



**BUSINESS
CASE STUDY**

Madcap

A Milk Analysis, Data Capture & Processing System

THE COMPANY

Australia's Dairy Farmers Group has been on a major growth streak. After many mergers and acquisitions, the co-operative today is the largest supplier of fresh milk products in Australia, operating in New South Wales, Victoria, Queensland and South Australia. Consolidation within the dairy industry has been a universal trend as groups bolster their resources to vie for new international markets. Along with growth has come big business and changes, particularly for the Dairy Farmers Group, where in Australia the industry faced deregulation, nationalization and GST all on the one day.

Helping them rise to this challenge is Contec Group International (CGI), a New Zealand-based software development company specializing in JADE. CGI has over 30 years experience in developing solutions for the dairy industry in New Zealand, Australia, Fiji and USA. They are also highly skilled in library and information management services - an important asset in developing new generation dairy systems which combine facts, figures and essential integration.



Contec Group International's JADE-based Milk Analysis Data Capture and Processing (MADCAP) system is now in its fifth release and is used by over 20 large dairy groups throughout the world.





MADCAP manages and reports on milk flow and quality on a daily basis from the farm gate to the factory. It also handles monthly payment to over 2000 farmers and share farmers.

Farm	Date	Pool	Vol	Fat	kg	Pro	kg
1	21/01/2000	5 Choice	1000.0000	3.20	32.0000	5.30	53.0000
1	21/01/2000	4 Premium	50790.0000	7.11	3611.1690	3.67	1863.9930
1	21/01/2000	3 City Milk	2410.0000	3.90	91.8310	4.10	96.6070
1	Farm total		54200	6.8911	3735.0000	3.7151	2013.6000
2	21/01/2000	4 Premium	6935.0000	2.84	196.9540	3.14	217.7590
2	21/01/2000	3 City Milk	365.0000	3.90	14.2350	4.10	14.9650
2	Farm total		7300	2.8930	211.1890	3.1880	232.7240
5	21/01/2000	4 Premium	2640.0000	3.75	99.0000	4.66	123.0240
5	21/01/2000	3 City Milk	138.0000	3.90	5.3820	4.10	5.6580
5	Farm total		2778	3.7575	104.3820	4.6322	128.6820
6	21/01/2000	4 Premium	1995.0000	1.11	22.1445	3.21	64.0395
6	21/01/2000	3 City Milk	105.0000	3.90	4.0950	4.10	4.3050
6	Farm total		2100	1.2495	26.2395	3.2545	68.3445
7	21/01/2000	7 Second	3000.0000	3.40	102.0000	3.40	102.0000
7	21/01/2000	4 Premium	2700.0000	2.20	59.4000	4.84	130.6800
7	21/01/2000	3 City Milk	300.0000	3.90	11.7000	4.10	12.3000
7	Farm total		6000	2.8850	173.1000	4.0830	244.9800
9	21/01/2000	5 Choice	156.0000	4.11	6.4116	3.20	4.9920
9	21/01/2000	4 Premium	845.0000	4.12	34.8140	3.16	26.7020
9	21/01/2000	3 City Milk	52.0000	3.90	2.0280	4.10	2.1320
9	Farm total		1053	4.1077	43.2536	3.2123	33.8260
Total	Grand total		73431	5.8465	4293.1641	3.7071	2722.1565

THE BUSINESS CHALLENGE

The Dairy Farmers Group faced massive information management challenges. Years of mergers had left them with disparate regional systems controlling and reporting on milk volume and quality. Deregulation on 1 July 2000 saw the introduction of a nationalized payment system for the Group's members (farmers) based on quotas and percentages, with slight variances over four different regions within the Group. The system needed to cater for GST and process monthly AUD\$35 million in payments to farmers and suppliers of the Dairy Farmers Group, including rural trading stores, banks and other institutions. In addition, it needed to provide farmers, milk tank drivers, testers and all those involved in the supply chain, up-to-the-minute information on their product (milk).

THE SOLUTION

MADCAP (Milk Analysis Data Capture And Processing) from CGI provides a comprehensive JADE-based solution helping organizations meet their e-business and e-commerce goals. Now in its fifth release, the product is used by over 20 large dairy groups throughout the world. Its functionality is based on years of research into the requirements of dairy companies, to the point that it can handle 90-95% of the requirements of most dairy companies. While customization is typically required to suit individual reporting requirements, it is a relatively simple and straight forward process.

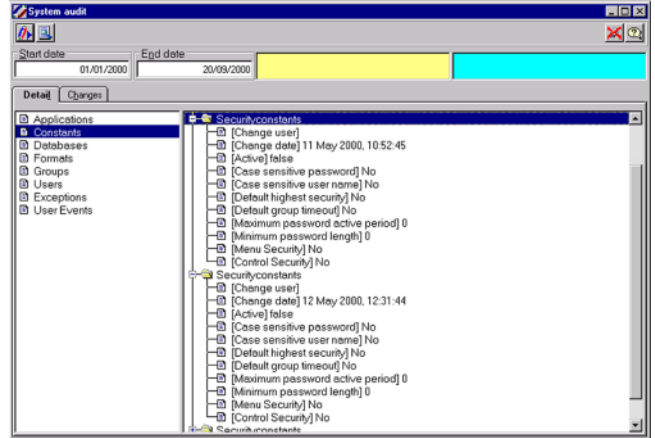


THE SYSTEM

The application manages and reports on milk flow and quality on a daily basis from the farm gate to the factory. It also handles monthly payment to over 2000 farmers and share farmers. MADCAP consists of five main modules: Milk Testing, Milk Collection, Milk Payments, Names & Addresses, and Security.

Milk Testing monitors milk component (fat and protein) and milk quality (bacteria), allowing realtime connections to a large number of milk analyzers and automating entry of daily information. It provides a statistical analysis of every result from every farm on a daily basis to highlight problems occurring within the quality system.

Milk Collection records each farm's daily milk volumes through transport management systems on each tanker. This system also works in reverse so that tanker drivers can report the previous day's quality information back to each farmer when they visit. It allows for extensive reporting on a factory-by-factory basis as well as breakdowns for the co-operative nationally.



milk supplied, state imposed or share acquisition levies, farmers' bank loans, and even rural store accounts.

Payment amounts can be imported from various organizations, with the payment module able to print checks automatically, deposit amounts directly into bank accounts or integrate with third party systems such as SAP, as in the case of Dairy Farmers Group.

The other two modules manage farmer profile information and complex security that can cater for seasonal workers and temporary staff. It also provides an extensive auditing system so that each and every change to any data within the system is captured.

MADCAP currently operates on all Microsoft Windows platforms. Dairy Farmers Group has one server based in Sydney, servicing all users within Australia. It runs the JADE database service and the JADE application server. The server software can run on hardware platforms ranging from Pentium-166Mhz PCs to servers running dual Pentium 750Mhz. The application is deployed entirely via JADE Smart Client Technology™, with JADE Smart Client workstations running on all types of PCs from 486-100Mhz upwards.

Date	Pck	Vat	Vehicle	Grade	Penalty	Vol	Fat
23/12/1998	1	1	20	1	2	470	4.70
23/12/1998	2	2	20	1	2	450	4.50

Milk Payments manages monthly payment to farmers and share farmers based on the daily supply from each farm. It takes into account ownership of each farm and may make several payments for each farm according to shareholder percentages. This module can handle payments for



KEY DEVELOPMENT ISSUES

CGI had five months to customize the MADCAP solution for Dairy Farmers Group, deploy it at more than 20 sites and go live nationally. In 1997 JADE was selected as the key development tool for MADCAP because its robust database support meant it could comfortably manage the requirements of many dairy systems. It was cost effective, and faster to develop and deploy than other comparable tools.

Customization was a priority for CGI, as they saw their solution being popular within the dairy industry. Several organizations have implemented MADCAP, changing only the GUI to accommodate specific presentation and reporting needs.

What makes JADE and therefore MADCAP easy and fast to customize is its intelligent way of combining data, logic and graphical user interface. The entire MADCAP application is built upon a base of re-usable functionality in order to create multiple logical databases, and maintain access to applications within those databases for users or groups of users. This large set of base classes and functionality is defined within its own separate schema. New functionality such as Interactive Voice Response (IVR) is currently being built in this way so that, when complete, it will be a re-usable component. This is one of the major reasons why working in JADE is less expensive than other development environments. And, while it was mainly developed for the dairy industry, CGI is finding that the core system has a lot of appeal to those looking for security and administration solutions.

THE FUTURE

MADCAP has delivered a consistent and uniform national system for all processes relating to the collection and payment for milk. Delivered on time, this new generation system meant that the Dairy Farmers Group was ready to tackle the challenges of the 21st century and benefit from considerable savings in IT support costs and automation of daily processes. The solution will easily support new enhancements which deliver increased functionality. For example, IVR will allow farmers to telephone the system and get daily information over the phone. With MADCAP and JADE, the Dairy Farmers Group and others in their industry have a solution to handle whatever changes may come their way.



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