

DOOMSDAY: EXPLOSION OF THE GALAXY!

MANAGEMENT DECISION

The authors prepared this case solely as a basis for class discussion and not as an endorsement, a source of primary data, or an illustration of effective or ineffective management. Although based on real events and despite occasional references to actual companies, this case is fictitious and any resemblance to actual persons or entities is coincidental.

Reactions and Decisions

The worst nightmare for Samsung has come true. Not only did Samsung had to go through a humiliating process of product recall twice in a row for one of their biggest revenue generator – the Galaxy series. The Galaxy Note7 was considered as one of the biggest technological failures in the history. In a fiercely competitive market and 24/7 media watch, Samsung was at the most vulnerable state it has ever been – threatening the equity the brand has built over time. To tackle the crisis, Samsung implemented a robust crisis management plan re-evaluating their internal and external process while keeping the customers at the core of the crisis operation. “For the last several months, together with independent industry expert organizations, we conducted thorough investigation to find cause to the Galaxy Note7 incidents. Today, more than ever, we are committed to earning the trust of our customers through innovation that redefines what is possible in safety, and as a gateway to unlimited possibilities and incredible new experiences.” DJ Koh, President of Samsung Mobile said apologetically in a press conference unveiling the findings of the Galaxy Note7 fiasco.

Management Decision

To ensure that Samsung upholds the core values of the organization, the following action plan was implemented synchronously by the leadership team of Samsung Mobile to mitigate the situation.

Reinforce Product Exchange Program

First of all, Samsung discontinued the Galaxy Note7 product line and continued with the exchange program, now with the option to either exchange with either Galaxy S7 or S7 edge or provide full refund in exchange for the device. They collaborated with their retailer partners and carriers to stop selling the products and ensure the smooth execution of the exchange program. "We strongly urge any customers still using their Note7 to return their device to the place of purchase for a refund or replacement," said Samsung Newsroom. Samsung continued to work with the external agency United States Consumer Product Safety Commission (CPSC) to reinforce the immediate recall of the Galaxy Note7.

To ensure that all customers return the Galaxy Note7 immediately in the appropriate channel, Samsung disconnected the network service of the Galaxy Note7s. "As part of our commitment to ongoing safety, Samsung would like to make our customers aware of plans to discontinue network service for Note7 devices," said Samsung Mobile President DJ, Kohn.

Samsung sold over 3 million Galaxy Note7 by October 2016 and successfully recalled 96% of the products

Internal Integration

To understand the root cause of the Galaxy Note 7 battery issue, Samsung created a team consisting of 700 engineers globally who were testing the device rigorously. Samsung tested overall 200,000 devices and 30,000 batteries and identified the root cause of the problem.

Third Party Analysis

In addition to the internal team assembled to investigate the core cause of the product failure Samsung also collaborated with three industry expert organizations – UL, Exponent and TUV Rheinland who provided objective analysis on the reasons for product failure.

Re-assessment of All process

The Galaxy Note7 failure forced Samsung to relook in their product development process to identify any gaps. Samsung critically reviewed all the product development process from design, hardware, software, assembly, testing to logistics. This strengthened Samsung's commitment towards quality and safety for customers.

Stakeholder Management

Employee: This crisis was an eye opener for Samsung corporation. Samsung had to look into the organization culture and reemphasize the importance of product quality and safety in its product. Samsung aligns these recent crisis as a catalyst for a fresh start for the company. On the 47th anniversary of the company, Kwon, Co-CEO of Samsung, said "The latest crisis made us look back at ourselves and think maybe we have grown complacent, and it served as momentum for a new start. We should continue to push for innovation in order to strengthen our competitiveness and technology leadership. "Moreover, Kwon urged for the development of a thorough crisis-management system so that it is better prepared.

Customer: Apart from the product exchange program, Samsung issued an apology letter to its customers. In the letter, Samsung agreed that it failed its brand promise of "Best-in-class safety and quality" and has failed consumer expectations. They concluded the letter by stating "We will listen to you, learn from this and act in a way that allows us to win back your trust." This action increased the share price for Samsung that was dwindling due to the crisis. Samsung is also contemplating a compensation program for the owners of Samsung Galaxy Note7, who would be able to change their phones for a newer model like the Galaxy S8. Samsung maintained constant communication informing the customers about the progress of their problem investigation. When they were able to pinpoint the reason for failure, Samsung arranged a press conference globally (**Exhibit 1**) where they explained the cause of the

product failure for Galaxy Note and introduced the steps they will take in the future to ensure quality.

Shareholders: To minimize uncertainty amongst its shareholders, Samsung published details about the estimated loss the company will incur due to the crisis and revised their profit and loss. They maintained transparency in publishing their financial detail online and attempted to reduce the apprehension of the shareholders.

Supplier: The main issue with the Samsung Galaxy Note7 was not using proper suppliers equipped to design the battery as per the specifications leading to product failure. Samsung cancelled two of their contracts with battery suppliers and are currently looking towards suppliers in countries who has positive reputation like Japan. Moreover, Samsung reevaluated their supplier selection process and conducted audits among its suppliers.

Upgrading the Product Quality Management Process

Samsung strengthened their commitment towards the quality management process for all its products as they want to ensure that this doesn't happen in the future. Keeping safety and quality in the forefront of their product development process they improved processes all throughout the company. Additionally, Samsung introduced 8-Point Battery Safety Check (**Exhibit 2**) which is an extensive battery test protocol to ensure safety of the battery from the complete device. They also introduced a multi-layer safety measure (**Exhibit 3**) which improved the safety standards of the batteries, hardware design and software protection. Lastly, Samsung created a Battery Advisory Group consisting of an external team of experts from academia and research centers who would provide objective analysis on their product quality to ensure that the safety and quality is not compromised.

Financial Loss Minimization

The massive product recall drilled a hole in the profitability of the business and threatened the sale of other products in its portfolio. To minimize the revenue loss from the product recall, Samsung pushed the sales for its mid-range phone models and Samsung Galaxy S7 in addition to increasing the communication in all of its product category. Moreover, Samsung's proactive steps to ensure that they are hands on the issue and constant apology helped keep the consumer trust intact. During the crisis period Samsung was active in the media and ensured news of its innovation and quality measures are being reported in the media.

The product recall of Galaxy Note7 hit Samsung mobile hard however, the company enjoyed its highest profit of GBP 6.32 billion in the last 3 years. This profit was driven by the memory business and display panel segment. The mobile unit experienced a sales dip of 2% but lost 60% profit during the period as the company financed the loss from the Samsung Mobile unit.

Minimize Impact on the Corporate Brand

To reinforce the pledge towards product quality and safety, Samsung has opened a new department called Global Product Quality Improvements which would lead product quality and monitor manufacturing process to avoid events like the Galaxy Note7 in the future. With the Galaxy S8 to be launched in the future, Samsung increased the frequency of its communication for quality management in the media to minimize the impact on the Galaxy S8 and its other products in the portfolio as well.

Exhibit 1 Press Conference on the Reasons for Galaxy Note 7 Failure

Galaxy Note7

What we discovered

A short circuit within the battery may occur when there is damage to the separator that allows the positive and negative electrodes to meet within the jellyroll. Based on a detailed analysis of the affected batteries, both Battery A from the 1st recall and Battery B from the 2nd recall, we identified separate factors that originated in and were specific to the two different batteries.

Lithium-Ion Battery Structure

The diagram shows a cross-section of a battery pouch containing a 'Jelly Roll' of electrodes and separator. Labels include Negative Tab, Separator, Positive Tab, Positive Electrode, Negative Electrode, Pouch, and 'Jelly Roll'.

Battery A

Abnormal

Main Cause

The negative electrode was deflected in the upper-right corner of the battery

Additional contributing factor

The tip of the negative electrode was incorrectly located in the curve, not the planar area

Normal

Main Cause

The negative electrode is not deflected

Additional contributing factor

The tip of the negative electrode is correctly located within the planar area

Battery B

Abnormal

Main Cause

High welding burrs on the positive electrode resulted in the penetration of the insulation tape and separator which then caused direct contact between the positive tab with the negative electrode

Additional contributing factor

A number of batteries were missing insulation tape

Normal

Main Cause

The positive tab is appropriately attached to the positive electrode

Additional contributing factor

Batteries with sufficient insulation tape

Exhibit 2 8-Point Battery Safety Check

8-Point Battery Safety Check

Since the Galaxy Note7 recall, we've re-assessed every step of the smartphone manufacturing process and developed the 8-Point Battery Safety Check. It involves putting our batteries through extreme testing, inside and out, followed by careful inspection by X-ray and the human eye. We are making a stronger commitment to safer devices.

8-Point Battery Safety Check Test



Durability Test

It starts with enhanced battery testing, including overcharging tests, nail puncture tests and extreme temperature stress tests.



Visual Inspection

We visually inspect each battery under the guideline of standardized and objective criteria.



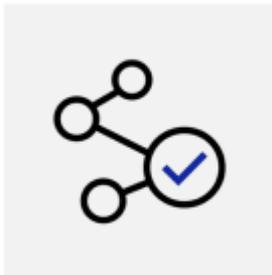
X-Ray

We use X-ray to see the inside of the battery for any abnormalities.



Charge and Discharge Test

The batteries undergo a large-scale charging and discharging test.



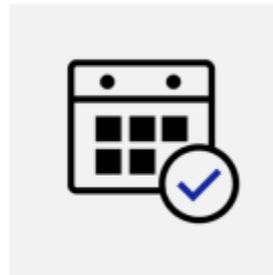
TVOC Test

(Total Volatile Organic Compound)
We test to make sure there isn't the slightest possibility of leakage of the volatile organic compound.



Disassembling Test

We disassemble the battery to assess its quality, including the battery tab welding and insulation tape conditions.



Accelerated Usage Test

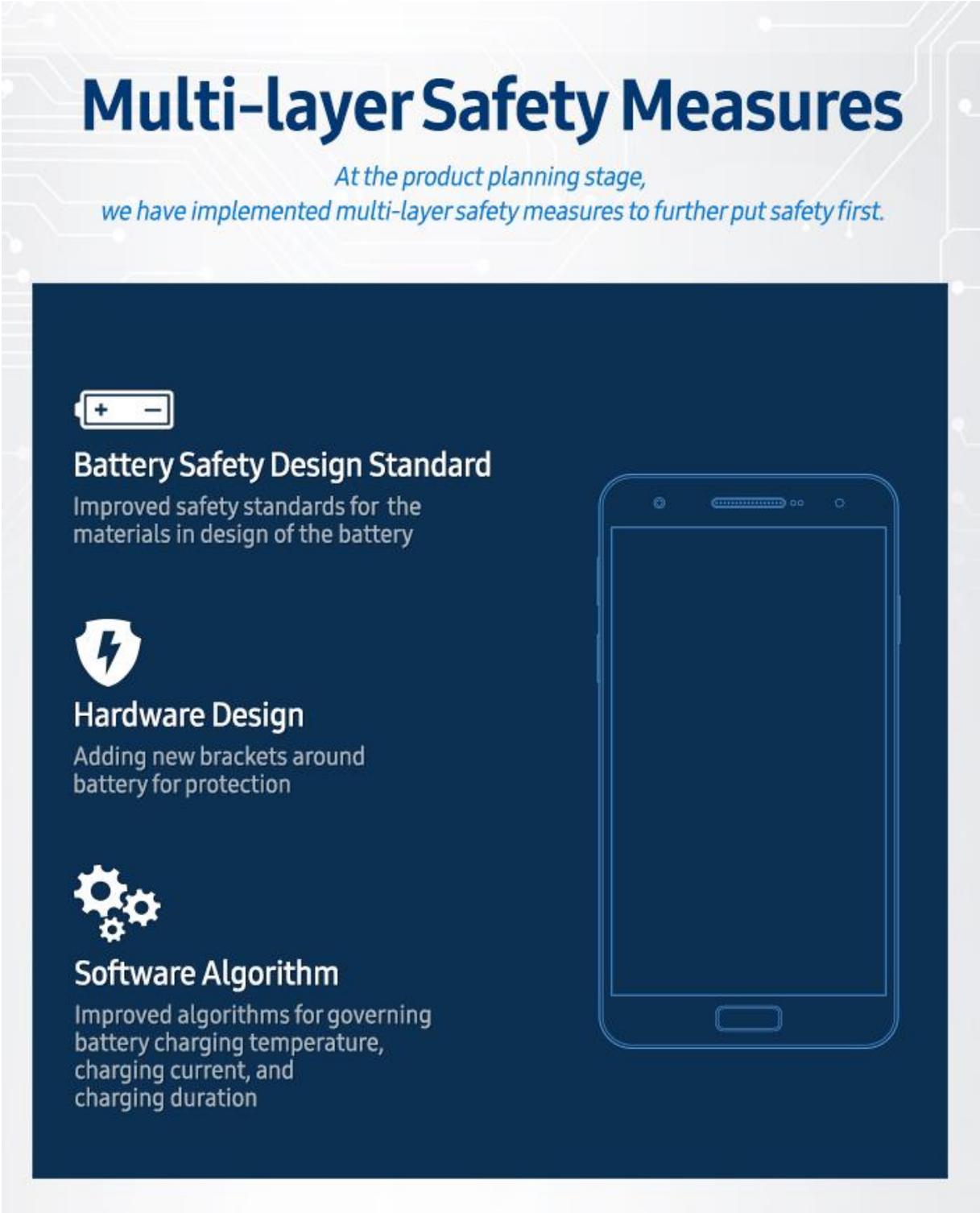
We do an intensive test simulating accelerated consumer usage scenarios.



ΔOCV Test

(Delta Open Circuit Voltage)
We check for any change in voltage throughout the manufacturing process from component level to assembled device.

Exhibit 3 Multi-layer Safety Measure



The infographic features a dark blue background with a light blue circuit board pattern. At the top, the title 'Multi-layer Safety Measures' is written in a large, bold, white font. Below the title, a subtitle in a smaller, italicized white font reads: 'At the product planning stage, we have implemented multi-layer safety measures to further put safety first.' The main content is organized into three vertical sections on the left, each with a white icon, a bold title, and a descriptive paragraph. The first section has a battery icon, the second a shield with a lightning bolt, and the third three interlocking gears. On the right side of the infographic, there is a white outline of a smartphone.

Multi-layer Safety Measures

*At the product planning stage,
we have implemented multi-layer safety measures to further put safety first.*

 **Battery Safety Design Standard**
Improved safety standards for the materials in design of the battery

 **Hardware Design**
Adding new brackets around battery for protection

 **Software Algorithm**
Improved algorithms for governing battery charging temperature, charging current, and charging duration

