

## CASE STUDY – Black Duck

“IT’S AN ABSOLUTE MUST FOR ANY MANUFACTURING BUSINESS”



### SINGLE PRODUCTION LINE CAPACITY INCREASES BY MORE THAN 30%

The best practice processes established at Black Duck’s new Wangaratta factory delivered significant improvements on its Perth production lines. Manufacturing of fast moving products which contribute 90 per cent of the company’s sales turnover, a single production line at Wangaratta achieved increases of between 30 and 40 per cent compared to Perth. If all three lines were operating, Black Duck could potentially increase capacity by up to 150 per cent.

Tim Richardson, Black Duck’s Eastern Australia Operations Manager, contracted Vative because of his experience with the consultancy in a previous management role.

“Introducing Lean manufacturing was a condition of my taking on the Black Duck role,” Mr Richardson says. “It’s an absolute must for any manufacturing business in Australia to become more efficient, otherwise we’ll just lose more jobs to China. I firmly believe Lean is the only way of competing.

“I like Lean because it’s very



simple, the tools are provided and it’s explained in a way staff can understand. Vative are very easy to work with.”

The Black Duck Lean project began with observation and documentation of processes and operations at the Perth factory to identify inefficiencies, blocks to production flow and other areas of waste.

A current value stream map was developed and the Vative – Black Duck team analysed and measured process times, inventories and quality levels, then calculated overall process lead times. The value stream map was workshopped and a future state value stream design was based on best practice Lean methodology. The team created a greenfield factory layout incorporating process, material and information flow based on the new value stream design. The final steps involved identifying resources and project teams, then developing project charters, deliverables and implementation for discrete projects.

## OVERVIEW

### INDUSTRY

Manufacturing

### CLIENT PROFILE

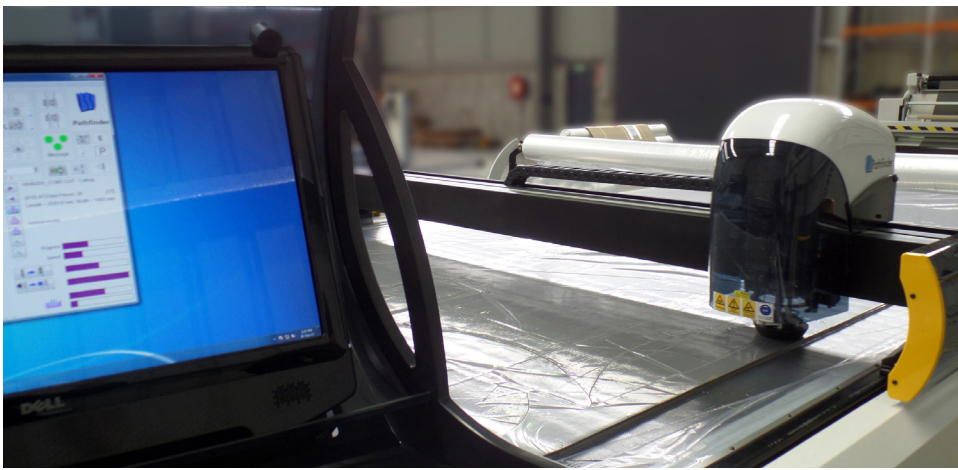
Black Duck Canvas Products are Australia’s largest supplier of canvas seat covers for the rural, mining and construction industries in Australia and New Zealand. More than 450 seat patterns are available for 4WDs, light commercials, trucks, mini buses, utes, agricultural machinery and vehicles used in surface and underground mines, exploration projects and construction sites. The company has been manufacturing seat covers for more than 25 years, and is known for its comfortable, hardwearing and practical products.

### BUSINESS SITUATION

Demand was growing rapidly for Black Duck products, and this Perth-based company realised it needed an additional factory to increase production capacity. Black Duck wanted to establish best practice production and operational processes in its new greenfield site in Wangaratta, Victoria, and engaged Vative to guide it in applying Lean methodology and tools.

### SOLUTION

Vative recommended a collaborative, cross-functional approach between its Lean Masters and Black Duck operational staff and management in Wangaratta and Perth. Existing processes at the Perth factory were used as the benchmark for identifying areas for improvement, then a new value stream design was developed, the factory layout designed and new processes established.



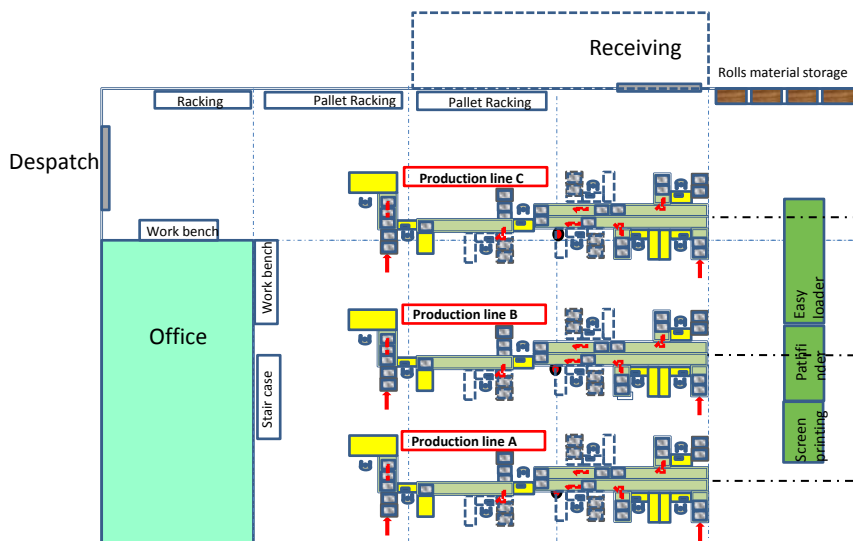
## VATIVE

Vative achieves significant business improvement for clients through solutions which are simple, realistic and highly effective. Providing consultancy and training services, Vative's 45-strong team includes Lean and Six Sigma excellence coaches with extensive business management, academic, engineering and trade backgrounds.

A number of areas of waste were identified, including:

- No FIFO (first in first out) in production system, resulting in significant amounts of WIP (work in progress).
- Over-reliance on key operators' knowledge of product manufacture, resulting in high variations in quality levels.
- Existing factory layout did not allow for single-piece flow, and standard batch sizes were not used to promote production flow.
- Significant time was wasted through:
  - Large amounts of double and triple materials handling
  - Long travel distances between operations
  - Operators carrying batches
- No visibility of job status or location and no visual management to facilitate capacity planning.
- Limited multi skilling, too few operators skilled in specific tasks, no work instructions or SOPs (standard operating procedures).

Black Duck was able to achieve



Concept diagram for Black Duck

a number of key outcomes from value stream design and process improvement initiatives, which markedly boosted capacity in the new plant compared to Perth. These were:

- Introduction of standard batch size (20 pieces) and single piece flow within processes.
- Elimination of WIP between workstations.
- Introduction of internal pull

### Tim Richardson

Eastern Australia  
Operations Manager  
Black Duck

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systems to trigger Just in Time replenishment of stock.

- Introduction of SOPs to control quality level, process output and manufacturing costs.
- Introduction of conveyor systems and tote (storage) bins to move batches between workstations. Totes matched the optimal batch size identified through the Kanban scheduling system.

Mr Richardson said his new staff readily accepted the Lean processes. Most came from the textile industry where payment for piecework was common, therefore understood the need for maximum efficiency.

Vative is a **ShareTree** company that works in collaboration with the **Lean Six Sigma Society of Professionals (LSSSP)**.