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Module-8.2

**The Dangers of Change Approval Processes**

**Introduction**

Change approval processes are essential in managing changes within IT services to minimize operational and security risks. However, these processes can sometimes have unintended consequences, leading to inefficiencies and even failures. This paper explores the dangers of change approval processes, supported by real-world examples and research findings.

**The Knight Capital Incident**

One of the most notable examples of a change approval process failure is the Knight Capital incident. In 2012, Knight Capital Group, a financial services firm, suffered a $440 million loss due to a software deployment error. The error occurred during a routine deployment, and the engineering teams were unable to disable the malfunctioning services in time. This incident highlights how even a seemingly well-structured change approval process can fail, leading to catastrophic outcomes.

**Change Control Failures**

Change control processes are designed to prevent errors and ensure that changes are thoroughly vetted before implementation. However, these processes can sometimes be counterproductive. In low-trust, command-and-control environments, stringent change controls can lead to delays and increased chances of errors. For instance, the Knight Capital incident could have been mitigated with better change control practices, but the rigid process likely contributed to the slow response and recovery time.

**The Impact of Heavyweight Processes**

Research by the DevOps Research and Assessment (DORA) indicates that traditional, heavyweight change approval processes often negatively impact software delivery performance. Such processes typically involve approvals by external reviewers or change approval boards (CABs), which can slow down the delivery process and lead to the release of larger, riskier batches of changes less frequently. This approach increases the likelihood of failures, as evidenced by the data showing that heavyweight approval processes are associated with higher change fail rates.

**Benefits of Peer Review and Automation**

Instead of relying on heavyweight approval processes, organizations can benefit from peer review and automation. Peer reviews, conducted during the development process, help meet segregation of duties requirements without introducing significant delays. Automation, through continuous testing, integration, and monitoring, can detect, prevent, and correct bad changes early in the software delivery lifecycle. This approach not only speeds up the process but also reduces the risk of errors.

**Case Study: Effective Change Control Process**

A study on effective change control processes by Asana highlights the benefits of having a structured yet flexible approach. The study emphasizes the importance of clear communication, proper documentation, and the use of workflow management tools. These tools help streamline the change control process, ensuring that changes are assessed and implemented efficiently without unnecessary delays.

**Pitfalls and Improvements**

Common pitfalls in change approval processes include treating all changes equally, relying too heavily on CABs, and adding more process layers in response to issues. To improve change approval processes, organizations should focus on peer review, automation, continuous improvement, and better communication. By doing so, they can create a more agile and resilient change management system.

**Conclusion**

While change approval processes are crucial for managing risks in IT services, they can also introduce inefficiencies and increase the likelihood of failures if not properly managed. The Knight Capital incident serves as a stark reminder of the potential dangers. By adopting peer review, automation, and a balanced approach to change control and management, organizations can mitigate these risks and improve their overall performance.

**References**

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By examining the challenges and potential solutions in change approval processes, organizations can better navigate the complexities of managing changes in IT services, ensuring both efficiency and security.