Tazmin Somerville
CSD 380 – DevOps
Assignment: The Dangers of Change Approval Processes
April 28 – May 4

The Dangers of Change Approval Processes

Change approval processes are critical for maintaining stability in IT and business operations. However, overly rigid or poorly designed approval workflows can introduce significant risks, including operational bottlenecks, resistance to cultural progress, and catastrophic failures. This paper explores these dangers, supported by case studies and insights from industry experts.

1. Operational Bottlenecks and Delays

Traditional change approval processes often rely on manual reviews, which create bottlenecks in fast paced environments like DevOps. Joe Offenberg, in his video on automating change approvals, emphasizes that manual processes struggle to keep up with the volume of modern deployments:

"DevOps pipelines are all about making small incremental changes continuously… your change managers are going to be overwhelmed because DevOps pipelines generate a high volume of changes" (Offenberg, 2023).

These delays force teams to batch changes, increasing the complexity and risk of deployments. The DZone article *"Change Control Doesn't Work"* reinforces this, arguing that traditional approval models fail because they prioritize bureaucratic compliance over agility, leading to rushed decisions or workarounds that bypass controls entirely (DZone, 2023).

2. Cultural Resistance to Innovation

Change approval processes in low trust, command and control cultures often stifle innovation. The *DevOps Handbook* highlights how such environments inadvertently increase risks by discouraging transparency. Gene Kim notes that teams in these cultures hide errors to avoid blame, leading to systemic issues like the Knight Capital disaster (Kim et al., 2021).

3. Catastrophic Failures: The Knight Capital Case

The 2012 Knight Capital incident remains one of the most cited examples of what can go wrong. A deployment error in untested code caused a $440 million loss in 45 minutes. While post mortems blamed insufficient testing, the *DevOps Handbook* argues that the root cause was a culture prioritizing rigid controls over collaboration. Engineers lacked the authority to halt the faulty deployment, exposing gaps in both change control and psychological safety (Kim et al., 2021).

Mitigating the Risks

To address these dangers, organizations should:

1. **Automate approvals** using policy driven criteria (e.g., code coverage, incident history) to reduce bottlenecks (Offenberg, 2023).
2. **Foster high trust cultures** where teams share accountability (Kim et al., 2021).
3. **Implement hybrid models**, escalating only high-risk changes for manual review (ApproveIt, 2023).

Conclusion

Though change approval processes are meant to reduce risk, outdated or rigid approaches often do the opposite. By balancing automation, cultural trust, and adaptive workflows, organizations can mitigate bottlenecks, encourage innovation, and prevent disasters like Knight Capital.

Sources:

- Kim, G., Humble, J., Debois, P., & Willis, J. (2021). *The DevOps Handbook* (2nd ed.). IT Revolution Press.
- Offenberg, J. (2023). Automating Change Approvals in DevOps. [YouTube Video]. https://www.youtube.com/watch?v=RilsVHcCyUg
- ApproveIt. (2023). How to Solve Chaotic Approval Processes in Your Business. https://approveit.today/blog/how-to-solve-chaotic-approval-processes
- DZone. (2023). Change Control Doesn't Work. https://dzone.com/articles/change-control-doesnt-work