



Quality Management in an Operational Environment ACEA 7012

The Impact of Product Recalls on Businesses and Projects

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List of Abbreviations

- ERAP - Emergency Response Action Plan
- CFT - Cross Functional Team
- PCA - Permanent Correction Action
- FMEA - Failure Mode Effect Analysis
- CA - Corrective Actions
- QMS - Quality Management System
- COQ - Cost of Quality
- WEEER - Waste Electrical and Electronic Equipment Regulations
- UK - United Kingdom

1. Introduction

This report is a critic analysis on the impact of product recalls on businesses and projects. The effects of product recalls can be extremely damaging to a company, its reputation and most importantly cost damages can be fatal to a company's existence. This report will cover points such as the consequences of poor quality, the costs of these quality failures, restoring consumer confidence, the need for more sustainable practices, ethical issues, supply chain complexity and the current practices of powerful buyers.

The author will concentrate on a pacific product and investigate how that brand developed a suitable process that can be followed in the event of their product being recalled. The brand is Hotpoint, and their product is their dishwashers. Hotpoint was originally an American company but was then was bought out in 2014 by the Whirlpool corporation. In April 2013 Hotpoint recalled 283,000 dishwashers, it is reported that there have been at least 38 fires related to the Hotpoint dishwashers (certain models), in July 2014 Hotpoint announced a further recall of an additional 330,000 dishwashers. As Hotpoint also own the Indesit brand, then their dishwasher was also recalled (Plugtest Ltd, 2024).

Hotpoint, and as with any other major manufacture will clearly display the make and model of the product, so that the consumer can identify the product to see if it has been recalled. The illustration in Figure 1 states the make and model of the product.



Figure 1 – Make / Model Identifier on Hotpoint Dishwashers (Hotpoint Service, 2024)

Product recalls can lead to loss of sales because the stock that has been recalled cannot be resold, so there is a loss and cost to production, supply and distribution this also takes into consideration administration. Future loss of sales can result in great difficulty for the company to recover, especially if the recalled product is a top seller, this also has the potential to for contracts to be cancelled.

There are potential consequences of a product recall event such as logistics, people, reputation, sales and economics. It is common for product recalls to take place through all industries, as technology develops then there have been positive developments in the process of carrying out a product recall to identify the issues, this also assists in identifying how to overcome the issue.

Once the customer has reservations about a product then it is challenging to the company to restore customer confidence. Affirmative and honest actions are the best way forward, the company needs to show that their main priority is consumer safety and then providing easy and informative instruction to return the product at no expense to the consumer. It is essential that the company acknowledges the power of the buyers, without customers then the company would fold.

2. Product Recall Process

2.1 Strengthening Hotpoint's Product Recall System

A large part of a company's success is by manufacturing a product that is safe and reliable, especially an electrical product which have the potential to overheat and cause fires, resulting in putting the consumer at serious risk. Hotpoint's reputation is essential to uphold, and if that company demonstrates to the consumers that their safety is their main priority.

A strong recall system is recommended which uses successful strategies for recalling products, oftens involves companies taking accountability for the failure, which allows effective solutions to be implemented and making amends with customers.

Electrical Safety First states that “it is estimated that there around 4 million recalled electrical appliances still being used in UK homes and businesses. The average success rate of a product recall is just 10% to 20%. There are over 1 million untraced appliances from just three product recalls by Bosch, Beko and Hotpoint” (PlugTest, 2024).

A product recall is a request to return to the maker, a batch or an entire production run of a product, usually over safety concerns or design defects or labelling errors. Companies recall products when defects seem to have safety concerns for customers and affect large number of customers (Quality Characterisation of Apparel, 2009).

Potential consequences of a product recall event

- ***Logistics***

- Advertising the recall, and tracing affected products can prove challenging, especially if the product is sold globally.
- Sending recall notices out to customers and vendors may be a relatively easy exercise but getting the product back is likely to be more complicated.
- Storage space needs to be found and allocated for the returned products.

- ***People***

- Staff will likely need to work overtime to deal with the issue adequately (e.g. customer service, warehouse). Hazardous product returns will need to be handled carefully, requiring workplace risk assessment.
- Management will also need to spend time dealing with the fallout, diverting attention from other tasks.

- ***Reputation***

- Reputational management will be at the top of the agenda. This is likely to require PR consultancy.
- While helpful for communicating with customers, social media can cause significant reputational and potential financial costs. Misinformation or one miscommunicated post can easily escalate the issue.

- **Sales**

- Refunds for affected products or goodwill sums can be costly but are likely to pay off in the medium or long term. If made conditional on the return of recalled products.
- The event is likely to result in loss of sales because of unsold affected stock that cannot be resold.
- Future loss of sales can be difficult to recover, especially if the recalled product is a top seller, flagship brand, or results in cancellation of contracts.

- **Economics**

- Determining the scope of affected products and root causes of failure can be a lengthy and expensive process as can ensuring the issue does not recur – particularly if it requires a supply chain overhaul.
- Implementing an effective recall, ensuring regulatory compliance, corresponding with the regulator, managing the consumer and dealing with supply chain claims can incur significant legal fees.

Table 1 – Potential Consequences of a Product Recall Event (Lockton Companies, 2024)

2.2 Hotpoint to Implement the 8D Process

There is a specific process that can help Hotpoint, this process is called the 8D (disciplines) and it can help companies addresses defective products and prevent recalls. The objective of the 8D process is to develop appropriate actions to eliminate root causes of failure in the production process. The Ford Motor Company founded the 8D process, it is reported that Ford found this process to an effective method for problem solving (Muncut, et al., 2019).

The purpose of the 8D methodology is to identify, correct, and eliminate recurring problems, making it useful in product and process improvement.

The 8D problem solving model establishes a permanent corrective action based on statistical analysis of the problem and focuses on the origin of the problem by determining its root causes. Although it originally comprised eight stages, or disciplines, the eight disciplines system was later augmented by an initial planning stage (ASQ, 2024).



Figure 2 – Implementing the 8D process (ASQ, 2024)

Breakdown of Steps for Hotpoint to carry out.

- **D0: Plan** - Hotpoint would need to prepare and plan for the 8D process. It is recommended that an Emergency Response Action Plan (ERAP) is put into place, this would protect customers from further exposure to failed items such as the dishwashers.
- **D1: Create a team** – A Cross Functional Team (CFT) is composed by Hotpoint with a group of individuals with vast technical experience, who will form a special team to investigate such faults.
- **D2: Define and describe the problem** – Hotpoint will investigate the problem, identify the issue and produce a solution to overcome such problems.
- **D3: Develop interim containment plan, implement and verify interim actions** - Hotpoint will indicate the actions the consumer needs to follow to assure their immediate safety.
- **D4: Determine, identify and verify root causes and escape points** – Hotpoint will be required to identify the root causes using specific analytical techniques to provide solutions
- **D5: Choose and verify permanent corrections for problem / nonconformity** – Hotpoint will perform a Failure Mode Effect Analysis (FMEA) on the Permanent Correction Action (PCA) choices to prioritise the movement. Chen & Cheng, 2010 stated that *“efficient planning is essential to successfully implementing permanent change which should include a project plan to demonstrate communication and the required steps to achieve the end goal. This allows to measure the success and conduct the lessons learnt at the end of project”*.

- **D6: Verify Corrective Actions** – Hotpoint will need to measure and monitor the results after implementing the corrective actions.
- **D7: Take preventive measures** - Hotpoint would need to prevent recurrence of recalls; they can do this by sharing knowledge and reviewing similar products and processes to identify the problems.
- **D8: Congratulate the Team** – This would be the final stage in the 8D process, Hotpoint would need to seize this opportunity to congratulate their team on identifying and solving the issues (ASQ, 2024).

The benefits of the 8 disciplines are among the strengths of this problem-solving strategy is that it is oriented to the zero-defects condition and identifies the exact step of the production process that yielded the problem (MDADI, 2024).

3. Cost Associated with Product Recalls and Controls

3.1 Quality Failure Costs

There are many ideas of what constitute quality costs have changed rapidly in recent years. Whereas only a few years ago the costs of quality were perceived as the cost of running the quality assurance department plus scrap and warranty costs. It is now widely accepted that they are the costs incurred in designing, implementing, operating and maintaining a quality management system (QMS), the costs involved in introducing and sustaining a process of continuous improvement, plus the costs incurred owing to failure of systems, processes, products and services.

- Internal failure costs occur when a product fails to meet the requirements, such as failure being identified before delivery to the customer.
- External failure costs occur when a product fails to meet the requirements after delivery to the customer, such as loss of sales, warranty claims, complaints, returned material repairs and recall costs.

Any recalls that Hotpoint must make will have a heavy financial impact on the corporation. They need to be sure that design and manufacturing is perfect to prevent any recalls. Poor quality can lead to many implications such as safety concerns, disgruntled customers, reputation damage, product recalls and loss of revenue. Failure costs can occur in various areas of Hotpoint, such as production, sales, service, or administration.

Hotpoint have released a statement and instructions on how to inform their customers on product recall. It is as follows: *“At Hotpoint, your safety is our top priority. We are dedicated to delivering high-quality electrical appliances that you can trust. However, occasionally, we must address safety concerns to ensure your appliance continues to operate safely and efficiently. Here you can find important safety alerts and learn what actions to take if your Hotpoint appliance is affected.”*

Hotpoint, 2024 advises their customers on why a safety notice matters; they state *“Safety notices are issued when appliances pose potential risks. It’s essential to take swift action to protect your and family. We’re committed to helping you resolve any safety issues quickly and smoothly”*.

Hotpoint have clearly stated that they have the customers safety on top of their agenda, and they advised the consumer about the importance of the safety notices. The customer can find further guidance on how to find out if their product has been recalled by following the steps on their website.

3.2 Cost of Quality

The Cost of Quality (COQ) can be divided into four categories. They include Prevention, Appraisal, Internal and External Failure. Within each of the four categories there are numerous possible sources of cost related to good or poor quality (Quality-One International, 2024).

In 2014, Hotpoint recalled approx. 520,000 dishwasher units after an electrical fault caused several appliances to catch fire. Hotpoint haven’t declared the full price of the recall, but it did result in an unprecedented cost to the organisation.

3.3 The Cost of Good Quality

1. Prevention Costs – costs incurred from activities intended to keep failures to a minimum.

These can include:

- * Establishing Product Specifications
- * Quality Planning
- * New Product Development and Testing
- * Developing of a Quality Management System (QMS)
- * Proper Employee Training

2. Appraisal Costs – costs incurred to maintain acceptable product quality levels. Appraisal costs can include, but are not limited to, the following:

- * Incoming Material Inspections
- * Process Controls
- * Check Fixtures
- * Quality Audits / Supplier Assessments

Investing in the Cost of Good Quality does not necessarily mean that the overall Cost of Quality will increase. In fact, when the resources are invested in the right areas, the Cost of Quality should decrease. When failures are prevented / detected prior to leaving the facility and reaching the customer, Cost of Poor Quality will be reduced (Quality-One International, 2024).

3.4 Cost Analysis

Product recall directly affects Hotpoint's revenue, the large recall on their dishwashers led to a great loss and cost to the organisation. The costs are broken down into direct recall costs and indirect recall costs.

Direct costs are expenses that Hotpoint can easily connect to one of their products, in this case it is their dishwashers. The direct cost encompasses the costs involved with creating, developing and releasing the product, whereas the indirect costs are expenses that are not tied directly to their pro.

Indirect costs can all lead to the collapse of the organisation, as with any loss to the company then they have to claw that revenue back whether that is through redundancies, natural wastage or lowering the pay reward structure, by doing this then it will affect employee morale which could lead to recruitment / retaining difficulties.

Direct Recall Costs consist of: • Notification costs • Loss of sales • Cost to maintain business interruption • Inventory losses • Transportation and storage costs • Engineering costs to redesign products to meet safety standards • Cost of refund / compensation • Logistic costs • Fines / lawsuits • Incentives to customers, such as extra warranties to encourage them to return the product.
Indirect Recall Costs consist of: • Loss of market share • Subsequent loss of sales • Negative impact to Hotpoint’s brand image • Loss in Hotpoint’s stock market value • Cost to rehabilitate their image • Collapse of organisation • Negative impact to morale • Cost to rehabilitate reputation

Table 2 – Direct & Indirect Recall Process (Research Gate, 2024)

4. Restoring Customer Confidence

4.1 The Need to Restore Customer Confidence

There should be a high drive on Hotpoint to do their utmost to restore their customer's confidence in their products. Hotpoint will need to act fast and react to the issue promptly, and how they will rectify the situation (provide a replacement model immediately).

In a Recall situation then it does provide Hotpoint an opportunity to demonstrate to the customer and the market, that their commitment to integrity and customer care is their main priority. By Hotpoint addressing the issue head-on and communicating effectively, then it will only increase the corporation's reputation.

There are several steps that Hotpoint should consider restoring their customers confidence, they are as follows:

- 1) **Acknowledgement** – It is essential to acknowledge the fault swiftly. The customers need to be valued, and they respect honesty and transparency.
- 2) **Communicate Openly** – Hotpoint need to ensure that its customers have access to regular updates about the recall process and any progress made.
- 3) **Rectify Quickly** – Time is of the essence in addressing product issues. Hotpoint act quickly to remove the defective items from circulation and provide a clear plan for refunds, replacements, or repairs.
- 4) **Reassure Customers** – After a recall, customers need reassurance that it's safe to continue using Hotpoint's products.
- 5) **Rebuild Confidence** – Regaining customer trust means proving that Hotpoint have learned from the crisis.
- 6) **Move Forward** – Now that Hotpoint have covered all of these steps then they can look ahead and build on from their lessons learned, they can focus on the future of their brand. (Linkedin, 2024).

Another approach could investigate the Poka Yoke solution where Hotpoint can ensure that failures don't occur again, or the process identifies the failure before being released to the customer. This would be achieved by carrying out intensive testing on the products. Poka Yoka is a lean manufacturing tool that refers to "mistake-proofing" (Heath, 2020).

4.2 The Need for More Sustainable Practices

The drive for sustainability is higher than ever, and it's important to carry on the excellent work that Hotpoint already do. As a corporation they need to demonstrate to their customers that they care for the environment and want to contribute to making a difference.

Hotpoint have a sustainability strategy to demonstrate their care for the environment and their appliances aim to be eco-friendly.

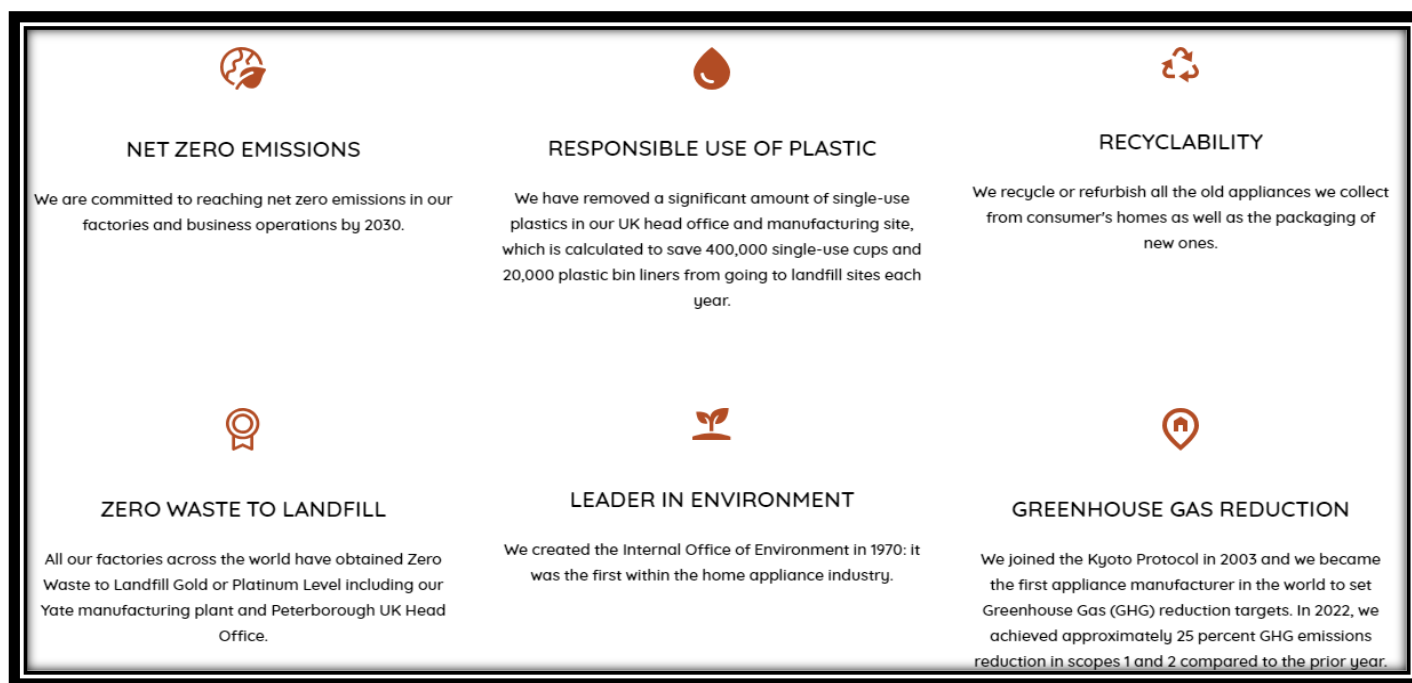


Figure 3 – Hotpoint's Sustainability Strategy (Hotpoint UK Appliances Ltd, 2024)

Hotpoint's unique 'GentlePower Technology' design allows the customer to have a peace of mind that their appliance is eco-friendly. Another positive note for Hotpoint is that they have partnered with Youreko to help the customer to understand the financial savings when purchasing an energy-efficient appliance.

Hotpoint state that they take environmental responsibilities seriously and are dedicated to recycling and refurbishing old appliances. They ensure that their products are treated and recycled in accordance with the European Commission - Waste Electrical and Electronic Equipment (WEEE) regulations (Hotpoint UK Appliances Ltd, 2024).

4.3 Ethical Issues

Poor quality performance leads to the financial impact and ethical concerns for the product. Ethical issues consist of the following:

- Business Ethics
- Medical Ethics
- Technology and Artificial Intelligence
- Environmental Ethics
- Social and Political Ethics
- Legal Ethics
- Cultural and Ethical Relativism

The corporation would need to take ethical obligations into consideration. Hotpoint need to guard against both design defects (products that are dangerous as designed) and manufacturing defects. They need to be responsible for their products, they need to be tested vigorously and independently. It would be fair to say that the corporation would prefer to discover the safety concerns prior than putting their customers at risk.

Sinha 2015, states that “*ethical issues can prevail if there is a toxic workplace culture, discrimination and harassment, unrealistic and conflicting goals or questionable use of technology*”. This statement is aimed at the employees of the corporation, and whether they are fully competent to carry out their duties, which could result in a faulty product. This is interesting as it does imply that there are many contributing factors to ethical issues.

4.4 Supply Chain Complexity

The complexity of the supply chain describes the interdependence of supply chain entities. It means that different elements in the supply chain are intricately connected and dependent on each other. Any event or change in one element can impact all the other elements of the supply chain.

Complexity also increases when companies in the supply chain form strategic alliances and partnerships. It may also increase when a business diversifies its product range and adds new products and services for competitive advantage.

There are 5 ways to address growing complexity:

- 1) **Visibility** – An effective way to deal with complexity is to gain end-to-end visibility. A 'fully visible' supply chain automatically becomes less complex.
- 2) **Convergence** – The convergence of procurement and supply chain has become vital to mitigate risks and build resilience.
- 3) **Reshoring** – To combat growing uncertainty, businesses are evaluating their sourcing strategies. Many believe it is time to implement alternative sourcing strategies such as nearshoring.
- 4) **Forward Planning** – Engaging in demand planning and forecasting can help a business get its supply in sync with demand.
- 5) **Supplier Base Consolidation** – Businesses must also consider rationalising their supplier base (GEP, 2024).

Drawing up from the above issues then it would be beneficial to Hotpoint to have two or more companies supplying the same product, this shows that if one / more supplier(s) fails to seize trading then the other company/s will be able to take over, this maintains a healthy competitive advantage.

4.5 The Current Practices of Powerful Buyers

Buyer power examples include larger and influential customers demanding higher-quality products for lower prices. Powerful buyers can be described as businesses that have significant leverage over suppliers due to their size, purchasing volume, or market influence. It is reported that due to the business stature that they can mould industries, supply chains, and pricing structures.

Jacob Dector, 2024 states that “*Buyer power refers to a customer’s ability to reduce prices, improve quality, or “generally play industry participants off one another”*”. Buyer power is impacted by bargaining leverage, the bargaining power of buyers relative to the target industry players, and price sensitivity, the measure of buyer sensitivity to changes in price (Toptal LLC, 2024).

Dector, 2024 advises that Porter’s Five Forces is an effective tool that allows the user to identify the main sources of competition in the industry. Hotpoint could use this to understand the forces affecting the white goods industry, they can adjust their strategy, boost profitability and stay ahead of the competition.

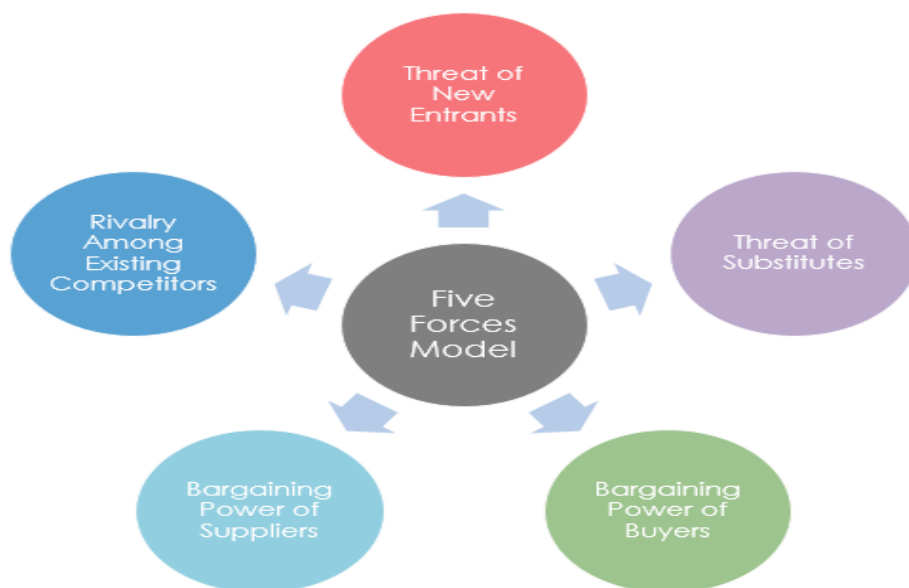


Figure 4 – Porter's Five Forces (Visual Paradigm, 2024)

Porter's Five Forces include the following:

Supplier Power

- The market is conquered by a few big suppliers
- There are no alternative products available
- The supplier customer base is fragmented
- High switching costs from one supplier
-

Buyer Power

- Customers procure large volumes.
- The supplying industry consists of several small operators.
- The supplying industry is controlled with high fixed costs.
- Switching products does not incur high costs.
- Customers are price responsive. Customers could manufacture the product themselves.

Competitive Rivalry

- Players are the same size & comparable strategies.
- Little or no differentiation between players and their products leading to price competition.
- Low market growth rates.
- Barriers for exit are high.

Threat of New Entry

- Economies of scale. High initial investment costs or fixed costs
- Cost advantage of existing players.
- Brand loyalty.
- Intellectual property like licenses, etc.
- Distribution means are controlled by existing players.
- Existing players have secure customer relations. Elevated switching costs for customers & Legislation.

Threat of Substitution

- Brand dependability of customers.
- Secure customer relationships.

- Switching costs for customers.
- The relative price for performance of substitutes.
- Up-to-date trends

Table 3 – Porter's Five Forces (Visual Paradigm, 2024)

The purpose of this model allows the user to be conscious of their competitors and external threats. The corporation can adjust themselves to benefit from the shift in the buyer's power. On the flip side to this, the corporation can make sure that they do the best they can to encourage the buyer but ultimately it comes down to the buyer and how they choose to purchase products. Evidently, one of the most common factors in purchasing is the quality of the product. The buyer has the power to change suppliers due to a better pricing and quality product.

5. Conclusion

This report recommends that having an efficient product recall system / process is essential to the corporation's reputation and longevity. The report has highlighted the benefits of the corporation having a high-end recall system in place, the recall process can ensure that the consumers safety comes first. The immediate action the corporation will take to detect the defective products and prevent dangerous occurring to the customer and their homes.

For Hotpoint to go through a recall process then it can be detrimental, and extremely costly to the corporation. It is not something that any business would want to go through, however it does put into perspective how as a company it reacts to unintended faulty products. It demonstrates to the users the policies it has in place to make the process as easily as possible to the consumer.

The consumer should not be penalised in any way, they should be made to feel reassured and protected by the corporation, regardless of the financial impact it may have. However, to add to this, it is evident that product recalls inherit financial restraints, and it is common that small and medium-sized companies can be liquidated due to be unable to recover financially.

Hotpoint have proven from this report that they are totally consumer focused, they implement the 8D process for the recalls. Hotpoint demonstrate that they take ownership of the defect and are honest with the issue, they provide clear instructions how to cease using the product with immediate effect and they clearly state how to return the product, at no additional cost to the consumer. They also offer incentives to the consumer to encourage them to come back and continue purchasing their products.

Hotpoint excel in restoring customer relationships throughout the product recall process. They have open lines of communications through social media, email addresses, contact details all being available on their website, or direct contact numbers.

The corporation is not only easy to contact, and that they alert the consumers to the defect, they also provide their customers with confidence that their catalogue of products is all fully working accordingly, and any existing issues will be prevented on future eco-sustainable models.

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