed in the Treasury. By January 1964, there were over 30 computers in the country, when compared to similar European countries at the time, New Zealand was lagging behind in the adoption of computers by around two years [3]. Geographic isolation was one of the main reasons for this, the time between placing an order for a newly announced computer and it being shipped and installed was often up to two years [4]. The Bank of New Zealand (BNZ) were the first New Zealand bank to consider using a computer, appointing a "bright young man" [5] from their London office, Gordon Hogg, to investigate their potential [1]. Hogg visited forty English and American banks, and was quick to pick up on the potential of MICR technology [1]. He also recognised that the lack of interbank integration was a key issue [5]. Due to the limited number of computers in New Zealand at the time and the fact that they were regarded as fallible, the sceptical board of the BNZ took some persuading. The catalyst was decimal currency conversion which was due to take place in New Zealand in July 1967. Decimalisation necessitated sweeping changes to accounting procedures and back office technologies, plus substantial investment in the replacement of accounting machines, adding machines, ledger books and customer statements [6]. The capital that would have needed to be spent on new decimal machines was instead spent on introducing computers [6]. Conversion to decimal currency also acted as an impetus for change in the banking system in the UK, though there it came later in 1971[6].

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In December 1964, orders were placed for two IBM 360s, to be located in the two main cities of New Zealand, Wellington and Auckland [1]. The choice of IBM was in part a result of Hogg's connection with the UK where banks were also predominantly purchasing from IBM [6]. In October 1966, the first branch of the BNZ had its accounts converted to a computer system and by decimal currency day on 10 July 1967 one hundred branches were computerised. The system was based on MICR which enabled source documents such as cheques and deposit forms to be read by reader sorters, another innovation was the use of one account number to identify each bank customer regardless of how many accounts they held [7].

National Bank of New Zealand (NBNZ) were also considering developing a computer system of their own, and had gone so far as to place a provisional order for its own computer systems, when discussions took place about the possibility of a consortium approach. According to one source the initial approach came from BNZ [1] who decided to offer the use of their basic system in a joint bank processing venture, however according to other sources the discussions were initiated by NBNZ [8]. Although the potential financial benefits to both participants were substantial there was still strong resistance to a cooperative processing enterprise. Though a minimum level of cooperation is necessary in banking to agree rules for clearing, reconciliation and settlement, there was concern about the inhibiting effect membership of the consortium would have on an individual bank's ability to compete effectively [2]. However the discussions addressed these concerns and an agreement to operate as a consortium was reached [9]. Cooperation was also in the national interest, the Department of Trade and Industry had agreed to import licences for two computers each for BNZ and NBNZ and by combining their resources they were able to achieve national coverage by locating the NBNZ computers in the two main cities of the South Island, Christchurch and Dunedin, to complement the BNZ computers which were in the two main cities of the North Island [8]. In late 1967 the banking consortium know as Databank Systems Limited was formed when NBNZ agreed to join up with BNZ and cancelled its own order for computers instead ordering two further IBM 360s. By deciding to use the same make of computer and combining their computer installations, very substantial savings in development, capital and operational costs were made [8]. For a smaller investment, wider coverage and a more efficient use of resources was achieved [9].

In 1968, the other three trading banks in the country, Australia and New Zealand Banking Group (ANZ), The Bank of New South Wales (BNSW) and The Commercial Bank of Australia (CBA) made the decision to join Databank buying shares in the Company. A Board of Directors was set up representing the five participating banks, with Gordon Hogg as General Manager of Databank. By August 1968, Databank was operating from three cities in the North Island, Auckland, Wellington, Hamilton and one in the South Island, Christchurch. By 1969 two further centres were opened, one in the North Island at Palmerston North and on in the South Island, Dunedin. By November 1969, every branch of the five trading banks in the country had been converted to computer processing [9]. Any concerns that competition would be compromised by a common approach to data processing was quickly dispelled by the expansion of banking services in all participating banks [2]. The introduction of the Databank system meant that staff were released from former routine functions like ledger posting and calculating interest, and were now able to provide a more personal service to customers [10]. Databank revolutionised banking within New Zealand and also introduced a consortium approach that was unique in the world. Over the succeeding 25 years Databank became the largest data processing company in the Southern Hemisphere and played a significant role in New Zealand's economic development [5].

The main sources for this article were the ANZ New Zealand archives which held minutes of the meetings of the Board of Directors of Databank Systems Limited along with miscellaneous internal memoranda and the National Library of New Zealand which had a number of internal reports produced by Databank, together with an oral history interview with Gordon Hogg. An article by Cardow and Wilson [5] which focused on Gordon Hogg's entrepreneurial style was also a valuable source, This article in turn had used material from the BNZ archives alongside personal interviews with former Databank employees. There is a wealth of information available about Databank which established its own private library in 1979 [11]. It produced a series of magazines starting with Dataday, "the official magazine of Databank Systems Limited" in 1979, followed by a biannual eight to sixteen page newsletter, "Databank Systems Newsletter" from May 1984 to Dec 1987. The newsletter promoted the work of Databank as well as exploring future focussed issues like Ethos and Videotex. There was a strong focus on education and also on the views of the General Manager, Gordon Hogg. This was succeeded by "Technicabilities" another biannual newsletter of around eight to twelve pages produced from July 1991 to May 1994, which had a more technical focus as outlined in its by-line, "Databank Technicabilities provides a forum for Databank people to

write about technical progress and achievement in the Company" [12]. From 1981 onwards there was a glossy annual report produced for staff giving an overview of the Company's financial situation and detailing staff achievements and awards. From the start of his appointment, General Manager, Gordon Hogg, was very active in the media giving speeches and writing articles which all provided useful source material. These sources were supplemented with articles from trade and popular magazines published in New Zealand such as *The Accountants' Journal* and *The New Zealand Company Director & Sharemarket Survey*.

The introduction has given an overview of the establishment of Databank and the drivers behind the development of consortium computing. The next section goes into more details about the operational environment of Databank, in particular the courier system that was developed to ensure even the most remote bank branch was connected to the system. The article them moves on to a discussion of Gordon Hogg's entrepreneurial management style and how Databank became regarded as "the" place to work. The penultimate section details the tensions that emerged as Hogg attempted to develop Databank into a computer services bureau despite the reluctance of the Board of Directors. The conclusion reflects on the outcomes and the impact of consortium computing on the banking sector, and the tensions between cooperation and competition.

Delivering the Data

For the Databank system to work a reliable link was needed between the bank branches and the computer centres. The New Zealand banks used a batch update system similar to the one that had been operating in the UK since 1961 [6]. In the UK system updates to customer accounts were delivered in bundles by hand or over telephone lines from bank branches throughout the day and were processed together in the evening when all entries had been received. In the morning printed account ledgers and statements were sent out to branch staff.

Challenging geography and the thinly spread distribution of New Zealand's population presented considerable problems in getting large volumes of data to a centralised point for computer processing. In 1966, the New Zealand Post and Telegraph did not have the facilities to handle vast volumes of time critical data and so a system of direct delivery by courier and return with output evolved, Couriers working to a strict timetable picked up input from each branch daily after it closed and delivered the documents to the computer centres, In some areas intermediate deliveries were made throughout the day using either public transport or

auxiliary courier runs. Output reports and sorted bank vouchers were returned before the bank opened for business the next day [9]. The courier system consisted of mainly of cars while air services were used in two remote areas [13].

Courier delivery outside the main centres of Auckland and Wellington would have been uneconomical for one bank alone but was affordable when the five banks combined though the Databank consortium. In the UK with a denser population there was no requirement for a courier system and each bank looked after their own network [6]. However smaller branches and those in rural centres were not computerised, for example in 1966, Barclays Bank in the UK had 2300 branches but had only computerised 100 of its busiest London branches [6]. In comparison through the Databank system every bank branch in the country even those in very remote areas was computerised,

In 1977, 30 couriers were operating in the North Island and 18 in the South Island travelling a total of 13,400 km per day with the longest route being over 640 km return. The couriers followed fixed routes and timetables. A driver set out from the centre at 5am to deliver the output then waited at the end point of the route during the day before setting out again at 3.30pm for the return run to the centre.

An article in a 1986 Databank Systems Newsletter describes a day in the life of Peter Broom employed by New Zealand Couriers Ltd who looked after the "paperchase" from Databank's Tauranga Computer Centre to trading bank branches north of the city in the remote and beautiful Coromandel peninsula driving for 2000km per week [14]. Couriers travelled a network that linked trading bank branches in large cities, tiny towns and remote country back blocks to the Databank network. They picked up banking paperwork such as cheques, deposit slips, direct credit schedules, Bankcard and Visa vouchers from trading bank branches and delivered them to the nearest Databank network centre. The "paper" transactions were entered into the Databank system overnight and the processed "paper" taken back to the bank branches the following day. Reporter Alison Sims spent the day with Peter who had an early start to the day loading up his car with green canvas bags of processed paperwork at 5am. He deposited the green bags at the different bank branches in lock up bins. The bags had to be delivered on time, however in the Coromandel heavy rain flooding roads had put a stop to deliveries on occasion, though at times Peter had driven on with waves crashing over the car. At 8.30am Peter reaches his last stop the BNZ branch in Whitianga and has seven hours to

kill until he returns to the BNZ at 3.30pm to begin the return journey. Luckily for Peter it is reported that he is fond of Whitianga "it's a home away from home….I can always fill the day. As long as you've got hobbies it's a pretty good lifestyle" It is after 6pm when Peter's day finishes when he calls into Databank's Tauranga centre to drop off the banking paperwork for overnight processing and after a total of seven hours on the road his working day is over. Peter was part of a human chain in an industry linked in all other respects by sophisticated computer and telecommunications technology [14].

In the mid-1970s the courier system was also used by Secondary Schools to teach computer skills. Around 200 schools taught programming using batch processing methods. They would prepare their code for an outside computer, send it off, then wait a couple of days until the output was ready for collection [15]. The Databank computer system was offered to schools for free by the banks and enabled schools to use it as a computer bureau. As Databank couriers visited every branch of every bank at least once a day, even the remotest school could have a 24 hour turnaround [15].

The courier system proved to be extremely suitable as the link between bank branches and the computer centres, and the development of telecommunications did not immediately change the need to shift large volumes of documents physically, even though it was considered as early as 1970. However by 1977 the use of data transmission devices was spreading and it was anticipated that eventually terminals would be installed at all branches to speed up data transfer and provide bank management with online customer information [9]. The courier system continued to operate in certain areas well into the 1980s.

Databank – "the" place to work

When Databank was founded in 1967 it had a staff of 84, it grew to be one of the largest employers in the country with 1000 staff in 1977 [9] and 1557 employees when it was sold in 1994 [5]. By 1977 it was processing an average of one and a half million bank transactions per day and servicing over a thousand computer programs. The number of bank master file records was over ten million [9].

Databank was always regarded as a good place to work and was known for paying the highest wages in the banking industry [5], in 1976 senior analysts were being paid $27,000 at a time when the average New Zealand wage was $5,340. Perks were also good, the top two tiers of

management were provided with eight and six cylinder cars [5]. The justification for this was the scarcity of experienced computer staff and the difficulty of attracting them to New Zealand.

In particular the expenses of the General Manager, Gordon Hogg often came under scrutiny mainly due to his high media profile and flamboyant personal style. He established Wellington's first US-style corporate office, complete with sauna, bar, private dining room and floor to ceiling marble [16, 17]. He had a personal expense account of $2000 [5]. Rumour had it that he travelled in a chauffeur-driven limousine with blacked out windows and dined at the finest restaurants [18]. While some of this may be exaggerated, it is undoubtedly true that he was well paid and had a comfortable corporate lifestyle.

Another benefit enjoyed by senior Databank staff was overseas travel. For example, in 1979 Hogg left Wellington on 10th May for an eight week trip abroad, taking in Los Angeles, San Francisco, Minneapolis, Chicago, Detroit, Boston, New York, London, Copenhagen, Amsterdam, Zurich and Hong Kong [19]. Hogg aimed to undertake a major international tour every two years with the objective of attending presentations of all the major machine companies, as well as keeping in touch with the competitive banking world of the United States and Europe [19]. In a 1971 memo, the Chief Accountant of the ANZ commented rather waspishly that Mr Hogg had been out of the country for several months in the past year [20]. Other Databank staff were also frequent attenders at international conferences, the June 1979 issue of Dataday reports on a four week trip by Malcolm Shaw, Manager Research who was to attend a four day training seminar in Hong Kong followed by visits to twelve different organisations in six countries including London and Tokyo [21].

Gordon Hogg was much in demand as a guest speaker and gained national prominence as a management expert [5]. His charisma was seen by many as a critical element of the early success of Databank [18]. Cardow and Wilson make a strong case for seeing Hogg as an internal entrepreneur, and he was described by his colleagues as a man who had a vision and someone who people wanted to follow [5]. However Hogg's entrepreneurial style was not appreciated by everyone and from 1972 onwards he began to have issues with Databank's Board of Directors, in particular Sir John Mowbray of the NBNZ. Many of these disagreements centred around bureau computing which will be covered in the next section [5]. In a 1972 memo, one of the Databank Board of Directors, Dr Lau, made the point that there

was unhappiness with the Company's management as: "The Company is completely dominated by a man who is dominated by self-interest and personal ambition, lacks balanced judgement, lacks a sense of responsibility and accountability" [22].

Bureau Computing

With an economy dominated by agriculture and small business, the New Zealand government was initially the major user of computing. As time-sharing developed in the mid-1960s computing became more affordable for smaller New Zealand companies who could hire computing time from service bureaus [23]. Between 1964 and 1971, around 30 independent computing bureaus were established, by the late 1970s around 70% of New Zealand companies' first use of computers was through bureaus [24].

Initially Databank's main objectives were:

1) To automate bank services;
2) To provide trading banks with a management information system;
3) To provide bureau services for parties other than banks [7].

By 1970 the first two objectives has been successfully achieved and Databank and in particular Gordon Hogg, were keen to start work on the third objective and to promote their services to outside organisations. However this proved to be controversial and met with resistance from the banks who preferred Databank to stay low profile. The idea of Databank expanding its services outside the banking system was not popular with the Bankers Association, which was increasingly at odds with Hogg's innovative approach [5]. They were concerned that customers would feel their personal information had been compromised if they became aware it was being processed by an organisation separate from their own bank [25]. ANZ's Chief Accountant expressed the view that the policy for Databank should be for them to be handed as much business as computer capacity permitted, but not to let the public and in particular politicians realise the extent of this type of business as it could easily result in adverse political reaction [26]. However even in these early years, Databank was already operating to a limited extent in some customer service areas by selling computer processing time to organisations with internal overloading on their own equipment. It had also developed the Data Utility Complex (DUX) accounting and analysis package to provide basic computerised accounting services to Chartered Accountants [9].

There was ongoing tension between Databank and the individual banks in defining their respective roles over the promotion of the new services developed by Databank. In June 1970 the Board of Directors sent a memo to the General Manager expressing concern that allowing Databank to make direct approaches to bank customers could create conflict through the organisation selling services that should instead have been sold by the individual banks [27]. It was recommended that if Databank was to approach customers directly to discuss time sharing or bureau services then the individual bank concerned should be kept informed. In a follow up memo the ANZ Chief Accountant noted that he had been advised orally by Databank personnel that a 10% commission payment would be made to individual banks following the introduction of computer services [28].

There were also continuing concerns about Databank's rapidly increasing expenditure. This was felt to be due in part to the company taking on non-bank work, for example by selling time on the new IBM 360 to be installed in Auckland, and current costing systems not being able to identify whether the outlay on non-bank work was being recouped. Despite this lack of clarity Databank was continuing to expand its operations by taking on more technical staff. The Board of Directors were opposed to this and requested a halt on any further recruitment until they could be provided with a breakdown of expenditure to clearly identify what was being spent on bank work and non-bank work [29]. This decision was confirmed at the November 1970 meeting of the Board of Directors where a decision was taken to defer taking on additional staff for work in non-bank areas until there was a clear distinction between expenses on bank work and customer work with separate cost and revenue accounts for each area [30]. The Directors also noted that they were reluctant to see Databank establish itself in the public eye as an operation that was separate and distinct from the banks, however the General Manager was not in agreement and was very keen to continue advertising bureau services and to pursue an opportunity that had opened up in Korea [30].

At the end of 1970, Mr Smillie, Research Director of the New Zealand Bankers' Association wrote a memo in an attempt to reconcile the views of the General Manager with those of the Board of Directors and putting forward suggestions for a review of Databank's long term objectives [31]. He acknowledged that there were conflicting views and stated that he would attempt to be impartial. He noted that the data processing industry was growing fast and that New Zealand because of its unique Databank setup was well positioned to have a greater stake in this area by expanding its activities beyond banking. At the same time he

acknowledged that data processing was a highly competitive industry and that other New Zealand computer bureau companies were already emerging. He commends the forward thinking of the General Manager, Gordon Hogg who was keen to expand Databank and acquire further data processing business, however he did sound a note of caution as this expansion would require investment in expensive equipment and research before any revenue could be earned. Smillie then went on to address the Company's image issue and the perception by the general public that Databank dictates what the banks do.

Smillie noted that the banks themselves are not so keen on moving into the bureau business, and feel that bank work should be given absolute priority. Recently substantial investment decisions have had to be made and as costs have risen the Board has been more questioning of the General Managers activities. In Smillie's opinion the Board is behaving like a committee of the Bankers Association requiring unanimous decisions that are only reached after extensive debate and compromise, which is time consuming and frustrating. The first goal of Databank, computer processing of clearings and account-keeping is now complete and the Company is now pursuing a subsidiary objective; data processing for outside organisations. The General Manager envisages that in a few years this work will far exceed that of the bank customers, however the banks themselves have yet to fully accept this proposition. Hence there is a need to define the areas of processing open to Databank, and alter the structure of the organisation to have two broad divisions, one to service banks and another for non-bank customers. Smillie also suggests introducing outside Directors onto the Board and making shares available to the public, in order to address any concerns about the banks acting as a cartel. This would also give greater autonomy and flexibility to the non-bank division and improve its competitive ability with other computer bureaus [31].

In response to this the ANZ Chief Accountant wrote a memo agreeing that while there was a need for periodic review of the operation of Databank Systems and that the Company and the individual banks were often pulling in different directions, his view that bank work should continue to be the first priority was unchanged. The only reason for taking on bureau work should be if it is needed to justify the expense of buying larger computers. If that means the bank work places limits on the bureau work that can be taken on then this should be accepted by Databank. He points out that though making profits from outside work to subsidise bank processing work was possible, at the moment it seems the opposite is happening and that marginal costing for bureau work means that the banks are actually carrying the overheads

for Databank. Though there was no doubt that there was a considerable amount of computer processing work available it was not yet proven that it could operate on a profitable basis. He was also against advertising, preferring a direct personal approach. There was a need to be careful about drawing too much attention to Databank's association with the trading banks. The fact that the Board of Directors sought compromise and questioned some of the General Manager's activities was seen as positive and Mr Hogg needed to be prepared to accept that he had to work within policy guidelines. If Mr Smillie's proposal was accepted it would diminish the control the banks had over Databank, which would be a negative outcome. He agreed with the notion of requiring the Company to operate separate divisions and to fully account for both bank and non-bank work and pointed out that moves were already in place to make this happen [20].

In some summary notes to the Chief Accountant, the ANZ General Managers Assistant, Mr Chittenden summed up the situation. If Databank changes from a behind the scenes organisation to a recognised computer processing organisation there is a risk of questions of secrecy and monopoly being raised by the banks opponents. Databank are already spreading limited resources too thinly and should not aim to generate widespread enquiries before they can handle them. If they don't have the staff resources to do all they promise the reaction will be against the banks which introduced the customer to them [32].

Despite these concerns a March 1971 memo to the ANZ London office reporting on two meetings of the Board of Directors makes it clear that Databank is worthwhile, however adequate control does needs to be exercised over future expansion. In particular the accounting for bank and non-bank work needs to be split so all customer services work bears its full share of overheads. The installation of the Auckland IBM 360/365 with data transmission links to the Hamilton and Wellington Computer Centres did offer large scope for the sale of time to computer users, but it must be ensured that Databank sold this time profitably and that any further expansion of Databank computer and staff resources was halted until the customer services operations could be shown to be profitable. On a positive note a comparison of the capital investment per branch and per account in New Zealand was shown to be less than that of UK based Lloyds bank [33].

At the time, a mainframe computer was an expensive resource and in order to make it affordable the Board of Directors were open to the idea of selling off spare processing power to other organisations, however they were wary of going into bureau work which involved

writing and maintaining computer systems for other organisations and their preference was to restrict Databank to just selling processing time.

An approach in 1971, from the Totaliser Agency Board (TAB), the government owned agency for betting on horse and dog racing, to Databank is a good illustration of the tensions between the Company and the Board of Directors. The TAB wanted to replace their clerical operation for receiving bets and paying dividends with online terminals at each TAB office which would issue tickets and signal back dividend payments. To do this they would need to communicate from every office terminal to the computer centre and back. At the same time Databank was looking at linking all six of its computer centres and a partnership with the TAB was a way of making it more affordable. Linking the centres would cost $468,000 if Databank did this on its own but only $168,000 with the TAB as a partner. At a meeting of the Board of Directors on 20th May 1971, Mr Hogg, who proposed the idea, was asked to elaborate on a number of points. Hogg's argument was that the requirements of the trading banks and the TAB were complementary, the TAB proposal would not affect bank peak-time work as the main pressure for bank work was midnight to 5am when file updating was taking place, while TAB processing would take place during the daytime [34]. In a memo that followed the meeting it was noted that this proposal had taken the Board by surprise as they had not been involved in any initial discussions and there was concern that there would need to be a substantial outlay of funds before any revenue came in from TAB. There was a decision that there would not be any approval of this proposal without further investigation [35]. A follow-up meeting was called on 28th May to discuss a further proposition from TAB suggesting the use of processing time only which required an urgent decision. However there was still resistance to this bid and the issue of a lack of clear division between expenditure on bank and non-bank work was raised again. It was also agreed that there was a need for a detailed feasibility study in respect of the TAB work showing that there would be an immediate profit to Databank Systems [36].

Following the November 1971 meeting of the Board, a memo was sent noting that as regards to the TAB proposal the Board was opposed in principle to Databank committing itself to software work for outsiders, and it was agreed that no tender would be put in for the work proposed, however the General Manager was still keen to put in a bid based on hardware only [37]. In a follow up memo it was reiterated that the TAB proposal should be vetoed as Databank have no mandate from the shareholders for the sort of activity proposed. There

were also high risks involved in the venture and as a bank they should not subscribe the capital to support it: "A considerable degree of public odium could fall on Databank and the banks in the event of unsatisfactory operation of the TAB system" [38].

An earlier memo concerning the August 1971 meeting of the Board of Directors reported on a discussion of the future of Databank following a report by Price Waterhouse. There was concern that this report was based heavily on information given to Price Waterhouse by the General Manager and that it would have been better to employ an independent consultant. After considering the report the Directors agreed that the Company should withdraw from customer services work apart from the sale of block computer time and the marketing of the DUX system. Though doubt was expressed as to whether the DUX system would ever be profitable as for this to occur it would need to be sold to a large number of individual users [39].

A further report was commissioned from PA Management Consultants [40] in order to assist the member banks in their evaluation of future planning for Databank. One of the four aspects the consultants were asked to consider was an evaluation of customer services focussing on their current worth, future market profitability and impact on bank processing. The report specifically recommended that the development of advanced systems, such as the TAB proposal, should not be pursued unless they were individually approved as research and development projects of prime importance to the future development of banking services. The reasons given were the demonstrated lack of profitability and absence of detailed market research, together with the unrecovered development costs of currently committed packages such as DUX. The recommendation was to keep only block time users and sell responsibility processing or bureau work. Block time users should also not be tied in to the Databank system in order to minimise the risk of compromising future computing capacity. DUX should be given six months to demonstrate that it can be made profitable. The report also recommended the replacement of the IBM 360/65 with a 370 [40].

A letter written by Dr Lau, representing the ANZ bank, to the Chairman of the Board of Directors reports on discussions that had taken place since the receipt of the report from PA Management Consultants on the future activity of Databank [40]. Dr Lau notes that in his view Databank should not engage in any external activities other than selling block time, he is also against continuing with the DUX package but is prepared to give this a bit more time

to see if it can become profitable. In what is clearly a dig at Gordon Hogg, he also notes that Databank does not need "ambitious go-getters with expansionist ideas" but rather "good steady qualified men" [41].

A memo reporting on a Directors meeting early in 1972 noted that the recommendations of the consultants report had been implemented and that future customer services contracts were to be limited to a) the sale of block computer time and b) DUX contracts for existing public accountant users. After 12 months the DUX programme would be reviewed and a decision taken whether to continue it or not. Other contracts would also be scrutinised and either made profitable by increasing charges or terminated after appropriate notice. The Company was to be split into two separate divisions for bank and non-bank work and a separate budget prepared for each [42].

There was continuing concern about rising staff costs due to taking on non-banking work in what was a highly competitive field. In a memo written in March 1972, Mr Andrews pointed out that the bureau market in New Zealand was dominated by the big machine manufacturers IBM, ICL and Electronic Data Systems and was also particularly sensitive to changes in the economic climate. Participation in this field would require intensive marketing, good sales and an adequate costing and pricing system and it is doubtful whether Databank could at present supply these [43]. The ANZ Chief Accountant also noted that it was a generally established fact that conversion to electronic data processing (EDP) techniques involved companies in initial losses and that in times of recession such moves were strenuously avoided by potential users [44]. He pointed out that Databank marketing efforts to date have achieved considerably less than the revenue anticipated. The marketing of the DUX package involves dealing with many small users of a service which inevitably has high costs as each individual customer needed to have their enquiries answered. Details of contracts entered into to date are known only to the General Manager and his staff, no details reported to member banks or the Board [44].

Though these differences of opinion continued to play out over the next sixteen years, Databank remained successful, and while it continued to generate considerable returns Hogg's management style was tolerated. Through the network that was established, the New Zealand banking system claimed it was better placed than any in the world to avail itself of advances in technology which affected the transfer of funds [10]. More than two million bank

customer accounts were serviced by Databank in March 1974 and transactions continued to grow rapidly [10]. Databank did develop bureau services though not of the scale originally envisaged by Hogg, by 1977 they had developed applications for building societies, payroll systems, retail organisations and law firms [9]. They also began selling services internationally with banks in Papua New Guinea and Indonesia being some of the first customers [18]. By the early 1980s non-banking work accounted for around 8% of Databank's total business and when the Company was eventually sold in 1994 it had reached 25% [18].

Conclusion

The Databank consortium was facilitated by the relatively small size of New Zealand, high and rising usage of cheque facilities and the realisation that a joint effort would provide a more economical and efficient service than any individual bank could [7]. There were only five trading banks in the country and only the trading banks had the authority to issue cheques. Gordon Hogg came up with the idea of shared data processing to generate daily ledgers for each branch. This pooling of resources enabled the banks to achieve scale from expensive computing technology [5].

Reflecting back on seventeen years of Databanks operations. The Deputy General Manager, Ian Archibald, commented that by cooperating on basic processing systems staff were freed up to intensify competition in developing and marketing the products which these systems support. Introducing computerisation using a cooperative approach gave New Zealand one of the most efficient and modern payment systems in the world [1].

Diplomacy was required to achieve a balance between cooperation and competition. When Databank was set up the benefits of cooperation quickly became clear to all participants, however when the Company tried to expand its operations, diplomatic relations became strained. In the early 1970s, mainframe computers were an expensive resource and the banks were open to the idea of renting out spare capacity to outside organisations, however they were much more wary of computer service bureau work which would link them with organisations outside the banking sector. Part of the reason for this was accounting and making sure that outside organisations paid a fair price for the resources they were using but the reasons went deeper than this. If Gordon Hogg had been allowed to develop bureau work to the extent that he wanted the banks could have lost their control over Databank. There was

also the question of their image and not wanting to be associated with risky ventures. The banks had taken a bold and innovative step by cooperating within their own sector but were not prepared to extend this cooperative approach to non-banking organisations. This resulted in ongoing disagreements between the entrepreneurial General Manager who saw the opportunities bureau computing could offer and the cautious and risk averse banking sector.

Databank was successful during its early years as the banks were in a period of weak competition and strong co-operation. At the time it was established there was limited competition as banking was highly regulated. However by the time the Company was sold in 1994 this situation had reversed, in 1984 New Zealand adopted a neoliberal economic approach and banks were competing strongly for customers, cooperation was weak and completion was high [5]. The enigmatic Gordon Hogg retired as manager in 1988, following recommendations that Databank be restructured, and the company was sold to the Texas-based company EDS in 1994 for an estimated $100 million [18].

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