



ATEM AAPPA 2000
CONFERENCE PAPER

*Examples of effective cost recovery
techniques in facility management*

MERCURY COMPUTER SYSTEMS

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Introduction

The paper will detail two models of maintenance cost recovery - La Trobe University's manual system, and Melbourne University's automated system. It will look at the interaction between their computerised maintenance management systems and their accounting systems.

Both universities use BEIMS as their computerised maintenance management system (referred to in industry as a 'CMMS'). This paper will briefly explain BEIMS and then look at the processes used to collate and transfer the required information for cost recovery.

Case Study 1 – La Trobe University

At La Trobe University, Building and Grounds, Maintenance Department staff enter information into BEIMS. Monthly reports are prepared from the information, showing recoverable costs incurred by each department. Once the costs have been approved for transfer, they are then passed to the Finance Department. Finance transfers these costs from the relevant department's nominated budget into the Building and Grounds Department's nominated budget.

Case Study 2 – Melbourne University

At Melbourne University, costs are compiled in BEIMS from both electronic transfers and staff entering information. On a regular basis, these costs are then transferred electronically back into the accounting system. This enables funds to be transferred out of the nominated budget back into the Property and Building Department's budget. Information from the accounting system is also transferred back into BEIMS so that finance reports can be run.

A further capability of Melbourne University's automated system is its ability to account for funds reserved for specific projects (commitments).

The paper will describe both universities' systems, and will show how they can increase efficiencies in cost recovery by improving accuracy in billing and cost transfer and reduce the duplication of services.

SECTION A

WHAT IS BEIMS? (Building and Engineering Information Management System)

“Modular software, designed for the management and maintenance of buildings, plant and company assets...”

During the last 20 years people have wanted computer systems to be “interfaced” and when you say it quickly it doesn’t sound hard at all. However, the reality is that “interfaces” have been complex to develop, use and maintain.

Interfacing - What have the problems been?

Different applications had different “file systems” (sometimes very different). Today the “theoretical OPEN systems connectivity has arrived” and is inexpensive and it actually works (frequently).

Different applications had different “data models”. For example this could mean that in some systems you could have only 1 invoice recorded against 1 purchase order. Today you can still have this problem, however the fundamental “data model” for handling financial transactions is much better and more widely known and systems designs have improved to allow for these complexities (ie a Purchase Order can have any number of invoices recorded against it).

BEIMS – Creation of Work Orders

BEIMS is a software tool to manage the maintenance on buildings and large properties. A Work Order is an authority to do or carry out work and is given / delivered to tradespersons, contractors or suppliers. The work flow process is fundamentally the same today as it has been since maintenance departments were formed. Technology just provides shortcuts and better communication within the engineering department and back to the “requesting person” (for example via WEB requests).

Work Orders are given attributes such as DEPARTMENT (the work being done for), COST CENTRE (who will pay for the work), JOB TYPE (is it a repair, installation, planned maintenance, or administrative work?). EXPENSE TYPE is wages, travel, phones, architects etc. CHARGE FLAG is do we charge for this work YES, NO or UNKNOWN at this time.

So much for creation....

BEIMS – Costs into Work Orders

The costs of the work can be entered directly into BEIMS. All invoices, purchase orders, material costs, labour times can be entered. From within BEIMS cost reporting can occur by various parameters – by Work Order, Building, Job Type, Department etc.

In many organisations any data exchange between BEIMS and the corporate finance system is done via paper based reports.

A further refinement of this process is to directly create “financial journals” in electronic form and deliver these transactions for posting into the finance system.

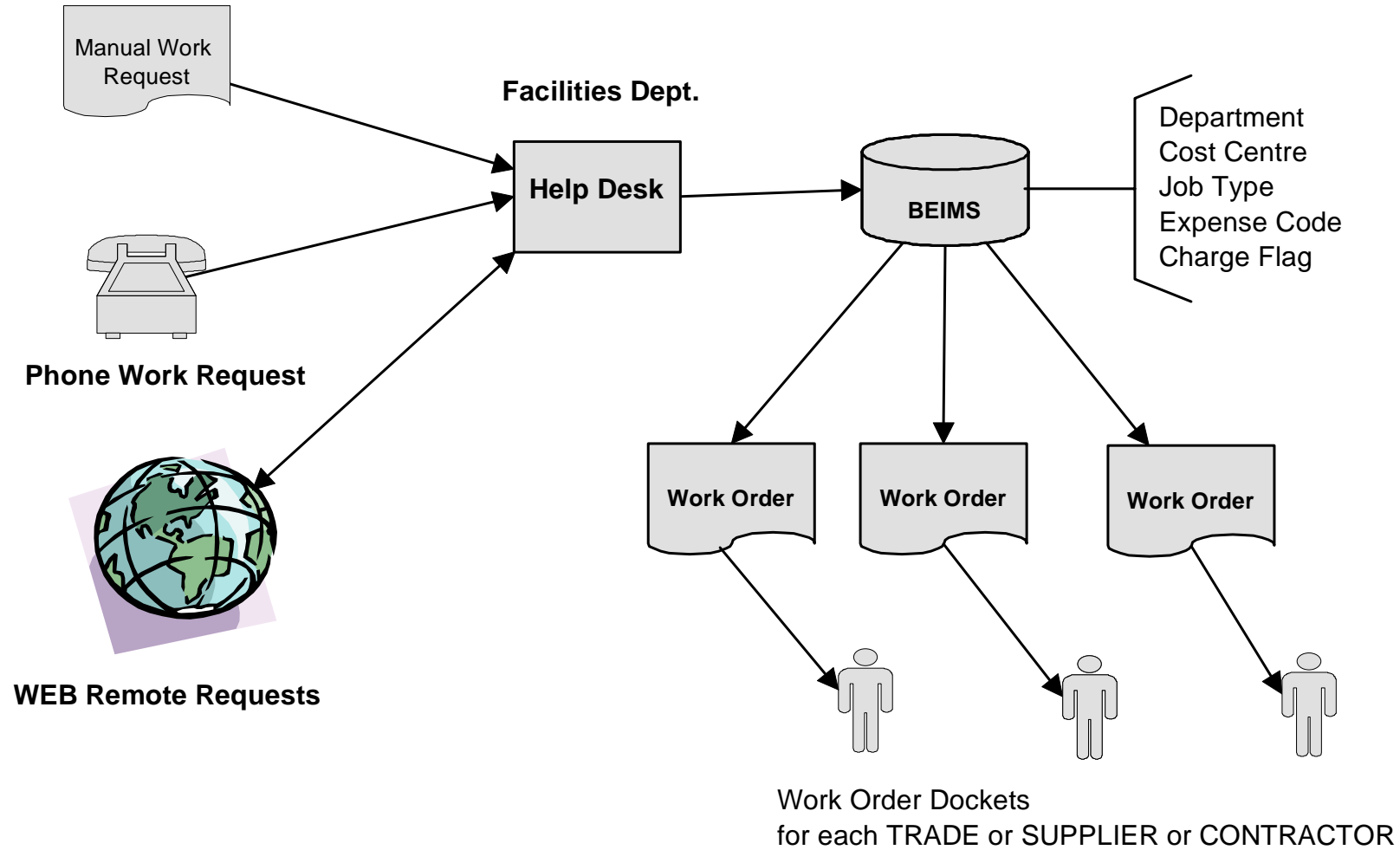
BEIMS – Costs from Finance

The ultimate end point is for information to flow **between** BEIMS and the finance system **in a bi-directional way**. This process provides significant benefits from the manpower perspective and from the increased quality and timeliness of the information.

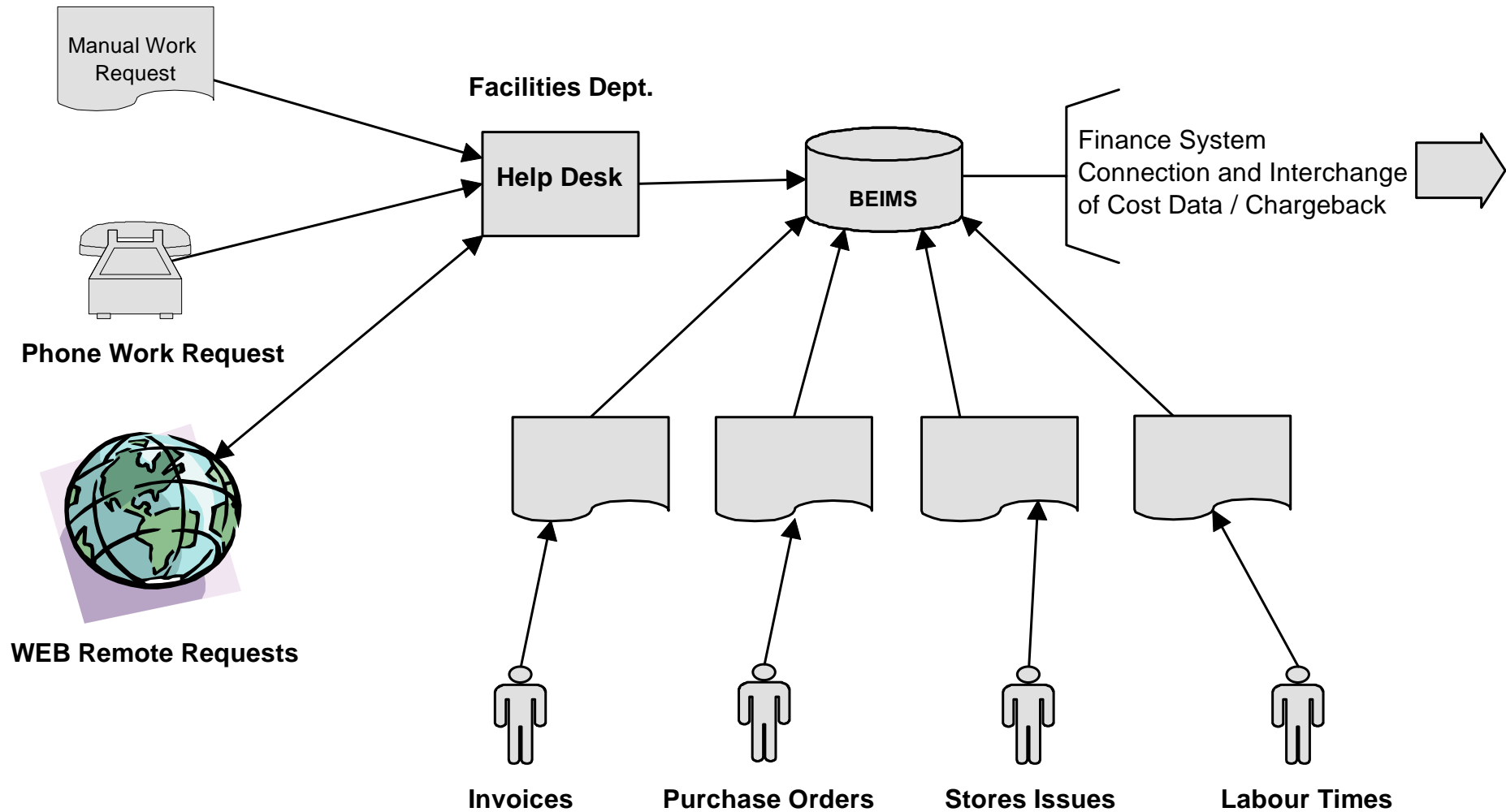
Today

Today it is possible to create a Work Order in BEIMS as a result of a user's WEB maintenance request. The budget for that Work Order can be posted to the corporate finance system as a COMMITMENT in about the same timeframe as an email takes to travel through a network.

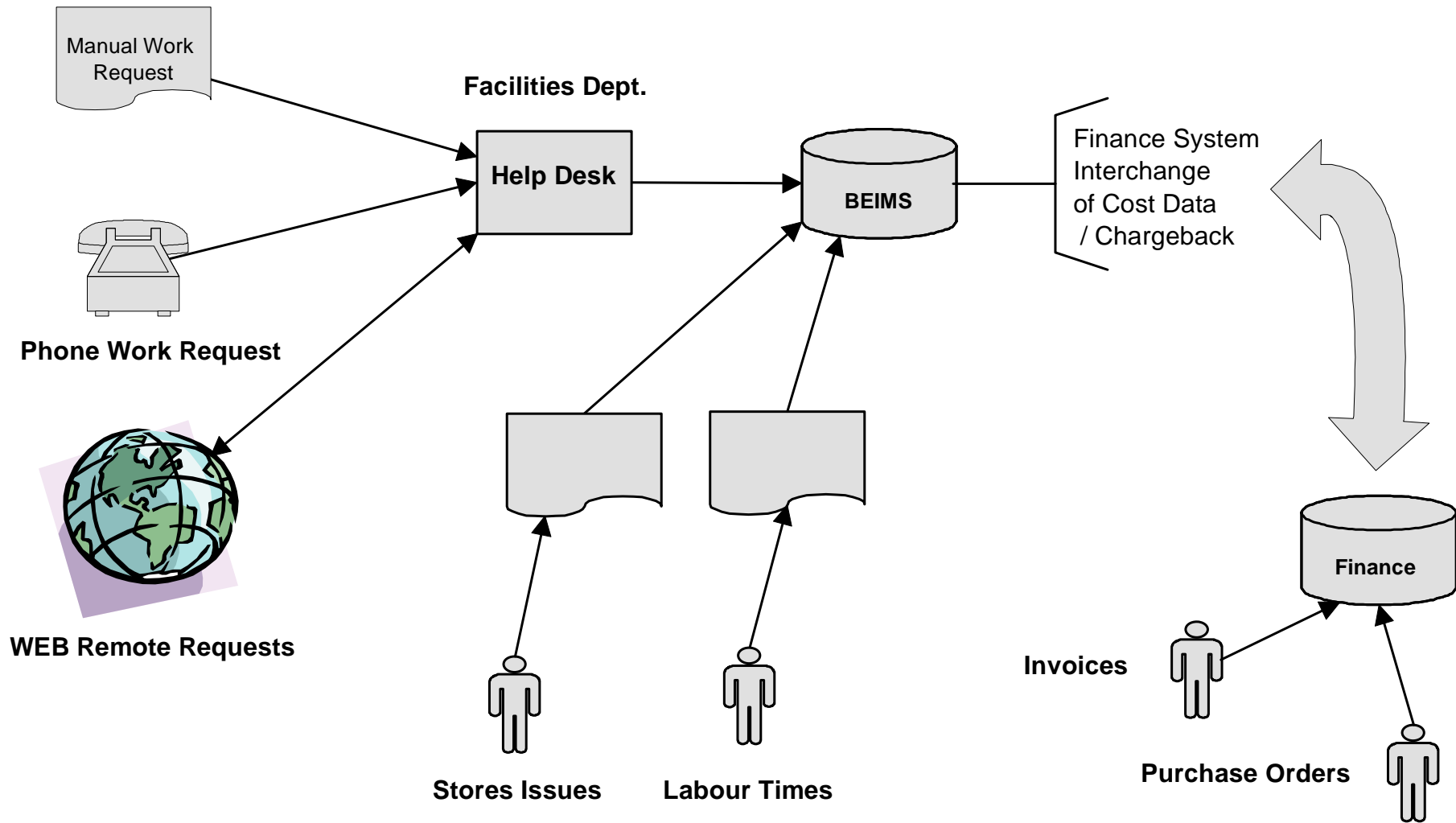
BEIMS - Creation of Work Orders



BEIMS - Costs into Work Orders



BEIMS - Costs from Finance

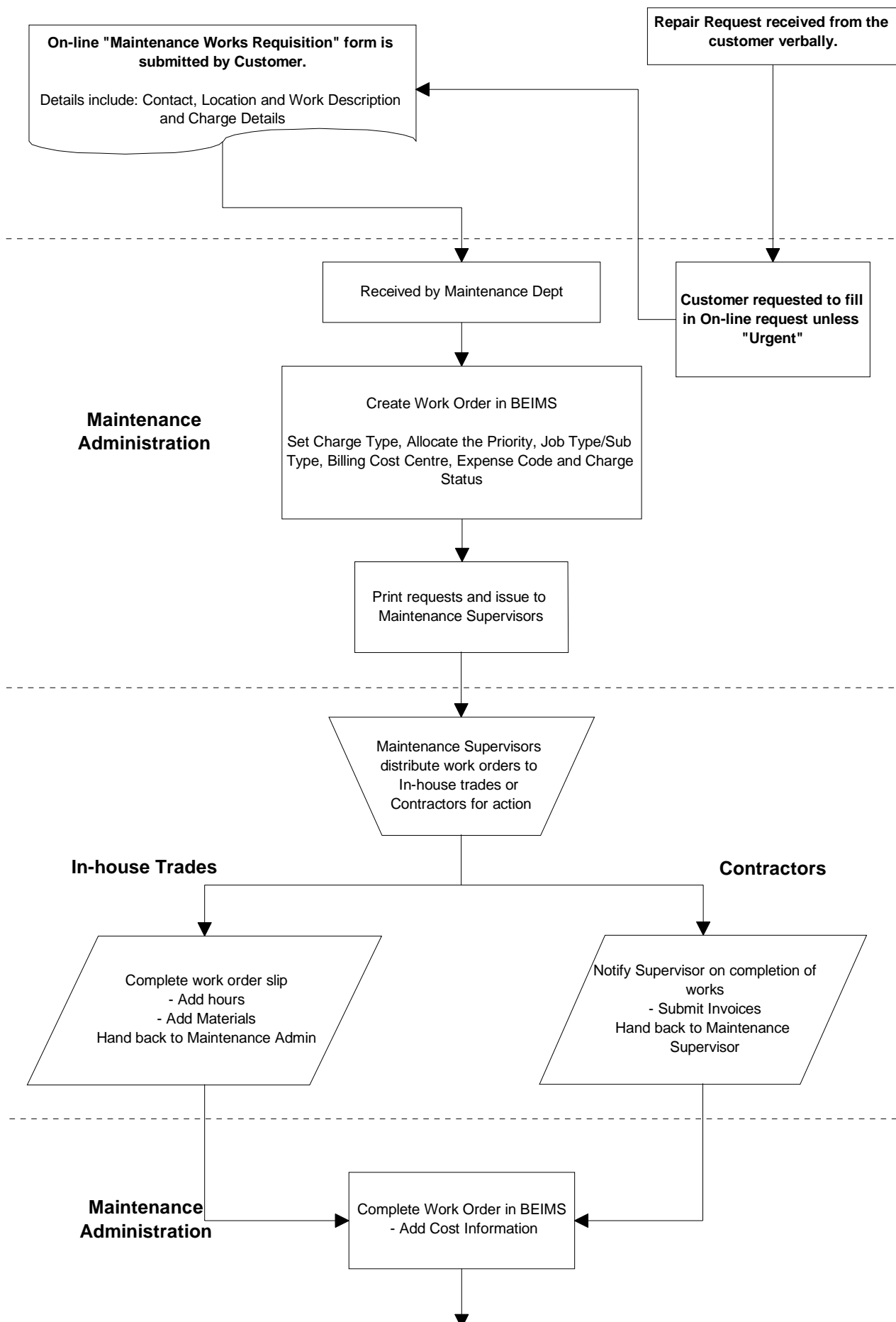


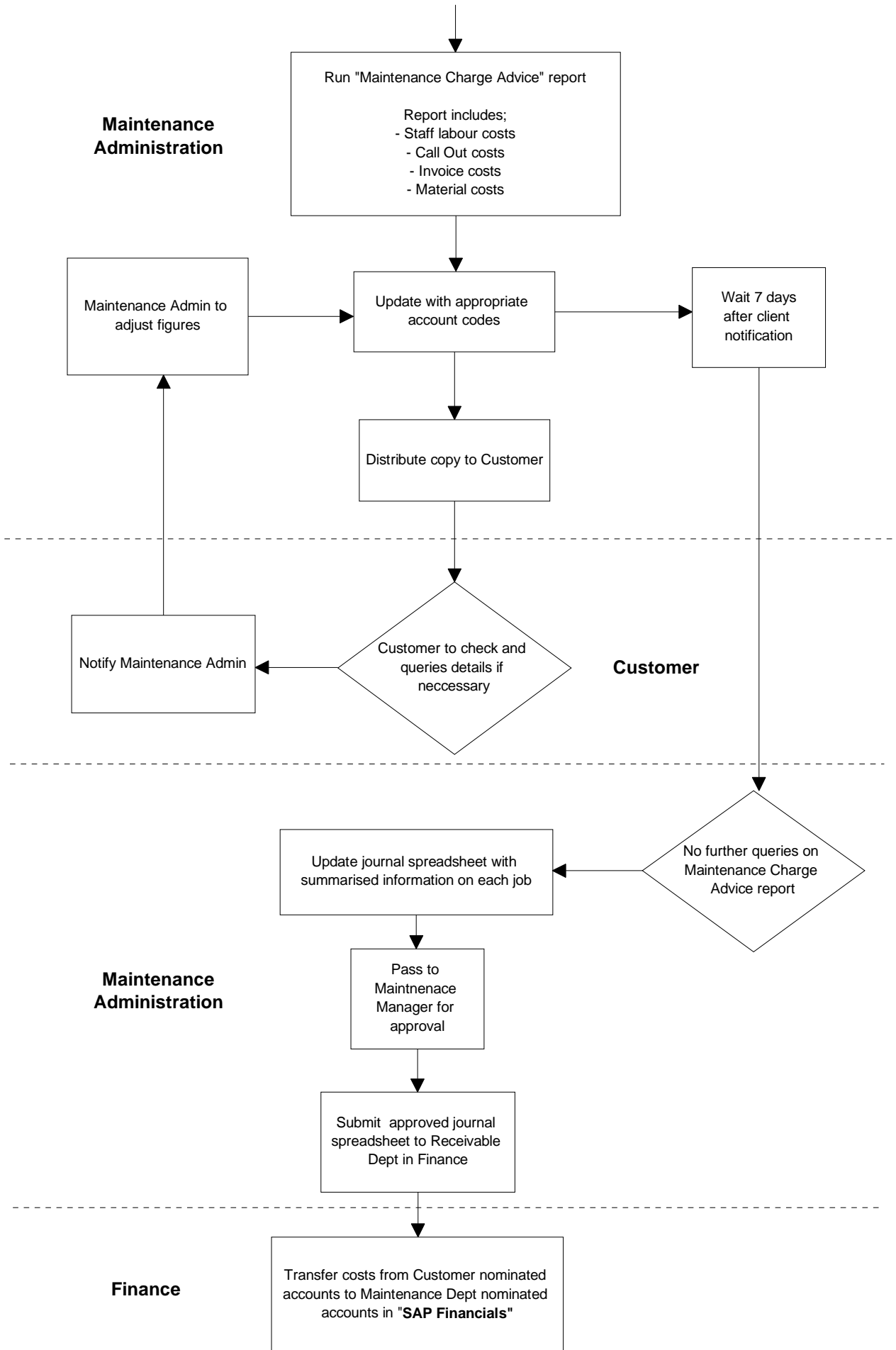
SECTION B

**CASE STUDY 1 – LA TROBE UNIVERSITY
MANUAL SYSTEM**

- Copies of the MCA Work Slips are sent to the respective customers for checking. If the customer has any queries, they are given 7 days to contact Maintenance Administration.
- At the end of the period, Maintenance administration staff prepare an Excel spreadsheet which summarises the cost details. This spreadsheet is then passed on to the Maintenance Manager for approval before sending to Finance Department processing.
- Finance process file and cost information is updated in SAP Financials (See appendices 3, 4 and 5 for graphs on cost for 1999 chargeable works).

Maintenance Requests - Adhoc Work Orders (La Trobe University - Bundoora)





Appendix 1

http://www.latrobe.edu.au/www/bg/ - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://www.latrobe.edu.au/www/bg/ Go

Buildings and Grounds Division

- About B&G
- La Trobe History
- Contact Information
- Image Archive
- Maps & Drawings
- B&G Newsletter
- B&G Intranet
- Documents & Forms

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Updated 23/08/2000
Chris Jordan

Maintenance Works Requisition

Please note that in Section 4 - For common areas that are not chargeable, please put in N/A in the Cost/Fund Code box and your name/e-mail in the 'Authorising Officer' boxes.

SECTION 1: CONTACT DETAILS

Reporter Name:

Department or School:

Faculty:

Phone Number: Fax:

Email Address:

Date of Report:

SECTION 2: LOCATION DETAILS

Internet

Appendix 2

Date/Time: 30/08/2000 15:50:58
 Report id CCR001r.rpt v 5.1.1



Maintenance Charge Advice

Maintenance Department
 Tel: (03) 9479 2017
 Fax: (03) 9479 1898

Work Order Number: Z0009596

| | |
|--|--------------------------------------|
| Department: Public Health | Job Type: Chargeable Works |
| Building: NW9 , Health Sciences 1 | Sub Type: Electrical Services |
| Floor: 1 | Fund: 1209 |
| Room: | Account Code: 509020 |
| Date Requested: 01/12/1999 | Chargeable: Y |
| Requested By: Patricia Rischbieth | Phone No: 5774 |

Description of Work/Fault:

Rm. 102: Pls. install a seperate switch for each light. CC: 100000/1209/509020

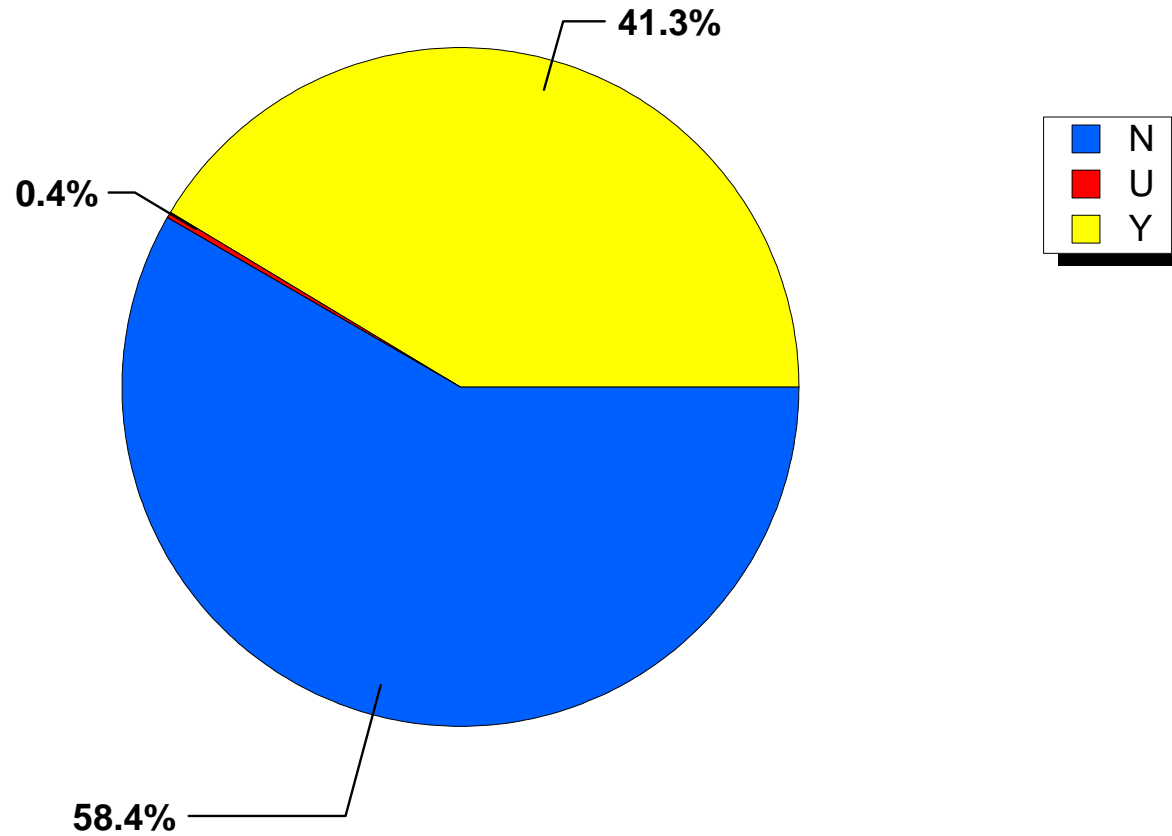
| Labour Details | Work Date | Hours (Contractors & Staff) | | | Costs (Staff Only) | |
|------------------------------------|------------|-----------------------------|-----------|--------|--------------------|---------------|
| | | Normal | Time &1/2 | Double | Labour (\$) | Call-Out (\$) |
| Electrical Supervisor | 03/12/1999 | 1.00 | 0.00 | 0.00 | 30.01 | 0.00 |
| Electrical Supervisor | 09/12/1999 | 1.00 | 0.00 | 0.00 | 30.01 | 0.00 |
| Strata Electrical | 11/01/2000 | 3.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BCD Contractors | 11/01/2000 | 3.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Staff Labour cost | | | | | \$60.02 | |
| Call-Out Cost | | | | | \$0.00 | |
| Contractors Invoice Cost | | | | | \$105.50 | |
| Material Cost | | | | | \$0.00 | |
| Sub-Total Charges | | | | | \$165.52 | |
| Maintenance Surcharge of 0% | | | | | \$0.00 | |
| Total Maintenance Charge | | | | | \$165.52 | |

| | Fund | Cost Centre | Profit Centre | Account Code |
|---------------------|------|-------------|---------------|--------------|
| Debit Customer Code | | | | |

| | Fund | Cost Centre | Profit Centre | Account Code |
|-------------------------|------|-------------|---------------|--------------|
| Credit Maintenance Code | | | | |

Appendix 3

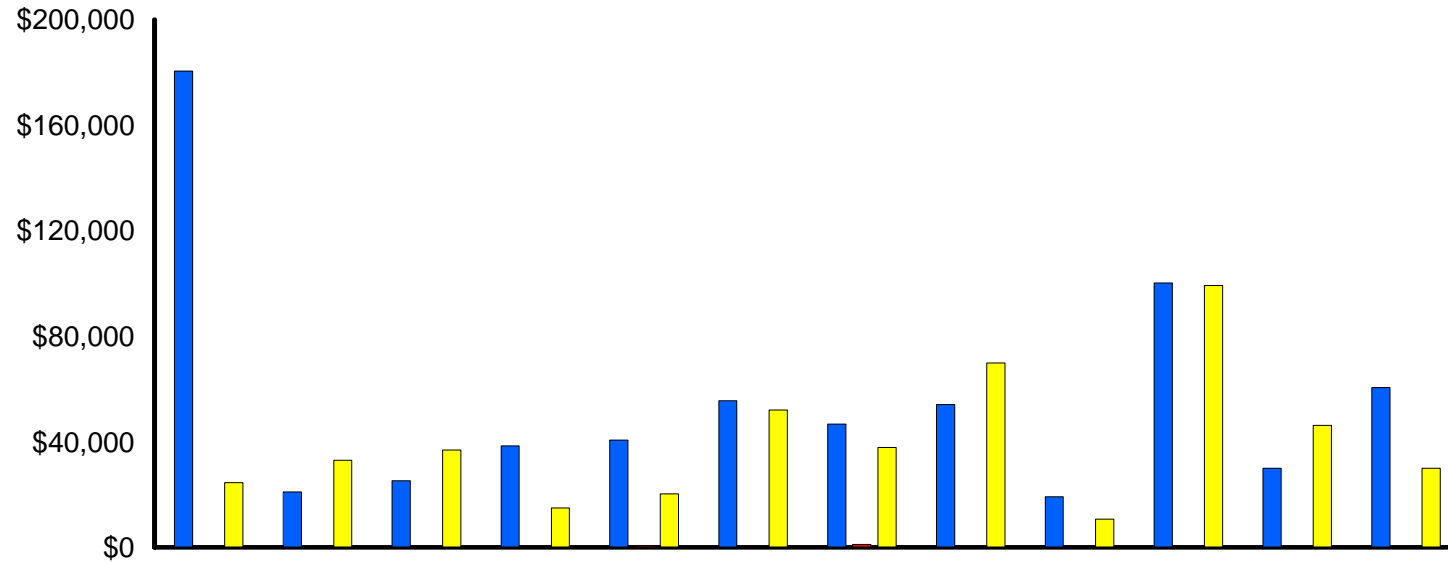
BEIMS Work Order Costs per Charge Type (1999)



N = Not Chargeable
U = Unknown
Y = Chargeable

Appendix 4

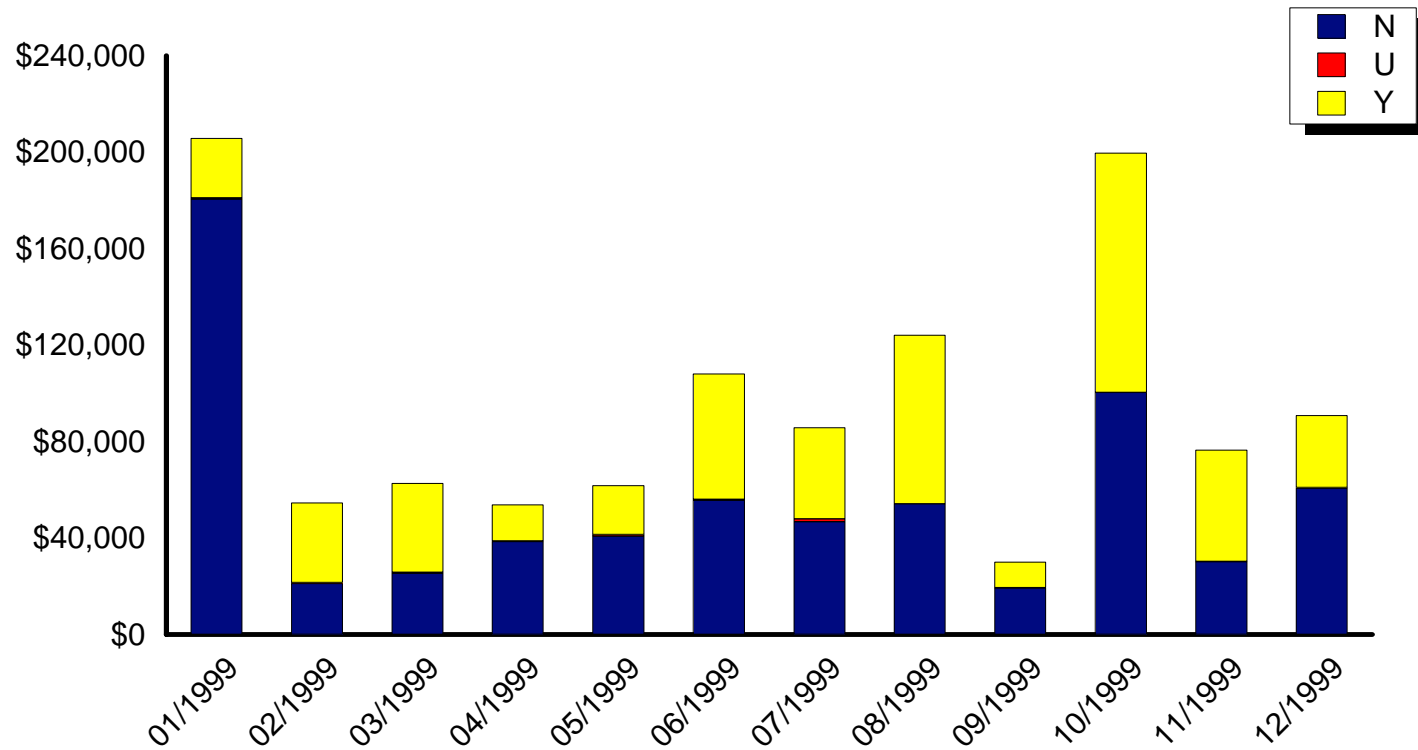
**BEIMS Work Order Costs
- by Charge Type per month for 1999**



**N = Not Chargeable
U = Unknown
Y = Chargeable**

Appendix 5

**BEIMS Work Order Costs
- by Charge Type per month for 1999**



**N = Not Chargeable
U = Unknown
Y = Chargeable**

SECTION C

CASE STUDY 2 – MELBOURNE UNIVERSITY AUTOMATED SYSTEM

Melbourne University has an automated system to recover their maintenance costs. The costs entered into BEIMS are transferred electronically back into their accounting system, MUFAS (Melbourne University Financial Accounting System).

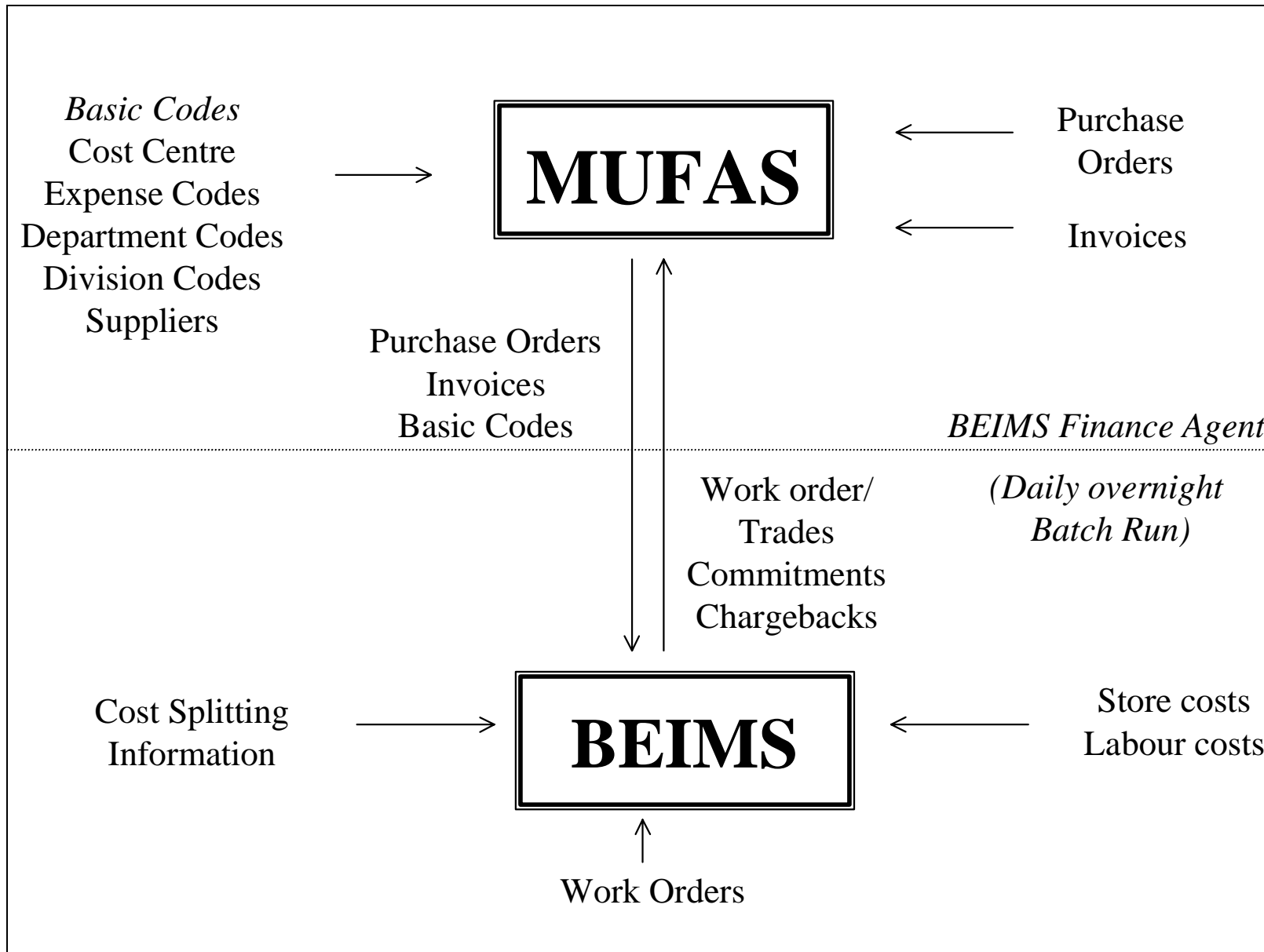
BEIMS – MUFAS financial Interface

- **Work Orders** are entered in the normal way. If the work order is being charged to a single cost centre this and the expense code are entered. The work order is set to “Chargeable” and a Budget is entered.
- If the cost of the work order is to be split between more than one cost centre use the **Cost Splitting Screen** to set up a project code with the cost splitting information. Enter the work order in the normal way but enter this project code in the appropriate place.
- Enter **Purchase Orders and Invoices** into MUFAS. When a user raises a purchase order against a department account code, MUFAS requests that a work order / trade code be entered at the same time. The user is presented with a list of Work Orders that have been previously transferred to MUFAS.
- **Stores Costs and Labour Costs** are entered into BEIMS in the normal way.
- **Basic Codes** are entered into MUFAS in the normal way. These codes include cost centre codes, expense codes, department codes, division codes and suppliers.
- **MUFAS to BEIMS** downloads. At predetermined times MUFAS generates files containing all new purchase orders, invoices and each of the basic codes. These files are transferred to the BEIMS server and processed by the Finance Agent.
- **BEIMS to MUFAS** uploads. BEIMS generates files containing valid outstanding work order numbers, valid trade codes, commitments and chargebacks.
- The **BEIMS Finance Agent** is the program that coordinates and initiates the transfer of files between MUFAS and BEIMS and the processing of files at the BEIMS side. It is scheduled to run at predetermined time, usually overnight.

Under the Hood

The system has been designed to be transparent to the normal BEIMS user in that they do nothing different to their normal use of BEIMS. Whenever a user enters financial data for example enters their time sheet, the system refers to the underlying work order and checks if it is chargeable. If it is, the system records the value in a ‘Posting’ table in the database. If the user changes an existing value the system records the difference between the new and old value. If the cost of the work order is being split between several cost centres entries are made for each cost centre incurring the cost. This mechanism results in a complete log of all financial transactions performed in BEIMS.

At certain intervals the Finance staff run reports that show what costs have been recorded for charge back. These reports are produced for each department in the University. The finance staff check these reports to confirm that the costs are correct, and if satisfied they use another screen that initiates the creation of a chargeback file. This process flags each cost as being ready to be charged to the cost centre. The next time the Finance Agent runs a chargeback file is created, this is transferred to MUFAS and each cost centre has the appropriate amount debited (or credited).



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