PN-ABS-419

USAID - EASTERN AND SOUTHERN AFRICAN MANAGEMENT INSTITUTE (ESAMI)

COMPUTER STRATEGY REPORT

MAY 1988

Coopers
&Lybrand
associates

PN-ABS-719

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Our Ref: rim lw

11 May 1988

Dear Madam

COMPUTER STRATEGY FOR ESAMI - MANAGEMENT SUMMARY

We have completed our study to assess the adequacy of existing financial and management information systems and identified the preferred option for computerisation in order to meet the existing and future requirements of ESAMI. We have:

- reviewed the adequacy of ESAMI's information systems, in particular the accounting, budgetting and costing systems and the training information database;
- prepared application profiles for each of the operational and accounting systems involved, summarising user requirements, volumes and timings;
- defined criteria for selecting the most appropriate option;
- identified the most appropriate option;
- established the likely costs of computer equipment, software, maintenance and implementation support;
- established an outline implementation plan.

2 A copy of our report is attached to this letter. In summary, our findings are as follows:

- o current computerised accounting systems do not provide the information required by ESAMI, in an accurate, timely and relevant manner;

- o of the three main options considered we identified that the most appropriate would be replacement of software and additional or replacement of hardware;

- o ESAMI's requirements would be best met by a set of integrated software, running on a multi-user microcomputer;

- o an acceptable computer solution could be provided by a number of major computer suppliers in Nairobi. An invitation to tender would need to be issued, so that individual responses could be matched against the specific requirements of ESAMI;

- o the estimated costs of implementing these new computer systems are likely to be in the order of:

		US$
-	hardware	69,000
-	software	30,000
-	implementation	13,200
	Total cost	112,200

3 None of these costs have been obtained from formal quotations from suppliers, but are based on our knowledge of the current basic costs. We would expect all suppliers to be prepared to negotiate on their prices once a formal invitation to tender is issued.

The Way Forward

4 In order to progress the selection and implementation of these new computer systems, ESAMI will now need to take the following steps:

- o obtain management approval to the financial and management information requirements set out in our application profiles;
- o formally agree selection criteria for the new computer systems;
- o prepare an invitation to tender to obtain responses from a shortlist of reputable suppliers, containing the application profiles and a supplier questionnaire;
- o negotiate with the suppliers and select the most appropriate solution;
- o obtain a firm commitment on hardware and software delivery date;
- o develop a detailed implementation plan;
- o identify ESAMI staff to be allocated to the implementation project.
- o agree the external assistance required for implementation

5 We would estimate that the following timescales would provide realistic targets in terms of elapsed time from the issuing of an invitation to tender:

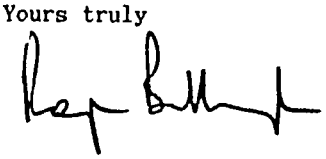
	Elapsed Time Month
Receipt of responses	1
Selection of most appropriate solution	½
Contract negotiations	½
Computer contracts signed	½
Hardware and software delivered	2½
Implementation of priority systems	5
Implementation of all systems	14
	24

6 We would be pleased to continue providing assistance to ESAMI during this important project. We have extensive experience in the selection and implementation of new computer systems and consider that this expertise will be of particular value to ESAMI in relation to:

- o the preparation of an invitation to tender and evaluation of responses;
- o the development of implementation plans for priority systems based on our structured and comprehensive approach;
- o training in the use of specific accounting software.

7 If you require any further information or clarification, please contact Richard Meadows or Carole Marshall. We would be pleased to discuss this report with you in more detail in the near future.

Yours truly



R Bebbington
For and on Behalf of
COOPERS & LYBRAND ASSOCIATES

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APPENDICES

I INTRODUCTION

1.01 The Eastern and Southern African Management Institute (ESAMI) was formally established as a corporate body on the 28th February 1980. It succeeded the East African Management Institute (EAMI) which operated under the sponsorship of the three community states, Kenya, Tanzania, and Uganda.

1.02 ESAMI is situated on Njiro Hill in Arusha, Northern Tanzania. A small sub-regional office has recently been established in Harare to cover the Southern African states. Local contact offices are also located in Entebbe, Dar-es-salaam, Lusaka and Nairobi. The main activities of the Institute are training, consultancy and academic research. Its main objective is to help improve the performance and management effectiveness of public and private enterprises within the member states of the Eastern and Southern African sub-region.

1.03 There are eighteen states which are eligible for membership of ESAMI. Only six (Comoros, Djibouti, Kenya, Tanzania, Uganda and Zambia) are signatories to the agreement. Financially, only the last four and Malawi have made any direct financial contribution through subvention payments. Although Zimbabwe has recently shown interest in supporting ESAMI activities, through subvention payments and payments from Namibia are also included in the budget estimates. The Institute therefore relies heavily upon income from participants fees and sponsorship from donors, such as USAID, CIDA and the UN.

1.04 Since 1980, the Institute has gradually increased the supply of both open and tailor-made courses. Between 1984 and 1987 the number of teaching consultants increased from 25 to 35. In the 1988 budget there is an establishment of 31. The demand for courses, has not however always matched this level of supply as shown by the number of cancellations and low level of participants on certain courses.

1.05 The provision of financial and management information to support these activities and to assist the Institute's decision-making processes has not kept pace with internal or external developments. There has been an increase in demand for information because of the financial difficulties facing ESAMI.

1.06 Despite efforts to improve the situation, through the provision of computer hardware and software and technical assistance, there is still a significant shortfall in the provision of accurate, timely and relevant information to both internal and external parties. This shortfall is recognised by the Director General, Chiefs of training divisions, consultants and other senior members of ESAMI's staff.

Method of Approach

1.07 In accordance with the scope of work issued as PIOT/T No. 698-0413-9 by USAID, Coopers & Lybrand Associates were requested to carry out a consultancy assignment with the key objective of assessing the adequacy of the existing information systems and recommending a strategy for making improvements based on the use of computer facilities. During this assignment we have:

(a) assessed the existing financial management systems by:

- o interviewing the Director General and personnel from:
  - the finance department;
  - academic divisions;
  - support service departments; and
  - the systems analyst;
- o analysing the financial information available;
- o reviewing procedures;
- o identifying the hardware and software currently in use;

(b) identified the information requirements of internal and external parties both at present and in the future (3 to 5 years);

(c) reviewed the training information database and the need for its interface with other financial management systems;

(d) prepared brief application profiles for the various accounting and management information systems which summarise user requirements and show:

- o outputs required;
- o distribution and frequency of outputs;
- o information maintained;
- o inputs;
- o interfaces; and
- o volumes of data;

(e) identified alternative options for computerisation;

(f) recommended our preferred option and summarised the reasons for this recommendation;

(g) prepared a provisional action plan which summarises the tasks required to achieve a successful implementation of the recommended option.

II REVIEW OF EXISTING SYSTEMS

2.01 The Institute currently possesses a variety of microcomputers, terminals, a Wang minicomputer, printers and several software packages. The location and details of the various items of hardware and software are given in Appendix A.

Accounting Systems

2.02 Until the end of 1987, the finance department were using a computerised accounting system purchased from Davis Computer Systems of Kenya. The Tanpay payroll package also operates on the department's Wang microcomputers. Other software installed on the microcomputers are Multiplan, dBase II, Lotus and the Wang word processing package.

2.03 The computerised accounting system purchased from Davis Computer systems was installed by an independent consultant in May 1986. It was intended that the system should be based on the design set out in the UNDP report entitled "A proposed departmental costing system for ESAMI". The inter-relationship between the Davis Computing System and other computerised systems is given in Table I.

2.04 The system was originally designed for a firm of lawyers and therefore considerable modifications and revisions have been required to formulate the type of information needed by the Institute.

2.05 The accounting system operated as four integrated modules (general ledger, debtors ledger, creditors ledger and project/donors ledger). The first three were due to be implemented and tested during the financial year ending December 1986, but conceptual, operational and programming problems meant that assistance was required from Mr G J Kallinga, an independent computer consultant from Dar-es-salaam, throughout 1986 and 1987. In 1986 and 1987 accounts and reports were only successfully produced with Mr Kallinga's assistance.

2.06 The project/donors ledger was implemented and tested during 1987 and now produces some limited reports.

INTER-RELATIONSHIP BETWEEN DAVIS COMPUTER SYSTEM AND OTHER COMPUTERISED SYSTEMS

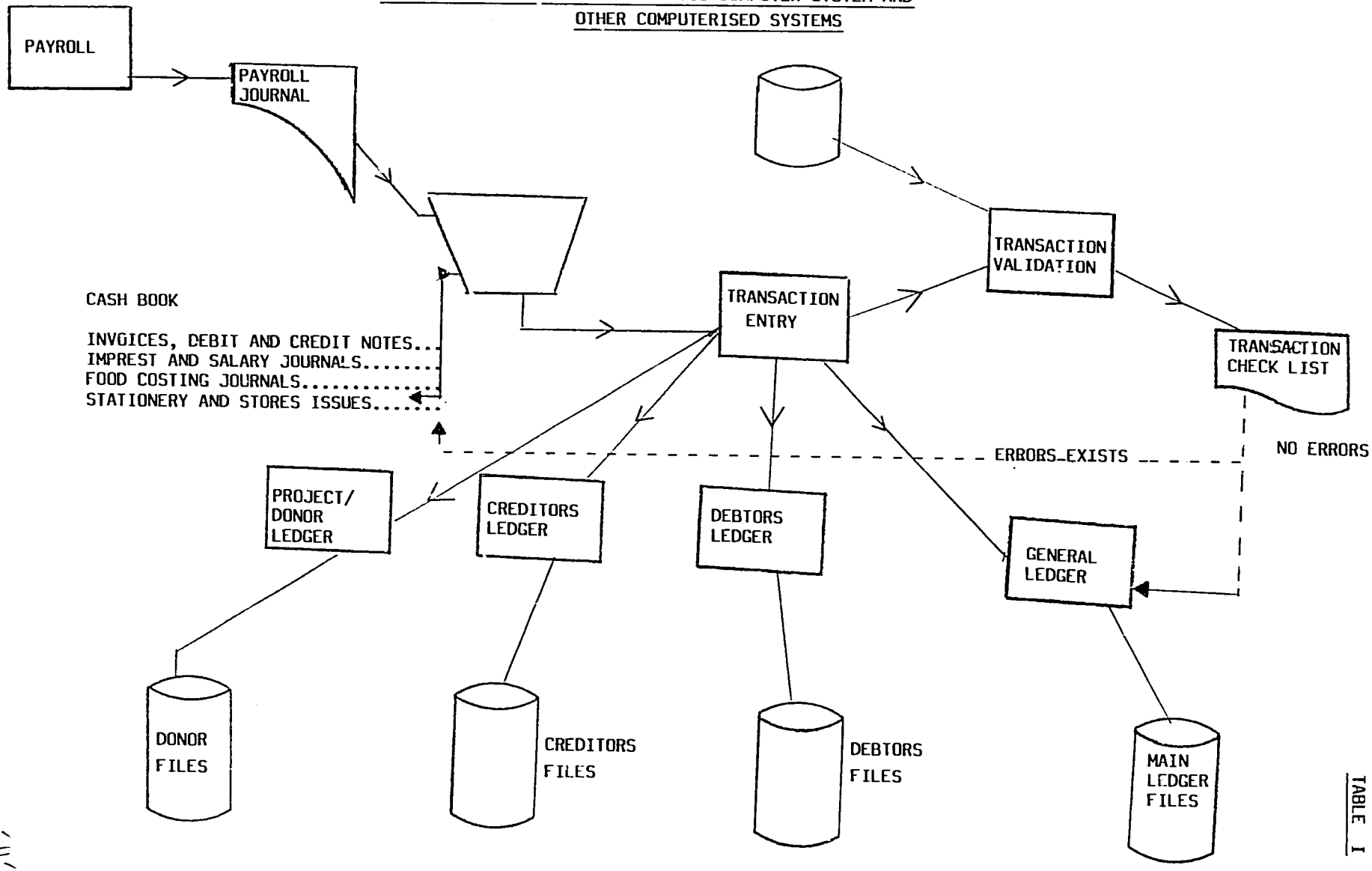


TABLE I

2.07 The system had a number of problems which can be summarised as follows:

(a) on-going revisions to the software programmes have taken place for the last two years, resulting in reports being produced late or, in some cases, not being produced at all;

(b) the existence of program bugs, causing calculations and reports to be incorrect;

(c) the lack of software maintenance support from the original suppliers;

(d) the consequent dependence on an independent computer consultant;

(e) the lack of system manuals and other system documentation;

(f) the lack of formal training for the accounts staff in the use of both the hardware and software;

(g) the software facilities are not user friendly;

(h) the system is not flexible, for example, changes in the frequency of report production requires a program amendment to be made.

2.08 At the beginning of January, the independent consultant installed a new general accounting package called ACCPACK. This package can operate on IBM, Olivetti and Wang under IBM emulation mode. The rationale for acquiring the new package was:

- to remove operational bottlenecks in data entry;
- to enable the integration of financial data with the training database maintained on the Olivetti M24;

- to facilitate the entry of cash book entries without batching;

- the production of a cheque register;

- the production of ledgers which will reflect all transactions from January to December for each single account.

2.09 The total cost of this change would be:

	US$
1 256mb upgrade board	1,000
1 20mb hard-disk drive with controller drive	2,000
2 IBM emulation boards at US$ 1500 each (a)	3,000
Total hardware enhancement costs	6,000
1 accounting package ACCPACK (b)	2,000
Installation and training expenses one month	
per diem at US$ 40 per day	1,200
honorarium per month	1,000
Total software and installation costs	4,200
Total Cost	10,200

Notes:

(a) one acquired on a loan basis

(b) acquired on credit basis for a trial period.

2.10 We were unable to observe the system in use and producing reports as the system is not yet operational, as a result of:

- technical problems being encountered;

- the volume of work in January, when final accounts were being completed for the previous year;

2.11 The inter-relationship between ACCPACK and the other computerised systems at ESAMI is shown in Table II.

2.12 Although we recognise the value of the attempt to improve the provision of information and to interface the financial data with the training database, we have reservations about this course of action for the following reasons:

- o there is continued dependence on a single person;
- o there is no system documentation;
- o staff have not been trained to operate the systems and procedures being used;
- o total misunderstanding by accounts staff of the actions of the DP consultant and a lack of comprehension of the implications of those actions. Staff did not realise that a new package had been installed, but thought that a technical change only had taken place, so that the Wang PC could emulate an IBM. The chief, finance and accounts had requested meetings with the DP consultant, to explain the changes, but these had not been forthcoming;
- o another three months delay in input of data;
- o no consideration of wider information requirements;
- o no provision of management reports, cash flow forecasts, cash requirement reports, budgetary control reports;
- o further ad-hoc changes to account codes.

INTERRELATIONSHIP BETWEEN ACCPACK AND OTHER COMPUTERISED SYSTEMS

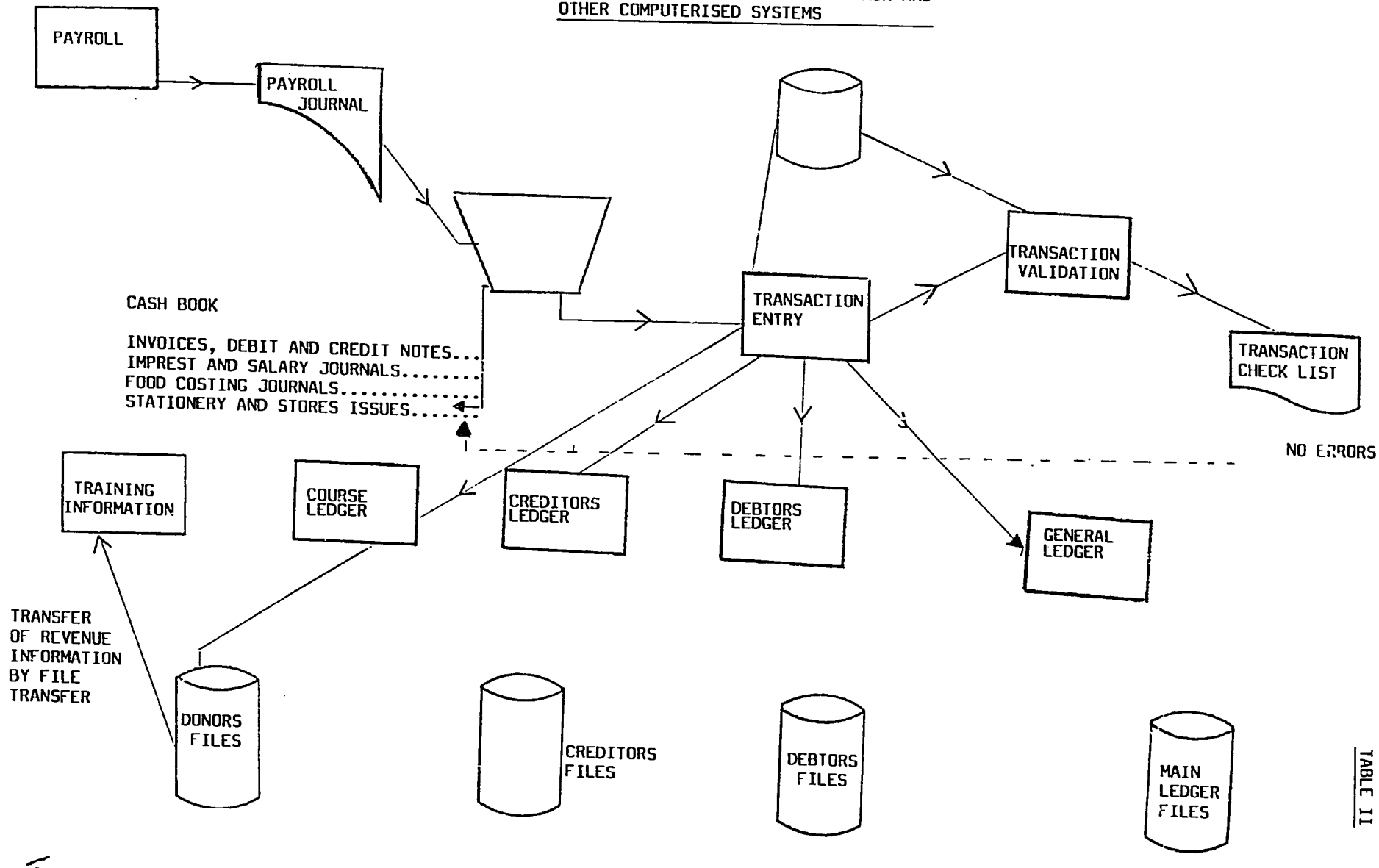


TABLE II

Budgetting

2.13 The budget for 1988 was prepared both manually and by using the Multiplan spreadsheet facilities, and word processing capabilities maintained on the finance department's microcomputers. The spreadsheets were set up by Mr Kallinga and currently there is no one in the finance department who can use these files. It is Mr Kallinga's intention to move these files on to Lotus, so that interaction can take place between ACCPACK and Lotus. In the past, setting the budget has tended to be an end in itself and little emphasis has been placed on subsequent budgetary control. Currently there are no totally computerised means of producing statements comparing budget versus actual amounts and variences (by course, division or for the Institute in total).

Payroll

2.14 The payroll system (Tanpay) does not form part of the accounting system, and data from the payroll system has to be re-entered manually into the general ledger.

2.15 The current payroll system operates quite efficiently as a separate entity, but is subject to a number of limitations, for example:

(a) no full transaction validation list is produced and thus a proper audit trail cannot be demonstrated;

(b) there is only one level of access, this should be expanded to enable:

- o enquiry about data only;
- o ability to change employee data, depending upon the level of authority;

(c) the summary of pay does not include a complete breakdown of allowances.

Costing

2.16 There is currently no proper costing system in operation despite the recommendations of both the World Bank and UNDP reports, in 1984 and 1985 respectively, that the actual cost of running courses should be established and the fees charged should cover all the associated direct and indirect costs. A cost accountant funded by the Commonwealth Fund for Technical Co-operation (CFTC) joined ESAMI at the beginning of April 1988 to assist them in establishing a relevant costing system.

Training Information Database

2.17 The training information database has recently been set up by Mr Kallinga to provide information for the training divisions and certain donors about the courses, the participants and their, social, demographic and geographical distribution. There are two databases, one for participants and one for courses. Programmes have been written to enable a standard set of reports to be produced and a menu has been established to facilitate use of these programmes. The standard reports that should be available are:

- o list of participants per course;
- o list of participants by country;
- o statistics of participants attendance;
- o participants attendance by sex;
- o participants attendance by sponsorship;
- o list of open, tailormade and sponsored courses;
- o revenue generated for open tailormade and sponsored programmes;
- o revenue generated by venue, ESAMI and elsewhere;
- o budgetted/actual revenue for each course;
- o total contribution for each consultant.

2.18 The databases have been set up on the training division's Olivetti M24's using dBase III and therefore ad-hoc reports can also be produced using the various selection parameters available. Data has been input from January 1984 to March 1988. Currently there is no interface with the financial data, although one of the reasons for acquiring the ACCPACK software package, was to enable this interface to be established.

2.19 The intention of the interface is to automate the production of the quarterly performance reports, rather than the sharing of data between systems.

Other Systems

2.20 Other systems at ESAMI are completely manual. These systems are often characterised by difficulties in information retrieval because of loss of data and misfiling. Analysis of the information is a time-consuming and tedious task and, because of the above difficultes, is not always accurate.

General Observations

2.21 Problems with the present computerised accounting systems are not solely responsible for the lack of accurate, timely and relevant information. There are a number of other factors which contribute to this shortfall including:

(a) maintenance of manual and computerised records means that there is a duplication of effort and time required. This leads to lateness of all forms of reports;

(b) management have not defined their information requirements;

(c) the inability to allocate and apportion costs effectively because of:

- o lack of precise information particularly from external courses;

- lack of charge-out rates;

- no information about consultant's time inputs because of their reluctance to complete timesheets;

(d) charging fee rates which are not directly related to the costs involved;

(e) poor communication between academic divisions and support service personnel;

(f) the need for training of accounts staff in bookkeeping and use of basic computer facilities;

(g) the lack of integration between computerised information systems which means that data has to be input more than once and differences can sometimes result;

(h) the late input of data. At the time of our review (April 1988), January data was still being input. Timetables for the input and output of data are not being followed;

(i) the centralised nature of the financial activities means that insufficient responsibility and accountability is being carried by the operational departments and training divisions. As it is the intention of the Institute to move towards a responsibility accounting methodology, training in financial matters will be required by heads of academic and support divisions.

III FINANCIAL AND MANAGEMENT INFORMATION SYSTEMS REQUIREMENTS

Application Profiles

3.01 After discussions with ESAMI management, we have prepared a set of application profiles covering all of the separate financial and management information systems, which are required to supply the necessary information to external bodies i.e. donors, banks and participant governments and internal management at ESAMI. The application profiles shown in Appendix C consist of:

- o an overview chart;
- o a summary of main functions required;
- o inputs;
- o information maintained;
- o outputs.

3.02 They reflect both current and foreseeable future requirements and have been prepared for systems which are currently computerised and/or manual. We have concentrated on financial systems, but have included details of other information systems where these are relevant.

System Overview

3.03 The system overview chart set out in Table III overleaf summarises the various applications which have been considered and shows the proposed inter-relationship between these applications.

Summary of Information Needs

3.04 In preparing the application profiles we have concentrated on the information requirements of various individual departments and external bodies. Having determined required outputs, we have identified the type of interfaces, inputs and the information to be maintained to satisfy these output requirements in the most effective and efficient manner.

SYSTEMS OVERVIEW

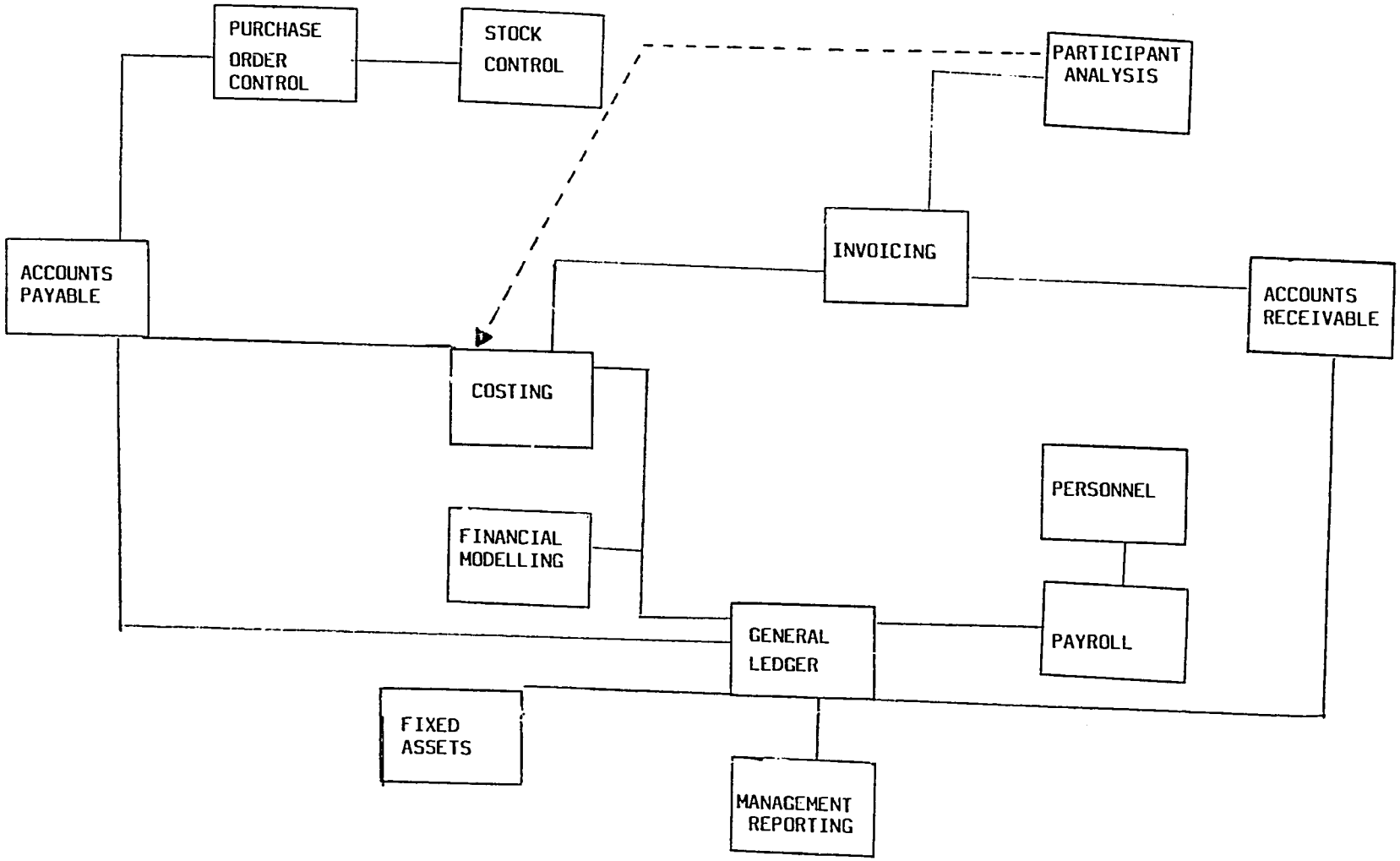


TABLE III

3.05 General requirements of the computerised system are:

(a) ease of use;
(b) comprehensive;
(c) interactive;
(d) modular in design, so that systems can be added;
(e) a level of sophistication that can be increased as knowledge and understanding improves;
(f) flexibility of reporting;
(g) expandability.

In the paragraphs 3.06 to 3.15 below, we have briefly summarised our findings for each of the main departments or group of departments. An organisation chart and the corresponding relationships between departments is given in Appendix D.

Finance Department

3.06 The main requirement of the finance department is for an improvement in management type information:

- o cash flow forecasts;
- o cash flow budgets;
- o flexible realistic budgets;
- o budgetary control reports:
  - at Institute level;
  - at cost/profit centre level;
  - at course/programme level;
- o accurate cost statements/breakeven levels;
- o participant payment details (for external courses).

3.07 In addition, the Chief, Finance and Accounts requires analyses of debtors and creditors outstanding and regular status reports on donor accounts, safari imprest accounts and individual staff accounts.

3.08 Once this information is available, it would then be possible for the department to become involved in longer term planning, what if analysis and graphical and tabular presentation of the financial position of the Institute. Strategic decisions on the direction of the Institute could also be financially assessed effectively and efficiently.

3.09 The ability to access the majority of this information directly would be preferable, as it would reduce stationery costs and improve response times to queries.

Training Divisions

3.10 All training divisions require regular and timely information on the following:

- o individual course/programme performance - budget/actual/variance statements;
- o status of donor accounts:
  - advances made and when;
  - expenses incurred and how;
  - balances brought forward and carried forward;
- o actual cost of running courses and break even levels of number of participants/length of course either for a particular division or course; and
- o costs of using support services i.e. transport charges, photocopying charges, printing charges for marketing brochures.

3.11 Other divisions and the consultancy division also require information on whether, clients requiring consultancy assistance or being provided with tailor made courses, who are required to make payments in advance, have actually made these payments and therefore whether work can commence.

3.12 In addition, there is a requirement for non-financial information which can be derived from an analysis of the data maintained for financial purposes, this would include:

- o analysis of course participants in detail and in total:
  - by sex;
  - by country;
  - by position;
  - by organisation;

- o analysis of client organisation:
  - by country;
  - by industry type;

- o analysis of donor support.

3.13 Furthermore, in order to assist staff in the training divisions to carry out their marketing and proposal budgetting tasks. Several consultants expressed the need for ready access to:

- o country data - demographic, social and economic indicators, including cost of living, inflation rates (actual and predicted);

- o up-to-date information on donors general requirements and allowances (i.e. per diems);

- o provision of information on clients/prospective clients financial position/year end;

- o analysis of feedback information from participants on course structure, etc;

- o provision of feedback information from resident consultants in country and sub regional offices.

Support Services

3.14 Under this heading we have included the requirements of the administrative and personnel sections and the catering, transport, security, staff travel, house-keeping departments and participant affairs. The Senior Administrative assistant is responsible for all these departments. The specific information requested in these areas, given the Institute's current operating environment included:

- o budget/actual/variance statements on a quarterly basis;
- o personnel information re - contract expiry date;
  probation expiry date;
- o supplies information
  - details of items requisitioned;
  - details of items received;
  - status of shortfall;
  - request approved/not approved;
  - orders awaiting delivery.

Documentation and Research Division

3.15 Included in this division are the library, audio visual and printing departments. The division also runs a small number of courses. The information requested by this department is similar to those required by other divisions and departments and includes:

- o budget actual variance statements for the three costs centres;
- o information about status of orders and status of payments to suppliers;
- o a library information database.

IV ALTERNATIVE OPTIONS

4.01 To satisfy the financial and management information systems requirements and to address the current problems experienced by the Institute in the provision of reliable, accurate and timely information, there are three main options. These are to:

(a) maintain current hardware, modify and expand existing software;

(b) maintain current hardware and purchase new software;

(c) purchase new hardware and software.

4.02 Each of these options could provide a solution to the existing problems and satisfy some of the main requirements. The extent to which each option is capable of providing a satisfactory solution and the associated cost in time, money and resources differs between the three solutions. The way to address the procedural difficulties will also differ depending upon the preferred solution. In Appendix E, we have assessed the capability of each solution to achieve the desired results, and the overall objective of improving the standard of financial and management information available to both ESAMI's management and external parties.

4.03 In Appendix F we have quantified this assessment by using weighting factors which have been agreed with the Chief, Finance and Accounts as to the importance of the various selection requirements and made a judgement on a Scale 1 to 10 of the fit (low to high) of the various options. In Appendix G we have weighted this evaluation to arrive at the preferred solution.

4.04 The current systems would require extensive and expensive modifications, which would only partially resolve the shortfall in information provision. To fulfill the detailed requirements which have been defined in the application profiles, it is therefore necessary to select new software which can be run on an appropriately sized hardware configuration. We have assessed the hardware requirements after a brief sizing exercise. This estimate is based on data volumes provided to us by ESAMI and shown in Appendix H.

4.05 We estimate that for all the systems included in the application profiles, a disk utilisation of approximately 40 mb would be necessary. A further 10 mb should be allowed for future contingencies and another 10 mb are likely to be required for the operating system. The overall disk capacity required is likely to be up to 60 mb.

4.06 We consider that in the initial stages 4 - 6 terminals/personal computers should be connected to the system. These would be located as follows:

- o finance department - 2;
- o Director General's office - 1;
- o support service departments - 1 or 2;
- o training divisions - 1 or 2.

4.07 As a number of the training divisions are to obtain personal computers from various donor agencies in the near future. Our cost calculations are based on the purchase of an additional four personal computers. ESAMI currently have a number of printers of various qualities and ages. The purchase of an additional two printers would be adequate for the needs of the immediate future.

V CONCLUSIONS AND RECOMMENDATIONS

5.01 It is the intention of the Institute to adopt a more businesslike approach to its activities. The provision of timely, relevant and accurate financial and management information is consequently considered of utmost importance.

5.02 Current software will require extensive modifications and additions to enable both the production of the information requirements and the provision of an interactive environment.

5.03 Existing hardware available for internal staff use does not possess either the capacity or the capabilities to accomodate an interactive and multi-access environment.

5.04 We would therefore recommend that additional hardware is acquired, existing hardware being used for word processing and other ad-hoc activities, or provided that both PC's were made to be IBM compatible that they formed part of the total configuration.

5.05 From the quantified evaluation and the assessment of the three main options, it can be seen that our recommended solution is Option 3, to replace both the hardware and the software currently used for accounting systems. This is seen to be the most time and cost effective solution to the provision of sound financial information both in the short term and particularly in the longer term, as it enables the provision of financial information to be improved and for other management information to be provided in an integrated and uniform way.

5.06 There are a number of well proven modular accounting packages currently available from leading computer suppliers in Nairobi including:

- Tetraplan from Computer Application Limited, (CAL) Wang and Epson distributors;
- SMB from ICL;

- Shortlands from NCR;

- Multisoft from Business Machines Limited (BML) - Olivetti distributors;

- Omicron from Data Centre Limited (DCL).

5.07 Examples of the hardware configuration which could support the current software requirements and provide scope for future growth would be NCR mini tower, ICL DRS 300, the smallest of the Wang VS range or a similar configuration from one of the other main suppliers.

5.08 The problems experienced by the Institute in successfully implementing the existing computerised accounting system and executing their accounting duties are not solely related to the inadequacies of the computer system.

5.09 The levels of accounting expertise, the working environment and the cramped accommodation, the attitude of the consultants to their involvement in accounting practices, the low level of communication, the cash position, the poor maintenance of up to date records i.e. fixed asset records, all contribute to the inadequate provision of sound financial and management information. In order for any computerised system to work effectively, it is necessary to address these issues first. We would therefore recommend that the following action is taken:

(a) training is provided to variour staff in accounting, bookkeeping and particualarly cost and management accounting skills. We assume that the latter will be covered by the new cost accountant;

(b) consultants are educated on their role in the Institute and the financial implications of their activities;

(c) new or additional office accomodation is provided;

(d) responsibility is allocated for sorting out manual files and bringing records up-to-date within a prescribed time limit. One officer should be assigned the responsibility for co-ordinating these tasks, so that data entered into a new computerised system is as up to date and complete as possible.

Schedule of Estimated Costs

5.10 We have set out below an estimate of the likely costs of the proposed computer solution. These figures are not taken from formal quotations, but are based on our knowledge of the current prices in the market.

5.11 We have taken a conservative estimate and the costs are inclusive of all customs duties and sales taxes into Tanzania. We understand that ESAMI may not have to incur the latter, and thus the prices quoted could be reduced significantly. In addition, we are confident that at contract negotiation stage, further price reductions could be obtained:

	US$
Hardware:	
c.p.u	29,000
4 x pc's (middle of the range)	35,000
2 x letter quality printers	5,000
Total - Hardware	69,000
Software:	
9 modules and modifications to existing systems	30,000
Implementation:	
external	13,200
Total Cost	112,200

5.12 The costs quoted above would be for the total system, further variations would occur, if personal computers were replaced by terminals and different quality printers were obtained.

5.13 The cost of external implementation assistance is based on the following:

		US$
-	training (supplier)	1,200
-	training (Coopers & Lybrand)	4,000
-	selection (Coopers & Lybrand)	5,000
-	planning (Coopers & Lybrand)	3,000
		13,200

5.14 These are of course one off additional costs, provision needs to be made for annual maintenance charges, which are normally 10% of original purchase price, and therefore based on the above would be approximately US$ 7,000.

VI THE WAY FORWARD

6.01 To ensure that current procedural, technical and operational difficulties are not allowed to continue and thus reduce the effectiveness and efficiency of future systems, we would also recommend that an implementation plan is established, which would provide the necessary controls and reviews for successful implementation.

6.02 The following tasks also need to be undertaken by ESAMI:

- o agreement of the information requirements identified in this report;
- o agreement of detailed and general selection criteria;
- o prioritisation of system implementation;
- o analysis of the market and the establishment of a shortlist of suppliers;
- o the issuing of an invitation to tender to the shortlisted hardware and software suppliers;
- o selection of the system that provides the "best fit";
- o contract negotiations;
- o placing of order.

6.03 Once the order has been placed, it is necessary to draw up an implementation plan, detailing timescales involved and resources required. The main topics to be covered include:

- o implementation planning;
- o specification of package operation;
- o software and hardware installation;
- o procedures development;
- o custom program and report development;
- o training;
- o file creation;
- o testing;
- o pilot running;
- o system cutover;
- o post implementation review.

6.04 We would recommend that a steering committee is set up comprising of the:

- o Director General;
- o Chief, Finance, and Accounts;
- o Senior Administrative Assistant;
- o MDC Chairman;
- o Project Manager.

6.05 The purpose of the steering committee would be to monitor the progress of the project and thus formalised project control procedures are essential. Reporting systems should be established and a timetable of meetings.

6.06 In order to ensure that the project is managed properly on a day-to-day basis, it is important to designate a person to be the full time project manager responsible for ensuring that deadlines are met, problems are rapidly solved and variances from targetted timescales are reported to the steering committee. At the end of the project, we anticipate that the project manager would become responsible for the running and further development of the systems.

6.07 The establishment of this formal monitoring mechanism would eradicate some of the problems experienced when installing the current accounting system including:

- o lack of control;
- o inability to meet deadlines;
- o parallel maintenance of computerised and manual records for unacceptable periods of time;
- o lack of system and user documentation.

6.08 Particular emphasis should be placed by the Institute on the training programmes within the overall implementation timescale. The training programme should include:

- o detailed training of finance department staff;
- o an overview of system course for management;
- o detailed training of other user department staff.

6.09 In Appendix I, we have outlined a provisional plan with estimated time inputs and the elapsed time period involved. This plan assumes the initial implementation of the main accounting systems:

- o general ledger;
- o accounts payable;
- o accounts receivable;
- o costing.

6.10 We have assumed that the remaining systems will be implemented on a phased basis, over a one and a half to two year period.

6.11 The successful implementation of a computer system needs the full time commitment of a number of internal resources, certain tasks can however be undertaken more cost effectively by external resources.

6.12 Coopers & Lybrand has extensive experience in the selection and implementation of new computer systems, and we consider that this expertise will be of particular value to ESAMI in relation to:

- o the preparation of an invitation to tender, assessment of responses and contract negotiations;

- o the development of detailed implementation plans for priority systems based on our structured and comprehensive approach.

6.13 We also provide training in basic computer courses, and on the introduction of computer systems. The latter is for senior management and deals with the various aspects of computer implementation outlined in the previous paragraphs.

6.14 Finally we have personnel, specifically trained in the major accounting packages available in Kenya and thus could provide both technical assistance and training in these skills.

LOCATION AND USE OF HARDWARE

Department	Hardware	Uses & Software Installed
Finance Department	Wang PC with 10 mb winchester disk drive (IBM emulation just installed) Wang PC - dual floppy Epson LQ 1000 printer	Tanpay (payroll package) computerised accounting system. ACCPACK (on trial) Multiplan Lotus Wang word processing package
Training Divisions		
Computer Rook	Wang 2200 mvp magnetic disks for back up purposes 10 mb Wang terminals x 3	training purposes
Classroom	Olivetti M24 x 8 20 mb hard disk 360K floppy disk RAM 640K	training purposes one, used to hold some of the training information database occassionally used
Computer Room	Olivetti M24 x 1	} for wordprocessing
	See above	} training information
Computer Room	Olivetti M28 x 1 23 mb hard disk 1.2 mb floppy disk RAM 512 K	} database other information requests All Olivetti's have following packages installed Supercalc 4 dBase 3 GW Basic Wordstar release 4
Administrative/ Secretarial Sections	Osborne x 1 x 5	Osborne used for word processing - Wordstar? (1)
Computer Room Classrooms	Ollivetti, DM 290 printers x 5 Current stabilisers x 5	
Administrative Section/Computer Room	Epson RX 80 printers	

Three IBM PS/2's are being purchased for ESAMI by the United Nations Economic Commission for Africa (UNECA).

The Institute also possesses a number of other software packages which are not yet installed in any of the machines.

Multimate	- Word processing package
Mathplan	- Spreadsheet
Microsoft windows	- Operating environment
Rbase System 5	- Database package
Turbo pascal	- programming facility

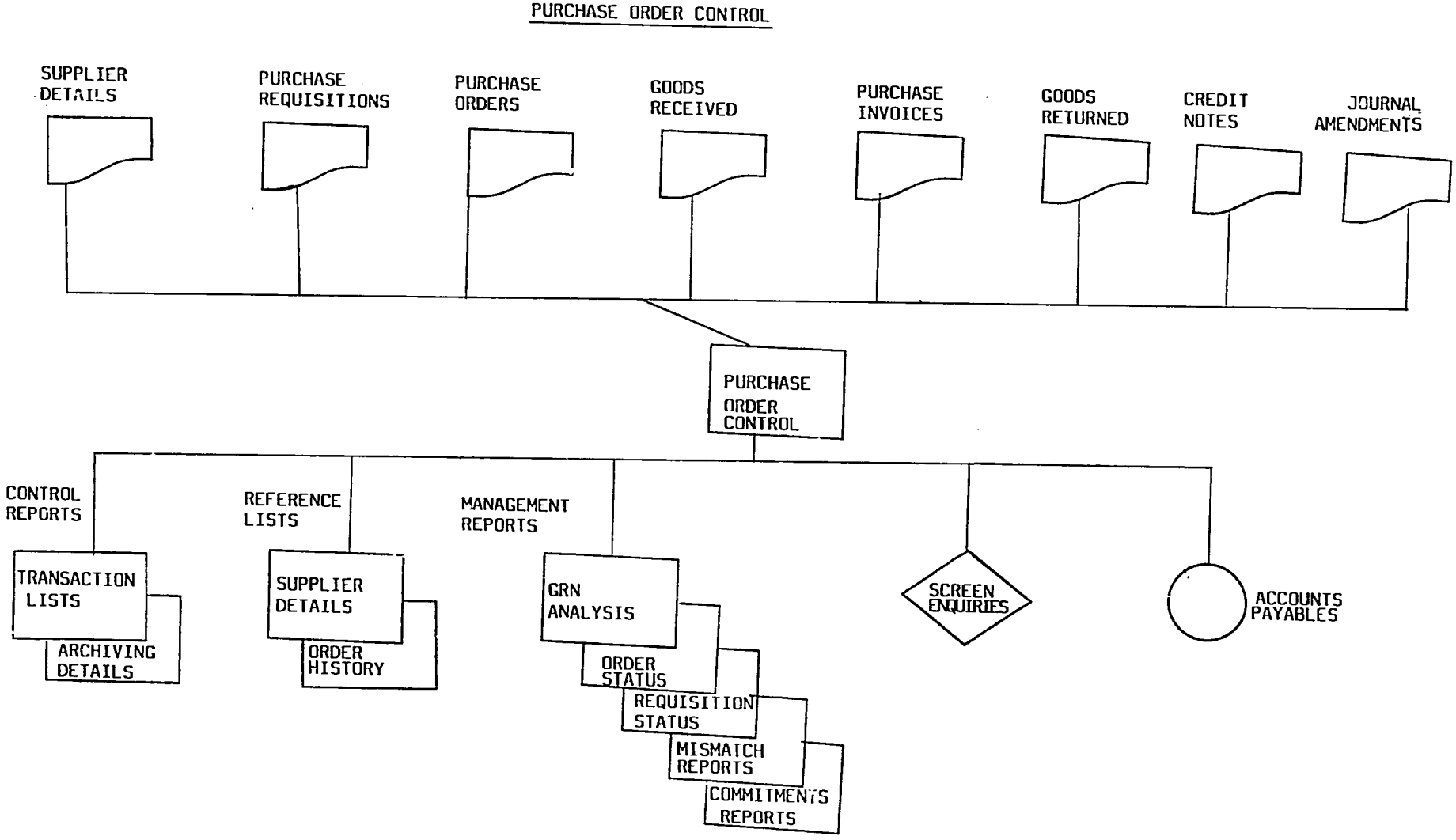
The World Bank have promised to supply a project planning package and a graphics software package.

REPORT PRODUCED FROM THE COMPUTERIZED ACCOUNTING SYSTEM

	Description	Report No
1.	Transactions check List:	
	Cash Book	AC101
	Journal	AC102
	Invoices	AC103
2.	Cash Book Printout	AC104
3.	Post Control Slips:	
	General Ledger	AC201
	Debtors Ledger	AC202
	Creditors Ledger	AC203
	Project Ledger	AC204
4.	General Ledger Reports:	
	Trial Balance	AC301
	Bank Statements	AC302
	Balance Sheet	AC303
	Summary Income and Expenditure	AC304
	Divisional Income and Expenditure	AC305
5.	Debtors Ledger Reports:	
	Aged Balances	AC401
	Staff Debtors Balance	AC402
	Ledger Statements	AC403
	Debtors List	AC404
6.	Creditors Ledger Reports:	
	Aged Balance	AC501
	Ledger Statements	AC502
	Creditors List	AC503
7.	Project Ledger Reports:	
	Aged Balances	AC601
	Ledger Statements	AC602
	Project List	AC603

Document Name: ACCTDOC1 on C

APPENDIX C


PURCHASE ORDER CONTROL
SUPPLIER DETAILS
PURCHASE REQUISITIONS
PURCHASE ORDERS
GOODS RECEIVED
PURCHASE INVOICES
GOODS RETURNED
CREDIT NOTES
JOURNAL AMENDMENTS
PURCHASE ORDER CONTROL
CONTROL REPORTS
TRANSACTION LISTS
ARCHIVING DETAILS
REFERENCE LISTS
SUPPLIER DETAILS
ORDER HISTORY
MANAGEMENT REPORTS
GRN ANALYSIS
ORDER STATUS
REQUISITION STATUS
MISMATCH REPORTS
COMMITMENTS REPORTS
SCREEN ENQUIRIES
ACCOUNTS PAYABLES

PURCHASE ORDER CONTROL

Main Functions

The main functions of the purchase order control system should be:

- to record details of all orders for stock and direct purchases placed with overseas and local suppliers on a one off or a blanket basis;
- to provide a means of monitoring the location of and controlling unfulfilled and overdue orders, particularly for imported goods;
- to provide a means of determining liabilities for goods and services which have been received but not yet invoiced;
- to provide a means of recording commitments for goods and services not yet received, not yet invoiced (particularly telephoned and telexed orders for travel/airfares etc) and thus facilitate cash requirements forecasting;
- to maintain details of purchase requisitions and their status i.e. approved/not approved.

INPUTS

The purchase order system should be capable of processing details from the following types of input transactions:

- supplier details;
- purchase requisitions and approvals;
- purchase orders/releases;
- purchase order amendments/cancellations;
- goods received notes;
- goods returned/discrepancy notes;
- purchase invoices;
- credit notes.

APPENDIX C

Information to be Maintained

The purchase order system should maintain the following standing information for each supplier:

- supplier reference number;
- name and address and telephone details;
- supplier location;
- currency;
- payment terms;
- date of last invoice;
- date of last payment;
- automatic/manual payment required.

The information maintained for each goods received/returned note should include:

- date of delivery;
- goods received/returned note number;
- reference number;
- unit of measure;
- unit cost;
- product description;
- purchase order number(s) to which goods relate;
- quantity received.

In addition for each unapproved invoice there would be a need to record:

- invoice number;
- date of invoice;
- actual value of invoice in original currency and in US dollars;
- currency;
- exchange rate;
- purchase order number and items to which invoice relates;
- general ledger account code or course cost code;
- due date;
- discount if appropriate.

For purchase requisitions, there would be a need to maintain the following details:

- purchase requisition number;
- date of requisition;
- originator of request;
- items requested;
- request approved/not approved.

OUTPUTS

The outputs from the purchase order control system are detailed below:

REPORTS

Control Reports

The finance department and/or the supplies section require control reports to establish complete audit trails for all transactions and to check the accuracy of data entered into the system. They therefore require:

- transaction listings by input type;
- details of trnsactions archived.

Reference Listings

From time to time, the supplies officer may require general information about suppliers and orders. This information can be produced by producing:

- suppliers lists:
  - by country;

- order history, showing date order placed, current status of order etc.

Management Reports

To reduce the time and effort involved in identifying and clarifying differences between orders, goods received notes and invoices, a monthly mismatch report should be produced highlighting the variances.

To assist cash flow requirement forecasting, the Chief, Finance and Accounts, Controller also needs to receive a regular report on outstanding commitments which would be:

- an analysis of goods received notes/telephoned/telexed orders not yet invoiced by:
  - general ledger analysis code;
  - cost centre/expense code.

This report could form the basis for a monthly accrual journal to the general ledger which is reversed the following month.

Requisition departments are also interested in receiving information about:

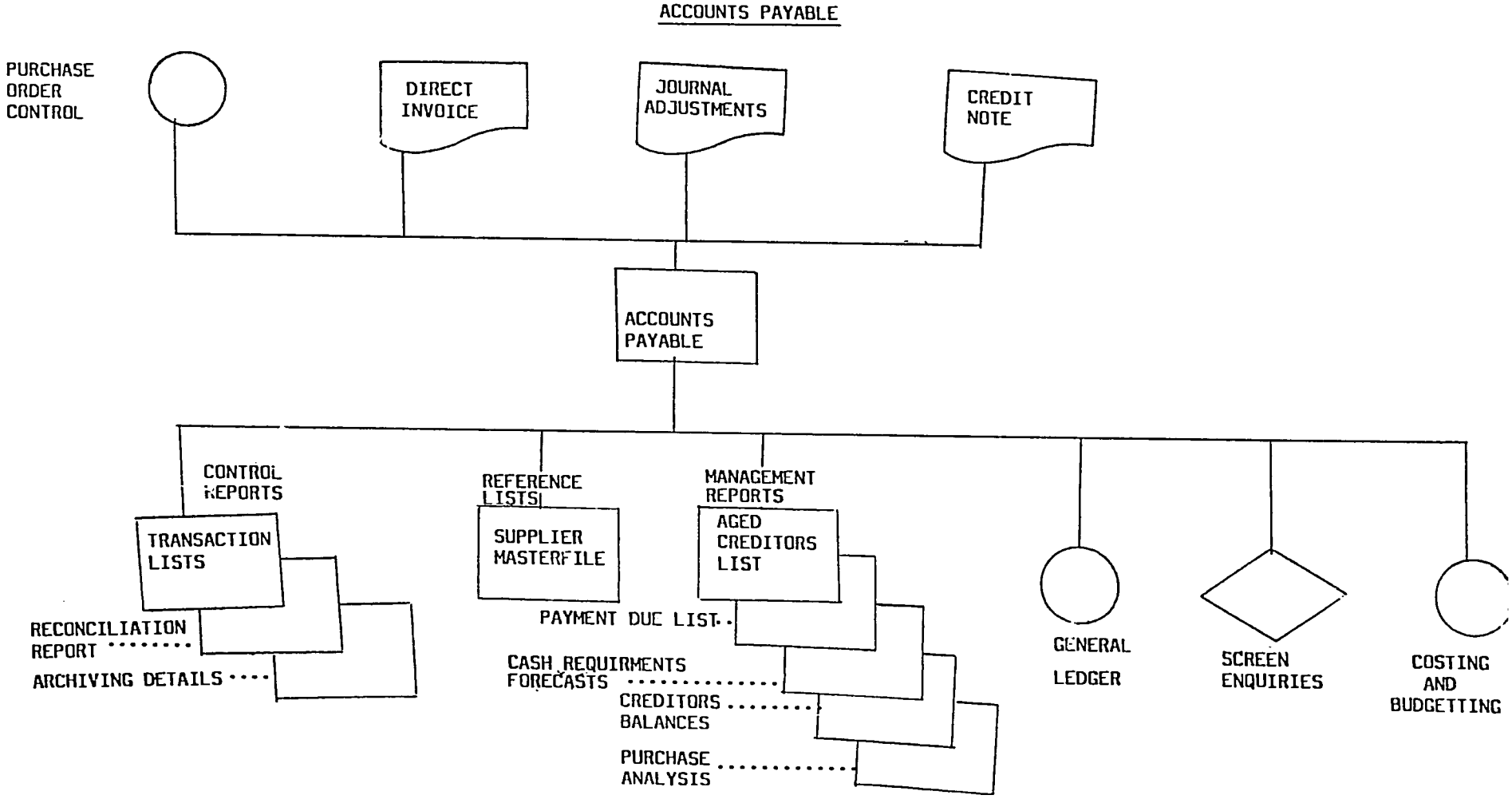
- status of requisition;
- status of order;

Screen Enquiries

On-line enquiries into the purchase order control system should be available to review the status of orders, orders overdue for delivery, goods delivered and invoices received.

Direct Interfaces

The purchase order control system should pass details of matched purchase invoices and debit nots automatically into the accounts payable system.


ACCOUNTS PAYABLE
PURCHASE ORDER CONTROL
DIRECT INVOICE
JOURNAL ADJUSTMENTS
CREDIT NOTE
ACCOUNTS PAYABLE
CONTROL REPORTS
TRANSACTION LISTS
RECONCILIATION REPORT
ARCHIVING DETAILS
REFERENCE LISTS
SUPPLIER MASTERFILE
MANAGEMENT REPORTS
AGED CREDITORS LIST
PAYMENT DUE LIST
CASH REQUIRMENTS FORECASTS
CREDITORS BALANCES
PURCHASE ANALYSIS
GENERAL LEDGER
SCREEN ENQUIRIES
COSTING AND BUDGETTING

ACCOUNTS PAYABLE

Main Functions

The main functions of the accounts payable system should be:

- to facilitate effective cash management and payment to suppliers by producing aged creditor listings and cash requirement reports;
- to produce a basis for reconciling to suppliers statements;
- to hold details of transactions with suppliers on an open item basis, allowing related transactions to be matched and cleared from the file. The matching process should allow for payment in advance and part payment of invoices;
- to update the general ledger automatically for all supplier transactions. ESAMI maintain a number of bank accounts in a number of currencies and the system must therefore cater for this.

INPUTS

The accounts payable system should receive the following inputs:

- supplier details;
- direct invoices;
- credit notes;
- journal amendments.

Information to be Maintained

The suppliers data will be shared with the purchase order control system. For each supplier the following details should be maintained:

- o supplier reference number;
- o name and address and telephone number;
- o currency;
- o payment terms;
- o date of last invoice;
- o date of last payment;
- o automatic/manual payment required.

For each invoice/credit note received into the accounts payable system, it will be necessary to maintain the following information:

- o suppliers reference number;
- o date of invoice;
- o invoice number;
- o total amount in original currency and converted to US$;
- o analysis codes - general ledger account code;
  and amounts - department/division/course/project code;
- o currency;
- o exchange rate;
- o due date;
- o discount if appropriate;
- o authorised to pay date;
- o payment date.

OUTPUTS

The outputs required from the accounts payable system should include the following:

REPORTS

Control Reports

Control reports are reuired for internal use by the finance department to enable them to verify and validate the data that has been input to the system and to provide a concise list of all transaction data. The reports required for this purpose would include:

- transactions lists for every type of input (direct invoices, credit notes, supplier details);
- reconciliation of brought forward ledger totals to carried forward;
- details of transactions archived.

Reference Lists

For reference purposes, the finance department staff and the supplies and purchasing officer may also require a printout of suppliers details. As suppliers are situated in a number of countries, it would be preferable if the report could be produced as follows:

- suppliers masterfile:
  - in alphabetical order;
  - by country.

Management Reports

To assist the finance department staff and senior management to assess their actual and future indebtedness, the system should be able to produce:

- aged creditors listings:
  - in total;
  - in detail.

- o a list of payments due in the following period;
- o cash requirement forecasts to meet the outstanding debts over a particular period;
- o creditor balances at the end of the month.

As cashflow is an essential part of ESAMI's financial management, these reports should be produced at least monthly. The system should also be capable of producing on request, reports for the supplies and purchasing officer, finance department staff, senior management and the tender committee on patterns of purchasing:

- o an analysis of purchases:
  - by department;
  - by period.

These patterns of expenditure can then be used to assist both the purchasing and budget making processes.

Screen Enquiries

An ability to make on-line enquiries to view suppliers accounts, invoices due for payment in detail and in total, and payments made where invoices have not yet been received, would facilitate the process of answering supplier questions and general management queries on the Institutes state of indebtedness.

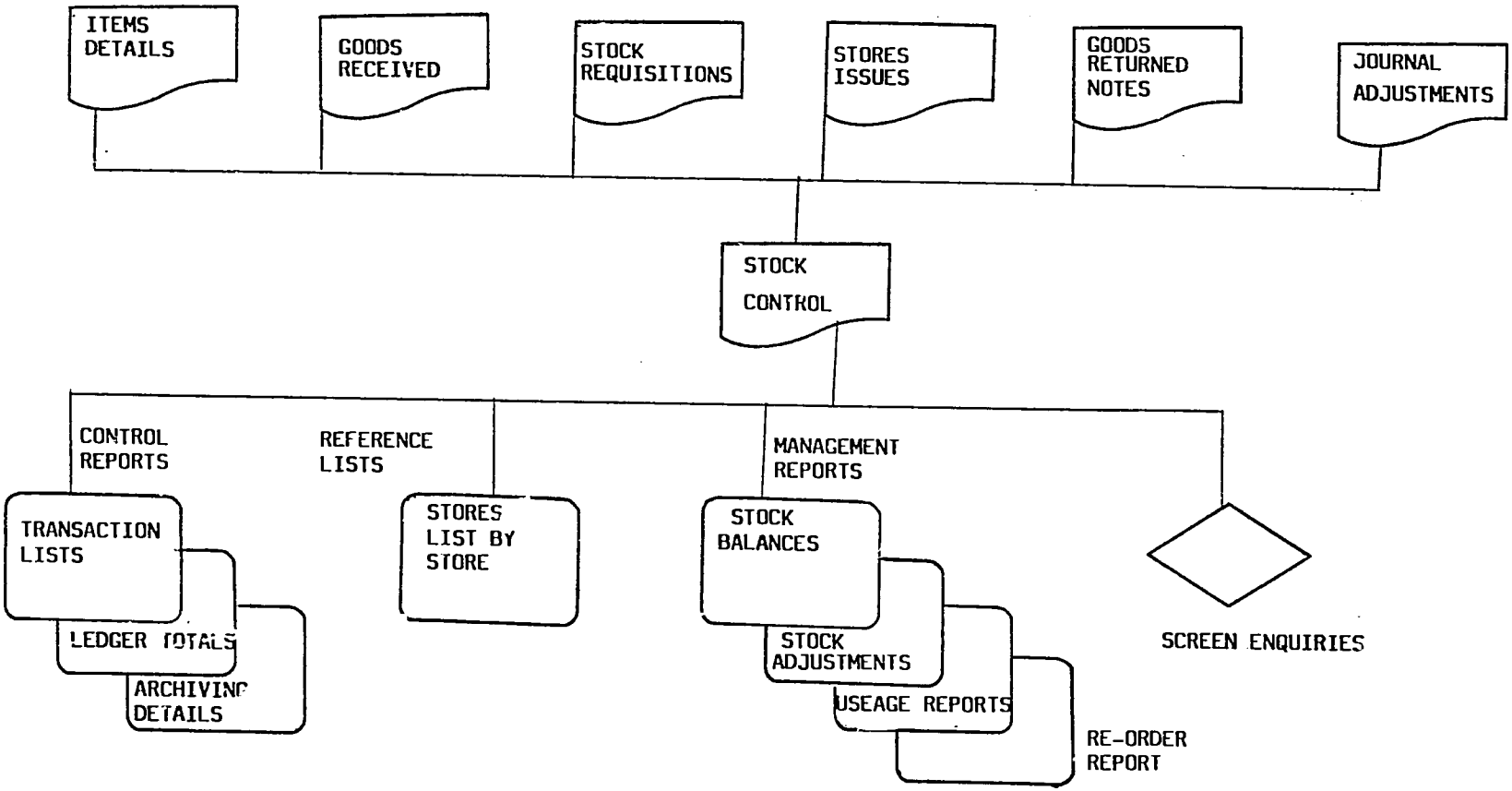
Direct Interface

Summary details of payments and expenditure analysis by GL cost centre a/c code should be interfaced to the general ledger system. Detailed allocation of expenditure to course or donor expenditure heads should be interfaced to the costing system.

Documents

In the short term furture payments to suppliers will be made on a manual decision basis and from a number of bank accounts. The ability to produce cheques automatically is therefore not required. A facility to adopt this approach in the longer term would however be beneficial.

STOCK CONTROL



STOCK CONTROL

Main Functions

The main functions of the stock control system should be:

- to maintain stock records at various departmental locations i.e. catering, stationery and general stores;
- to indicate purchasing requirement by maintaining maximum/minimum stock levels and re-order levels;
- to provide management with reports to enable them to monitor stock movement, identify obsolete stock and fast moving items;
- to provide data for the maintenance of store counts;
- to highlight shortfalls in stock levels vis-a-vis anticipated useage;
- to enable valuation of stock at either standard or average cost;

INPUTS

The stock control system should receive the following inputs:

- item details;
- goods received and their cost details from the purchase order control system;
- stores requisitions from other departments;
- stores issues to departments;
- journal adjustments for stock returns.

Information to be Maintained

The following information should be maintained for each stores item:

- description;
- quantity;
- stock location;
- unit of measure;
- minimum/maximum stock levels;
- re-order level/quantity;
- lead time;
- value;
- unit of despatch;
- despatch price.

OUTPUTS

The following outputs should be produced by the stock control system:

REPORTS

Control Reports

The finance department or the supplies section requires control reports from the system to enable checks to be carried out on the validity and accuracy of data input and establish audit trails for use by internal and external auditors. At the end of every complete data entry process, the following reports should be produced:

- transaction listings by input type;
- reconciliation of brought forward ledger totals to carried forward totals;
- details of transactions archived.

Reference Lists

On an ad-hoc basis, a reference document should be prepared, giving a list of items held within stores:

- o stores item list:
  - in total;
  - by stores.

Management Reports

The finance department, the supplies and stores section and divisional/department chiefs (on request) should receive monthly reports on:

- o stock balances;
- o stock adjustments;
- o stores item useage by department.

The system should automatically produce on a weekly basis, a re-order report, highlighting the items in stores, whose balances have reached re-order level.

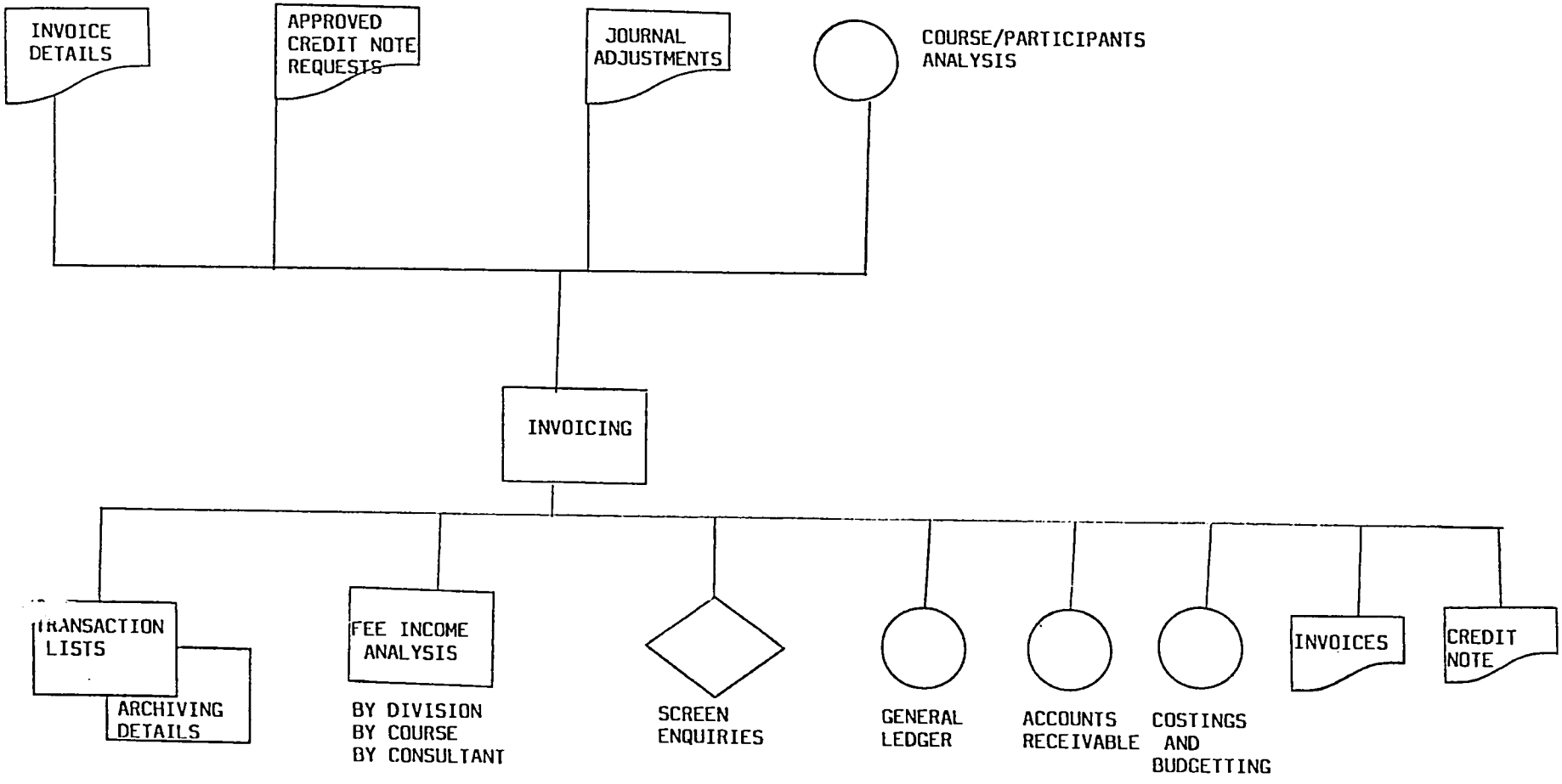
Screen Enquiries

On-line enquiries into the stock control system should be available in the future, so that spending departments and the supplies section can view stock details.

Direct Interface

No direct interface will be required for output from this system, although the stock control system will share data with the purchase order control system.

INVOICING


INVOICE DETAILS
APPROVED CREDIT NOTE REQUESTS
JOURNAL ADJUSTMENTS
COURSE/PARTICIPANTS ANALYSIS
INVOICING
TRANSACTION LISTS
ARCHIVING DETAILS
FEE INCOME ANALYSIS
BY DIVISION
BY COURSE
BY CONSULTANT
SCREEN ENQUIRIES
GENERAL LEDGER
ACCOUNTS RECEIVABLE
COSTINGS AND BUDGETTING
INVOICES
CREDIT NOTE

INVOICING

Main Functions

The main functions of the invoicing/analysis system are:

- to produce invoices for tuition, accommodation and field trip fees for client organisation;
- to produce invoices to donor organisations for re-imbursement of expenses incurred in programme establishment;
- to have the capability of producing invoices for late nominations, cancellation or non attendance;
- to have the facility to raise invoices prior to course commencement, during the course or at the end of the course;
- to produce credit notes for overpayment.

INPUTS

In order to carry out the above functions, it is necessary to input the following data:

- course participant details, and course details from the participant analysis system;
- invoice/credit note details;
- journal adjustments - fee rates etc;

Information to be Maintained

For each invoice/credit note produced by the system, the following information should be maintained:

- o invoice/credit note number;
- o date of invoice;
- o divisional code;
- o date of course to which invoice relates;
- o course category (open or tailor made);
- o client/donor reference number;
- o location/country code;
- o line details:
  - course attended;
  - course director;
  - tuition fees/participant;
  - accommodation fees/participant;
  - field trip fees/participant;
  - expenses incurred to be reimbursed:
  - travel;
  - subsistence;
  - accommodation;
  - training materials;
  - line values;
  - total values;
- o cash, credit, transfer;
- o currency for payment;
- o date due for payment;
- o net value of invoice/credit note.

For analysis of activity purposes the following information should be maintained:

- o value of fees for division/consultant split between open and tailor made courses for:
  - current period;
  - year to date;
  - last year current period;
  - last year - year to date.

OUTPUTS

A number of outputs in the form of reports, screen enquiries and direct interfaces are required from the Invoicing/Analysis system, to monitor both the value of training and consultancy activities and to compare income receivable with the cost of running the courses.

REPORTS

Control Reports

As with other systems, it is essential that the invoicing system provides sufficient control reports to enable the finance department to verify and validate the data that has been input, these would include:

- o transaction lists (including sales daybook);
- o details of transaction archived.

Management Reports

Donors, Divisional Chief, the Director General, and the Chief, Finance and accounts all require information about fee and donor income and numbers of participants attending particular courses. The following reports should therefore be produced either monthly or at the end of a programme of courses:

- o fee income by category (tuition accommodation, consultancy, cancellation etc) for open & tailor made courses:
  - in total;
  - by division;
  - by course;
  - by consultant.

The above report should be produced for the period and year to date and should be compared with previous years figures.

Screen Enquiries

It would be useful to have on-line access to "sales" information, so that rapid clearance of senior management and donors queries could be obtained.

Direct Interface

Details of all invoices/credit notes should be interfaced automatically to the accounts receivable system.

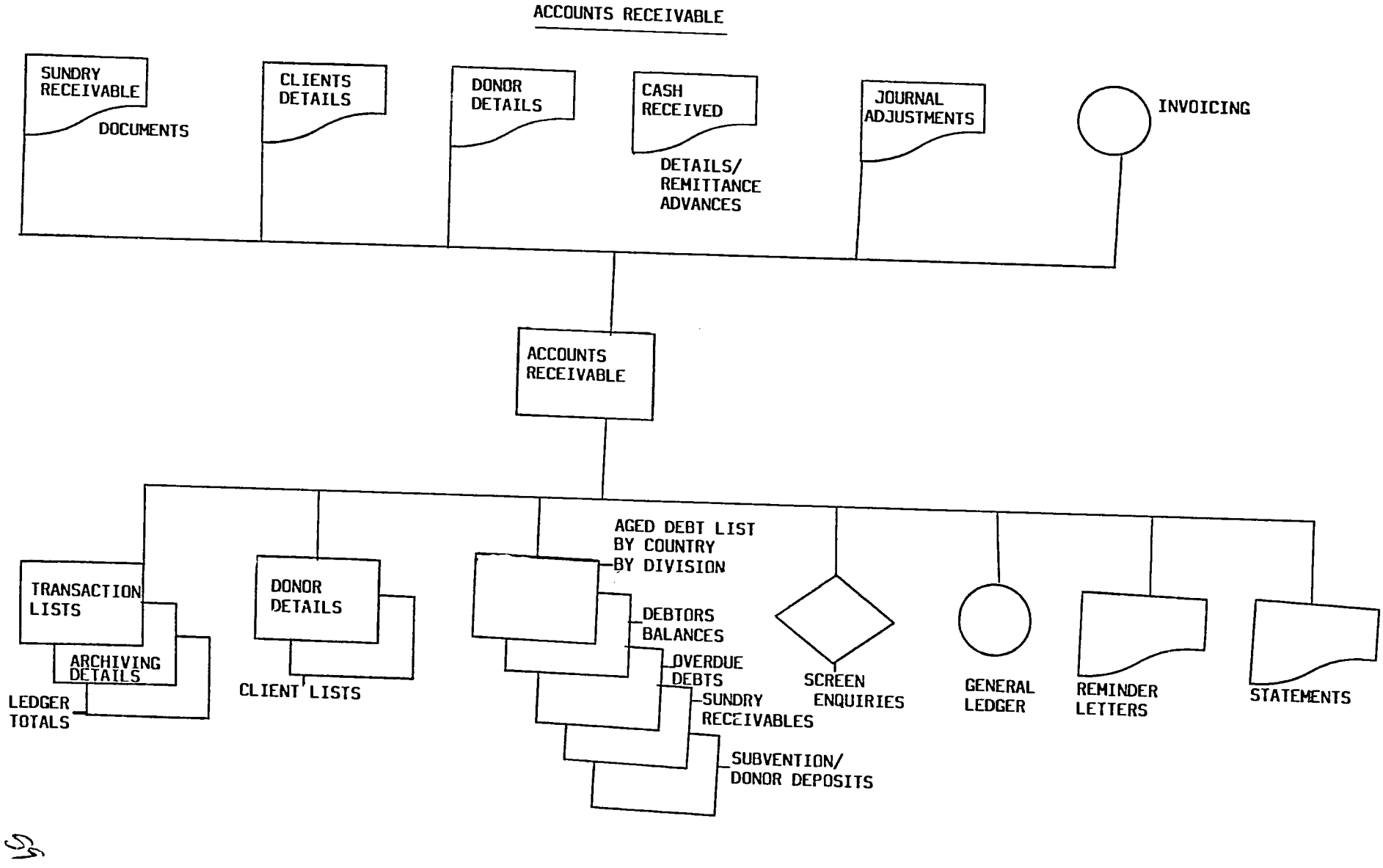
Summary of sales by division should be interfaced to the general ledger system.

Summary of sales by course or donor should be interfaced to the costing system.

Documents

The following documents should be produced:

- o invoices;
- o credit notes.


ACCOUNTS RECEIVABLE
SUNDRY RECEIVABLE
DOCUMENTS
CLIENTS DETAILS
DONOR DETAILS
CASH RECEIVED
DETAILS/ REMITTANCE ADVANCES
JOURNAL ADJUSTMENTS
INVOICING
ACCOUNTS RECEIVABLE
TRANSACTION LISTS
ARCHIVING DETAILS
LEDGER TOTALS
DONOR DETAILS
CLIENT LISTS
AGED DEBT LIST BY COUNTRY BY DIVISION
DEBTORS BALANCES
OVERDUE DEBTS
SUNDRY RECEIVABLES
SUBVENTION/ DONOR DEPOSITS
SCREEN ENQUIRIES
GENERAL LEDGER
REMINDER LETTERS
STATEMENTS

ACCOUNTS RECEIVABLE

Main Functions

The main functions of the accounts receivable system should be:

- to record and report indebtedness by participants;
- to facilitate effective credit control and debt collection by producing aged debtor listings debtors balances, customer statements and reminder letters;
- to update the general ledger automatically for summarised cash received transaction, ESAMI receives income from fees, donors and subvention payments in a number of currencies and the system must be able to accommodate this;
- to provide a basis for rapid clearance of client/donor account queries including maintenance of accounts on an open item basis;
- to produce customer statements and reminder letters.

INPUTS

The accounts receivable system should receive the following inputs:

- client organisation details;
- donor details;
- cash received details;
- journal adjustments;
- invoice and credit note details automatically interfaced from the sales invoicing system;
- sundry receivable documents i.e. payments for petrol etc.

Information to be Maintained

The standing data to be maintained for each donor or participant organisation is as follows:

- organisation's reference number;
- invoice name and address details;
- country/location code;
- currency for payment;
- contact name.

In addition for each invoice/credit note on a client/donor account, the system should maintain the following:

- Invoice/credit note number;
- date of invoice;
- date of course;
- value per participant;
- total value;
- due date;
- amount outstanding;
- cash received details:
  - date received;
  - bank account (12 possible bank accounts);
  - amount;
  - matched;
- invoice/credit note status.

OUTPUTS

The outputs required from the accounts receivable system include reports, screen enquiries, direct interface and letters or documents.

REPORTS

Control Reports

The system must produce sufficient control reports to ensure that complete audit trails are maintained for all transactions from inception to their archiving and to verify that data has been input correctly from the source documents, and that program updates are functioning correctly. The reports included in this category therefore include:

- o transaction listings for every input type;
- o details of transactions archived;
- o reconciliation of brought forward ledger totals to carried forward totals;

Reference Lists

Lists of donor organisations, supporting ESAMI operations and of participant's employing organisations may often be required by ESAMI management as a source of information for the establishment of theier marketing strategy, as a base list for the distribution of course brochures, annual training programme prospectuses and newsletters. The system should therefore be able to produce:

- o client organisation lists:
  - by country;
  - by industry type (manufacturing, agricultural etc.);
  - by economic category (governmental, parastatal, private, sector).
- o donor lists.

Management Reports

To assist staff in the finance department and senior management in assessing their cash flow position, the system needs to be able to produce on a regular monthly cycle, the following set of reports:

- o aged debtors listing analysed by country:
  - by training division;
  - by consultant;
- o total debtors balances at the end of a particular period;
- o overdue debts listing.

The above reports are related solely to the receipt of fees from the running of courses and/or consultancy work. In addition reports should be prepared for the relevant officer in the finance department and the appropriate operational manager about:

- o sundry income obtained during the period, i.e. for farm sales, bar sales and petrol sales.

Furthermore the Director General and the Chief, Finance and accounts need to know about subvention payments from member and other supportive countries, and block deposits and revolving fund advances from donor organisations. These reports should be available on an ad-hoc basis, but should be produced automatically on a quarterly basis.

Screen Enquiries

Enquiries from course co-ordinators about whether or not a participant's employing organisation has paid the relevant fees, queries from clients about the state of their indebtedness and general information about the employing and sponsoring organisations which are supporting ESAMI should be available on-line. Significant time savings could be realised if such information is centralised and readily accessible.

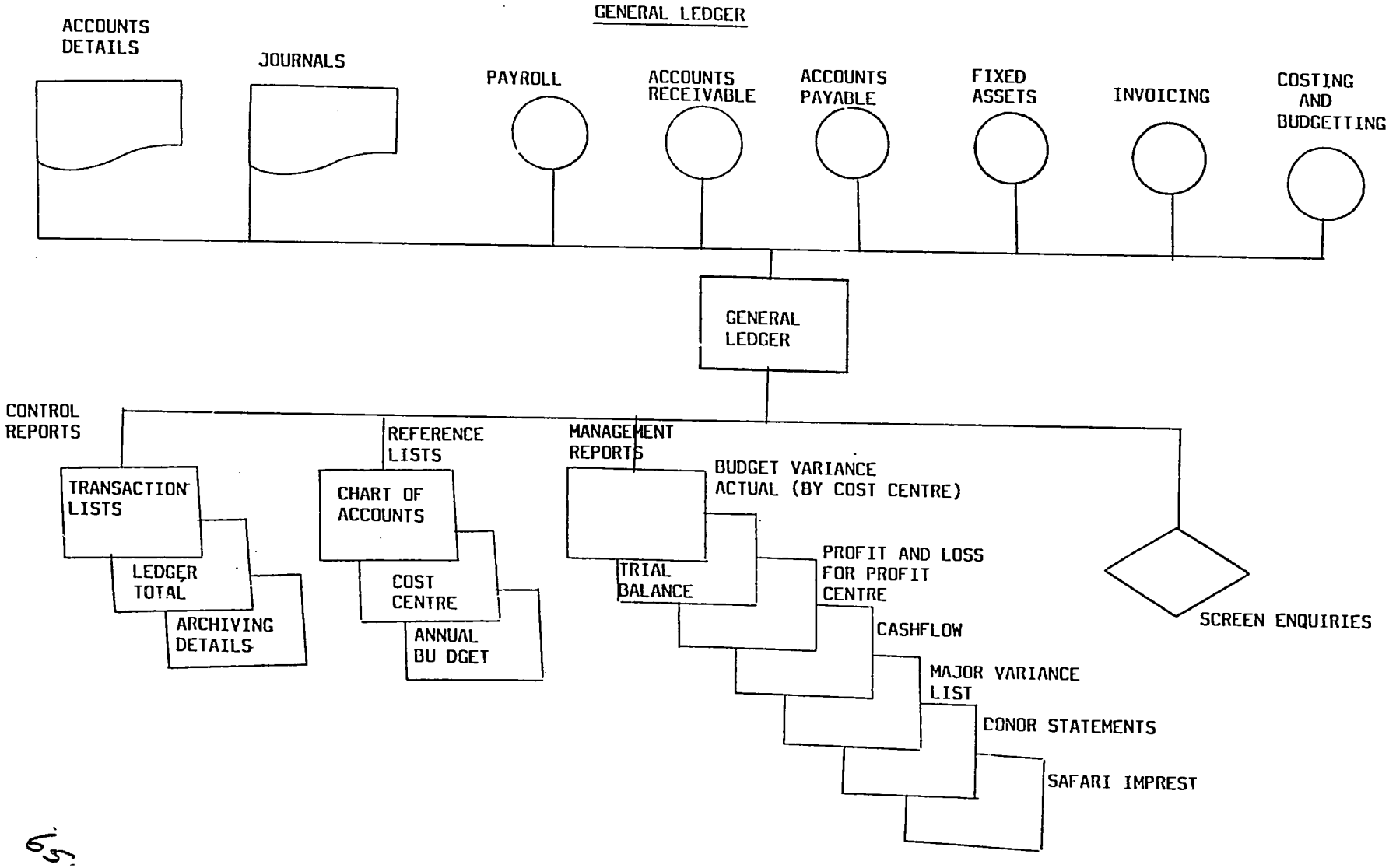
Direct Interface

Summarised cash received details should be automatically interfaced to the general ledger.

Documents

The following documents should be produced:

- monthly statement for client and donor organisations;
- reminder letters which should be automatically produced, if payment is not received within one month, three months, six months and one year. The wording of the letters should alter as the time period involved increases.


GENERAL LEDGER
ACCOUNTS DETAILS
JOURNALS
PAYROLL
ACCOUNTS RECEIVABLE
ACCOUNTS PAYABLE
FIXED ASSETS
INVOICING
COSTING AND BUDGETTING
GENERAL LEDGER
CONTROL REPORTS
TRANSACTION LISTS
LEDGER TOTAL
ARCHIVING DETAILS
REFERENCE LISTS
CHART OF ACCOUNTS
COST CENTRE
ANNUAL BU DGET
MANAGEMENT REPORTS
BUDGET VARIANCE ACTUAL (BY COST CENTRE)
TRIAL BALANCE
PROFIT AND LOSS FOR PROFIT CENTRE
CASHFLOW
MAJOR VARIANCE LIST
CONOR STATEMENTS
SAFARI IMPREST
SCREEN ENQUIRIES

GENERAL LEDGER

Main Functions

The main functions of the general ledger system should be:

- to maintain the financial general ledger for the statutory books of account;
- to process journal vouchers for all types of financial transactions for the institute;
- to provide management accounting reports and the statutory accounts, including comparisons of actual with budget;
- to provide an allocation facility to enable apportionment of administrative and support service expenses to training divisions including the allocation of expenses over a twelve month period or any other predetermined pattern;
- to provide a facility to highlight variances between budget and actual on a percentage or amount basis;
- to provide a flexible facility for reporting so that new formats can be designed and existing formats amended as required;
- to maintain details of individual safari imprest accounts and to provide a central facility to ensure timely repayment;
- to maintain the accounts of the various profit orientated activities i.e. farm, bar;
- to hold details of donor accounts either revolving fund, block deposits, or programme associated and to report regularly on advances made, expenditure incurred and outstanding balances.

INPUTS

The general ledger should accept interfaces from the following system, so that data does not have to be entered more than once:

- payroll - net postings by general ledger account, rather than postings of individual transactions and of summary postings to payroll control accounts;
- accounts payable - summary postings of purchases and payments;
- accounts receivable - summary postings of cash receipts;
- invoicing - summary of sales invoices;
- fixed asset register - net postings by general ledger account of depreciation calculations.

Journalised data should be input via the screens and should include the following:

- stock adjustments;
- budget entry/amendments;
- statistical data;
- internal sales;
- sundry cash book payments & receipts;
- travel advances/claims.

In addition the system should be capable of processing reversible, standing and automatic journals and differentiating between the various types of journal and interface transaction.

Information to be Maintained

The general ledger should hold summarised information in relation to each individual account as follows:

- account type (posting, summary, income, expense, asset, liability)
- account code;
- account description.

In relation to individual cost and profit centres:

- cost centre code;
- cost centre description;
- name of person responsible.

For each account/cost centre combination the system should maintain:

- opening balance for current year;
- current year actual figures by month/cumulative to date;
- current year budget figures by month/cumulative to date/annaul;
- current year revised forecast figures by month/cumulative to date/annual;
- prior year actual figures;
- profile code/inflation indicator for budget data (the profile code distributes budget data across the year in a predetermined way to reflect expenditure patterns);
- variance factor, this factor highlights on hardcopy reports, lines where actual expenditure varies from budgeted expenditure by a predetermined amount and/or percentage;
- type of expenditure indicator i.e. variable, semi-variable and fixed.

In relation to individual journal or interface transactions, the general ledger should maintain the following data:

- journal/interface type;
- journal reference number;
- journal batch total;
- journal narrative;
- accounting period/actual date;
- account and cost centre code;
- value of transaction;
- debit/credit indicator.

In relation to individual safari imprest accounts, the general ledger should maintain the following data, until travel claims are received and charged to the relevant course or donor:

- individual's name;
- starting date of trip;
- return date/due date for repayment;
- duration of trip;
- amount advanced;
- repayment indicator.

In relation to individual donor accounts it is necessary to maintain the following data:

- donor name;
- amount advanced;
- individual expenditure incurred - as for journal voucher and interface transactions;
- balance brought forward and carried forward.

OUTPUTS

The outputs from the general ledger system should include the following:

REPORTS

Control Reports

The finance department require control reports from the general ledger system, so that they can check the validity and accuracy of the data entered into the system and establish complete audit trails. It is essential therefore that the system can produce after every entry process or set of entry processes:

- o transaction lists by every input type;
- o details of transations archived;
- o ledger totals.

Reference List

On an adhoc basis, the system should be capable of producing reference lists for use by finance department staff, divisional/departmental staff regional offices and donor agencies. These would include:

- o chart of accounts in total by cost/profit centre;
- o list of cost/profit centre;
- o annual budget (initial and revised).

When changes are made to any of these files, the finance department should request a revised report and be responsible for distributing this new list to the heads of divisions and departments.

Management Reports

It is the intention of the Institute to decentralise financial responsibility to the spending departments, to facilitate this process the system must produce on a monthly basis:

- budget - actual variance statements by each cost/profit centre. The Chief of that department/division would then be responsible for analysing, monitoring and controlling variances.

The finance department is to act as a co-ordinator and overall controller of financial information and management. The system should be able to provide on a monthly basis for the finance department staff usage the following reports:

- income and expenditure account (profit and loss a/c) for the whole institute and individual profit and cost centres;
- a cash flow statement (retrospective analysis of cash flow in and out, actual with budget);
- list of major variances by departments (this would enable the finance department to maintain an overall check and control on overspending division);
- trial balance in summary;
- status of donor accounts.

On a monthly basis, divisional chiefs, senior management and the finance department should be provided with:

- a report on outstanding safari, imprest account showing individual, amounts advanced, date of return, amounts outstanding.

This report will provide the basis for controlling and monitoring travel imprest accounts and the need for rapid repayment or justification of advances made.

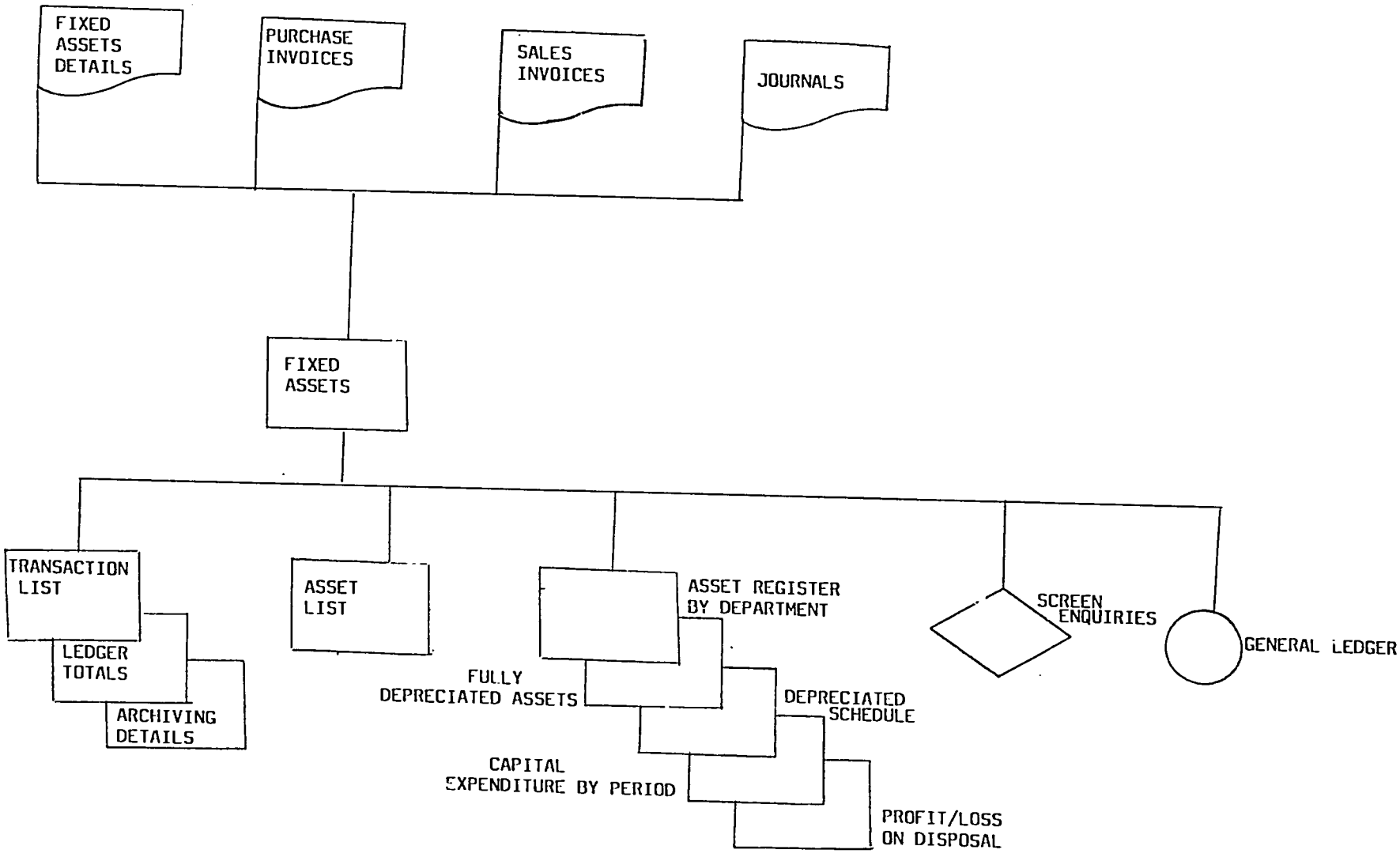
On a quarterly basis, the finance department and senior management require:

- o balance sheet;
- o trial balance in detail.

Screen Enquiries

On-line enquiries should be available to the finance department staff and divisional/departmental staff into general ledger accounts for current year balance/budget/variance by period and by department. The status of safari imprest accounts by individual and donor accounts should also be available. The access to on-line enquiries to divisional/departmental data, should be restricted to personnel within that division. Only finance department staff should have access to all data, and even in the finance department data entry should be traceable to relevant staff.

FIXED ASSETS



FIXED ASSETS

Main Functions

The main functions of the fixed assets register should be:

- to maintain individual records for all ESAMI's fixed assets including land, building, vehicles, plant and machinery in US dollars and Tanzanian shillings;
- to record details of all acquisitions revaluations and disposal of assets;
- to calculate depreciation on individual assets or categories of assets according to the Institute's depreciation policy.

INPUT

The fixed asset register should be capable of processing data from:

- fixed asset details;
- purchase invoices (acquisitions);
- sales invoices/scrap notes (disposals);
- journal entries for revaluation purposes.

Information to be Maintained

The fixed asset register should hold the following details for each asset:

- asset description;
- asset code;
- asset location;
- original cost;
- asset category;
- depreciation percentage;
- date of purchase;
- accumulated depreciation;
- remaining life of asset.

OUTPUTS

The reports, interfaces and enquiries required from the fixed asset system include:

REPORTS

Control Reports

In order to ensure that the data has been input correctly and that an audit trail is established, it is necessary for the finance department to receive verify and validate control reports after every entry process. Depending upon the volumes involved the transaction entry process may only occur on a quarterly basis. Reports produced should include:

- o transaction listing by input type (i.e. purchases, sales, revaluations, asset details);
- o ledger totals reconciling the brought forward balance to the carried forward balance;
- o details of transactions archived.

Reference Lists

The finance department and/or the administration department may require on an intermittent basis, a complete list of the assets owned by the Institute. The system should therefore produce:

- o an asset list:
  - by asset category;
  - by location.

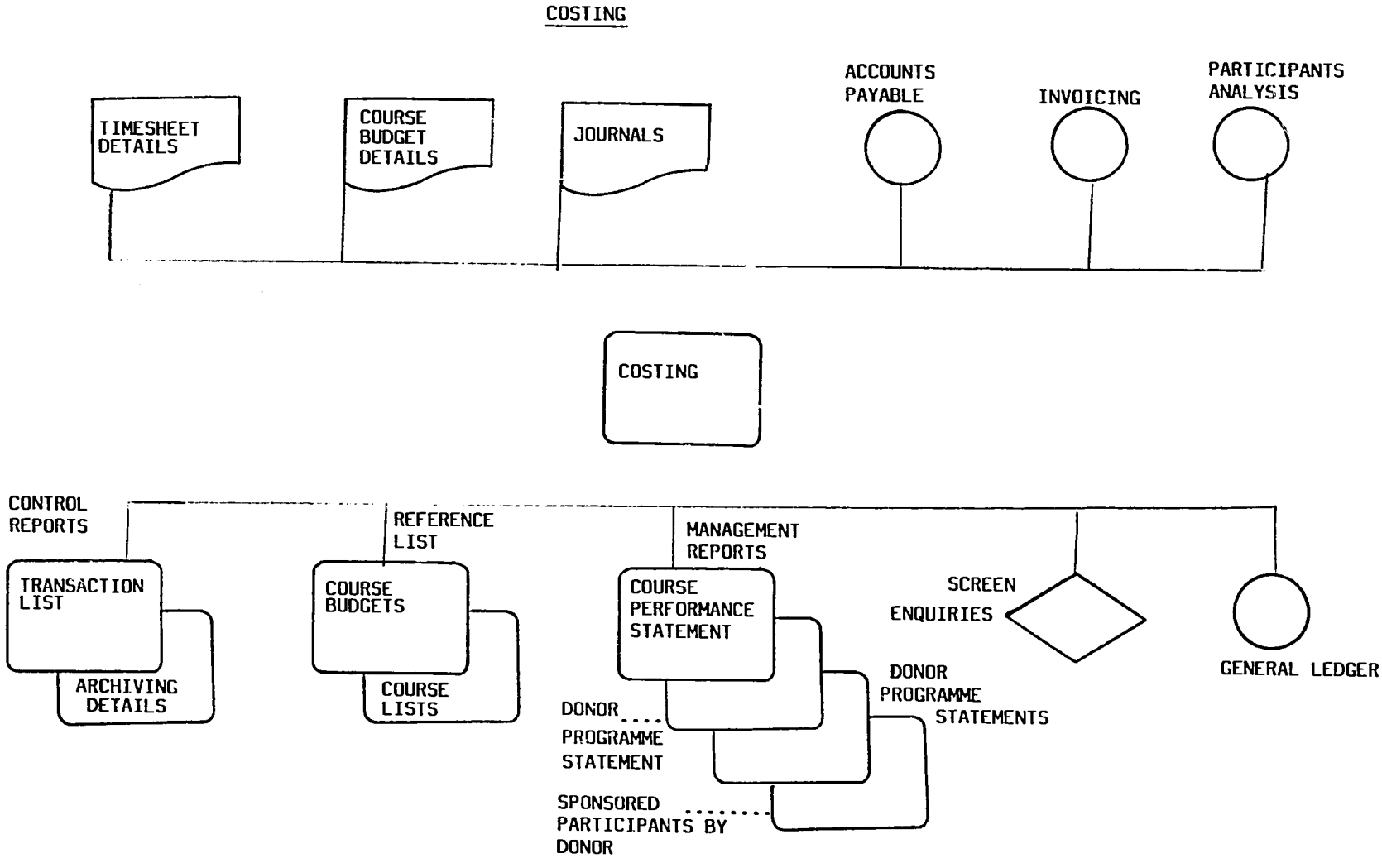
Management Reports

Information about the Institute's assets may also be required by the finance department and senior management when preparing the following years capital budget and the statutory accounts. The system should be able to produce:

- asset register by department or division;
- a report on the fully depreciated assets;
- a schedule showing the amount of depreciation in the year and the remaining book values of the various assets;
- the level of capital expenditure in a particular period;
- profits/losses on disposals.

Direct Interface

General Ledger - On a six monthly basis the fixed asset system should automatically update the general ledger with the depreciation of fixed assets.


COSTING
TIMESHEET DETAILS
COURSE BUDGET DETAILS
JOURNALS
ACCOUNTS PAYABLE
INVOICING
PARTICIPANTS ANALYSIS
COSTING
CONTROL REPORTS
TRANSACTION LIST
ARCHIVING DETAILS
REFERENCE LIST
COURSE BUDGETS
COURSE LISTS
MANAGEMENT REPORTS
COURSE PERFORMANCE STATEMENT
DONOR PROGRAMME STATEMENT
SPONSORED PARTICIPANTS BY DONOR
DONOR PROGRAMME STATEMENTS
SCREEN ENQUIRIES
GENERAL LEDGER

COSTING

Main Functions

ESAMI are currently reviewing and establishing a costing system. One of the options being considered is the use of a marginal costing system, and the establishment of cost and profit centres, each centre would then have costs divided into variable, semi-variable and fixed costs. This approach can be accomodated within the general ledger system.

In addition there is a need to aggregate the costs associated with open/tailormade and sponsored courses. The main functions of the costing system would therefore be:

- to accumulate costs, variable and semi-variable associated with a particular open or tailor made course;
- to accumulate costs associated with donor sponsored programmes;
- to accumulate the income accruing to each particular course or programme;
- to produce variance statements, showing course and programme performance of actual against budget;
- to produce statements showing the contribution each course has made towards fixed costs;
- to aggregate all course related costs and to transfer the summarised details to the relevant cost centre general ledger account.

INPUTS

The costing system should receive the following inputs:

- o course budget details;
- o timesheet details;
- o journals:
  - telex charges;
  - transport charges;
  - photocopying charges;
  - catering (direct);

- o course related expenses from the accounts payable system;
- o fee income for relevant courses from invoicing system;
- o course and participant details from the participant analysis system.

Information to be maintained

The information to be maintained for each open or tailormade course will include:

- o course name;
- o course director;
- o course code;
- o course budget details;
- o time inputs:
  - academic;
  - non academic;

- o direct costs;
- o direct fees;
- o charges:
  - telex;
  - telephone;
  - transport;
  - photocopying;

- o contribution percentage (actual);
- o contribution percentage (budget).

The information to be maintained for sponsored programmes will include the above plus:

- o donors name;
- o donors code;
- o re-imburseable expenses/costs;
- o report dates.

The information to be maintained for sponsored participants would include:

- o sponsor/donor name;
- o donor code;
- o name of participants sponsored;
- o courses attended - name and code;
- o costs incurred/re-imburseable expenses.

OUTPUTS

The outputs from the costing system would include:

REPORTS

Control Reports

The finance department must receive regular control reports to monitor the accuracy and validity of data input into the system and to establish a complete audit trail. These reports would include:

- o transaction lists by input type;
- o archiving details.

Reference Lists

The costing system should be able to provide various reference type reports including:

- o individual course budgets;
- o course lists.

Management Reports

For internal management purposes and for external reporting to donors. The costing system must be able to produce reports for distribution to the Training Committee, Director General, Course Directors, Divisional Chiefs and the finance department on the performance of open and tailormade courses. These reports should be available within a predetermined time of the end of the course (i.e. two weeks).

In addition, the above personnel and sponsoring organisations should receive regular reports on donor programme expenses and sponsored participant costs. The timing of these reports will vary because of the differing reporting requirements of donors. For internal purposes, the two week deadline suggested above would seem equally appropriate for donor programmes. Details of sponsored participants costs and revenue should be available on an ad-hoc basis, but should be produced at least once a quarter. Reports would include:

- o course performance statements;
- o donor programme statements;
- o contribution statements;
- o sponsored participants details by donors.

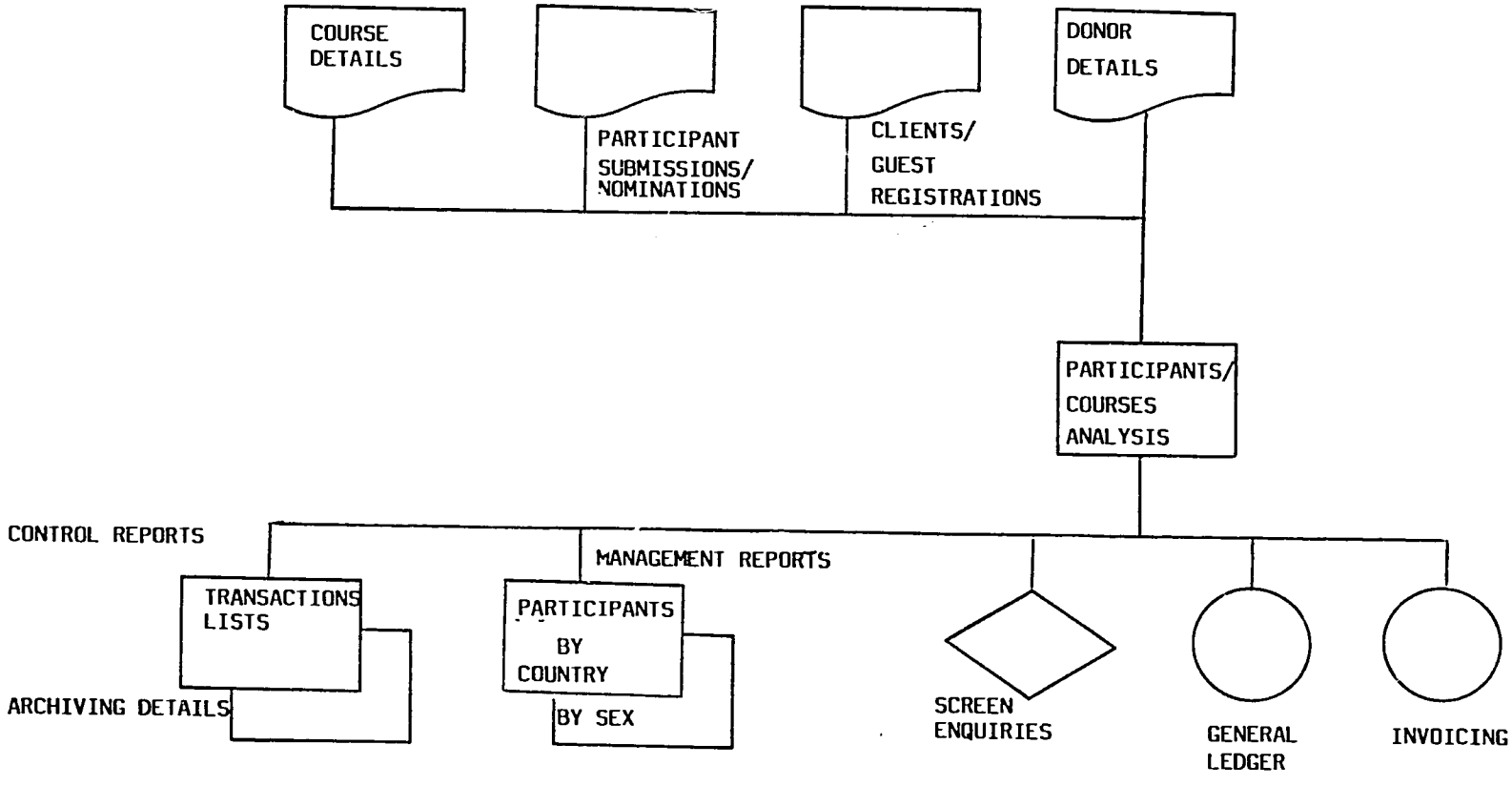
Screen Enquiries

On line access should be available to view course performance details and donor programme statuses.

Direct Interface

The costing system should be able to transfer summarised course related data to the relevant general ledger cost centre account.

PARTICIPANT. COURSE ANALYSIS



PARTICIPANTS/COURSE ANALYSIS

Main Functions

The main functions of the participants and course analysis system are:

- to produce various analyses of participant attendances for external reporting and internal management purposes;
- to produce regular and ad-hoc reports on the client organisation that send participants to ESAMI;
- to maintain a flexible reporting facility.

INPUTS

The participant analysis system should receive the following inputs:

- course submissions and nominations;
- client/guest registration forms;
- sponsoring/employing organisation details.

Information to be Maintained

The information to be maintained within the sytem can be divided into four broad categories. Information about the participant should include:

- name;
- address, telephone number;
- sex;
- nationality;
- job designation;
- employing organisation;
- country of employment;
- course attended;
- sponsored/not sponsored;
- name of sponsor.

Information about the course should include:

- name;
- venue;
- course director;
- duration;
- actual dates;
- open/tailormade/sponsored;
- name of sponsor.

Information about the employing organisation should include:

- name;
- address, telephone, telex numbers;
- contact name;
- country;
- industry sector;
- industry type;
- financial year end.

In addition certain information should be maintained about the sponsoring or donor organisation, this would include:

- name;
- address, telephone and telex number;
- contact name;
- type of donor account:
  - block deposit/revolving fund;
  - specific programme;

- reporting requirements:
  - date by which course report submitted;
  - date by which accounts submitted.

OUTPUTS

REPORTS

Management Reports

Consultants, donors, divisional and departmental chiefs, the training committee and the director general will all require information from this system both on an ad-hoc and regular basis. The exact nature of their reporting requirements will differ and therefore the system must be able to produce reports using any conditional selection procedures. Reports regularly required might include:

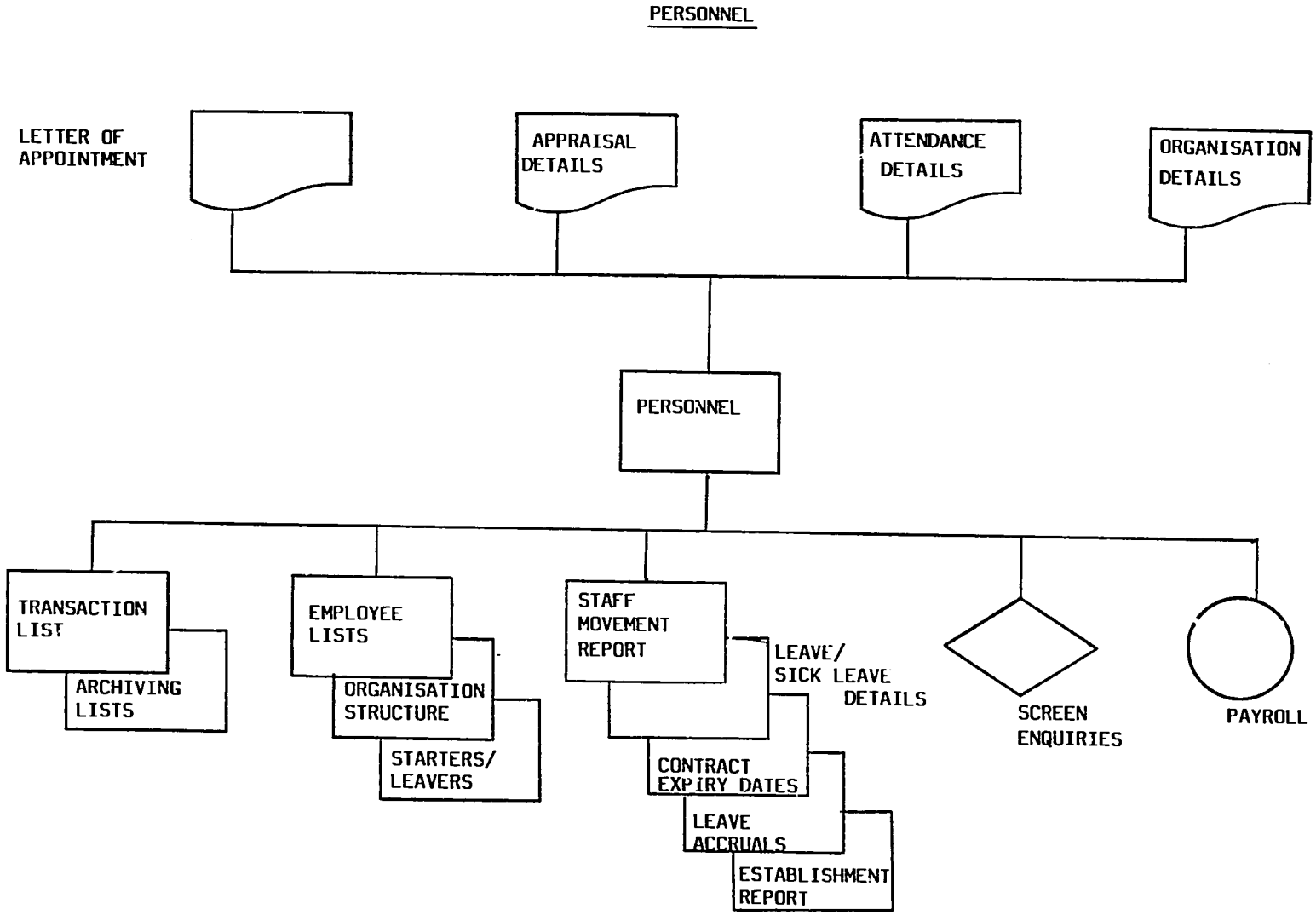
- participants by country;
- participants by sex;
- participants attendance:
  - sponsored;
  - not sponsored.

Screen Enquiries

On-line access to the participant analysis system should be available to enable random queries of the data.

Direct Interface

Participant details could be shared with the invoicing system, to enable the latter to raise invoices in a timely and accurate manner. Invoices could be raised on receipt of participant submissions, any adjustments being made when participants actually register for the course. Course and donor details could also be shared with the costing system.


PERSONNEL
LETTER OF APPOINTMENT
APPRAISAL DETAILS
ATTENDANCE DETAILS
ORGANISATION DETAILS
PERSONNEL
TRANSACTION LIST
ARCHIVING LISTS
EMPLOYEE LISTS
ORGANISATION STRUCTURE
STARTERS/ LEAVERS
STAFF MOVEMENT REPORT
LEAVE/ SICK LEAVE DETAILS
CONTRACT EXPIRY DATES
LEAVE ACCRUALS
ESTABLISHMENT REPORT
SCREEN ENQUIRIES
PAYROLL

PERSONNEL SYSTEMS

Main Functions

The main functions of the personnel system should be:

- to hold comprehensive accurable and up to date personnel records of all ESAMI's permanent employees for the period of their employment, covering in particular, personnel and family details and information about education, training experience, previous employment, staff assessments and other relevant data;

- to provide management with information to facilitate personnel planning and deployment, analysis of skill and experience and staff turnover;

- to hold information about employee attendance and sickness to assist in individual assessment and payment and in the evaluation of required staffing levels;

- to hold details of ESAMI's establishment including data about vacancies and sponsored positions to assist in planning and control of staff numbers;

- to hold details of senior staff travel plans, including data about purpose of trip, duration destination and sponsor (if any).

INPUTS

Employees details should be input from the letters of appointment and data should be shared with the payroll system. Notification of leavers and changes in status, travel details, sickness and holidays should also be input from the appropriate form/letter. Details of organisational change should be input from the appropriate document. Information about appraisals should also be entered.

Information to be Maintained

The information maintained in respect of each employee should be as follows:

- o name;
- o home address, telephone and box numbers;
- o payroll number;
- o department/division name and number;
- o date of birth;
- o date commenced employment;
- o grade;
- o starting salary;
- o sponsoring organisation (if any);
- o job title;
- o probation period expiry date;
- o previous employment;
- o contract expiry date;
- o length of contract;
- o 1st, 2nd, 3rd contract;
- o qualifications/publications;
- o annual leave entitlement;
- o attendance record;
- o advances and loans received (non safari):
  - purpose;
  - total amount;

- o nationality;
- o trips:
  - purpose;
  - duration;
  - destination;
  - sponsor.

OUTPUTS

The outputs from the personnel system should comprise of hard copy reports, screen enquiries, and direct interfaces, the latter reducing the necessity to input data twice and allowing different departments to share common information.

REPORTS

Control Reports

As with other systems it is necessary to produce control reports to ensure correctness of data entries and to provide an audit trail of transactions. The system therefore should be capable of producing:

- o transaction lists by all types of input;
- o details of archived transactions.

Reference Lists

The staff in the personnel section also require general reference information for the preparation of staffing level reports and for inclusion in general Institute reports. These lists would include:

- o employee lists:
  - in alphabetical order;
  - by location;
- o organisation details/grading structure;
- o starters/leavers.

Management Reports

Divisional and departmental heads and the senior administrative officer also require regular monthly reports to assist them in planning the effective utilisation and deployment of staff (both professional and non professional). These reports should also be available to the Director General. A staff movement report for senior staff showing planned trips outside Arusha, the purpose of the trip, duration and sponsoring organisation (if any) is also required.

- o leave and sickness details:
  - by employee;
  - by department;

- o contract and probationary expiry dates;

- o leave accruals (this might also be required by the finance department at the end of the year to take account of the financial implications).

Manpower reports produced on a quarterly basis for the administration and finance departments should also be available showing:

- numbers;
- distribution; and
- movement of staff.

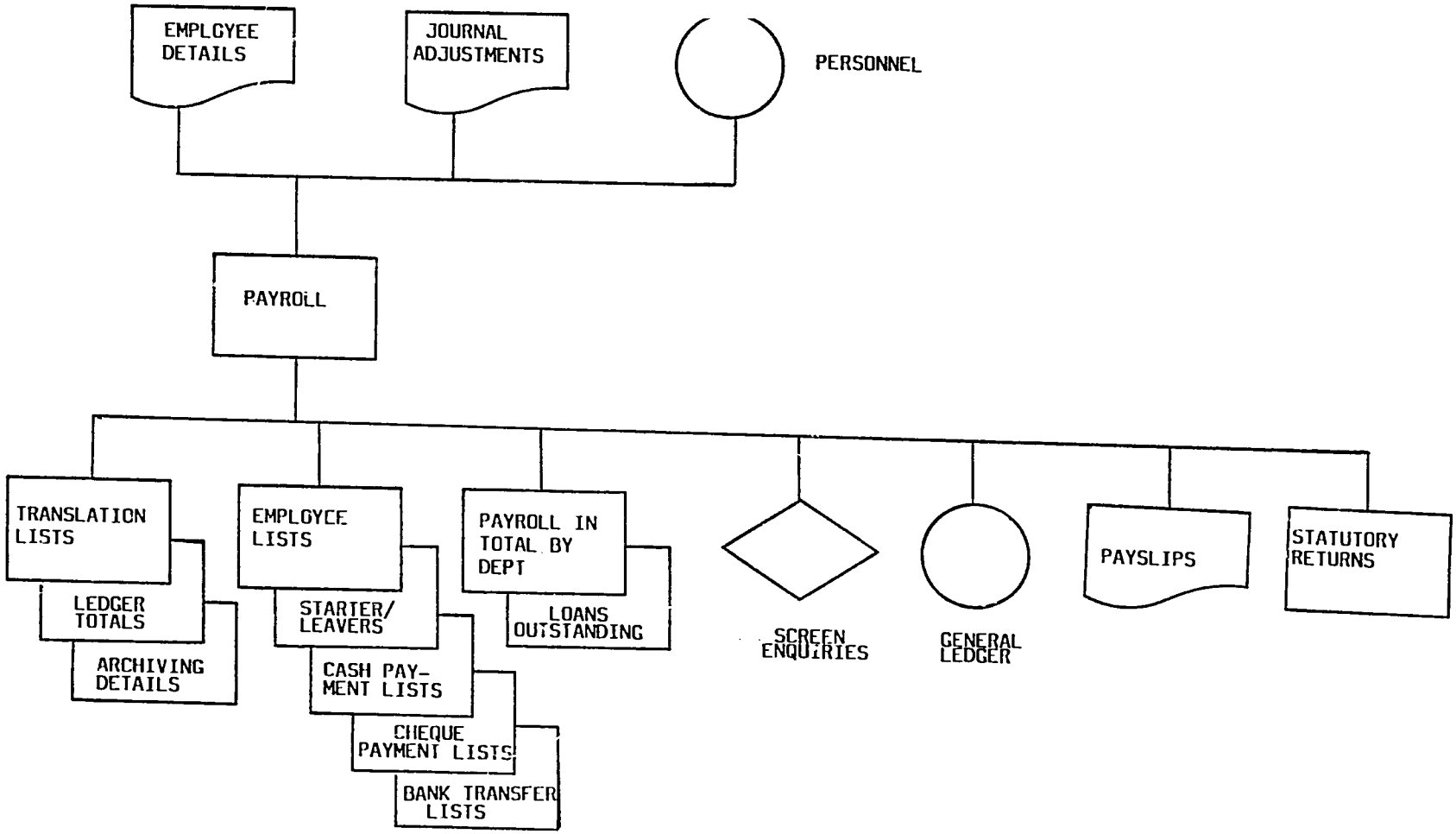
Screen Enquiries

Access to personnel records on line should be restricted to specific individuals. The ability to view and amend data should be segregated and the extent of the information available to view should be further restricted according to that person's status.

Direct Interface

The personnel system should preferably interface directly with the payroll system to provide the latter with the relevant information about starters, leavers, changes in grade, promotions or changes of department.

PAYROLL



APPENDIX C(9.)

PAYROLL

Main Functions

The main functions of the payroll system should be:

- o to calculate salary/wage payments for each employee;
- o to provide information on ESAMI's liability for tax, NSSF payments and other contributions and deductions;
- o to maintain up to date records of each employee's pay details;
- o to produce various statutory year end returns;
- o to produce other reports of permanent salary details as and when required;
- o to update the general ledger system for the cost of labour employed in relation to particular cost centres or departments;
- o to provide details of staff advances and staff loans;
- o to provide details of gratuities.

INPUTS

The payroll system should be capable of handling data from:

- o starters, leavers details;
- o standing data amendment forms:
  - for employee payment details (method of payment, bank details etc).

Information to be Maintained

The payroll system should share staff details with the personnel system. In addition, the payroll system needs to maintain payment details for each employee as follows:

- gross payment to date;
- net pay to date;
- gratuities to date;
- gross deductions to date;
- housing rent/allowances;
- total salary;
- increment point;
- hours worked;
- taxable category:
  - professionals (non Tanzanians) - no tax;
  - professionals (Tanzanians) ESAMI pay tax;
  - non professionals - liable for tax;

- hourly rate;
- basic/overtime rate;
- bank name;
- branch;
- bank account number;
- total loan outstanding/repaid;
- individual monthly payment records i.e. basic overtime;
- net payment for the month;
- mid month advances.

It will also be necessary to maintain details of the bank account(s) from which salaries are paid and overall pay details for the Institute:

- bank name, branch, account number;
- total pay for the month;
- department/division cost totals for the month.

OUTPUTS

The outputs from the payroll system should include the reports, screen enquiries, interfaces and documents set out below:

REPORTS

Control Reports

To ensure that data has been input correctly and to maintain an audit trail, it is necessary to produce transaction lists for internal use by the finance department. Such reports should be produced at the end of every input session (normally for payroll at ESAMI, once a month. The reports produced would include:

- transaction lists by type (additions, amendments, deletions);
- ledger totals reconciling brought forward to carried forward balances;
- details of transactions archived in the month.

Reference Lists

The system should also be capable of producing reference information, which is required on an ad hoc basis by the finance department or administration department. These would include:

- employee lists (in alphabetical order or by department/division);
- starters/leavers lists.

To assist the finance department in paying out salaries, three lists should be produced every month:

- a list showing all employees being paid cash. For each employee, the note/coinage breakdown should be printed so that the cashier can pay quickly the exact amount and correct denominations of notes and coins. The totals of coinage breakdown can be used to draw money from the bank;

- a list showing all employees being paid by cheque. The list shows the net pay and a place for signature by the employee when he/she collects the cheque;

- a list showing all employees paid through the bank. This needs to be produced for all banks.

Management Reports

The Chief Accountant and where relevant divisional chiefs should receive every month:

- an analysis of payroll details by department/division;
- an analysis of loans outstanding.

In addition, in order to satisfy the requirements of the income tax department and other government bodies, the Chief Accountant or a delegated person in the finance department requires:

- month end returns for income tax, PPF, NPF and loans;

- end of year reports for income and NPF.

Screen Enquiries

On-line access to individual, departmental and total payroll details should be available. This access must be restricted to specific individuals.

Documents

The system should be capable of producing easily understandable payroll slips showing full details of earnings, deductions, tax calculations, loan balances etc.

Direct Interface

The payroll system should automatically update the general ledger sysem with the net postings by general ledger account and department and summary postings to the payroll control account.

FINANCIAL MODELLING AND MANAGEMENT INFORMATION

Main Functions

The financial modelling system should be capable of undertaking the following functions:

- o receive data from the main accounting systems, the budgetting system, word processing and statistical databases for manipulation and further analysis;
- o produce statistical and financial data in graphical and tabular format;
- o assist in strategic planning and forecasting;
- o enable "what if" calculations and sensitivity analysis to be carried out;
- o produce cash flow forecasts.

Management Information

ESAMI is required to produce external reports for the board of governors, donors and member countries. In addition, there is a requirement for internal management accounting reports, quarterly performance reports and general management information which may vary according to managements changing needs. The reporting and interactive capabilities of any system should therefore be flexible and adaptive enough to collate data from a number of modules, databases and the financial modelling system described above. We would anticipate that this facility could be provided by standard package report writers, a separate management reporting module and data interchange and exchange capabilities.

OTHER SYSTEMS

During the course of discussions on the preceding application profiles, other systems at ESAMI were identified as requiring consideration for computerisation or enhancement of existing facilities. These include the following:

- Word processing;
- Library database;
- Country/economic database;
- Forward planning;
- Vehicle performance.

WORD PROCESSING

Word processing facilities should be available to personnel in the training and support divisions to enable the following:

- the preparation of standard letters, for examp'e, letters of appointment, documents and the editing of standard documents;
- the production of course brochures;
- the production of course reports, consultancy reports and research papers;
- the typing of normal correspondence/letters/ad-hoc reports.

Library Database

This database would hold records on all the books, publications and journals held by the Institute within a subject area.

Country/Economic Database

This database would contain up to date records on the economic, social and demographic indicators for the countries with ESAMI's region.

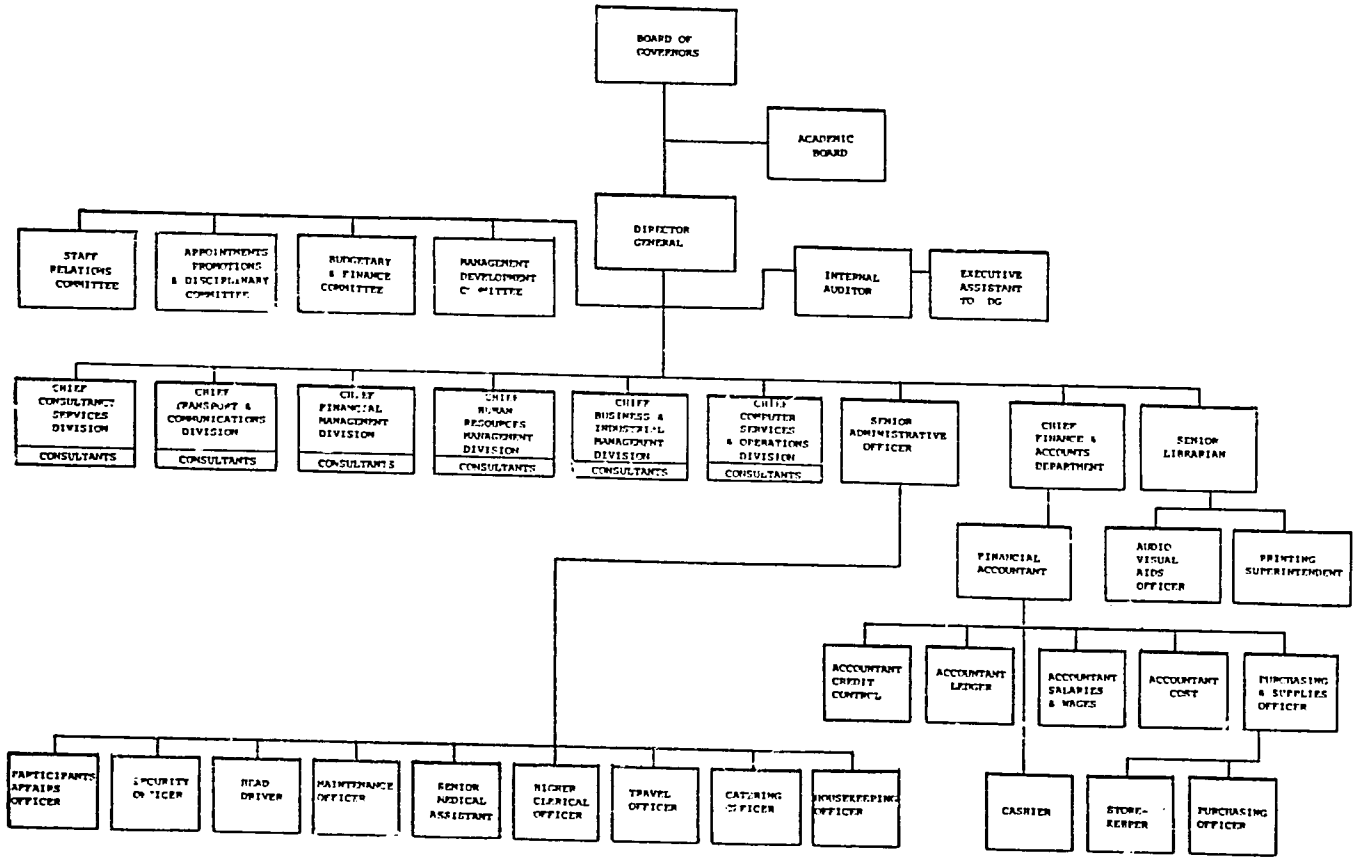
Forward Planning

This information system is required to simulate the effects on the Institute's resources i.e. accommodation, catering of the initial Training Programme, submissions to open programmes and additional tailormade or sponsored courses held at Arusha.

Vehicle Performance

This system would enable the monitoring and control of particular vehicles running performance and maintenance requirements. This data would be maintained for the life of the vehicle and would provide information on which to base a comparative decision of which make or model of vehicle to purchase.

ESAMI ORGANIZATION CHART



APPENDIX D

EVALUATION OF ALTERNATIVE OPTIONS

MAIN REQUIREMENTS	OPTION 1	OPTION 2 & 3
1 Ease of Use	As shown by the fact that there is great dependence on an external consultant, and the current inability to use the system, current systems do not meet this requirement. This is partly a training problem but is also related to the system itself.	As 1 - 5 are software specification these should be included in the selection criteria. They are generally available from the main accounting packages in the East African market. The only constraint would be that if software is chosen which is not supported by the existing hardware supplier(s) (option 2).
2 Comprehensive	The computerised accounting system, meets only a limited number of the information, requirements, revision and expansion and the development of totally new systems would be necessary.	There could be: (a) conflict of interests; (b) technical problems.
3 Interactive	The creditors, debtors and general ledger are modular in design, but do not interact with other computerised systems, complicated interface programmes would be required, to provide an interactive environment.	

	MAIN REQUIREMENTS	OPTION 1	OPTION 2 & 3
4	Modular in Design	The computerised accounting system from Davis and ACCPACK are modular in design, but there are only limited additional modules available for purchase.	
5	Increasing level of sophistication.	Not feasible	
6	Flexibility of reporting and expandability of hardware	Without additional hardware, expandability is limited, the design of the existing system severely restricts and in many cases precludes flexibility in reporting.	Option 2 would only allow limited expandability and given the sizing requirements, certain systems could not be obtained without additional hardware.

MOST OF THESE REQUIREMENTS HAVE BEEN SEEN AS DIFFICULTIES WITH THE CURRENT SYSTEM, IN ADDITION HOWEVER THERE ARE A NUMBER OF OTHER DIFFICULTIES AND PROBLEMS.

7	Lack of system and user documentation	It would be necessary for Mr Kallinga to write full system and user documentation for existing systems, before work could commence on new systems.	As for 1-5, 7 and 8 are software related and should be included in any selection criteria.

	MAIN REQUIREMENTS	OPTION 1	OPTION 2 & 3
8	Lack of software maintenance support	Dependence on a single person and no regular maintenance contract is unsatisfactory. A partial solution would be: (a) good documentation; (b) involvement and training of the system analyst, so that at least one person at ESAMI knows the system. Again, however there is reliance on a single person.	
9	Lack of Training	Only limited training has taken place, a full training programme would be required on existing systems, before the introduction of additional systems.	All software suppliers provide training programmes, the quality does however differ and comments from existing users/consultants would be helpful.
10	Lack of hardware maintenance support	Agreements with existing suppliers are required use of hardware from two or more different suppliers for integrated systems could lead however to: (a) technical problems (often insurmountable despite sales claims); (b) lower level of support overall.	As for Option 1, Options 2 and 3 would require proper maintenance contracts. The quality of service provided should be one of the criteria used in choosing a hardware supplier.

MAIN REQUIREMENTS		OPTION 1	OPTION 2 & 3
11	Late input of data	If this is not caused by technical problems, this can be remedied by applying proper control procedures e.g.: - timetable: (input & outputs); and non maintenance of manual and computerised information.	As for Option 1, the Institute needs to implement and adher to proper procedures for controlling micro based systems.
12	Duplication of data input	Because of the non-interactive nature of the current system duplication of data input is a problem. As detailed under the "interactive" paragraphs, considerable revisions would be required to provide an interactive environment and even then certain links may not be technically feasible.	The greater degree of integration available with the major commercial accounting packages resolves the necessity to input data twice.

SELECTION CRITERIA

SELECTION REQUIREMENT/ CRITERIA	IMPORTANCE	OPTION 1	OPTION 2	OPTION 3
Low initial cost	7	4	7	6
Ease of use	9	4	7	8
Comprehensive	8	4	6	7
Interactive	9	3	10	7
Modular in design	8	4	7	7
Increasing level of sophistication	6	2	5	5
Flexibility of Reporting	8	3	7	8
Expandability	7	6	7	8
Good system documentation	9	5	8	8
Good user documentation	9	5	8	8
Good software maintenance	7	3	6	8
Good Training facilities	9	4	7	7
Good Hardware Support	7	5	6	8

APPENDIX G

WEIGHTED EVALUATION OF ALTERNATIVE OPTIONS

SELECTION REQUIREMENT/ CRITERIA	OPTION 1	OPTION 2	OPTION 3
Low initial cost	28	49	42
Ease of use	36	72	72
Comprehensive	32	48	56
Interactive	27	54	63
Modular in design	32	56	56
Increasing level of sophistication	12	30	30
Flexibility of Reporting	24	56	64
Expandability	42	42	56
Good system documentation	45	72	72
Good user documentation	45	72	72
Good software maintenance	21	42	56
Good Training facilities	36	63	63
Good Hardware Support	35	42	56
	415	698	758

TRANSACTION VOLUMES

ACCOUNTS RECEIVABLE	Current	ESTIMATES Future	Frequency
Number of receipts	30	50	Monthly
Average life of invoice before payment			
- Tanzania	1 Months		
- Elsewhere	3 - 6 Months		
Number of bank a/c's	6	6	
Number of journal adjustments	10	15	
ACCOUNTS PAYABLE			
Number of purchase invoices	35	50	
Number of lines/invoice (average)	5	5	
Number of credit/debit notes	7	7	
Number of journal adjustments	10	10	
Number of manual payments	20	25	
Number of automatic payments	-	-	
Average life of invoice before paid			
- local	one month		
- overseas	2 - 3 months		
Number of bank accounts	6	6	
Number of foreign currencies	3	4	

COSTING	ESTIMATES Current	Future	Frequency
Number of budgetted open courses - Arusha	45	60	Year
Number of training & consultancy divisions	7	10	
Number of tailormade courses	25	30	
Number of journal adjustments	10	15	
Number of budgetted open courses external	31	38	
Number of participants (budgetted)			
- open courses	1240	1500	
- tailor made courses	2000	3000	

FIXED ASSETS

	Estimates		
	Current	Future	Frequency
Number of asset accounts	5,000	6,000	
Number of locations	10	12	
Number of purchase invoices	3	4	Quarter
Average no' of lines per purchase invoice	2	2	
Number of sales invoices	1	1	Quarter
Average number of lines	1	1	
Number of journal adjustments	1	1	
Proportion of fully depreciated assets	20%	-	
Number of asset categories	15	-	

PAYROLL	Current	Future	Frequency
Number of GL account codes	50	170	
Number of bank account details	12	12	
GENERAL LEDGER			
Number of GL a/c's	180	200	
Number of departments/divisions	25	30	
Number of donors	14	20	
Number of manual journals	20	25	
Number of periods to be held in detail	12	12	
Number of comparative years	1	1	

PERSONNEL	Current	Future	Frequency
Number of letters of appointment, termination	1	1	Monthly
Length of contract			
- professional	3 yrs	3 yrs	
Av. length of employment	5 yrs		
- non-professional			
Number of scales for support staff	12	12	
Number of scales for professional staff	5	5	
Number of employees			
- professional	36	40	
- non-professional	121	150	

INVOICING	Current	Future	Frequency
Number of invoices	60	80	Monthly
Number of foreign currencies	1	1	
Number of GL course codes	50	70	

BUDGETTING	Current	Future	Frequency
Number of consultants	31		
Number of courses at Njiro Hill per consultant	2		
Number of courses external	1		
Tuition fees	US$ 250		
Accommodation fees	US$ 280		
Field trip fees	US$		

ASSIGNMENT PROGRAMME

client ESAMI

description IMPLEMENTATION

name

agent

date

initials APPENDIX I