Can Construction Schedule Quality Improve?

An FSA study looking at schedule data across 32 projects globally

A Schedule Quality Series

FSA

Empowering Construction Projects Through Innovative Technology Solutions and Expertise

Our team conducted an in-depth analysis of construction schedule using real-life data

Welcome to

Part 1

Open-Ended Activities

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McKinsey & Co states[1]

"***98%*** *of projects incur cost overruns or delays, with an average cost increase of* ***80%*** *and an average schedule slippage of* ***20*** *months.“*

Chartered Institute of Building (CIOB)[2]

“*...the* ***quality*** *of time* ***management*** *on construction projects is generally* ***poor***."

1 - McKinsey & Co
2 - CIOB

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Our team utlised its own proprietary schedule analytics software called **SchedXpert.**

SchedXpert is built by industry experts.

Designed for project planners, schedulers, forensic experts, project directors, consultants, legal teams, and more.

Our expert services and our innovative **tools** are used to ensure **optimal** outcomes for all type of construction projects globally no matter the complexity.

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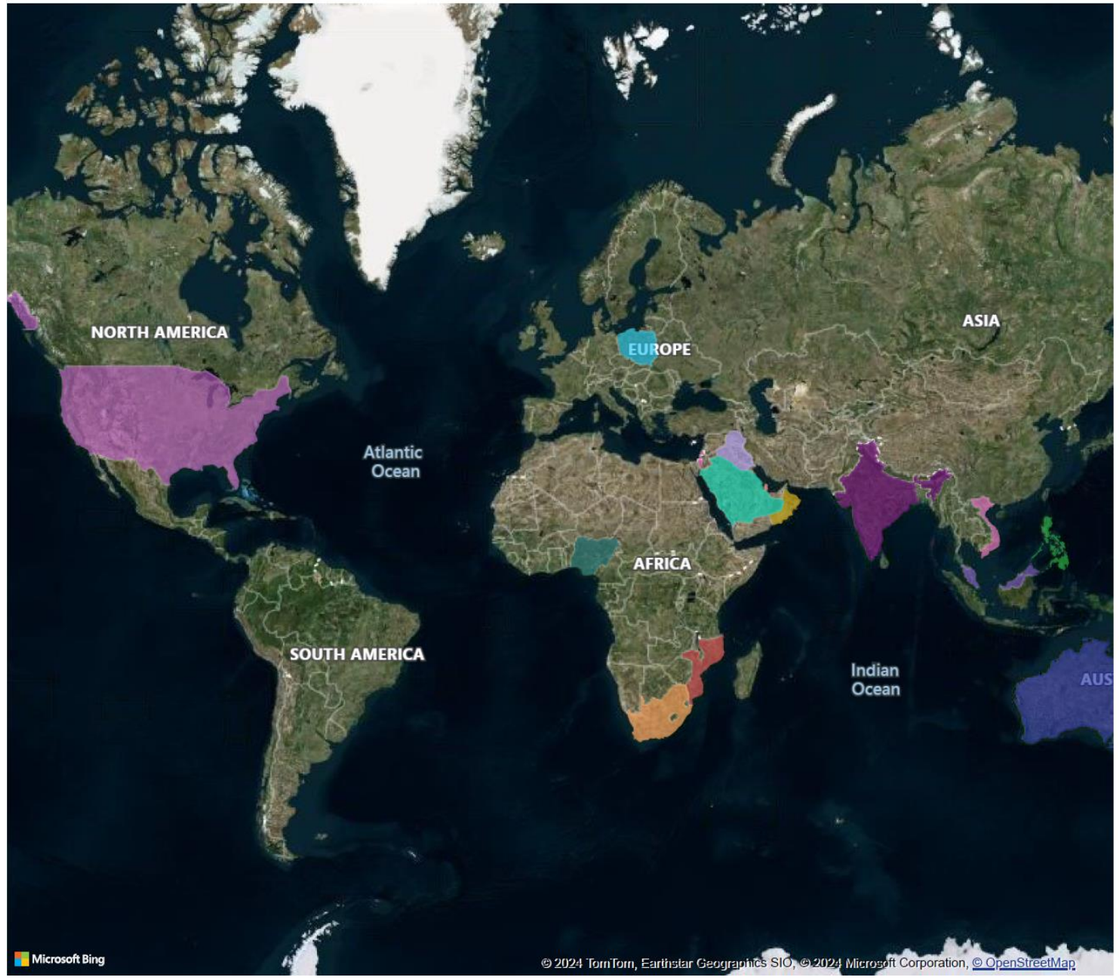
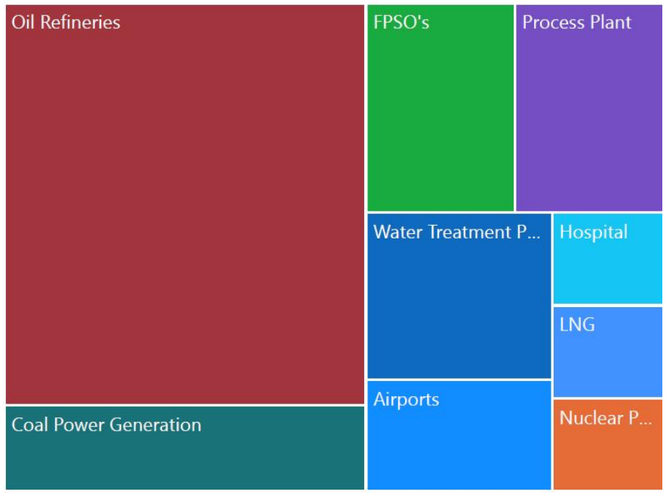
Our study was conducted on **32** construction projects between **2007** and **2024** across various sectors globally, equating to a total of **2,339** schedules. Here's what we found!

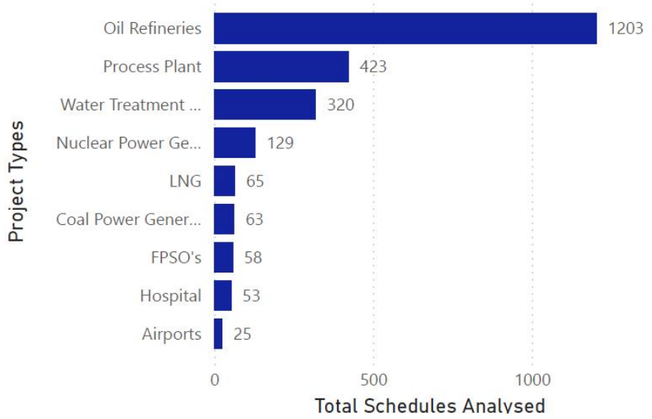
FSA Global Project Study



Project Type



Schedules Analysed by Project Type



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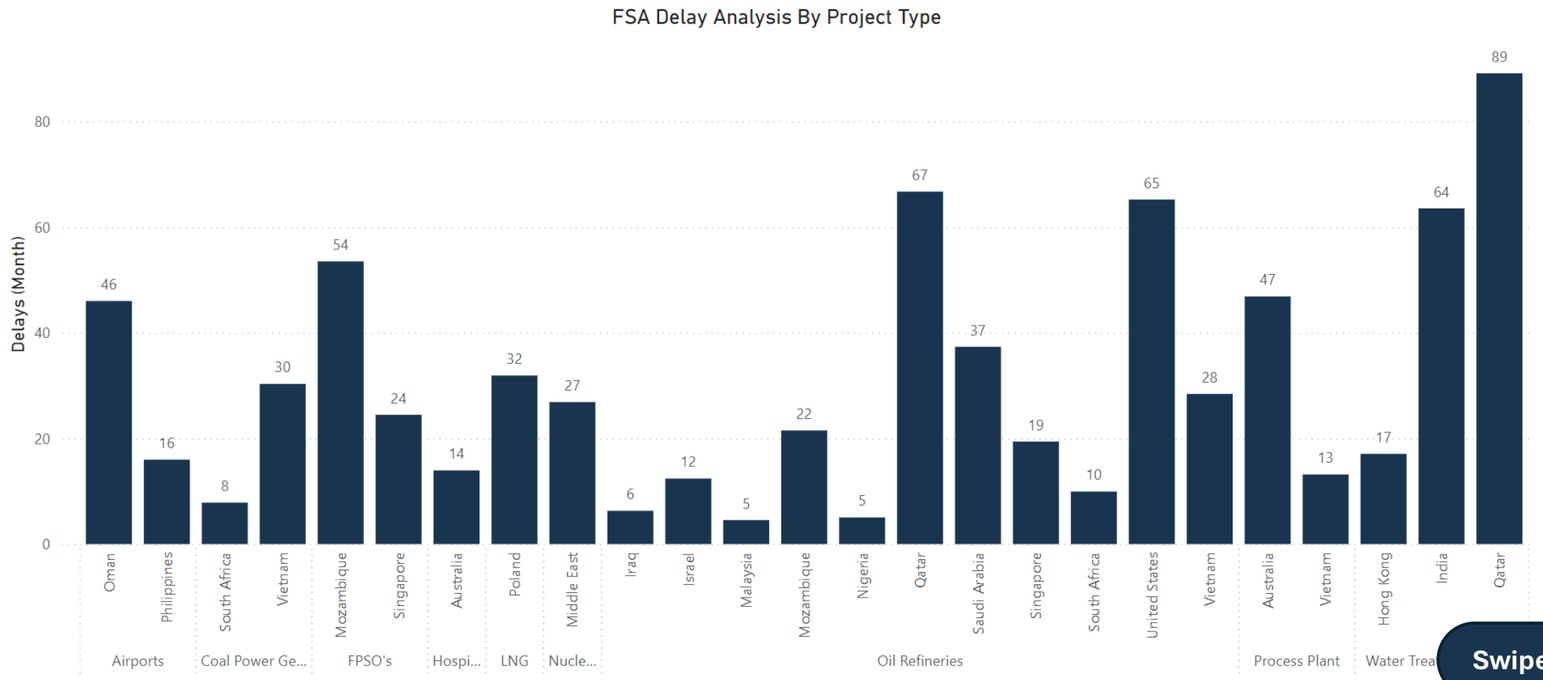
All **32** projects faced delays to contractual milestones, ranging from **6** to **88** months, with an average delay of **24** months.

Could schedule quality be a contributor to project overruns?



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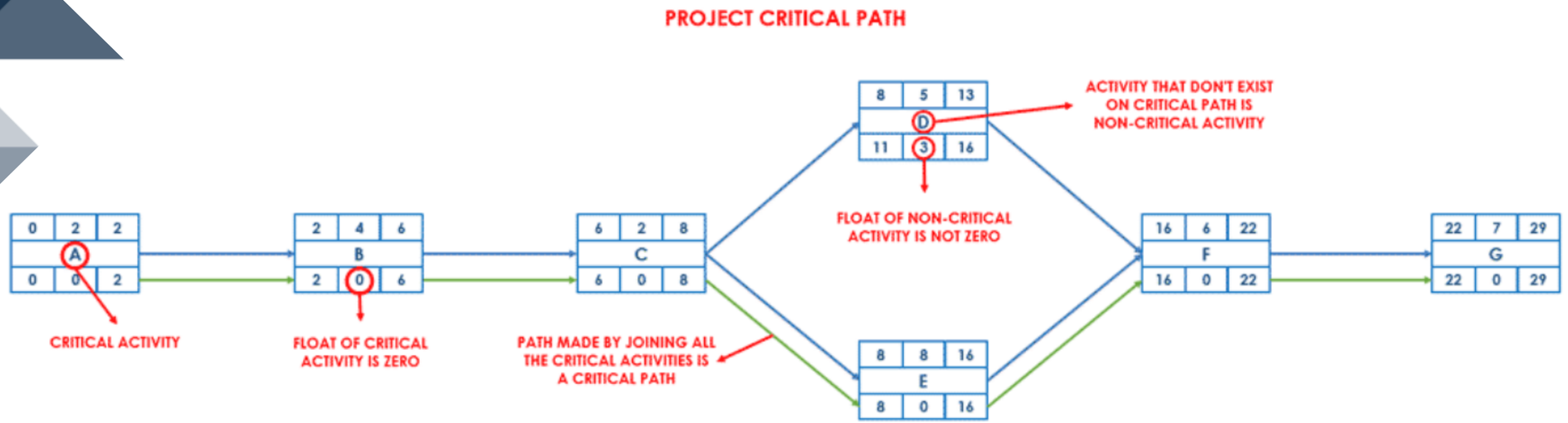
DELAYS

In this study, we focus on **Critical Path Method (CPM)** schedules and a specific quality metric: open-ended activities, one of the 14 points in the Defense Contract Management Agency (**DCMA**) assessment.



A CPM schedule relies on **forward** and **backward** pass calculation to determine the **critical path** and **float**. If the network is incomplete, these calculations can be inaccurate, resulting in a **critical path** that may not be truly critical.

1 - Project Critical Path Graphic

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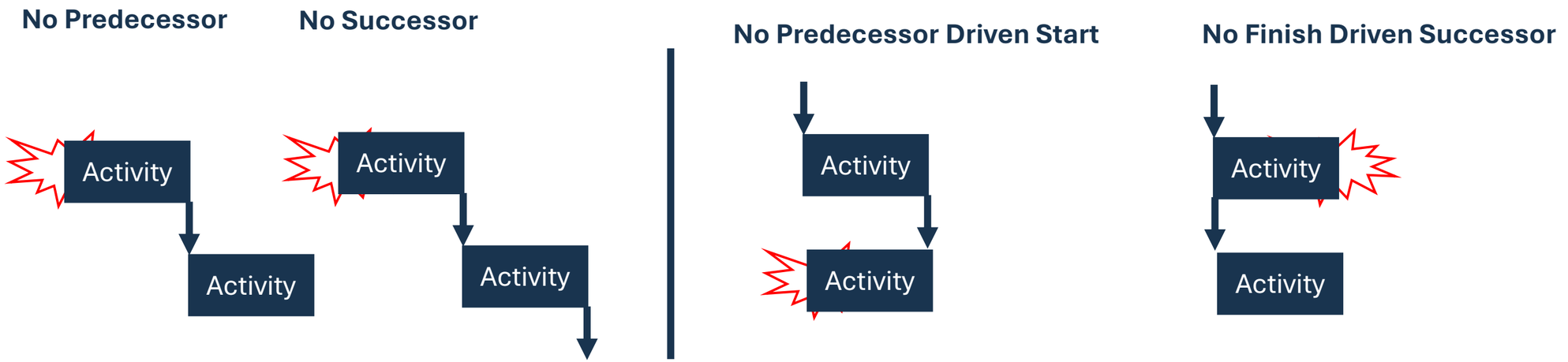
CPM Open-Ended Activities

- **Critical Path Accuracy:** Activities must be correctly linked using appropriate relationships.
- **DCMA Threshold:** Unlinked activities result in open-ended activities; the DCMA allows for only 5% open-ended activities in a schedule.
- **Impact of Open-Ended Activities:** Delays not being communicated back into the schedule, high float values, inaccurate critical paths, miss leading float values of activities, false criticality

Example of Open-Ends



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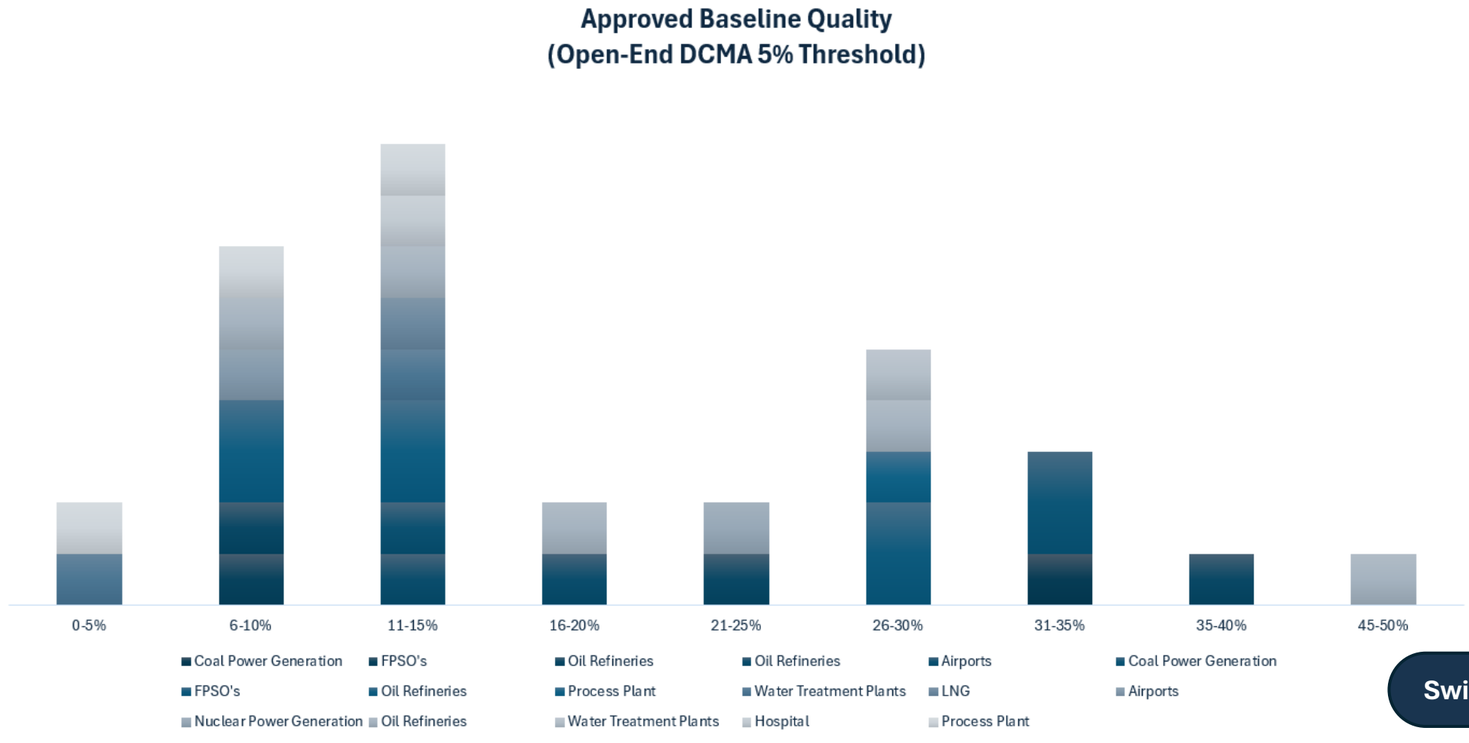
Our study found that out of **32** projects, only **2** meet the DCMA threshold for open ends, indicating widespread issues with some reaching up to 50% open-ended activities.

Key Points:

- **Only 2 Projects** meet the DCMA open-ended activity threshold.
- **Majority of Projects** exceed the DCMA threshold, with open ends as high as 50%.
- **Implication:** Poor schedule quality, particularly with open ends, is a likely contributor to project delays and overruns.



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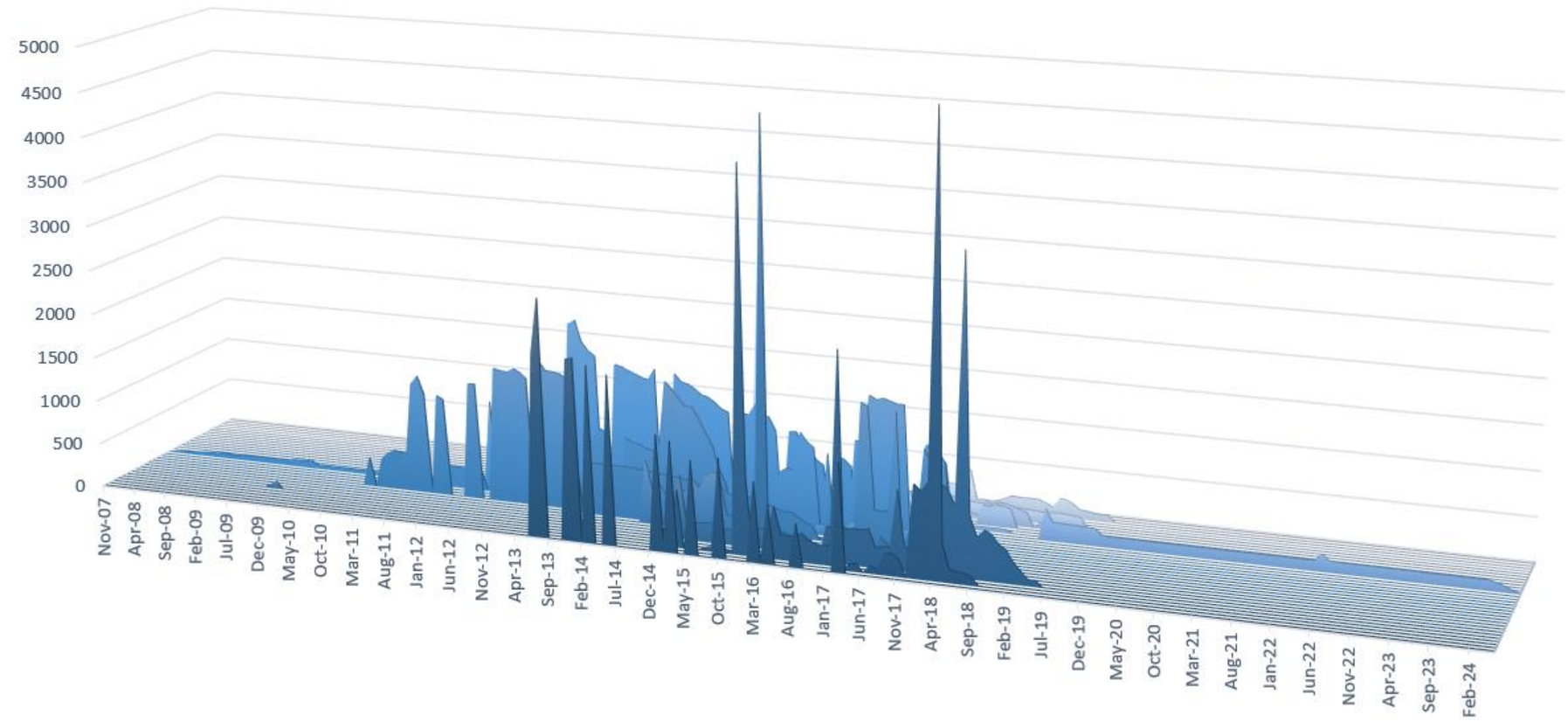
Did schedule quality improve over time?

As the data suggests, of the **2,339** schedules, open-ended activities were evident across all projects. Furthermore, it shows that open-end activities increased as the projects progressed.



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The Impact of Open-Ended Activities

Our study reveals that **94%** of approved construction schedule baselines did not meet the **DCMA** threshold for open-ended activities. These can have severe consequences on a CPM schedule, leading to multiple issues:

- **Critical Path Not Accurately Calculated**
- **Activities with Excessive Float**
- **Delays and Disruption**
- **Delays Not Properly Communicated Back into the Schedule**
- **Late Identification of Delays**
- **Poor Resource Management**
- **Ineffective Risk Mitigation**
- **Unsuccessful Extension of Time Claims**
- **Poor Arbitration Outcomes**

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Ensuring Optimal Schedule Quality with FSA

In this study, we examined open-ended activities in **CPM** construction schedules which occurred regularly but can be avoided.

At FSA, we provide clients with **innovative technology** solutions that ensure optimal construction schedule quality audits, potentially saving our clients ⏰ & 💰 avoiding lengthy **disputes**.

Our **SchedXpert** application equips our team with essential data to ensure schedules are approved based on a **systematic** framework and also ensure schedules are well-maintained throughout the project duration.

For more information on **FSA services** and how we bring value to your projects, visit our website **www.fsa.sg** or contact us at **info@fsa.sg**

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Stay Tuned for Part 2

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At FSA, our vision, mission, and values are centred on safeguarding client data and information at all costs, ensuring integrity across all our services.

This study has been conducted with strict confidentiality, and no client information has been compromised.

Disclaimer: *The findings of this study are based on anonymised data, and no client information has been disclosed.*