



EVALUATION OF THE CHANGE FROM PAPER-BASED TO ELECTRONIC ACCIDENT AND NEAR-MISS REPORTING.

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Executive Summary

The purpose of this report is to analyse whether the organisational change at Blackwood Engineering, involving a transition from a paper-based to electronic incident reporting, was effectively managed. To understand this, Lewin's Force Field Analysis and Three Step Model were used in conjunction with Kotter's eight step process and Herzberg's two factor theory to evaluate the effectiveness of the change, and the role of leadership and management.

From these models, major justifications for the change were identified to transition into a modern-age system including an increased efficiency by eliminating the need for writing and filling paper forms which have more potential to be damaged. However, major resisting forces to this change were identified involving the ability to successfully adapt to this change due to technical ability and adequate training to be able to perform the work that the change requires of them. Although further IT training was developed due to a disruption to the organisational change, this factor could have been prevented by utilising these models in advance to understand roadblocks that can affect a successful change process.

Analysis of the leadership and management of the change also identified a lack of communication regarding the urgency for the change. This required more effective communication on the factors behind implementation with the vision to improve safety of the workplace by allowing for more effective investigation due to increased details in reporting. As well as this, constant communication was also required through all aspects of the change process to help ensure this new process is maintained. This could have been implemented with more personal interaction such as face-to-face talks to understand the issues employees may have but also provides an opportunity for leadership to provide ongoing support and demonstrate what is expected throughout the change.

Motivation also plays a major factor in ensuring successful change within an organisation. Multiple factors within a work environment such as achievement and recognition can have significant impact on motivation which can adversely affect an organisation's performance. Ensuring that the organisational change does not disrupt these factors allows a company to implement these changes successfully.

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1. Introduction

Blackwood Engineering (BWE) situated in Aberbeeg, Wales, is a global supplier of quality engineered castings and counterweights, manufactured in China and India, which offer customers first-class logistics and engineering support (Blackwood Engineering, 2025). As such, this involves processes that require high risk activities such as forklift trucks (FLT) and overhead cranes. This provides a workplace where the reporting of accidents and near misses is essential to prevent serious injuries and identify unsafe conditions. To improve this process, BWE switched from an old paper format to electronic to increase efficiency and prevent delays, allowing for a more structured and systematic approach to support accident investigations.

Paper format reporting of accidents and near misses presented issues such as potential loss of key data or personnel not completing reports with adequate information leading to problems with implementing corrective actions. Furthermore, this traditional method did not utilise digital innovations such as photos or videos, which could improve understanding of the incident causes and support improvements in overall safety in the workplace. Therefore, this outdated model required a change to a more advanced reporting system to help build a safe working environment. For successful organisational change, change management techniques such as communication and adequate training are vital. As well as this, ensuring the motivation of employees is high to ensure they feel satisfied to follow through with the differences the organisational change can bring to their working routines. To support this transition, effective leadership from management can support personnel in adapting to change to their daily work structure by not only reinforcing the purpose but by also demonstrating their own commitment (MIT Sloan School of Management, 2026).

2. Main Findings

Organisational change is referred to as the movement of an organisation from the known (current state) state to the unknown (Desired future state) state (Hussain et al., 2018). Organisational change from an employee's point of view can lead to active and constructive responses where others may present more destructive responses (Breutner and Roth, 2024). This reinforces the concept of the appropriate leadership and management style to address an employee's response to organisational change.

2.1 Lewin's Force Field Analysis

Force field analysis, developed by Lewin (1947), is widely used in change management, referring to change as an imbalance between driving forces and restraining forces (University of Cambridge, 2016). It allows for evaluation of driving and restraining forces to a change, allowing for understanding of how the change process can be effectively implemented through the correct management.

The organisational change at BWE involved an online platform which allowed personnel to fill out incident reports digitally that could be accessed via a custom-made web portal. This change was managed by the Production Support Engineering (PSE) department, supported by the Operations Manager. Targeted personnel responsible for reporting these incidents across the office and factory were given log ins to access the digital storage of the reports, such as Management and Team Leaders.

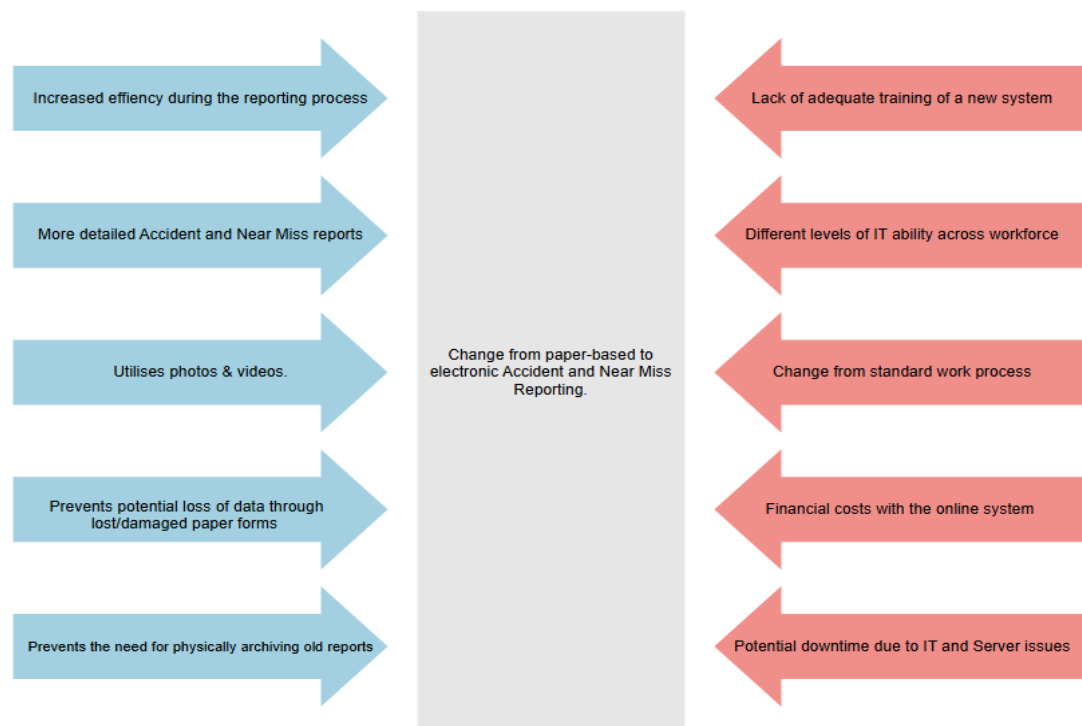


Figure 1: Force Field Analysis (adapted from (VisualParadigmOnline, n.d. based on Lewin, 1947)

Lewin's (1947) Force Field Analysis illustrates the various driving forces behind the effectiveness of this organisational change. Factors such as more detailed reports and improvement in efficiency are key driving forces that allow for a positive change to improve safety. By switching to an online version, it allows for a required amount of data to be filled in before submitting and allowing for pictures of what caused the incident for further understanding. This aligns with Gardener (2010) which states a single corporate database in an electronic format provides a process where data is consistent and allows for a framework to report all essential information. This is essential for ensuring that corrective actions implemented are effective based on understanding what has occurred, paper-based forms prevented this level of data from being collected. These driving forces demonstrate a strong justification for this change, and the improvements the online system brings can mitigate these restraining forces. However as outlined by Tahir (2019) and (Six Sigma, 2024), the total number of forces each side must be scored and weighted to understand whether the organisational change will be successful. This demonstrates where BWE Management should have evaluated the resisting forces to the implementation against the driving forces to form an action plan on reducing the effects on the organisational change. Several resisting factors that were not highlighted in the change process affected implementation.

Key factors such as lack of adequate training and different levels of IT ability were strong resisting factors to the change. These resisting factors presented challenges to the employees not only because it was a deviation to their normal process, but because of the difficulty of understanding the different IT levels of key personnel within the company. According to Kotter (2012, pg. 90) and (Olsen and Stensaker, 2013) training is often provided but not to a sufficient level required for the organisational change. This prevented a straightforward implementation to the company due to inability of personnel to successfully use the software and potentially cause incidents to be inadequately reported hampering successful investigations. This reflects an area where the BWE Management could have done more research and testing of the software, in conjunction with members of the shopfloor to identify these issues before full rollout. Although this can be argued was carried out by BWE management as they identified those potentially needing practice on the reports were given five old reports to transfer over. Nevertheless, more intimate training formats such as direct face-to-face would have provided a more effective environment for teaching of these IT issues that hampered the organisational change. This approach aligns with Edmondson (2024) and Mossop (2025) that face-to-face learning allows for more engagement and interpersonal connection compared to modern digital learning. However, this could present issues as face-to-face learning requires more resources to the business instead of digital learning methods such as videos and e-learning.

2.2 Lewin's Three Step Change Model

To further understand the change process, Lewin's (1947) Three Step Change Model can be utilised. The model dissects the change process into three steps involving unfreezing the current state, making the change and the subsequent refreezing of the new behaviours into place (Scienceinsights, 2026). This allows for the change transitions to be viewed chronologically and assess whether the implemented changes are still in effect.

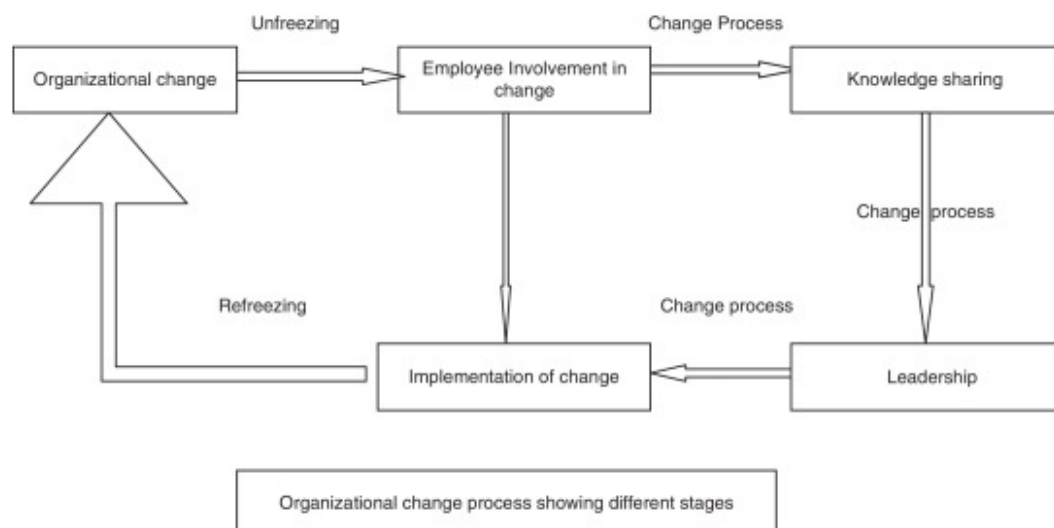


Figure 2: Lewin's Three Step Model (Hussain et al., 2018)

2.2.1 Unfreezing Stage

Lewin's (1947) Three Step Model outlines the first stage of organisational change is the unfreezing stage into employee involvement in change. This stage involves creating a sense of urgency and preparing the organisation for upcoming change by communication of why it is needed and ideally breaking down the mindsets and behaviours that resist it (PubAdmin Institute, 2024). Furthermore, according to (Burnes, 2004, pg. 274), the key to unfreezing was to recognise that change was a profound psychological dynamic process, where factors such as psychological safety must be sufficiently managed or otherwise the change will not take place. When analysing to the change at BWE, it highlights there was a sense of urgency to improve the reporting process of incidents and allow for integration of modern technologies. On the contrary, the communication of why the change was required and ensuring employees felt satisfied and safe for the change to their working process needed more effective management. This aligns with Kotter (2012) eight step process of ensuring successful organisational change. According to Kotter (2012, pg. 80) vision is usually communicated most effectively when many different vehicles are used, such as large groups meetings, posters and one-on-one talks. For BWE to have achieved this, the appointment of change agents within the organisational change would have been beneficial. This approach aligns with Burnes (2017, pg 21) and Endrejat et al. (2021) that change agents are vital to establishing the level

of readiness for change using adequate communication to enhance employees' reaction to the change. Since the Production Support Engineering department were responsible for the software, they could have been selected as change agents. Due to having previous experience with the software and understanding the reason for the change, they could have provided the most effective communication to help ensure the level of readiness at BWE was ready for implementation of the software.

2.2.2 Making the Change

The model then moves into the change process involving knowledge sharing and leadership. This stage can often be the most complex due to new processes being implemented and people involved in learning new skills, adjusting to new expectations and making mistakes during the process (Scienceinsights, 2026). This highlights the need for management and leadership to support those closely during this stage in the process, as reinforced by (Burnes, 2004, pg. 274), that without reinforcement, change would be short lived. Furthermore, in this stage, training and capacity building are essential as those who are expected to work with the change cannot perform well if they are not equipped with the right skills (PubAdmin Institute, 2024). This is further supported from (Olsen and Stensaker, 2013) where change recipients struggle to put new skills and competencies into practise. Reflecting on the change at BWE, this was partially done with practise reports assigned to those who potentially could struggle. However, the problem was a lack of skills in technical ability of using a computer in the first place. This meant that certain personnel were not equipped with the main skills to undertake this change and more intensive training of computer skills from IT was required first. This highlights the importance of the support of management in ensuring training is adequate to competently train those involved in the organisational change. When analysing this change, using this model could have prevented delays within the change by outlining all the required skills needed to use the new software.

2.2.3 Refreezing Stage

The last part of the change process is the refreezing stage. New changes are solidified into the organisation's culture and operational framework, ensuring that new behaviours and processes are stabilised and become the new norm (Majka, 2024). At BWE, the transition from paper to electronic eliminated the potential for the change to not be carried out as it became the only way to report incidents. However, as outlined in section 1 the change process was not seamless due to problems using the software and potentially causing personnel to be deferred to wanting to report electronically. According to (Majka, 2024), leadership plays a vital role in the refreeze stage and leaders must continue to model and reinforce the new behaviours and learn from any setbacks. This aligns with Kotter (2012, pg 22) that until new behaviours are rooted in social norms and shared values, they are always subject to degradation as soon as the pressures associated with a change effort are removed. This underlines that management should continually reinforce the organisational change consistently instead of only during the change. During this change, BWE leadership should have worked closely with those struggling during the initial implementation and reinforced the concept of its importance to mitigate these potential behaviours. The PSE department and the Operations Manager could have provided regular follow up communication or alternative

training methods for those affected by the organisational change. This would provide BWE a platform where not only could behaviours continually be reinforced, but direct insight into the actual root causes of employees' problems.

2.3 Motivation

Motivation within a company is essential and according to (Galanakis and Peramatzis, 2022), employee motivation is a main factor of organisational performance and employee satisfaction and retention. This indicates the importance of effective leadership and management to ensure a high level of motivation within a company. According to (Galanakis and Peramatzis, 2022), Herzberg's Two-Factor Theory specialises in which factors are relevant for motivating employees, where certain factors cause job satisfaction while a separate set cause dissatisfaction.



Figure 3: Herzberg's Two-Factor Theory (Nickerson, 2025)

Herzberg's (1959) Two-Factor Theory outlines various motivators such as recognition and achievement and demotivators such as work conditions and salary which all affect motivation differently. When analysing these factors to the change at BWE, we can see the importance of motivation within a company. As outlined in section 2.2.2, certain personnel required full IT training due to not having the fundamental skills required to successfully use the online system. This would have caused a negative impact on motivators such as the work itself and achievement, as they were unable to carry out the work. This would have negatively impacted their motivation which can further impact their desire to participate in the change process. According to Kotter (2012, pg 63), a good vision can improve motivation by acknowledging that sacrifices will yield particular benefits and personal satisfactions that are far superior to those available today. BWE Management could have helped support employee motivation during organisational change by outlining the many driving forces behind the change, especially fostering a safer working environment for employees due to the features of the new software. This approach aligns with theories that suggest motivation is affected by the leadership style within the organisation (Galanakis and Peramatzis, 2022 and Vasileva and Datta, 2021). This further underlines the importance of effective leadership and management in the change process as failure to understand factors affecting motivation can not only affect the change itself, but also the performance of employees within the organisation.

3. Conclusion

In conclusion the change from a paper-based to electronic system for reporting accidents and near misses at BWE would have been more effectively managed through improved leadership and management. Lewin's Force Field Analysis (Section 2.1) outlined a balance of driving and resisting forces behind the change. Key driving forces such as increased efficiency in the reporting process and more detailed reports provided strong justification for change. Although major driving forces, resisting forces such as IT ability across the workforce and adequate training created stagnation in the implementation of the change due to these issues not being managed before the implementation of the software. This aligns with Kotter (2012) and Olsen and Stensaker (2013) who argue training offered within an organisation's change is not sufficient for the employees involved. Furthermore, Lewin's Three Stage Model (Section 2.2) allowed for analysis to understand the different aspects of the change process. Reflecting on the change at BWE, multiple improvements were identified across all three stages of the model on how the change management was conducted. Increased communication of those involved with the change, as well as identifying the training requirements before a change is introduced, would have provided BWE with an improved organisational change. This is supported by Burnes (2017, pg 21) and Endrejat et al. (2021) regarding the importance of the implementation of change agents and adequate communication to ensure readiness for the organisational change. Utilising Herzberg's Two-Factor Theory (section 2.3) outlines the factors that can affect a person's motivation and the importance of ensuring an organisational change does not negatively impact these drivers for motivation through effective management. This is reinforced by Galanakis and Peramatzis, 2022 and Vasileva and Datta, 2021 who state that motivation within an organisation is correlated to the type of management style. Altogether, despite criticism of these models, utilising these before a change allows for identification of potential resistance from employees, allowing for a company such as BWE, to address these issues and improve the sustainability of the organisational change maintaining.

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