PRENTICE COMPUTER CENTRE

ANNUAL REPORT 1985

PRENTICE COMPUTER CENTRE MANAGEMENT COMMITTEE 1985

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1.0   INTRODUCTION

The Prentice Computer Centre provides support for teaching, research and administration for the University of Queensland and Griffith University. The extensive data communications networks on both campuses are linked by a high speed link operating at 2 million bits/second. Users of the 1100 terminals connected to the network have access to large mainframe computing power on IBM 3083E, DEC KL10 and DEC VAX 11/780 systems as well as to specialised facilities such as high resolution plotters, high speed and letter quality printers and a photo-typesetter. Sixty smaller computers are installed in the departments of both Universities and most are also connected to the network. Users can also access external networks such as AUSTPAC (Telecom's Australian Data Switched Network), the CSIRO network and through the OTC's MIDAS service, most overseas scientific networks. A Computervision system provides CAD/CAM facilities to a number of departments and supports a printed circuit board design service.

In addition to central computer and network services, the Prentice Computer Centre provides support for departmental computer systems through hardware and software maintenance services, general consulting and central purchasing services. A pool of Analyst/Programmers is available to perform system development under contract on behalf of users. Short training courses for University staff and post-graduate students are available throughout the year.

2.0   COMPUTING AND NETWORK DEVELOPMENTS

Following a period of insufficient central computing capacity, the new IBM 3083E system became fully operational in 1985. This system almost doubled the amount of available computing resources, the usage in 1985 increased well beyond the average long term growth rate of 30% and the system is often operating at close to maximum capacity. The IBM 3083E has provided a level of support to research projects on a scale that was not possible with previous systems. A further benefit is that students can now receive instruction in the use of an advanced relational data base system. The IBM 3083E was planned to operate with minimum additional recurring costs. As a result, it was possible to lower the charge to users and to simplify the charging procedure.

The DEC PDP10 and DEC VAX 11/780 systems continued to operate at full capacity and an additional VAX 11/750 system was installed to meet the requirements of the Department of Computer Science.

Emphasis continued to be placed on upgrading the Campus Data Network. The number of lines installed increased by 70% with the major emphasis on higher speed transmission. During the year, tests were conducted to allow the "ETHERNET" local area network system operating at 10 million bits/second to be upgraded from coaxial cable to fibre optic transmission. This will improve security and provide immunity from lightning strikes.

A 2 million bits/second data communications link was installed between Griffith University and the Prentice Computer Centre, the local area network at Griffith University was extended by the installation of 240 lines.

The Centre's dial-up facilities were enhanced to meet increased demand for access from homes of staff and students via the switched telephone network. The use of the X.25 gateway to Telecom Australia's AUSTPAC service and to overseas networks more than doubled during 1985. The installation of the gateway lowered the cost of access to international networks and provided higher speed transmission. The Centre registered as a service provider on the Telecom Australia VIATEL system.

Systems development and programming services were provided under contract to a wide variety of teaching, research and administrative projects for both Universities. The development phase on an energy management project for the University of Queensland was completed. The Centre continued to provide its specialised services at contract rates to external organisations. Following a feasibility study, the Centre gained an ADAB funded project for an enrolment system for the Papua New Guinea University of Technology at Lae. The Prentice Computer Centre and the Queensland Tertiary Admissions Centre co-operated to revise the admissions system to take advantage of the latest technology in relational data base and communications. A computer based system was developed to support the new Equine Blood Typing Research Laboratory. A review of PDP11 systems was conducted on behalf of the Queensland Electricity Commission and as part of the Aboriginal Health Programme, a project to support the study of immunisation against Hepatitis B was commenced. The new Printed Circuit Board (PCB) design service based on the Centre's Computervision CAD/CAM system is now being used under contract by one Queensland based company.

Hardware maintenance contracts were continued for 35 mini-computers and 500 terminals. Personal Computers represented the largest growth area with 140 being ordered by the Centre in 1985 on behalf of departments. A Personal Computer Support Group has been established to enable staff and students to purchase personal computers at the same level of discount as the University. Warranty, maintenance and software services will be provided by this Group.

Contracts were negotiated with vendors to ensure that the Universities obtained favourable prices and conditions on hardware and software purchases. During 1985, 640 orders to a value of $990,000 were placed on behalf of the departments of the two Universities.

The short courses run by the Prentice Computer Centre for University staff and post-graduate students contribute to the effective use of the University's computing resources. In 1985, 96 short courses with a total enrolment of 694 covered introductory and advanced subjects.

3.0 FINANCIAL AND OPERATING RESULTS

In 1985 it was necessary to meet the full costs of hardware maintenance and software licences for the IBM 3083E systems as well as significant staff costs for development work associated with its establishment. Operating costs increased by 14% to $2,562,000 and income increased by 10% to $2,513,000 over the previous year. A loss of $49,000 representing 2% of total expenditure was recorded for the year. This is covered by the reserve of $164,000 from past operating surpluses. The result is a significant improvement on the approved 1985 Budget deficit of $156,000.

Revenue from the usage of central computers rose by 10%, revenue from contract programming by 18% and revenue from hardware maintenance by 24%. The salary costs rose from $1,770,000 in 1984 to $1,957,000 in 1985 (10.6%) and non-salary costs rose from $472,000 to $605,000 (28%). The latter increase reflects the full year costs for hardware maintenance and software licences for the IBM 3083E.

Usage of the KL10 and VAX systems changed very little from that of the previous year. The major increase in usage was on the IBM 3083E system where revenue increased from $32,000 in 1984 to $201,000 in 1985.

Revenue flowing from the General Fund of the University contributed to 50% of the operating costs of the Prentice Computer Centre. This represented 1.1% of the total General Funds of the University.

A surplus of $76,740 was achieved for Campus Data Network operations. This surplus is committed for repayment of the establishment loan.

4.0 STAFFING

All labour hours worked by Prentice Computer Centre staff are costed to approximately 300 activities. Centre staff worked 130,519 hours in 1985 and the distribution over major activities of the Centre was as follows:

	%
Executive, Common Services & Overheads	30
Central Computer Operations	19
Applications Development	15
Software Maintenance and Development	12
Engineering and Communications	11
Distributed Computing	13
TOTAL	**100**

As mentioned previously in this report, the costs other than salary have increased significantly and there is little opportunity for savings. In order to reduce operating deficits, it has been necessary to hold staffing levels down despite increases in workload in all areas of the Centre. In 1985, the Centre had 9 resignations (14% wastage) and 6 cases of long service and special leave, totalling 28 man months. This further increased the staff management problem. Nevertheless, the staff have responded under very frustrating conditions to meet user requirements.

It is appropriate in concluding this report that I thank the Management and Staff of the Prentice Computer Centre for their efforts during 1985 and for the co-operation and the understanding of our users in what was operationally a very difficult year.

Alan W. Coulter
Director

Attach:

FINANCIAL STATEMENT

PRENTICE COMPUTER CENTRE OPERATIONS ACCOUNT SUMMARY - 1985

REVENUE ($000's)	Budget 1985	Actual 1985
Computer Use:		
Internal University of Qld	1210	1092
Internal Griffith University	190	284
Other Educational Institutions	7	8
External	190	261
CAD/CAM System Use:		
Internal Users	30	32
Others	5	–
Programming & Hardware Services	521	534
Cash Sales	7	6
Operational Services - Griffith Univ.	22	24
Charge to General Fund for approved services rather than charges to individual users -		
University of Queensland	185	185
Griffith University	25	25
Network Development charged to CDN	31	15
Transfer to Reserve Fund	156	49
	2579	2515

EXPENDITURE ($000's)	Budget 1985	Actual 1985
Net Salaries (1)	1922	1910
(actual salary costs $1 957 077		
less Salary Supplementation $47 050)		
Maintenance	170	146
Contract Equipment Maint.	112	128
Software Charges	132	118
Electricity	100	104
Stationery	65	65
Insurance	20	14
Air Conditioning & Maintenance	15	9
Travel	10	9
Publications	20	1
Magnetic Tapes & Packs	7	8
Furniture & Fittings	6	3
	2579	2515

(1) Budget estimates are based on expected December 1984 rates - Award & CPI increases being covered by Salary Supplementation of $47 050 calculated by Bursar's Office.

(2) Outstanding Debtors 31.12.85 = $103 116   Outstanding Orders 31.12.85 = $48 584

PRENTICE COMPUTER CENTRE OPERATIONS ACCOUNT SUMMARIES - 1981-1985

REVENUE ($000's)	1981	1982	1983	1984	1985
Computer Usage: (1)					
Internal University of Qld.	660	785	896	1104	1092
Internal Griffith University	67	100	145	209	284
Other Educational Instit.	13	8	10	9	8
External	170	225	265	212	261
CAD/CAM System	-	-	-	-	32
Contracts - User Services & Equipment Maintenance	319	315	336	445	534
Sales of Software	5	-	-	-	-
Cash Sales	8	7	7	3	6
Operational Services - Griffith Univ.	-	-	-	-	24
Salary Supplementation	138	125	44	107	47
Charge to General Fund for Approved Services - Univ. of Qld.	60	105	116	167	185
- Griffith Univ.	7	10	14	23	25
Network Development - CDN	-	-	13	-	15
Transfer from Reserve Fund	-	-	14	-	49
	1147	1681	1860	2279	2562

EXPENDITURE ($000's)	1981	1982	1983	1984	1985
Gross Salaries (2)	1173	1317	1508	1770	1957
Maintenance	89	129	173	254	392
Stationery	30	46	51	57	65
Electricity	62	64	73	105	104
Insurance	11	11	12	18	14
Furniture & Fittings	2	2	2	1	3
Air Conditioning Maint.	11	18	10	11	9
Travel	2	10	10	10	9
Publications	30	22	20	8	1
Rentals	6	3	-	-	-
Magnetic Tapes & Packs	1	1	1	8	8
Transfer to Reserve Fund	30	58	-	37	-
	1147	1681	1860	2279	2562

(1) Low priority terminal rate reduced from 50% to 40% of prime rate from 1.5.80; VAX 11/780 system introduced at 3/4 KL10 charge rates on 17.8.81; VAX 11/780 charge rates reduced by 15% from 1.2.82; KL10 primary memory charges reduced to 1/3rd of KL10 equivalent charges; KL10 primary memory charges reduced by 10% and charge rates reduced by 15% from 1.3.83; introduction of User Kit charging on IBM from 1.8.84; charge for file I/O reduced.

(2) Actual staff costs including payroll tax, overtime, penalty payments and other staff costs.

REVENUE EARNED 1981 TO 1985   ($000's)

| | UNIVERSITY OF QLD | | | GRIFFITH UNIVERSITY | | | | | | | |
YEAR	ACADEMIC	ADMIN	AFFIL.	ACADEMIC	ADMIN	AFFIL.	OTHER EDUC INSTITUT.	EXTERNAL	CASH SALES	HARDWARE	TOTAL
COMPUTING AND CASH SALES											
1981	306	269	85	48	22	9	13	173	8	–	933
1982	335	351	99	56	39	4	8	226	7	–	1125
1983	361	450	87	60	72	26	10	265	7	–	1338
1984	421	590	78	68	85	56	9	212	3	–	1522
1985	428	601	77	77	87	133	8	258	6	–	1675
CONTRACTS											
1981	66	3	55	1	34	–	–	46	–	–	205
1982	60	2	32	2	64	1	1	15	–	–	177
1983	55	12	8	2	54	49	2	9	–	–	191
1984	46	61	6	11	60	73	–	8	–	–	265
1985	49	21	6	11	76	146	–	3	–	–	312
HARDWARE SUPPORT											
1981	–	–	–	–	–	–	–	–	–	114	114
1982	–	–	–	–	–	–	–	–	–	138	138
1983	–	–	–	–	–	–	–	–	–	146	146
1984	–	–	–	–	–	–	–	–	–	179	179
1985	–	–	–	–	–	–	–	–	–	222	222
TOTAL											
1981	372	272	140	49	56	9	13	219	8	114	1252
1982	395	353	131	58	103	5	9	241	7	138	1440
1983	416	462	95	62	126	75	12	274	7	146	1675
1984	467	651	84	79	145	129	9	220	3	179	1966
1985	477	622	83	88	163	279	8	261	6	222	2209

Notes:

1. Figures refer to revenue earned during the year. There may be variations between these and revenue brought to account in expenditure and revenue statements.
2. Figures do not represent relative work load on computers due to variations in use of priorities, changes to charge rates and charge factors for different classes of users. External users are charged at 3.7 times the internal rate and other educational institutions at 1.7 times the internal rate.
3. UQ Affiliated figures for 1982 includes $64 000 for QTAC, whilst QTAC revenue of $73 000 for 1983, $123 000 for 1984, $262 000 for 1985 is included with Griffith University Affiliated