Crisis Management Simulation

Case Study: Boeing's Problems with the 737 MAX

Prepared for

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Introduction

In this assignment, we aim to explore the challenges faced by Boeing in the wake of the 737 MAX crisis and to propose collaborative solutions incorporating research. The assignment encompasses an analysis of a provided case study, which delves into the longstanding issues within Boeing's organizational culture and leadership that contributed to the crisis. Additionally, we will utilize a selection of toolkits by IMPROV in relevant questions to devise innovative solutions to repair Boeing's reputation and address underlying systemic issues.

The primary objective of this assignment is to critically analyze the factors that led to the 737 MAX crisis and to propose effective strategies for Boeing's recovery. By employing personal Creative Industry expertise from multiple courses taken throughout the years, research, and toolkits designed for collaboration and problem-solving, we aim to generate creative collaborative solutions, not just in text, but visually as well that address both the immediate challenges faced by Boeing and the underlying cultural issues within the organization.

The provided case study, by George (2024), offers insights into Boeing's history, leadership transitions, and strategic decisions that ultimately culminated in the 737 MAX crisis. Through an examination of past leadership failures and cultural shifts within Boeing, the case study sheds light on the systemic issues that contributed to the company's reputational damage and market setbacks.

Question 1: Describe the crisis issues related to the paper. Using your professional or academic background in creative industries suggest solutions to use collaboration as an element for mediation the crisis.

Crisis Overview, Issues and Collaboration Strategies Solutions

In the Boeing case study, a number of crisis issues have emerged, the most of which revolve on safety concerns, regulatory difficulties, and the loss of public trust. These issues reached their peak with the suspension of the whole 737 MAX fleet following two tragic disasters, exposing systemic flaws in Boeing's operations (George, 2024).

The incidents not only exposed flaws in the aircraft's design, but also raised larger concerns about decision-making integrity and the company's adherence to safety procedures. Furthermore, the incident exposed flaws in Boeing's communication strategy and organizational culture. Initial comments were unclear and inconsistent, increasing the public's distrust and presenting the firm as unconcerned about the severity of the problem. This, combined with claims of prioritizing short-term financial benefits over long-term safety and innovation, emphasizes the critical need for a comprehensive and coordinated strategy to addressing the crisis at its root (George, 2024).

To effectively mediate the crisis, collaboration must be leveraged as a central element in the strategic response. Drawing from my knowledge gained in courses related to creative industries, including Studies in Creative Collaboration, Risk and Crisis Communication, and Organizational Problem-Solving and Report Writing, I propose solutions to address the crisis issues identified in the Boeing case study.

Solution #1: Creative Collaboration Workshops: Firstly, drawing from insights gained in Studies in Creative Collaboration course, fostering collaboration within Boeing's organizational structure can be achieved through targeted initiatives. These workshops, as outlined in Figure 1, involve cross-functional teams gathering around a whiteboard to brainstorm solutions.

For example, implementing cross-functional workshops where employees from different departments come together to **brainstorm solutions** can break down silos and encourage innovative thinking. Utilizing methodologies like distributed creativity, such as design thinking workshops facilitated by the IMPROV toolkit, can ensure structured ideation sessions that foster the generation **of out-of-the-box ideas t**o tackle safety concerns and regulatory challenges.

By fostering a culture of collaboration and creativity, Boeing can tap into the diverse expertise of its workforce to address the multifaceted nature of the crisis. The reason behind the seating in a circle, is to have equality to breaks down hierarchy.

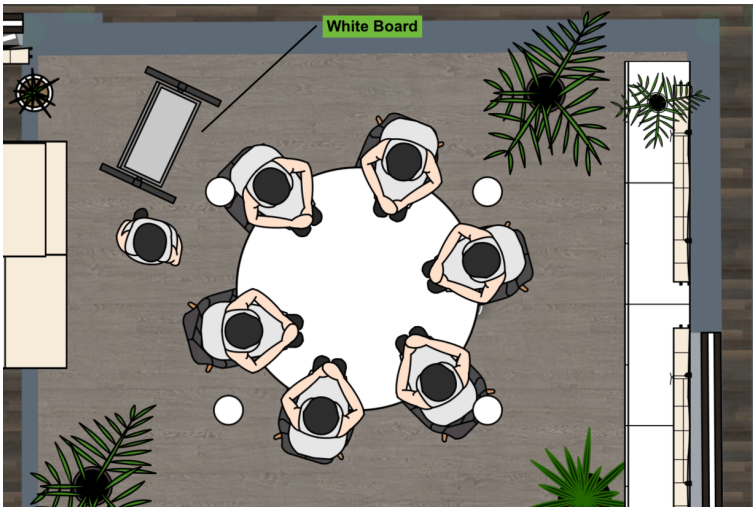


Figure 1: Example of Collaborative Brainstorming Session

Solution #2: Collaborative Communication Task Forces: Secondly, in line with strategies learned in a Risk and Crisis Communication course, clear and transparent communication is paramount for rebuilding trust and credibility. Boeing can adopt collaborative approaches by forming

communication task forces comprising representatives from various departments, including public relations/marketing, legal, and finance, as seen as in Figure 2. These task forces can work together to develop **comprehensive communication plans** that ensure consistent messaging across all channels. Collaborating with external stakeholders such as regulatory authorities and industry experts in the communication process can provide valuable insights and enhance the credibility of Boeing's messaging. Additionally, engaging with customers through **collaborative forums** can demonstrate a commitment to transparency and customer-centricity, further bolstering trust.

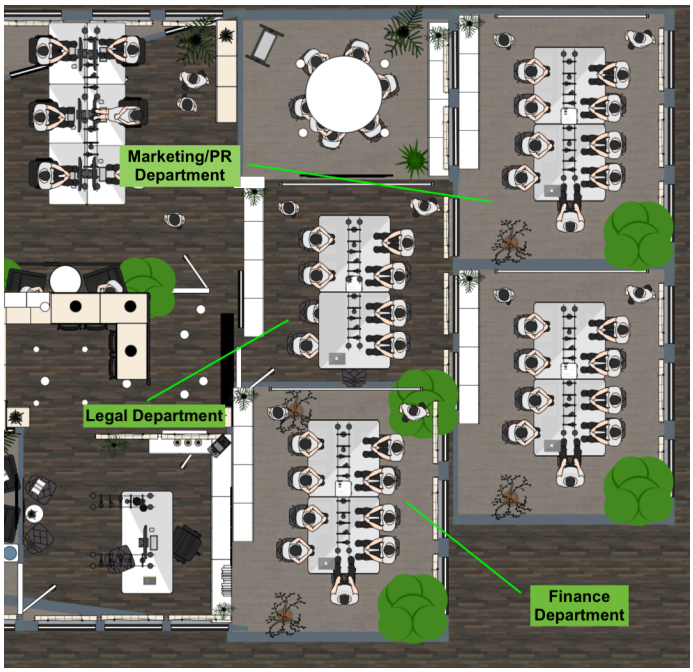


Figure 2: Example of Cross-Functional Task Forces within Departments

Solution #3: Problem-Solving Teams and Report Writing: Finally, applying problem-solving methodologies from Organizational Problem-Solving and Report Writing course that I took involves more than just conducting analyses; it requires collaborative problem-solving efforts. Boeing can establish problem-solving teams consisting of subject matter experts and stakeholders to conduct **in-depth root cause analyses** using techniques like fishbone diagrams or **SWOT analysis**, as seen in Figure 3. By collaborating closely with relevant stakeholders throughout the analysis process, Boeing can ensure that diverse perspectives are considered, and potential solutions are

thoroughly evaluated. Proficient report writing skills are essential for effectively communicating the findings and recommendations of these analyses to stakeholders in a clear, concise, and persuasive manner, fostering collaborative decision-making and action planning.

Figure 3: Example of Problem-Solving Teams with SWOT Analysis

Solution #4: Open Innovation Involving External Stakeholders

According to Thirlway (2016), Open innovation offers numerous benefits to companies, including access to external talent, infrastructure, and revenue streams. As the last solution, Boeing could launch an open innovation challenge to delve into the shared knowledge and creativity of **external stakeholders**, such as startups, researchers, and industry experts. Through this challenge, Boeing can encourage participants to contribute **innovative solutions** to specific parts of the issue, such as improving safety standards, increasing regulatory compliance, or strengthening crisis communication methods. The challenge can be promoted via a variety of means, including social media, industry forums, and innovation hubs, along with passing by their office as seen in Figure 4.

Furthermore, Boeing can provide incentives such as financing, coaching opportunities, or collaborations to encourage involvement and stimulate the development of high-impact ideas.

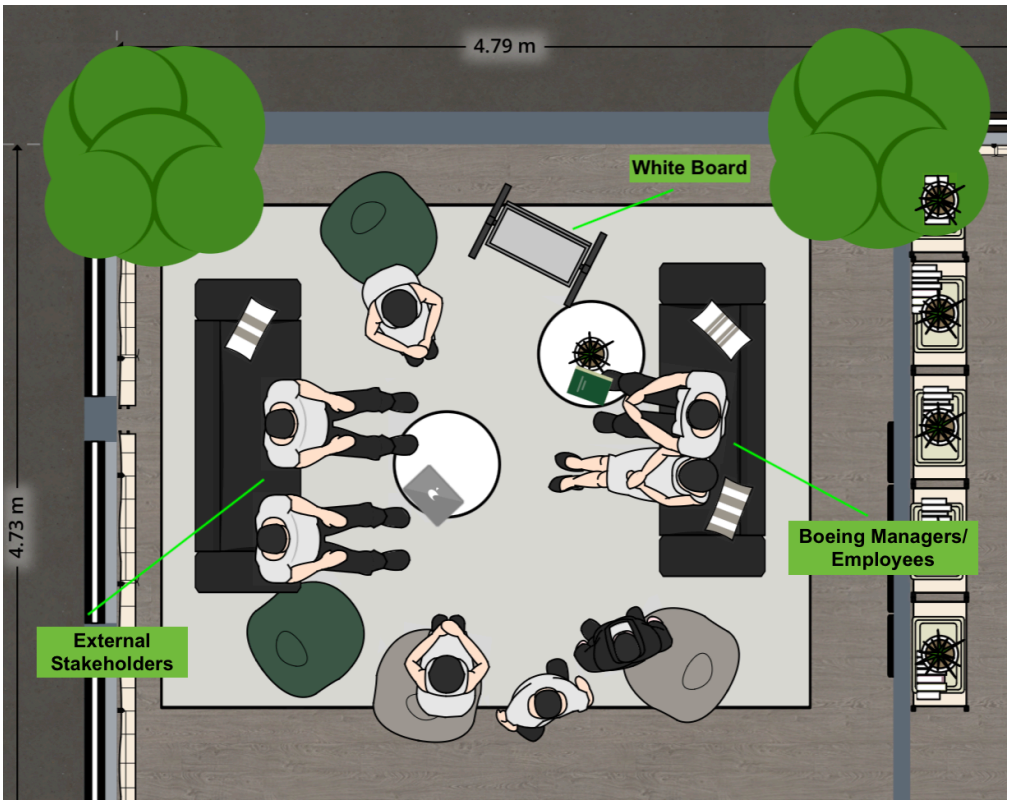


Figure 4: Overview of Boeing's Open Innovation Sessions

Question 2: Perform a detailed SWOT analysis applying the lessons and techniques learn in this course. How to use the Artificial Intelligence to minimize the impact of the crisis descripted in the case study? Suggest interventions from creative industries field to convert weakness in opportunities and threats.

SWOT Analysis and AI Integration

In response to Question 2, a detailed SWOT analysis will be provided to assess the strengths, weaknesses, opportunities, and threats facing Boeing in the context of the crisis described in the case study. Prior to discussing each element, an overview is provided as seen in Figure 5. This analysis will draw upon the lessons and techniques learned in our course to provide a comprehensive evaluation of Boeing's internal and external factors, similarly to the Gostoso's Industry Report.

Additionally, we will then explore how AI can be leveraged to minimize the impact of the crisis, followed by suggestions for interventions from the creative industries field to convert weaknesses into opportunities and threats into strengths.

Figure 5: Overview of Boeing's SWOT Analysis

Part 1 - Explanation of SWOT Analysis

Strengths

Boeing benefits from an established **brand reputation** that spans decades of aviation excellence. This reputation has been built upon the successful deployment of iconic aircraft like the Boeing 747 and the consistent **delivery of quality products** and services.

Additionally, Boeing boasts a **diverse portfolio** of aircraft models, ranging from narrow-body jets like the 737 to wide-body jets like the 777X, allowing the company to cater to various market segments and customer preferences (Boeing, 2024). Furthermore, Boeing's commitment to **technological innovation** has enabled it to stay at the forefront of the aerospace industry, with advancements such as the incorporation of composite materials in the construction of the 787 Dreamliner, enhancing fuel efficiency and performance. Lastly, Boeing's extensive **global reach** and market presence provide the company with access to diverse markets, allowing it to leverage economies of scale and capitalize on emerging opportunities.

Weaknesses

One significant weakness is the degradation of its **organizational culture** and engineering quality. Recent leadership changes and strategic decisions have led to a departure from Boeing's traditional focus on engineering excellence, resulting in compromised product quality and safety. Additionally, Boeing's decision-making processes have come under scrutiny for their **lack of transparency**, particularly regarding the development and certification of the 737 MAX aircraft. Moreover, Boeing has encountered regulatory compliance issues, leading to **delays in product delivery**, financial penalties, and reputational damage. Finally, Boeing's crisis communication strategies have been inadequate, contributing to public distrust and tarnishing the **company's reputation**, along with the overly depending on suppliers, that may cause disruption (Abbott, 2020).

Opportunities

The adoption of emerging technologies, such as **AI** and **machine learning**, presents opportunities to enhance aircraft safety and operational efficiency. **Collaborative partnerships** with regulatory authorities, industry experts, and customers can provide valuable insights and facilitate the development of innovative solutions to industry challenges. Additionally, Boeing can explore opportunities for **market expansion** in emerging economies and new customer segments, diversifying its revenue streams and reducing dependence on mature markets (EdrawMax, 2018).

Furthermore, investing in talent development and organizational restructuring can strengthen Boeing's capabilities and foster a **culture of innovation** and continuous improvement.

Threats

Boeing faces several external threats that could impact its **business operations** and **financial performance**. Continued regulatory scrutiny, stemming from recent safety incidents like the grounding of the 737 MAX fleet, poses a significant threat to Boeing's reputation and market standing. **Intense competition** from rival manufacturers, particularly from Airbus, Lockheed Martin, and Northrop Grumman, among others (Chiffey, 2021). This challenges Boeing's market position and profitability, leading to pricing pressures and potential loss of market share. Moreover, ongoing geopolitical tensions and economic instability present risks to Boeing's global operations, affecting demand for air travel and aircraft orders. Additionally, reputation damage resulting from public distrust and **negative media coverage** could further impact Boeing's brand reputation and customer trust, potentially leading to long-term consequences for the company's financial health and competitiveness (Xaif, 2021).

Part 2 - AI Ideas for Crisis Prevention

Idea #1: Enhance Situational Awareness and Decision-Making

By integrating AI, it can help Boeing improve its situational awareness and decision-making capabilities by analyzing real-time data, forecasting outcomes, and providing effective crisis response plans. Boeing could gain important insights into the crisis situation by using AI algorithms to identify developing **threats**, **stakeholder opinions**, and **market trends**. Furthermore, AI can enable predictive analytics, allowing Boeing to anticipate future developments and plan strategic reactions accordingly. These AI interventions, together with insights from Churchman (2023) and Futurium (2023), could provide Boeing with the necessary knowledge and abilities to effectively manage the crisis, optimizing resource allocation while minimizing the damage on its operations and reputation.

Idea #2: Empower Employees with Relevant Knowledge and Skills

Boeing employees could be aware of the necessary information and abilities to address the problem efficiently, with the help of AI. This does not only save time, but could potentially cut down more costs as Boeing's AI-powered systems can provide **direction**, **feedback**, and **training** on crisis management best practices, allowing employees to respond quickly and decisively to unexpected circumstances. For example, if engineers have a question regarding a problem in the aircraft, AI can assist them, as seen in Figure 6. These AI-enabled learning tools can provide Boeing's staff with the skills required to handle complicated crisis scenarios, make educated decisions, and effectively communicate with stakeholders, such as clients and journalists.

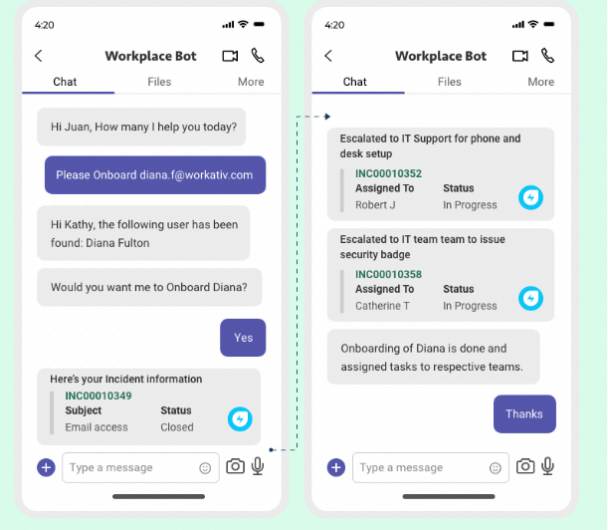


Figure 6: Overview of Workplace AI Support Bot

Idea #3: Reduce Information Overload and Filter Misinformation

If Boeing undergoes a similar future scenario, where crises such as product recalls, safety issues, and reputation crises, AI could appear as an essential instrument for Boeing in fighting misinformation. In this scenario, AI-powered algorithms can scan through massive volumes of data, including **social media**, news stories, and online chats, to uncover emerging trends and patterns, analyzing what stakeholders are saying. Misinformation, such as **rumors** about product flaws or safety issues, can spread quickly during a crisis, compromising Boeing's brand and public trust. According to Research Outreach (2019), Technology plays an important role in delivering proper situational awareness, which informs practical, life-saving decisions for effective crisis management.

For example, AI-powered fact-checking technology and platforms, such as Originality.ai, automatically evaluate the accuracy of Boeing-related news stories and social media posts, preventing disinformation from spreading. Furthermore, sentiment analysis systems track public attitudes and detect possible disinformation hotspots, allowing Boeing to address concerns and clear up any confusion. An example of a simple AI fact checker can be seen below, in Figure 7.

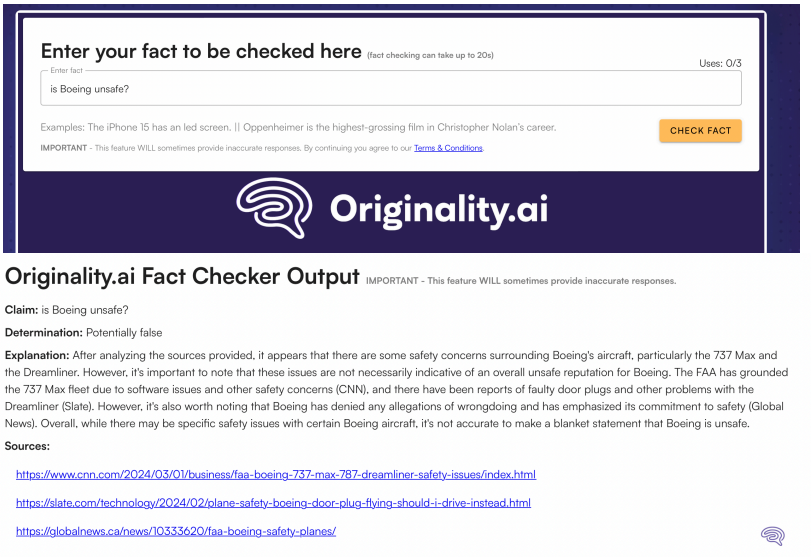


Figure 7: Example of AI Fact Checker

Idea #4: AI-Driven Supply Chain Optimization for Crisis Resilience

Boeing could utilize AI-powered algorithms to protect its supply chain against catastrophes, as this is one of their weaknesses, as mentioned earlier. By using cutting-edge AI technology like **aircraft predictive analytics** and machine learning to forecast potential disruptions, find weaknesses, and reduce risks across its supply chain network. For example, AI systems may filter through massive amounts of historical data, market dynamics, and external variables to predict possible shortages or delays in the supply chain, allowing Boeing to implement **contingency plans** and investigate alternate sourcing options. Furthermore, AI-enabled predictive maintenance solutions can optimize inventory management and expedite logistical procedures, ensuring the availability of critical components and materials even during turbulent times.

Notable organizations, from different sectors including airlines such as Delta Airlines, has also built an effective predictive maintenance program as seen in Figure 8. They use a system known as Delta TechOps, which uses sensors to monitor the health of their aircraft. When an issue is detected, the system notifies maintenance personnel, who may rapidly repair the problem before it becomes a significant one. This has resulted in significant reductions in maintenance expenses and less flight delays due to maintenance concerns (FasterCapital, 2024).

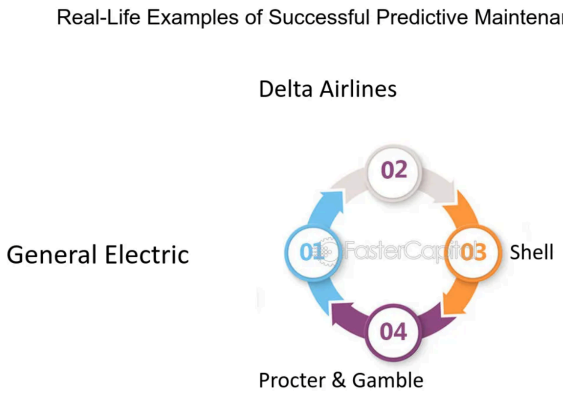


Figure 8: Examples of Companies Integrating AI Maintenance Programs

Part 3 - Creative Industries Interventions

Weakness to Opportunity

Transformation #1: Collaboration with Cultural Consultant "Egon Zehndar"

One of Boeing's weaknesses, arises from a decline of its organizational culture and engineering quality. By collaborating with Egon Zehnder, a creative global leadership consultancy firm, Boeing can turn this weakness into an opportunity for cultural rejuvenation and organizational success. For example, Egon Zehnder could organize workshops and training sessions aimed at creating a **culture of innovation** and **collaboration** among Boeing's engineers. This way, Boeing could gain from Egon Zehnder's expertise in leadership development and cultural transformation by implementing customized programs that promote transparency, creativity, and customer-centricity inside the business resulting in a culture of continuous improvement and drive innovation across the company.

Transformation #2: Immersive VR/AR Brand Experience with "PurpleGlo"

Boeing's weakness in crisis communication techniques can be addressed by collaborating with PurpleGlo, an established agency in the UAE that specializes in VR/AR brand activations. By leveraging PurpleGlo's experience, Boeing can develop immersive virtual experiences that are targeted to its customers. These experiences might include interactive **virtual tours** of Boeing's most recent aircraft models, which would allow potential customers to learn about each aircraft's features and capabilities in a realistic and entertaining way. Boeing may also create virtual exhibitions of its aviation technologies, giving customers a firsthand glimpse at the company's dedication to safety, sustainability, and cutting-edge technology. This way, Boeing can improve consumer engagement, establish brand loyalty, and position itself as a forward-thinking, customer-centric aerospace leader by implementing these immersive brand experiences. An example of how the VR activation could look like can be seen by an airline competitor, Qatar Airways, in Figure 9.

Figure 9: Example of Qatar Airways VR experience in London

Threat to Strength

Transformation #1: Creative Risk Management Advisor "RiskWise Strategies"

One of Boeing's threat is from **legal obstacles**, which can be effectively managed by working with innovative risk management experts such as RiskWise Strategies, a leading risk agency. By working with RiskWise Strategies, Boeing can turn threats into strengths by building effective risk management plans. RiskWise Strategies' expertise in creative risk analysis and reduction allows them to give Boeing with actionable insights and effective solutions for navigating the aviation industry's uncertainty. For example, this can be an opportunity to create unique **scenario-planning simulations** that duplicate potential regulatory problems and market disruptions, allowing the corporation to detect and manage risks before they become major issues. Through this relationship, Boeing will be able to not only manage risks but also capitalize on new possibilities, strengthening its market competitiveness.

Transformation #2: Artistic Collaboration with "ArtHub" for Unique Aircraft Designs

Boeing faces threats from competitive pressures in the aviation industry, which might be minimized by innovative collaborations with local artists and designers. By collaborating with creative talent from organizations such as ArtHub Dubai, Boeing can turn risks into strengths by incorporating creativity into its **product design**. Collaborating with artists to create unique airplane liveries or interior themes not only improves brand uniqueness, but also has an emotional impact on consumers. An example of this can be seen in Figure 10, of Sumo x Luxair, an airline company with a Graffiti artist (Sumo, 2014). These artistic partnerships help Boeing stand out in an increasingly competitive marketplace by attracting the attention of potential consumers and creating a stronger connection with existing clients.

Figure 10: Example of Sumo x Luxair Airplane Design

Question 3: Create an activity to solve or minimize the impact of the crisis using Artificial Intelligence and your expertise in Creative Industries. Critical analyze the situation and describe how to involve the UAE or Dubai in your solution?

AI Activity Design Involving UAE

Activity #1: VR Simulation Employee Training Program

The AI-Enhanced Disaster Resilience Training Program aims to revolutionize Boeing's disaster preparedness and emergency response capabilities by harnessing the power of AI along with immersive virtual reality (VR) simulations. This innovative training program will be designed collaboratively in cross-disciplinary innovation labs, where engineers, data scientists, creative designers, and AI experts will work together to develop customized training modules and interactive simulations tailored to specific disaster scenarios and facility environments.

This VR training program will be held in all of the **Boeing facilities**, such as headquarters, offices, etc. The program will feature **gamified training modules** that dynamically adapt to individual learner performance, incorporating storytelling elements and visualizations to enhance engagement and knowledge retention, aimed for all departments, from PR to Engineering. With my expertise in Creative Industries, I have created prototype for games, which is why this idea has arisen as a solution for this crisis.

Boeing employees will participate in VR drills using AI-powered simulations to practice evacuation procedures, hazard recognition, and crisis communication protocols in a safe and immersive environment. For example, somebody working in the crisis department, can be put in a situation of dealing with journalists at a time of a crisis. The AI systems can **evaluate employee performance** in these simulations, delivering individualized feedback and finding areas for development, that can be beneficial for managers too.

Another example is how AI may evaluate an employee's capacity to speak effectively under pressure, providing insight into their strengths and places for improvement. Furthermore, AI can allow for dynamic modifications to training modules depending on individual learning styles and progress, ensuring maximum engagement and knowledge retention. As seen in Figure 11, Boeing employee, such as a Pilot, could wear the VR gadgets and imagine how it would be flying a plane, whilst managers could watch and evaluate their performance, along with the evaluation of AI.

Additionally, an **employee recognition program** could be implemented to encourage participation and proficiency in the training program, rewarding employees and teams who demonstrate exceptional performance in disaster preparedness and response exercises.

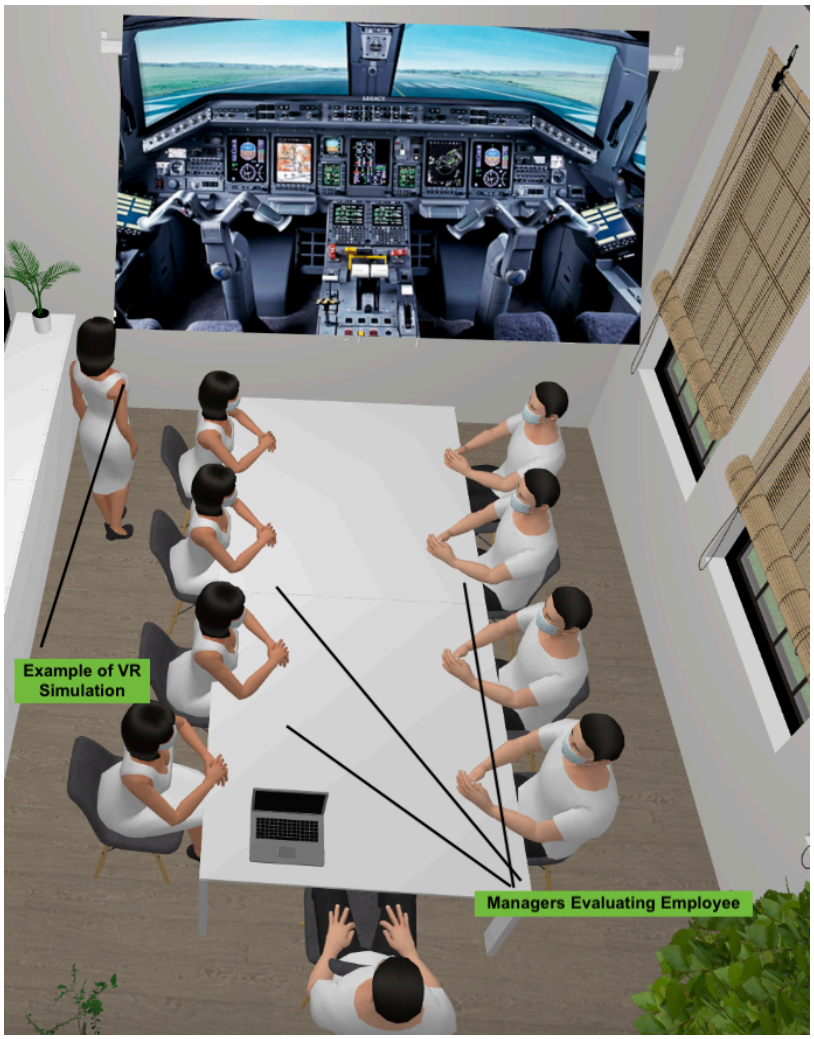


Figure 11: Overview of VR Simulation Training

UAE Involvement

In addition to working together with VR/AR studios and training academies based in UAE, Boeing will engage in open innovation activities with UAE-based startup **AI and tech businesses** to further develop the AI-enhanced training program. They can also optimize training modules and simulations by collaborating with AI research institutions or tech firms such as the Mohammed Bin Rashid Space Centre or Dubai Future Foundation, which have access to cutting-edge AI technologies. Moreover, Boeing could also involve **local universities l**ike the American University of Dubai or Canadian University Dubai in the project, with students from Engineering or Technology majors, to contribute to the development of AI algorithms for the crisis simulation platform. This collaboration not only promotes knowledge exchange but also fosters skill development among future industry professionals. As a Creative Industry student, this open innovation initiative has proven to be successful.

Boeing could also form agreements with **aerospace engineering firms** in Dubai, such as the Dubai Aerospace Enterprise or Emirates Advanced Investments Group, to use their domain-specific expertise and data to train AI models. This way, Boeing can ensure the accuracy of simulations designed to meet aviation industry standards by gaining access to expert knowledge and resources.

Furthermore, engagement wit**h local AI startups** such as Ai Everything and Injazat Data Systems will allow Boeing to leverage their AI solutions or co-develop customized predictive maintenance tools that are tailored to Boeing's unique requirements. These collaborations will encourage creativity and efficiency in crisis preparedness and response operations. Lastly, Boeing will actively collaborate with **authorities** such as the Dubai Civil Aviation Authority to guarantee compliance with aviation safety standards and laws. By working closely with regulatory organizations, Boeing can ensure that the AI-enhanced training program fulfills industry standards

and effectively improves safety measures. This comprehensive approach to partnership will not only increase Boeing's crisis adaptability, but will also help to advance the UAE aviation sector by encouraging innovation, safety, and long-term sustainability.

Activity #2: AI-Powered Flight Operations Optimization System

Another example of an activity could be the AI-Powered Flight Operations Optimization System, that could involve a significant collaboration between Boeing and a variety of stakeholders that has the potential to transform the way airlines operate. This unique solution and activity incorporates advanced AI algorithms into flight operations, empowering decision-makers while improving overall performance.

By leveraging AI, the system enables **proactive decision-making** and risk mitigation, minimizing the frequency and severity of prospective crises. For example, predictive models established within the system may anticipate and **address difficulties** such as bad weather, air traffic congestion, or equipment faults, considerably improving operating safety and efficiency, as seen in Figure 12, from a pilot's point of view.

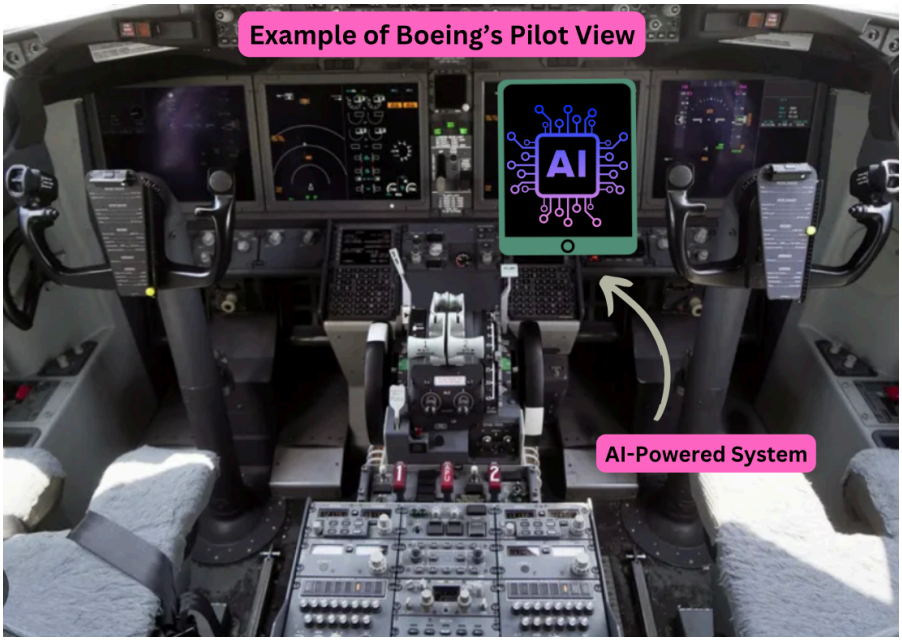


Figure 12: Overview of AI Flight Operation System

UAE Involvement

Boeing could collaborate with renowned **technology and aviation universities** in the UAE to advance the development of an AI-powered flight operations optimization system. By doing so, Boeing plans to use academic skills and research capabilities from universities such as Emirates Aviation University (EAU), Khalifa University, and the University of Dubai to improve the system's performance and functionality. They could also build **internship programs** specifically for students from these universities, providing them with hands-on experience and industry exposure in AI-driven aviation operations. This will give Boeing a good public view as they will look like they are aiming to cultivate local talent, stimulate information exchange, and drive innovation in the UAE's aviation sector, thereby contributing to its long-term growth and sustainability.

Question 4: Answer the questions using the CASE STUDY as your foundation. Explain the different types of roles that individual contributors may take on in collaborative environments, and the strengths and challenges specific to those roles and how to involve stakeholders in all the five following questions.

Roles in Collaboration and Stakeholder Engagement

In this section, we will examine different aspects of collaborative crisis management solutions in the context of the Boeing case study. Furthermore, we examine how stakeholders might be effectively engaged in answering five questions. The stakeholder include customers, employees, and more. These questions address the use of storytelling, design thinking, improvisation, visual communication, and the continual evolution of creative industries in crisis management situations with the involvement of IMPROV toolkit.

Collaborative Roles

In a collaborative environment, clear responsibilities are essential for effective communication and production. As Day (2021) points out, well-defined positions help to clarify expectations, increase involvement, and improve team efficiency. Each function, whether facilitator, recorder, or engaged participant, adds to team coordination, assuring focused and successful collaboration.

The **Social Styles Framework** developed by TRACOM Group's which is similar to the Six Thinking Hats method by Edward De Bono can be a useful tool for analyzing individual social behaviors and preferences, that can be linked to **four roles** that Boeing can have to address the crisis. With four basic social styles: Driving, Amiable, Expressive, and Analytical, the model provides understanding of how people communicate, make decisions, and connect with others. This understanding serves as the foundation for developing collaborative roles that are critical in crisis management initiatives, allowing Boeing to effectively involve stakeholders and communicate the crisis narrative accurately.

Role #1: Crisis Narrator (Analytical Style)

The Crisis Narrator carefully looks into all of the **facts** and details surrounding the Boeing disaster. They create a logical and accurate story based on evidence and analysis. They ensure that stakeholders fully comprehend the situation and can trust the information presented by applying **data-driven** strategies. For example, they could give detailed reports and analysis to demonstrate the technical components of the scenario. Their strengths include having the ability to provide thorough and accurate information, to the public and stakeholders. They also build trust through evidence-based storytelling. Lastly, they ensure stakeholders have a comprehensive understanding of the crisis, by taking into account all their perspectives.

Role #2: Stakeholder Coordinator (Amiable Style)

The Stakeholder Coordinator empathetically engages with affected stakeholders, such as employees, families of passengers, and regulatory authorities, sharing personal stories and experiences to connect on an **emotional level**. For instance, they might organize open houses where individuals impacted by the Boeing crisis can share their concerns and feelings in a supportive environment**.** Their strengths include building strong emotional connections with various stakeholders. Additionally, they create a supportive environment for open dialogue, encouraging public involvement. With doing that, they also prioritize stakeholders' emotional well-being and concerns.

Role #3: Communication Coordinator (Expressive Style)

The Communication Coordinator could create **visual presentations** and impactful storytelling campaigns to communicate key messages about the Boeing crisis.

For example, they might develop a series of short videos featuring interviews with company leaders and affected stakeholders, highlighting the human impact of the situation. Their strengths include creating engaging and impactful communication materials, along with capturing stakeholders' attention. They do that by utilizing multimedia platforms effectively to reach a wide audience.

Role #4: Decision Facilitator (Driving Style)

Aligned with the Driving Style, the Decision Facilitator drives the crisis management process forward with **decisiveness**, assertiveness, and a focus on results with a **sense of urgency**. For example, they may offer success stories from previous crisis resolutions and present an engaging representation of the positive outcomes that can be achieved with prompt and decisive action in the case of the Boeing situation. Their strengths lies in taking decisive action and drives progress during crises along with maintaining a clear focus on achieving desired outcomes. Overall, they inspire confidence and motivation in stakeholders through assertive leadership.

Role Challenges

Each role faces its own set of challenges in dealing with the Boeing crisis. The Crisis Narrator, using an Analytical Style, has to maintain a **balance** between factual accuracy and emotional resonance while avoiding overwhelming stakeholders with data. Meanwhile, the Stakeholder Coordinator, embracing an Amiable Style, struggles to **preserve objectivity** while empathizing with varied stakeholders and ensuring decisions are implemented sensitively. The Communication Coordinator with an Expressive Style faces the difficulty of prioritizing **substance over style**, simplifying complex material, and ensuring message consistency across multiple channels.

Finally, the Decision Facilitator, guided by a Driving Style, must manage the integration of several views, strike a balance between **speed and thoroughness**, and respond rapidly to unforeseen changes in the crisis landscape. These problems highlight the complexity and relevance of crisis management and emphasize the importance of effective collaboration, communication, and adaptive leadership across different roles (Refer to Figure 13 for visual overview).

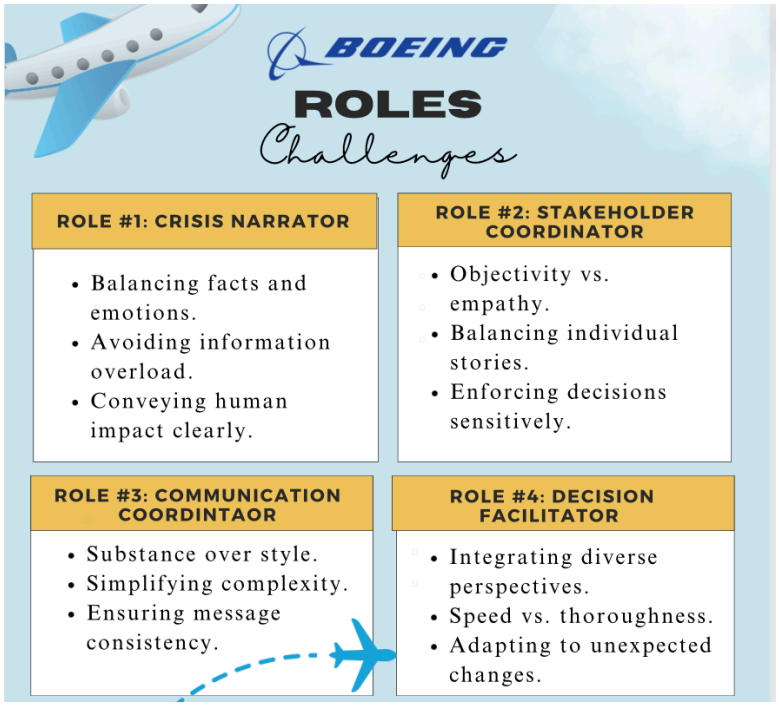


Figure 13: Overview of Boeing's Possible Role Challenges

Question 4A: How can principles of storytelling be employed in crisis management strategies to effectively?

Storytelling for Crisis Communication

Storytelling is important in crisis management, especially in situations like the provided case study, where good communication is critical in the face of crisis. Boeing may navigate crises by reducing complex information into coherent storytelling that resonate with stakeholders. In the case of Boeing, when public trust and confidence were severely tested following the disaster, storytelling proved to be an effective method for conveying **transparency**, **empathy**, and **accountability**. By creating appealing narratives, Boeing can not only provide clarity on the facts and specifics surrounding the problem, but also develop emotional connections with stakeholders, reassuring them of the company's commitment to resolution.

Gill (2024) highlights the significance of crafting **compelling narratives** during crises, stressing the importance for organizations to simplify complex data into coherent stories that connect with stakeholders. With this perspective in mind, we will explore the following principles on how Boeing can leverage storytelling concepts to effectively communicate the crisis and its resolution. Below are three principles that are aligned with storytelling.

Principle #1: Understanding Audience

In the context of the Boeing crisis, understanding the audience is essential for tailoring the narrative to address their specific concerns and interests. Boeing must consider the diverse stakeholders involved, including customers, employees, regulators, and the general public. Each group may have distinct expectations, emotions, and questions regarding the crisis. By conducting surveys, engaging with stakeholders through social media, and leveraging feedback channels, Boeing can gain insights

into their perspectives. This understanding enables them to communicate with transparency and consistency, building trust and credibility amidst the crisis.

Principle #2: Defining Narrative

Boeing must define a clear and coherent narrative that answers fundamental questions about the crisis while aligning with the company's values and mission. The narrative should address what happened, why it happened, how it impacts the brand and stakeholders, and what steps Boeing is taking to address and prevent similar occurrences in the future. By crafting a narrative that reflects authenticity and accountability, they can demonstrate its commitment to resolving the crisis while maintaining stakeholder trust.

Principle #3: Choosing Channels

Selecting the appropriate communication channels is critical for delivering the narrative effectively during a crisis. Boeing should consider the severity and nature of the crisis when choosing platforms and formats for communication. Formal channels like **press releases** and **official statements** may be suitable for conveying factual information, while social media and open houses provide opportunities for more interactive and engaging communication. By adapting the tone and style of communication to suit different channels, Boeing can ensure that its narrative reaches stakeholders in a timely and impactful manner.

Involvement of Stakeholders

Activity #1: Interactive Workshops (Co-Creation)

Boeing could initiate interactive workshops or forums as part of its crisis management strategy. These sessions would provide a platform for stakeholders to convene, exchange perspectives, and contribute ideas for addressing the crisis. By facilitating open dialogue and collaboration, Boeing can gain valuable insights into stakeholders' concerns and priorities, fostering a sense of involvement and ownership in the crisis resolution process. The different type of stakeholders can be employees, clients, journalists, etc.

Activity #2: Storytelling Sessions

Hosting storytelling sessions would allow Boeing to humanize the crisis by inviting stakeholders to share their personal experiences and perspectives. By providing a platform for individuals affected by the crisis to share their stories, Boeing could cultivate empathy, deepen understanding, and build rapport with stakeholders. Additionally, actively listening to stakeholders' narratives demonstrates Boeing's commitment to acknowledging their voices and concerns.

Activity #3: Multimedia Campaigns

Boeing could leverage multimedia campaigns to amplify stakeholder voices and convey the complexity of the crisis. By incorporating stories from diverse stakeholders into **videos**, **interviews**, and **testimonials**, Boeing can highlight the human impact of the crisis and its efforts to address stakeholders' needs. These campaigns serve to engage a wider audience, enhance transparency, and reinforce Boeing's commitment to stakeholder-centric crisis management.

Question 4B: In what ways can the design thinking process assist in identifying innovative solutions to navigate through a crisis and mitigate its impacts on stakeholders?

Design Thinking for Innovative Solutions

Harvard Business School (Han, 2022) defines design thinking as a problem-solving and innovation method based on human-centered design. It focuses on understanding the requirements and viewpoints of users in order to create solutions that truly address their concerns. Design thinking, in contrast to traditional problem-solving methods, focuses on the **solution** rather than the problem.

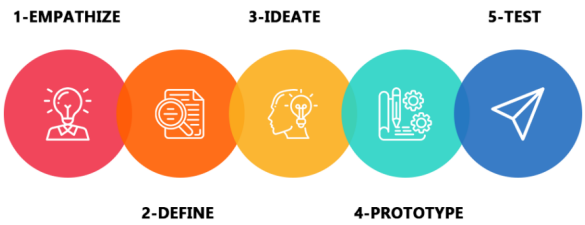


Figure 14: Overview of Design Thinking Steps

In the context of the Boeing crisis, design thinking provides a **systematic framework** for generating new ways to overcome challenges and decrease the crisis's impact on stakeholders. Design thinking allows Boeing to develop unique ways that are tailored to stakeholder demands by encouraging empathy and creative creativity. This strategy stresses quick prototyping and testing, allowing Boeing to iterate on ideas quickly and effectively respond to changing issues throughout. Below is a summary of the steps that Boeing could apply in design thinking.

#1: Empathizing with Stakeholders

Boeing can conduct **in-depth interviews**, surveys, and observations to understand the needs, concerns, and challenges of various stakeholders, including employees, customers, regulators, and the general public. By gaining deep insights into stakeholders' perspectives and experiences, Boeing can uncover underlying issues and opportunities for innovation in crisis management.

#2: Defining the Problem

Once Boeing has gathered insights from stakeholders, the next step is to define the problem statement clearly. This involves **analyzing** the information collected during the empathizing phase to identify key pain points, gaps, and areas for improvement in crisis management processes. By framing the problem statement in a human-centered manner, they can ensure that the solutions developed address the specific needs and priorities of stakeholders.

#3: Ideating Innovative Solutions

With a well-defined problem statement, Boeing can then engage in ideation sessions to generate creative solutions to navigate through the crisis effectively. Ideation involves brainstorming ideas, exploring different perspectives, and challenging assumptions to uncover innovative approaches. Boeing can leverage **cross-functional teams** comprising experts from diverse backgrounds to foster creativity and collaboration in the ideation process.

By encouraging out-of-the-box thinking and embracing experimentation, they can identify novel solutions that address the root causes of the crisis and mitigate its impacts on stakeholders.

#4: Prototyping and Testing Solutions

After generating a range of ideas, Boeing can prototype and test potential solutions to validate their feasibility and effectiveness. Prototyping allows Boeing to quickly iterate on concepts, gather feedback from stakeholders, and refine the solutions iteratively. By creating prototypes, such as **mock-ups**, or simulations (as outlined in question 3) Boeing can visualize proposed solutions and identify areas for improvement. Testing prototypes with representative stakeholders enables Boeing to evaluate the usability, desirability, and viability of the solutions in real-world scenarios.

#5: Implementing and Iterating Solutions

Once validated, Boeing can implement the most feasible and promising solutions and **monitor their performance** in addressing the crisis and mitigating its impacts on stakeholders. Continuous refinement are essential to ensure that the solutions remain effective and responsive to evolving needs and challenges. By fostering a culture of innovation and continuous improvement, they can adapt quickly to changing circumstances and enhance its resilience in managing crises effectively.

Involvement of Stakeholders

Activity #1: Stakeholder Feedback Sessions

Boeing could organize feedback sessions where stakeholders will review and provide input on proposed solutions and prototypes. This will allow Boeing to gather valuable feedback, identify potential challenges or concerns, and refine the solutions iteratively. By incorporating stakeholders' feedback throughout the design process, Boeing can ensure that the final solutions are user-centered and responsive to stakeholders' needs.

Activity #2: User Testing and Validation

Boeing could involve stakeholders in testing and validating prototypes to assess their usability, effectiveness, and desirability. Boeing can organize user testing sessions where stakeholders will

interact with prototypes in real-world scenarios and provide feedback on their experiences. By actively engaging stakeholders in the testing phase, Boeing can identify usability issues, validate assumptions, and refine the solutions to better meet stakeholders' expectations.

Activity #3: Collaboration Platforms

Collaboration platforms or digital tools can help Boeing enable continuous communication and collaboration between its stakeholders. These platforms will provide a centralized space for sharing ideas, updates, and feedback, facilitating ongoing engagement and co-creation throughout the design process. By leveraging technology to involve stakeholders remotely, Boeing can ensure inclusivity and accessibility, particularly for geographically dispersed stakeholders, from Middle East to the West.

Question 4C: In what ways can the design thinking process assist in identifying innovative solutions to navigate through a crisis and mitigate its impacts on stakeholders?

Improvisation and Adaptation in Crisis Management

Improvisation, often associated with the performing arts, offers valuable principles that can be applied to crisis management scenarios, such as the Boeing crisis (Art, 2024). These principles could enable Boeing teams to adapt quickly to evolving situations, make effective decisions under pressure, and maintain agility in response to changing circumstances. By linking it back to the IMPROV toolkit, the following principles can be linked to Boeing’s crisis:

Principle #1:"Yes, And" Mindset

Boeing could integrate the "Yes, And" mindset into its crisis management approach, encouraging team members to accept and build upon each other's ideas. By fostering an environment where all contributions are valued and serve as **building blocks** for problem-solving and decision-making, Boeing can promote effective communication and collaboration. This approach aligns with the principles of openness from the IMPROV toolkit.

Principle #2: Using Emotional Replay

Boeing could leverage the Emotional Replay exercise from the IMPROV toolkit to understand stakeholders' emotional responses during the crisis. By revisiting **past interactions** or scenarios and reenacting them with different emotional tones, Boeing can gain insights into stakeholders perspectives and adapt their crisis management strategies accordingly. This exercise fosters empathy and helps Boeing anticipate and address stakeholders emotional needs during the crisis.

Principle #3: Incorporating Soundscapes

Soundscapes involve creating collaborative audio environments using **vocal sounds** and gestures. Boeing could use this exercise to simulate crisis scenarios and practice communication and coordination among team members. By engaging in collaborative sound creation, Boeing's crisis management team can enhance their ability to communicate effectively, coordinate actions, and respond rapidly to crisis situations. This exercise promotes teamwork, creativity, and adaptability, essential qualities for navigating complex and unpredictable crisis scenarios.

Involvement of Stakeholders

Activity #1: Stakeholder Improvisation Sessions

Boeing could organize stakeholder improvisation sessions where participants, including employees, customers, regulators, and community members, engage in spontaneous role-playing exercises related to crisis scenarios. These sessions would encourage stakeholders to think on their feet, adapt to changing circumstances, and **collaborate in real-time** to address emerging challenges. By simulating crisis situations through improvisation, stakeholders can develop agility in decision-making, enhance communication skills, and build resilience to uncertainty. Boeing could also incorporate the "**Silent Story**" exercise from the IMPROV toolkit. In this exercise, participants communicate a story without speaking, relying solely on gestures and actions. By engaging stakeholders in non-verbal communication exercises, Boeing can foster creativity, strengthen

teamwork, and encourage alternative forms of expression, which can be invaluable in crisis situations where traditional communication channels may be disrupted.

Question 4D: How can the principles of visual communication and graphic design be utilized to create compelling and informative crisis communication materials that resonate with diverse audiences?

Visual Communication for Crisis Materials

Visual communication and graphic design play a crucial role in creating compelling and informative crisis communication materials that resonate with diverse audiences. By leveraging the principles of design, Boeing can ensure that its communication materials are effective in **conveying key messages** during times of crisis (Antonia, 2022). Although there are over 10 principles and elements of design, this section will cover how the main 7 principles can be utilized in the provided case study of Boeing, as seen in Figure 15, along with an explanation of how Boeing can apply the design principles.

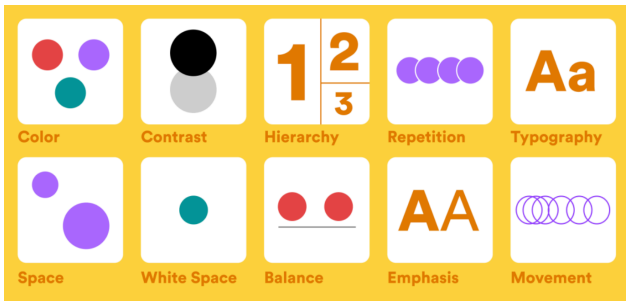


Figure 15: Overview of Visual Communication Main Elements

Element #1: Emphasis

Emphasis plays a pivotal role in directing the audience's attention to critical information within crisis communication materials. Boeing can effectively utilize emphasis through various visual techniques. For instance, employing **bold typography** for headlines and important messages, as seen in Figure 16, utilizing vibrant colors to highlight essential information or calls to action, and incorporating prominent imagery to draw attention to specific content. In a crisis communication

poster, for example, Boeing could use bold typography and contrasting colors to emphasize crucial safety instructions for employees.

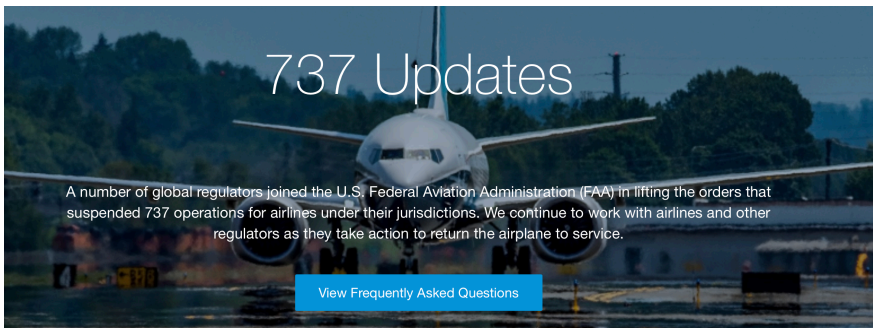


Figure 16: Emphasis on Title Example

Element #2: Balance and Alignment

Maintaining balance and alignment is essential to ensure that communication materials are visually harmonious and **easy to follow**. Boeing can achieve this by distributing elements evenly across the layout and ensuring proper alignment. In a crisis communication email, for instance, Boeing could utilize a grid-based layout with aligned text and images to create a balanced and structured design.

Element #3: Contrast

Contrast helps create visual interest and **hierarchy** within communication materials. Boeing can incorporate contrast through various means, such as color contrast, size contrast, and textural contrast. For example, in a crisis communication infographic, Boeing could use color contrast to make key statistics or facts stand out against the background. An example of contrast between a bright blue background, with white text, can be seen in Figure 17.

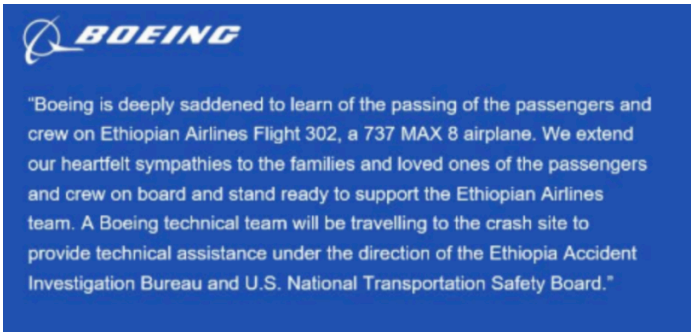


Figure 17: Example of Boeing Utilizing Contrast

Element #4: Repetition

Repetition helps reinforce key messages and creates **visual consistency** across communication materials. Boeing can utilize repetition by consistently using certain visual elements, such as colors, fonts, or graphic styles, throughout its crisis communication materials. This consistency helps reinforce brand identity and ensures that important information is easily recognizable to the audience.

Element #5: Proportion

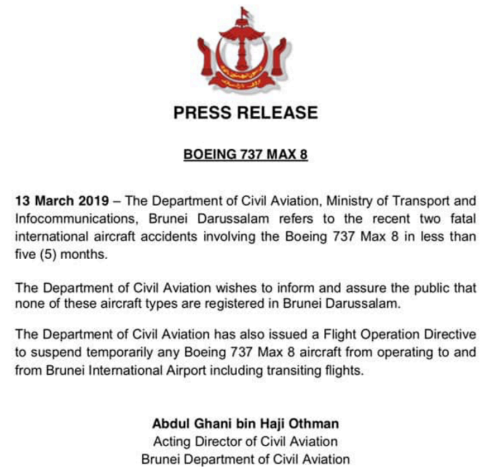
Proportion refers to the relationship between different elements within a design. Boeing can ensure proper proportion by carefully considering the **size and scale** of various elements relative to each other. For example, in a crisis communication brochure, Boeing could use proportional scaling to ensure that images and text are appropriately sized to maintain visual balance and readability.

Element #6: Movement

Movement adds dynamism and visual interest to communication materials, guiding the audience's eye through the content. Boeing can incorporate movement through techniques such as visual cues, directional elements, or **animated graphics**. For instance, in a crisis communication video, Boeing could use animated graphics or subtle transitions to create movement and engagement.

Element #7: White Space

White space, or negative space, refers to the empty areas around and between elements in a design. It helps improve readability, create visual hierarchy, and reduce visual clutter. Boeing can leverage white space by strategically incorporating empty areas around text, images, and other elements to enhance clarity and focus. In a crisis communication brochure, for example, Boeing could use ample white space around key messages to ensure they stand out and are easily digestible for the audience (Figure 18).



PRESS RELEASE

BOEING 737 MAX 8

13 March 2019 – The Department of Civil Aviation, Ministry of Transport and Infocommunications, Brunei Darussalam refers to the recent two fatal international aircraft accidents involving the Boeing 737 Max 8 in less than five (5) months.

The Department of Civil Aviation wishes to inform and assure the public that none of these aircraft types are registered in Brunei Darussalam.

The Department of Civil Aviation has also issued a Flight Operation Directive to suspend temporarily any Boeing 737 Max 8 aircraft from operating to and from Brunei International Airport including transiting flights.

Abdul Ghani bin Haji Othman
Acting Director of Civil Aviation
Brunei Department of Civil Aviation

Figure 18: Example of White Space in Boeing's Press Release

Involvement of Stakeholders

Activity #1: Visual Preference Surveys

Boeing could conduct visual preference surveys among representative stakeholder groups to gather insights into their preferences regarding visual elements such as color palettes, typography styles, and graphic styles. By understanding stakeholders aesthetic preferences and visual communication preferences, Boeing can tailor its designs to align with audience expectations and preferences, enhancing the effectiveness and appeal of the communication materials. They could involve various stakeholders, internally and externally.

Activity #2: Collaborative Design Workshops

Although Co-Creation was mentioned multiple times as an activity, in the context of this aspect, Boeing could host a collaborative design workshops where stakeholders collaborate with their design team to co-create visual communication materials. Through interactive exercises, participants can contribute ideas, share visual references, and provide input on design concepts. This collaborative approach ensures that stakeholders perspectives are integrated into the visual communication process, resulting in materials that resonate with diverse audiences.

Question 4E: How can the collaborative and iterative nature of creative industries such as game development or film production inform crisis management practices, particularly in terms of teamwork and rapid prototyping of solutions?

Collaboration in Rapid Prototyping for Crisis Solutions

The collaborative and iterative nature of creative industries, such as game creation and film production, can offer valuable insights into crisis management approaches, particularly in terms of teamwork and rapid prototyping of solutions. Walker's (1994) study on the use of scenarios and game simulations in crisis management planning highlights their efficacy in preparing for unexpected events and enhancing response capabilities.

Game Development Overview

In game development, collaboration is essential, as teams of designers, programmers, artists, and testers collaborate closely to create **immersive experiences**. This teamwork reflects the multidisciplinary approach required in crisis management at Boeing. For instance, Boeing's crisis management teams can adopt agile development methodologies like Scrum from the gaming industry. Scrum emphasizes teamwork, accountability, and iterative improvements through short, adjustable cycles known as sprints (GameCloud, 2021). Boeing's teams could employ such methodologies to quickly refine crisis response plans, incorporate feedback, and adapt to evolving situations.

An example is the creation of a flight simulation game, as seen in Figure 19. Boeing's crisis management teams may use simulated scenarios and feedback to constantly refine their communication protocols, resource allocation tactics, and decision-making frameworks, just as game designers and programmers do. Implementing game development concepts such as **user-centered design** and iterative prototyping can help Boeing improve its crisis response and resilience to unanticipated events.

Figure 19: Example of Flight Simulator Game

This is also relevant to Question 3, related to the AI VR simulation, designed to provide immersive training experiences, aligning with the collaborative and iterative practices seen in game development and film production. The development process likely involved **multidisciplinary teamwork** and iterative testing to refine the simulation's effectiveness and realism.

Film Production Insights

Film production is another creative sector that can provide useful insights into crisis management strategies, particularly in terms of teamwork and **resource management**. In film production, multiple teams work together under tight timelines and budget constraints to bring a director's vision to life, that go under preproduction, production, and postproduction. Similarly, this collaborative approach is similar to the challenges faced by Boeing's crisis management teams, who must efficiently allocate resources and make strategic decisions under pressure.

For example, a production of a documentary on aerospace innovations, where producers, directors, and crew members work collaboratively to plan and execute intricate shots and sequences, much like how Boeing's crisis management teams could leverage film production techniques to coordinate emergency responses and optimize resource allocation. By integrating film production principles such as clear communication, contingency planning, and risk management, Boeing can enhance its crisis response capabilities, ensuring swift and effective actions during crises.

Involvement of Stakeholders

Activity #1:Collaborative Crisis Response Simulations

Building on the AI VR simulation capabilities developed in Question 3, Boeing can expand these technologies to create collaborative crisis response simulations involving multiple stakeholders. These simulations can replicate real-world crisis scenarios, enabling stakeholders to interact and collaborate virtually in a controlled environment. Participants could include representatives from various departments within Boeing, emergency responders, and external partners. By engaging in these collaborative simulations, stakeholders can practice coordination, decision-making, and communication, fostering a cohesive and agile response during actual crisis situations. They could also involve different industries, such as **game development**, **film production**, and so on to help them encourage feedback change along with creative ideas.

Conclusion

In sum, this comprehensive review of Boeing's crisis management practices has provided me with useful insights on the various aspects of efficiently dealing with organizational crises. The integration of storytelling, design thinking, improvisation, visual communication, and fast prototyping has demonstrated the significance of creativity, adaptability, and stakeholder engagement in addressing complex situations. The simulation demonstrated the importance of proactive planning, open communication, and collaborative problem-solving in reducing risks and increasing resilience.

Moving forward, Boeing could consider implementing collaborative initiatives such as the AI-Enhanced Disaster Resilience Training Program, immersive VR/AR brand experiences, and AI-Powered Flight Operations Optimization System. These strategies not only address immediate crisis management needs but also foster continuous improvement, innovation, and stakeholder involvement. Additionally, embracing design thinking principles and improvisational techniques can enhance Boeing's agility and responsiveness in crisis situation. By using a comprehensive approach that incorporates multiple viewpoints and uses creative industries, Boeing can reestablish trust, develop its organizational culture, and secure long-term growth in the face of crisis.

References

Abbott, A. (2020, October 5). *Boeing SWOT 2024 | SWOT Analysis of Boeing*. Business Strategy Hub. https://bstrategyhub.com/boeing-swot-analysis/

Antonia. (2022, January 7). *The 7 Principles of Design and How to Use Them | VistaPrint US*. Vistaprint Ideas and Advice US; Vistaprint Blog: Small Business Ideas & Advice from Experts. https://www.vistaprint.com/hub/principles-of-design/

Art. (2024). *Improvisation: The Art of Improvisation: Embracing Spontaneous Assets - FasterCapital*. FasterCapital. https://fastercapital.com/content/Improvisation--The-Art-of-Improvisation--Embracing-Spontaneous-Assets.html#Understanding-the-Basics-of-Improvisation

Art Hub Dubai Gallery | Dubai. (2023). Facebook.com. https://www.facebook.com/p/Art-Hub-Dubai-Gallery-100040335403520/

Boeing SWOT Analysis | EdrawMax Online. (2018). Edrawsoft. https://www.edrawmax.com/article/boeing-swot-analysis.html

Churchman, L. (2023, July 11). *How should you use AI in crisis management? | EC-PR*. EC-PR. https://ec-pr.com/how-should-you-use-ai-in-crisis-management/*Commercial Airplanes*. (2024). Boeing.co.uk. https://www.boeing.co.uk/commercial-airplanes

Day, A. (2021, January 29). *Collaborative Team Structures: Roles - MoEdu-SAIL*. MoEdu-SAIL. https://www.moedu-sail.org/lessons/collaborative-team-structures-roles/

Ellison, H. (2016, November). *Qatar Airways creates VR experience at London Waterloo*. Campaignlive.co.uk; CampaignUK. https://www.campaignlive.co.uk/article/qatar-airways-creates-vr-experience-london-waterloo/1414125

Futurium | European AI Alliance - AI for Crisis Management: Impacts, Challenges, Best Practices. (2023). Europa.eu. https://futurium.ec.europa.eu/en/european-ai-alliance/forum-discussion/

ai-crisis-management-impacts-challenges-best-practices/

GameCloud. (2021). *Scrum Methodology In Video Games Testing – Game Cloud*. Gamecloud-Ltd.com. https://gamecloud-ltd.com/scrum-methodology-in-video-games/

George , B. (2024, January 24). *Why Boeing's Problems with the 737 MAX Began More Than 25 Years Ago*. HBS Working Knowledge. https://hbswk.hbs.edu/item/why-boeings-problems-with-737-max-began-more-than-25-years-ago

Gill, H. (2023). *What are the key elements of a successful storytelling strategy in crisis management?* Linkedin.com. https://www.linkedin.com/advice/3/what-key-elements-successful-storytelling-strategy-de3qe

Han. (2022, January 18). *What Is Design Thinking & Why Is It Important? | HBS Online*. BusinessInsights Blog. https://online.hbs.edu/blog/post/what-is-design-thinking

HBS Working Knowledge – Harvard Business School Faculty Research. (2024). *HBS Working Knowledge*. https://hbswk.hbs.edu/

Maddy Chiffey. (2021, September 6). *Boeing Competitors Analysis : 7 Strongest Competitors - Business Chronicler*. Business Chronicler. https://businesschronicler.com/competitors/boeing-competitors-analysis/

Predictive maintenance - FasterCapital. (2024). *Predictive maintenance - FasterCapital*. FasterCapital. https://fastercapital.com/startup-topic/Predictive-maintenance.html

PurpleGlo. (2024). Purpleglo.co. https://www.purpleglo.co/

Research Outreach. (2019, December 20). *Crisis management: Using Artificial Intelligence to help save lives*. Research Outreach; Research Outreach. https://researchoutreach.org/articles/crisis-management-artificial-intelligence-save-lives/

RiskWise | Business Solutions. (2016). Riskwise. https://www.riskwise-solutions.com/

Shephard, J. (2022). *How Understanding Your Social Style Can Improve Your Relationships*. Ivey Business School. https://www.ivey.uwo.ca/academy/insights/2022/09/how-understanding-your-social-style-can-improve-your-relationships/

Sumo. (2014). *Sumo*. Sumo. https://www.sumoartwork.com/projects/luxair

Thirlway, C. (2016, January 26). *The benefits of open innovation*. Sopheon.com; Sopheon. https://www.sopheon.com/blog/the-benefits-of-open-innovation/

TOOLKIT: IMPROV THEATRE FOR NON-FORMAL EDUCATION. (n.d.). https://www.salto-youth.net/downloads/toolbox_tool_download-file-3770/Improv%20for%20Change%20Toolkit%20-%20Improv%20Theatre%20for%20Non-formal%20Education.pdf

Walker W. (1994). The Use of Scenarios and Gaming In Crisis Management Planning and Training. https://www.rand.org/content/dam/rand/pubs/papers/2009/P7897.pdf

Workativ. (2023, August). *10 Ways to Use AI Chatbots for HR Support* . Linkedin.com. https://www.linkedin.com/pulse/10-ways-use-ai-chatbots-internal-hr-support-workativ-com/

Zehnder, E. (2021). *Culture Transformation Consultants - Egon Zehnder*. Egon Zehnder; Egon Zehnder. https://www.egonzehnder.com/what-we-do/cultural-transformation

Xaif. (2021, October 31). *Extensive SWOT Analysis of Boeing - 2024 Update | IIDE*. IIDE. https://iide.co/case-studies/swot-analysis-of-boeing/