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## Plan for the unthinkable: Advanced Reading: There are business lessons to be learned from the mistakes made in building **Titanic**

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Byline: Mark Kozak-Holland

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Imagine yourself on one of **Titanic's** lifeboats being picked up by Carpathia. It is 1912 and you have just survived the most infamous disaster of the 20th century. You question how this could happen. Why was the ship travelling so quickly? Where were the lookouts? Wasn't **Titanic** supposed to be the safest ship ever built? Many of us attribute the disaster to bad luck and incompetence at sea, but an examination of the evidence presented at the two subsequent inquiries shows that, because prestige overtook safety as the primary principle in **Titanic's** design, the ship many thought invincible had a fate that was inevitable. Worse still, the bad guys got away with it.

To date, most of the research on **Titanic** has been on the four-day maiden voyage and the disaster. To extract lessons for today's business world we have to go back to 1909, the outset of **Titanic's** project, and examine each stage of the project.

In the requirements stage, the architects initiated a strategy based on replacing White Star's ageing fleet with three super liners using the latest in emerging technology. For several years, White Star had been losing ground to competition. Larger ships meant larger accommodation and public space, and therefore, more luxury. The Atlantic crossing would be slower by a day but it was the quality of the trip and the customer experience that were paramount. No expenses were spared. Europe's best craftsmen were contracted at Harland and Wolff. The business case was solid with a two-year payback, admirable by today's standards.

In the design stage, the architects transferred the business into the functional and non-functional requirements. The former defined transportation and hospitality. The latter defined the operational characteristics, and included safety, performance, stability, security, maintainability, and the environment to ensure the ship delivered its functions. The architects initially opted to go with the highest level of safety and incorporated the latest safety technologies, including a double hull, bulkheads with electric doors and triple-stacked lifeboats. However, these were undermined by executive pressure from White Star's director, Bruce Ismay, who pushed for the ultimate passenger experience. For example, the need for a spacious 200-foot ballroom cut straight across bulkheads in the centre of the ship. Similarly, a desire to give a clear ocean vista to the first-class suites on the promenade/lifeboat deck was at odds with triple-stacked lifeboats. **Titanic's** overconfident architects conceded and four bulkheads barely reached 10 feet above the water line, while the 48 triple-stacked lifeboats were reduced to a single-stack of 16, far too few given the ship's passenger capacity.

By the construction stage, although the ship's non-functional requirements had been severely compromised, there was little acknowledgement that anything was seriously wrong. **Titanic's** architects still believed **Titanic** was practically unsinkable and could survive any situation because of the aggregated effect of safety features, the broad hull design, her sheer size and the use of latest technologies. This was used actively as part of the marketing. The lifeboats were viewed as an added safety feature, useful if **Titanic** had to rescue another ship in distress.

The planning stage for testing was compromised by **Titanic's** sister ship Olympic. In service on June, 1911, she had a track-record deemed adequate for launching an identical ship into service without extensive sea trials. But the track-record was spotty, with several incidents, the most serious being a collision with the cruiser HMS Hawke. The cruiser pierced Olympic's outer skin and caused considerable damage that required four weeks of repair; plating was replaced at one sixth of the original total cost. Work stopped on **Titanic**, delaying the maiden voyage by a month. The business pressures for **Titanic** to sail were enormous considering the large investments in the four-year construction.

By the testing stage, the perception existed with both White Star and the public that **Titanic** was invincible: The ship underwent one day of sea trials in April, 1912. With the staged delivery of three ships, Ismay saw a marketing opportunity to promote each ship as an improvement over the last. By beating Olympic's best crossing time of six days, he could market **Titanic** as superior. To promote this, he published a shipping announcement in the New York Times that **Titanic** would arrive a day earlier than the published schedule. This was a publicity stunt, but in reality, Ismay was writing out a new service level objective without verifying it with his captain and officers. This was fateful in pushing the ship to her operational limits.

On leaving Southampton, **Titanic** had a near collision, similar to the incident between Olympic and Hawke. The steamer New York broke her own moorings and came within four feet of **Titanic**, indicating the challenges in handling the large ship. At Queenstown, the last port before the Atlantic crossing, Board of Trade inspectors checked **Titanic** for safety. A lifeboat drill was performed to determine crew readiness, with two lifeboats lowered. The poorly executed test failed to highlight that the crew was not prepared for a disaster that would require the launch of all 16 lifeboats, as would be necessary in a calamity. Surprisingly, there were only 83 mariners in a crew of 900. The remainder operated **Titanic's** luxury hotel and its machinery.

At sea, the maiden voyage, or operations stage, was riddled with problems. First **Titanic** received eight warnings reporting icebergs and icefloes. However, the radio operators sporadically relayed these to the bridge because they were preoccupied with the flood of outgoing commercial radio messages. The radio operators were employed and paid by Marconi to transmit messages for first-class passengers.

Second, the lookouts were missing binoculars, somewhat unusual as it was customary to always have one pair in the crow's nest. The mariners had repeatedly reported this since leaving Southampton but were ignored.

Third, Ismay was patrolling the ship and ignoring operational procedures by pushing the crew to reach maximum speed of 22 knots.

The collision was probably inevitable with the compromised safety features, the failure of feedback systems, and the belief that **Titanic** was invincible. But what is scandalous is that bad management turned what could have been a mere embarrassment into an outright disaster. Passenger evidence at the inquiries was consistent: Hundreds of passengers described it as **Titanic** innocuously coming to a halt with a quiver, rumble or grinding noise that lasted a few seconds as if rolling over a thousand marbles. There was no "crash stop," and there were no fatalities -- or even minor injuries. There was no violent jolt sideways and repeated strikes along the ship's length, as are common with a side swipe against an ice spur when a ship is turning very hard away from it. The breakfast cutlery in the dining salons barely trembled and drinks remained unspilled in first-class smoking rooms. All the evidence indicates a grounding on to an underwater ice-shelf at the base of the iceberg.

Ismay was hell-bent on saving face and what greater feat than **Titanic** saving herself? His anxiety over White Star's reputation created an atmosphere where mistakes were easily made. Coupled with inaccurate information, bad decisions were made as Ismay telegraphed the engine room "dead slow ahead" in the hope of recovering the situation. He only succeeded in turning it into a horror. Engineers later testified the ship sailed forward at three knots with a grinding noise.

At the inquiries Ismay and the remaining officers concocted the ice spur story to hide the truth. The British government assisted the cover up and saved White Star from bankruptcy. After all, with the Great War looming, Britain needed large ships for transportation .

Illustration:

• Black & White Photo: Beware of bad decisions: This is one of the last photographs of the **Titanic**, taken as the ship left Southampton heading for New York on its fateful maiden voyage.

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Note: Mark Kozak-Holland is the author of On-line, On-time, On-budget: **Titanic** Lessons for the e-Business Executive (MC Press). He is a senior management consultant and has been working with mission-critical solutions since 1985. He can be contacted via his Web site: [www.lessons-from-history.com](http://www.lessons-from-history.com)

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