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Cotton Research and Development Corporation

Project Title: Computer Systems Manager, Narrabri
Project No: CSP49C
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A final report prepared for the Cotton Research and Development Corporation

FINAL REPORT RECEIVED

1. Introduction

CRDC has for many years supported the development and maintenance of computer systems at the Australian Cotton Research Institute, Narrabri. These computer systems have benefited all research programs through their use in data processing, storage, statistical analysis, modelling and the development of end-user packages. At times the Industry has directly benefitted through connection to Siratac, and other programs made available on-line.

Effective system management is essential to provide these services in a reliable manner and to ensure the operation of the computer systems as the focal point of data acquisition systems such as the weather station network. Full-time support of the server and network hardware is required to operate this system. With the increase in computing power and network software on ACRI desks, the need for technical support directly to the user has increased.

2. Objectives

- (i) To provide full time management of the computer system at Australian Cotton Research Institute.
- (ii) To ensure optimal provision and use of computer resources for research and industry.

3. Results and Discussion

Staffing

Mr Chris Nutt (System Manager to October 1995)	CRDC funded	100%
Mr Lance McKewen B.E. (Hons), Grad. Dip. Bus. Sys. Senior Research Scientist	CSIRO funded	20%
Mr Greg Nash (Programmer)	CRC funded	20%

Progress:

The ACRI Computing Facility is an essential component in the success of numerous research and development projects for the cotton industry. The facility has been progressively developed over several years and on completion of this project consisted of:

- DEC 2100 AXP SMP Server purchased in 1994 (see CSP50C)
- IBM PC Server 320 running Windows NT
- Sparc 20 Server running Solaris 2.4
- a 10MB Thick/Wire Ethernet,
- telephone modems,
- an HP colour inkjet printer,
- Webster Multigate bridges to MAC network,
- MACs,
- CD-ROM readers,
- PCs,
- laserwriters,
- a network FAX connection,
- an SPC Dataline being currently connected to SIRONET, AARNET and the INTERNET for EMAIL and document transfer facilities for use by all staff,
- connection of all computing devices in the 6 major buildings on site,

- 1 x 5kVA and 2 x 6 KVA Uninterruptable Power Supplies to maintain system availability for up to 15 mins. through power blackouts,
- a Power Conditioner to eliminate power line surges and spikes from affecting the computing facilities on-site.

Upgrades implemented in August 92 have almost totally alleviated reliability problems experienced earlier. System availability is now almost 100 per cent.

In 1994 the previous VAX system was replaced by a new DEC 2100 Server (see CSP50C). This has enabled effective networking with Email, file sharing and connections to the academic world via internet to be fully implemented.

Management and administering of the system is a full-time job. For the most of the term of the project Mr Chris Nutt has been System Manager supported by CRDC. His duties included:

1. Managing all computing systems on the site involving daily checks on operating systems, regular backups of hard discs and maintenance of archived materials.
2. Providing corrective action to the systems when needed involving liaison with hardware and software engineers and implementation of maintenance agreements.
3. Resolving user-originated problems at all levels for the DEC 2100, and at a hardware level for all MACs and PCs.
4. Installation and management of direct connection to SIRONET & AARNET by direct line to Canberra providing XWindows sessions & Email services for both Administration & Research personnel.
5. Provide Planning, Purchase and Implementation of Computing Resources for the site.

4. Discussion

The technological changes outlined in CSP50C led to the departure of the System Manager, Chris Nutt, in October 1995. This gives us the opportunity to appoint a network support specialist who is focussed on assisting users to obtain maximum value from the system, as well as maintain the server and network hardware.

With the increase in computing power and network software on ACRI desks, the need for technical support directly to the user has increased. Since the departure of the full-time System Manager, this support has been provided on a part-time basis by research staff. This activity has been a constraint on progress in two major research projects. Due to time constraints, this support has been restricted to maintenance and trouble-shooting rather than progressive development.

5. Conclusions, Recommendations and Application to Industry

It is proposed that the two separate projects (CSP49C and CSP50C) be replaced with a single new project, providing the Network Support Specialist position and operating funds for the ongoing development and operation of the network. The total cost of the project/s will be reduced through the savings on maintenance contracts and the reduction in level of the funded position.

7. Appendix

A. BUDGET