Home > The Transformation of Telecom's "Ugly Duckling"

The Transformation of Telecom's "Ugly Duckling"

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Abstract

Telecom's directory publishing business produced the White and Yellow Pages directories from 1975 to 1991. Prior to 1980, directory publishing was regarded within Telecom as a side show to the mainstream business ? telecommunications. In 1976 the directory publishing business was in a crisis; it ranked in the top three of Telecom's public relations problems, was operating at a loss which would rapidly increase, and was becoming untenable. Over the next 15 years the publishing business was transformed to become the most profitable and innovative business in Telecom. This is the story of that transformation, which also illustrates the difficulty in innovating in a public service business at that time. A remarkable improvement in performance in the first five years failed to establish credibility within Telecom. What might have taken less than ten years to achieve in the private sector took more than 20 years in Telecom and Telstra.

Directory Publishing

Telecom, and its predecessor the Postmaster General's Department (PMG), published telephone and other directories to assist customers to make calls on the network. In 1976 Telecom published the White and Yellow Pages in 63 telephone directories, a telex directory (28,000 copies) and a Telegraphic Code Address Directory (35,000 copies).

Disclosure

This is not an academic paper; a more accurate description would be a reflective historical paper.

The paper is supported by a number of records from the period, including business plans, business cases, and trading statements, as listed under "References". The records are incomplete but sufficient to support the points made. A number of these records no longer exist or are not easily accessible, such as those in the archives of Telstra and its predecessors.

Opinions and judgments are mine unless otherwise stated. Those of Telstra and its predecessors are expressed using standard private sector criteria including growth, market share, customer service and profit, rather than using public service criteria.

Telecom in 1976

This section draws on material in the following references:

- Study of the Organisation of the Postmaster-General's Department (CMP 1973 [5]);
- Vernon Royal Commission of Inquiry (Vernon 1974 [6]);
- Evaluation of (the APO's) Financial Management (Price Waterhouse 1974 [7]);
- Report of the Committee of Inquiry into Telecommunications Services in Australia (The Davidson Report) (Davidson 1982 [8]).

The report of the Vernon Royal Commission of Inquiry with its contributory studies into the Postmaster General?s Department (PMG) recommended in 1974 to the Whitlam Government that the PMG be split into two businesses, the Australian Telecommunications Commission (Telecom Australia) and the Australian Postal Commission (Australia Post). The two businesses were to each have a board of management, be operated on "commercial business principles", with personnel and other employment policies, including industrial relations, suited to the new businesses and independent of the Public Service Board. Two of the key consultants to the Commission of Inquiry into the Australian Post Office were Cresap McCormack & Paget (CMP) and Price Waterhouse. [i] [9] [ii] [10] [iii] [11]

The new Telecom was designed and implemented in 1975 by senior managers transferring from the PMG. Key recommendations of the Vernon Report were not implemented: for example, the new district organisation was based on state boundaries rather than on commercial principles; the one senior manager appointed from the private sector had little commercial experience; and the personnel and other employment policies, processes, and culture of the public service were retained.

The resulting business was minimally commercial in organisation, skills, focus, priorities and processes. From 1975 until 1989, except for a brief period, there was only one senior manager in Telecom who had a significant commercial, private sector training and experience.

This background is crucial to understanding Telecom's resistance to the transformational change needed and proposed for directory publishing. Vastly different from the private sector driven by markets, Telecom, with its monopolies, union constraints and public sector legacy, preferred change on its own terms with minimal risk; it was familiar with managed technical change but not commercial change.

The Fraser government elected in late 1975 made no significant attempt to influence change in Telecom until 1981. AUSSAT Pty Ltd, another government carrier, was established in 1981 to operate domestic satellite telecommunication and broadcasting services, and the Davidson Inquiry (Davidson 1982 [8]) was launched in 1982 to assess private sector involvement in the delivery of existing and proposed telecommunications services, including "value added" services. Davidson recommended radical change in Australia's telecommunications market; widespread competition in customer premises equipment, resale of telecommunications capacity, the installation and operation of private networks and the interconnection of private networks with the public network. These were rejected by the incoming Hawke Labour government in March, 1983.

Attempts to implement change in directory publishing from 1976 proceeded with minimal internal support, and sometimes obstruction, until the mid 1980's. By the end of the 1980's, with more radical change possible, directory publishing had become a cash flow powerhouse impossible to ignore.

Telecom's Directory Publishing Business in 1976

This section draws on material in the following references:

- Directory 81 ? an initial business strategy for the Directory Function ? 1976/81 (Telecom 1976a [12]);
- Telecom Australia National Product Costing Results for the year ending June, 1976 (Telecom 1976c [13]);
- Telecom Australia Annual Reports for the years 1975/76 to 1988/89 (ATC 1975-1989 [14])

In June, 1976, there were 3.7 million telephone services in operation in Australia. Over that year there were over one million changes in the telephone directories; 335,000 new services connected and 449,000 cancellations (of which 280,000 services were re-connected for the next customer in a home or business). This ?churn? of listings - approaching 25% and climbing - justified producing a new edition of the White Pages for each telephone area each year. Over 10 million books were printed each year and the printing task was one of the largest in Australia.

At that time the Sydney and Melbourne directories were so large that the White and Yellow Pages were split into separate volumes and the Yellow Pages into two volumes - commercial and industrial. All telephone directories for other areas in Australia were White and Yellow Pages combined into one volume.

The Sydney and Melbourne Yellow Pages format ? ?commercial" and "industrial?, each in a separate volume ? was so unpopular with users and advertisers that this ranked in the top three of Telecom?s public relations problems.

Usage, the reason for the existence of the White and Yellow Pages, was not known. The sharp rise in directory assistance costs over the previous five years by more than 40% - from $4.3 million in 1971 to $17.7 million in 1976 ? suggested that usage of the White Pages was declining.

The mainstream paper-based and computer systems and related databases and production processes were fragmented across Australia, unable to handle the growing transaction volumes, and the computer systems were approaching a state of chaos.

Table 1 attempts to show the contractors involved in each process and the locations of the processes. About 30% of the White Pages database was converted to computer format, with the rest still on paper records. There were four different and incompatible White Pages computer systems maintaining the listings databases and compiling and paginating the directories; each system with its own database, one operated by Telecom and three by the contractors at five locations. The situation was similar for the Yellow Pages.

Table 1: 1976 - Directory Publishing Processes and Contractors

	% of Work Converted to Computer	Brisbane	Sydney	Melbourne	Adelaide	Perth
Production						
White Pages databases	30%	A	T	B	B	D
Yellow Pages databases	50%	A	A	E	B	D
Pre-press	n/a	A	A	E	C	D
Printing	n/a	A	A	E	C	D
Sales						
Yellow Pages database	100%		F	G		

T = Telecom   A, B, C, D, E, F, G = Contractors

There were three reasons for this mess.

For example, Telecom used three production contractors (A, B and D) to maintain the White Pages databases which were used for pre-press (composing into pages and plate making for printing), and for printing directories. Contractor A maintained the White Pages database in Brisbane, Contractor B in Melbourne and Adelaide, and Contractor D in Perth.

Firstly, at that time the Australian printing industry was converting as fast as possible from the old manual pre-press processes to the new screen-based computer systems to input listings and artwork, manage the databases, and compile and paginate the pages for printing. The benefits that these new computer systems offered to the industry were massive: much more sophisticated printing capabilities, higher printing quality, far faster processing times, far lower error rates and much lower operating costs.

Secondly, because Telecom was slow in developing mainstream computer processing systems, including directory publishing systems, the contractors developed their own systems to obtain the obvious benefits until Telecom "caught up". Worse, as Telecom had no White Pages or Yellow Pages computer systems strategy, the four contractors were advancing their computer systems independently without any guidance from Telecom.

Finally, Telecom's internally developed directory computer system, with about 30% of the listings converted, appeared to be well behind the most advanced comparable systems in the USA and Canada. Telecom's system was intended to replace the contractors' systems as the future national, standard White Pages system in about two years. By this time the system would be obsolete.

The four contractors used for pre-press and printing operated centres for data processing, pre-press and printing plants in five states. These operations complicated directory production and provided no benefits of scale. The printing capability and related equipment was approaching obsolescence; the colour printing capability was minimal, production rates were far too slow, and the printing quality was generally unsatisfactory.

The marketing of advertising in the Yellow Pages was passive with two contractors used to sell the service and minimal advertising and promotion. The computer systems used by the sales contractors were different and were operated on the contractors' premises. The level of complaints by customers and advertisers was unacceptably high as was the revenue forgone by the passive approach and outsourcing.

Apart from the inefficiencies and cost of the large number of incompatible computer systems, the fact that the White and Yellow Pages databases were maintained on the production and sales contractors' premises with the contractors' systems was strategically unacceptable. It meant that Telecom's ownership of the data was tenuous at best.

Directory publishing was regarded within Telecom as a necessary but separate and "non-core" activity compared to the mainstream business of telecommunications ? building and operating the network. Directory management and staff, many of them long serving, were considered as ?less than equal? to the elite mainstream; the thinking was that a job in directory publishing reduced career prospects in the parent business.

Almost all of the directory publishing businesses in advanced countries were highly profitable; the White Pages operated at a marginal loss but the Yellow Pages usually had a gross margin of over 40% on sales. The little financial information available indicated that Telecom's directory business was unique; in 1976 it would operate at a loss and the loss would increase rapidly.

There was no business plan and no credible plan to address any of the main problems. The business was sinking.

The Initial Directory Publishing Strategy - "Directory 81"

A ?first order? business plan was proposed in late 1976 ? named ?Directory 81? (Telecom 1976a [12]) ? which defined a vastly improved business to aim for in 1981, five years away.

"Directory 81" was a standard business planning approach; it nominated three options to better understand the business issues, the related opportunities and consequences of each option, and to prepare the ground for agreeing the proposed way ahead.

- Option A: "Business as usual ? band aid to keep the business operational";
- Option B: "Fix the Sydney and Melbourne Yellow Pages problem and drive for a high sales growth while attempting to reduce costs within the restrictive public service framework";
- Option C: "The private sector approach; transform the business".

Capital expenditure over the five-year period for options B and C, mainly for computer systems and equipment, was expected to be less than $10 million, less than 3% of Telecom's capital investment program.

Option "C" over the five years would dramatically improve the business. The Yellow Pages directories in Sydney and Melbourne would be re-formatted to market demand with the next issue. Processes would be re-engineered, standardised and automated nationally. Production contractors would make a major investment in the emerging pre-press and computer technologies to increase prepress and printing capabilities and capacity, to improve product quality, and to sharply reduce production and distribution costs and times.

Management and staff would be recruited, trained and motivated for the task. Outsourcing contracts for advertising sales, listings management, compilation, pagination, prepress, printing and distribution would be made more demanding and accountable to improve quality and operational and financial performance, and consolidated to provide scale benefits.

Looking back, it is interesting to note that in late 1976 inflation was running at about 13%, making any financial projections beyond one year somewhat heroic.

"Directory 81" attracted little interest among Telecom's senior management beyond fixing the Yellow Pages problem in Sydney and Melbourne, and there was no encouragement for implementation. Implementation proceeded in areas where it was possible ? such as sales ? which did not require significant internal support. To achieve faster progress, overseas experience, technology and systems were sought and adopted where useful, using the contractors as conduits to overseas sources of information. Internal development such as in systems would be minimal. To motivate the contractors their contracts would be reconstructed to meet the plan.

The outcome would be a directory business which still outsourced Yellow Pages sales, pre-press, printing and distribution and was approaching world benchmark performance within five years.

The main elements of the strategy are outlined in a later section.

The Performance against "Directory 81" Option "C" - Transforming the Business

This section draws on material in the following references:

- Directory 81 ? An initial business strategy for the Directory Function ? 1976/81 (Telecom 1976a [12]);
- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81 (Telecom 1976b [15]);
- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory 1981-1986 [16])

Table 2 shows the outcome five years later against the three forecast options; the financial results substantiated the practicality of Option "C".

Table 2: Directory Publishing ? Financial Performance against Directory 81 Projections ? 1976/81

	Option ?A? est. 1980/81	Option ?B? est. 1980/81	Option ?C? est. 1980/81	Actual 1980/81	Variance from Option ?C?
Revenue $m	55	68	81	120	+39
Publishing Costs $m	66	66	68	83	-15

Net Profit $m (before Interest & Tax)	-11	2	13	37	+24

Source: (Telecom 1976a [12]; Telecom 1976b [15]; Directory 1981-1986 [16])

The business, which made a loss in the first year, 1976/77, made a profit in year five of $37 million, exceeding the "Directory 81" Option C by $24 million.

This "non-core" publishing business now contributed 4.6% of Telecom?s revenue and almost 15% of Telecom?s profit at a gross margin on sales of over 30%, an extraordinary recovery.

The main reason operating costs in year five exceeded Option "C" by $15 million was that higher sales, particularly of Yellow Pages advertising, caused higher printing and paper costs. Another reason was that the operating costs of the mainstream processes could not be reduced to the potential due to substandard computer systems.

The directory business had become far more market oriented. Users were generally satisfied with book formats around the country. Usage was being measured and used as a guide to make the books more attractive and to refine promotion.

Telecom's contractual frameworks for sales, pre-press, and printing and for purchasing paper were all revised as applicable to those models provided by the world leaders in directory publishing in the USA and Canada ? AT&T, GTE, Reuben H Donnelly and Bell Canada.

The production and distribution quality had improved markedly, costs and times for all directories had fallen considerably, and delivery was usually on schedule.

While directory services were still only a relatively small part of Telecom?s business in terms of sales value, it appeared to rank around 150th by revenue in the businesses listed on the in Australian stock exchange.

The main failure in the first five years was slow progress towards nationwide standard systems at world class parity. The strong performance in the first five years made no difference to the lack of support from Telecom to fast track key areas of the business, including systems and contracts; the next ten years were to be a constant grind.

The Main Strategic Actions

This section draws on material in the following references:

- Directory Services Program 1976-1981 (Telecom 1976b [15]);
- Directory Services Review of Activities (for the years) 1981-86 Directory Services 1981-1986 [16]);
- Telecom Australia Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17]).

The main strategic actions taken from 1976 were textbook, unremarkable in the private sector.

The priorities were to drive book usage and revenue growth, strip out costs to "lowest cost" in the industry ? standard nationwide systems at world parity, one pre-press and printing plant, and escape from public service employment policies ? secure the data bases and prepare for an electronic future.

To achieve faster progress, the business would adapt overseas experience, technology and systems, using the contractors as the major source of information.

The outcome would hopefully be a directory business which was operating at world benchmark performance within five years.

The Main Strategic Actions - 1. Quickly reformat the Sydney and Melbourne Yellow Pages from ?commercial/ industrial? to the familiar ?classifications A-Z?.

This section draws on material in the following references:

- Directory Services Program 1976/77 - 1980/81 (Telecom 1976b [15]);
- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory 1981-1986 [16]);
- Enterprises Division Strategic Review 1988. (Telecom Enterprises 1988 [17])

This would resume the format popular with users and be a sound basis for the next Yellow Pages sales campaign. It would also greatly reduce the number of complaints from advertisers and users.

The popular new format was announced in early 1977 so that it was the basis for the Yellow Pages sales campaign in Sydney and Melbourne beginning in February, 1977, and for the new format books to be distributed in late 1977. This move was crucial, not only to fix the public relations problem, but because the Sydney and Melbourne Yellow Pages contributed almost 50% of the national Yellow Pages revenue. With an increase in binding capacity installed for the following year, the Sydney and Melbourne Yellow Pages were each issued as a single volume.

The Main Strategic Actions - 2. Rapidly increase Usage of both the White and Yellow Pages.

This section draws on material in the following references:

- Directory Services Program 1976/77 to 1980/81 (Telecom 1976b [15]);
- Directory Services Review of Activities 1981/82 to 1985/86 (Directory Services 1981-1986 [16].);
- Enterprises Division Strategic Review (Telecom Enterprises 1988 [17])

Usage was the prime purpose of telephone directories ? to increase the number of calls made on the network. It was also the foundation for ramping up sales of White and Yellow Pages entries and, hopefully, containing the growth of directory assistance operating costs.

The pursuit of usage was problematic and challenging. Could usage be increased and if so by how much?

White Pages usage in the early years appeared low and calls to directory assistance were soaring; the costs of the directory assistance service were $4.3 million in1971; $17.7 million in 1976 and $31.6 million in 1981. The Australian people appeared to increasingly prefer to call directory assistance rather than use the "unattractive, clumsy" paper directories. Over 60% of calls to directory assistance requested a number that was listed correctly in the White Pages. A more attractive White Pages in every household and business reduced the need for a customer to call directory assistance. It also strengthened the case for a charge for a call requesting a number which was correct in the current book.

For the White Pages the dominating drive was to increase usage by making the books more useful, more attractive and easier to use, and on that foundation promote higher usage. The White Pages were made more attractive by a range of enhancements. For example:

- from 1977 the emergency services pages and the various levels of government information

pages were progressively made easier to access and read. In the same year ethnic sections appeared in the front of metropolitan directories providing information in a number of languages other than English and rolled out to other directories in the following years.

- beginning with the 1979 issue of the Perth directory, a four-colour indexed information pages section was introduced to make the information pages easier to understand and use; this was extended across all White Pages directories over the following year.
- in 1980, maps of the area covered by the directory were provided on the back cover of country directories showing the area covered and the adjacent STD (long distance calling) area codes.
- in 1981 a Community Information section (Blue Pages) was launched on the Gold Coast.

The front covers of the White Pages promoted various prominent activities and events to lift brand recognition. In 1979 the front covers were designed by primary school children living in the area of the directory. Children across Australia submitted well over 100,000 entries in a contest for the design of the covers of the 1980 telephone directories to mark the ?International Year of the Child? and the 1980 centenary of the first telephone directory in Australia. The subject of the drawings was ?a child?s view of our heritage?. The 1981 covers promoted ?The International Year of the Disabled?.

A national tracking study was launched in 1979 to measure directory usage nationally and observe any changes in usage. The first results in 1979 revealed that over 60% of people over the age of 14 years used the White Pages in the last seven days. The average usage was 5.5 times a week and a total usage of 39 million times per week. About 80% of people who used the White Pages did so to find a telephone number and call it right away, and about 30% used the Yellow Pages on the same basis.

It was disappointing, but probably inevitable, that the usage of the White Pages remained roughly steady for the next few years; even though the directories were being progressively improved people increasingly called directory assistance.

From 1981 the White Pages was the only directory of its type in developed countries to make a profit.

For the Yellow Pages boosting usage not only assisted to increase calls on the network, it increased the value of the product as an advertising medium to advertisers and the sales of Yellow Pages advertisements.

As with the White Pages, to increase usage of the Yellow Pages the product was made more attractive and easier to use. A major difference was that the Yellow Pages was very heavily promoted and sold as an advertising medium.

The format problem for the Sydney and Melbourne directories was fixed in 1977. In 1981 the Adelaide and Perth directories were split into separate White and Yellow Pages.

Apart from restructuring a steady range of improvements and features were introduced. For example:

- covers were standardised on the Yellow Pages logo to strengthen brand recognition,
- in 1980 colour coded information pages were introduced, and the range of advertisements was expanded. Locality indexes ? for example, dentists in Melbourne listed by suburb ? were made more comprehensive. A number of new types of advertisements were developed to improve the convenience to users and offer more affordable advertisements to smaller and new advertisers.
- red, a second colour to black, was introduced to the advertisements range in 1984 as a trial, and then rolled out during the following year.

The Main Strategic Actions - 3. Drive Revenue Growth of Yellow Pages Advertising

This section draws on material in the following references:

- Directory Services Program 1976 ? 1980/81 (Telecom 1976b [15]);
- Directory Services Review of Activities (Directory Services 1981-1986 [16]);
- Enterprises Division Strategic Review (Telecom Enterprises 1988 [17]).

Revenue growth targets for sales of advertising in the Yellow Pages were ambitious and were based on usage and the value as an advertising medium to advertisers.

With the formats, appearance and utility of the Yellow Pages progressively improving, in 1978 spending on advertising and promotion was almost tripled over the previous year; in the following years the increase was about 15%pa. This rise in spending was validated by the sales increases achieved, but was controversial in Telecom as many believed spending on advertising was "wasted money".

Table 3: Usage of Yellow Pages and Advertising Recall through Interviews - 1979/81

Last Time used Yellow Pages	Wave 1 %	Wave 2 %	Wave 3 %	Wave 4 %	Wave 5 %	Standard 6 %	Error %
- in the last 7 days	28	27	28	29	34	30	+/-2
- in the last 14 days	40	41	43	42	48	45	+/-2
- in the last 28 days	51	50	53	52	58	55	+/-2
- in the last 6 months	70	72	74	74	77	77	+/-2
- in the last 12 months	75	77	78	79	81	81	+/-2
- at some stage		86	88	89	89	90	+/-2
- never used Yellow Pages	14	12	11	11	7	10	+/-1
Recall of Yellow Pages Advertising	42	49	51	54	56	58	+/-2
Refer to Yellow Pages as a Buying Guide	39	41	42	45	45	43	+/-2

Population is people over the age of 14. Source: Australian Sales Research Bureau Pty Ltd through Roy Morgan Research Centre Pty Ltd

As with White Pages, Yellow Pages usage and advertising effectiveness were tracked by market research. The surveys for the Yellow Pages were more extensive and were more focussed on driving sales. Table 3 provides an example of the methodology and shows that usage increased modestly in the first two years. Advertisers considered these early results sufficiently convincing to support a large increase in sales over the next decade and beyond.

Table 4: Usage of Yellow Pages and Sources of Buying Information - 1981/84

Year ending June	1981	1982	1983	1984
- used at least once in the last 7 days	30%	38%	53%	55%
Sources of information when buying a product or service (a person could name one or more sources).				
Yellow Pages	43%	64%	70%	72%
Daily Newspapers	42%	50%	47%	47%
Local Newspapers	37%	39%	39%	40%
Television	20%	27%	19%	20%
Weekly Newspapers	11%	17%	18%	15%

Radio	10%	9%	7%	8%
Magazines	10%	10%	9%	9%

Population is people over the age of 14. Source: Australian Sales Research Bureau Pty Ltd through Roy Morgan Research Centre Pty Ltd

National promotions included the Australian Open Tennis Championship, the Australian Open Golf Championship, the Little America's Cup (for small catamarans) and the Australian Small Business Awards. Advertising campaigns supported the sales campaigns and were aimed at usage after distribution of a book. Advertising themes included: ?If you need a little help (in buying a product or service consult the Yellow Pages)?; ?Run around Sue? who saved money, time and effort by using the Yellow Pages; and "(Yellow Pages advertising) working 365 days a year?.

The use of "survey" phones was increased to demonstrate the effectiveness of Yellow Pages advertising to an advertiser. A "survey" phone was installed in an advertiser's premises with a number that only appeared in that advertiser's Yellow Pages advertisement; the number of calls to that phone number indicated the effectiveness of the advertisement and the Yellow Pages as an advertising medium.

The marketing program ? the combination of product improvement, a more professional and more highly motivated sales force, more rigorous quality controls preventing dubious sales practices, improvements in customer service and much stronger and focussed promotion and advertising ? clearly worked. The White Pages brand was already strong. The Yellow Pages brand became one of the most recognised in Australia, as did the "Walking Fingers" logo. Sales of Yellow Pages advertising increased by over 350% in five years.

Table 4 shows that from 1981 the Yellow Pages dominated other advertising media as source of buying information; when people thought about buying a product or service.

The Main Strategic Actions - 4. Diversify the Directory Product Range and Revenue Base and establish a strong position in Emerging Markets, particularly in Electronic Services.

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81 (Telecom 1976b [15]);
- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory Services 1981-1986 [16]);
- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17])

A more diverse product base would accelerate revenue growth and strengthen Telecom's market position and market share ahead of the competition in the traditional directory markets.

Diversification was pursued in three broad areas: traditional directory printed products, mass-market electronic directories and specific-market electronic services.

Although the standard White and Yellow Pages continued to be the basic directory products, changes in the market and the emergence of competition spurred the introduction of new printed products.

For example, Community Phone books were introduced in 1983 in several trial suburbs in Sydney and Melbourne, and then rolled out to other suitable suburbs and in other cities.

Both the Sydney and Melbourne Yellow Pages covered very large areas. Melbourne extended from Frankston in the east to suburbs more than 40 kilometres away in the west. Many advertisers in the Melbourne Yellow Pages such as tradespeople only wanted coverage in their nearest suburbs, and the Community Directory provided this option. In addition, users in a suburb sought a range of local services such as from plumbers and dentists in the immediate area, and appreciated a more convenient directory for these services in addition to the comprehensive standard White and Yellow Pages.

In 1985 the Australian Business Communications Directory was launched which combined the existing Telex and Telegraphic Code Address directories, and in 1990 was re-launched as a ? National Business Directory?.

Even in 1976 it was clear that electronic directory and related services were a crucial part of the directory future. Computer terminal access to remote electronic directory databases, other databases and electronic services was certain to happen, but the speed and nature of the transition was speculation.

In 1978 the France PTT launched "Minitel" ? a Videotex online service accessible through telephone lines ? in Brittany, and extended it throughout France in 1982. Millions of terminals were placed free with telephone subscribers instead of providing the traditional White Pages. Customers could access White Pages listings free but were charged for access to Yellow Pages listings and advertisements. Users could make online purchases, make train reservations, check stock prices, search the telephone directory, have a mail box, and chat in a similar way to that now provided by the Internet.

Minitel was one of several "nation building" projects launched and heavily subsidised and supported by the French government during the 1980's. Other projects included deployment of digital information services, accelerated digitisation of the telecommunications network and high speed trains.

In late 1979 the UK Post Office introduced a far less ambitious (and less funded) inter-active videotex type of service called Prestel.

The French PTT released very little information about Minitel such as the Minitel price ? said to be $US100-200 per terminal ? the take-up rate, usage, investment, operating costs, and savings achieved from any reduced distribution of White Pages. Around 1980 the price of similar terminals in Australia was estimated at over $A1000. Modelling indicated that an Australian Minitel service would accelerate customers? electronic access to directory and other databases, as in France, but the service would produce a very large negative cash flow during the 1980's, beyond Telecom's capability to resource. During the 1980's there appeared to be no political support from the Australian government to heavily subsidise an Australian Minitel-type of service. Telecom monitored developments in France during the 1980's, but over that period the cost structure continued to be prohibitive, political interest in Australia remained low and the service viability was essentially unchanged.

Meanwhile, Telecom developed prototype electronic White and Yellow Pages in the early 1980's but these were not available as a public service until 1985 when Telecom launched Viatel, a videotex type of service. The stand-alone Electronic White Pages (EWP) directory product as a public service was launched in 1988 with a data base of 6.7 million listings. The Service attracted over 35,000 customers in the first year. A similar public Electronic Yellow Pages (EYP) service was launched in 1990.

During the 1980's computer terminals and data modems became more capable, affordable and more widely deployed in the homes and businesses of Australia. Noting the progress of Minitel, it was apparent that a huge market would develop for "electronic services" ? **directory services** (electronic White and Yellow Pages), **electronic trading** (transactions), **electronic services** (airline bookings), and information services (weather) ? perhaps in the early 1990's. After the Davidson Inquiry in 1982 it was also apparent that there would be strong network and services competition emerging in the same timeframe.

From 1985 the challenge for Telecom was to establish a strong and proprietary position in this new, massive, yet to be fully understood ?electronic services? market by (say) 1990. The strategy adopted was to develop independently the four service areas ? directory, trading, services and information ? and package them in ways that might accelerate demand and deployment to achieve that proprietary position. New services were easy to identify, but without an Internet-type of infrastructure and a higher penetration of terminals in homes and businesses, the services were expensive to explore and deploy. Over $50 million was invested over the period 1985-1991 preparing for the (internet-type) market. Telecom?s retention of market share from 1993, the success of BigPond a little later, and the escalating profits from the directories business from 1991 indicates that there was some success.

The platform used was the Telecom Viatel service which offered both an EWP and an EYP with a range of electronic services, initially with over 100 service providers, for the home and office. For example, an on-line information service primarily aimed at small businesses combined a public messaging service with access to a range of information services which included the electronic directories, investment advice and travel information. A tele-banking service operated by the Commonwealth Bank allowed customers to conduct transactions from the home or office. Directory publishing, together with Viatel, explored advertising opportunities in electronic media and information services beyond the EYP classified advertising market alongside investigating the potential of other electronic services. Electronic services projects covered a range of sectors including the automotive industry, shipping, finance and banking, mining and telecommunications.

The EWP system was the winner of the 1990 Australian Design Award. It was so well regarded that in 1991, DirectoryNet Inc, a wholly owned subsidiary of Telecom, was established in Atlanta in the USA, to offer an EWP service in North America.

The Main Strategic Actions - 5. Convert the remaining paper records to computer as quickly as possible and Purchase and Install a "state-of the art" Computer System for both White and Yellow Pages as the standard national system owned and operated by Telecom on Telecom premises.

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81. (Telecom 1976b [15]);
- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory Services 1981-1986 [16]);
- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17])

In 1976 about one half of the listings transactions and prepress activity for the White and Yellow Pages was still performed "off-computer". Conversion to computer systems was completed within two years.

Computer processing improved product quality and reduced processing times, error rates, and production costs, but there were still huge potential improvements to be gained by standardising the various White and Yellow Pages systems to one single nationwide system.

In 1976 Telecom was developing a national White Pages system in-house which already appeared to be obsolete.

In 1977 GTE, the second largest telephone company in the USA and the second largest directory publisher in the world, agreed to sell at a nominal cost their most advanced computer systems for listings processing, compilation, pagination, and distribution for both the White and Yellow Pages. This offered a "world class" standardised nationwide publishing system and database, and an earlier, automated feed of data to a computer-based directory assistance within one year. Telecom's decision to continue the deployment of the in-house Telecom White Pages system, rather than to transfer resources to adapt and implement the GTE system, was a huge setback for directory publishing.

The progressive implementation of the less capable Telecom system still achieved a major improvement in productivity over the five years 1976/81, but far less than was possible; staff increased to 497 (17%) to handle increases in the number of telephone services to 5.07 million (37%), in the number of directory listings to 4.92 million (45%), and in directory transactions to 2.21 million (91%).

By 1985 the four different and incompatible White Pages computer systems operating in 1976 for maintaining the databases were reduced to one system owned and operated by Telecom. This gave Telecom ownership and control of the White Pages database. The four pre-press contractors operating four incompatible computer systems at five locations were reduced to two contractors using two systems at two locations ? Sydney and Melbourne.

A world class system ? supplied and facilities operated by AMDOCS of the USA ? was deployed nationally for White Pages from 1987. This greatly improved the speed and accuracy of listings processing at a substantially lower cost. A world class Yellow Pages sales system operating on one database controlled by Telecom was achieved in 1992 with the formation of Pacific Access, Telstra's new Yellow Pages sales subsidiary.

The decision not to purchase the "state-of-the-art" GTE system in 1977 had enormous consequences for directory publishing; a world class White Pages system only began operation some 10 years later, from 1987, and a Yellow Pages system 15 years later, from 1992.

The Main Strategic Actions - 6. Bring all Computer Systems and Databases In-house

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81 (Telecom 1976b [15])
- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory Services 1981-1986 [16]);

- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17])

This would secure Telecom?s ownership and control of the brands, processing systems and databases, particularly against any attack on branding, and listings ownership and copyright.

The White Pages database was owned by Telecom and operated on Telecom premises from 1980.

The Yellow Pages database was effectively owned and controlled by Telecom from 1992 with the establishment of Pacific Access. The database was not operated on Telecom premises until 1999 with the formation of Sensis.

The purchase the GTE system in 1977 would have provided ownership and control of the systems and databases on Telecom premises before 1982.

The Main Strategic Actions - 7. Consolidate all Production - Pre-press and Printing - at One Printing Plant

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81 (Telecom 1976b [15]);
- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory Services 1981-1986 [16]);
- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17]);
- Enterprises Benchmarking Project (Booz Allen & Hamilton 1988 [18])

This would provide scale and "lowest cost" production. If this was impractical in the short term, compromise on two plants, one in Sydney and the other in Melbourne.

The "churn" ? additions, alterations or deletions ? in the listings in White Pages was already high in 1977 ? about one million, approaching 25% and climbing. Together with the growth in listings the number of changes was expected to exceed 2.0 million in five years. Any book that took (say) 90 days to print would contain listings that had more than 25% errors or omissions on the first day of distribution.

In 1977 the typical elapsed times between closing and distributing a directory were abysmally long, particularly for the largest directories: Sydney was about 50 days, Melbourne and Perth 90 ?100 days, and Brisbane and Adelaide 90 days. As the number of listings and volume of advertisements increased the books would become larger and production times longer.

Clearly production needed to be transformed to produce more attractive books, and a range of new directories, up to four colours, higher quality, higher utilisation, and far faster and more flexible production at "lowest cost" for the small Australian market. A reasonable expectation was that within five years there would be one plant in Sydney and another in Melbourne and within ten years one plant serving Australia.

From 1977 production contracts were modelled on those used by the leading publishers in the world ? AT&T, GTED, Rueben H Donnelly and R. R. Donnelly in the USA. The contracts foreshadowed fully computerised White and Yellow Pages compilation, pagination, improved printing quality, much high production volumes and faster production times, progression to four colour printing, and more comprehensive and rigorous processes for planning and programming production and managing quality, throughput and paper utilisation.

After nine years, in 1985, the five printing contractors operating in five locations in 1976 were reduced to two contractors in two plants at two locations ? Sydney and Melbourne. The Sydney printing plant was already dedicated to directory production. In 1988 a second dedicated plant opened in Melbourne. As an indication, the new Melbourne plant increased output dramatically from 3,000 books per hour to 7,000.

The slow progress to two dedicated production centres was caused by a combination of factors including political considerations in shutting down printing plants, the application of the public tender process in Telecom and the capability of the printing industry to fund the required level of investments.

In 1988 a benchmarking study by Booz-Allen Hamilton (Booz 1988 [18]) reported that the printing costs of the two dedicated plants were about 30% higher by US standards, with the lower local volumes being a factor, but most of the gap could be closed by moving to one supplier operating one factory. This option was explored for the next production contract period in the early 1990's and "one factory" production began at Chullora, Sydney in 1995.

The Main Strategic Actions - 8. If necessary, accept slightly higher paper prices from local producers, if the quality is acceptable, to obtain security of supply.

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81 (Telecom 1976b [15]);
- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory Services 1981-1986 [16]);
- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17]);
- Enterprises Benchmarking Project (Booz 1988 [18])

In 1976 all directory paper was imported, contributed 28% of production and distribution costs, and was already the highest cost in producing and distributing directories. Paper costs exceeded the costs of prepress, printing and distribution, and was rapidly approaching the level of the sales commission. All the signs were that it would exceed 45% in five years.

The market and financial consequences of delaying or missing a directory due to a shortage of paper were unacceptable. The cost of stockholding of imported paper sufficient to minimise the supply risk was excessive, and the cost of a stock-out of paper was intolerable. Paper prices were close to parity with the USA.

Telephone directories use a special type of thin paper. The international standard yield was 36 grams per square metre, lighter than newsprint. Directory paper is a balance between strength, opacity and the cost of production; a low thickness (and lower strength) reduces the bulk and weight of a directory, and opacity or density avoids show-through of the print on the reverse side. Directory paper is thin but must be strong enough to avoid web breaks at high web speeds during the printing process which cause delays in the production and delivery schedules.

Telecom had purchased paper on behalf of the printers since 1974. In that year, a worldwide paper shortage increased prices beyond the capacity of the printers to finance the purchase. Most of the paper was imported from the USA, Canada and Scandinavia. A local supplier, Australian Pulp & Paper Manufacturers (APPM), had supplied a limited amount of paper, but could not reliably produce to specification.

Usage in 1976 was 15,000 tons and was estimated to exceed 25,000 tons in five years. The world market for directory paper was cyclical with rapid movements from glut to shortage and with prices moving even more erratically. A shortage of paper could mean cancelling, delaying or a reducing a print run of a directory. This would unacceptably damage the market position and revenue. Stockholdings of paper were costly; stock in 1976 was of the order of 50% of purchases, about 8,000 tons valued at about $4 million.

Variability of worldwide supply and prices and the risk of stock outs made a strong case for local paper manufacture provided suppliers could produce reliably to specification at a competitive price.

The two paper manufacturers in Australia ? APPM and Australian Newsprint Mills (ANM) -- were approached and trials were held. In 1979 APPM still had not achieved the standard. As the Wesley Vale mill was not fully loaded, APPM unilaterally claimed that their quality was satisfactory and persuaded the Fraser Government to impose a tariff on directory paper of 20% and instruct Telecom to purchase 6,000 tonnes. The result was that the cost of paper consumption rose by about 20% and production slowed while the marginal quality APPM paper was used.

Over the following years the quality of locally manufactured paper improved so that in 1987 Telecom purchased all its requirements from local suppliers at a quality and price competitive with imports. Paper quality continued to be satisfactory making the supply of paper secure.

The benchmarking study by Booz Allen Hamilton in 1988 (Booz 1988 [18]) reported that paper costs were close to parity with the US with local manufacturers unable to close the remaining gap.

The Main Strategic Actions - 9. Recycling

This section draws on material in the following references:

- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17]);
- Enterprises Division Business Review - 1990/96 (Telecom Enterprises 1990a [19]).

By 1990 paper usage had reached 48,000 tons producing some 22 million books. A recycling strategy was developed with the ambitious target of collecting and recycling 80% of old books nationally by 1997.

Several approaches were trialled for collecting old directories: local scouting groups, drop-offs at supermarkets, swapping an old directory for a new one, and collection by municipal councils. Large plastic bins in the shape of a "Book Muncher" almost two metres high were placed in supermarkets and other high traffic areas convenient for customers to dispose of their books.

Approaches for recycling the old directories were made with the Australian Conservation Foundation to produce a safe low-cost building insulation material branded ?All Seasons?. A wide variety of alternative uses were also being explored ranging from seedling pots to kitty litter.

Directory materials such as inks, glues and cover boards had already been modified to facilitate recycling.

The Main Strategic Actions - 10. Establish rigorous National Standard Accounting, Budgeting, Control and Reporting Systems, including performance parameters for every activity of the business.

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81.

(Telecom 1976b [15]);

- Directory Services Review of Activities (for the years) 1981/82, 1982/83, 1983/84, 1984/85 & 1985/86 (Directory Services 1981-1986 [16]);
- Enterprises Division Strategic Review. 1988 (Telecom Enterprises 1988 [17]).

This was a standard activity in the private sector and would provide tight management and operating control of the business and a framework for driving improved quality, reduced production and distribution times, improved process productivity and lower costs.

Comprehensive systems with related management accountabilities were operating within two years including new production contracts based on the contractual frameworks used by the US publishers.

The Main Strategic Actions - 11. Spin off Directory Services as a Separately Incorporated Arm?s Length Subsidiary of Telecom.

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, - 1980/81 (Telecom 1976b [15]);
- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17]);
- Enterprises Division ? Arm?s Length Proposal (Telecom Enterprises 1990b [20])

Over time, this action would reduce, if not remove, the public service influence and culture, reduce the higher cost of public sector employment, reduce the influence of the public service unions and allow faster and more focussed improvement.

Several proposals were made over the years to 1991 and all failed. The main benefits of separation were superior service quality, faster expansion of the service range and higher profits. The main argument against was that a separated business would be more vulnerable to a political instruction that Telecom sell the business. In fact, it would have been just as easy to sell the business whether it was within or separated from Telecom. A more profitable separated business would attract a higher price.

In the mid-1980's directory publishing was located at Box Hill some 20 kilometres from Telecom's headquarters, which moderated the public service culture but little else.

In the late 1980's there were several approaches from the private sector to purchase the publishing business. None were accepted.

The Main Strategic Actions - 12. Bring the Yellow Pages sales operation in-house.

This section draws on material in the following references:

- Directory Services Program (for the years) 1976/77, 1977/78, 1978/79, 1979/80, 1980/81 (Telecom 1976b [15]);
- Enterprises Division Strategic Review 1988 (Telecom Enterprises 1988 [17]);
- Pacific Access Negotiations. Notes for negotiating the Joint Venture (Telecom 1990 [21]);
- Pacific Access Business Case. Presentation to the Board of the Australian Telecommunications Commission (Pacific Access 1990 [22]).

This would provide far stronger control of the sales function, savings exceeding 2% of sales, ?lowest cost? operation and full security of the databases, branding and data copyright.

Telecom outsourced the selling of the Yellow Pages to two sales contractors with the contractors operating the Yellow Pages sales databases on their premises. The strategic intention in 1976 was to take over the selling function and to directly own and manage the data bases on Telecom premises. This action was unthinkable while directory publishing was operating within Telecom and subject to public sector policies and processes.

The establishment of the Australian & Overseas Telecommunications Corporation (AOTC) through the merger of Telecom and OTC in 1992 finally made this practical as the public service ethos was expected to decline in the new business.

The takeover of the sales function was achieved in two stages: Stage 1 was a joint venture with the current contractors, and Stage 2 was, in say another five years, the exercise of pre-emptive rights to buy the partners out.

Stage 1 negotiations with the two sales contractors over 1989 and 1990 resulted in "Pacific Access", a joint venture between Telecom, the majority owner, and the owners of the two sales contractors. The scope of the business was published directories, electronic directories and other business areas largely based on the directory databases both within and beyond Australia.

Pacific Access was one of the largest ? if not the largest ? and most favourable deals structured in Telecom's lifetime; the Net Present Value (NPV) to Telecom of the joint venture over 10 years approached $800 million ($350 million NPV @ 17%) and required minimal capital.

Pacific Access Pty Ltd, a Telecom Yellow Pages sales subsidiary, began operation on 1 July, 1991. All of the Yellow Pages functions were consolidated into the new business; research and development, sales, marketing and compilation services, both for the traditional and electronic directories. Apart from the financial benefit, combining the two sales contractors in this way improved the quality of the finished product, improved customer service and encouraged faster development of new products and services.

A crucial strategic benefit arising from the Pacific Access structure was that, for the first time, after 14 years, Telecom had uncontested ownership and complete control of the Yellow Pages data bases, branding and data copyright.

Benchmarking against North America

Continuous contact had been maintained with the leading directory publishers in the USA and Canada since 1977 and developments suited to the Australian market were quickly applied.

In September, 1988, Booz-Allan Hamilton, an international consultant, benchmarked Telecom's directory publishing business against the US directory publishing industry (Booz 1988 [18]). It reported that Telecom's business was at benchmark performance in almost all parameters except for systems development costs, paper prices, and printing and distribution costs.

Yellow Pages revenue performance in terms of account penetration ? the proportion of business accounts who were advertisers in the Yellow Pages (at about 30%), and share of total advertising media (at 10%), were both close to parity with the US performance. Pricing for Yellow Pages advertisements in the large metropolitan directories was at the low end compared to the US, and White Pages revenue performance was significantly better than the US ($34 per line of business compared with $15-25).

Telecom?s Yellow Pages sales productivity compared with the US at significantly lower cost, and further productivity gains were possible by increased telemarketing and direct mail.

Paper costs were close to parity with the US, but in aiming for the security of local manufacture of paper there was little possibility of closing the remaining ?local price premium? gap.

White Pages and Yellow Pages production costs were higher than in the US. The gap for White Pages could be partly closed by reducing the error rate of listings provided by the Telecom District customer service offices and reducing the costs of directory computer systems development. Yellow Pages production could be moved towards parity by consolidating the Telecom and Yellow Pages sales contractor systems.

Computer systems development costs were high by US standards ? 5.3% of revenue compared to 2.6% ? mainly due to in-house systems development.

Printing costs were about 30% higher by US standards with the lower local volumes being a factor, but most of the gap could be closed by moving to one printing supplier. Almost all of the US publishers used one printer for a market far larger than Australia.

Distribution costs were higher than in the US. Service levels were comparable for the initial delivery, but the US achieved a superior service for on-going deliveries through the year. The US out-sourcing of distribution for on-going deliveries allowed costs to be 30-50% lower than Telecom.

In summary, Directory Services had potential cost savings of perhaps $25 million per year from directory delivery ($4.5-$6m), production ($5-$8m) and printing ($4-$11m).

Telstra's Directory Publishing Business in 1991.

This section draws on material in the following references:

- Australian Telecommunications Commission Annual Reports for the years 1975/76 to 1988/89 (ATC 1975-1989); [14]
- Annual Reports for the years 1989/90 & 1990/1991 (ATC 1989-1991 [23]);
- Enterprises Division Business Review ? 1990/96 (Telecom Enterprises 1990a [19]);
- Enterprises Division Strategic Review ? 1992/97 (AOTC 1992 [24]).

Telecom's directory publishing business in 1991 was a cash flow powerhouse and a highly practised innovator which was positioned as a dominant platform for publishing and electronic services for the future.

The trading performance over 15 years (shown in Table 5) was remarkable. Revenue rose from $33 million in 1976 to almost $600 million in 15 years (1991) achieved by market growth alone. More significantly, contribution rose from an expected loss of $1 million to $264 million over the same 15 year period.

Over the 15 year period from 1976, for a capital investment of less than $150 million Telecom gained a contribution of about $1.5 billion.

Table 5: Telecom?s Directory Publishing Trading Performance - 1976-1991

Year ending 30th June	1976	1981	1986	1991
Gross Revenue ($m)	33	120	336	593
Less Publishing Costs ($m)	32	83	207	329

Publishing Contribution ($m)1   37   129 264
Source: National Directory Services, 31 March, 1994.

Table 6 shows that directory publishing revenue and profit growth exceeded Telecom?s growth. Directory publishing revenue was 2.3% of Telecom?s revenue in 1975/6 growing to 6.2% fifteen years later. The profit contribution was even more spectacular: 0.7% in 1975/6 and 27.4% in 1990/91.

Table 6: Directory Publishing & Telecom?s Performance - Revenue & Profit Growth - 1976/91

Year ending 30th June	1976	1981	1986	1991
Directory Services Revenue ($m)	33	120	336	593
Profit ($m)	1	37	129	264
Telecom Revenue ($m)	1,424	2,609	5,472	9,531
Profit ($m)	152	234	465	963
Directory Services/Telecom Revenue (%)	2.3	4.6	6.1	6.2
Profit (%)	0.7	15.8	27.7	27.4

Table 7: Directory Services - Some Measures of Actual Performance - 1980/1

Year ending 30th June	1976	1981	1986	1991
Sales Telecom ($000?s per person)	19.2	29.0	60.0	113.6
Sales Directory Publishing ($000?s per person)	99.5	241.0	511.4	916.8*
Operating Costs Telecom ($000?s per person)	17.3	26.4	53.0	94.2
Operating Costs Directory Publishing ($000?s per person)	89.4	167.6	315.7	500.8*

Note: *. Indicates only an order of scale due to Telecom?s accounting treatment of the sales commission.

Table 7 shows sales and operating costs per person for Telecom and directory publishing. The directory publishing figures are high due to the outsourcing of a range of functions including pre-press, production, distribution and sales of Yellow Pages. Telecom?s sales and operating costs per person should have been much higher as a range of functions should have been outsourced from 1975; for example, food services, property services, the limousine fleet, and a high proportion of transport and information systems development.

For directory publishing over the 15 year period sales per person grew ninefold while Telecom?s growth factor was sixfold. Comparing growth in profit is not useful due to directory publishing's low base and the high degree of outsourcing.

Directory publishing handled all of the considerable development activity and an 83% increase in listings processed with a 17% increase in staff, a major improvement in productivity.

Some Directory Publishing Innovations

This section draws on material in the following references:

- Enterprises Division Strategic Review - 1992/97 (AOTC 1992 [24])

Telecom did not grasp the opportunity to become commercially focussed in 1975 and only seriously began that journey in 1988. Directory publishing stood out as the most innovative area in the business through many innovations, most of which were standard practice in the private sector and illustrate how far Telecom was behind.

Some of the innovations included:

- Business strategic planning based on modelling and options.
- Rigorous budgeting, control and accountability based on the trading statement with monthly reviews against budget, mandatory practices in the private sector. Until 1985 directory publishing was the only product area within Telecom which operated in this way.
- Commercially focussed product management for each product and service in the directory range. Telecom did not introduce commercially focussed product management across the range of businesses until 1988.
- An operational computer systems strategy integrated with the business plan and trading statement. Again this was an essential practice in the private sector. Directory publishing completed conversion of White Pages customer records to computer in 1980. Yellow Pages records were operating on computers from 1975.
  Telecom's conversion of telephone customer records to a computer system (DCRIS) was completed in 1985. At that time there were at least three customer data bases (CABS, DCRIS, directory publishing and LEOPARD) and there was no clear plan to rationalise this architecture. A fourth customer data base, mobiles, was launched in 1988. This proliferation of data bases continued into the 1990's.
- Market research tightly focussed on usage and the quality of customer service began in 1977. Telecom?s TELCATS customer polling began in 1988.
- Benchmarking against industry leaders around the world began in 1977. The first significant benchmarking in Telecom was done informally by George Hams in 1985.
- Directory publishing engaged in a high degree of collaboration with contractors to accelerate benefits to mutual advantage.
  For example, the Yellow Pages Management Group comprising staff from directory publishing and the sales contractors began operation in 1977. This was the most successful marketing group in Telecom and drove sales far more strongly than would have been possible working at arm?s length. The owners of the Yellow Pages contractors ? Bell Canada International, GTE Directories, Southwestern Bell and Volt Information Sciences ? all contributed marketing and production data, developments, ideas and knowhow free as part of the association.
- Directory publishing developed regular contact with a number of overseas telecommunications businesses including AT&T, GTE, GTE Mobile, Southwestern Bell, Pacific Bell, Bell Atlantic, British Telecom and Televerket (Sweden), and directory publishing businesses such as AT&T Directories, Ruben H Donnelly Corporation, R R Donnelly, Bell Canada Directories and NZ Telecom Directories.
  This resulted in sharing plans and developments in the directories business as well as in other telecommunications areas such as Mobile Services and Operator Services.
  The collaboration was less with some operators in the USA after the AT&T divestiture in 1984, but still continued.
- A sales incentive program was introduced in the Yellow Pages sales force in 1977, the first such program in Telecom until the sales incentive program for the new Telecom sales force in 1984.

The Directory Publishing Business transferred to Telstra in 1991

This section draws on material in the following references:

- Annual Reports for the years 1989/90 & 1990/1991 (ATC 1989-1991 [23]);
- Enterprises Division Strategic Review - 1992/97 (AOTC 1992 [24]).

The Australian & Overseas Telecommunications Corporation (AOTC, later Telstra) was established in 1992. The directory publishing business handed over to AOTC was a strategically strong and profitable platform for the future:

- The projected trading performance over the five years to 1997 was solid. Revenue including sales expense was expected to increase from about $790 million to over $1 billion in 1996, and it did. If the agreement with the Pacific Access partners was to be believed, gross sales in 1997 would be higher at almost $1.2 billion; this was probably optimistic but optimistic partners were an asset.
  More significantly, projected contribution was planned to rise from $267 million to reach $480 billion in 1997 totalling $2 billion in the five years.
  Capital investment for the five years would be less than $200 million.
- A nationwide standard and world parity mainstream computer system for published and electronic directories offered ?lowest cost? operations for the Australian market, operating costs as a proportion of sales were expected to decline.
- Operating efficiencies were high with very low error rates and fast processing times.Although processing volumes were projected to markedly increase, staff would fall from 700 to about 680.
- Usage rates for both the White and Yellow Pages appeared durable - over 50% of people used the books in the last seven days - but it was uncertain how long this usage would hold against electronic directories and alternative advertising media (the ?internet? was not so named until about 1992).
- In 1992 Yellow Pages was Australia?s leading buying guide with over 1.2 million people using it every day. Again, the effect in the future of the internet was an unknown.

Table 8: Directory Publishing - Business Plan - 1992/97

Year ending 30th June	1992	1993	1994	1995	1996	1997
Gross Sales (Est $m future prices)	794	810	856	934	1043	1142
Revenue* (Est $m future prices)	632	630	681	742	832	913
Profit (PBIT) (Est $m future prices)	267	281	317	376	436	486
Capital (Est $m future prices)	15	38	19	25	33	57
RoS (%)	n/a	35	37	40	42	43
Staff	649	661	696	692	699	697

* Note that "Revenue" is "Gross Revenue" less "Sales Commission". This table reports that directory publishing was a $1 billion business based on Gross Sales by 1996.

In Table 9 the category, "Telephone Directories", included the other directory publisher, Business Marketing Australia (BMA) which published seven directories (compared with Telecom 72) with a circulation of 3.4 million (Telecom 13.5 million) and a revenue of $26 million (Telecom $697 million). Telecom?s revenue of $681 million does not include White Pages, Electronic White and Yellow Pages and contractor sales commission, which adds to a total revenue of about $850 million.

- An independent survey of the telephone directory market in 1994 reported that Telecom Directory Services held 12% of the advertising market in Australia ? see Table 9. Telstra dominated the market for classified directories.
- The Telstra Electronic White Pages and Yellow Pages were in a strong position to expand to other forms of electronic services and Pacific Access was a supporting developer to assist with this.
- The related electronic services, although still exploratory, were a sound gateway to expand into other information services and advertising based on those services.

Table 9: Advertising Industry in Australia - 1993/4

	Revenue ($M)	Growth 1993/94 (%)	Market Share (%)
Newspapers	2,301	14.1	38.5
Television	1,870	6.2	31.3
Radio	477	4.6	8.0
Magazines	340	25.9	5.7
Outdoor / Cinema	269	- 22.0	4.5
Telephone Directories	723	9.2	12.1
Total	5,980	8.5	100

What could the Directory Publishing have achieved as a Private Sector Business?

Most professional managers with experience in both the public and private sectors would agree that it was more difficult to innovate in the public service.

Competition is a hard taskmaster in the private sector. It encourages and rewards innovation and punishes the slow, the static and the inefficient. In grim business situations open markets and shareholders demand radical change. Telecom, with its monopolies, union constraints and public sector legacy, preferred change on its own terms with minimal risk. It was familiar with managed technical change but not commercial change.

On the other hand, even with its monopoly advantages, Telecom faced a number of huge challenges, particularly in the early years from 1975. For example, a new national district organisation with some 83 districts was implemented throughout Australia in the first three years. A new computer-based telephone customer service order system was deployed in the districts converting over three million telephone paper-based customer service records to the new system by 1985. However, this achievement in 1985 was at least ten years after similar systems were deployed in the USA, and perhaps 15 years after similar systems were operating in the commercial world in Australia.

There were perhaps six main problems experienced over the 15 years of the directory publishing transformation period which hindered improving the service and driving profits:

- the lack of a strong commercial strategic planning framework in the 1970's to the mid 1980's within which business proposals such as "Directory 81" could have been structured, assessed, approved and implemented.
- the lack of an IT strategy with business priorities and a defined systems architecture within

which all systems and data base development could be assessed, approved and implemented. For example, the new telephone service order system, while urgently needed, added another customer data base and another product data base to at least two existing similar data bases ? billing and directory publishing. By 1990 there would be more such data bases.

- the rigidity in computer systems development which preferred in-house built systems rather than purchasing and adapting "state of the art" systems.
  The rejection of the GTE systems opportunity in 1977 was a major setback, delaying the availability of a leading directory system until 1989. The Booz Allen Hamilton benchmarking study in 1988 reported that internal development of directory publishing systems was roughly twice as costly as those in the USA.
- while the use of a public tender process in government business enterprises was essential for transparency and probity, the rigidity of the process hindered innovation in directory contracts. The reduction in the number of production centres from five to two was delayed by as much as three years.
- political considerations increased operating costs.
  Ending pre-press and printing operations in Western Australia raised a political issue of "lost jobs in WA" which delayed the result by at least four years. The Government policy to introduce tariffs for directory paper increased the price of paper by 20% adding costs of about $1 million each year. A Ministerial direction which forced the purchase of unsatisfactory paper from a local supplier also increased production costs.
- the public service policies, processes, employment conditions and unions inhibited innovation and increased operating costs. The amount of the increase was debatable but benchmarking studies over 1985 to 1988 indicate the penalty could have exceeded 20%.

The speed and effectiveness of a transformation in a similar business in the private sector is, of course, speculative. However, a reasonable expectation would be that a world class, standard computer system for both White and Yellow Pages would have been achievable within three years instead of 12; two production contractors in say four years instead of eight; one production contractor in six years instead of nine; a "Pacific Access" subsidiary in eight years instead of 14; and lower paper prices without Government and ministerial direction.

The outcome would have included an even faster growth in sales and lower operating costs, perhaps generating higher profits of the order of $0.5 billion over 20 years.

1992 and Beyond

There appear to have been three major developments in Telstra's directory services after 1991 before the published directory product moved towards collapse in about 2010.

In 1994 directory production of all telephone directories in Australia was consolidated to one purpose-built factory in NSW. This occurred when McPhersons Limited won the production tender by proposing a ?one plant? solution based on a factory at Chullora, some 15 kilometres west of Sydney.

In 1997 Telstra bought out two of the minority partners in Pacific Access, and in 1999 the other two. (Montgomery 1999 [25])

In 2002 Pacific Access was rebranded to "Sensis". (Sensis 2002 [26])

The March of the Internet

To an outside observer, after 2000 the rationale and financial viability of published directories began to weaken, and by about 2010 became a serious problem.

In the early 2000's a push began in several countries, including the USA, to reduce or prohibit the publishing of the White Pages, mainly on conservation grounds. The USA used about 600,000 tons of paper each year and this was regarded by some as a ?waste?. In 2012, after some North American cities passed laws banning the distribution of telephone books, an industry group took legal action and obtained a court ruling permitting distribution to continue.

Mobile telephones eroded the utility of published directories. These phones provided a comprehensive internal directory for most of the numbers called and could obtain almost all of the other numbers needed on the Internet, including from Telstra's electronic directories. In 2004 Sensis' revenue was reported to be $1.3 billion, accounting for about 6.5 per cent of Telstra's total revenues, and around 10 per cent of its cash flows. (Koutsoukis 2005 [27])

Around 2007 the internet began to significantly affect Yellow Pages revenue and profits. Yellow Pages sales were reported to be falling. To reduce costs Telstra degraded the White Pages and Yellow Pages in a number of ways including a smaller typeface resulting in fewer pages and smaller, lighter books which used less paper. The effect on usage has not been made public, but usage would likely have fallen faster.

In 2012 Sensis reported that it had "been struggling with the move from phone books to online directories ". In the 2011 financial year "... income declined 5.9% ..." but "in the first half of the 2012 financial year sales fell 24.1%" to $528 million. At the same time earnings before interest, tax, depreciation and amortisation dropped by 54.9%. The company noted that "the advertising and directories market's shift to digital marketing is occurring faster than we expected" (Whalley 2012 [28]; Robin 2012 [29]).

In 2013 Telstra reported that Sensis revenue for 2012/13 was $1.33 billion, a decline of 11.7% from the previous year. Print revenue fell by 19.9% to $778 million, comprising a decline of 11.4% in White Pages and a 25.6% reduction in the Yellow Pages (Telstra 2013 [30]).

In 2014 Telstra announced the sale of the White and Yellow Pages directories part of Sensis, about 70% of Sensis? revenue, for $454 million to Platinum Equity, a US-based investment fund. At the announced price the entire business was valued at less than its print revenue for 2013. Telstra retained the Trading Post and the voice services business which included directory assistance. (Pond 2014 [31]; Bingemann 2014 [32])

Most financial commentators expressed the opinion that the sale should have been made at least eight years earlier when the asset was at a peak value, said to be about $12 billion. One opinion was that ?(the Sensis sale) will long be a symbol of one of Telstra?s biggest failures to deliver shareholder value?.

In Conclusion

The story of the Telecom's directory publishing business during Telecom?s 16 years is of managers and staff in the directory area and among the contractors who accepted a challenge, even though the mainstream was unlikely to support them and might in some ways obstruct them. They succeeded.

These people included two managers of directories in the States: Rupert Brown in NSW and Ron Warnock in Queensland. In Headquarters it included people such as Jim Holmes, Martin Turner, Geoff Barkla, Andrea Polmear, Bob Copp, Wayne Jones and John Stanhope.

The managers of the contractors were also crucial to the success of the business. Strong supporters in the Yellow Pages sales contractors were Phil Watts of Edward H. O?Brien, the selling contractor in NSW; Tony Knight and Barry van Ry of Directories Australia, the selling contractor for the other states until 1985; Stan Schmidt of Australian Directory Services; and Bob Johnson of Pacific Access. Among the production contractors, supporters included William Brooks of William Brooks Ltd; Bryan Price of Wilke Ltd; and George Gatehouse of Wilke and McPhersons Ltd. All were enthusiastic and dependable colleagues and innovators.

Telecom's directory publishing business was an "ugly duckling" in 1976; in 1991 perhaps it was a "swan", or even an "eagle"?

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Endnotes

[i] [36] CMP recommended *inter alia*:

"Fundamental to the proposed Customer Services unit is adequate staffing in terms of both numbers and quality of personnel. Achieving such adequacy will, without question, require heavy augmentation of the present Telecommunications Division staff; experienced and talented marketing personnel should be sought from outside the APO to the extent required.

[ii] [37] Price Waterhouse commented, *inter alia*:

(regarding regional organisation)

"The reasons for States based regions are historical . . . . (it is) illogical to arrange regional organisation with Tasmania matched with NSW."

"State Directors have a high level of delegation of responsibility. States operate with considerable independence and effective co-ordination by senior management (in National Headquarters) is difficult."

[iii] [38] The relevant recommendations of the Vernon Report were:

Recommendation: (regarding regional organisation) Pages 248 & 249

"(a) new regional organisation, as outlined, should be established for the administration of the telecommunications service; the boundaries of these administrative areas should be determined by the business characteristics of the telecommunications network rather than by State boundaries."

Recommendation: (regarding Customer Services) Chapter 11.20, Page 247.

"To take responsibility for marketing and customer related programs, an operational unit is proposed under a Director Customer Service". This unit represents a markedly upgraded and re-organised version of the existing Telecommunications Division within the APO Central Office. Its purpose is to improve co-ordination between marketing and engineering by bringing a marketing viewpoint into technical decisions. Product marketing analysis would be strengthened to provide better sources of marketing data, including tariff analysis. The consultants make the point that adequate staffing in terms of numbers and quality of personnel is fundamental to the proposed Customer Services unit and that experienced marketing personnel should be sought from outside the APO.

[iv] [39] Product Costing Report: Directory Publications Revenue = $26.4 m; Expenses = $28.2 m; Surplus/ (Deficit) = ($1.8 m); Investment in Fixed Assets = $0.5 m.

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History of Telstra's directories business	Directories	History	Publishing
[44]	[45]	[46]	[47]

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