

Making Smart Investments: a framework for maximizing your ROI in technical decisions

Katerina Iliakopoulou

Senior Machine Learning Engineer 

Never have I ever...

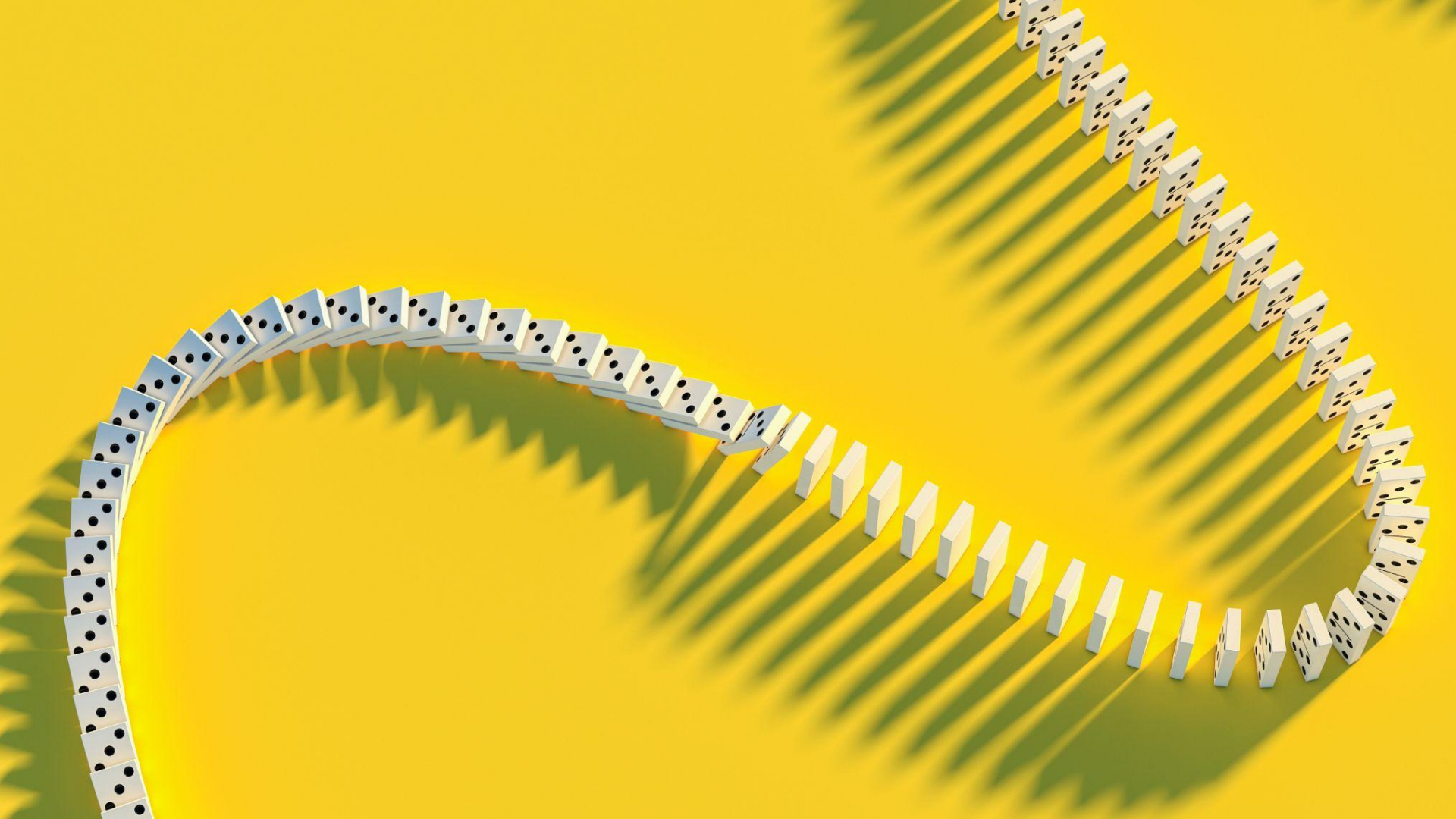
Never have I ever, prioritized new feature development over addressing critical technical debt.

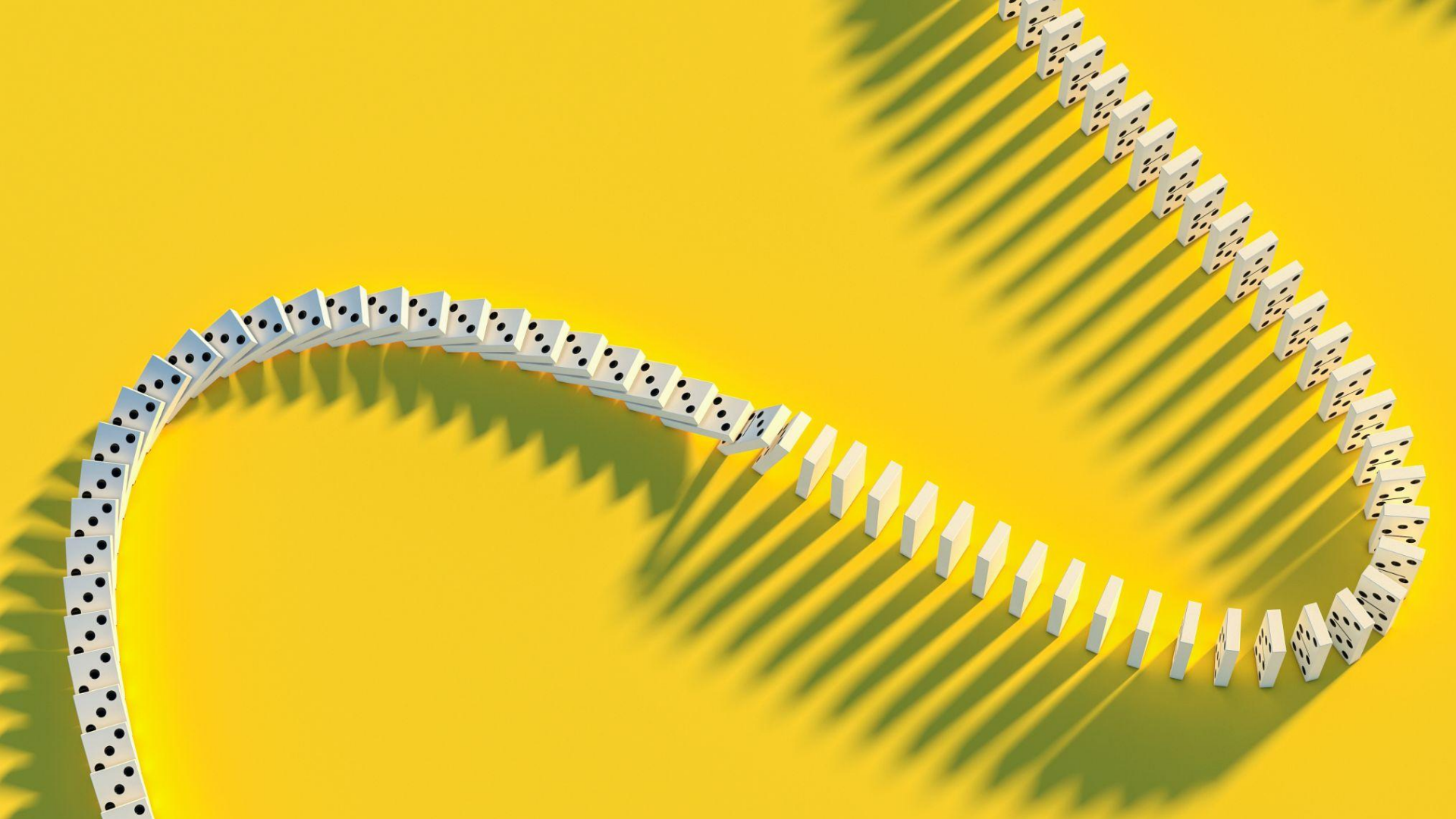
Never have I ever, had to re-prioritize projects due to sudden changes in leadership directives.

Never have I ever, launched a product or feature only to deprecate it a few months later.

We all make technical decisions











Finding the story
behind decisions



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Story #1: Deciding on a high risk project with unknown returns

- Chose a state-of-the-art model recently launched in our organization.
- Explained why the model would be a good solution.
- Needed features and unfamiliar technology.
- Worked with feature generation team for necessary pipelines.
- Delays due to feature availability and ramping up on the model.
- Minimal impact from A/B tests; valuable learning experience despite no value added to the team.



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Story #2: Deciding when to outsource to a vendor



- Leading a core internal platform
- Constant fires and on-call challenges.
- Lost know-how led to confusion and oftentimes ineffective solutions
- New company priority led to a rapid rise in requests.
- Vendor solution was proposed as an alternative
- Showed leadership that outsourcing wasn't feasible.
- Managed to keep the platform running but at a much higher cost.

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It depends ...

Were these decisions good or bad?

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Cost = Time + Money

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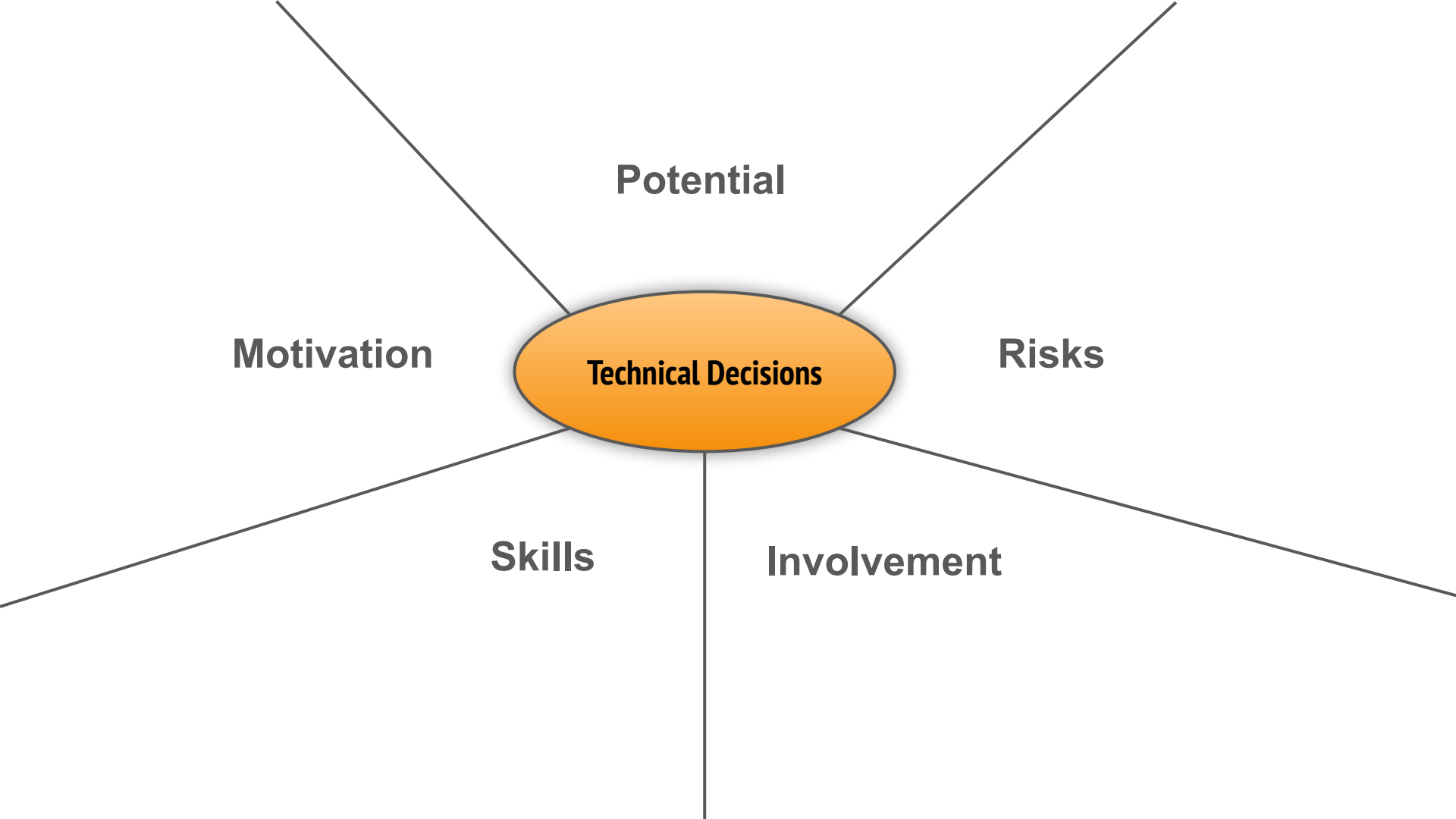
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Bias

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Potential

Motivation

Technical Decisions

Risks

Skills

Involvement

Potential: Assessing the Impact and Benefits

- **Impact on user experience**
- **Potential revenue increase**
- **Operational efficiency**
- **Alignment with strategic goals**

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Operational metrics

Cost savings

User engagement metrics

Conversion rates

Adoption rates

Proxy metrics

Link goal metrics to other metrics
easier to measure?

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- **Technical limitations**
- **Resource budget constraints**
- **Performance constraints**
- **Data Privacy / Security**

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Guardrail Metrics

System reliability and uptime

System response time

System exposure points

Data sensitivity

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Budget variance

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What processes need to be in place to ensure effective collaboration?

Do your partners have the bandwidth to support us?

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- **Tools and infrastructure**
- **Identify necessary knowledge for execution**
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Assess Capability

Performance metrics

Willingness to learn

Resources & Availability

Motivation: Aligning your decision with team interests and incentives

- **Evaluate potential team growth.**
- **Assess their commitment and excitement.**
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Gauge Motivation

One-on-One Meetings

Team career growth goals

Satisfaction surveys

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Putting it all together

Potential + Motivation + Skills = Gain

Risks + Involvement = Cost

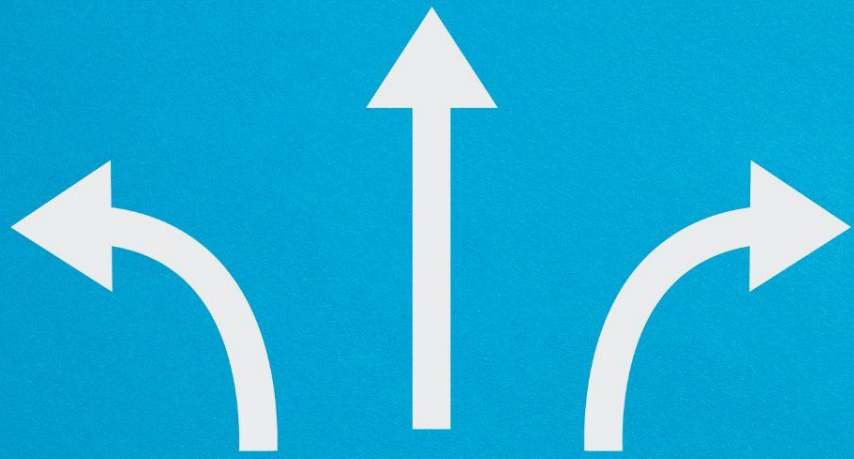
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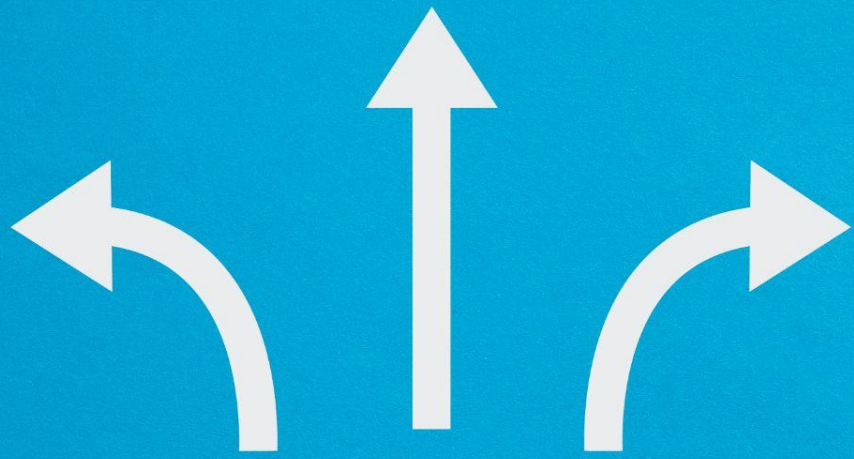
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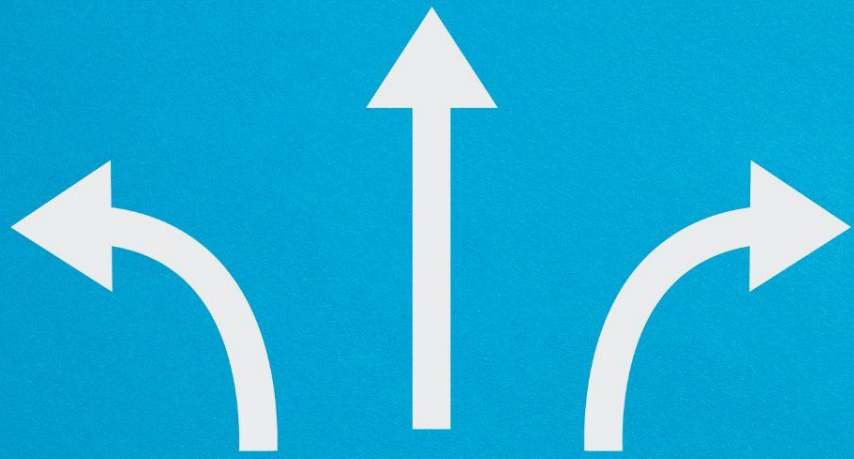
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