UNIVERSITY OF EDINBURGH

EDINBURGH   REGIONAL   COMPUTING   CENTRE

(Report of the Edinburgh Computing Committee for
the year ending 31st July 1984)

(17th Report)

REPORT OF THE EDINBURGH COMPUTING COMMITTEE FOR THE YEAR ENDING 31 JULY 1984

1. Mainframe replacement strategy

The Committee's main preoccupation has been the continuing discussion
of its mainframe replacement strategy following a thorough investigation
by a Working Party. The University's main computers have been saturated
in 1983-84. The figures on EMAS use are contained in Appendices A,B and
C. Overall, there is no growth over the previous year once the effect of
higher charges has been discounted. Within that static overall picture,
some groups, notably the Faculty of Arts, the Secretary's Office and the
Library have grown significantly but they remain relatively small users;
CAST has become a major user, with an increase of more than 80% over the
previous year, partly as the result of the transfer of staff from ERCC.
There is no prospect of additional computing power before Easter 1985.

The University was due in 1985 for a major enhancement to its main
computers funded by the Computer Board. In line with its previously
reported strategy, the Committee proposed a system with IBM-type
architecture running the University's own operating system - EMAS. This
would have replaced both the existing main computers and provided about
twice the power of the present service. The cost at £1.2m was more than
the University would normally expect from the Board at this point in time
but that figure took account of recurrent savings to the Board from the
closure of the existing service. In the event, the Board was not
prepared to take recurrent savings into account and set a limit of £750k,
nor was the Board keen to see a continuation of EMAS in place of a
manufacturer's operating system. Protracted negotiations followed and
the Board finally agreed to a second hand Amdahl V7 costing £570k
including peripherals. The machine is of IBM-type architecture and will
run EMAS. It will operate as an addition to, rather than a replacement
for the existing service, although the total power available in the old
and new machines will be about twice the present system as originally
planned. The machine will be delivered shortly and it should be possible
to provide a service to users by Easter 1985. The remaining £180k of the
Board grant is potentially available for investment between now and 1987
and the Committee will be considering how it might be used.

The final outcome is reasonably satisfactory from the University point of
view. The main disadvantage is that the existing computers will have to
continue in service for the time being; however this will make posible
the continuation of the two DAPs which are hosted on the 2976s. Most of
the savings which would have accrued to the University (as well as to the
Board) from the closure of the mainframes will not now be available
although it should still be possible to close the Bush estate site and
transfer its operations to King's Buildings. The 2976 computers are
becoming increasingly unreliable and it may not be practicable to keep
them running until 1990, the date when the University can expect its next
major investment from the Computer Board.

Supplementation of the main computing service formed only part of the
Committee's mainframe replacement strategy. The other components,
equally important, are support services for the medium sized and personal
computers used increasingly in departments. This is discussed further
under 3 below but it is worth mentioning here that part of the
application packages service has been switched from EMAS to a VAX/VMS
machine which may be extended to become the main provider of this
component of the service.

2. **Computers in teaching**

A Working Party of the Computer Board highlighted the need for universities to pay more attention to the use of computers in teaching; Professor Michaelson was a member of that Working Party. The Government was not prepared to accept the Computer Board's recommendation that universities should be provided with extra money for computers in teaching. Nevertheless the Board has been able to find about £1m over two years to help promote developments. The University was unsuccessful in its application for £200k for staff and equipment to develop software for teaching but the application will be considered in a second round in November 1984. Whether or not the University succeeds in obtaining a special Computer Board grant, the use of computers in teaching is likely to become increasingly significant. The ECC reported its views on the potential importance of such developments and Academic Group is also considering the issue.

3. **Review of distributed systems**

Following the review of mainframe replacement strategy, ERCC, CAST and the DPU are jointly conducting a more detailed reappraisal of support for distributed systems. The Committee sees support for departmental medium sized and personal computers as critical and there will be substantial capital investment to ensure that the central computing services have machines representative of those used in departments. The results of the review of distributed systems policy are not yet available but it seems likely that on microcomputers the support strategy, based at present on the UCSD p-system, will be diversified and that on medium sized computers, the VMS and UNIX services will be strengthened.

4. **Centre for Applications Software and Technology**

The review of the Program Library Unit was reported on last year. Under its new Director, the Unit has been expanded, as recommended by the review body, with the transfer of staff involved in database work from ERCC. To reflect its increased role, the Unit's name has been changed to the Centre for Applications Software and Technology.

5. **Recurrent finance**

The financial statements for ERCC and CAST for 1983-84 are contained in Appendices D and E respectively.

The financial outturn for ERCC has been rather better than expected, in spite of the continuing decline in income from Treasury and Research Council users. There was a surplus for the year of £126,635 which reduces to £30,635 once the normal transfer to capital expenditure has been deducted. This compares to a deficit of £122,425 after the transfer to capital expenditure in 1982-83. There are a number of complicating factors which make it sensible to consider the two years 1982-83 and 1983-84 together. The overall deficit after transfer to capital was, £91,740. This matches almost exactly the exceptional expenditure over the two years on Information Technology Fellowships which Resources Committee agreed could be drawn from the reserves. Thus, if this exceptional expenditure is discounted, ERCC has succeeded in meeting its savings targets and remaining in balance over the two years. The probable outturn for 1984-85 is that the accounts will again be in balance after the transfer to capital expenditure. There is considerable pressure for ERCC to expand in the areas of network support and distributed computing

and it is difficult to see how these new requirements can be met without additional funding from the University.

CAST's finances are also healthier than expected because of an unexpected increase in royalties from software distribution, and there was a surplus for the year of £62,886. The income from this source helps to sustain CAST's running costs and a proportion of its staff costs. As the income is volatile it is prudent to maintain reserves at a reasonable level. Nevertheless, a proportion of the reserves may be invested in new developments such as short-term posts for the computers in teaching project.

6.   Membership

The membership of the Committee for 1983-84 is contained in Appendix F.

A F Woodburn
October 1984

Utilisations of 2988 in 1983 - 84
by Participating Institutions

Institution	Computing Costs £	Proportion of Computing Costs %
Edinburgh University *	650802.55	28.16
Glasgow University	105152.10	4.55
Strathclyde University	1122606.03	48.57
Other Universities	1243.73	.05
Research Councils	62007.37	2.68
Treasury Supported Users	130184.29	5.63
Commercial Users	5120.49	.22
Overheads	234372.42	10.14
Totals	2311488.98	100.00

*Including ERCC

Utilisation of 2988 in 1983-84
by Participating Institutions
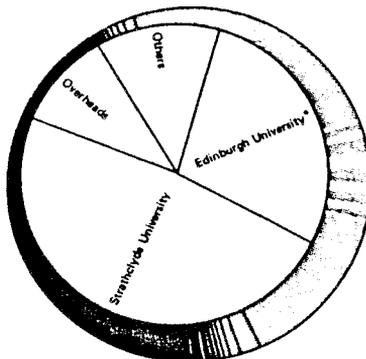
*Including ERCC

Faculty or Sub-Faculty	Notional Cost	Proportion of Total Cost
Arts	17446.33	2.45
Divinity	787.81	.11
Law	132.76	.02
Social Sciences	208424.82	29.24
Music	—	—
Medicine	38847.16	5.45
Dentistry	2042.09	.29
Veterinary Medicine	13515.18	1.90
Physical Sciences	142877.67	20.04
Engineering Sciences	4549.21	.64
Biological Sciences	39296.47	5.51
Non-Faculty Departments	121830.39	17.09
E.R.C.C. *	61052.66	8.57
AFRC	2385.68	.33
MRC	10552.18	1.48
NERC	49069.51	6.88
Total	712809.92	100.00
Other Universities **	1229001.86	
Treasury Supported Users	130184.29	
Commercial Users	5120.49	
Total	2077116.56	

* Less Overheads
** Strathclyde, Glasgow, Heriott Watt & Other Universities

Utilisation of 2988 in 1983-84
by University of Edinburgh and Research Councils
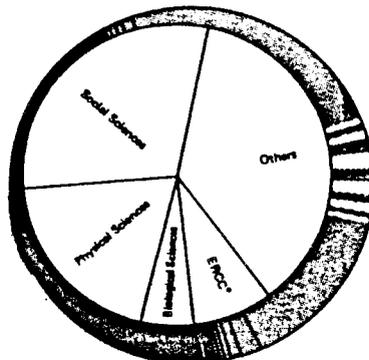
* Less Overheads

Faculty or Sub-Faculty	Notional Cost	Proportion of Total Cost
Arts	12278.75	.55
Divinity	—	—
Law	377.27	.02
Social Sciences	190214.44	8.48
Music	—	—
Medicine	9461.12	.42
Dentistry	214.71	.01
Veterinary Medicine	440.01	.02
Physical Sciences	1226980.07	54.72
Engineering Sciences	302860.96	13.50
Biological Sciences	191536.22	8.54
Non-Faculty Departments	78644.77	3.51
E.R.C.C. *	223377.66	9.96
AFRC	241.82	.01
MRC	5.03	—
NERC	5739.08	.26
Total	2242371.91	100.00
Other Universities **	34447.40	
Treasury Supported Users	14507.70	
Commercial Users	30536.70	
Total	2321863.71	

* Less Overheads
** Strathclyde, Glasgow, Heriot Watt & Other Universities

Utilisation of 2976 in 1983-84
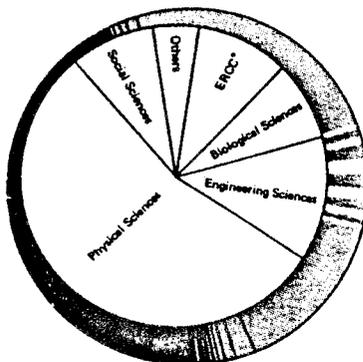by University of Edinburgh and Research Councils

° Less Overheads

Edinburgh Regional Computing Centre

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED 31 JULY 1984

DBM/409
28 Sep 84

1983 £		£	£	£
	I N C O M E			
641530	Grants: Computer Board		664672	
1599739	University of Edinburgh		1655872	
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2241269				2320544
=======				
90779	Sales: Research Councils		73229	
103878	Industry		129936	
235671	Treasury supptd organisations		211165	
33706	University of Edinburgh		51392	
1611	Other universities		3760	
189892	Software contracts		287374	
532	Staff contracts		3034	
-------			-------	
656069				759890
=======				
188340	Factoring & recovered costs			536328
278237	Administrative services			209870
	Projects			274535
22365	Miscellaneous			13166
10000	SERC DEC-10 contract			6680
-------				-------
3396280				4121013

E X P E N D I T U R E

1983		£	£	£
1116951	Staff costs: Academically related	1152204		
490126	Other	529415		
88794	Casual	113021		
-------		-------		
1695871			1794640	
36507	Mats & svcs: Travel & subsistence	50187		
114476	Computer materials	140572		
494451	External service charges	203767		
263280	Mainframe maintenance	408993		
183309	Telecommunications	156658		
53191	Engineering development	86900		
27154	Information & training	70213		
320546	General expenses	299510		
	Factoring & rec costs	529378		
-------		-------		
1492914		1946178		
1395	*Stock adjustment	-4346		
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1494309			1941832	

	Use of SERC Contract facilities		5607
213144	Overheads		209806
48	Bad debts		4493
35332	Transfer to CAST		40000
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3430704			3996378
-------			-------
-42424	Surplus/deficit for year		124635
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    * Notes: Stock at 1.8.83          21334
             Stock at 31.7.84         25690
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             Increase in stock held   -4346
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M O V E M E N T S   I N   R E S E R V E S

R E V E N U E   R E S E R V E

	Local	Regional	Total
Balance at 1.8.83	111901	155255	267156
Adjustment related to 1982/83	19100		19100
Surplus/deficit for year	60305	45229	105535
	------	------	------
	191307	200484	391791
Transfer to Capital Account	53714	40286	94000
	------	------	------
	137593	160199	297791
	======	======	======

C A P I T A L   R E S E R V E

Balance at 1.8.83	251416
Minor Facilities Grant	39000
UGC Equipment Grant	125000

	415416
Expenditure during year	254140

	161276
Transfer from Revenue Reserve 31.7.84	94000

Balance at 31.7.84	255276
	======

At 31.7.84 there were the following commitments of capital
expenditure to be funded from the Capital Account:

Authorised expenditure	215225
Documentation special grant	15000

	230225
	======

CENTRE FOR APPLICATIONS SOFTWARE AND TECHNOLOGY

Final Income and Expenditure Account for year ended 31 July, 1984.

1983 £	Income	£	£	£
140,371	University of Edinburgh award		247,101	
6,332	Computer Board Grant		-	
146,703				247,101
28,000	Sales - ERCC transfer		47,332	
	(Software Licences		131,491	
	(User Projects		30,941	
101,167	(ICL Projects		41,033	
	(Manuals		4,786	
	(General		24,851	
129,167				280,434
275,870				527,535
	Expenditure			
173,298	Staff Costs - Academically related	313,529		
	Secretarial	37,858		
			351,387	
	Materials & Services -			
20,260	Royalty Payments	47,361		
6,332	Other Software Costs	10,709		
	(Manuals/Subscriptions	8,349		
45,265	(General and Computing	16,865		
	(Travel and Conference	24,978		
5,000	Overheads	5,000		
76,857			113,262	
250,155				464,649
25,715	Surplus/(Deficit) for year			62,886
£	Movements in Reserves			
11,118	Balance at 1 August 1983		36,832	
25,715	Surplus for year		62,886	
36,833	Balance at 31 July 1984		99,718	

MEMBERSHIP OF EDINBURGH COMPUTING COMMITTEE

Nominees of the Educational
Policy Committee
	Dr A J Crosbie (Convener)
	  MA PhD
	J C P Schwarz MA PhD
	Professor D J Wallace
	  BSc PHD FRSE

The Director Edinburgh Regional Computing Centre	G E Thomas, BSc MSc PhD MIEE FBCS FRSE
The Deputy Director Edinburgh Regional Computing Centre	P E Williams BSc
Representatives of the Research Councils	D P Blight BSc MSc PhD CEng FIMechE J Woulds PhD
Representatives of the Users' Committee	G M Alder MA PhD R M Sillitto BSc FInstP FRSE Miss J Muscott BA
Representatives of the Faculty of Science	M A D Fluendy MA DPhil DSc CChem FRSC MInstP FRSE W E S Mutch BSc PhD FICFor
Representative of the Faculty of Medicine	Professor D C Flenley BSc MB ChB PhD FRCPE FRCP
Representative of the Faculty of Social	F Bechhofer MA
Representative of the University Library	Miss B EMoon MA FLA
Representative of the Secretary's Office	D Brown, MSc FCCA
The Professor of Computer Science	Professor S Michaelson BSc ARCS FRSE FIMA FRSA
The Secretary	A F Woodburn BSc DPA