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Cost of Risk in Healthcare:

What to Measure, How to Understand What Matters

Singapore Healthcare Enterprise Risk Management Congress 2014

Agenda

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1. About Tigerair

2. Cost of Risks

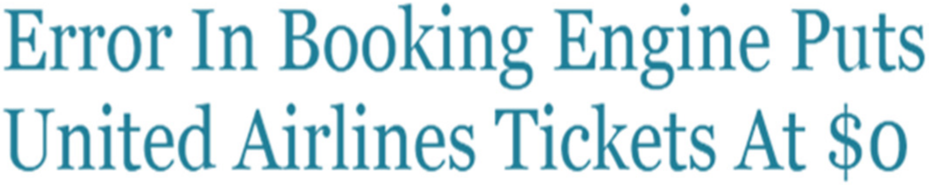
3. Managing Risks

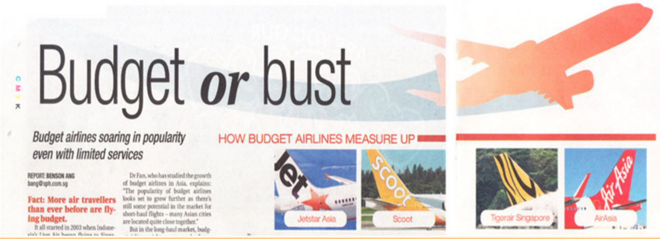
4. Concluding remarks

1. About Tigerair

Our challenges

- Extremely thin margins (make a guess!)
- Intense competition – substantial increase in capacity in Asia; dynamic and 'commoditised'
- B-to-C operations – complex; many touch-points and manual processes
- Lean workforce + dependency on 3rd parties (ground services, IT) → limited visibility and control
- <u>Equity</u> structure versus <u>Operating</u> structure – governance is challenging without control!


Error In Booking Engine Puts United Airlines Tickets At $0


Budget or bust

Budget airlines soaring in popularity even with limited services

REPORT: BENSON ANG
bang@sph.com.sg

Fact: More air travellers than ever before are flying budget.

It all started in 2003 when Indonesia's Lion Air began flying to Singa-

Dr Fan, who has studied the growth of budget airlines in Asia, explains: "The popularity of budget airlines looks set to grow further as there's still some potential in the market for short-haul flights – many Asian cities are located quite close together."

But in the long-haul market, budg-

HOW BUDGET AIRLINES MEASURE UP

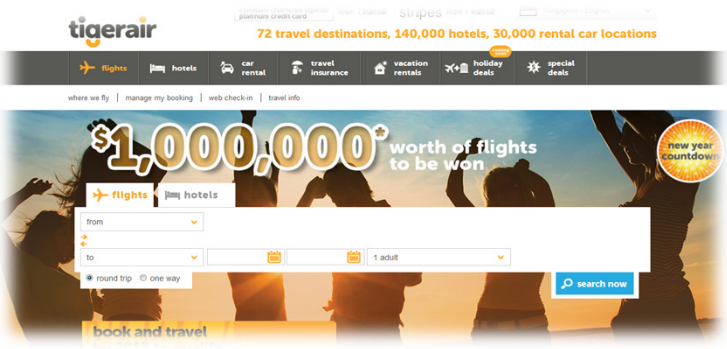
Risk is *real* in our business

Compliance risks:

- Safety and Security
- Air Operator Certificate (AOC) requirements
- Consumer protection laws (competition, spam, privacy)

Market and Financial risks:

- Fuel – 40% of operating costs
- Forex – USD expense vs SGD revenue
- Investment in capacity – aircraft and routes


standard chartered tigerair platinum credit card
login | sign up
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login | sign up
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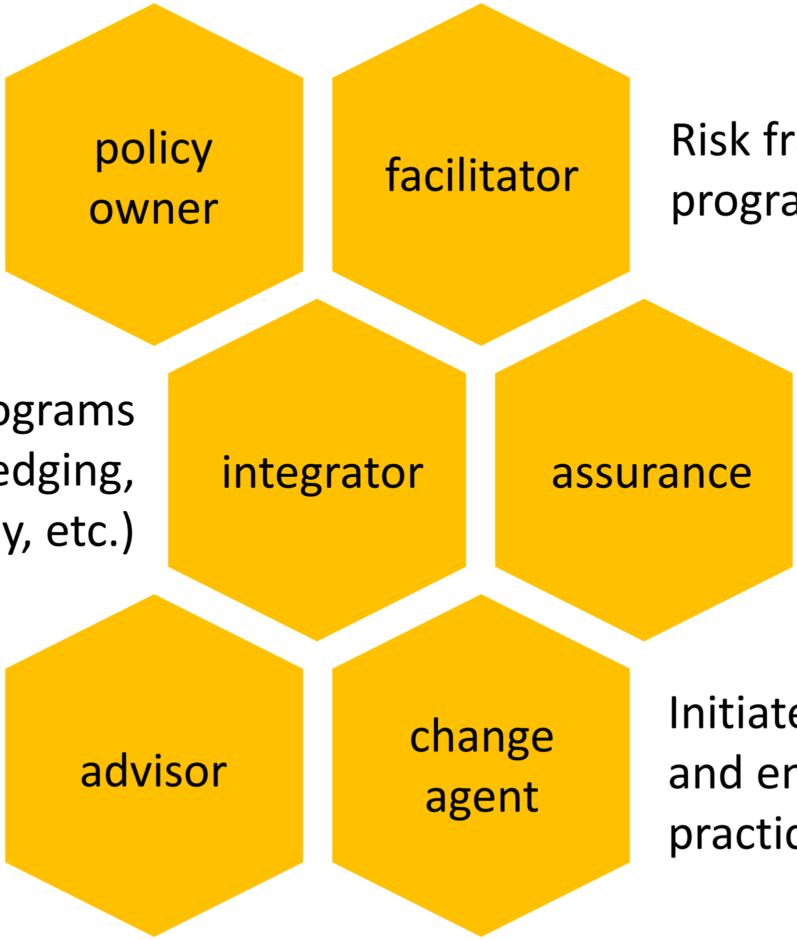
72 travel destinations, 140,000 hotels, 30,000 rental car locations
flights
hotels
car rental
travel insurance
vacation rentals
holiday deals
special deals
where we fly | manage my booking | web check-in | travel info
$1,000,000* worth of flights to be won
new year countdown
flights
hotels
from
to
1 adult
round trip
one way
search now
book and travel

Commercial & Operational risks:

- Direct channel dependency
- Decentralised, outsourced operations
- Commercial decisions → operational complexity and risks

Role of ERM in Tigerair



Policy, processes, tools

policy owner

facilitator

Risk framework, compliance programs (e.g. PDPA)

Integrate risk programs (e.g. Insurance, hedging, safety and security, etc.)

integrator

assurance

Internal audit, controls assurance

To the Board and Management

advisor

change agent

Initiate process improvement and enhance risk management practices

2. Cost of Risks

Important questions…

What *are the top risks we should be worried about?*

Who *are affected by risks and their consequences (stakeholders)?*

How *do these risks affect us?*

Top Global Risks

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Social Media

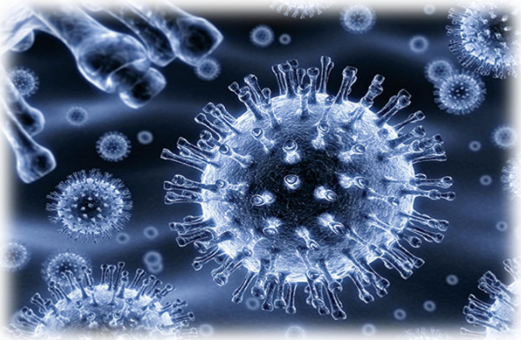
Natural Catastrophe

Geo-political

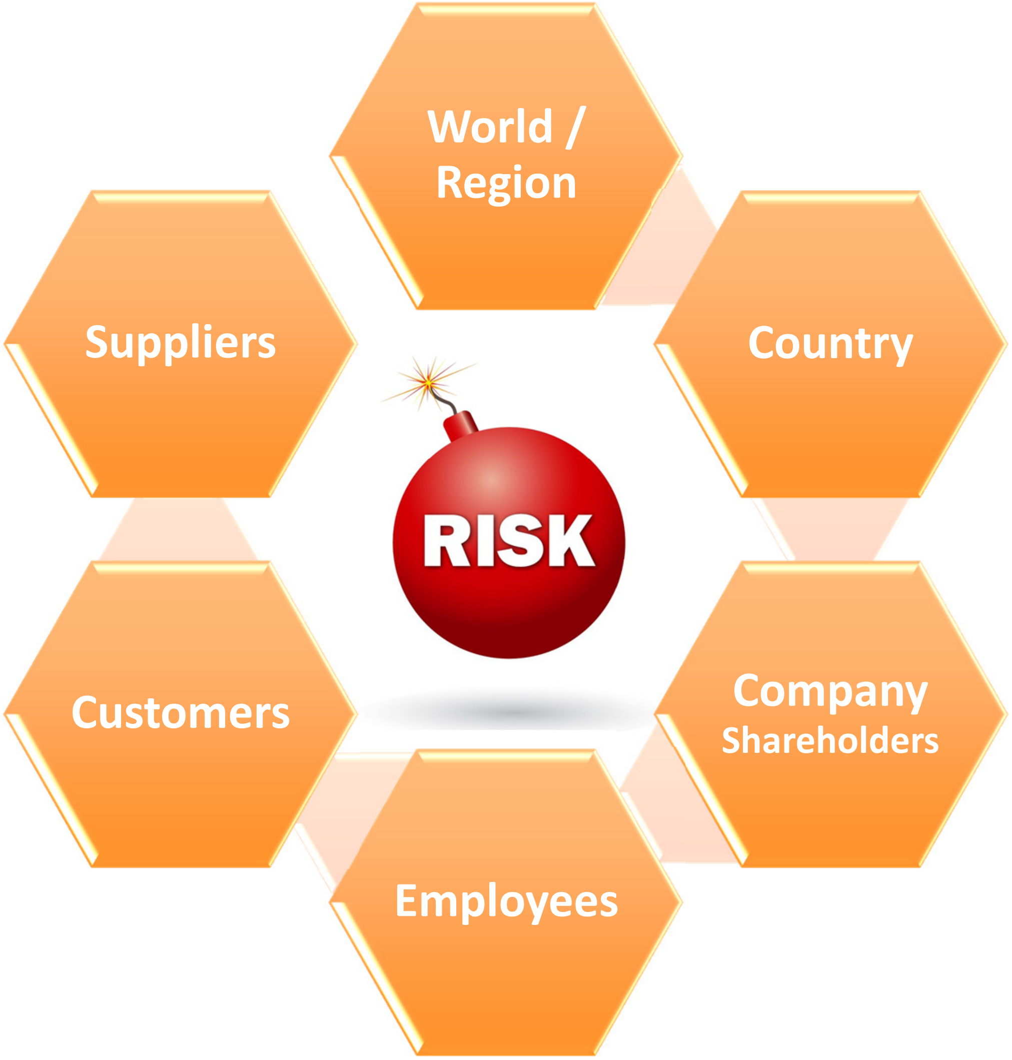
Cyber crime

Economic Instability

Pandemics



‘Victims’ of risks…



World / Region

Country

Company Shareholders

Employees

Customers

Suppliers

RISK

Catastrophic risks

*"The World Bank has estimated 1,425 billion baht (**US$45.7 Bn**) in economic damages and losses due to flooding, as of 1 December 2011"*

*Haiyan killed at least **5,500 people**, left more than **1,700** missing, displaced as many as four million and destroyed around **$563 million** worth of crops and infrastructure…. The government's initial estimates point to a reconstruction cost of as much as 250 billion pesos (**$5.7 billion**).*

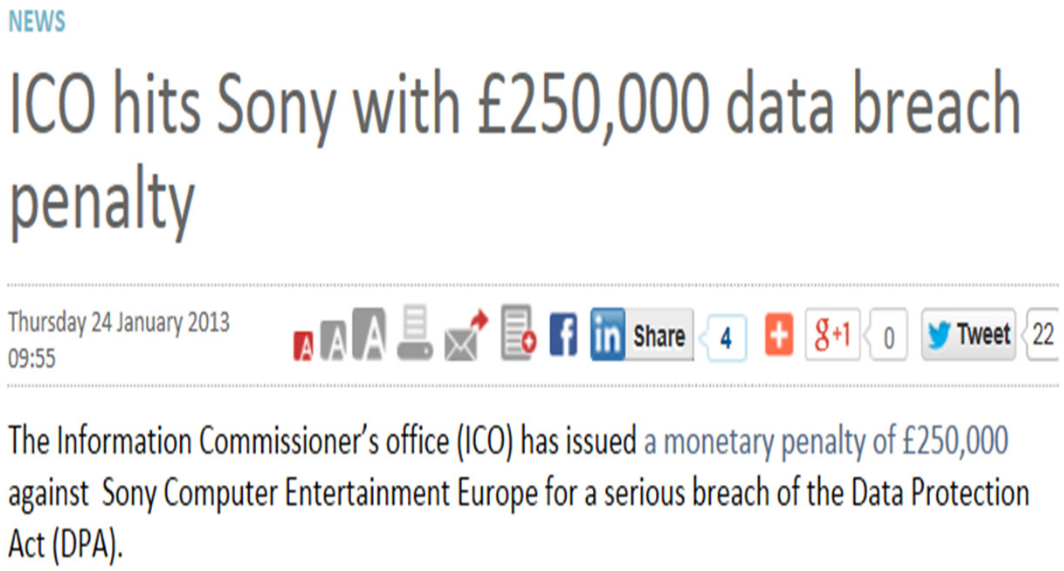
*"…So if one adds $7.6 trillion of "actual" losses and $5.2 trillion in "avoided" losses, there's an estimated grand total of **$12.8 trillion** in costs for the crisis."*

~ Businessweek on the cost of the financial crisis on the US economy between 2008 - 2012

THE TI

ehman collapse sends hockwave round worl

Cost of risks to companies

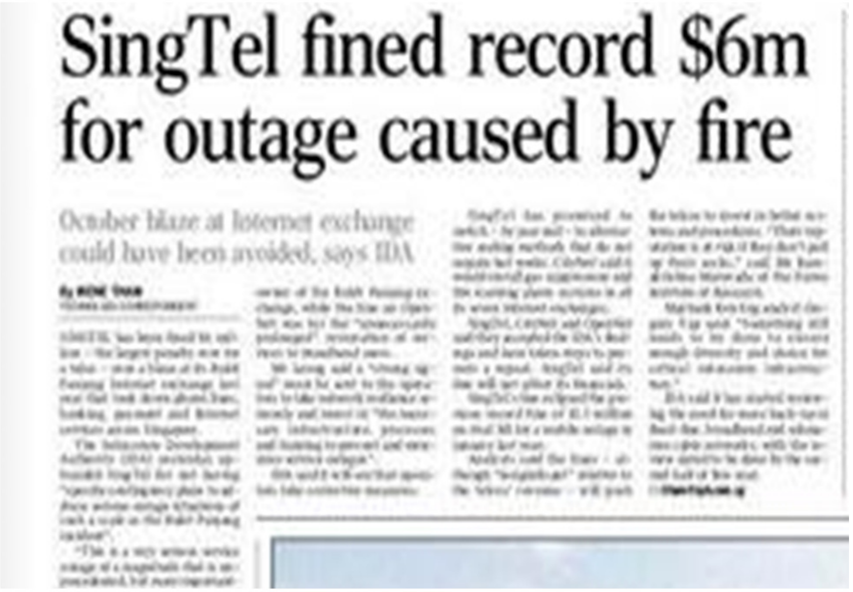


NEWS

ICO hits Sony with £250,000 data breach penalty

Thursday 24 January 2013
09:55

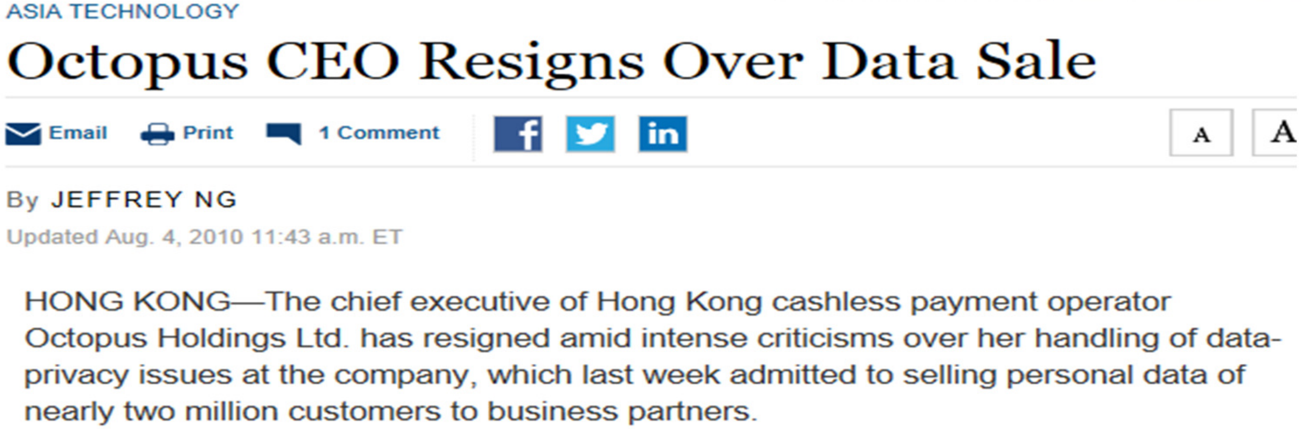
The Information Commissioner's office (ICO) has issued a monetary penalty of £250,000 against Sony Computer Entertainment Europe for a serious breach of the Data Protection Act (DPA).



SingTel fined record $6m for outage caused by fire

October blaze at Internet exchange could have been avoided, says IDA

[illegible]



ASIA TECHNOLOGY

Octopus CEO Resigns Over Data Sale

By JEFFREY NG
Updated Aug. 4, 2010 11:43 a.m. ET

HONG KONG—The chief executive of Hong Kong cashless payment operator Octopus Holdings Ltd. has resigned amid intense criticisms over her handling of data-privacy issues at the company, which last week admitted to selling personal data of nearly two million customers to business partners.

Cost of risks to companies

*"The direct cost of cyber risk due to IT failures is usually easy to estimate. The average business loses **545 man-hours** each year, and a recent survey conducted by CA technologies found that the cost of downtime is going up; last year it was estimated at **$138,000 an hour**, up from $98,000 per hour in 2010. The **indirect costs** of cyber risk can be even higher and more far reaching."*

~ Tolman and Wiker

‘People Cost’ of risks

NTUC WORKER
BRANDED A RACIST
RACIST
FIRE!!!
Amy Cheong

Missed Alarms and 40 Million Stolen Credit Card Numbers: How Target Blew It

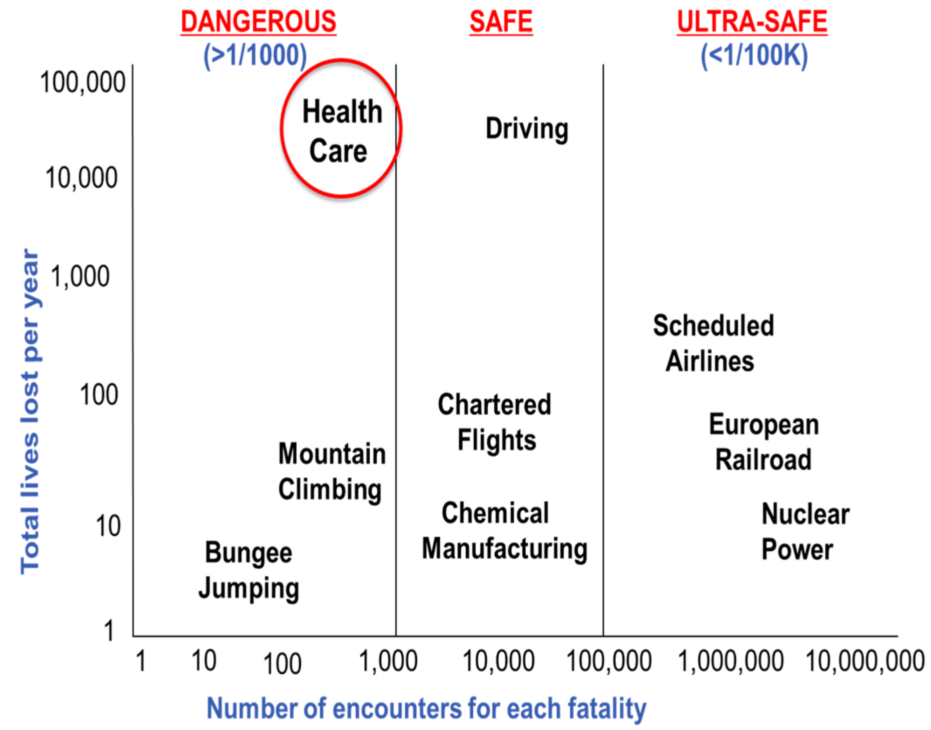
Source: Sharp Thinking Newsletter Summer/Autumn 2007

An explosion at a factory in eastern China has killed at least ***68 people****, according to Chinese state media.*

Karen Daley, an emergency room nurse at a Boston teaching hospital, was infected with HIV and Hepatitis C after being pricked by a needle.

3. Managing Risks

A ‘risky business’…



Lucian Leape, 2/2001

"If you were admitted to hospital tomorrow in any country... your chances of being ***subjected to an error in your care would be something like 1 in 10****. Your* ***chances of dying due to an error in health care would be 1 in 300****… This compared with a risk of dying in an air crash of about 1 in 10 million passengers”*

– Sir Liam Donaldson, WHO envoy for patient safety

"Black Week" for aviation

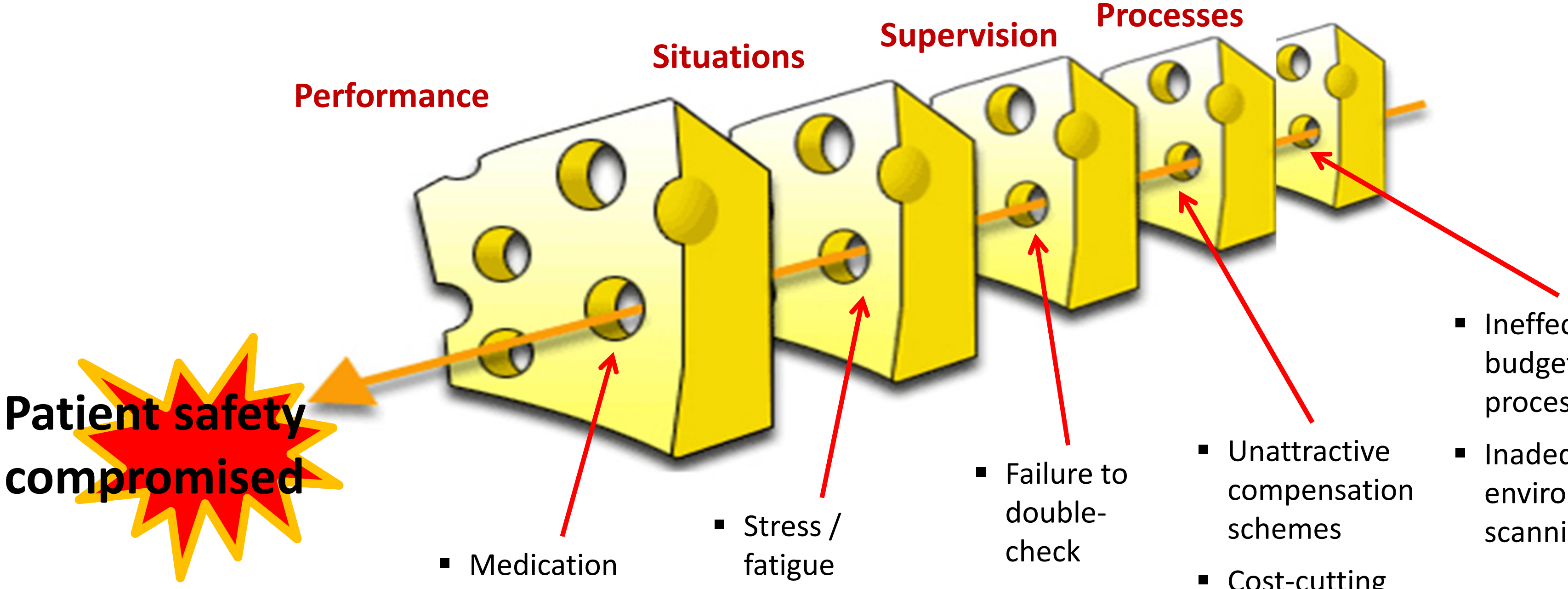
"Our number one priority is safety, and despite the events of the past seven days, flying is safe"
~ IATA Dir-Gen Tony Tyler

MH17

GE222 (TransAsia)

AH5017 (Air Algérie)

Reason's 'Swiss Cheese'



Performance

Situations

Supervision

Internal Processes

Leadership and planning

Patient safety compromised

- Medication error

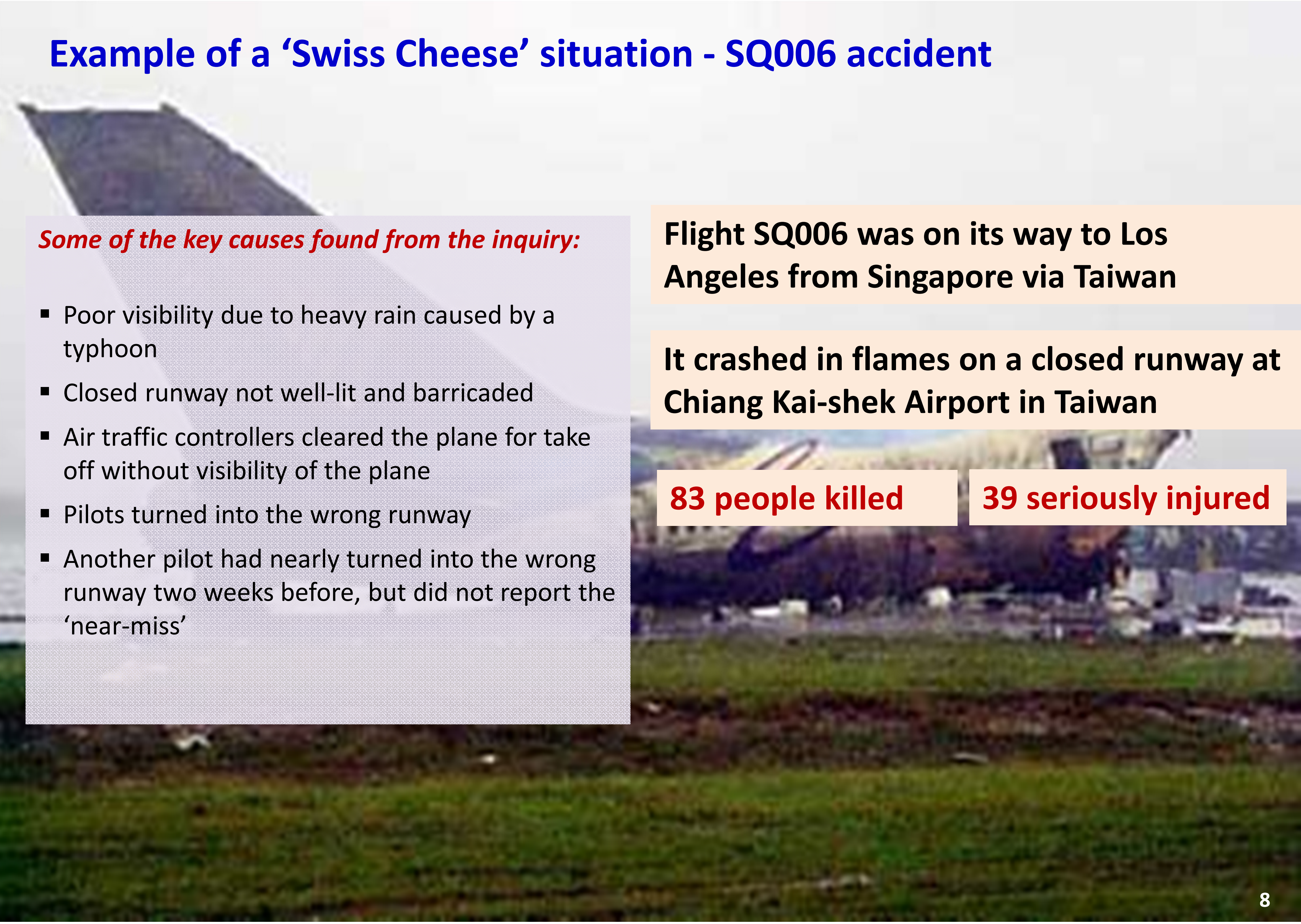
- Stress / fatigue
- Distractions (e.g. phone call)

- Failure to double-check
- Lack of supervision

- Unattractive compensation schemes
- Cost-cutting measures

- Ineffective budgeting process
- Inadequate environmental scanning done

Example of a ‘Swiss Cheese’ situation - SQ006 accident



Some of the key causes found from the inquiry:

- Poor visibility due to heavy rain caused by a typhoon
- Closed runway not well-lit and barricaded
- Air traffic controllers cleared the plane for take off without visibility of the plane
- Pilots turned into the wrong runway
- Another pilot had nearly turned into the wrong runway two weeks before, but did not report the ‘near-miss’

Flight SQ006 was on its way to Los Angeles from Singapore via Taiwan

It crashed in flames on a closed runway at Chiang Kai-shek Airport in Taiwan

83 people killed

39 seriously injured

Practical risk management

People:

- Right capabilities, 'right-sized' in the right places
- Alignment and teamwork
- Vigilance
- Communication

Processes:

- Updated SOPs
- Dynamic processes
- Compliance

Systems:

- IT configuration controls
- Access controls / SOD
- Analytics and Exception reports

Warning signs

SLA Procurement Fraud (2008 - 2010)

- Opulent lifestyle
- Large amounts of contracts to a few of the same vendors
- No observable ‘deliverables’ for verification

APB Fraud (1999 - 2003)

- Habitual gambler and casino VIP
- Owned a Mercedes-Benz and properties
- Gifts totaling $300,000 to various people

Risk communication

Toyota Recall Crisis (2010)
According to some published articles, Toyota insiders have commented on how the company was **"run like CIA"** – everything was secretive and strictly on a **"need to know" basis**.

Challenger Space Shuttle (1986)
Safety concerns raised by outsourced engineers were **overridden by program management**.

BP Deepwater Horizon (2010)
Outsourced engineering firm Halliburton witness alleged that BP management had **ignored warnings of blowout risk**.

“Cockpit culture”…part I

Korean Air Cargo Flight 8509 (1999)

Captain Park was an experienced air-force pilot (a military Colonel)

Investigative report said that Park was irritated by their late departure from London. He said to the FO: “Make sure you understand what ground control is saying before you speak.”

Pilot over-banked the aircraft; whilst the warnings would have been obvious to other crew members, **no one spoke up**.

Did cockpit culture contribute to the accident?

"Cockpit culture"…part II

Asiana Airlines 214 (2013)

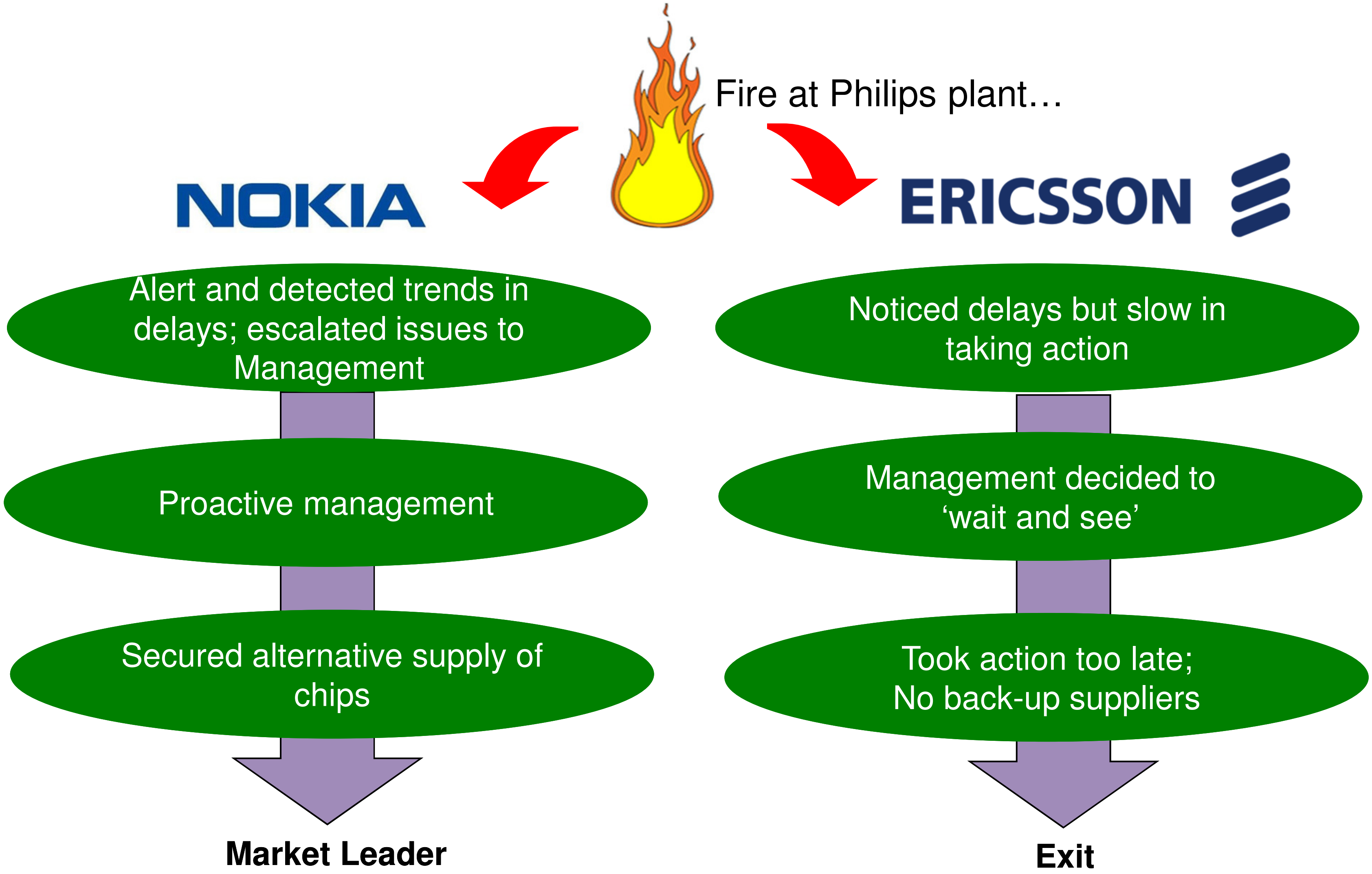
LIVE
HL7742
BREAKING NEWS
BOEING 777 CRASHES AT SFO
ON THE PHONE: BRUCE MILAN, FORMER UNITED PILOT

A hearing into the July 6 crash that killed three people and injured more than 180 people in San Francisco revealed that one of the pilots said he did not feel he had the authority to abort a low-speed landing as people at a "higher level" had to make that decision.

"It's a reality that within our country there is a leaning toward a patriarchal culture and many pilots work and fly within the strict military order," Chief Executive Kim Soo-cheon told reporters on Monday.

Note: the final investigation report pointed to other pilot-related issues as being causes of the accident

Responding to risk



Fire at Philips plant…

NOKIA

Alert and detected trends in delays; escalated issues to Management

Proactive management

Secured alternative supply of chips

Market Leader

ERICSSON

Noticed delays but slow in taking action

Management decided to ‘wait and see’

Took action too late;
No back-up suppliers

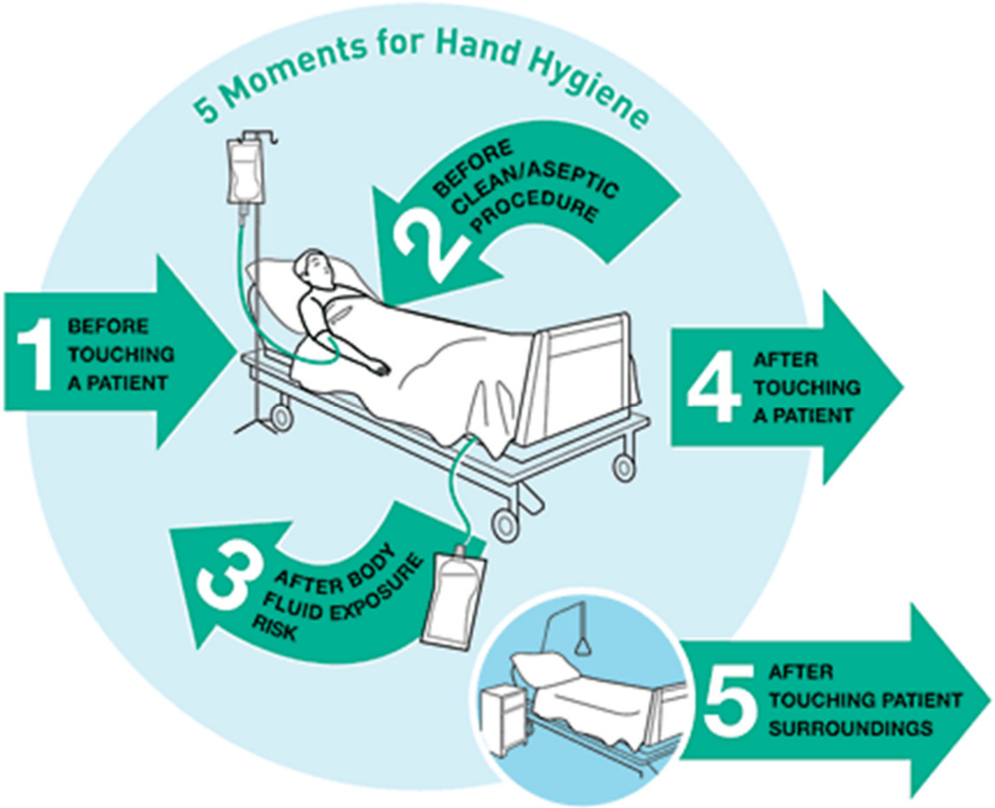
Exit

Compliance with procedures

"Speaking bluntly, we observe ***routine safety processes****, such as hand hygiene, medication administration, and communication in care transitions,* ***failing routinely****"*

- Mark R. Chassin, MD, FACP, MPP, MPH President of The Joint Commission (Israel Journal of Health Policy Research)

Knowing, Understanding, Practising


5 Moments for Hand Hygiene
1 BEFORE TOUCHING A PATIENT
2 BEFORE CLEAN/ASEPTIC PROCEDURE
3 AFTER BODY FLUID EXPOSURE RISK
4 AFTER TOUCHING A PATIENT
5 AFTER TOUCHING PATIENT SURROUNDINGS

- **Knowing** and **Understanding** the rationale behind standard procedures

- **Complying** with standard procedures, for example:
  - Hand hygiene procedures
  - Lab safety procedures
  - Medication dispensing procedures

Consequence of non-compliance (1)

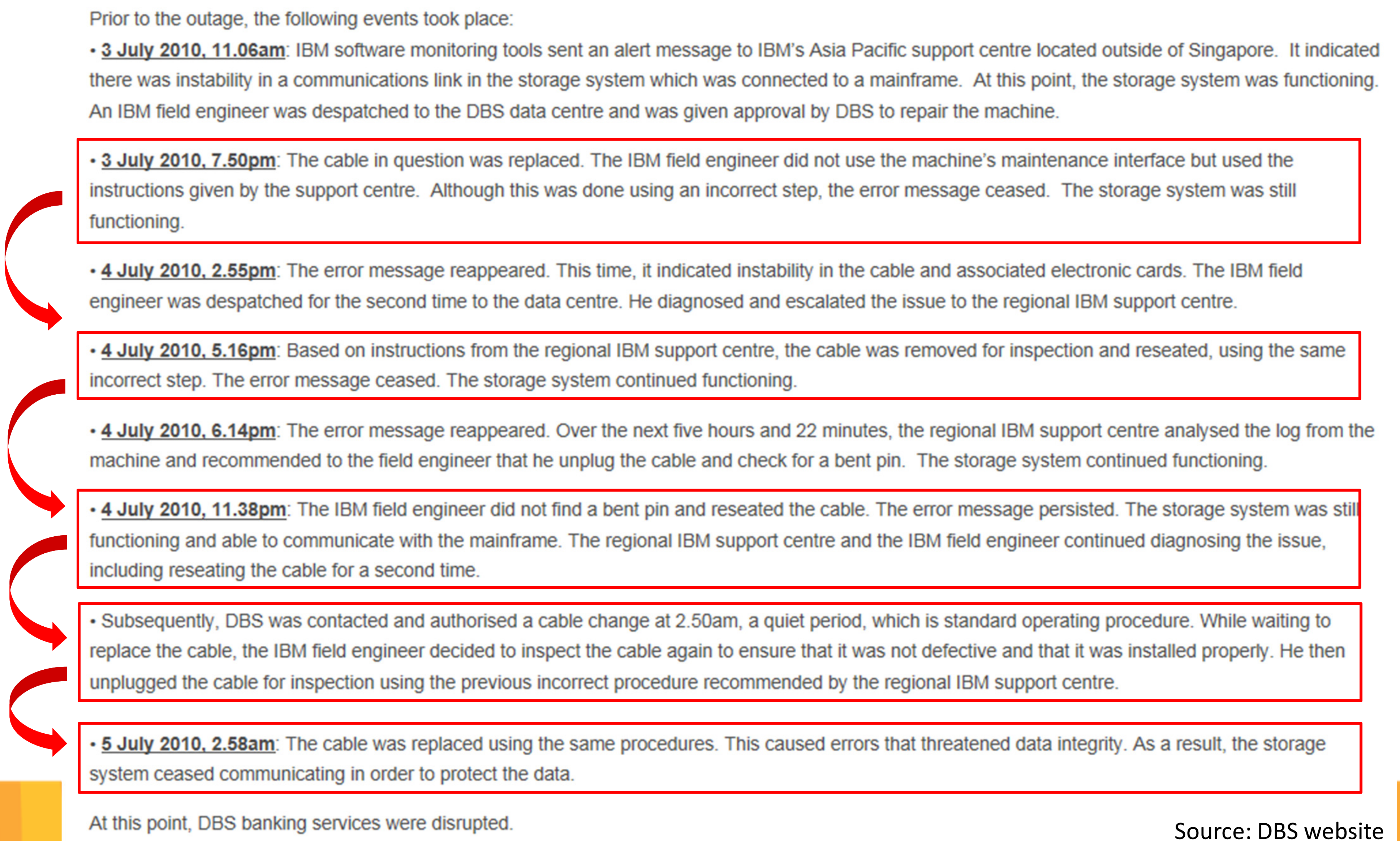
Wrong Site Surgery at Rhode Island Hospital

- A nurse marked a straight line down the patient's right forearm to the wrist rather than directly on the fingers because she didn't know where, exactly, the incisions would be made and did not want to be reprimanded.

- The surgeon did not verify the correct surgical procedures, including the site and side.

- The team failed to conduct a mandatory "time out“ on BOTH occasions.

Consequence of non-compliance (2)



Prior to the outage, the following events took place:

- **3 July 2010, 11.06am**: IBM software monitoring tools sent an alert message to IBM's Asia Pacific support centre located outside of Singapore. It indicated there was instability in a communications link in the storage system which was connected to a mainframe. At this point, the storage system was functioning. An IBM field engineer was despatched to the DBS data centre and was given approval by DBS to repair the machine.

- **3 July 2010, 7.50pm**: The cable in question was replaced. The IBM field engineer did not use the machine's maintenance interface but used the instructions given by the support centre. Although this was done using an incorrect step, the error message ceased. The storage system was still functioning.

- **4 July 2010, 2.55pm**: The error message reappeared. This time, it indicated instability in the cable and associated electronic cards. The IBM field engineer was despatched for the second time to the data centre. He diagnosed and escalated the issue to the regional IBM support centre.

- **4 July 2010, 5.16pm**: Based on instructions from the regional IBM support centre, the cable was removed for inspection and reseated, using the same incorrect step. The error message ceased. The storage system continued functioning.

- **4 July 2010, 6.14pm**: The error message reappeared. Over the next five hours and 22 minutes, the regional IBM support centre analysed the log from the machine and recommended to the field engineer that he unplug the cable and check for a bent pin. The storage system continued functioning.

- **4 July 2010, 11.38pm**: The IBM field engineer did not find a bent pin and reseated the cable. The error message persisted. The storage system was still functioning and able to communicate with the mainframe. The regional IBM support centre and the IBM field engineer continued diagnosing the issue, including reseating the cable for a second time.

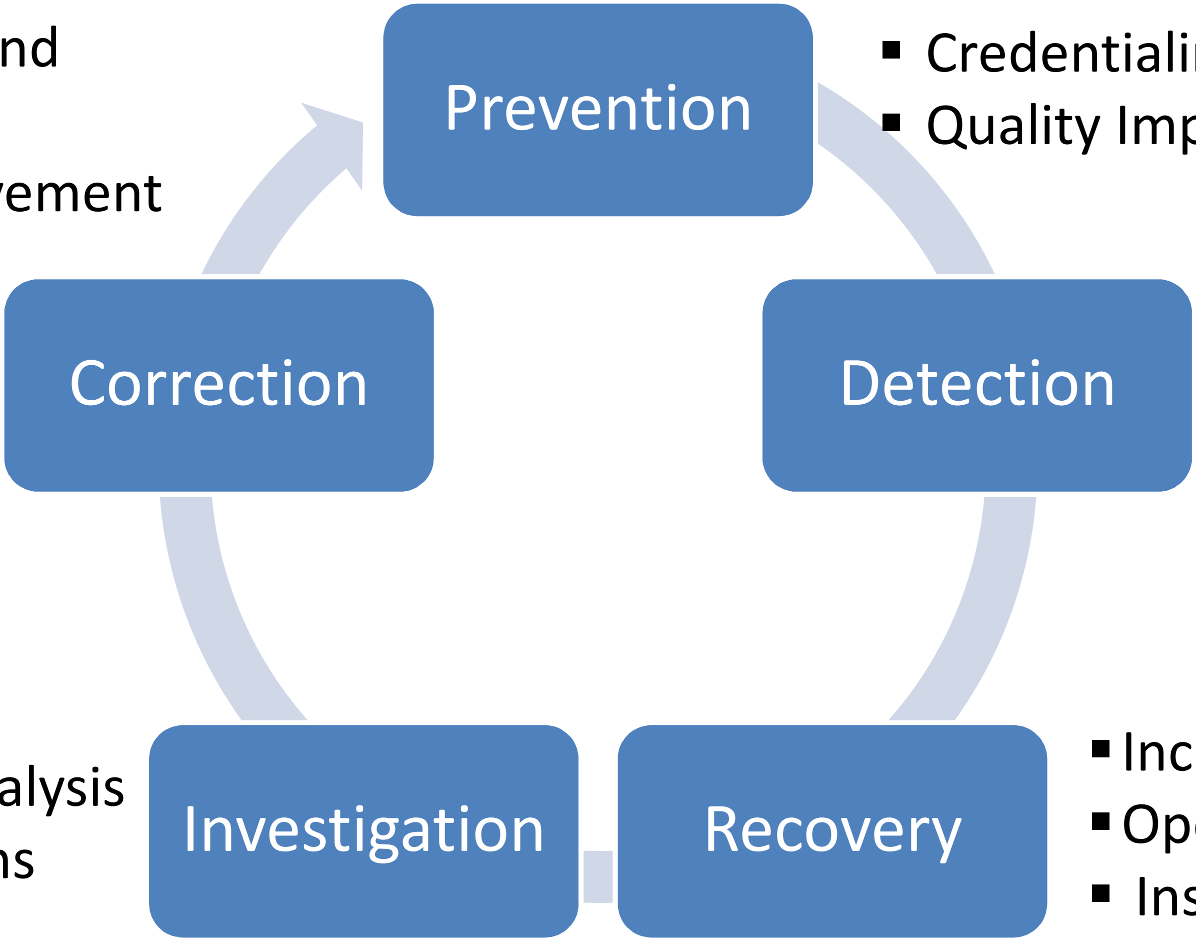
- Subsequently, DBS was contacted and authorised a cable change at 2.50am, a quiet period, which is standard operating procedure. While waiting to replace the cable, the IBM field engineer decided to inspect the cable again to ensure that it was not defective and that it was installed properly. He then unplugged the cable for inspection using the previous incorrect procedure recommended by the regional IBM support centre.

- **5 July 2010, 2.58am**: The cable was replaced using the same procedures. This caused errors that threatened data integrity. As a result, the storage system ceased communicating in order to protect the data.

At this point, DBS banking services were disrupted.

Source: DBS website

Framework for risk management



Prevention

Detection

Recovery

Investigation

Correction

- Clinical Policies and Processes
- Credentialing & Privileging
- Quality Improvement

- FMEA
- Quality Metrics
- Reporting
- Clinical Audit

- Incident Mgmt.
- Open Disclosure
- Insurance

- Root Cause Analysis
- Expert opinions

- Staff training and counselling
- Quality Improvement

4. Concluding remarks

Key takeaways

☑ Risks are dynamic and its nature and impact **evolves in a changing environment**. Be sensitive to changes in your environment when monitoring risks.

☑ Risks are interconnected and often affects more than one department/group. **Work as a TEAM** to effectively manage these risks.

☑ Risk management should be **everyone's responsibility**. The success of Risk Management depends on every individual.

☑ Risk management **should not be a 'tick the box' exercise** – it should result in tangible outcomes and benefits

Thank you