Comments on the Two Historical Reprints in Automation of Directory Assistance

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Abstract: This paper is a comment on the background to the two historical papers reproduced in "Automation of Directory Assistance" in this issue. The experience of this author is that, despite a rapid decline in the service quality and mounting operating costs, Telecom was slow to act on automation of the Directory Assistance Service, did not fully exploit the advantages of the automated system, and provided a Directory Assistance Service that was clearly inferior to world's best practice. Some benchmarking results are provided as evidence.

Keywords: Directory Assistance, Benchmarks, History of Australian Telecommunications

[**Editor's note:** The *Journal* is delighted that its articles encourage discussion amongst readers. We are happy to print written comments as well as to further the discussion.]

Introduction

My comments are based on my management of Telecom Australia's directory publishing service almost continuously from 1976 until 1991, my visit in 1977 to AT&T and attendance at a trial by AT&T of the CCI system to be trialled in Telecom, my close association with Telecom's directory assistance service from 1976 to 1991, and my management of the directory assistance service from 1989 to 1991.

In the late 1970s, Telecom's directory assistance service used a paper-based system for providing numbers to callers. My recollection is that, in the centres I visited, service operators worked in a room with paper lists of updated numbers for new subscribers (what Telecom called customers), such as weekly and monthly, spread over tables. My opinion was that the locations were primitive in terms of accommodation and ergonomics. The operators' hands were often ink-stained from the printed lists.

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Telecom's Directory Assistance Service

I provide five comments about the trial and the final IBM DAS/C system described in the two historical papers from 1981 and 1982 reprinted in Moorhead (2025).

1. The papers make no mention of the approaching crisis in customer service quality, operating costs and worker satisfaction in the directory assistance service from around 1975 to 1980.

Calls to the service were escalating as more callers were preferring to use the service rather than the increasingly heavy and bulky metropolitan White Pages.

The quality of service was poor, as many calls were not connected, call waiting times for connection to the operator were too long, call holding times once connected were too long, and too many numbers could not be found. Operators' work satisfaction was low as customers increasingly reacted negatively to the poor service.

Costs, mostly for operators, were estimated to climb from about $23 million in 1976/77 to over $32 million in 1980/81.

2. The papers overlook the slow progress in establishing and completing the trial and the time for calling tenders.

In early 1977, I visited the headquarters of AT&T, then the world's leading telecommunications business, and saw an AT&T demonstration trial of a computer-based directory assistance service provided by Computer Consoles Incorporated (CCI). AT&T claimed at that time that every second that the call holding time was reduced was worth about $US 1bn in additional revenue from more calls handled and numbers found and a major reduction in operating costs. The value of such a system was obvious, even dramatic, in improved customer service, operating costs and worker satisfaction and productivity.

I arranged with CCI a 10-screen trial at no cost to Telecom in a location to be agreed within Australia (likely Sydney or Melbourne) with CCI and a local telecommunications manufacturer, STC, providing the equipment and a consultant, subject to Telecom approval.

The proposal for a trial was first made about April 1977 to Telecom's headquarters, which raised no interest. Preparation for a trial began in Sydney around late 1977 and headquarters eventual joined the project (as described in Dougall (1981), the first reprinted historical paper). The trial progressed over February to August 1979 and, after tenders were called, a contract was let to IBM in January 1981. My recollection is that national implementation was completed in 1985 (as described in Baxter & Lyon (1982), the second reprinted historical paper).

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Over eight years is a long time to deploy a system offering such a radical improvement in the quality of customer service, operating costs, productivity and operator working satisfaction at a time when the service was faltering.

3. The considerable union and staff involvement and consultation as outlined in Dougall (1981) was common for the period, but the process still left Telecom unprepared for the predictably strong union opposition to the system.

The operators' union, the Australian Telephone and Phonogram Operators Association (ATPOA), covered employees connecting long-distance calls, international calls, paging calls and directory assistance. Over the 1980s, exchange automation would eliminate most of the call connection services and DAS/C would significantly reduce the number of directory assistance operators required. The fall in union membership caused an amalgamation in 1988 of the ATPOA with the Technicians, the ATEA.

Strong industrial action against the DAS/C system by the ATPOA found Telecom unprepared and resulted in the union exploiting the arguable impact of Repetitive Strain Injury (RSI), which hindered deployment of the system and accumulated workers compensation claims exceeding $120 million (Campbell, 2017).

4. In planning the implementation of the system, the emphasis was on operating the system within the Telecom environment, with little attention given to exploring the potential of the system without that constraint.

The result was that Australians experienced a directory assistance service that was seriously inferior to that routinely produced in the USA.

Some of the main structural actions towards the US model were:

- Fewer directory assistance service centres;
- An increase in the number of operator positions in each centre depending on the location;
- Fully separate operator centres from Telecom premises, which included leaving the main telephone exchanges, and locating the centres in areas that could provide motivated operators, such as those living in larger, industrially less influenced cities, such as Ballarat, Townsville, Perth, Adelaide and Geelong. The separation would help to moderate the influence of operators from Telecom and the union.
- With the number of centres and the location of the centres optimised, call queuing, processing and management of the directory services could move towards full optimisation — call collection and distribution, the number of centres and the number of positions in each centre — to service the call volumes.
- Attempt to move operator wages, conditions and working practices towards private sector standards. For more details on the industrial relations at the time, see Campbell (2017).

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5. In 1988, I arranged a benchmarking study by Booz Allen Hamilton of Telecom's directory assistance service against four Regional Bell Operating Companies in the USA. The difference was shocking. Telecom delivered a clearly inferior service at a significantly higher cost.

Telecom's service quality was lower in fact and as perceived by the customer (Table 1).

Table 1. Comparative Performance Measures for Directory Assistance

Measure	Telecom	US Average
Calls Dropped	17%	Less than 1%
Average Speed of Answer	12 seconds (estimated)	3–6 seconds
Customer Perceived Quality Very Satisfied	86%	97%

Source: Benchmarking study

The cost of a US operator to handle a directory assistance call in the US was two-thirds that of a Telecom operator, and the main reasons were too many call centres, too few operators per centre, the locations of centres, conditions of employment, the workplace rules and labour cost.

With lower online hours per day, fewer work days per year, and a longer mean service time, a Telecom operator handled about 67% of the call volume per online hour of a US operator (Table 2).

Table 2. Comparative Efficiency Measures for Directory Assistance

Measure	Telecom	NY Tel	PacBell	Bell Atlantic
Number of Operators	2,248	2,195	5,200	7,180
Total Call Volume (millions)	166	350	873	1,217
Online Hours/Operator/Year	1,093	1,573	1,573	1,573
Calls/Online Hour/Operator	68	101	107	108

Source: Benchmarking study

Note the consistency and discipline of performance of the three US operators.

Conclusion

While the historical papers reproduced in Moorhead (2025) adequately describe the initial trial (Dougall, 1981) of an automated directory-assistance service and the subsequent deployment (Baxter & Lyon, 1982) of a nationwide DAS/C system, they do not describe the background leading to the new system, nor the service results from the final implementation. My comments are aimed at filling those gaps.

During the 1970s, Telecom's directory assistance service came under pressure from increasing call volumes and antiquated operating procedures and environments. There was a clear case for greater automation and improved working conditions. I had identified a working system

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in the US that could be trialled in Australia, but it took some years before a trial was conducted and the system was operational. The trial showed clear advantages in service quality and improved operator performance.

After the new automated system for directory assistance had been rolled out and had been operating for a few years, I commissioned a benchmarking study that clearly showed that Telecom had not fully taken advantage of the benefits that could have been achieved. In particular, more consideration of the size and location of the directory-assistance call centres and the work practices therein could have yielded significantly improved service quality and efficiency. The summary performance indicators provided in these notes clearly make the case.

References

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