Real-World Cases

Following is a list of real-world cases related to the concepts addressed in these notes. Each case includes a short description, references to relevant lecture note items, and a classification by cause, consequence, and result. These examples serve as learning tools to illustrate how decisions, failures, and successes influence the governance and evolution of digital systems in both public and private organisations.

<1> Maersk and the Quiet Catastrophe

Description: A.P. Møller–Maersk, the world's largest shipping and logistics company, suffered a massive operational shutdown in 2017 due to the NotPetya malware. Originating from a tax software update in Ukraine, the attack spread rapidly across global systems, disabling terminals, bookings, and communications. Maersk's recovery relied on salvaging a domain controller from a remote office that had been offline during the attack. The incident exposed deep architectural coupling, limited segmentation, and dependency on informal recovery practices.

Relevant Lecture Note Items:
- 3.5 Technical Debt and System Evolution
- 3.13 Operational Resilience and Incident Response
- 2.25 IT Supply Chain
- 2.15 The Ecosystem of Cybersecurity

Classification:
- **Cause:** Architectural fragility and lack of segmentation
- **Consequence:** Global service disruption across business units
- **Result:** Operational loss (~$300M), reputational questions, improved cyber architecture

Sources:
- https://www.wired.com/story/notpetya-cyberattack-ukraine-russia-code-crashed-the-world/
- https://softwarelab.org/blog/notpetya/
- https://www.cybereason.com/blog/notpetya-costs-companies-1.2-billion-in-revenue

<2> Colonial Pipeline and the Long Weekend (2021)

Description: In May 2021, Colonial Pipeline shut down fuel distribution after a ransomware attack on its IT systems, even though OT systems were not directly compromised. The lack of visibility into the breach's full impact, along with poor coordination between IT and OT, led to a service halt affecting the U.S. East Coast. The company paid a $4.4 million ransom, partially recovered by authorities. The event demonstrated how digital risks can cascade into critical physical infrastructure.

Relevant Lecture Note Items:
- 3.13 Operational Resilience and Incident Response
- 2.6 Operational Technology and the IT/OT Interface
- 2.25 IT Supply Chain
- 2.15.2 National Authorities and Coordination
- 2.29.4 Strategic Relevance and Governance Maturity

Classification:
- **Cause:** Ransomware attack + poor IT/OT integration
- **Consequence:** Pre-emptive operational shutdown and fuel shortages
- **Result:** Economic disruption, federal policy reaction, cyber regulation update

Sources:
- https://www.cisa.gov/news-events/news/attack-colonial-pipeline-what-weve-learned-what-weve-done-over-past-two-years
- https://www.nytimes.com/2021/05/08/us/politics/cyberattack-colonial-pipeline.html
- https://www.bbc.com/news/business-57050690
- https://ransomware.org/blog/one-year-later-lessons-from-colonial-pipeline/

<3> ING agile transformation (2015)

Description: ING restructured its organisational model to adopt agile practices across banking functions, dismantling traditional hierarchies in favour of autonomous squads and tribes. While initially disruptive, it became a benchmark for digital transformation, despite early concerns from regulators.

Relevant Concepts:
- 1.1 Governance, Management, and Operations
- 4.1 Business and Strategy

Classification: Intended cause, Good consequence, Positive results

Sources:
- https://www.mckinsey.com/industries/financial-services/our-insights/ings-agile-transformation
- https://www.ing.com/Newsroom/News/Squads-sprints-and-stand-ups.htm

<4> OpenAI and the Boardroom Shockwave (2023)

Description: In November 2023, OpenAI's board suddenly fired CEO Sam Altman without consulting key stakeholders. The lack of transparency and stakeholder alignment provoked near-unanimous staff backlash, a public offer from Microsoft to hire the entire team, and the board's subsequent reversal. The event revealed governance fragility in hybrid non-profit/commercial structures and the strategic risk of board isolation from operational realities.

Relevant Lecture Note Items:
- 1.21 Board Dynamics and Governance Structures
- 1.25 CxO Roles in Governance and Strategic Engagement
- 4.26 CxO Dilemmas
- 4.3 Stakeholder Engagement and Strategic Communication

Classification:
- **Cause:** Governance misalignment and opaque board decision-making
- **Consequence:** Organisational crisis and mass resignation threats
- **Result:** Board restructuring, Altman reinstated, stakeholder trust questioned

Sources:
- https://en.wikipedia.org/wiki/Removal_of_Sam_Altman_from_OpenAI
- https://medium.com/aicorporateedge/openais-boardroom-bombshell-unveiling-the-radical-shake-up-and-the-secret-players-behind-it-1e4a133fed5e
- https://boardshape.com/blog/when-boards-clash-with-visionaries-sam-altman-saga

<5> NHS email storm (2016)

Description: An accidental mass email sent to NHS staff caused disruption across the UK health service. Despite initial confusion, the event prompted improved controls and digital hygiene measures.

Relevant Concepts:
- 1.2 Management and Maturity
- 2.1 Governance of IT

Classification: Unintended cause, Bad consequence, Positive results

Sources:
- https://www.bbc.com/news/technology-37979456
- https://arstechnica.com/information-technology/2016/11/nhs-email-storm-distribution-list-blunder/

<6> SEF migration debacle (2023)

Description: The poorly planned restructuring of Portugal's border agency SEF led to service failures, system outages, and a public backlash. Unclear role distribution and weak stakeholder coordination contributed to the disruption.

Relevant Concepts:
- 1.1 Governance, Management, and Operations
- 1.2 Management and Maturity

Classification: Intended cause, Bad consequence, Negative results

Sources (Portuguese):
- https://cnnportugal.iol.pt/sef/problemas/problemas-informaticos-deixam-sef-lento-e-ate-parado-numero-de-processos-pendentes-nao-para-de-aumentar/20231003/65142e31d34e65afa2f5c77a
- https://observador.pt/2024/02/05/falta-de-acesso-as-bases-de-dados-do-sef-nao-compromete-investigacao-da-pj-diz-seguranca-interna/
- https://www.rtp.pt/noticias/pais/falta-de-acesso-as-bases-de-dados-do-sef-nao-compromete-investigacao-da-pj-garante-seguranca-interna_a1548639

<7> Germany's E-ID project

Description: Germany's digital ID initiative faced low adoption and public criticism due to inter-agency misalignment, low trust, and limited usability, despite its ambitious goals.

Relevant Concepts:
- 1.2 Management and Maturity
- 2.1 Governance of IT

Classification: Intended cause, Bad consequence, Negative results

Sources:

- https://www.signicat.com/blog/digital-identity-in-germany-market-status-trends-and-regulations-that-you-need-to-consider
- https://link.springer.com/chapter/10.1007/978-3-031-45648-0_29

<8> France health data hub realignment (2018…)

Description: Facing backlash over storing health data on US cloud infrastructure, France restructured its Health Data Hub to use a European provider, rebuilding trust and compliance posture.

Relevant Concepts:

- 1.1 Governance, Management, and Operations
- 2.1 Governance of IT
- 4.3 Strategic Portfolio and Investment Governance

Classification: Intended cause, Good consequence, Positive results

Sources:

- https://implicity.com/everything-you-need-to-know-about-health-data-hub/
- https://openfuture.eu/note/the-french-data-protection-authority-reluctantly-greenlights-the-health-data-hubs-hosting-by-microsoft
- https://gdprhub.eu/index.php?title=CE_-_N%C2%B0_444937
- https://www.euractiv.com/section/health-consumers/news/french-decision-to-have-microsoft-host-health-data-hub-still-attracts-criticism/
- https://azure.microsoft.com/es-es/blog/microsoft-azure-is-now-certified-to-host-sensitive-health-data-in-france/
- https://learn.microsoft.com/en-us/compliance/regulatory/offering-hds-france

<9> Sonos App Overhaul Fallout (2024…)

Description: In 2024, Sonos released a major redesign of its mobile app that removed features, broke support for older devices, and degraded user experience. Loyal customers voiced frustration through negative reviews and social media backlash. Sonos was slow to respond, undermining trust. The case illustrates the risk of digital product changes without sufficient transition strategy or user engagement.

- **Relevant Lecture Note Items:**
  - 4.3 Stakeholder Engagement and Strategic Communication
  - 4.6 Enterprise Architecture and Alignment
  - 4.5 Target Operating Model
  - 3.5 Technical Debt and System Evolution
- **Classification:**
  - **Cause:** Abrupt digital product redesign without stakeholder alignment
  - **Consequence:** Feature loss, brand damage, and customer backlash
  - **Result:** Negative publicity, user trust erosion, delayed roadmap revisions
- **Sources:**
  - https://www.theverge.com/2025/1/13/24342282/sonos-app-redesign-controversy-full-story
  - https://edition.cnn.com/2025/02/08/tech/sonos-app-update-redemption-2025/index.html
    https://www.wsj.com/articles/sonos-marketing-chief-exits-as-fallout-from-app-calamity-continues-422ff362

<10> Harley-Davidson boardroom eruption (2025)

Description: Governance weaknesses led to a leadership crisis during CEO succession at Harley-Davidson, exposing gaps in board oversight and strategic alignment, and resulting in reputational and strategic setbacks.

Relevant Concepts:

- 1.1 Governance, Management, and Operations
- 1.3 CxO Roles in Governance and Strategic Engagement

Classification: Intended cause, Bad consequence, Negative results

Sources:

- https://www.wsj.com/business/inside-the-boardroom-eruption-harley-davidson-future-ceo-search-proxy-battle-e740b646?mod=wknd_pos1
- https://eu.jsonline.com/story/money/business/2025/04/17/harley-davidson-corporate-drama-the-players-impact-on-customers/83127406007/