AGWA Process Efficiency Case Study 3

Dairy Industry

- **Metric analysis**
- **Process Automation**

Australian Government
Australian Grape and Wine Authority



Process Efficiency Opportunity	Outcomes
Measurement of metrics	Analysis of existing metric data
	Equipment optimisation
	Increased process, labour, energy and waste efficiency
	Increased materials efficiency and identification of causes of product loss
Automation	Greater data collection
	Equipment optimisation
	Process optimisation and increased process efficiency
	Increased materials efficiency by greater process control
	Increased labour efficiency by utilising staff more efficiently
	Increased energy efficiency due to greater process control
	Increased water efficiency by greater process control

Process Efficiency	Percentage process saving	Cost savings (per annum)
Materials inventory reduction	**3%**	**$270,000 (once off savings)**
Labour Savings	**3%**	**$270,000**
Raw material loss reduction	**13.5%**	**$670,000**
Yield improvement	**11%**	
Reduction in waste and rework	**15**	

When undertaking an analysis of processing efficiencies, an international cheese manufacturer identified one of their plants as having a higher than typical cost per unit measure at one of their processing facilities. After further analysis, it was determined that process inefficiencies were resulting in additional costs of close to $5 million per annum.

The dairy identified five key process efficiency issues that needed to be addressed:

- Improved efficiency and yield
- Reduced cost of waste
- Reduced costs of labour
- Reduced raw material inventory
- Reduce ‘giveaway’ products

With the assistance of process automation experts the dairy undertook a multi step approach to increasing automation, real time monitoring systems, material management, and implementing general production management tools. More specifically, these included:

- Production management tools for synchronizing the production process from raw material to the creation of the finished goods while controlling the process from start to finish.
- Production data collection systems which allowed process data to be generated. This data was then used to find ways to increase production efficiency and undertake root cause analysis for any production issues.
- Materials management systems which tracked raw material, work in progress material, scrap, rework and any materials losses.
- Reporting management system which allowed automatic reports to be generated allowing staff to work on other value adding production work.

The results of this automation upgrade were:

- A reduction of raw material inventory by 3% or $270,000.
- A labour savings of 5% or $160,000 per annum
- A raw material variance reduction of 13.5% or $670,000 per annum
- A yield improvement of 11%
- A reduction in waste and rework by 15%

System automation does not necessarily mean replacing large quantities of capital equipment, but more so, providing the resources and data to make good decisions about increasing production efficiency.