

## PRENTICE COMPUTER CENTRE ACCOUNTING SYSTEM

### 1. WHAT IS IT?

Really, no such thing exists as a discrete entity.

Rather an amorphous collection of interacting A/C systems.  
(Term 'A/C' is used as loosely as term 'Systems').

First lets try to see just what 'IT' is. Probably best to get it in historical perspective.

#### (a) University/Bursars set of A/C

Originally University A/C's were kept on ledger cards, then were later transferred to a NCR-500 mag strip ledger card system. Then to a new General Ledger system, QUBAC, implemented on the KL-10. This was interfaced (very simply) to Salaries system (developed for the University by the Prentice Computer Centre) - only carries across A/C totals. QUBAC expanded by purchase and subsequent modification of ? A/C Payable package. Major expansion in 1981/82 with Sibling A/C to give departments ? breakdown.

The Prentice Computer Centre has an official set of A/Cs, within UQ QUBAC used for our granted funds (e.g. central equipment purchases) holding revenues (internal and external) and suspense A/C, such as purchases on behalf of departments. This net comprise the Centre's Audited A/C and so must be used in budgetting. They are our funds interface with the outside world and the rest of the University. In 1980 Senate approved that, as a matter of urgency, the Bursar should review the structure of our accounts in QUBAC. However, this was never done.

#### (b) Salary System A/C

All Prentice Computer Centre staff salaries, superannuation and other payments are processed via the UQ Salary system. For proper budgeting within our own terms we really need access to salary (and staff) records for our own staff.

#### (c) The Machine Services A/C System

Originally designed and implemented in 1969 to charge for computing services on the then new KA-10 system. It has since been modified/extended/carved-up many times. Some of the major major changes made were to:

- (i) Include a range of operational parameters never envisaged such as SLOTS, special time-of-day rates for some facilities and users only, priorities etc.
- (ii) provide users with 'detailed' accounting - originally for

student exercise but later generalisation.

- (iii) bill users for contract work done including staff time.
- (iv) handle prepayments and special billings (e.g. Griffith University ?).
- (v) transport it to the KL-10 and work for both KL and KA systems.
- (vi) charge for services on remote batch stations at rates specific to the station and service.
- (vii) interface to the Prentice Computer Centre's group code system to charge contract work from time sheets.
- (viii) automatically update salary rates for contract work.
- (viii) interface to the University's QUBAC system for direct funds transfer from user A/C's to Prentice Computer Centre revenue A/C's.
- (x) transport to VAX computer to charge for its use.
- (xi) accept and transfer sibling account codes to QUBAC.
- (xii) interface to GU QUBAC system as for UQ QUBAC.
- (xiii) NOT charge for specific network data transfers.
- (xiv) charge for typesetting from both KL and VAX.
- (xv) charge for CV machine use.

What started as a charging mechanism for a single mainframe is now cumbersome, confusing to users and does not meet many current needs. It is TOTALLY inappropriate to both present and future service charging for the Prentice Computer Centre.

(d) The Group Code System

The GC system was developed in the mid 70's to meet two specific needs:

- (i) Provide internal costings and reports for PCC management.
- (ii) Satisfy the requirements of the Award to keep time-sheets, leave records etc.

Since its initial Implementation this system, too, has undergone numerous modifications. Some changes include:

- (i) controls on group codes,
- (iii) Interface to machine charging system to automatically charge contract work,

(iii) Introduction of the 'small job sheet' to reduced paper work,

(iv) controls for better capture of 'small job sheets'.

(d) Communications A/C

Communications A/C grow from the need for the PCC to charge out TELECOM line and modem installations and rental to user departments. Because of the initial small volume this started as a manual system and, despite Ideas and proposals to automate it, has remained so ever since. The charging for CDN and TELECOM at both the University of Queensland and Griffith University is now an enormous task.

(f) Equipment Maintenance

The Centre maintains departmental computing/terminal equipment on a variety of basis such as contract, 'on-call' or 'bring-in'. Although most of the data necessary to automate the billing of contract maintenance is contained in the Engineering equipment data base, invoices are still prepared and dispatched manually - a tedious task. Further, there appears to be a trend away from contract maintenance to on-call or bring-in maintenance; indeed, for micro's, the PCC promotes the "bring-in" maintenance concept. I think this work is currently handled on a "small job sheet" where the billing is direct to a QUBAC A/C, and NOT via an invoice.

(g) Equipment Purchase

The PCC is the University's purchasing authority for all computing equipment in both central and departmental. I'm not too sure how this is arranged but I believe it is via prepayment into one at the Centre's QUBAC accounts (SPEC SERV). Once the equipment is installed and accepted payment is made out of this account on behalf of the client and final adjustments are by invoice/journal transfer.

(h) Orders

Orders on supplies go via the University's standard ordering system In QUBAC. to the best of my knowledge, this seems to work reasonably well (i.e. I don't get a stream of complaints about it!)

(i) Miscellaneous Orders

The Centre generates a variety of miscellaneous charges which are usually the result of some ad hoc or one-off special arrangement. For example, the Systems Analyst support from GU is negotiated for a 2 year period and a special A/C arrangement is set up within the machine accounting system to bill this each month. On the other hand, the provision of an operator at GU is reviewed annually and charged annually via a miscellaneous invoice.

## (j) Non-Charged Services

The Centre Is funded for a number of staff positions to support a number of functions on a 'no charge' basis. These include Education, some mini/micro support, preliminary analysis and advice for projects seeking funds and some free programming in particular circumstances. There is also some support for network development. At presents this work is very poorly accounted mainly via global group codes. Although it is notionally 'free' we should provide some detailed A/C and reporting by department back to the Computing Policy Committee, in annual reports and as basis for increased funding of these and similar services.

In summary therefore it can be seen tha the Centre's "A/C System" is NOT a discrete entity but a somewhat vague combination of At least 10 loosely coupled accounting mechanisms. When Alan Coulter Complains that the A/C system doesn't give him the communications statistics he needs, he probably really means that Dal Anderson cannot easily extract the information from the communications manual billing records.

Graham Rees comments that our A/C system is @?!\*!, which means that he cannot balance the AUC Capital A/C in the University's QUBAC systems and that the Group Code system does not keep the detail he would like on the type of work done in the Small Job Requisitions. And when I say the present A/C system must be scrapped and completely replaced with a system designed for network A/C I am referring to our machine services charging system. Although we all refer to the "Centre's Accounting System" we are all really talking about different systems.

How did we get to this point of such an apparent mush-mash of partially cooperating accounting processes? I guess there are many factors, most long since forgotten. However they would undoubtedly include:

- (i) A natural desire to get the maximum mileage out of existing software.
- (ii) The need to accommodate particular situations imposed upon us externally e.g. sibling codes, trade union award conditions etc.
- (iii) The rate of change in this industry which dictates the rate of change in services we must provide.

## 2. A/C SYSTEM PROBLEMS

What, then, are the problems of this mix of accounting systems we now operator. Without going into detail I believe the following global problems can be identified.

- (a) from the users point of view the picture presented by our A/C systems and associated procedures must he of complexity, of

uncertainty and totally lacking in sympathy.

- (b) There is no standard basis for organizing and matching A/C systems. I'm not sure if our budget headings correspond in any way to the structure of our QUBAC A/C's. But certainly from my viewpoint, our budget structure, theoretical organization structure, actual organization structure and group code structure all appear different. Its one hell of a job to reconcile them all for budget preparation and financial reporting each year.
- (c) The many different mechanisms for charging and invoicing clients introduces a degree of uncertainty into the charging/revenue Collecting process. I cannot be sure that we always charge clients for work done when we should, let alone be certain that the charges are correct. Likewise this multiplicity of mechanisms makes it well nigh impossible to determine the overall status of a client's account with the Centre.
- (d) Similarly, the multiplicity of sets of records and data bases make it at best difficult and at worst impossible to produce reasonably corelated statistics on various aspects of the Centre's operations.
- (e) Most of the A/C software is old technology - pre database. It is therefore difficult and expensive to modify and extend. Many existing charging policies are built into code and cannot be easily varied.

### 3. WHAT A/C SYSTEM(S) DO WE NEED

What accounting system(s) do we need to overcome all the present problems in this area and hopefully accommodate our foreseeable future needs? I don't really know and I don't believe anyone else in the PCC does either. Indeed, this is one of the major reasons for employing a Financial Manager in the Centre.

However, the need to redevelop the services charging mechanisms for network operations and the new main-frame is such that this most probably will occur before a total restructuring of the Centre's accounting system(s) is possible.

Hence, I suggest the following points of general principal for discussion and, hopefully, agreement as a basis for the structure of a future PCC accounting system. Adoption of these, or some variation of them, should provide sufficient guide-lines for the services account redevelopment to commence.

- 3.1 I believe that no matter what stand the Universities take from time-to-time on charging University users for services, we will ALWAYS have to account for usage and
  - (a) if internal charging disappears the level of detail of our accounting for internal use will increase,
  - (b) the unit of internal accounting will always be dollars

because it is a common denominator for comparisons,

(c) we must always charge external clients REAL money.

Hence, throughout this document, the terms "accounting" and "charging" will be used interchangeably except where I make a distinction clear.

- 3.2 I do not believe that it is possible to have a single accounting system to handle ALL the Centre's needs. However, 10 relatively independent (or very loosely coupled) systems is ridiculous.
- 3.3 The Centre must have a chart of accounts within the QUBAC system. From the University's viewpoint these are out "official" accounts. I believe this chart should reflect our budgetting/organizational structure. Further, the sibling accounts in the chart should be used to provide finer detail on this structure where required.

While this is easy to say, it is NOT very easy to do. For Example, should the sibling structure for Operations Revenue be based on "UQ Depts", "UQ Admin", "UQ Affiliated" etc, - out traditional budgetting headings; or on say "KL-10", "VAX", "PLOTTING", "DATA PREP", etc. - the current Operations service offerings? If the former should we not use these headings for Engineering Revenue?

There is obviously a lot of work to be done in this area. [For the record, I see the Centre rapidly moving to providing a large range of discrete services -

- 3.4 I DO believe, very firmly, that we must have ONE single total Client accounting and billing system. ALL charges of whatever nature for ALL clients, both internal and external, must go via that system. It is only by having such a complete database of ALL charges for ALL clients that we can hope to produce comprehensive, timely financial statistics and reports for management. Obviously this system must also provide on-line enquiries.

Notes on specific points

- (i) Miscellaneous invoices which are simply typed on PCC invoice forms should be banned. Although the overhead of creating a new client record just to post one invoice may appear high, it is really small compared with losses in reporting and other hassels these can create.
- (ii) This clients system must also handle credits, journal transfers, pre- and post-payments etc.
- (iii) It must have a very close interfave with QUBAC to record payments as well as charges and pass appropriate detail to correctly update our QUBAC sibling accounts.

- 3.5 In terms of the "Prentice Client Accounting System", 3.1 above for want of a better name must be able to both "account for use

of services" and "charge for use of services" as two distinct functions. Thus, for example, the use of our education service should be accounted for, reported say on the basis of number of student-hours for client and the service costed. But, at present, it is only charged i.e. transfers of real money made for external clients. Likewise, all mini-micro services to clients should be accounted for with some of these being charged.

- 3.6 PCAS must provide the flexibility of data base technology so that one-off reports can EASILY be produced on any basis on any aspect of the Centre's operations.
- 3.7 The Prentice Client Accounting System must exist independently of any machine or services charging system. (Although it will obviously exist on one of the Centre's computers the PCAS and the Charging system for that computer will be linked in the same way as the PCAS and all other service charges).
- 3.8 PCAS is fed with usage details from all the identifiable services provided by the PCC. At present, these would include various machines, plotting, typesetting, data entry, programming contracts, engineering maintenance contracts, engineering development contracts, programming or engineering one-up jobs, CDN charges (installation and maintenance) etc. Possible future services could include PCB design, client machine installation service, client machine operational management service, ???
- The source of these details for PCAS would be various machine accounting systems, data bases, group codes or self generation within PCAS itself (e.g. GU Systems Analyst and Operator charges).
- 3.9 It must be possible to EASILY add new services change existing services or remove old services.
- 3.10 All charging systems should provide a "user code" facility so that users can annotate their own charge records if desired (an extension of the present detail accounting concept). The PCAS should allow users access to their own accounting data so that they can produce whatever reports and analysis they wish, at their own expense.
- 3.11 How do we get a PCAS? The options are simply to develop it ourselves OR adopt some suitable available existing system; say QUBAC?

#### 4. MACHINE SERVICES ACCOUNTING

Currently we face immediate problems with accounting for machine services. Any solution of these must be in terms of the general accounting environment prevailing in the future.

The basic philosophy in 1969 was that a users account on the main-frame was also his account with the Centre - main-frame computing then being the only service provided by the Centre. If

this account balance could be kept up-to-date in real time then it could also be used as a control mechanism to prevent our expenditure, run-away jobs, bad debts etc. As outlined in Section 1.3, the implementation of this philosophy has undergone MANY changes since that date.

Despite all these changes, the basic philosophy still exists in our machine services accounting albeit in a tenuous form in some cases.