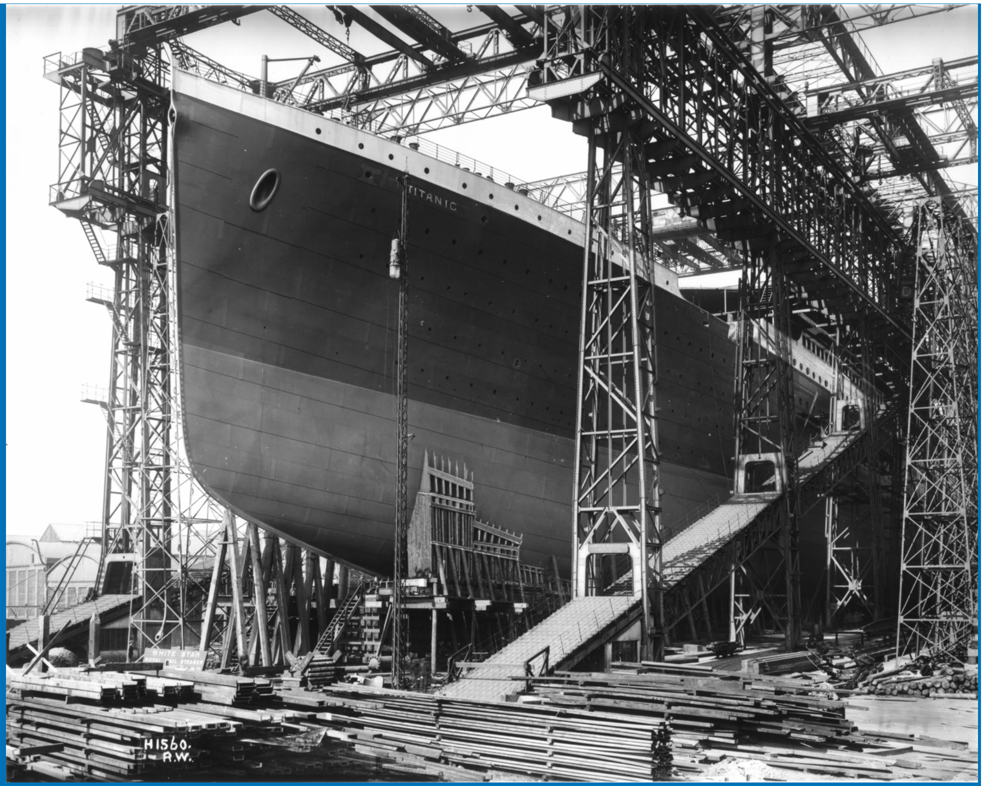


“Lessons From the Past that Assist the Projects of Today to Shape the World of Tomorrow”
www.lessons-from-history.com

“Titanic Lessons for IT Projects”

IT Projects from Hell

Authored by Mark Kozak-Holland, HP Services
July 13th, 2007
Presentation for the Center for the Management of Information Technology (CMIT)
Lessons-from-History

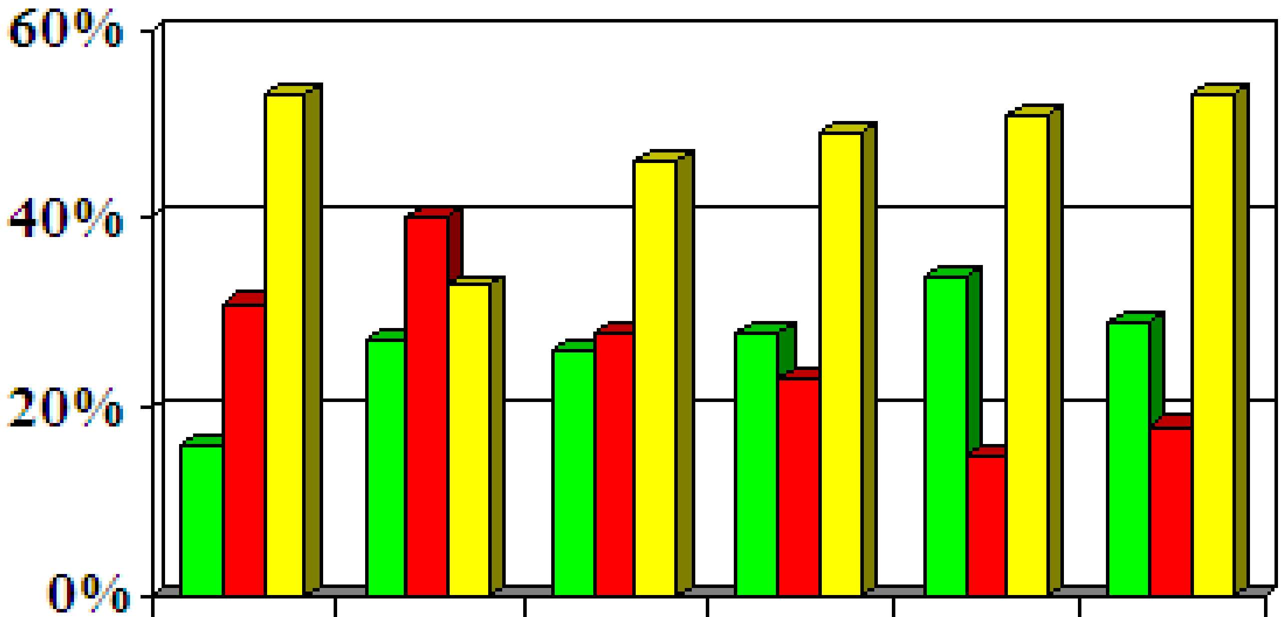
Objectives: Analyze *Titanic's* construction project and voyage and contrary view to popular held belief

- It uses lessons learned to understand key project issues.
- It looks at key decisions that led to project compromises.
- It questions why captain was unable to prevent disaster.
- It makes a step by step comparison to today's IT projects.

- Please prepare questions for the end of the presentation.

The success rate of IT projects is stubbornly low as first shown by the “Chaos” reports from Standish Group

- **Hypothesis:**
  - IT projects set seeds for future operational failures.
  - Problems on-line attributed to poor decisions making in IT project.



	1994	1996	1998	2000	2002	2004
Succeeded	16%	27%	26%	28%	34%	29%
Failed	31%	40%	28%	23%	15%	18%
Challenged	53%	33%	46%	49%	51%	53%

Source: “Chaos, a recipe for success,” Standish Group, 2004. Part of a series 1994, 1996, 1998, 2000, 2004 - 280,000 projects evaluated

Check www.lessons-from-history/Project Success or Failure/

Some notable project failures during the project implementation or into operation

- **January 2007, Sweden's largest Bank, Nordea, the biggest heist of customer accounts on record more than $1m was stolen.**
- **The Hershey Foods ERP system implementation failure ($112m) led to massive distribution problems and 27% market share loss.**
- **The FoxMeyer Drug ERP system implementation failure led to collapse of entire $5 bn company.**
- **July 2005 HSBC admitted hardware failure caused a major systems crash that hit thousands of customers for ATM, credit/debit, online services and internet, and it was the worst in its history.**
- **June 2004, RBC fell behind processing salary deposits thousands of Canadian workers as millions of transactions were affected by a computer glitch that caused payroll delays.**
- **June 2004, an air traffic control computer failure saw massive air disruption across the UK. All flights from UK airports were grounded after a problem at the National Air Traffic Service.**
- **August 2004, a computer crash prevented thousands of UK pensioners collecting benefits payments on the busiest day of year after the £500m Benefits Transfer system went down.**
- **September 2004, hundreds of flights grounded for 3 hrs, Western US airports. A computer failure stopped pilot/traffic controller contact. In 5 instances planes passed very close to each other.**
- **October 2004, computer failure at Waikato Hospital (NZ) left thousands of health workers out of pocket and forced the manual processing of patient records.**

Check www.lessons-from-history/Project Success or Failure/

Notable project failures during projects. Why do problems still occur and IT projects fail catastrophically?

- 2006 Department of Homeland Security scuttles its $229m Emerge2 program (new financial IT system).
- 2005 US Justice Department stated $170m FBI Virtual Case File project a failure, after 5 yrs & $104m. In a 18-month period, FBI gave contractor 400 requirements changes.
- 2005 UK Inland Revenue gave $3.45 bn of tax overpayments because of software errors.
- April 2005 Australian inter-departmental warfare resulted in failure of $64m federal project.
- 2005 British food retailer J Sainsbury wrote off $526m in automated supply-chain system.
- IRS project on taxpayer compliance took decade to complete and cost $50 bn.
- Oregon DMV conversion to new software took 8 years and public outcry killed the project.
- State of Florida welfare system plagued with numerous errors & $260m in overpayments!
- May 2005 major hybrid car manufacturer installed software fix on 20,000 vehicles. The automobile industry spends $2 to $3 bn per year fixing software problems.
- July 2004 new welfare management system in Canada costing $200m unable to handle simple benefits rate increase. Contract never tested this in 6 weeks of acceptance tests.
- 2004 Avis cancelled an ERP system after $54.5m is spent

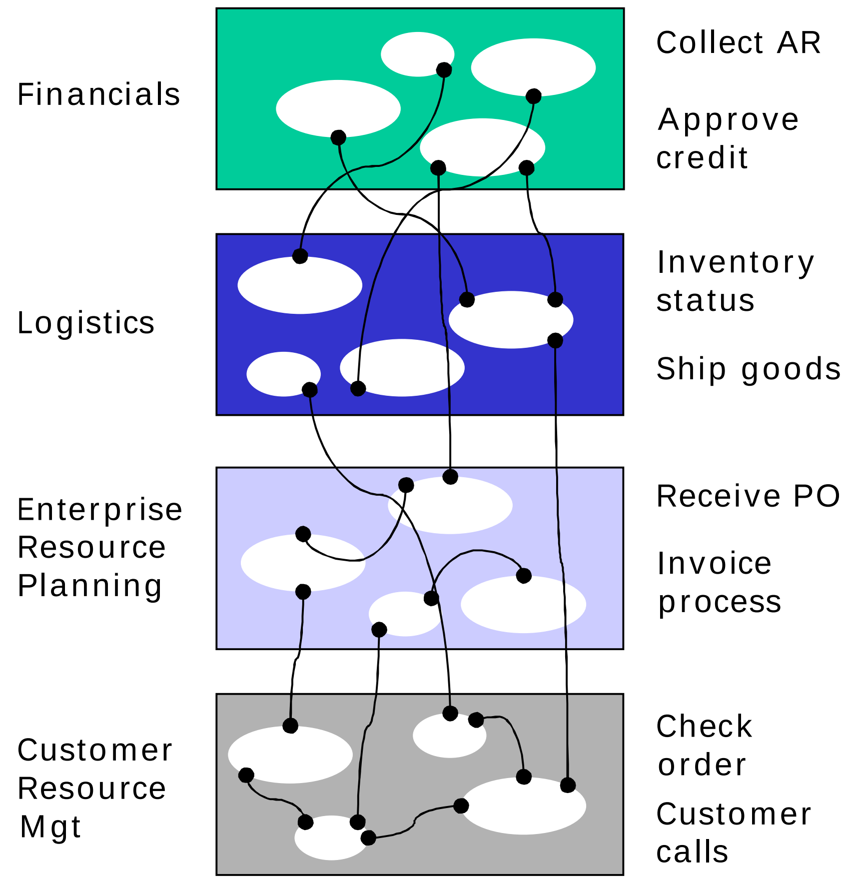
Check www.lessons-from-history/Project Success or Failure/

The costs of lost services are significant regardless of industry & relate back to decisions made in the project

Outage Costs By Industry			
Industry	**Description**	**By Minute**	**By Hour**
Package shipping	Like Fedex	$467	$28,000
Internet e-tailer (small)	Like CDNow	$750	$45,000
Computer vendor	Like Dell	$1,000	$60,000
Financial Institution	Like Citibank (credit/debit)	$1,300	$78,000
Retailer sales catalog	Like Sears	$1,500	$90,000
Internet e-tailer (large)	Like Amazon	$1,500	$90,000
Financial institution	Like Charles-Schwab (brokerage)	$1,500	$90,000
TV home shopping	Like The Shopping Channel	$1,550	$93,000
Telco	Like ATT	$2,000	$120,000
Pay-per-view	Cable provider, like Rogers	$2,500	$150,000
Network vendor	Like Cisco	$2,783	$167,000
Microchip manufacturer	Like Intel	$3,750	$225,000
Airline	Like Sabre	$36,000	$2,160,000

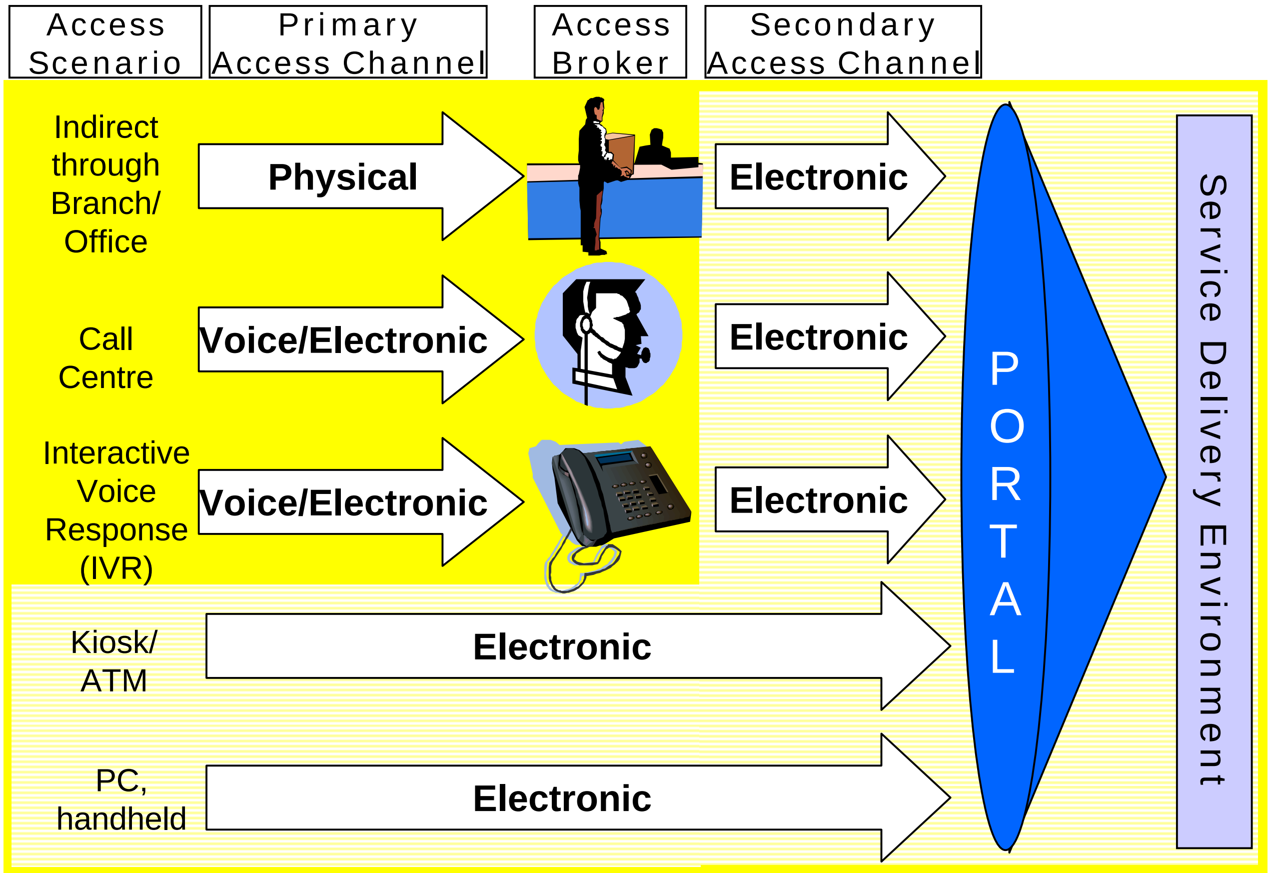
As complexity has risen so has risk. The internet brings risks & exasperates dependencies on on-line services

- Integration to complex application/database environment.
- Interface to Internet:
  - Backend operation put on-line.
  - High expectations of 24x7 service delivery.
  - Rate acquiring mission critical status.
  - Expands B2B to global 24x7, e.g., suppliers, resellers, partners.
- Millions of lines of code
- Integration with complex technologies



As companies weave IT through every aspect of their business all channel access to company services has an electronic dependency

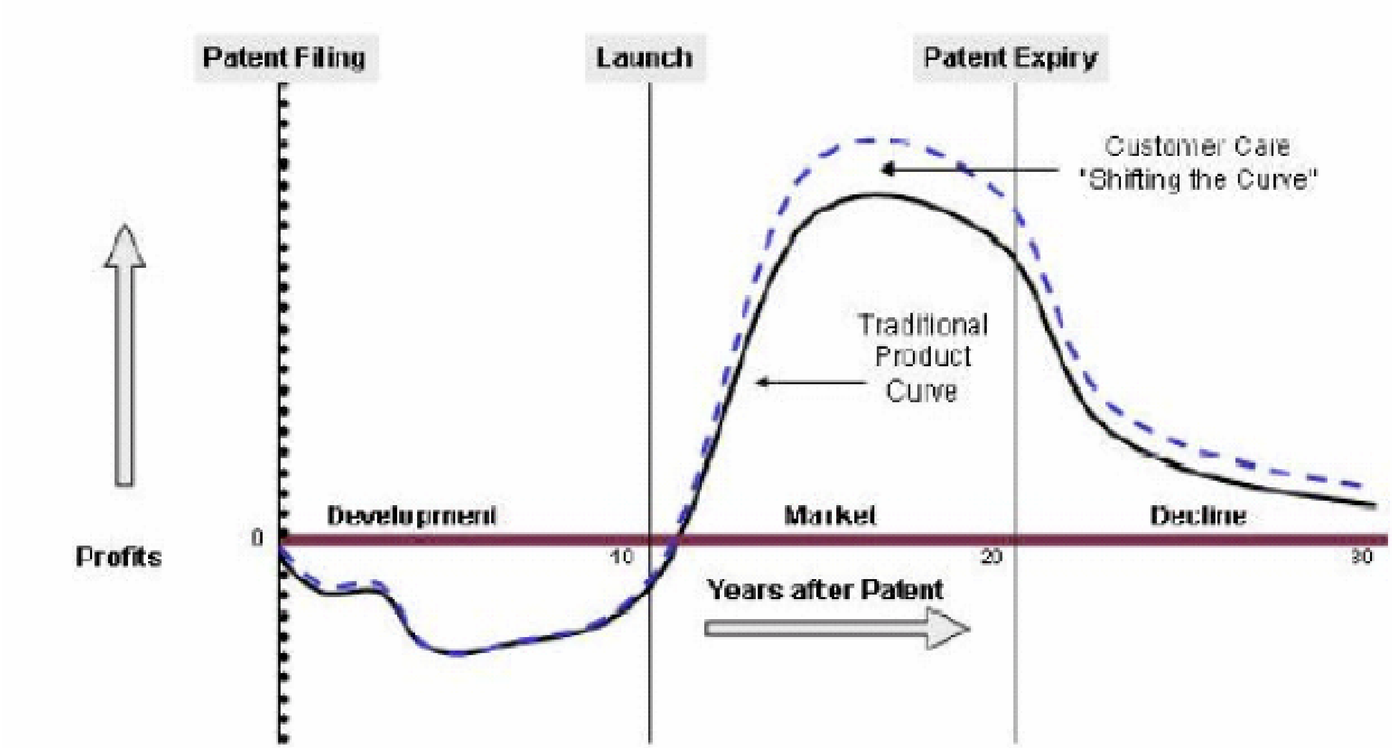
A business solution 10 years ago was destined for a department/business unit today economies of scale push solutions across the whole enterprise, more accessible to employees, partners, and customers.



As IT solutions become more complex in scope & implementation IT projects become more difficult to manage, longer, and with a less clear end point.

Most projects today have parallel marketing effort and can not afford to miss window

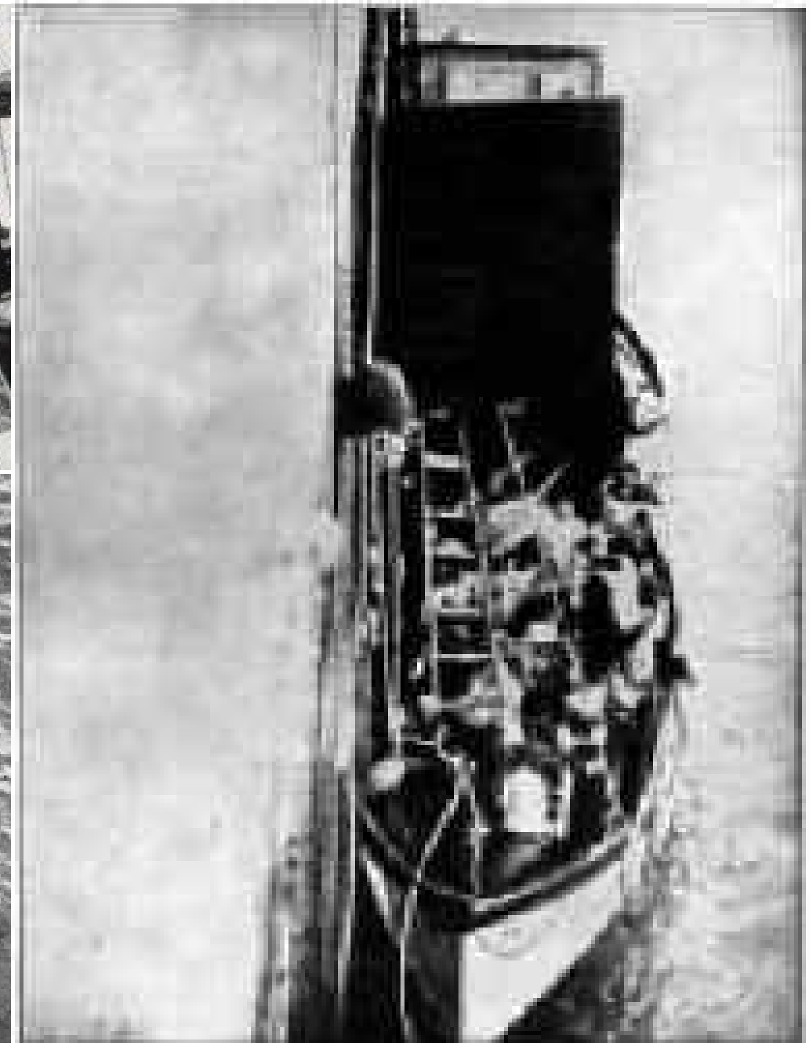
- Playstation, Xbox - launch “bang on”
- HP reduced laptop development cycle 9 months to 4 weeks



Bad IT service performance, IT project success rates, & IT investments are not a CIO problem affect all c-levels

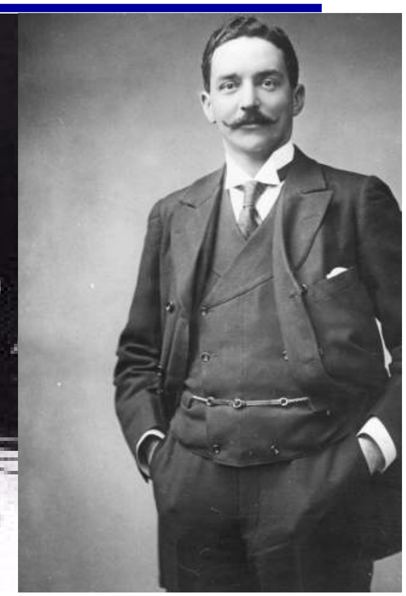
- **"…serious deficiencies in senior executive skills with IT projects. Lack of PM skills cut benefits of IT projects by 25%."**
- **"Executives are involved in selecting and approving projects, but rarely delivering them. 49% experienced one project failure in past 12 months."**
  - **Source: KPMG's Global IT Project Management Survey, July 2005.**
- **C-levels need to understand:**
  - **Relationship IT projects / on-line operations**
  - **What can go wrong in complex on-line operation?**

To understand relationship between operations & IT projects imagine yourself in 1912 in a *Titanic* lifeboat being rescued.



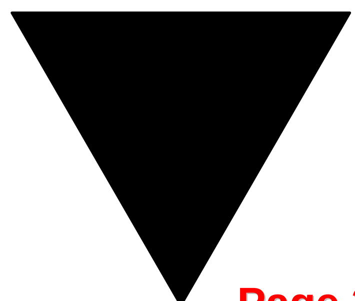
In 1909 White Star facing businesses pressures and responded with strategy that leveraged emerging technology

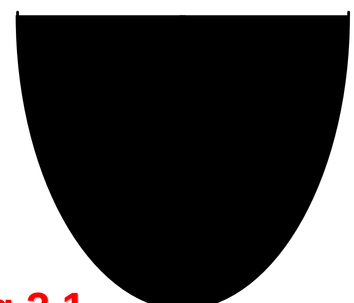
- **Competition and new entrants.**
- **Aging technology infrastructure, inferior service, loss of market share & customers.**
- **Invest in technology - 3 new super liners to sweep Atlantic.**
- **Push emerging technology to limits.**
- **Address all 3 passage classes, priority on first-class.**
- **Quality of crossing, customer experience.**



Mauretania

Olympic





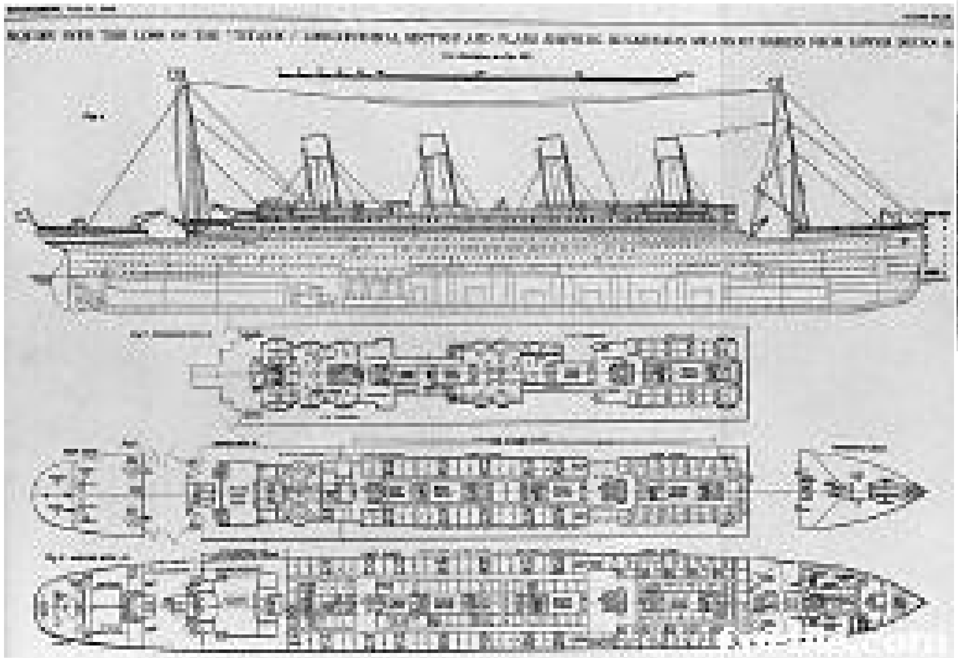
Page 30, Fig 3.1

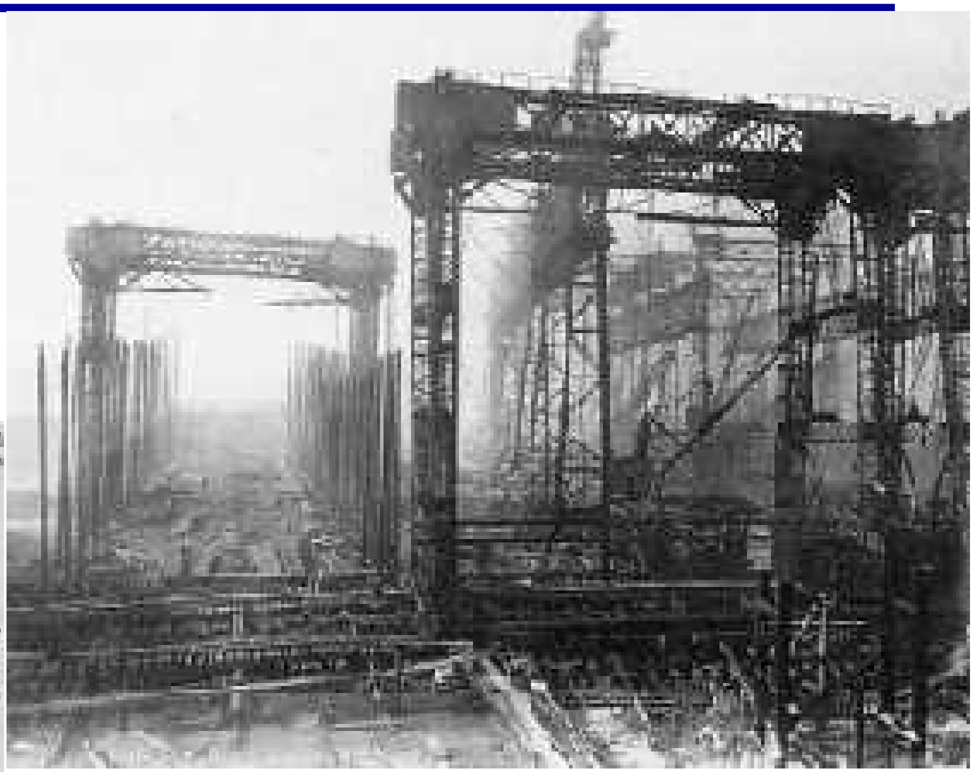
15% faster

23% greater capacity

The strategy required new technology investments but the business case was really solid

- **Profitability analysis breakeven 2 yrs.**
- **6 year construction project.**
- **75% of revenue first-class.**
  - **1st class suite - $4,350,**
  - **2nd class suite - $1,750,**
  - **3rd class ticket - $30.**





- ***Titanic's* class segregation = today's customer segments.**
- **Passenger space allocated:**
  - **60% for 905 first-class.**
  - **7% for 1134 third-class.**

In comparison for an IT project today the project team can minimize risks with the following techniques:

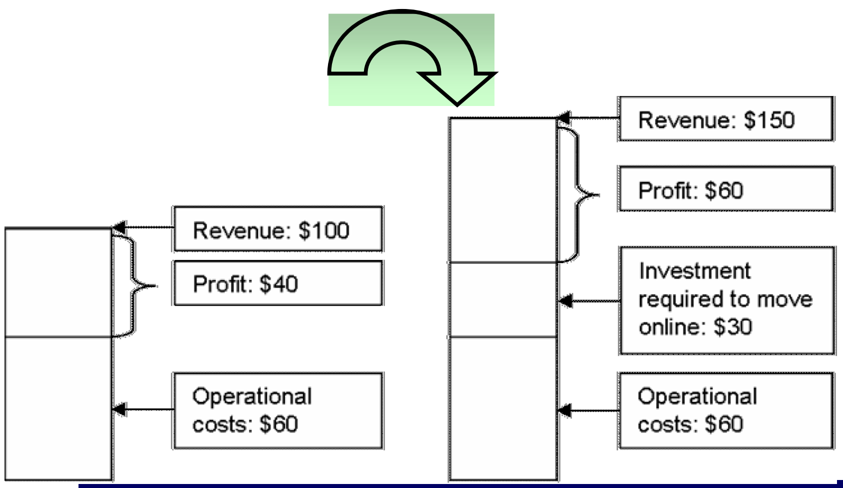
BEST PRACTICES

- Due diligence in business problem, competitive services, potential costs, and risk.
- Determine by segments customer/target audience, value propositions, create profiles and scenarios for these.
- Determine integration to existing services & data dependencies.
- Establish service level targets to guide architect.
- Assess solutions driven by new emerging technology.

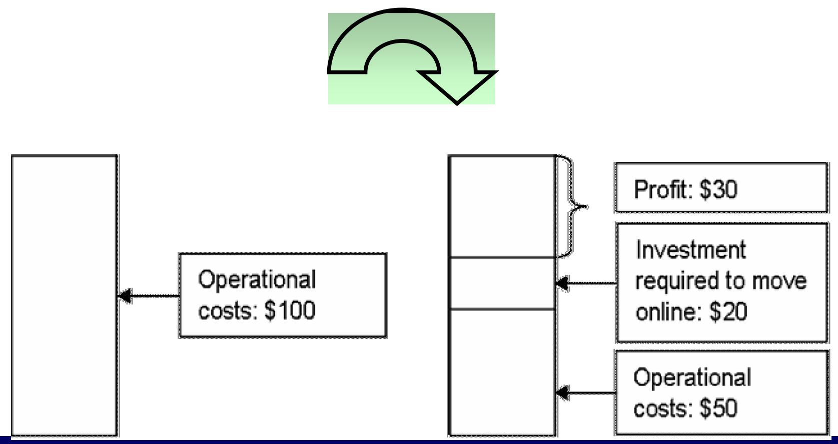
Build business case for project that looks into the operational side and incorporates potential risks:

- **Identify hidden costs based on affected users.**
- **Consider branding, image and prestige.**
- **Highlight exposure and risk, (potential "bankruptcy").**
- **Ensure investments out-weigh on-line costs**

Revenue generating on-line operation



Cost saving on-line operation

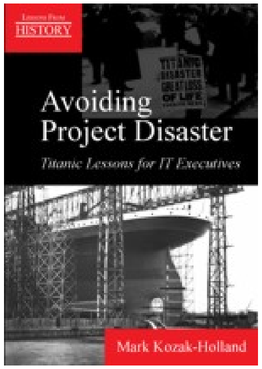


Compute exposure to lost customers/profits by surveying customers on items below

BEST PRACTICES

			% Will NOT Continue As Customer		# Will NOT Continue As Customer	$ Profit Lost due to lost customers
# of customers who experience a problem	X	*Sought Assistance 50%* X	*% Completely satisfied*	X *5%*	= ________	X $ =............
			% Mollified	X 25%	= ________	X $ =............
			% Dissatisfied	X *70%*	= ________	X $ =............
		Did not seek assistance 50%		X *45%*	= ________	X $ =............

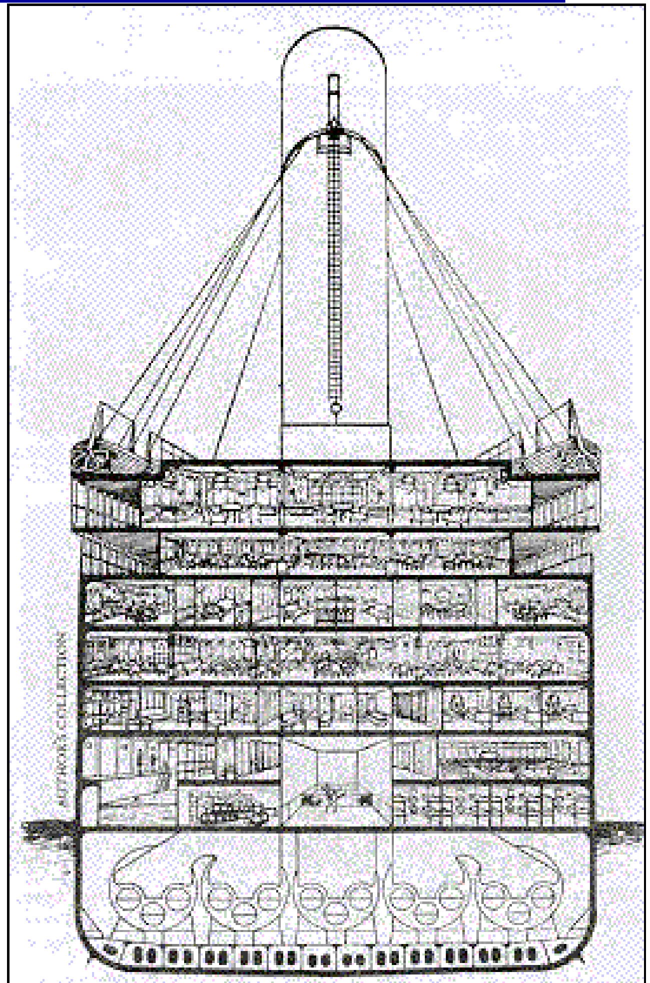
Source: TARP Study



In *Titanic*'s architecture stage like in IT projects, Architects faced many investment options

Thomas Andrews

- **Harland and Wolff most expensive craftsmen in Europe.**
- **Created luxury liner priority first-class functional requirements (What).**
- **Lavish attention implied equivalency in non functional requirements (How).**
- **Designers choice in safety technology**
  - **Old**
    - **lifeboats**
  - **New**
    - **bulkheads,**
    - **double-skin hull,**
    - **electric doors,**
    - **automatic fog warning.**



Cutaway View of RMS Titanic

M0PLSDT2.JPG

Definition of Functional and Non-Functional requirements.

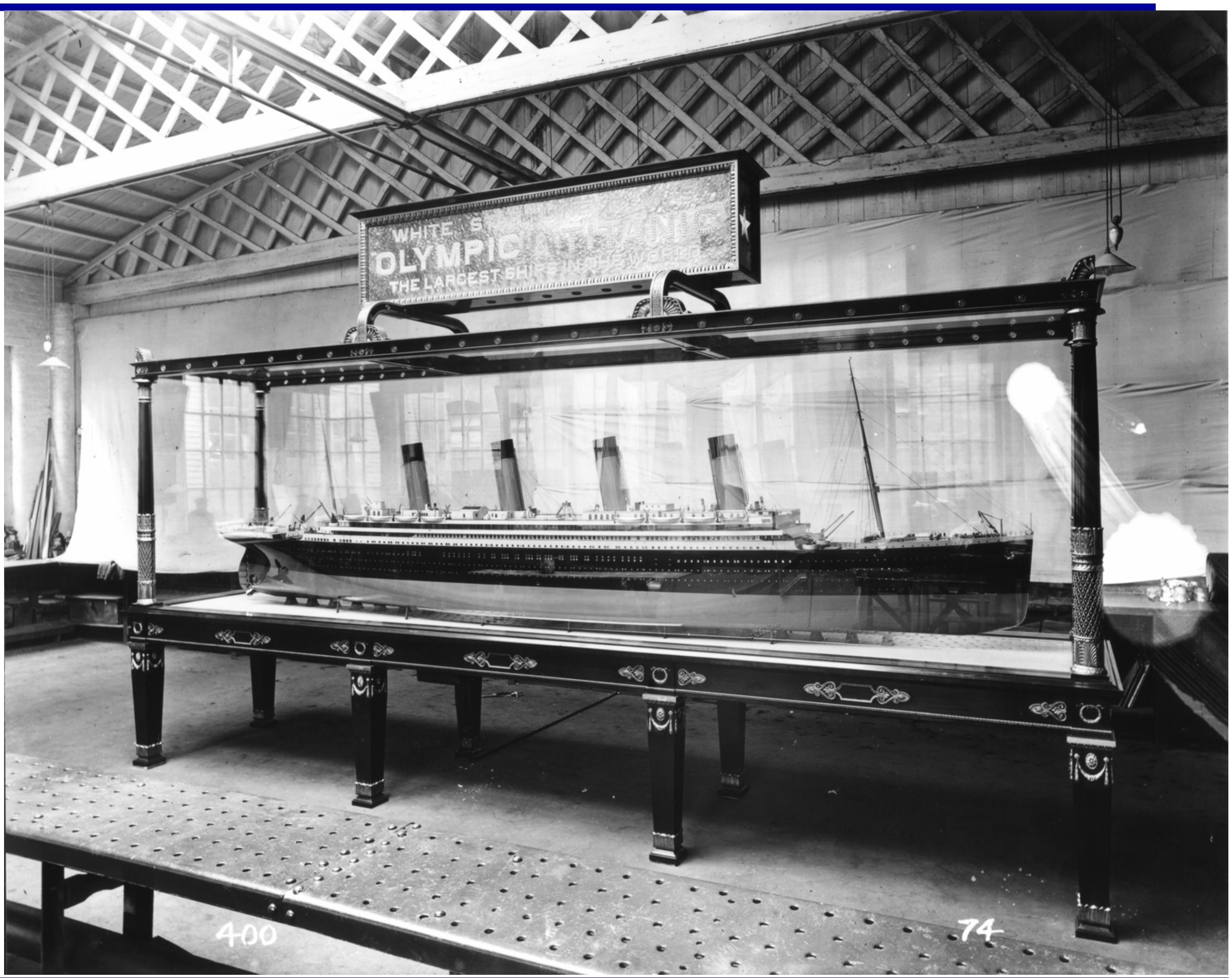
- **Functional defines what the system needs to do:**
  - Business Rules
  - Transaction corrections, adjustments, cancellations
  - Administrative functions
  - Authentication
  - Authorization –functions user is delegated to perform
  - Audit Tracking
  - External Interfaces
  - Certification Requirements
  - Reporting Requirements
  - Historical Data
  - Legal or Regulatory Requirements
- **Non-Functional defines how the system needs to behave:**
  - Performance - Response Time, Throughput, Utilization, Static Volumetric
  - Scalability
  - Capacity
  - Availability
  - Reliability
  - Recoverability
  - Maintainability
  - Serviceability
  - Security
  - Regulatory
  - Manageability
  - Environmental
  - Data Integrity
  - Usability
  - Interoperability

Check www.lessons-from-history/functional vs non-functional.html/

White Star invested in ship-builder's model (IT pilot). Used to analyze all exposures to the possibility of loss.

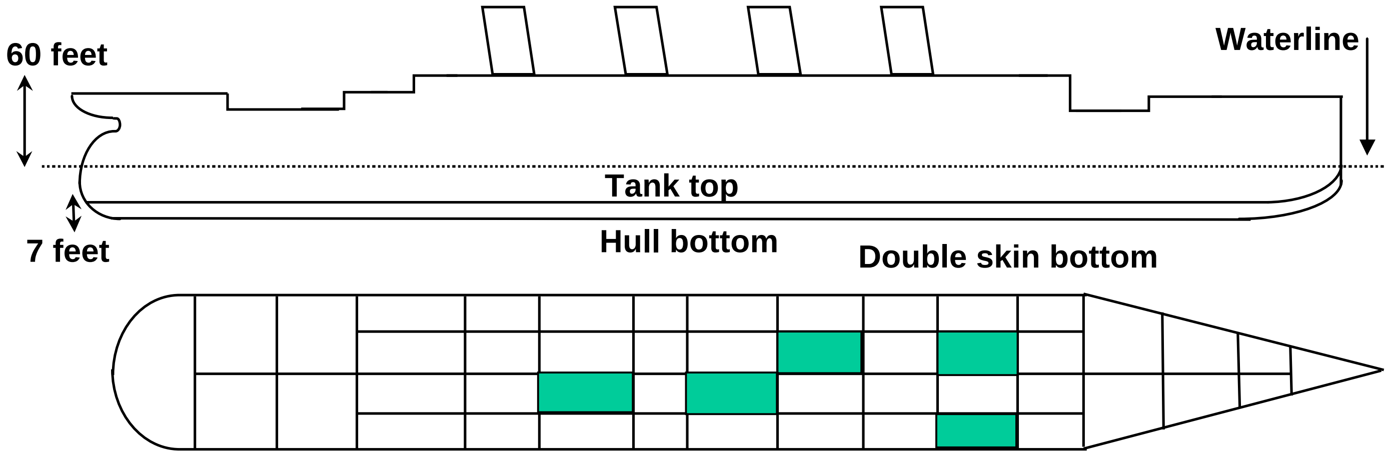
- **Flow analysis, "static testing" to review ship characteristics, test design, and identify vulnerabilities.**
- **Sound strategy with limited testing options available, identified problems.**
- **Atlantic risks 400 years of travel.**

Page 31, Fig 3.2



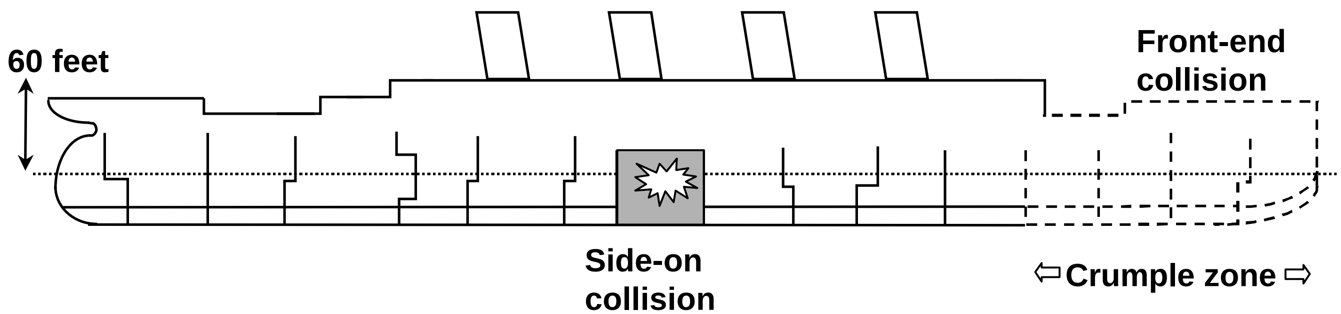
The Architects were well aware of the risks in crossing the Atlantic. The model tested worst case failure scenarios.

- **Running aground**



- **Collisions**

Page 33, Fig 3.4



In the architecture stage the project team can minimize risks with the following techniques

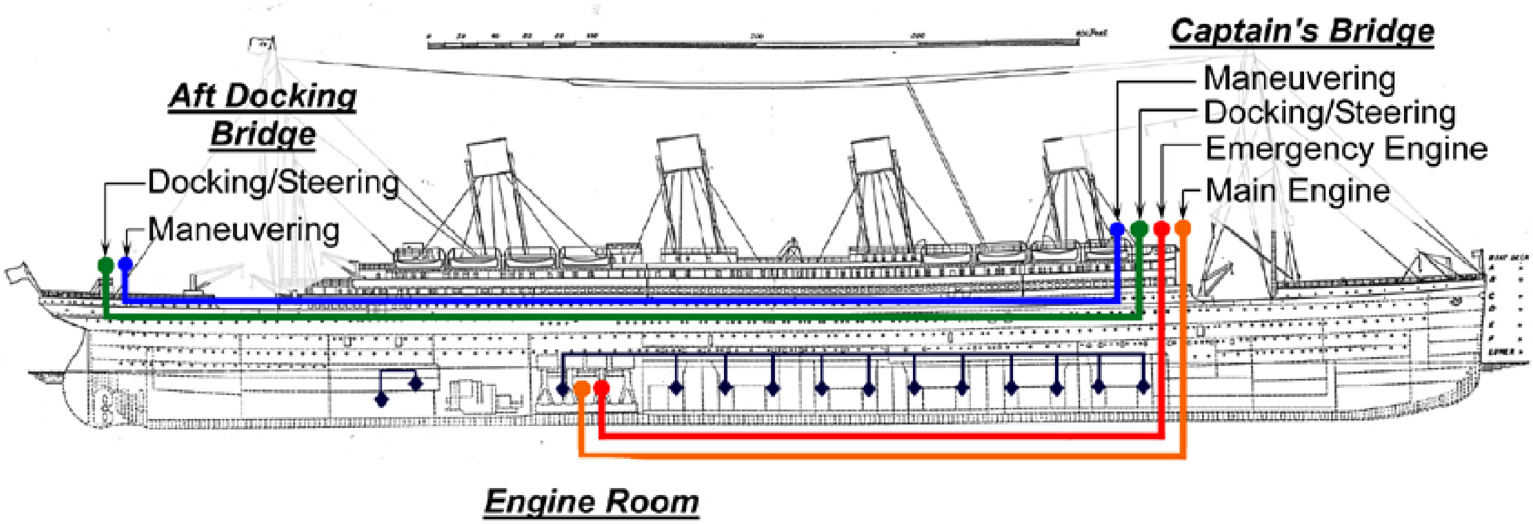
BEST PRACTICES

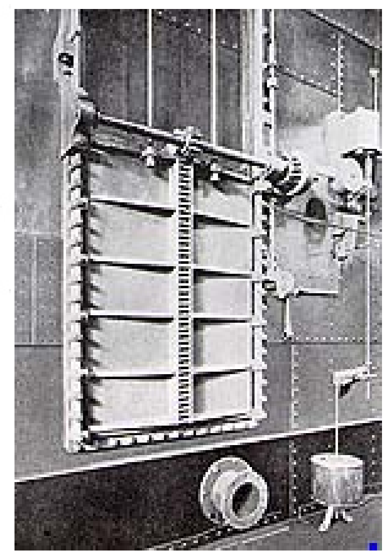
- **Walkthrough the design, to catch problems early.**
- **Walk along critical transaction paths end-to-end.**
- **Complete "component impact analysis" - single failure points.**
- **Build security zones for access.**
- **Avoid under-investing in non-functional requirements.**
- **Avoid one technology, lack of diversity increases susceptibility.**
- **Avoid complexity, strive for simplicity, design for manageability, operability, scalability, performance, security, and ease of use.**

Check www.lessons-from-history/functional vs non-functional.html/

Titanic's construction stage integrated many complex technologies and selected safety features to reduce risks

- **Disparate technologies integrated to single point.**
- **Finalized non-functional requirements.**
- **Invest in expensive safety features (new technology).**
- **Over confidence in ship safety.**
- **Perception *Titanic* was unsinkable.**

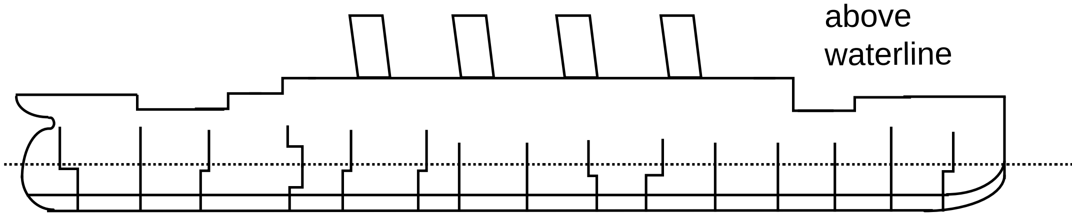




Decisions with esthetic factors compromised individual safety features and escalated the level of risk

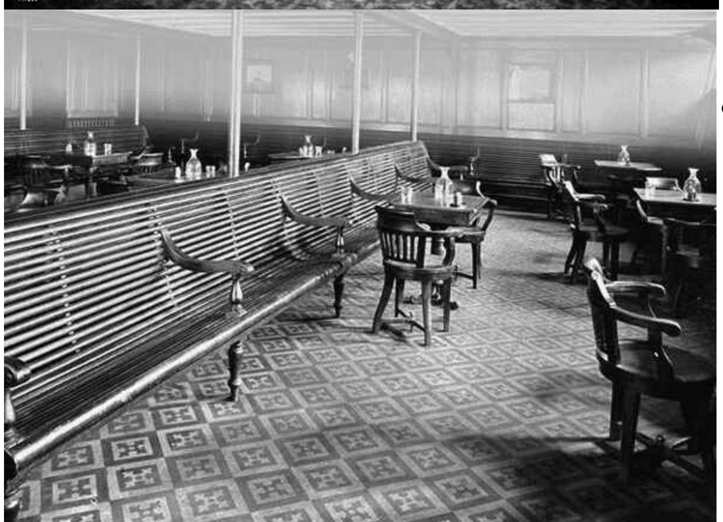
- **No construction dollars diverted from safety to enhance first-class.**
- **Lifeboats - 16 single vs 48 triple stacked, uninterrupted 1st-class view.**
- **Spacious public areas compromised bulkhead height.**
- **The double skin not continued up, only 7 feet deep, below waterline.**

Bulkheads end 10 feet above waterline



15 Bulkheads/16 Compartments

By end of construction *Titanic's* safety compromised severely. But White Star believed it safest ship ever built.



- Safety regulations for lifeboats, outdated technology.
- *Titanic* sold at highest safety level, but really passenger safety low.
- Expensive construction effort incorporated mistakes of earlier stages.

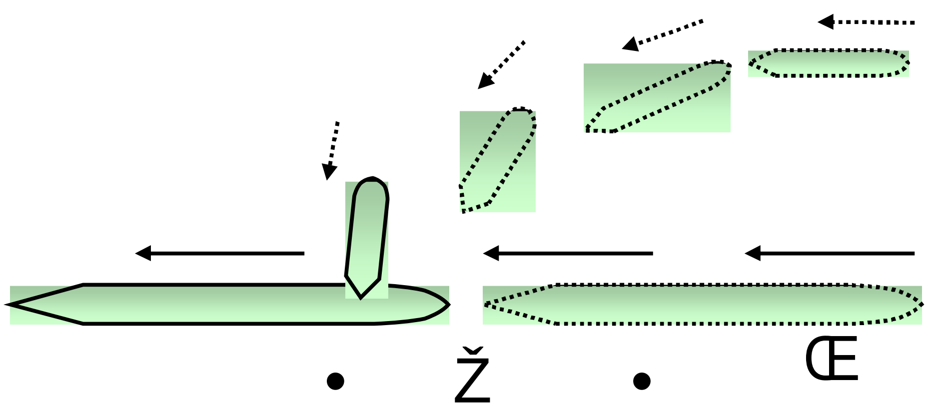
In the construction stage the project team the project team can minimize risks with the following techniqu

B EST PRACTICES

- Identify building blocks (components vs prefab) and solution alternatives (build versus buy).
- Identify non-functional alternatives (safety features).
- Build in cycles. Start small (prototypes), and scale up.
- Tier solution, scale independently, and create redundancy.
- Review Government regulations that may impact.
- Ensure execs/sponsors involved through construction.

Business pressures for *Titanic* to go live were enormous with large investments tied up in four-year construction.

- *Olympic* 3 incidents, HMS *Hawke,* 17% of original cost.
- Extensive sea trials not critical with *Olympic* in service.
- Change-management theory not established.
- Too much faith in *Olympic*.



Page 43, Fig 4.2

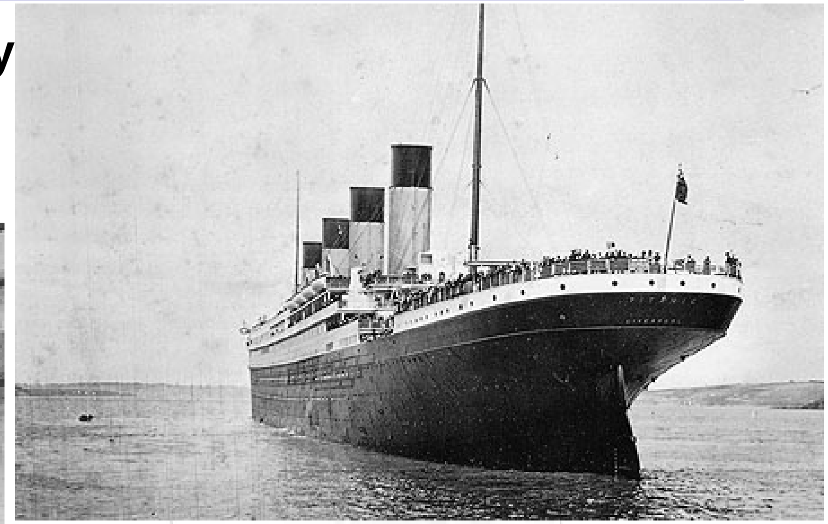
In the planning stage the project team can minimize risks with the following techniques:

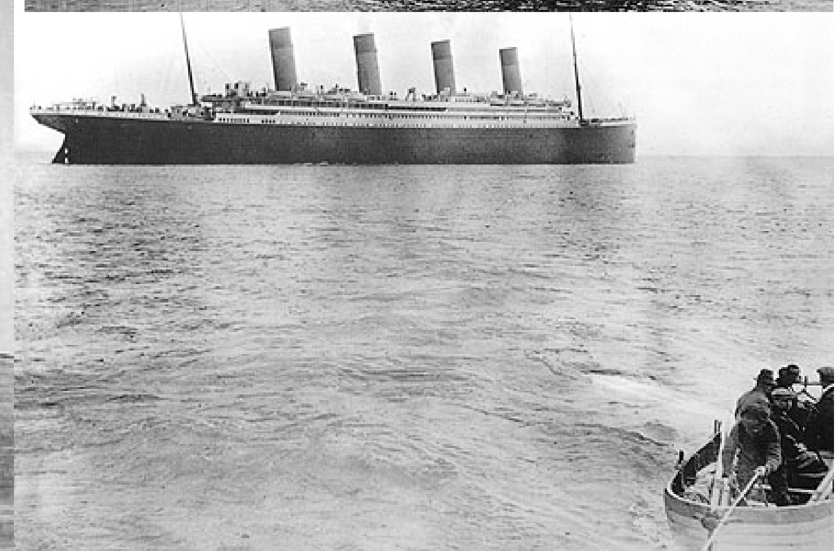
B EST PRACTICES

- Review existing/previous projects with PMO for commonality.
- Follow a change-management process, use risk assessments.
- Plan level of testing, select right tests, and acceptance criteria.
- Assign operations services ownership and control of process.
- Define alternatives to launch (withdrawal), and back-out plans.
- Create a test environment that mirrors live environment.
- Prepare for increase in frequency of changes with the Internet.
- Deploy in test environment, run parallel to live environment.
- Ensure testing is broad not just on functions.

Bruce Ismay compromised the project Service Level Agreements shipping announcement in NY Times.

- **Passengers "who's who" public life 300 very famous people, 53 millionaires collective worth $500m.**

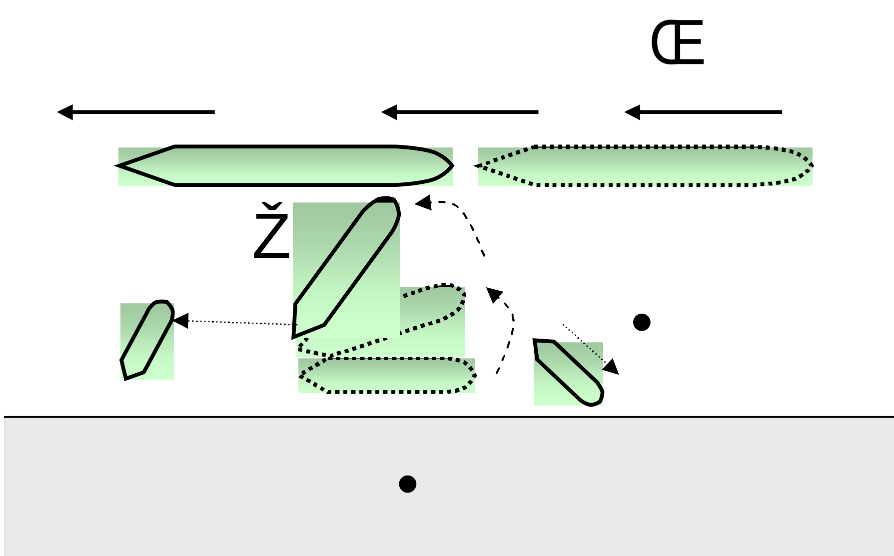




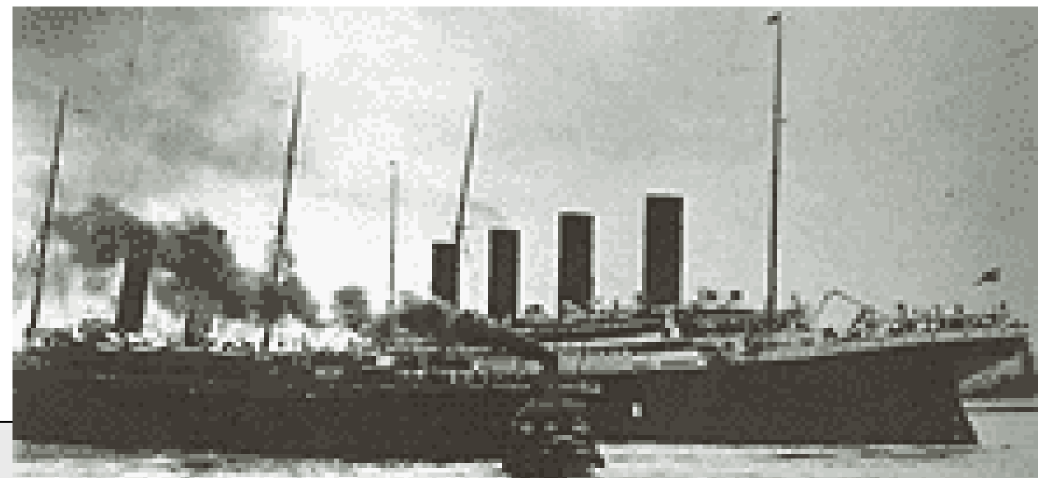
Titanic's testing was maiden voyage.

- On leaving port, *Titanic* (1) nearly collided with the steamer *New York* (2) coming within four feet (3) indicating the challenges in operating a very large ship.
- The Tug Vulcan (4) and quick thinking of Captain Smith prevented the accident.

Page 52, Fig 5.4



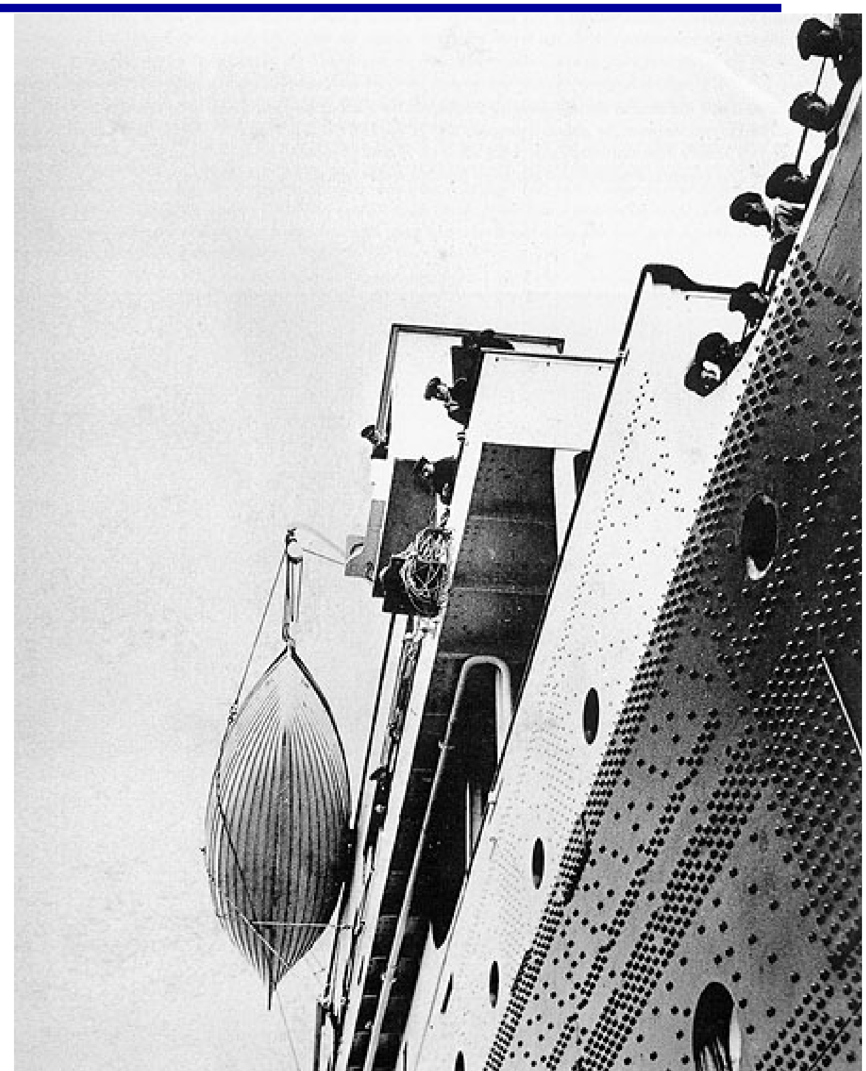
Page 53, Fig 5.5



"Suction of Giant Liner Breaks Hawsers of the New York, Which Floats Helpless" Source: The New York Times, 11 April 1912

The business pressures and economic needs pushed *Titanic* into service and resulted in limited testing

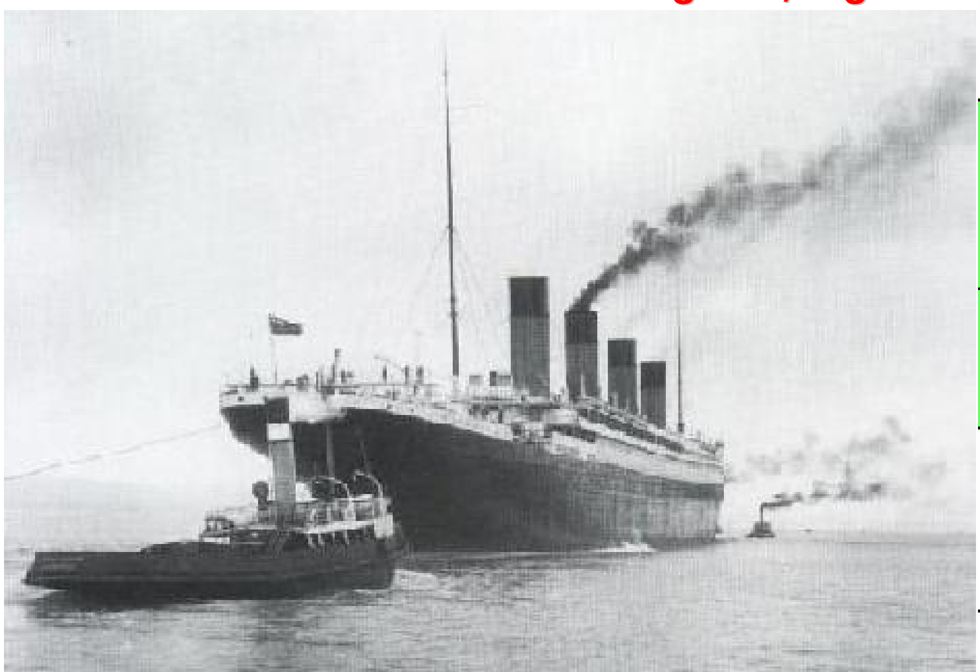
- **Only one lifeboat drill was performed to satisfy the British board of inspectors.**
- **No time was spent in preparing the crew for the maiden voyage.**
- **The crew of 900 had 83 mariners.**
- **The crew was unprepared to handle a disaster and the launch of all lifeboats.**

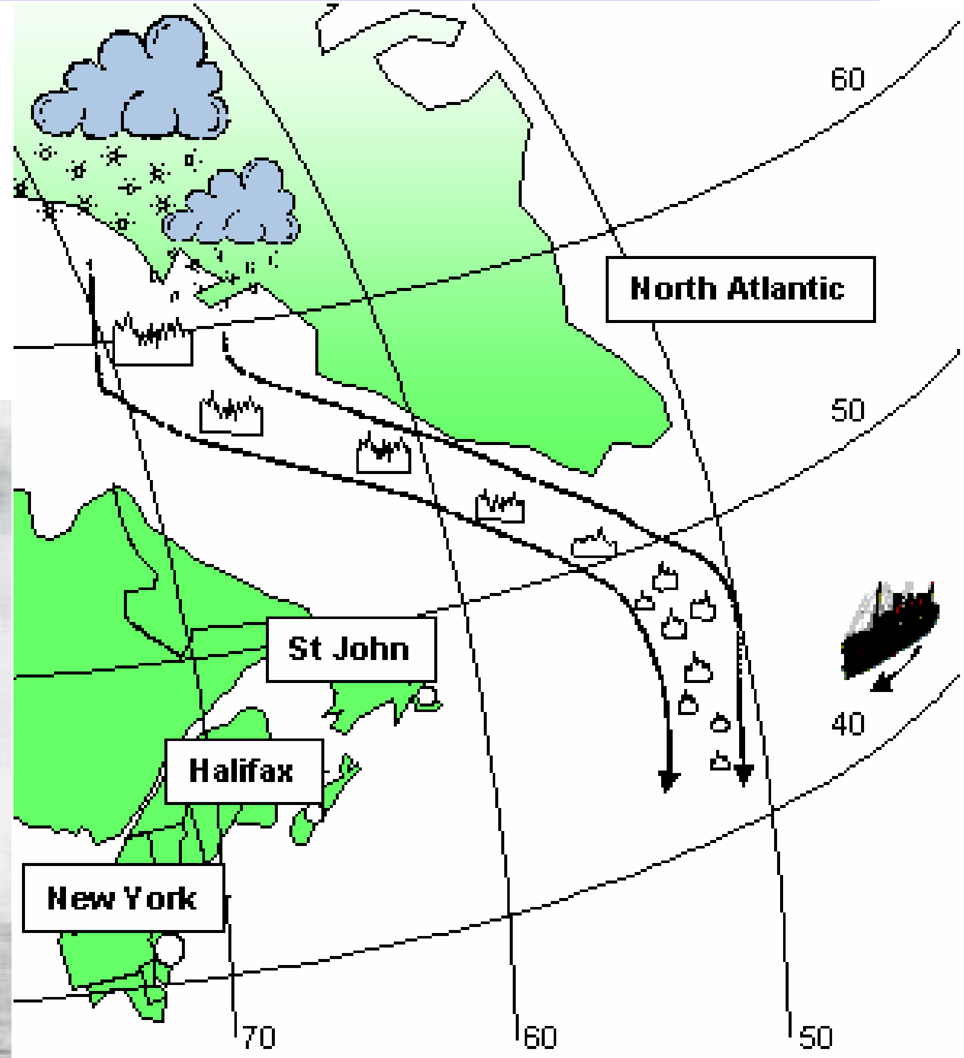


Titanic's captain and officers were well aware of "Iceberg Alley" and the associated risks.

- **North Atlantic features.**
- **Winter 1911 mild, April worst month.**
- **Sailing path moved.**
- **Fate of French liner *Niagara*.**

Page 58, Fig 6.1





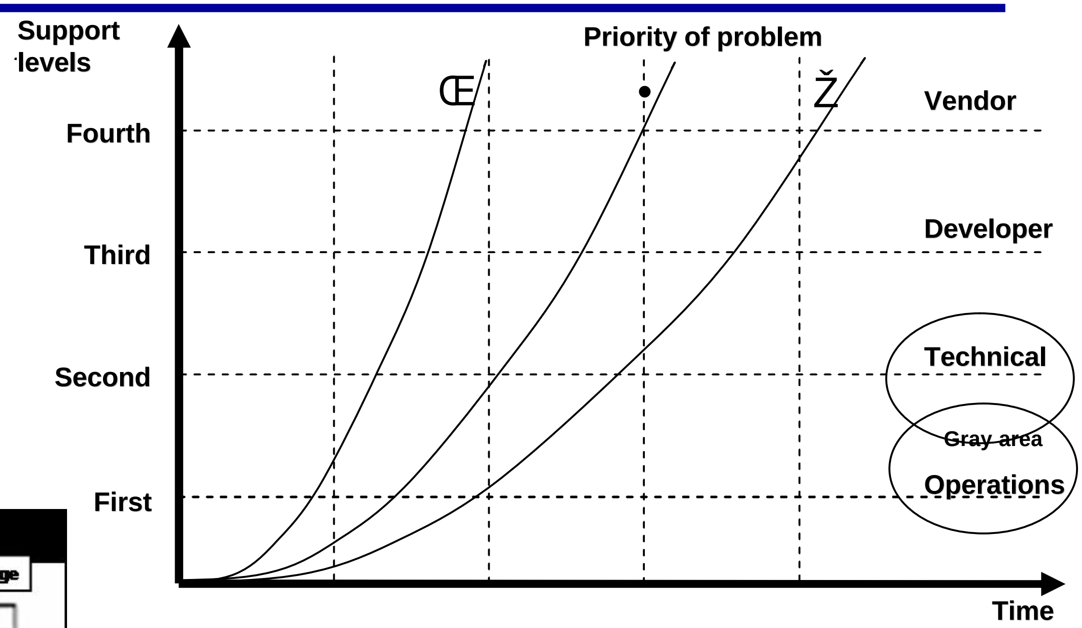
In the testing stage the project team can minimize risks with the following techniques:

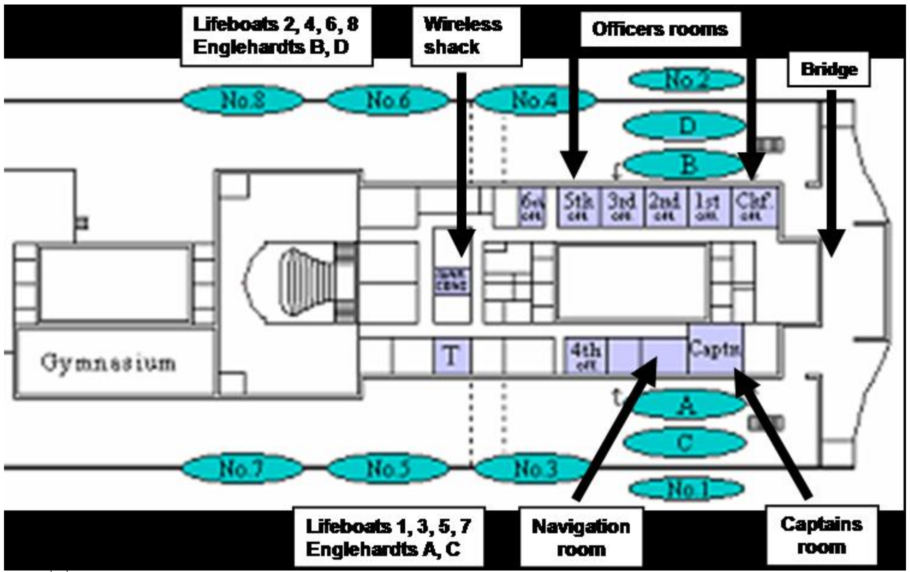
BEST PRACTICES

- Undertake business and technical risk assessments.
- Ensure independent test teams - incentives to test objectively.
- Establish the ability to stop an implementation if testing fails.
- Ensure that major testing, once under way, can be halted.
- Ensure change process strategies for rapid implementation.
- Avoid change process that lacks support and "teeth."
- Avoid giving developers rights to live environment.
- Refine your service level objectives and agreements.

Today's IT projects need to set up delivery of the on-line operation which include: Page 76, Fig 9.2

- An organization support structure
  - 4 levels of support
- Centralized operations
- Automated operations

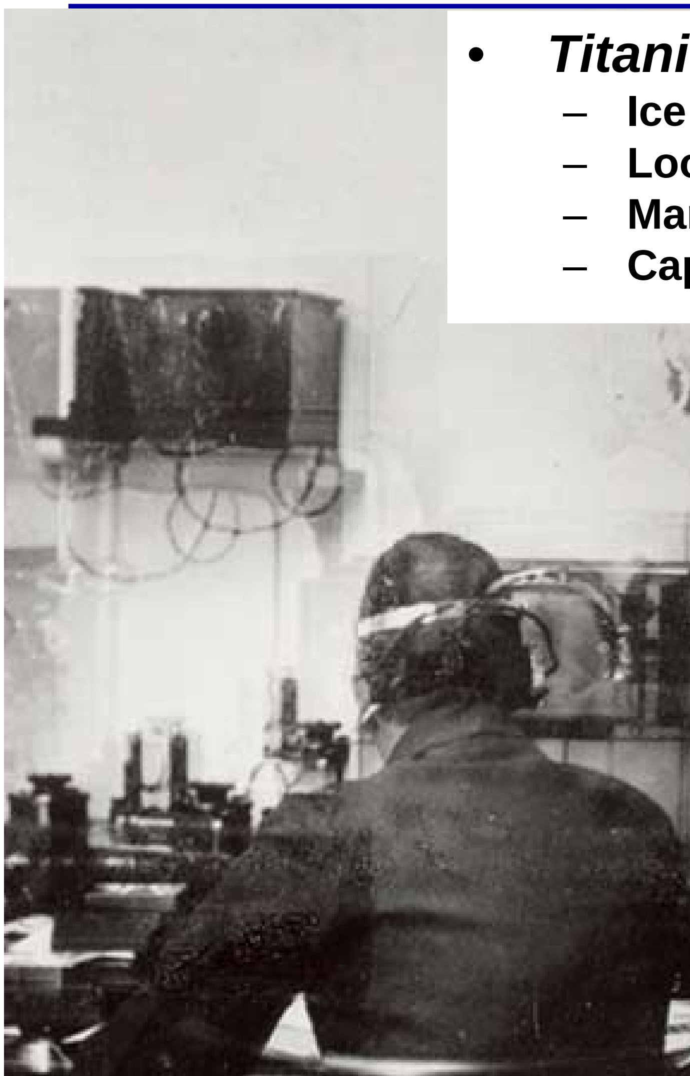




1. Lookouts, wireless operators, on duty officers
2. Safety officer, navigation officer, carpenter, ships doctor
3. First and second officers, captain
4. Architect

The operating stage required the deployment of the ship into production and her maiden voyage

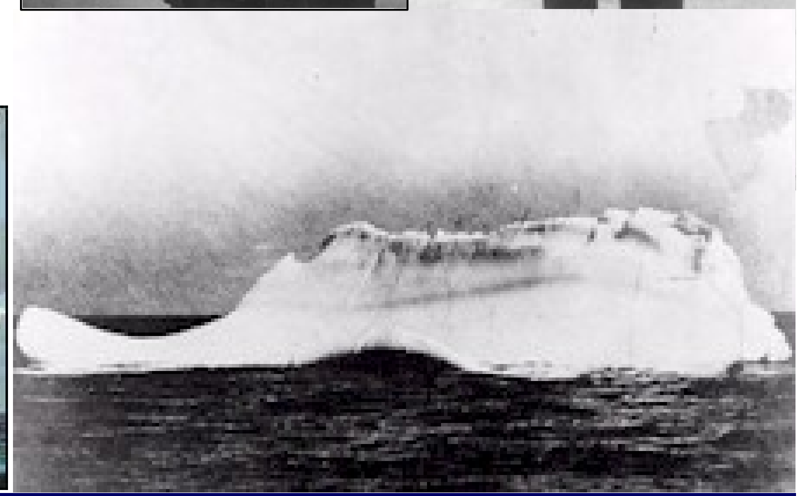
- ***Titanic's*** **built-in feedback mechanisms**
  - **Ice bucket test.**
  - **Lookouts.**
  - **Marconigrams Operators.**
  - **Captain resistant to new technology.**



Bruce Ismay determined to prove *Titanic* superior to *Olympic* changed the SLO, dramatically increasing risks

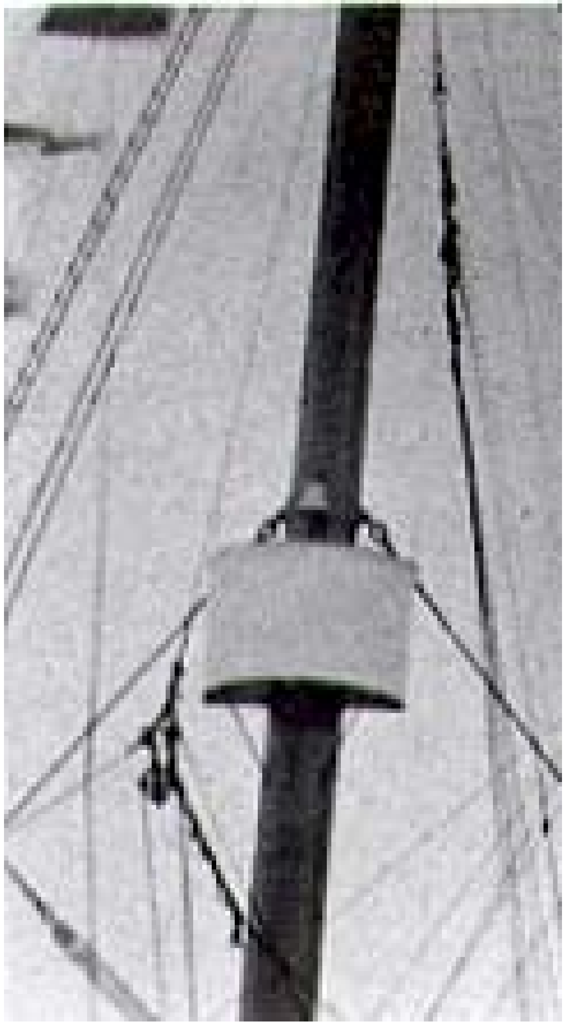
- **Ismay overrode Smith**
- **Pushed crew to limits.**
- **Captain succumbed to pressure.**
- **Operations mandate overriden.**
- **Stringent guidelines broken.**
- **Everything put in jeopardy.**

Page 63, Fig 7.1



The two lookouts, without binoculars, hesitate on sounding the alarm.

- Sea dotted with hundreds of ice floes.
- No extra lookouts posted.
- Very hazy atmospheric conditions common to large sheets of ice.
- The lookouts confused in what they see ahead.
- At least 7 minutes pass between spotting and reporting a “dark mass” and raising alarm.

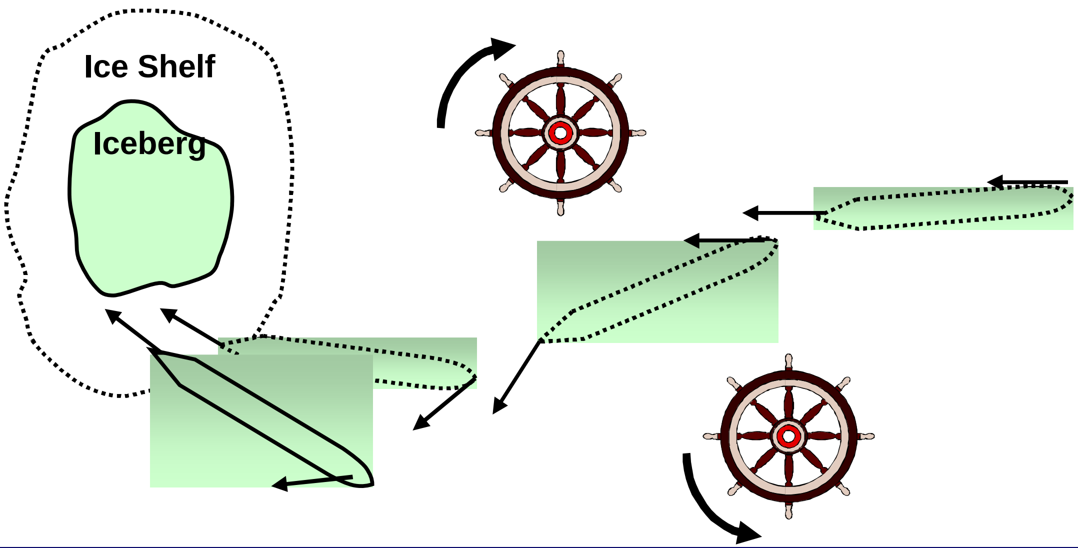


Iceberg alarm raised at 912 yards (3 ship lengths) and Officer Murdoch performs an 'S' turn to avoid collision

- Sea of ice (not lookouts' warning of lone deadly iceberg)
- Band of haze ahead, oily, strange conditions on the North Atlantic that night
- Fuzzy horizon, no wind, flat calm sea, perfect clear night, no moon
- No breakers around blackberg

The collision was inevitable and Murdoch almost succeeded pulling off a brilliant maneuver.

- **Feedback systems compromised.**
- **Ship reached peak speed 22 knots, 3 additional boilers lit.**
- ***Californian's* last radio message ignored.**
- **Lookouts gave 37 seconds warning.**
- **Murdoch tried to dodge iceberg and decelerate ship "S turn."**



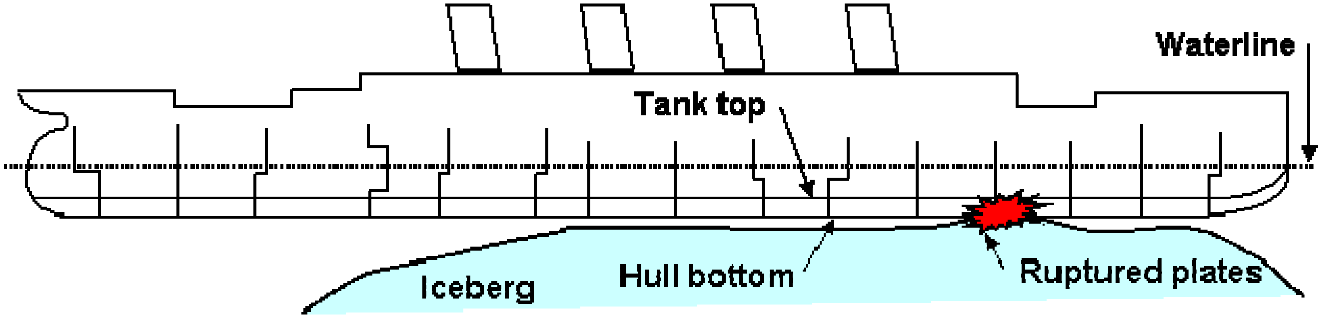
Page 69, Fig 8.1

The ship grounded itself on the ice shelf and consistent testimonies of the collision describe it as innocuous.

- **"I heard this thump, then I could feel the boat quiver and could feel a sort of rumbling.."**
  - **Joseph Scarott Seaman**
- **"... It was like a heavy vibration. It was not a violent shock."**
  - **Walter Brice Able Bodied Seaman**
- **"…I felt as though a heavy wave had struck our ship. She quivered under it somewhat."**
  - **Major Arthur Peuchen First Class Passenger**
- **"I was dreaming, and I woke up when I heard a slight crash. I paid no attention to it until the engines stop."**
  - **C E Henry Stengel First Class Passenger**
- **"We were thrown from the bench on which we were sitting. The shock was accompanied by a grinding noise…."**
  - **Edward Dorking Third Class Passenger**
- **"It was like thunder, the roar of thunder…"**
  - **George Beauchamp Fireman**

Unperturbed the bridge sends two assessment groups to survey the ship for damage.

- No sharp jolt of ship slamming immovable object.
- No rebound effect.
- Breakfast cutlery in dining rooms barely rattled.
- No injuries or broken bones, no deaths.
- Ship quivered for several seconds.



Page 78, Fig 9.3

Passenger descriptions of QEII's grounding 1992 parallel Titanic's

- **QEII grounding (Cuttyhunk Island Vineyard Sound, Ma)**
  - **August 7, 1992 vessel sustained $13.2 million in damages, and leaked 50 gallons of fuel oil from empty fuel tank ruptured in incident.**
- **Soft landing**
- **The ship measures**
  - **Displacement: 70,327 gross tons**
  - **Length 963 ft (294 m) long.**
  - **Top speed of 34 knots making her one of the fastest passenger ships afloat.**

U.S. Navy aircraft carrier Tarawa 1951 CRASH STOP ("reverse engines") in Straits of Messena

- **Passenger ferry suddenly cut across the warship's bow.**
- **"All back emergency!“**
- **The stern of the ship began jumping up and down 6 feet.**
- **The collision was avoided.**
- **Next morning, dozens of crew were sporting slings, casts and neck braces from being flung to the deck.**
- **So much china was broken ship put into port to buy more.**
- **In few weeks, ship drydocked to repair damage propeller shaft.**

- **displacement: 27,100 tons**
- **length: 888 feet beam: 93 feet; width flight deck: 147 feet**
- **draft: 28 feet speed: 32.7 knots**
- **complement: 3,448 crew**

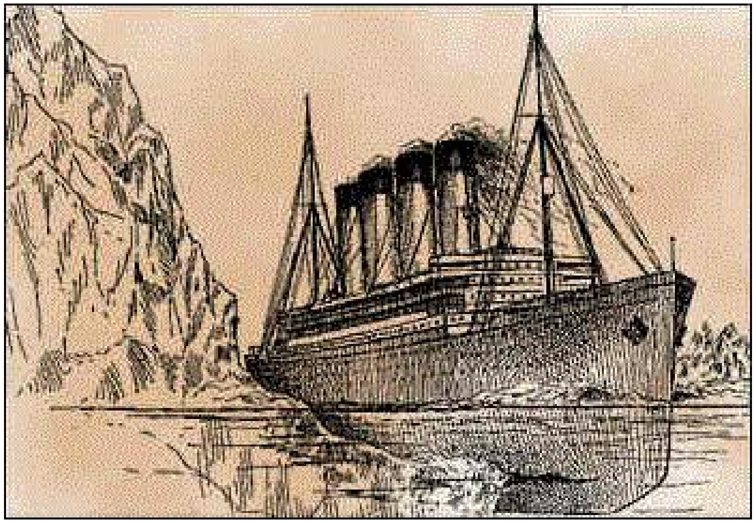
Close examination of inquiries shows officer and passenger testimonies differed greatly.

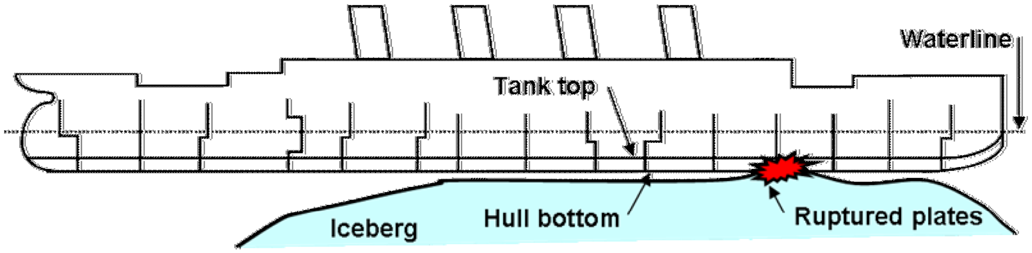
Officer

- Sharp side-swipe against ice spur causes 300 foot gash. Ship bumps along the side to a stop. Water pumps could not keep pace with flooding.

Passenger

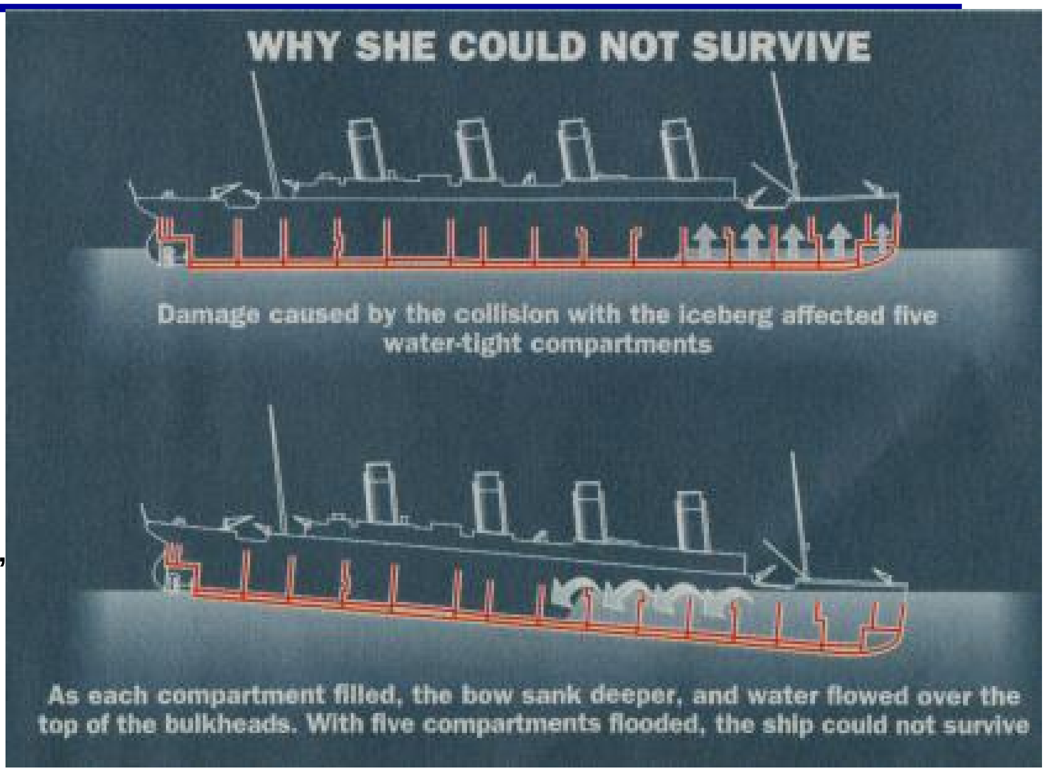
- Gradual deceleration and grinding noise like a thousand marbles.
- A "grounding" from the bottom of the ship.





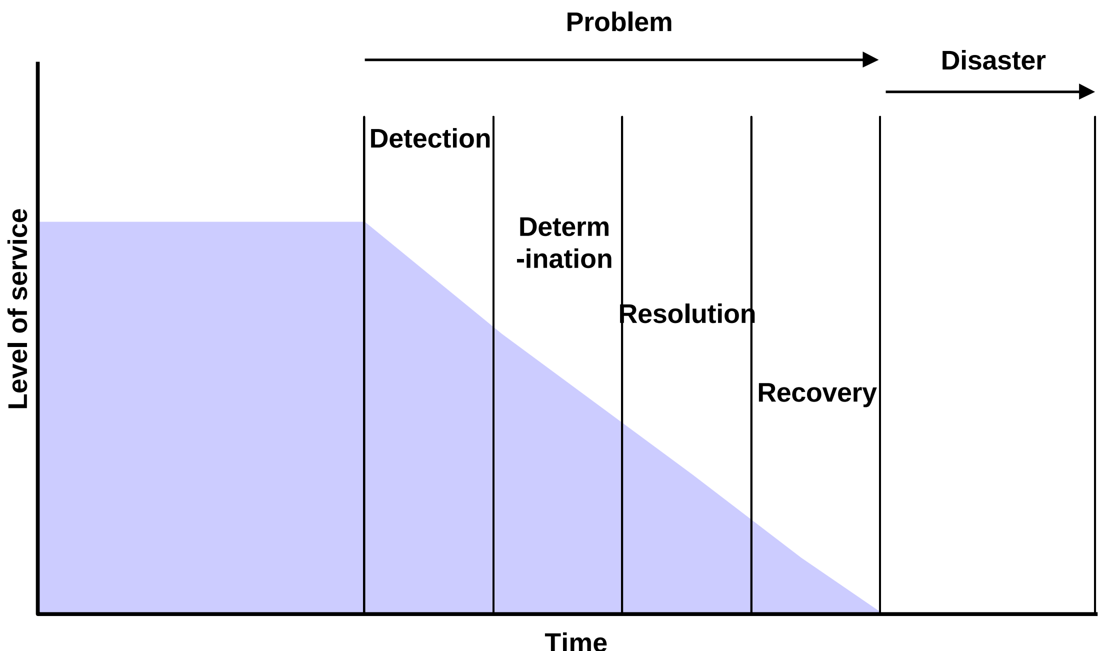
Two assessment groups surveyed for damage. Bruce Ismay made fateful decision to prove *Titanic* could save herself.

- First group inaccurate report.
- Ismay's dilemma and options.
- Second group returned
  - (architect and carpenter).
- First wireless to White Star office in NY.
  - "TITANIC PROCEEDING TO HALIFAX. PASSENGERS WILL PROBABLY LAND THERE WEDNESDAY; ALL SAFE. SMITH"
  - True at 11:53 pm.
- Pumps not keeping up with flooding.
- Architect predicted 2 hours.



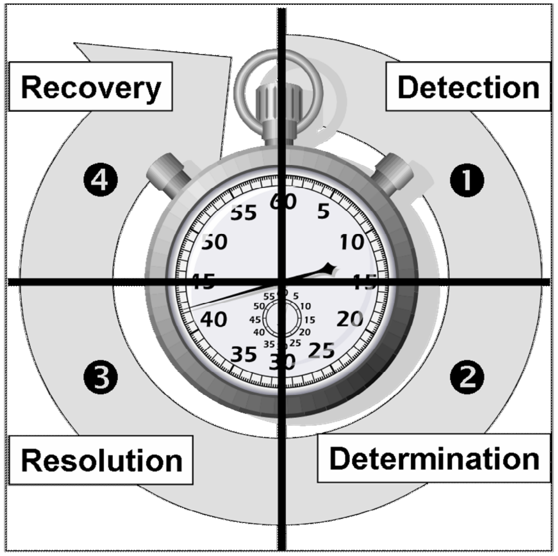
In the operating stage of today's IT projects you need to be prepared for on-line operation and beyond:

- Deliver the level of service as defined by service-level agreements that provide the guidelines to follow.
- Prevent problems from occurring that could disrupt this level of service.
- Recover the service-delivery environment from an outage or problem in the shortest time possible, through rapid problem management, and restore the on-line operation to the agreed level of service.



In the operating stage the project team can minimize risks with the following techniques:

- **Ensure the business/operations refine SLAs, and adhere these.**
- **Structure support for holistic client view of service, avoid technology silos, assign operations sole responsibility.**
- **Build problem-management processes around recovery clock.**
- **Base proactive problem-avoidance around early warning system.**
- **Synthesize/route timely feedback to decision-makers.**



Page 74, Fig 9.1

And take a comprehensive approach to organization, processes, and tools, a basis for continuous availa

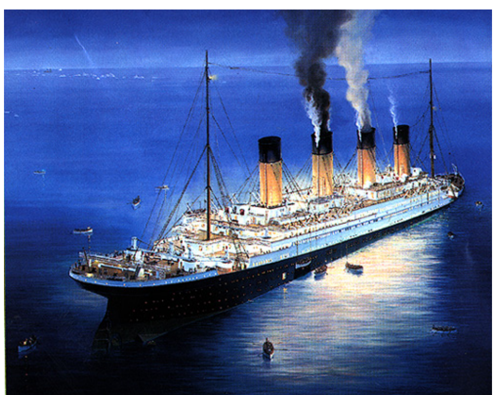
BEST PRACTICES

- Monitor strategic components critical to availability.
- After implementation monitor whole environment.
- Investigate environmental anomalies quickly.
- Identify meaningful metrics “User outage minutes” vs 99.999%.
- Re-evaluate initial business case with returns and metrics.
- Avoid claiming a project success too soon.

Officers and crew operated in state of disbelief unable to perform effective recovery. Panic ensued amongst passengers.

- Disaster assessment - 20 mins
- 65 mins before lifeboats ordered filled.
- Hierarchical structure, physical segregation, skeptical crew impeded information flow.
- Passengers got up, went back to bed.
- First life-boat left half full reluctance to get in.
- Launching 16 lifeboats took over 90 minutes.
- Recovery plan would have been poorly executed.

Page 109, Fig 14.2




THE NEW YORK HERALD.

THE TITANIC SINKS WITH 1,800 ON BOARD; ONLY 675, MOSTLY WOMEN AND CHILDREN, SAVED

MOST APPALLING DISASTER IN MARINE HISTORY OCCURS WHEN WORLD'S LARGEST STEAMSHIP STRIKES GIGANTIC ICEBERG AT NIGHT

Scores of World's Most Widely Known Persons, Including Colonel John Jacob Astor and His Wife, William T. Stead and Isidor Straus Among Those Whose Fate Is in Doubt.

Evacuation in lifeboats (#s) many of the early launched lifeboats were half empty

Boat #	Time of launch	Total People
6	12:55	28
8	1:10	39
10	1:20	55
12	1:25	42
14	1:30	63
16	1:35	56
2	1:45	26*
4	1:55	40
D	2:05	44
B	Floated off	

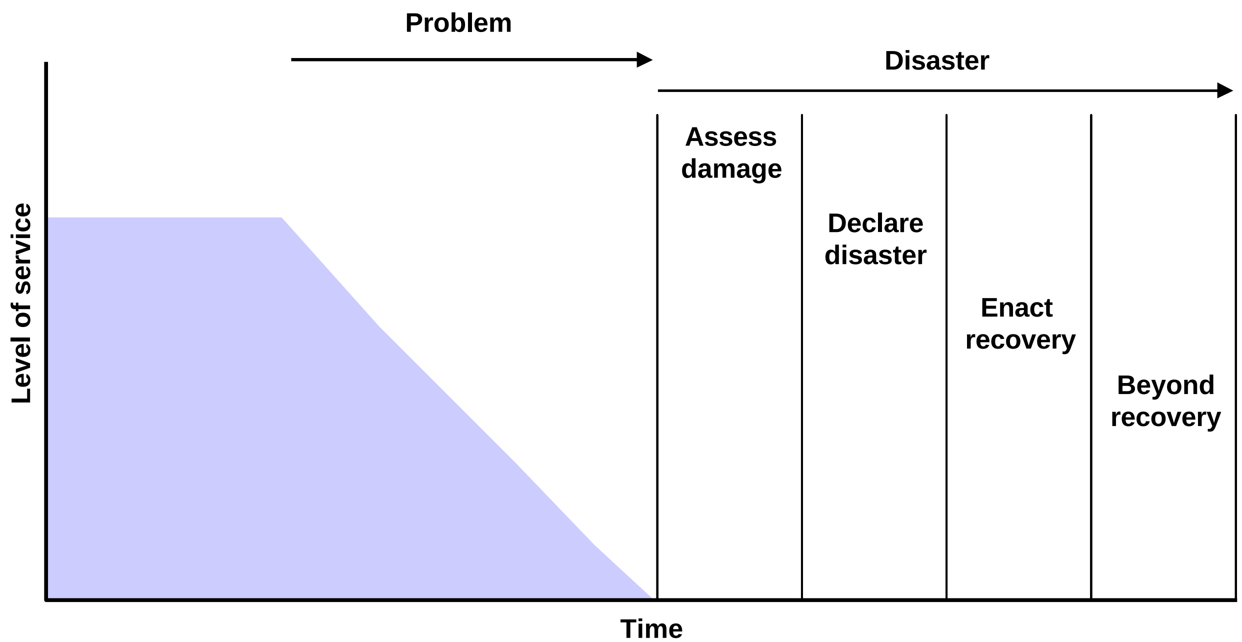
Boat #	Time of launch	Total People
7	12:45	27
5	12:55	41
3	1:00	50
1	1:10	12
9	1:20	56
11	1:25	70
3	1:35	64
4	1:35	70
C	1:40	71
A	Floated off	

Regular boats 65 person capacity
Emergency boats with 40 person capacity

Launching 16 lifeboats took over 90 minutes.
The last 2 Englehardts were floated off upside down.

In today's world IT projects need to prepare for worst case scenarios. This includes:

- Disaster recovery plan
- Communication plan
- Institutionalized with the organization support structure



In the operating stage the project team can minimize risks with the following techniques:

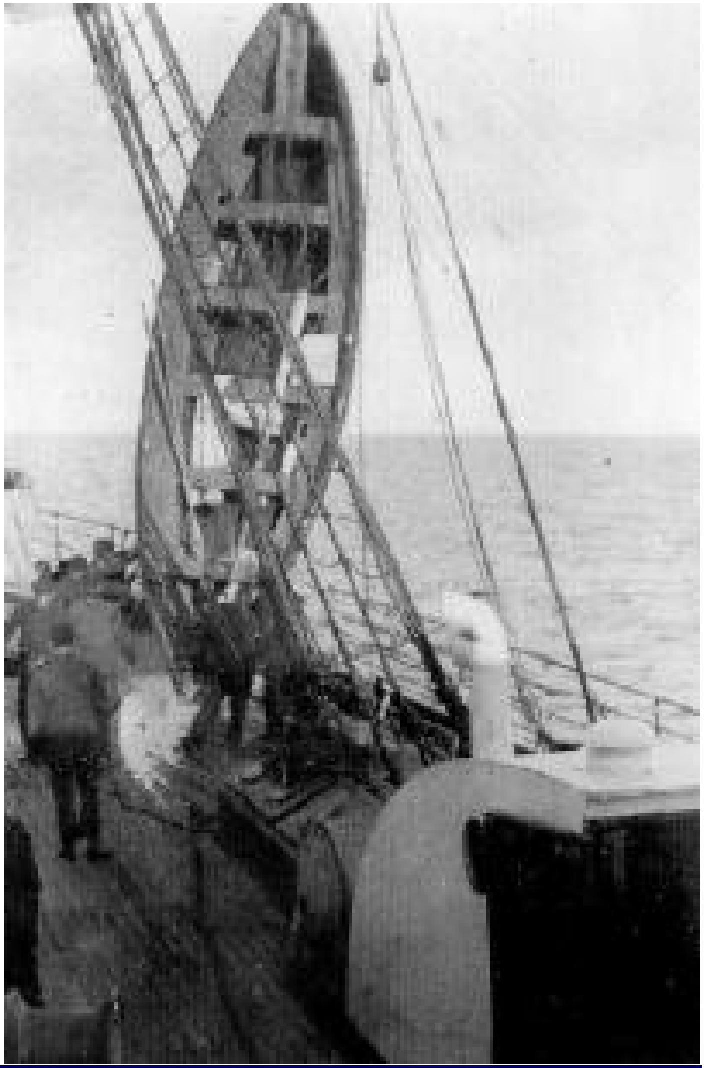
B EST PRACTICES

- Ensure disaster recovery enacted according to plan and without hesitation.
- Ensure disaster recovery plans accessible to organization.
- Nominate 1 group guardian (ops) of disaster recovery plan.
- Ensure staff adequately trained to follow disaster recovery plans.
- Practice and rehearse disaster recovery plans regularly.

U.S. and British Titanic inquiries were set up in competition to each other

- **President got no response from Carpathia, sent navy which failed to get further information**
- **U.S. Inquiry set up when disaster numbers known**
  - **Started one day after ship landed, Friday 19th April, 1912**
- **British Wreck Commissioner's Inquiry**
  - **Set up to start Monday, 22nd April, 1912**
- **Competition between two which more thorough**

http://www.titanicinquiry.org/



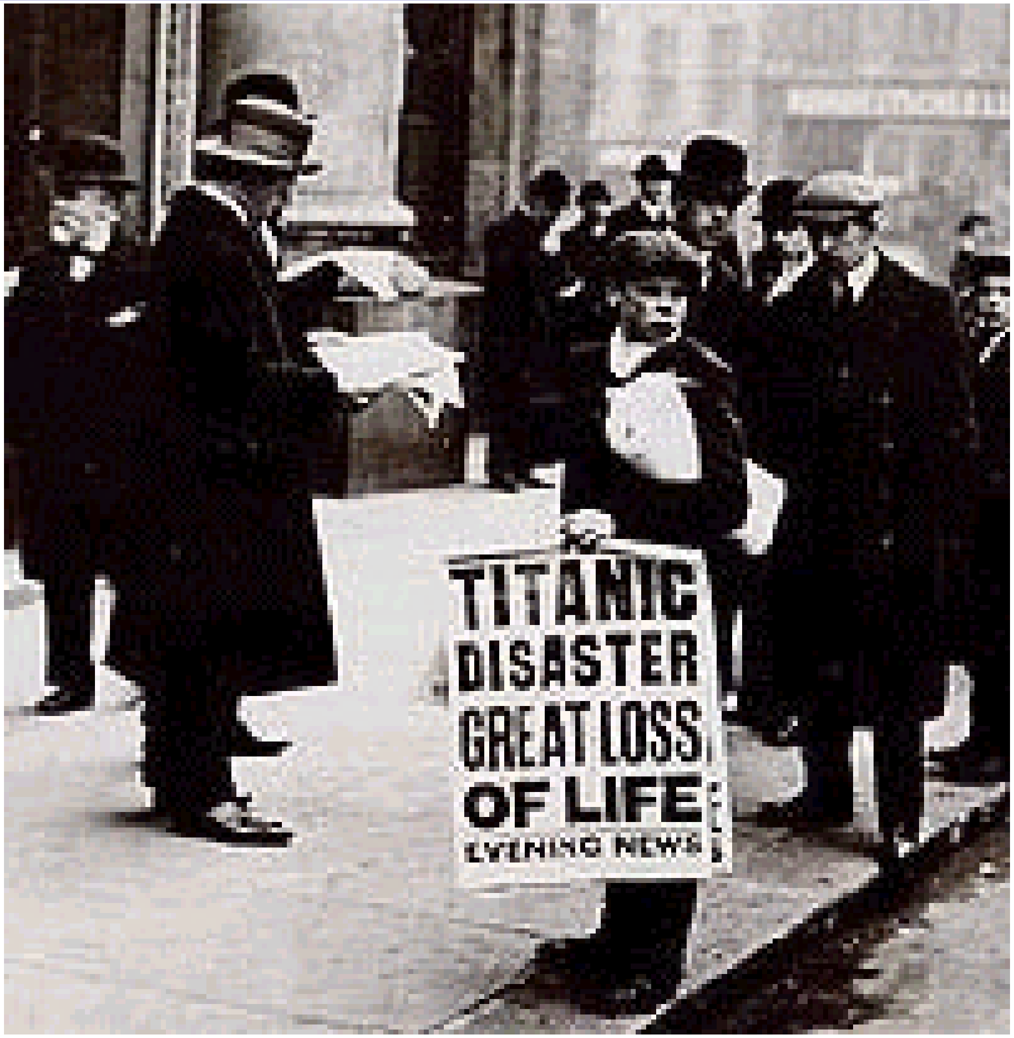
U.S. Senate Inquiry identifies that Ismay is desperate to get back to the UK

- **Forced Bruce Ismay to remain in U.S. & grilled him over role as director, and relationship with captain, officers and crew.**
- **Day 11 - Testimony of Joseph Bruce Ismay - Recalled.**
- **Message received by Mr. Franklin on April 17:**
  - ***"Most desirable Titanic crew aboard Carpathia should be returned home earliest moment possible. Suggest you hold Cedric, sailing her daylight Friday, unless you see any reason contrary. Propose returning in her myself. Please send outfit of clothes, including shoes, for me to Cedric. Have nothing of my own. Please reply. "***

Page 114, Fig 15.3

Following *Titanic*'s disaster, both the U.S. and British authorities conducted post-mortems. The U.S inquiry came close to uncovering the cover up.

- U.S. inquiry called 82 witnesses including specialists and technical experts.
- Determined the ship had reached top speed through the ice-field with no attempt to slow down.
- Recommended lifeboat space for every person on all ships from U.S. ports; lifeboat drills for passengers and crew; adequate manning of boats; and 24-hour operation of radiotelegraph equipment.



British Inquiry clears White Star and shifts blame


The New York Times.

TITANIC SINKS FOUR HOURS AFTER HITTING ICEBERG; 866 RESCUED BY CARPATHIA, PROBABLY 1250 PERISH; ISMAY SAFE, MRS. ASTOR MAYBE, NOTED NAMES MISSING

- **Captain Stanley Lord blamed:**
  - **Took the brunt of the British inquiry**
  - **Did not respond to Titanic**
  - **Lord lost his job for failure to act**
- **British Board of trade blamed:**
  - **Failed to upgrade lifeboat regulations according to growth**


THE NEW YORK HERALD.

THE TITANIC SINKS WITH 1,800 ON BOARD; ONLY 675, MOSTLY WOMEN AND CHILDREN, SAVED

MOST APPALLING DISASTER IN MARINE HISTORY OCCURS WHEN WORLD'S LARGEST STEAMSHIP STRIKES GIGANTIC ICEBERG AT NIGHT

Pressures on British Inquiry to save White Star from bankruptcy

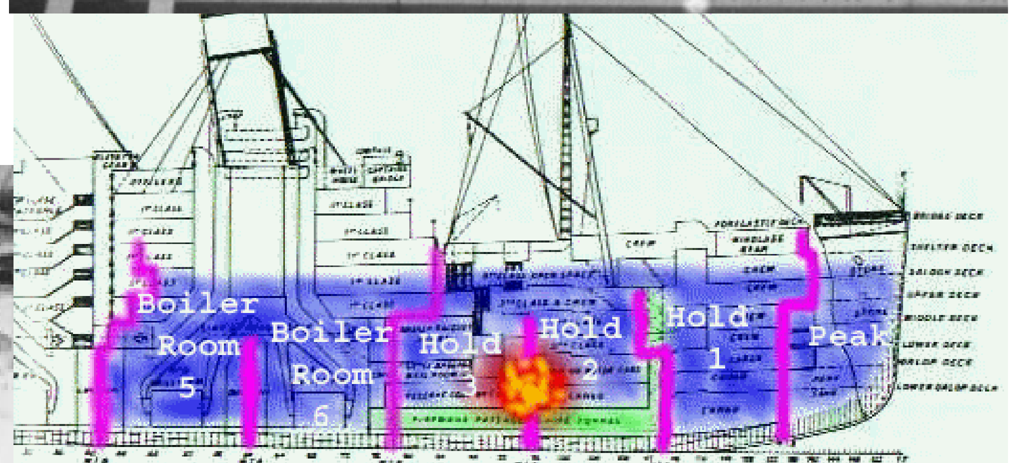
- **Worried about German competition.**
- **The arms race drove the need for ocean liners**
  - **Kiel canal built in 1907 in anticipation for a great war in Europe**
  - **Dreadnought race**
- **Saw European war of 1914 looming**
  - **Needed large ships for troops and materials.**
- **Today private lawsuits would have brought White Star.**
- ***Titanic* unnerved western society's faith in technology progress.**

Fate of Olympic – went through a refit and served distinguished 24 year career before being scraped

- Already in service for 10 months difficult to modify
- Provided with full compliment of lifeboats
- Dry-docked for installation of inner watertight skin, Watertight bulkheads extended up to "B" deck
- Spring 1913 back in service
- Evaded WW1 torpedoes

Fate of Britannic – went through a refit, with substantial increase in lifeboats

- Britannic, served as hospital ship and sunk by mine in 1916
- New giant sized lifeboat davits capable of holding 3 lifeboats
- Full compliment of lifeboats
- Bulkheads top to bottom



Lessons learned - what can you take from all this. Your IT project is little different to *Titanic's* project.

- **Roots of *Titanic's* disaster in project, compromises to safety features and elevation of expectations allowed business pressures to override operational procedures.**

- **This lead to numerous violations of the "rules of good seamanship". Probability of failure very high because of inability to recognize introduced risks.**

Why do projects fail? Recap of Standish group

Project Success Factors

1. User Involvement
2. Executive Management Support
3. Clear Statement of Requirements
4. Proper Planning
5. Realistic Expectations
6. Smaller Project Milestones
7. Competent Staff
8. Ownership
9. Clear Vision & Objectives
10. Hard-Working, Focused Staff
11. Other

Project Impaired Factors

1. Incomplete Requirements
2. Lack of User Involvement
3. Lack of Resources
4. Unrealistic Expectations
5. Lack of Executive Support
6. Changing Requirements & Specifications
7. Lack of Planning
8. Didn't Need It Any Longer
9. Lack of IT Management
10. Technology Iliteracy
11. Other

•Why we have the 9 knowledge areas from PMBOK

Requirements	Design	Build	Test	Implement	Live

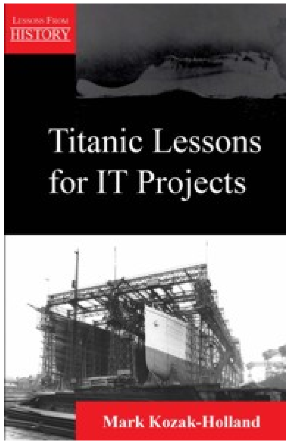
Mitigate risk from the project outset through the application of best practices at each IT project stage

- **100s of best practices listed by project stage:**
  1. **Project life cycle, deliverables and iteration**
  2. **Business case for an online operation**
  3. **Mission critical application dependencies**
  4. **Architectural models and frameworks**
  5. **Enterprise application integration and interdependency of data**
  6. **Organizational and process elements**
  7. **Change and problem management**
  8. **Use of metrics, service levels objectives and agreements**
  9. **Use of automation and Early Warning Systems**
  10. **Disaster recovery & business continuity plans**

Implementation of one best practice can *save thousands of dollars*

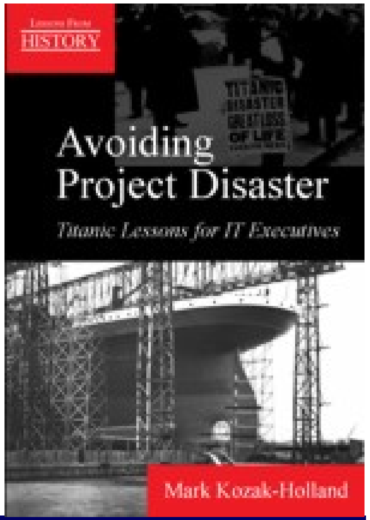
Executive Sponsor

Bruce Ismay



Project Team

Thomas Andrews



Questions

This presentation will be available on-line

Mark is available to work with you and your organization (PMs and Executives), speak or run workshops

Credits and Sources

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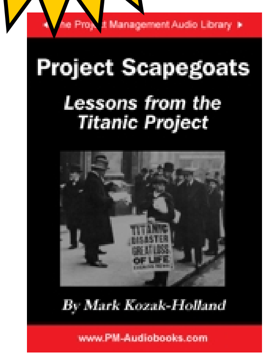

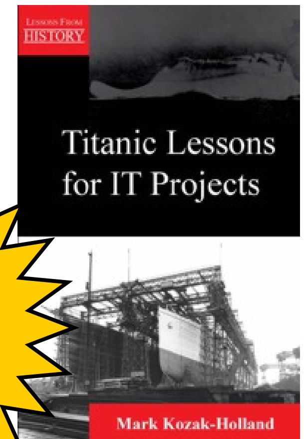

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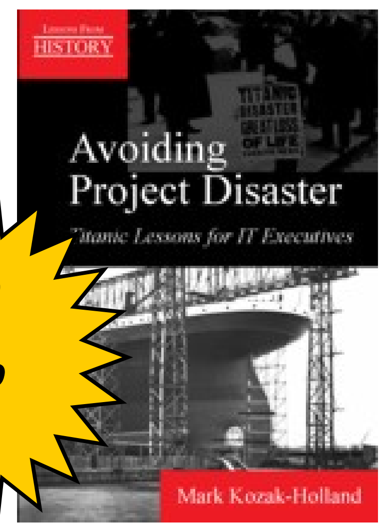

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i n v e n t

The World Of Project Management Has Changed

Old way	New way
IT owns all responsibility for project	Shared responsibility for the business
Strong business case not required	Robust business cases and cost benefit analysis are a must
Project management methodology seen as too bureaucratic	Project management seen as a prerequisite for successful delivery
IT must deliver benefits	IT must manage costs while business measures benefits
Anyone can manage a project	Project management is a specialized skill

39493

Source: Forrester Research, Inc.