PRENTICE COMPUTER CENTRE

BUDGET REPORT 1988

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BUDGET 1988

1.00 1987 FORECAST

1.01 As mentioned in the budget submission for 1987, the major influence on the 1987 result would be the additional pay period ($82,000) and the additional cost of operating the new mainframe computer for administrative work ($250,000). Despite higher usage during the conversion phase of administrative systems, the revenue from that source for 1987 has been pegged at 1986 levels (adjusted by CTEC indexes). The opportunity for revenue growth on other central systems was limited by the availability of computing capacity and the situation of financial stringency in departments of the Universities. Our external income from computer use has also been reduced as users, mainly State Government departments, move work to their own computer systems.

1.02 A careful control has been maintained over costs, particularly the major component of staff cost. The Centre is currently holding more positions vacant than projected in the 1987 budget submission but an abnormally high rate of wastage has increased payouts for long service leave and accumulated recreation leave. Nevertheless, staff costs in 1987 should be $75,000 below the budget figure to offset shortfalls in computing revenue. The forecast position for 1987 is that the Centre should be close to the approved budgeted deficit of $179,000. This will be covered by the transfer of funds from the Reserve Account.

2.00 1988 BUDGET SUMMARY

2.01 There are many unknowns in framing the 1988 Budget. If a new central system is approved as a first stage of replacement for the ten year old PDP10 (KL) computer system, then capacity will be available to encourage positive marketing of the Centre's services. Computing remains a growth area in the University and, whilst many applications are served by distributed computing systems, there remains a strong demand for central computing services which is limited by availability of computing capacity and by the Departments ability to pay. It may be that, in 1988, there may be overall a slightly better financial climate in the University. We can expect some loss of revenue from Griffith University in 1988 as they plan to install a separate computer system. The Centre will be required to continue to meet the high costs of operation of the KL10 computer system.

2.02 A conservative approach to the 1988 Budget has been adopted. A total of 15 staff positions will be held vacant unless revenue is higher than budgeted. Most of the expenditure on "other than salary" items is payable to external suppliers for hardware maintenance, software licences, air conditioning maintenance, electricity, insurance, Telecom data links, and spare parts.

There is little opportunity to make savings on these items and, indeed, external suppliers have tended to increase costs at around 9% per annum. The net result of the 1988 Budget is an expected deficit of $172,000, of which $106,000 will be offset from the Reserve Account.

3.00 APPROVED SERVICES CHARGED TO THE GENERAL FUND RATHER THAN TO INDIVIDUAL USERS

3.01 In 1979, consistent with the recommendations of the Holmes Committee Review of Computing Resources, approval was given to provide funding for positions to provide services required by the University in a corporate sense but difficult to charge to individual users. Additional staff were approved in 1982 and again in 1984. A total of seven positions are now funded for the following functions:

(a) Computer Education (2 positions). Short courses are provided to university staff and post-graduate students. Seventy courses attended by 568 staff and post-graduate students were offered in 1986. In 1987, additional courses have been introduced to assist university staff to make more effective use of personal computer systems.

(b) Support for Departmental Systems (4 positions). These positions cover advice on procurement of equipment and software on behalf of departments, ordering and testing of equipment, contract negotiations with suppliers, consulting support on departmental hardware, software and networking. With the substantial increase in departmental personal computer systems, the work in this area has increased substantially over the past two years and indications are that the demands on our specialised services will further increase in 1988. The Computing Policy Committee has commended our efforts in this area and requested that resources should be directed to provide further support for personal computers.

(c) Systems and Programming Consulting (1 position). This position was established to provide systems and consulting support to departments, particularly for research projects (up to a maximum of one week in any particular case). Work in this area has increased with the special allocations of computer time by the Research Committee on the IBM 3083E system.

3.02 The computing environment of the University has changed significantly over the past five years. Staff of the Computer Centre have upgraded their knowledge in both software and applications beyond central computer facilities. Many staff now own their own personal computer systems. The Director, Deputy Director and Section Leaders are spending much more of their time now on wider aspects of the development of computing and networking across the campus. The Director and Deputy Director have been involved in the specification, tender assessment and

contract negotiations of a number of significant purchases of departmental computers.

3.03   It is in the interests of the future development of computing across the University that these services should continue. Indeed, except for the need to maintain a tight budget, it would be appropriate to increase resources in this area. The charge for the University of Queensland in 1988 has been increased only by incremental staff costs but following a review, the charge to Griffith University has been reduced to $18,000.

4.00   PRICING - CENTRAL COMPUTER FACILITIES

4.01   A problem of pricing central computer facilities is that perceived cost to end users is high in comparison with non-costed (on an equivalent basis), non-charged departmental facilities. In the 1987 Budget, it was mentioned that the Computing Policy Committee intended to conduct a review of the costs of departmental capacity. This has not occurred. The costs of operation associated with staffing, hardware maintenance, software licences, air conditioning maintenance, consumables, electricity etc. has increased by an overall average of 7% as a result of external factors. Whilst an increase in Prentice Computer Centre charges to meet such cost creep may increase the propensity for departments to install their own computing facilities at unknown real and imputed costs in the future, there would not appear to be a budget alternative but to increase charges to meet additional costs.

4.02   The most appropriate price mechanism would be to relate adjustments to the departments ability to meet increases as well as the Centre's cost structure. This would suggest that CTEC indexes should be used, weighted by the proportion of PCC salary costs (75%) to non-salary costs (25%) for central computer operations. The percentage variation would be the index movements for the previous year as at March (having regard to availability of published figures). A similar basis has been used in respect of pricing of the Facilities Management Charge for the Administration computer. The calculation results in an increase of 6.375% and it is recommended that base rate charges for the IBM system, the VAX 11/780 system and for use by other than Administration of the VAX 8650 system be increased by 6%.

4.03   It is not proposed to increase charges for the KL10 computer. This system is ten years old and pricing is non-competitive in comparison with the modern systems. The Centre must continue to operate the KL10 until Administrative tasks are converted by the University of Queensland and Griffith University.

4.04   IBM Kit Charging System. In the 1987 Budget, approval was given to introduce maximum limits in kits for CPU and disk/input subject to adjustment during 1987 with the aim that no user would pay more than the 1986 charge + 10%. This proved to be a difficult exercise but the Centre certainly gained better information on the requirements of users. In summary, the

following needs are evident:

(a)   Some users were prepared to pay more for an unrestricted kit at normal priority;

(b)   Others would prefer a lower priority at a lower price; and

(c)   Still others (mainly intensive computation work) would accept a very low priority at a much lower price;

(d)   A number of departments require students to be familiar with industry accepted applications packages operating on the IBM system. There is a need for low cost class kits for credit courses.

(e)   The kits for direct sale to students were not sufficiently promoted or supported by the Centre.

(f)   Changes on likely Prentice Computer Centre charges should be advised to users at an earlier time for budget planning purposes.

4.05   The following adjustments have therefore been made to the IBM kit structure to be effective from 1.1.88:

(a)   The range of kits with limits on CPU and I/O operations will be increased. The I/O operations limit for 2M/byte kits will be increased by 50%.

(b)   Non-restricted kits will be available at normal priority.

(c)   Non-restricted kits at discounts of 25% for low priority and 70% for very low priority will be available. Whilst these kits can be used during prime shift, the response and job elapsed time will be better in other periods.

(d)   Low cost Student Class kits at normal priority will be introduced. Indicative prices are - a 1.5M/byte kit with CPU limit of 40 CPU mins/semester, 200,000 I/O operations/semester and 1 cylinder disk space will cost $27.75 per student per semester; a 2M/byte kit with CPU limit of 200 CPU mins/semester, 600,000 I/O operations/semester and 5 cylinders of disk space will cost $67 per student per semester.

(e)   The cost of kits for direct sale to students will be increased from $40 to $45 per semester to take into account an initial allocation of $5 value of printing. Additional printing must be paid in advance. The memory allocation will be increased to 1.5M/bytes and the I/O operations to 200,000 per semester.

A schedule is attached in Attachment F.

5.00 STAFF BUDGET

5.01 With the possible loss of some computing revenue from Griffith University and external clients, overall revenue in 1988 is expected to increase by only 2%. It should be noted, however, that the actual work of the Centre will not decrease as a result of such losses of marginal revenue. Indeed, work in areas which are staff intensive are expected to increase. Nevertheless, without reduction in staff costs, it will not be possible to maintain a manageable deficit.

5.02 Staff costs in the 1988 Budget reflect a decrease in real terms of 4%. This will have some adverse impact on grade-of-service and staff morale.

6.00 NON-SALARY COSTS

6.01 These mainly reflect existing contracts with external suppliers and there is not a great deal of opportunity for savings, although of course costs will be kept under careful review. Costs of equipment maintenance, software licences and electricity have been increased to reflect costs over the full year for equipment installed in 1987 and to cover the recurrent costs associated with the installation of an additional computer as the first stage replacement of the KL10 computer.

7.00 CAMPUS DATA NETWORK - FORECAST 1986 and BUDGET 1987

7.01 This group is responsible for installation and maintenance of data lines, line drivers and multiplexers on the campuses of the University of Queensland and Griffith University, plus the same activities at off-campus sites.

7.02 The 1985 decision to equalise off-campus departments communications costs has meant that, in 1987, the group has met Telecom costs to these sites of some $20,000. Forecasts for 1987 also include the payment of materials, optical fibre cables, and parts for the Audio-Visual project. Only these costs will be reimbursed in 1987. Payment of staff costs will be subject to acceptance test of the system in 1988. Cable costs continue to increase as they fluctuate due to the use of the "AEEMA Cable Industry Index" used by suppliers.

7.03 Other electronic parts used by the group are subject to currency variations based on the Australian dollar's world market fluctuations. Engineering support charges have risen because of the increasing involvement by PCC engineers in the development of new technology for the group and the increasing use of optic fibre, multiplexers and MICOM equipment.

7.04 The forecast surplus of $6,000 will allow the final repayment of the loan ($2,394) to be made in 1987 as budgeted at the creation of the group.

7.05 For the 1988 year, the Budget shows a surplus of $52,000 after allowing for further purchases of electronic parts and materials for the Audio-Visual project, increases in normal materials, rising subsidisation of the Telecom charges for off-campus departments, and general increases in salaries and normally required materials and parts for new installations and maintenance of existing services.

8.00 CONCLUDING REMARKS AND RECOMMENDATIONS

8.01 Whilst the Centre will continue to use its resources to advance developments in - networks, support for departmental systems and central computer services, the 1988 Budget is framed in a situation of financial stringency forcing a steady state approach.

8.02 It is recommended that:

(a) The Prentice Computer Centre General Operations Budget 1988 (Attachment A) be adopted;

(b) The Campus Data Network Budget 1988 (Attachment E) be adopted;

(c) The base level charges of the IBM 3083E, VAX 11/780, and academic use of the VAX 8650 be increased in accordance with variations of the CTEC indexes between March 1986 and March 1987 (i.e. 6%) from 1.1.88;

(d) The structure of the Kit Charging System for the IBM 3083E be varied by the introduction of low cost student kits for credit courses, low priority unrestricted kits and that the resource limits and charges documented in Attachment F be adopted.

Alan W. Coulter
Director

Attach:

PRENTICE COMPUTER CENTRE BUDGET SUMMARY - 1988

A

Income

	ACTUAL 1986	BUDGET 1987	FORECAST 1987	BUDGET 1988
Central Computer Use:				
University of Queensland	1130	1235	1200	1296
Griffith University	353	335	337	290
Other Educational Instit.	19	20	10	10
External	2293	270	230	200
CAD/CAM System Usage:				
Internal Users	38	30	30	30
Other Users	14	10	19	25
Contracts:				
Applications Development	410	375	370	410
Distributed Computing	246	285	205	220
Campus Data Network	4	30	45	40
Operational Services - GU	5	-	-	-
Communications	13	-	22	40
Cash Sales & Courses	8	5	8	5
Approved Services charged to General Fund - not to individual users:				
- Univ. of Qld contribution	195	250	250	261
- Griffith Univ. contribution	27	35	35	18
Salary Supplementation from General Fund	39	-	31	-
Expected Loss Transfer to Reserve Fund	-	179	171	172
	2794	3059	2963	3017

Expenditure

	ACTUAL 1986	BUDGET 1987	FORECAST 1987	BUDGET 1988
Salaries	1916	2175	2100	2015
Maintenance (Spares Telecom & General)	159	180	175	170
Contract Equip. Maint	184	259	259	370
Software Charges	140	170	160	175
Stationery	62	75	80	85
Electricity	112	122	120	132
Insurance	15	20	16	20
Magnetic Tapes & Disk Packs	15	13	7	5
Furniture & Fittings	1	5	3	5
Air Conditioning Maintenance	16	15	15	15
Travel	21	15	25	20
Publications	3	10	3	5
Labpak Patent Costs	12	-	-	-
Expected Surplus Transfer to Reserve Fund	138	-	-	-
	2794	3059	2963	3017

REVENUE EARNED JANUARY-AUGUST 1981-1987   (000's)

YEAR	UNIVERSITY OF QLD			GRIFFITH			OTHER EDUC. INSTIT	EXTERNAL USERS	CASH SALES	TOTAL
	T & R DEPTS	ADMIN	AFFIL	SCHOOLS	ADMIN	AFFIL				
1981	179	178	49	30	16	4	8	118	7	589
1982 *	199	248	57	35	30	4	5	148	6	732
1983 *	205	276	67	38	47	8	6	182	5	834
1984 *	238	389	56	40	57	25	6	142	2	955
1985 *	244	407	55	50	58	67	4	179	1	1065
1986 *	244	460	33	52	72	93	14	194	1	1163
1987 *	236	730	24	72	79	19	9	166	1	1336

*Grants for Innovative Teaching & Research projects not yet brought to account but in 1985; 1986 and 1987 includes IBM 3083E and VAX 11/780.

CONTRACT REVENUE EARNED JANUARY-AUGUST 1981-1987   (000's)

YEAR	UNIVERSITY OF QLD			GRIFFITH			OTHER EDUC. INSTIT	EXTERNAL USERS	TOTAL
	T & R DEPTS	ADMIN	AFFIL	SCHOOLS	ADMIN	AFFIL			
1981	30	2	36	1	21	–	–	26	116
1982	46	2	22	2	48	–	–	11	131
1983	19	6	6	1	33	19	1	6	91
1984	36	22	5	6	43	30	–	6	148
1985	35	17	5	6	56	107	–	2	228
1986	29	21	9	2	61	39	10	6	177
1987	33	21	17	3	81	9	4	8	176

HARDWARE MAINTENANCE EARNED 1981-1987

	$
1981	114,000
1982	138,000
1983	146,000
1984	179,000
1985	222,000
1986	245,000
1987	205,000

PRENTICE COMPUTER CENTRE STAFF BUDGET 1988

STAFF ESTABLISHMENT $000's

Projected cost of a full year of existing Staff Establishment (salary levels as at 31 Aug 1987)	2074
PLUS: Holiday Loadings	28
Payroll Tax and Workers Compensation	114
Superannuation Contribution	123
Overtime, Shift Penalties and On-Call Allowances	20
	2359
LESS: Savings on Vacancies*	344
	2015

* The following positions will be held vacant in 1988 pending regular reviews of the revenue position:

    4 Operators

    4 Technicians

    1 AO1

    6 Programmers

    + Allowance for delay in filling vacant positions

D

1987 BUDGET REVIEW AND 1988 BUDGET

POSITIONS

SALARY RATES & LOADINGS
$

a) Computing Education Officer –
approved 1979
(Training of Academic Staff and
Post-Graduate Students)   48,699

b) Senior Systems Programmer –
approved 1979
(Systems & Programming, consulting
for Academic Depts)   48,699

c) One-half Systems Programmer –
approved 1979
(Distribution & support and general
assistance on Mini/Micro software
for departmental systems)   21,109

d) One & one-half Systems Programmers –
approved 1982
(Distribution, support & general assistance
for Mini/Micro software for
departmental systems)   63,326

e) One-half Senior Systems Engineer –
approved 1982
(Investigations, procurement, installations,
testing etc., of departmental hardware)   24,350

f) Assistant Systems Programmer – assisting
Computing Education Officer – approved
1984 Budget
(Training of Academic Staff and Post-Graduate
Students)   36,433

g) Assistant Systems Programmer/Engineer –
approved 1984 Budget
(Distribution, support, general assistance
on software for departmental systems,
investigations, procurement, installation
testing, etc., of departmental hardware)   36,433

                                                                $279,049

CAMPUS DATA NETWORK BUDGET SUMMARY – 1988

REVENUE

(000's)

	ACTUAL 1986	BUDGET 1987	FORECAST 1987	BUDGET 1988
Rental, New Installations, and Contract Services	221	208	286	364
Transfer surplus to A/C 105622 as repayment	–	–	–	–
	221	208	286	364

EXPENDITURE

(000's)

	ACTUAL 1986	BUDGET 1987	FORECAST 1987	BUDGET 1988
Salaries	53	62	61	70
Materials, Telecom Audiovisual Project etc.	95	100	172	200
Vehicle Running Costs	2	1	2	2
PCC Engineering Support	4	30	45	40
Purchase new van	5	–	–	–
	62	15	6	52
	221	208	286	364

PRENTICE COMPUTER CENTRE - BUDGET 1988

PRICE SCHEDULE FOR IBM 3083E KITS FROM 1.1.1988

1. Student Credit-Class Course Kits

Memory	Priority	CPU Limit (mins/sem)	I/O Limit ('000 ops/sem)	Disk Cylinders Normal	SQL	Price ($)
1.5	Normal	40	200	1	0	27.75
1.5	Normal	40	200	1	1	38.50
2.0	Normal	200	600	1	0	50.75
2.0	Normal	200	600	5	0	67.00

Notes:

1. These are semester kits for credit courses only.
2. Charges and limits are per semester.
3. Charges are for processing only. Printing, tape mounts etc are additional.

2. Student Cash Kits

Memory	Priority	CPU Limit (mins/sem)	I/O Limit ('000 ops/sem)	Disk Cylinders Normal	SQL	Price ($)
1.5	Normal	40	200	1	0	45.00
1.5	Normal	40	200	1	1	49.75

Notes:

1. These are semester kits for cash sale to undergraduate and post-graduate students.
2. Charges are for processing but include printing to the value of $5. Additional printing, plotting etc is charged at standard rates.
3. Charges and limits are per semester.

IBM PRICE SCHEDULE - 1988 (contd)

3. Unrestricted Kits

Memory (M Bytes)	Priority	Price ($ per month)	% Change (from 1987)
1.5	Normal	187	-6.5%
1.5	Low	140	0.0
1.5	Very Low	56	new
2.0	Normal	265	+6.0%
2.0	Low	199	-0.5%
2.0	Very low	80	new
3.0	Normal	292	new
3.0	Low	219	new
3.0	Very low	88	new
4.0	Normal	321	+7.0%
4.0	Low	241	-3.6%
4.0	Very low	96	new
5.0	Normal	353	new
5.0	Low	265	new
5.0	Very low	106	new
6.0	Normal	388	+10.9%
6.0	Low	291	-3.0%
6.0	Very low	116	new

Notes:

1. Low priority attracts a 25% discount off normal priority.
2. Very low priority attracts a 70% discount off normal priority.
3. Each additional MByte of memory in excess of 2MBytes represents a price increase of 10%.
4. Clients will now be able to purchase 3MB and 5MB kits.
5. Disk storage (mini-disks and SQL database space) is not included in the above prices.

4. Restricted Kits

Memory (MBytes)	Priority	CPU limit (mins/month)	I/O limit ('000 ops/ month)	Price ($/month)	% Change (from 1987)
1.5	Normal	10	50	43	+7.5
2.0	"	50	150	80	+6.7
3.0	"	75	200	120	new
4.0	"	100	250	159	+6.0
5.0	"	175	375	212	new
6.0	"	250	500	265	+6.0

Notes:

1. Clients will now be able to purchase 3MB and 5MB kits.
2. The I/O limit for the 2MB kit has been significantly increased from 100,000 to 150,000 I/O operations per month.
3. Clients who exceed limits will be denied access to the system for the remainder of the month. The clients can elect to upgrade to an unrestricted kit for the incremental cost of an unrestricted kit.
4. Disk storage (mini-disks and SQL database space) is not included in the above prices.

5. Charges for On-line Disk Storage

Disk storage is allocated in two ways:

Mini-disks (600 Kbytes per unit) and
SQL database space (512 Kbytes per unit).

Storage can be provided in increments of one storage unit. Examples of charges are as follows:

Units	$ per month
1	4.77
2	9.17
3	13.27
4	17.15
5	20.84
10	37.38
25	78.08
50	135.10
100	234.89
250	495.80
500	884.15
1000	1593.37