Introduction

This proposal outlines the approach to studying the relationship between M&A premiums and Qualcomm Inc.'s long-term performance, focusing on three acquisitions in the semiconductor industry between 2011 and 2022. Due to the limited number of acquisitions, the analysis will explore premium calculation methodologies and long-term performance metrics based on available data. Understanding this link is crucial, as overpaying in M&A can negatively impact long-term value, posing significant financial risks.

Methodology

1. M&A Premium Calculation for Target Companies

We will calculate the M&A premium on two bases: **absolute** and **relative**.

Absolute Premium:

- Measure the difference between the offer price and the target's pre-announcement stock price.
- This will be measured across various time intervals:
    - 1-day
    - 1-week
    - 1-month

Relative Premium:

- Compare the premium to **industry-wide** and **market-wide** M&A premium averages within the semiconductor sector during the same time frame.

2. Long-Term Performance Measurement for Qualcomm Inc.

We will evaluate long-term performance based on **stock performance** and **operating performance**.

Stock Performance:

- Track Qualcomm's performance on both an **absolute** and **relative** basis.
- Use **factor analysis**:
    - **CAPM** (Capital Asset Pricing Model)
    - **Fama-French 3-factor model**
- Use **valuation analysis**:
    - **Price-to-Earnings (P/E) ratio**
    - **Enterprise Value/Revenue (EV/Revenue)**
    - **Enterprise Value/EBITDA (EV/EBITDA)**

Operating Performance:

- Analyze key operating metrics, including:
    - **Revenue growth**
    - **Profit margins**
    - **Free cash flow (FCF)**
    - **Return on Assets (ROA)**
    - **Return on Equity (ROE)**
    - **Return on Invested Capital (ROIC)**
- Consider **merger impairments** or **write-offs** that could impact long-term performance.

Data Collection

This study focuses on analyzing Qualcomm Inc.'s mergers and acquisitions (M&A) as the acquirer, with a particular focus on the following criteria:

1. Company of Interest

- **Acquirer**: Qualcomm Inc.

2. Deal Status

- Only **Completed** deals are included in the analysis.

Selected Search Criteria	Matches	
101) Company : QUALCOMM INC Apply to - Acquirer	137	⊗
102) Deal Status : Completed	130	⊗
103) Dates : Custom(March 31 2009, October 3 2024) Apply to ...	81	⊗
104) Deal Type : M&A	42	⊗
105) Public/Private : Public, Apply to Target	3	⊗

3. Time Frame

- Deals announced and completed between **March 31, 2009** and **October 3, 2024**.

4. Deal Type

- The study is restricted to **Mergers and Acquisitions (M&A)**.

5. Target Companies

- The analysis includes only **Public** companies that Qualcomm Inc. acquired during this period.

6. Key M&A Deals

Qualcomm's acquisition of three companies with a total value of **$5.3B** is evaluated:

- **Ikanos Communications Inc** (Announced: August 6, 2015, Value: $25.5M)
- **CSR Ltd (United Kingdom)** (Announced: October 15, 2014, Value: $2.1B)
- **Qualcomm Atheros Inc** (Announced: January 5, 2011, Value: $3.1B)

| | 1) Overview | 2) Deal Breakdown | 3) Capital Flow | 4) League Table | 5) Deal List | 6) Buyer List | 7) Time Series |

Deal Status Breakdown

Current Status	Value	Count
All	5.3B	3
11) Completed	5.3B	3

Geographic Breakdown

Target Region	Value↓
All	5.3B
21) North America	3.2B
22) Europe	2.1B

Industry Breakdown

Target Industry	Value↓
All	5.3B
51) Communications	3.1B
52) Technology	2.2B

Deal List   Sort by ○ Recent ● Largest

	Type	Ann Date↓	Target	Acquirer	Value	Payment Type	Status
101)	M&A	08/06/15	Ikanos Communications Inc	QUALCOMM Inc	25.5M	Cash	Completed
102)	M&A	10/15/14	CSR Ltd/United Kingdom	QUALCOMM Inc	2.1B	Cash	Completed
103)	M&A	01/05/11	Qualcomm Atheros Inc	QUALCOMM Inc	3.1B	Cash	Completed

7. Geographic Breakdown

- The target companies are from **North America** and **Europe**.

8. Industry Breakdown

- The target companies are from the **Communications** and **Technology** industries.
    - Communications industry acquisitions account for **$3.1B**.
    - Technology industry acquisitions account for **$2.2B**.

Data Collection

To effectively analyze the relationship between M&A premiums and long-term performance of acquirers, this study will rely on a combination of financial databases, market benchmarks, and company-specific financial statements. We use **Bloomberg** as the primary source for detailed M&A transaction data and company financial data, such as stock price and financial performance. Additionally, we choose **S&P 500** and **Semiconductor industry's ETF** as our market benchmarks.

For instance, **SEC filings**, including **10-K** and **10-Q** reports, will be used to extract detailed financial metrics for Qualcomm Inc.

Established Hypotheses

We develop the following hypotheses to test the relationship between M&A premiums and performance:

1. **Higher M&A premiums** are associated with **better long-term stock performance**.
2. **Higher M&A premiums** are associated with **better long-term operating performance**.
3. **Higher premiums** may negatively impact performance due to **overpayment**.

Expected Outcomes

Through a detailed analysis of Qualcomm's M&A premiums and their relationship with long-term stock performance and key operating metrics, we aim to gain valuable insights into the effectiveness of Qualcomm's M&A strategies in driving long-term value creation.

Specifically, the study will evaluate whether the premiums paid for acquisitions were justified by improvements in financial performance. Additionally, we expect to identify a reasonable range of M&A premiums that can inform and guide future M&A decisions within the **semiconductor industry**.