

INDUSTRY 4.0 NETWORK SITE VISITS

Griffin's Food Company

Griffin's Food Company is a food manufacturer that produces many of the brands of biscuits, crackers and chips that people will recognise from their weekly shop.

Business overview

The company, which was started by John Griffin in the 1890s, now has more than 500 staff working in a fast-paced environment with highly automated production lines. Griffin's, who is passionate about crafting New Zealand's favourite snacks, operate from two sites, in Papakura and Manukau.

Background

Griffin's have long appreciated the need for data collection as part of their processes. Knowing the daily performance through collecting paper-based, manually entered figures has been a staple of their reporting for a number of years. However, their continuous improvement philosophy identified that although this data collection was valuable to the management teams, very little was able to be communicated to the shop floor team to boost engagement in identifying and quickly resolving production issues.

Data on key quality parameters was monitored throughout production, but this data would then be collected and manually entered into databases at the end of a shift. Being retrospective there was little use for the data by then and it only added more administrative tasks to the supervisory staff. It was difficult for the shop floor team to interpret performance over a day consistently, leaving them not knowing whether they had a good, productive day or not.

The solution

The team at Griffin's had heard of Industry 4.0 and sought to identify what value it could add for them at their Papakura site. They quickly adopted a useful philosophy that Industry 4.0 offered opportunities through technology to resolve issues that were previously too costly or difficult to tackle. The senior management team in the business were passionate about implementing some initiatives, so pulled a very small, agile team together.

This small team submitted a high-level business case for funding and were given a high degree of autonomy with freedom to decide where to focus. This resulted in a team that was rapidly able to make decisions and iterate, delivering some immediate initial solutions. This progressive view of a delivery team worked well and has enabled them to demonstrate the value as of the project early on in the project cycle, enabling quick expansion.

One of the solutions, aimed at increasing their shop floor intelligence and vertical integration maturity, was to access previously challenging data sources within machine PLCs and visualise these in an intuitive way to the shop floor teams. This also provided a one-stop shop for managers and supervisors to easily interpret live performance across the lines.

From a technical perspective, the team used a platform to tap into the PLCs of critical performance data points on the line, such as carton weights and number of products shipped, transferring this into a database which was then used to drive large TV screen dashboards of live performance data. More of these links have been put in place for managers to access a detailed analytics dashboard through their tablet or laptop.

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Conclusion

Thinking big, the team have a paperless vision that they are working towards, however to start small the team first identified the critical data required to engage the shop floor team and give insights to supervisory staff. They boiled this down from tens of lines of possible data to four or five lines. By getting teams to a place where 'they can't live without it' ensured that further investment and expansion was much easier to achieve.

Across four out of six production lines they now have access to critical data sources visualised in an easily understandable (not language dependent) format. This has enabled the shop floor teams to begin the problem-solving journey, identifying issues daily and aiming to put preventative fixes in place where possible to avoid repeat issues.

Ultimately it is now plausible that all operational staff on site know how well their team has performed that day, as well as being able to engage in discussion about how they can improve.

The next steps are to introduce more intelligent parameters. With the plethora of accurate data now in a useable format and accessible it is possible to overlay analytics tools for optimised parameter settings that will help to lift the performance of the line. For example, on a hot or humid day historically a certain dough mixture may have performed better in terms of quality parameters, providing data supervisors on a day with similar conditions the ability to influence the performance of their product. This also removes a level of dependence on experienced individuals who may be leaving the business in the coming years.

Key Learnings

- A small very agile trusted team to cut through the red tape and deliver value quickly, proving the concept.
- Identify basic structural elements necessary for delivery earlier, for example WiFi and data storage.
- Keep it simple and don't let perfection get in the way of quick progress to show the benefits.
- An iterative mindset – happy to make adjustments now the framework is established to optimise engagement.

About the site visits & Industry 4.0

The purpose of the Demonstration Network is to drive uptake of Industry 4.0 technologies among New Zealand manufacturers with the aim of increasing their productivity and global competitiveness. The Network of Site Visits (NSV) are part of the [Industry 4.0 Demonstration Network](#), which also includes a mobile showcase and smart factory showing cutting-edge industry 4.0 technologies in action. The NSV takes selected companies through a fully-funded assessment process to help them accelerate their own journey towards Industry 4.0, and sees them share their knowledge with other manufacturers.

Further questions?

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