Keeping Your Enemies Closer: When Market Entry as an Alliance with Your Competitor Makes Sense

C. Jeffrey Cai (Mays Business School, TAMU)
Jagmohan S. Raju (The Wharton School, UPenn)

2017.01.25
Yunhyoong Kim
Table of Contents

• Introduction
• Model
• Analysis
• Summary and Conclusion
Introduction

Research Question:

Rivalry in a certain market continues in a new market? Or do they cooperate?

- Competition between firms in the existing market
- Cooperation between firms in the new market
Introduction

Related Literature:

Reason of "Alliance Formation"

1. Sharing infrastructure (R&D, supply chain)
2. Achieving economies of scale
Introduction

Related Literature:

Reason of “Alliance Formation”

1. Sharing infrastructure (R&D, supply chain)
2. Achieving economies of scale

Do not explain the case of “GE and P&W”

1st and 2nd of the market (Boeing 747)
“Fierce Competitors”

Enter into a new market (A380)
“Alliance”

“Both firm had technological capabilities, and economies of scale to enter the new market alone”
Introduction

Why do they form an alliance?

3. Multimarket Competition
Mutual interdependences between markets

Focus on 2 factors: size of market, extent of competition
Model

Sequential Game

Firm A decides—Form alliance with firm B?

Yes

Firm B decides—Form alliance with firm A?

Yes

Firm A and B invest independently

Yes

Firm A and B invest as an alliance

Yes

Firm A and B invest independently

No

Firm A and B invest independently

Stage 1: Simultaneous move game to form alliance

Stage 2: Simultaneous move game to decide how much to invest in each market
Model

Sequential Game

Firm A decides—Form alliance with firm B?

Firm B decides—Form alliance with firm A?

Yes

No

Stage 1: Simultaneous move game to form alliance

Firm A and B invest independently

Firm A and B invest as an alliance

Firm A and B invest independently

Firm A and B invest independently

Stage 2: Simultaneous move game to decide how much to invest in each market
Model

Mode of Entry: Stage 1
Independent Entrance

size of market

\[ M \in (0, 1) \]

size of market

\[ 1 - M \]

- Firm A
- Firm B
- Firm X

Existing market

New market

- Firm Y
Model

Mode of Entry: Stage 1

size of market
\( M \in (0, 1) \)

size of market
\( 1 - M \)

Independent Entrance

Firm A
Firm B
Firm X

Existing market

Firm A
Firm B
Firm X

Existing market

Firm Y

New market

Alliance Entrance

Firm A
Firm B
Firm X

Existing market

Firm A
Firm B

Alliance: A + B

New market

Firm Y
Model

Investment Decision : Stage 2

Independent Entrance

Firm A
Firm B
Firm X
Existing market

Firm A
Firm B
New market

Alliance Entrance

Firm A
Firm B
Firm X
Existing market

Alliance: A + B
New market

A's investment into the existing market $a$
B's investment into the existing market $b$
A's investment into the new market $1 - a$
B's investment into the new market $1 - b$
Model

Investment Decision: Stage 2

Independent Entrance
- Firm A
- Firm B
- Firm X

Existing market

New market

Alliance Entrance
- Firm A
- Firm B
- Firm X
- Alliance: A + B

Existing market

New market

A's investment into the existing market: $a$
B's investment into the existing market: $b$
A's investment into the new market: $1 - a$
B's investment into the new market: $1 - b$

X's investment into the existing market: $w$
Y's investment into the new market: $1 - w$

Reasonable Assumption?
Model

Investment Decision : Stage 2

Overall Profit

= Profit from existing market + Profit from new market - Investment

\[
\text{size of existing market} \quad \text{Investment of } A, B, X, \text{ and } Y
\]

\[
M \in (0, 1) \quad a \quad b \quad w \quad 1 - w
\]

\[
\pi_{A, \text{indep}} = \frac{a}{a+b+w} \cdot M + \frac{1-a}{(1-a)+(1-b)+(1-w)} \cdot (1-M) - 1
\]

\[
\pi_{B, \text{indep}} = \frac{b}{a+b+w} \cdot M + \frac{1-b}{(1-a)+(1-b)+(1-w)} \cdot (1-M) - 1
\]
Model

Investment Decision: Stage 2

Overall Profit

\[ \text{Overall Profit} = \text{Profit from existing market} + \text{Profit from new market} - \text{Investment} \]

- **Size of existing market**
  \[ M \in (0, 1) \]

- **Investment of A, B, X, and Y**
  \[ a \quad b \quad w \quad 1 - w \]

\[ \pi_{A, \text{indep}} = \frac{a}{a+b+w} \cdot M + \frac{1-a}{(1-a)+(1-b)+(1-w)} \cdot (1-M) - 1 \]

\[ \pi_{B, \text{indep}} = \frac{b}{a+b+w} \cdot M + \frac{1-b}{(1-a)+(1-b)+(1-w)} \cdot (1-M) - 1 \]

\[ \pi_{A, \text{alliance}} = \left( \frac{a}{a+b+w} \cdot M \right) + s \left( \frac{(1-a)+(1-b)}{(1-a)+(1-b)+(1-w)} \cdot (1-M) \right) - 1 \]

\[ \pi_{B, \text{alliance}} = \left( \frac{b}{a+b+w} \cdot M \right) + (1-s) \cdot \left( \frac{(1-a)+(1-b)}{(1-a)+(1-b)+(1-w)} \cdot (1-M) \right) - 1 \]

Share of A and B

\[ s \quad 1 - s \]
Analysis

Case: \( M = \frac{1}{2} \) (market size is equal) and \( s = \frac{1}{2} \)

Independent Entrance

\[
a^*_{\text{indep}, M=1/2} = b^*_{\text{indep}, M=1/2}
\]

Alliance Entrance

\[
a^*_{\text{alliance}, M=1/2} = b^*_{\text{alliance}, M=1/2}
\]

- Observation
  - Investment in the existing market is always higher in alliance entrance
  - Investment in the existing market is non-monotonic
Analysis

Optimal Mode of Entry

$M = \frac{1}{2}$ (market size is equal) and $s = \frac{1}{2}$

Result. An alliance mode of entry into the new market yields a higher profit than independent entry (i) when the new market is larger relative to the existing market; and (ii) when competition in the existing market is stronger relative to the new market.
Summary and Conclusion

• Try to explain an alliance between fierce competitors
  – Based on Mutual Inter-dependences between markets
  – Key factor: Market Size, Extent of Competition
  – 2 Stage Sequential Game
    • Stage 1: Selecting mode of entry
    • Stage 2: Investment decision

• Findings
  – Alliance mode of entry is preferred when
    • New market is relatively larger than existing market
    • Competition in existing market is relatively stronger to the new market
  – Supported their findings by empirical analysis (shopping center)