



ANALYSIS OF THE PORTS OF AUCKLAND AUTOMATION PROJECT

ABSTRACT

A brief analysis of key failures in POAL's automation project, including the Five Pillars of Governance, poor planning, and ethical oversights.

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1. Five Pillars of Governance

1.1 Value delivery

The ports of Auckland Limited (POAL) launched an automation project (AP) in 2016. This project, which lasted six years, was a failure costing 65 million dollars and led to the death of some workers. The AP was an attempt to improve efficiency, safety and reduce labour costs. The idea was to fully automate the Auckland port by replacing the manual straddlers with automatic straddles. These straddlers would be expected to take full control of moving containers, speed up the pace and stack up four containers instead of the original three (manual straddler) (Nigel Haworth et al., 2023). This would increase the efficiency of operations at port and would mean that there are no workers working in this dangerous environment. This project led to many delays, additional costs for port and workers and disruptions due to COVID. POAL put pressure on its workers to make up for these disruptions and jeopardised their safety, which led to increased accidents (Nigel Haworth et al., 2023). According to the ITF report, POAL's performance declined during this automation period. This Binns Report also reported that the port failed to check regularly progression at key milestones to see if benefits were arising due to these new straddles, and whether the AP was on track to finishing on time (Nigel Haworth et al., 2023). As a result, the expected value from automation was never realised. There were no measurable improvements in efficiency, and rather than reducing operational disruption, the project introduced new problems and reduced the port's overall performance. Safety did not improve, conditions worsened, undermining one of the key reasons for the project. Additionally, the cost savings projected through labour reduction were reduced by the high implementation costs, delays, and system failures. This meant that there was no financial benefit. POAL did not establish any formal review process to evaluate whether the intended business value was being delivered at each stage. This demonstrates a fundamental failure in value delivery, as the project consumed substantial resources but delivered none of its promised outcomes.

1.2 Strategic Alignment

The Automation Project (AP) strategic goals included becoming a more efficient, innovative, and safer port. With automation technology, POAL aimed to become a leader in port innovation and reduce long-term operating costs through reduced reliance on human labour. When the project was executed, there was a poor alignment between the strategic goals and the conditions the port was experiencing. This included the decision to roll out automated straddlers while continuing live port operations, which has never been done before. This created many problems, safety risks, and challenges within the system. The strategic vision did not take into account the physical and social context of the port. There was the difficulty of working alongside a live and ongoing port. This led to disruptions and loss of capacity (Nigel Haworth et al., 2023). There was poor communication between the Board and senior management. Workers were often excluded from key decisions, and concerns raised by the Maritime Union of New Zealand (MUNZ) about safety and practical issues were overlooked (Nigel Haworth

et al., 2023). The project also failed to adjust its strategic direction in response to early signs of trouble, such as ongoing system failures and delays. Overall, while the project was framed around an innovative strategy, the lack of alignment between strategic vision and practical challenges shows a major failure in achieving strategic alignment.

1.3 Performance Management

The Binns Report and the ITF research both identified that POAL lacked formal structures to monitor progress, evaluate outcomes, or respond to issues as they emerged. The ITF report stated that, “management continued to hype the project even as safety incidents occurred,” failing to respond with a serious performance review process as conditions worsened (Nigel Haworth et al., 2023, p. 14). Despite many system faults, shipping delays, and safety incidents, the project overlooked these and proceeded with the project. There were also no rigorous performance milestones, or structured evaluation systems in place. It is very clear to us in the Binns report where it states that POAL neglected key milestones which were set up to assess the AP’s progress, and allowed acceptance testing criteria to be changed, making it easier to approve the automated straddlers (Binns, 2022). This shows that they lowered their standards to keep moving forward. Prioritizing the AP’s completion over the safety of workers. Rather than pausing the AP to reassess problems, the board continued pushing aside the many errors and underperformances. The ITF report concludes that POAL would not be able to function without the precision, speed and safety that humans had, which is a final acknowledgment that the project never delivered its performance expectations (Nigel Haworth et al., 2023).

1.4 Resource Management

POAL invested approximately \$65 million into the project and failed to manage this financial commitment. Significant resources were spent on automated straddlers and software systems that remained idle or underused for extended periods. According to the ITF report, “we’ve had cranes sitting at the end of the wharf for three years and blue automated straddle carriers ‘doing nothing’” (Nigel Haworth et al., 2023, p. 34), which shows a very poor use of their resources. After all this money spent, POAL failed to improve efficiency of the port and make use of the new automated straddles. Considering that this port had no spare land, these automated straddles sitting idle meant that there was wasted space. POAL’s poor use of financial and physical resources, affected them significantly, slowing down workflow and making operations difficult.

1.5 Risk Management

Risk Management was a significant factor which led to the downfall of the AP at POAL. The project was launched despite posing many risks to the safety of workers, the software systems, and the overall operations of POAL. The idea to implement automation in a live, operational port, is something that has never been done globally.

The ITF report explains how POAL was overly optimistic and downplayed risks of failure, to achieve the financial goals of the AP (Nigel Haworth et al., 2023). This lack of caution contributed to increased accidents, system failures, and ultimately, the project's collapse. POAL also implemented a new bonus system which rewarded workers for the speed at which regardless of risks undertaken to achieve high volumes. This system encouraged unsafe behaviours and placed pressure on workers to prioritise productivity over safety. Rather than mitigating risks, POAL's approach increased the likelihood of accidents. This environment that POAL had created caused harm to many workers and led to the deaths of three of them. The number of injuries that occurred tripled from 2018 to 2021 (Nigel Haworth et al., 2023). These outcomes highlight how POAL's risk management failed not only in creating a safe environment but also in implementing a system that could have prevented foreseeable danger.

2. Ethical Analysis

(a) Key stakeholders

The key stakeholders were POAL's Board and senior management. They were responsible for overseeing the project and making decisions. Port workers were directly affected by the automation, especially in terms of workplace safety. Other stakeholders include the vendors such as Kone and TBA, who delivered the technology for automated straddles. The ports customers and public are also stakeholders, who expected safe and efficient port operations. The ethical issue began when workers were exposed to unsafe conditions without being properly consulted and protected.

(b) Duty based ethics

Under a duty-based ethics view, POAL had two obligations. Which was to protect their workers' safety and rights, and to achieve business goals like reducing costs and innovating operations. However, the project success was prioritized over worker wellbeing, pressuring employees to perform under unsafe conditions and ignoring union safety concerns. Workers reported that there were uncontrolled movements of the automated straddles and expressed fear working near them yet concerns that they took up to the management were dismissed (Nigel Haworth et al., 2023). The Maritime Union of New Zealand (MUNZ) received multiple concerns from workers and warned POAL about these safety issues, but POAL did not address them (Nigel Haworth et al., 2023). POAL failed to act on these repeated safety warnings from both workers and MUNZ, which shows a clear breach of POAL's ethical duty to protect and care for its employees.

(c) Utilitarian perspective

From a utilitarian perspective, POAL's actions caused more harm than benefit. The project aimed for long term efficiency and cost savings, but it led to increased injuries, three worker deaths, poor port performance, and a \$65 million loss. This was a clear failure, making the decision to carry on with the AP ethically unjustifiable. Tony Gibson (POAL CEO) admitted the company "carried on with it, eye on the prize, chasing the timeline," despite suspect testing and safety issues (Nigel Haworth et al., 2023, p. 34). POAL only focused on achieving their goal. Their narrow view of the project completion

affected worker safety and public trust. Which made their actions ethically unjustifiable under a utilitarian reasoning.

(d) Could POAL have balanced duties?

POAL could have balanced its duties more ethically and effectively. They could have meaningfully engaged with workers and unions during the planning and early stages of the project, rather than pushing ahead without consultation. Implementing automation in smaller, safer phases would have allowed time to identify issues even if they were small. Investing in proper worker training and transparent communication would have reduced harm while still making a progress in automation.

3. Vendor Selection Evaluation

POAL selected a Finnish company Kone to supply the automated straddle carriers and a Dutch company TBA to provide the automation software that controlled them. A key concern was that the vendor selection process was poorly structured and lacked independence. One of the vendors had been working with POAL in a consultancy basis since 2012 and played a significant role in shaping the proposed solution, this indicates a potential bias and a lack of independent evaluation (Nigel Haworth et al., 2023). The Binns Report also noted that POAL committed to partial automation without formally re-evaluating other options (Nigel Haworth et al., 2023). Given the complexity of automating straddlers in a live port, POAL could have reduced risk by carefully evaluating the AP and considering any potential problems that may arise in this new approach. A more transparent selection process might have helped remove technical issues and improved the project's chance of success.

4. Reflection

The justification for implementing automated straddlers within the live, ongoing operations of the port was driven by POAL's desire to maintain the ports functionality while advancing its innovation. The goal was to avoid disruption to port services and revenue streams while transitioning to automation. This "world first" approach was seen as ambitious and potentially efficient. This project would have showcased POAL as a leader in global port innovation. But when carrying out AP decisions that were being made ignored the complex risks of merging automation with daily operations, especially in an environment that is dangerous, like a working port.

The AP created many problems suggesting that POAL did not follow a 'fail fast' approach. The 'fail fast' concept encourages cheap and early testing, quick identification of issues. With this approach, you can abandon the project without spending too many resources. In our context, POAL continued investing in the Automation Project despite the countless failures, safety concerns, and performance issues. The company ignored early warning signs such as system faults, project delays, and concerns raised by the MUNZ. Instead of pausing or reassessing the project, the management continued with the project. This persistence when there are clear signs of failure is the opposite of a 'fail fast' approach. If POAL followed a 'fail fast' approach, the

AP would have conducted small and cheap trials of automation. These trials would have allowed POAL to identify risks and valuable insights. POAL's unwillingness to pause project and address issues contributed significantly to the project's \$65 million loss, decline in performance, and harm to workers.

References

Nigel Haworth, P., Smith, C., & Hendren, D. J. (2023). *Lessons in Failure: Automation at the Port of Auckland* (pp. 01-68) [Review of *Lessons in Failure: Automation at the Port of Auckland*]. <https://www.itfglobal.org/en/resources/lessons-in-failure-automation-port-auckland#:~:text=But%20the%20automation%20project%20failed,the%20port%20and%20its%20users>

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