

## Covington-McNutt Template

A draft guide to the Construction of CTLs in Workshops conducted by Patrick McNutt and to be read in conjunction with the Appendix in McNutt's (2010) *Decoding Strategy*

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**2015**

At the on-campus *Managerial Economics* Workshop conducted by Patrick McNutt the MBA executives apply game theory concepts and economic reasoning to real companies. In the tradition of the *Manchester Method* the executives focus on the real business world analysing company and market data in real time. The methodology is guided by the principle of 'observe but do not judge' the data patterns in an attempt to construct a game dimension. The purpose is to evaluate a company's value proposition. A key take-away is the translation of a company's value proposition (new product launch, market entry, differentiation, pricing, acquisition) into a strategy set and the provision of a set of recommendations presented in a short executive Memo.

Furthermore, the methodology is inductive based on observations, signals, research and analysis. Textbook concepts are applied, assumptions are limited: the patterns discovered in the data sets define the scope and content of the analysis. Companies are selected based on real time events and business media coverage. Such coverage provides an insight into the value proposition. The purpose of the Template is to present the corporate intelligence and market research as a storybook of patterns uncovered in the analysis of a game dimension. The company as a player is defined by type: Baumol type and price signalling, Marris type and dividends signalling and Cost-Leadership (CL) type signalling costs and capacity. Game theory types based on entry-exit games are also introduced. The share price is a key performance indicator, and along with profits and sales forecasts, they represent the more topical signals on business media.

From Chapter 4 in *Decoding Strategy*, a Marris  $v = \text{CAPM}/\text{Asset value}$  is defined with respect to a company's capitalised market value, the total value of the shares outstanding of a publicly traded company. It is equal to the share price times the number of shares outstanding. The denominator is the company's asset value, the net book value or replacement costs of assets. Assessing the worth of a company as a player requires more research into the game signals in order to fully assess the relevance of the asset value in the game. What is the value of a brand? What is the value of an effective CEO? What is the cost of losing the game? What is the cost of lagging behind technology? So we translate the Marris  $v = \text{noise}/\text{signal}$ , assuming that the CAPM follows a *Fibonacci pattern* and the asset value reflects the signals in a game. Once a signal is acted upon it becomes a move in a game. McNutt is currently working on a *Poisson distribution* as an expression of the probability of a given number of moves, assuming player keeping to type, in a game occurring at a fixed time interval. In the interim, MBA executives can play with the investment tool: for example: Hypothesis: if Marris  $v < 1 \Rightarrow \text{noise} < \text{signal}$ : BUY

In the specific cases following we would like to acknowledge the research work of each of the following MBA executives attending Workshops. Nike: Cynthia Kuang, Hector Pages, Edison Jarrin, Premkumar Achari and Martin Cabrera. China Mobile: Bijoy Kuttappan, Shantanu Goswami, Nicholas Meyer, Sammy Musa, Ram Kurakula, Steve Williams. Nokia: Weihao Ding, Danci Zhao, Chen Zhang, Fengyan Gao, Jun Zhou and Li Wang. Microsoft: Christina Sherlock, Haresh Nagarajan, Dave Barnaby, Tareq Ahmed and Hunter Reed. Google: Lim Mun Hon, Jadran Ivancic, Ch'ng Eng Knoon, Ralf Schneider and Tam Yam Wai. And the Pepsi team of Stefano D'Agostino, Iyabo Elefin, Uzoezi Osagie, Danilo Tyra and Mel Courtney. Their combined efforts represent the decoding of patterns in company signals.

## **Broad Guidelines for a Template Using 7 Slides ( 20 mins presentation)**

Following the steps provided for constructing a [CTL] critical time line in the *Appendix* of McNutt (2010) *Decoding Strategy* the research and data analytics carried out during the Workshop translates into the Template. MBA executives can decide on the content of each slide and the following acts as a guide as to likely content.

### **Slide 1: Performance Indicators & Financial Analysis**

This slide presents an overview of the financial performance and key metrics and KFI that the research group discovered in order to define the likely value proposition proposed in the Prognosis. Share price is a typical indicator or market share data.

### **Slide 2: The Company as Player: Who are the Company?**

In this slide the designated company is described in terms of the game signals with a focus on C-suite signalling, market analysis, business media coverage. Outline the shareholders, whether the company is listed or private, and specific news items at this point in time.

### **Slide 3: Player Signature & Relevance of T/3**

This slide presents an overview of the company and focuses on specific key points that contribute to the game analysis. Define the company as a player and relevance of the T/3 – technology, time and player type.

### **Slide 4: CV Matrix or Market Focus or Specific Game**

The conjectural variation [CV] provides a first principles approach to identifying a near-rival from the sum of competitors. The near-rival is that competitor who is more likely to react to action by the company under review. Define the game Bertrand and price or Cournot and non-price signalling.

### **Slide 5: Game Dimension, G and Likely Sub-games g**

This slide illustrates the game dimension, the likely competitors, the market size, any market trends on entry and exit. Focus on the possibility of a sub-game in either a different product or geography.

### **Slide 6: CTL Critical Time Line across 5 years or less**

This key slide illustrates the pattern discovered in the research and data analytics. The action-reaction sequence defines a game dimension across 5 or less years of data patterns.

### **Slide 7: Conclusions & Prognosis t+1**

This slide illustrates the main set of conclusions based on the CTL analysis. A prediction is for t+1 is presented that will link in to an Executive Memo for upload to Blackboard.

Objective is to focus on real-time micro-data trends in order to uncover hidden data patterns about the company's behaviour.

The working hypothesis: strategy is embedded in the observed data patterns.

Construct a CTL in order to find the pattern.

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The following 6 companies are presented as players in a game dimension. Based on publicly availability data and public research sources and commentary, MBA executives were arranged into groups in order to evaluate the relevance of behavioural patterns in assessing a company's strategy.

They applied the T/3 framework in McNutt's *Decoding Strategy*: identifying the company as a player in a game and researching the signals to define the market-as-a-game and to confirm the player's *type*; describing the *technology* of the game where appropriate – this includes technology and innovation but also a change in consumer habits and any external influences on the observed behaviour. Finally, *time* is defined as a 5 year time period to cover a minimum of data points to construct a critical time line, CTL.

Value propositions are identified and translated into an optimal strategy – based on competitor analysis, pattern identification and likely predictions. The research is inductive and facts-driven and analysed without prejudice. The companies selected represent companies in the public eye and have been subject to much scrutiny in the business media. It is hoped that the critical time lines will add value to the on-going analysis of these companies and contribute to the continued application of economic and game theory tools of analysis in real company appraisals. The usual disclaimer applies.

1. Nike
2. China Mobile
3. Nokia
4. Microsoft
5. Google
6. Pepsi

# Financial Analysis

Item	2008	2009	2010	2011	2012
Revenue	18.6B	19.2B	19.0B	20.9B	24.1B
Cash	2.13B	2.29B	3.08B	1.96B	2.32B
Dividend	0.88/share	0.98/share	1.06/share	1.20/share	1.39/share

Has consistently increased dividend over past 5 years.

Item	Q4,10	Q1,11	Q2,11	Q3,11	Q4,11	Q1,12
Cash	5.15B	4.69B	4.79B	4.47B	4.54B	3.70B

Has shown considerable investment in new technologies.

■ Q1 2012 – Launch of FlyKnit Technology.



## Who is Nike?

- Established in 1978
- 2012 Revenue: \$24.1 Billion USD
- Primary Sector: Fitness Apparel and Equipment
- Market Leader in U.S.: 30%+
- Notable Brands within the Portfolio:
  - Cole Haan (sold in 2013)
  - Umbro (sold in 2012)
  - Starter (bought in 2004)
  - Converse (bought in 2008)



\*Nike is the Greek Goddess of Victory

Notable Products:



## CV Matrix

Nike (A)	Adidas (B)	Puma (C)	Under Armour (D)	Near Rival
Lower Price	CV = 0	CV = 0	CV ≠ 0	D
Launch New Product	CV ≠ 0	CV ≠ 0	CV = 0	B & C
New Innovation	CV ≠ 0	CV = 0	CV ≠ 0	B & D
Acquisition	CV ≠ 0	CV = 0	CV = 0	B
Dividend Increase	CV = 0	CV = 0	CV = 0	N/A

CV Matrix Result for Near Rival: **Assume Adidas**



## G: Game Dimension

### Game Type: Cournot

Nike and Adidas are engaged in non-price activity establishing a Cournot type game.

### Nike Player Type: Marris Type

Nike is currently in growth mode, is innovating, acquiring and increasing their dividends consistently and showing investment internally within the company.

### Nash Equilibrium: NO

There is currently no evidence that the game has ended. Although, the end could come soon based on sales of Umbro and Converse recently.



## T/3: Innovation = Opportunity

### FlyKnit:

Nike's new knitting technology that makes shoes 19% lighter than the Zoom.

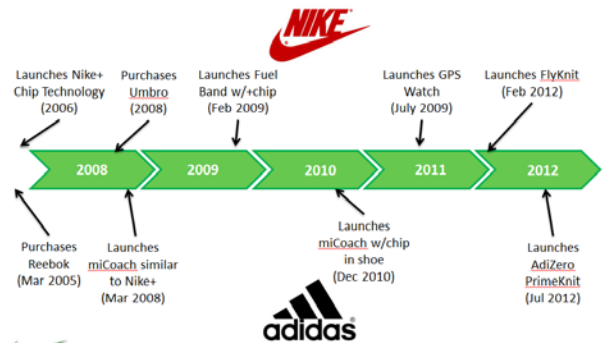


### Opportunities:

- Differentiator in the marketplace for the consumer
- Proprietary and Patented Technology (Equity Builder)
- Reduced Fixed Costs from Less man power needed to produce
- Economies of Scope by using technology for other products beyond shoes



## Critical Timeline



## Prognosis t+1

Nike should consider multiple contingency plans as they continue their game with Adidas:

### Scenario 1: Support Baumol Type and Price War

If a competitor narrows the competitive advantage, Nike should be able to withstand entering a Baumol type and competing on price in external markets on more elastic product lines.

### Scenario 2: Enter CL Type and compete on capacity

Expansion of new manufacturing facilities and of new technologies should give Nike competitive advantage to maintain market share and competitive price through capacity.



Share Price

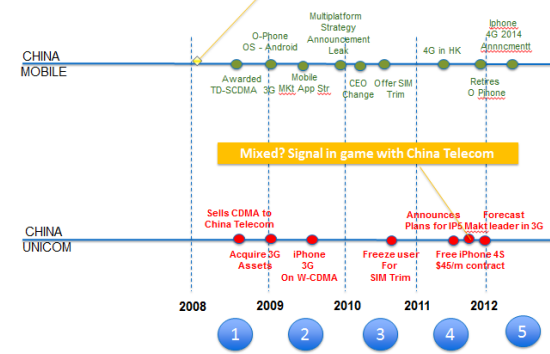


The Player

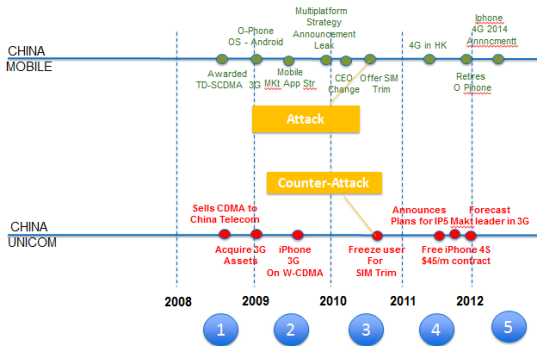
China Mobile (中国移动通信)

- Largest mobile telecom company in China
- World's largest Mobile phone operator (655 million subscribers) listed on NYSE and SEHK
- Revenue of \$ 44 Billion in 2011
- Domestic market share of 68%
- Testing the TD-LTE 4G network in China
- Apple iPhone 4G is rumored to work with the existing TD-SCDMA and the TD-LTE infrastructure
- President Key decision maker Mr Xi Guohua, since 2011.

Game - Cournot

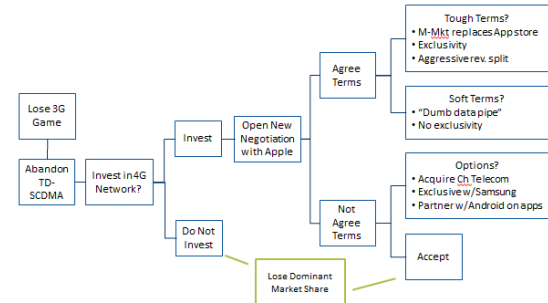


CV Signals



New 4G Game

The Nash decision tree for the new 4G game



Prisoners Dilemma

Who Gets 4G?

		China Mobile	
		Cooperate (share 4G)	Compete (exclusive 4G)
Unicom	Cooperate (share 4G)	3,3 Win-win equilibrium	5,-1 Become CL-type, paradox of want
	Compete (exclusive 4G)	-1,5 China Mobile partners with Samsung	1,1 Lobbying prevents roll-out of 4G

Observations & Patterns

- 1<sup>st</sup> Period – Cournot Game with Marris type players
- China Mobile lost to China Unicom (3G game)
- China Mobile now an incumbent extant
- New Game begins (4G)
- China Mobile will aim to win this game on Technology
- And if they win, will play a Cost Leader strategy
- Next Game begins (Data Delivery – Apps/Media)
- China Mobile will aim to maintain a CL strategy if it controls 4G



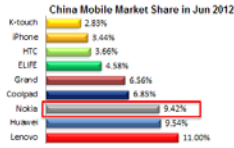
**Nokia – Finance Performance**



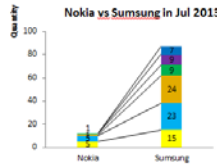
**Nokia – Stock Market**



**China Mobile Market Share**



**Nokia VS Samsung**



**Nokia: Player Overview**



- In 1865 the Nokia was evolved from riverside paper mill in southwestern Finland.
- In 1992, Nokia decided to focus exclusively on manufacturing mobile phones and telecommunications systems. Others are gradually sold off.
- In 2007, Nokia is recognized as the 5th most valued brand in the world.
- In 2013, Nokia Corp's core cell phone was acquired by Microsoft for \$7 billion.



- Nokia Corporation operates as a mobile communications company worldwide. It operates in three segments:
- Devices & Services
  - HERE
  - Nokia Siemens Networks.

**Nokia - Player Type**

Condition	Apple	Nokia	Samsung	Lenovo	Hua wei	Price	Elastic TR	Inelastic TR
E < 1 Price Inelasticity - High End	iPhone 5S ¥6,288	Lumia 1520 ¥4,799	Galaxy Note P60 ¥5,188	VIBEZ K910 ¥3,199	Ascend P6(S3G) ¥2,288	↑	↓	↑
E > 1 Price Elasticity - Low End	3GS ¥453	106G SM ¥169	E1200H G3M ¥138	MB169 ¥199	C2856 CDMA ¥158	↓	↑	↓
Price Gap	¥5,835	¥4,633	¥5,050	¥3,000	¥2,130			

- Note:
1. Samsung and Apple
  2. Nokia, Samsung, Lenovo and Huawei

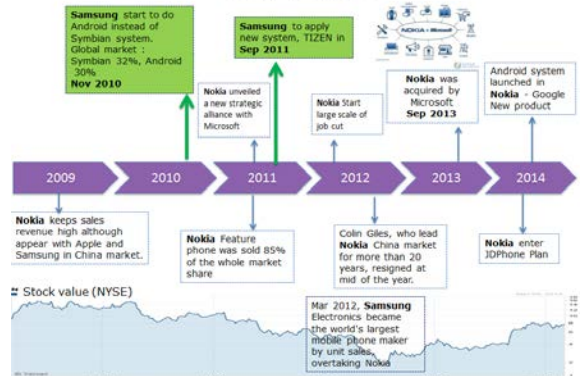
- Low-end mobiles are fighting ships as Cross Substitutes of mobile OEMs
- Nokia low-end mobile phone is Bertrand Game Type
- Probability equals to 1 which means this is a Baumol Model

**Nokia's Conjectural Variation Matrix**

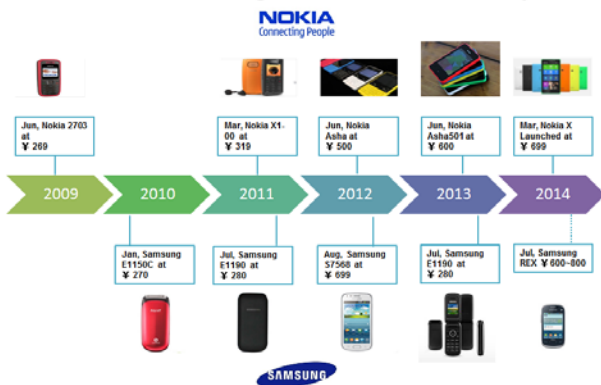
Condition	Apple	Samsung	Lenovo	Huawei	ZTE	Near rival
Action 1: Lower price	CV=0	CV≠0	CV=0	CV=0	CV≠0	Samsung ZTE
Action 2: Launch New product	CV≠0	CV=0	CV≠0	CV=0	CV=0	Samsung Apple Lenovo
Action 3: New Innovation	CV≠0	CV=0	CV=0	CV=0	CV=0	Samsung Apple

**Nokia's Near Rival is Samsung**

**CTL for G1**



**CTL: g1 Low Cost Entry**

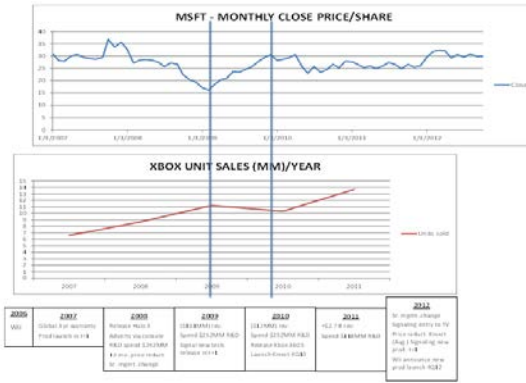


**Recommendations t+1**

- Increase R&D investment operating system
  - Cooperation with Microsoft
- High-end market share expansion*
- v
- Low cost entry model:*
- Cooperation with Chinese 'smaller' incumbents



# Performance



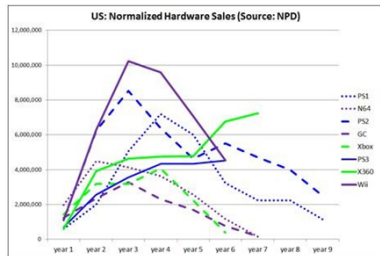
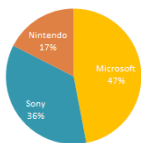
## Background Focuses and Divisions

- Engages in Developing, Licensing and Supporting a Wide Range of Software Products and Services
- Design and Sale Hardware and Deliver Online Advertising
- Five Business Segments:
  - Windows & Windows Live Division (Windows Division)
  - Server and Tools, Online Services Division (OSD),
  - Microsoft Business Division (MBD)
  - Entertainment Division (IED) – Est. 13% Total Revenue
  - Devices Division (EDD)

## MS Decision Makers

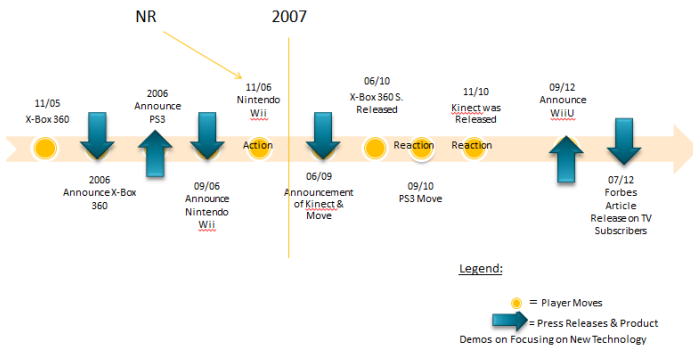


## The US Market

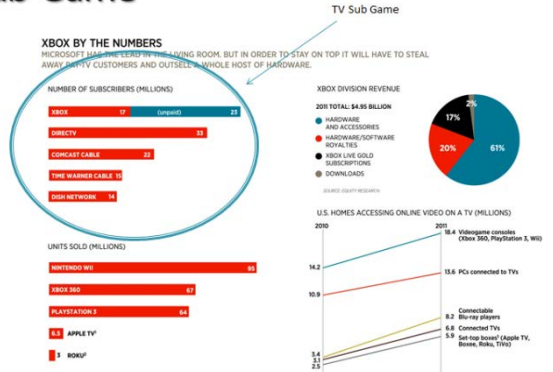


Microsoft X-Box 360 has maintained its US share leader position for 20 straight months (since Jan '11)

## CTL



## Sub-Game



## t+1 Strategy

- Near Rival to Nintendo
- “Play not to lose” - SMA vs. Nintendo’s FMA
- Marris Type: Invest Heavily in R&D
  - Economies of Scope
  - Microsoft Reacted to New Innovation (CV=0)
- Cournot Game: Focus on Technology and New Product Launches
  - No Reactions to Price from 2007 – 2012
- Product Relatively Inelastic
  - May become more Elastic as Technology Ages

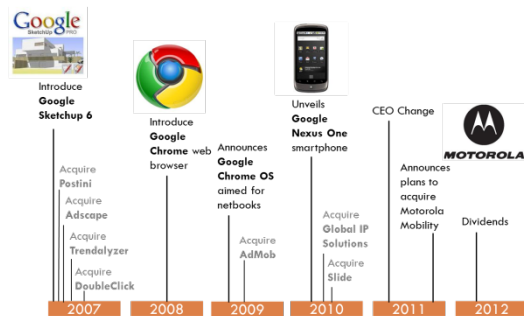




## Player: Google Inc.

## Google Overview 2007-2012

- Founded by Larry Page and Sergey Brin
- Headquarters: California, USA
- First incorporated as a privately held company on Sep. 4, 1998.
- Initial public offering on Aug. 19, 2004
- End of year 2008, Google has the most powerful brand in the world
- Fast growth is attributed to a series of **aggressive moves**, including new product developments, acquisitions, and partnerships.
- Google positions itself as a **top-tier search company** and acts as the gatekeeper of the world information.
- Google earns its revenue from **targeted advertising** related to its internet search, Gmail, online shopping and other service
- Creative products and services are launched by Google frequently, and some have become very popular. E.g. Gmail, Google Desktop, Picasa, iGoogle



## CV Matrix & Near-rival

## Game Dimension

	Yahoo	Microsoft	Aol	Reaction
Search Business	✓	✓	✓	{Yahoo, Microsoft, AOL}
Maps/Locations	✓	✓	✗	{Yahoo, Microsoft}
Cloud Storage	✗	✓	✗	{Microsoft}
Mobile OS	✓	✓	✗	{Microsoft}

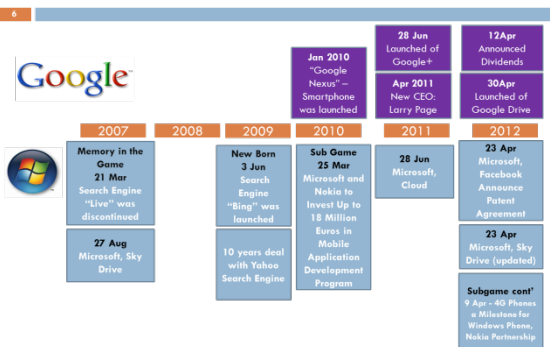
Microsoft is the Near-rival

- Geographical Market: USA
- Product: search ads
- Cournot game (non-price signals, duopoly)
- Two main players: Google & Microsoft

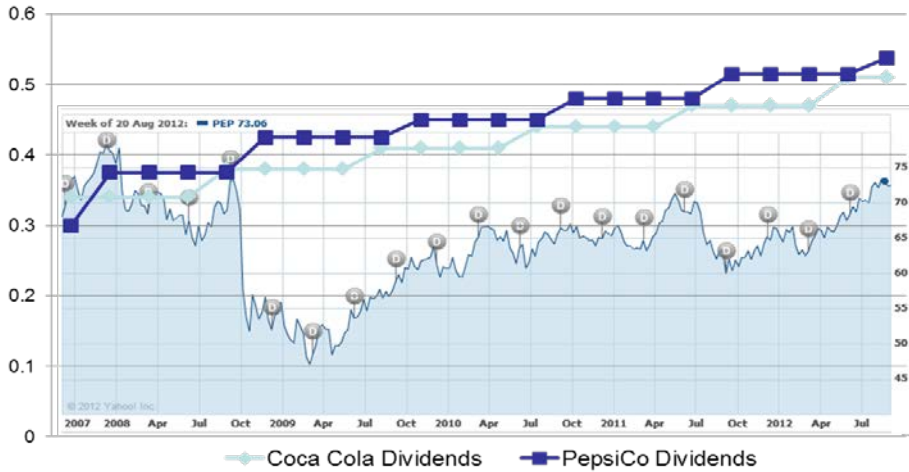
Google	Microsoft
Incumbent dominant player	Newborn player <ul style="list-style-type: none"> <li>It was in the search ad business in the past but it failed</li> <li>It tried to go back in the game as de novo by offering to buy Yahoo. It failed and entered as newborn as Bing</li> </ul>
Marris Type	Baumol + Marris Type

## Critical Timeline & Signals

## Prognosis t + 1: MS Near Rival



# Share Performance



## The Players

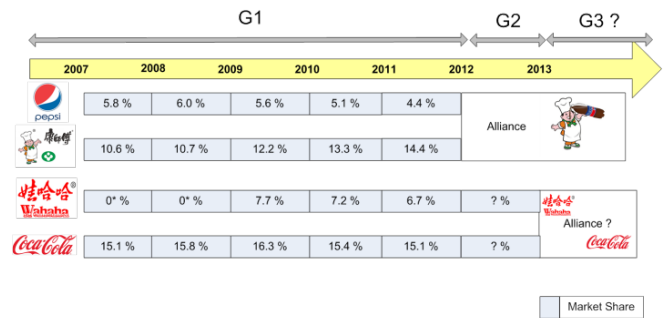
Pepsi launched new drinks (particularly non-carbonated healthy drinks)

Wahaha responded with milk based and tea based drinks. Pepsi has shown consistent investment in China Marris type player in a Cournot game.

Despite the investment Pepsi failed to gain market share and in 2011 so an alliance with **Tingyi** to exploit their distribution capabilities in T1.

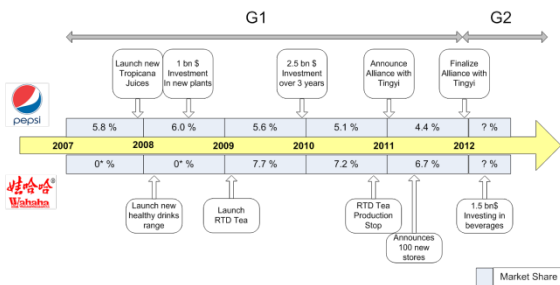
Wahaha signal new investments .

## Entropy in China Game

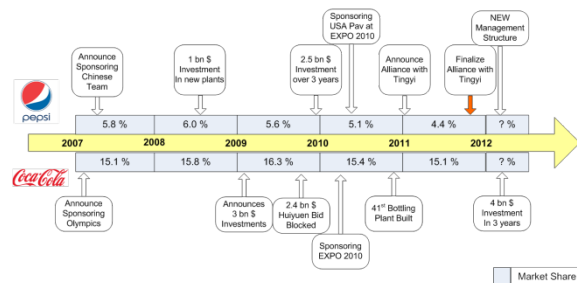


\* Wahahamarket share incorporated into Danone 2007-2008

## CTL: Pepsi v Wahaha

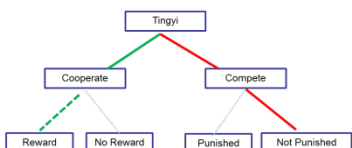


## CTL: Pepsi Sub-Game: g1



## Game Tree Analysis

- Pepsi's organic investments have not delivered market share gain in China
  - Cooperation needed with Tingyi to improve distribution



## Predictions

Mar 2012 Pepsi Alliance with Tingyi to continue.

t+1 potential alliance Coca Cola and Wahaha

Wahaha to diversify in China.

Noise in the game in 2011 announcement by Wahaha of 100 new stores and \$2bn in cash reserves for further investment.