

世界投資者週：探討科技股分析重點

演講嘉賓：

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王華先生, CFA, 易方資本對沖基金的創辦人及基金經理

洪灝先生, CFA, 交銀國際董事總經理

吳漢銘先生, CFA, 亞洲金融科技師協會 (IFTA)數據分析委員會主席

世界投資者週

- 由國際證券事務監察委員會組織（IOSCO）倡導的國際活動
- 目的是推動投資者教育及投資者保障
- 世界投資者週由**2017**年開始舉辦，今年已經是第4屆
- 2019年共有89個國家和地區的證券監管機構、證券交易所及多家國際性組織、投資者協會參與
- 在香港，「世界投資者週」由投委會統籌，不同的相關機構包括CFA協會、ACCA同CFA Society Hong Kong積極參與同支持
- 投委會「錢家有道」網站了解更多「世界投資者週」活動詳情。



WORLD INVESTOR
WEEK 2020
PROMOTED BY IOSCO

2020年10月5日至11日

世界投資者週 | 成就投資力量

-  綠色投資機遇網上講座
-  科技行業分析網上講座
-  社交媒體防騙資訊
-  跟主播學投資短片系列



科技融入生活 - 地球一分鐘

每一分鐘：

- ZOOM有超過20萬人參與會議
- WhatsApp有超過4000萬條新短訊
- Facebook有14萬張新上載照片
- IG有超過34萬個新Story
- YouTube新增500小時影片
- Amazon有超過6000貨運出
- 100萬美元的網上消費

Source: Domo - Data Never Sleeps 8.0



主題演講

朱暖暉女士, FCCA

ACCA (特許公認會計師公會)香港分會政策主管



探討科技股

By Eunice Chu
Head of Policy, ACCA Hong Kong

閱讀完整報告

Sector Analysis: A Framework for Investors



SEMICONDUCTORS

UNDERSTANDING THE INVESTMENT FUNDAMENTALS OF THE SEMICONDUCTOR SECTOR

By Alan Lok, CFA, Eunice Chu, ACCA, and Guruprasad Jambunathan, FRM

One sure-fire way to kill any technology-related conversation is to talk about vacuum tubes. Bear with us though, because they're incredibly important. Before there were semiconductors in our electronic gadgets, we used vacuum tubes. Both vacuum tubes and semiconductors carried out the same function, but the vacuum tube was a monster that required immense physical space and energy. And at its height, the vacuum tube technology was employed in the ENIAC, the world's first digital computer, built in 1946. It weighed over 30 tons, consumed 200 kilowatts of electricity, but was somewhat unreliable.

Semiconductors changed all that. The chip that powers your mobile phone and computer is made possible with semiconductors, which are minute and consume significantly less power compared to vacuum tubes. Without these ingenious semiconductors, there would be no internet, no tech giants, no international space stations, and definitely no Facebook. Simply put, they allowed us to progress into the information age.

Today semiconductors continue to drive our digital economy; our increasingly technology-reliant society needs even more circuits, chips, and microchips. Semiconductors are also the foundation of the "Industrial Revolution 4.0" as necessary components of the growing number of smart production facilities connected with the Internet of Things (IoT).

In this investment framework, we will first take you on an exploratory journey through the global semiconductor industry landscape, now worth almost US\$500 billion in annual sales. Thereafter, we will proceed to give you an analytical framework to assess investment opportunities in this sector.

A COMPLEX GLOBAL ECOSYSTEM

In a nutshell, the semiconductor value chain comprises six stages, beginning with research and development, followed by design, manufacturing, assembly, testing and packing, and finally, distribution. This is a complex value chain spanning different continents; in fact, a global R&D cum supply chain ecosystem is how the industry is organised, as it is impossible for one country to try to house all six stages in a single location and excel at every stage.

On the demand side, consumers unceasingly insist on more features, greater reliability, and higher speed. This has resulted in higher R&D expenditure (R&D on average consumes about 15% to 20% of revenue) in a bid to improve on current models. On the supply side, fierce competition dictates that the eventual manufacturing, testing, assembling, and packaging must be of sufficient scale to enjoy low unit cost.

Satisfying both criteria requires completely different sets of logistical infrastructures, not to mention human resources and working environments. And this is why chip designers such as Intel, AMD, and ARM are in the US Silicon Valley, whereas manufacturers and assembly lines like Foxconn and Flextronics are in China. The industry has optimised production through a globally interdependent ecosystem that pools up the best each country or economy can offer. However, this arrangement may change in the future following the US ban on China's technology champion, Huawei. Chinese companies will definitely attempt to develop their own chips and machines that manufacture these chips, including chip designing capabilities.

A SHIFTING LANDSCAPE

In addition to being complex and in production in multiple continents, the industry is also far from static. Currently, integrated device manufacturers (IDM) such as Intel, Micron, and Samsung continue to dominate the landscape. However, fabless foundries (which focus exclusively on design while outsourcing fabrication) such as ARM, Qualcomm, and Broadcom are slowly but surely evolving into a force to be reckoned with. This shift is inevitable as products become more sophisticated, increasing the need for further specialisation.



SECTOR ANALYSIS: A FRAMEWORK FOR INVESTORS

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When was the last time you withdrew money from an ATM? This used to be the quintessential financial transaction, but it gradually has become less critical and thus less common. We'd be willing to bet that if you compared your bank account records from this year with that of even five years ago, the frequency of which you entered a PIN to received cash would have been markedly higher back then.

It makes sense. Why even bother with cash when you have smartphone-enabled e-wallets at your disposal? You not only save time from queuing for your turn at the ATM but also bypass the inconvenience of carrying notes and coins. Online transactions (which include mobile payments) have changed the way we pay for goods and services in our daily lives.

Of course, online payments are nothing new. Amazon has depended on them since 1995 when it was just a virtual bookstore. PayPal launched its money transfer services in 1999. But it is only with the advent of 4G mobile communication coupled with the simultaneous proliferation of smartphones that the online payments business model has come to the fore. Companies in this space need no longer rely on the legacy structure of credit card vendors, conventional retail banks, or even desktop computers.

A NONUNIFORM TREND

Although the general trend today is toward making cashless payments increasingly ubiquitous, the pace, format, and depth of coverage vary quite widely across jurisdictions. Consider Sweden, a developed nation on track to becoming an almost entirely cashless society by 2023. Only about 10% to 15% of point-of-sale purchases made by households use cash and many merchants no longer accept it at all. The same can be said of payments made in China: those who use notes and coins are mostly tourists.

That said, a few notable outliers among the industrial nations remain highly cash-centric, such as Germany and Japan. About 80% of German household point-of-sale purchases are still made using cash. In Japan, the largest coin is worth ¥500 (about US\$5), meaning residents have little choice but to lug around pieces of metal. The attachment to physical funds in these countries, however, may reflect their recent traumatic past rather than an inability to embrace new technology.

COMMON CHALLENGES

Despite these variations across jurisdictions, all online payment businesses around the globe face common challenges. One such challenge is disappearing geographic boundaries, which bring opportunity but also more convoluted tax issues. Another is the increasingly real-time nature of society. Satisfying the on-demand needs of consumers creates more intense pressure on hardware infrastructure, which also means much greater opportunity costs for any downtime.

Then there are switching fees. Even if moving to a newer and more efficient service provider may realize significant savings in the long run, stakeholders in the ecosystem may still be unwilling to bear the upfront charges. This is especially true for companies beholden to public shareholders, which often results in an incentive system skewed toward the short term – one always focused on the next quarterly earnings report.

Finally, there's the challenge of security. Although encryption technology is improving by leaps and bounds, so too is the hacking capability of criminals. And in a world in which many proclaim that "data is the new oil," issues of privacy and potential theft of sensitive information are two significant issues that the industry faces.

CASHLESS IS WORTH TRILLIONS

Physical cash may be falling by the wayside, but the amount of money flowing through a myriad of digital channels continues to increase. Total worldwide digital payments by consumers alone (excluding business-to-business) reached US\$4.1 trillion in 2019 and is estimated to hit US\$6.7 trillion by 2023, equating to a compound annual growth rate of about 12.8%.

This impressive growth rate highlights the upside of the nonuniformity of the cashless trend. Many lucrative untapped markets remain. Against this background, let's move on to a systematic framework for analyzing both the high-level and nitty-gritty aspects of online payment business.

NICHING DOWN

Online payment is a term encompassing many different subcategories. As such, step one is to determine what specific products and services a company provides. See whether the business is a payment gateway, digital wallet, mobile app, or a combination of these services. Then ask what this service



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TELECOMS

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By Alan Lok, CFA, Eunice Chu, and Guruprasad Jambunathan

For investors exploring the telecommunications sector, it is important to be aware of the key economic, operational and regulatory factors influencing these firms. These not only vary from country to country but also from company to company, depending on the kind of service that is being provided – fixed line, mobile or a combination of the two. Common to all are the opportunities afforded by the growth in data and the proliferation of online services. For operators in developing markets, lower penetration rates offer long-term opportunities. Meanwhile for operators in the developed world, staying relevant by keeping pace with technological advancements is vital. In general, the sector is marked by intense competition, hefty capital expenditure requirements (at least historically) and rigorous regulatory intrusion.

There are three listed telecommunication stocks in the FTSE ST All-Share Index, with a net market capitalisation of S\$28.6 billion, and they accounted for 7.5% of the index as at 31 Jan 2018*. Of the three, Singtel is the largest constituent company, representing about 90% of the Singapore telecommunication sector by market capitalisation.

DEMAND DRIVERS

The degree of price elasticity of demand is a notable issue in the telecom services space. For mobile operators, this tends to be non-discretionary but at the same time still relatively elastic. In short, price sensitivity is an important metric to consider.

Of increasing importance is the extent of contribution from new-age services enabled by digitalisation. These include unified messaging, collaboration and content generation, and a company's positioning in these areas can have a profound impact on revenue prospects.

Also, the appeal, range, and quality of a service offering are critical. How well a fixed-line operator is positioned can be gauged by examining the profile of end users, and the revenue split between voice and data.

In the mobile segment, the operating outlook is influenced by the mix of revenue by user type (for instance retail versus corporate), data usage and by billing arrangements (pre-paid or subscription). More recently, mobile has been taking a growing share of total data consumption. However, the whole pie is growing: usage of data has increased considerably across the board, and companies are thinking of ways to harvest and monetise the information they have gleaned from customer behaviour.

MARKET POSITION

The operating landscape for telecom companies is heavily influenced by both competition and the regulatory environment. Investors should examine barriers to entry, in addition to the ease with which existing rival firms can compete. The number of operators in the market has a bearing on performance. There may be only a few competing businesses, or the market could be ripe for consolidation.

Of course, the mechanics of the sector are not purely dependent on supply-and-demand parameters. The role of the regulator is essential from both competition and licensing perspectives. Pricing can be influenced by the agenda of a regulatory body, and an operator may be obliged to fulfil specific technological or coverage requirements. The structure of the telecoms market is changing, and the consequences of increased competition from OTT (over-the-top) services such as Skype or WhatsApp require monitoring.

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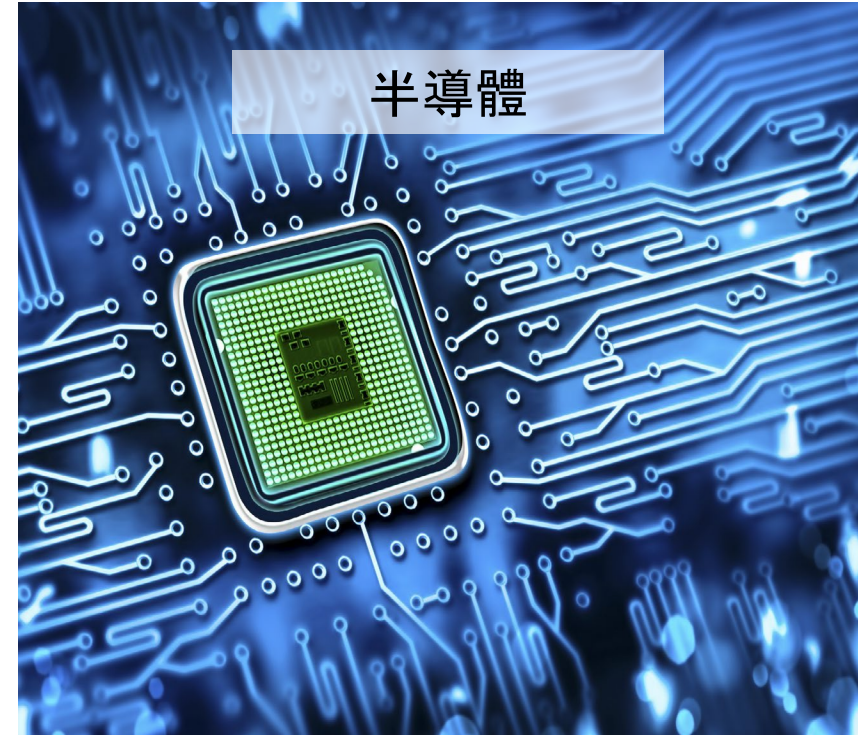


<https://cfainst.is/30kszoA>

概述



- 世界上第一台建於1946年的計算機
- 重量超過30噸
- 消耗 200 千瓦
- 不可靠



- 互聯網、手機、科技巨頭、太空站的基礎
- 信息時代和物聯網的推動者
- 工業革命4.0的燃料

價值鏈 – 全球相互依存的生態系統

1. 研發

2. 設計

3. 製造

4. 裝配

5. 測試和包裝

6. 銷售分佈

- 晶片設計師在美國矽谷
- 佔據收入 15% - 20%

- 足夠的規模，降低製造成本
- 中國鑄造能力良好

將每個國家提供的最好的資源結合起來

行業設備製造商 (IDM)

設計和製造

- Intel
- Micron
- Samsung

非鑄造 設計商

專注於設計,外判製造

- AMD
- Qualcomm
- Broadcom

半導體廠

僅製造

- Foxconn 富士康
- Flextronics 偉創力

行業設備製造商 (IDM)

設計和製造

- 向第三方提供製造服務?
- 自行製造和第三方製造之間的利潤率比較
- 產能使用率

非鑄造 設計商

專注於設計, 外判製造

- 供應鏈風險
- 過度集中於一個製造商

半導體廠

僅製造

- 鑄造能力
- 使用率
- 停機時間
- 資本投資與收入之間的時間差異

分析框架

需求集中

- 買家高度集中
- 集中幾個大買家對公司的影響



需求週期性

- 影響產品季節性的因素
- 國內生產總值增長
- 消費者情緒
- 企業支出
- 收入的變化
- 用戶市場預測

定價

- 由於專有技術、知識產權或特殊產品，享受更高的定價
- 價格壓力
- 保護價格的合約協定期

地緣政治風險

科技進步

- 科技發展迅速
- 霸主可能失敗
- 設施升級
- 對新興技術的投資
- 人工智能
- 物聯網



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在此處下載報告。



A person is captured mid-jump over a beach at sunset. The sky is filled with orange and pink clouds, and the sun is low on the horizon. The person's reflection is visible in the water. The text "Thank you" is overlaid on the image.

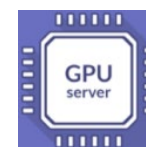
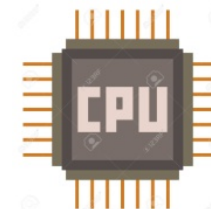
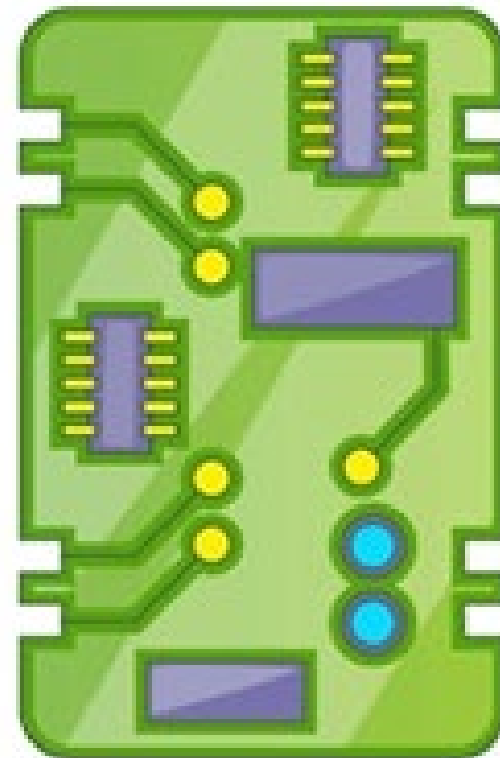
Thank you

By Eunice Chu
Head of Policy, ACCA Hong Kong

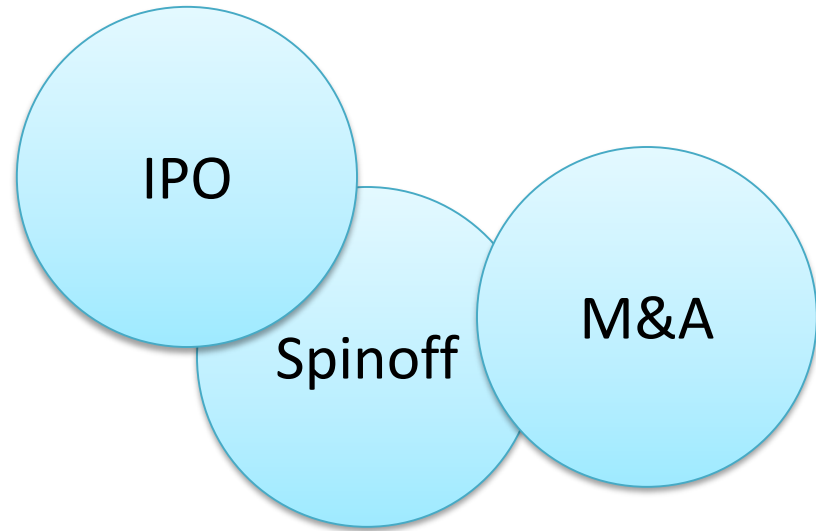
環球科技股總覽

王華先生,CFA,

易方資本對沖基金的創辦人及基金經理



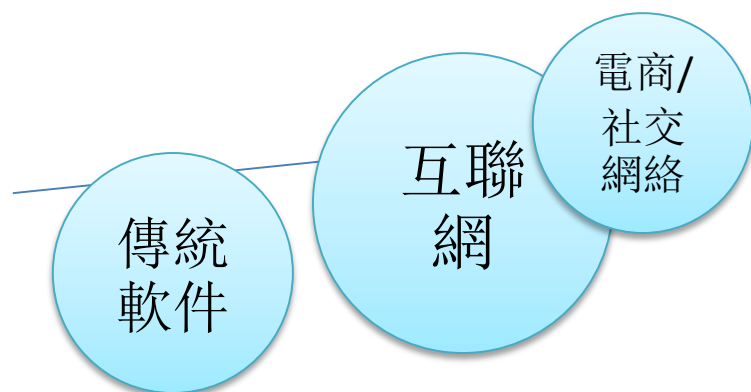
三個科技股推手



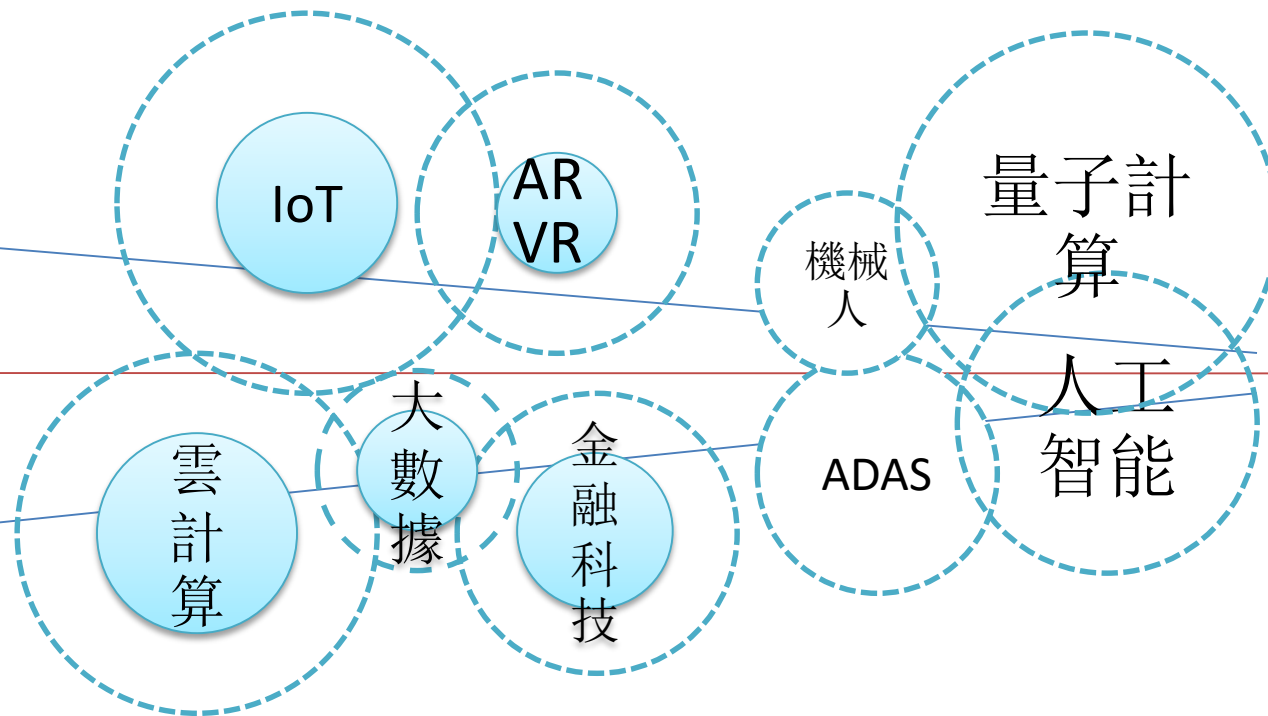
WFH → WFA
Digital Nomad
Contactless economy

Global Eco-System / 賽道

硬件/半導體



軟件/互聯網/金融科技



Data
Privacy

數據

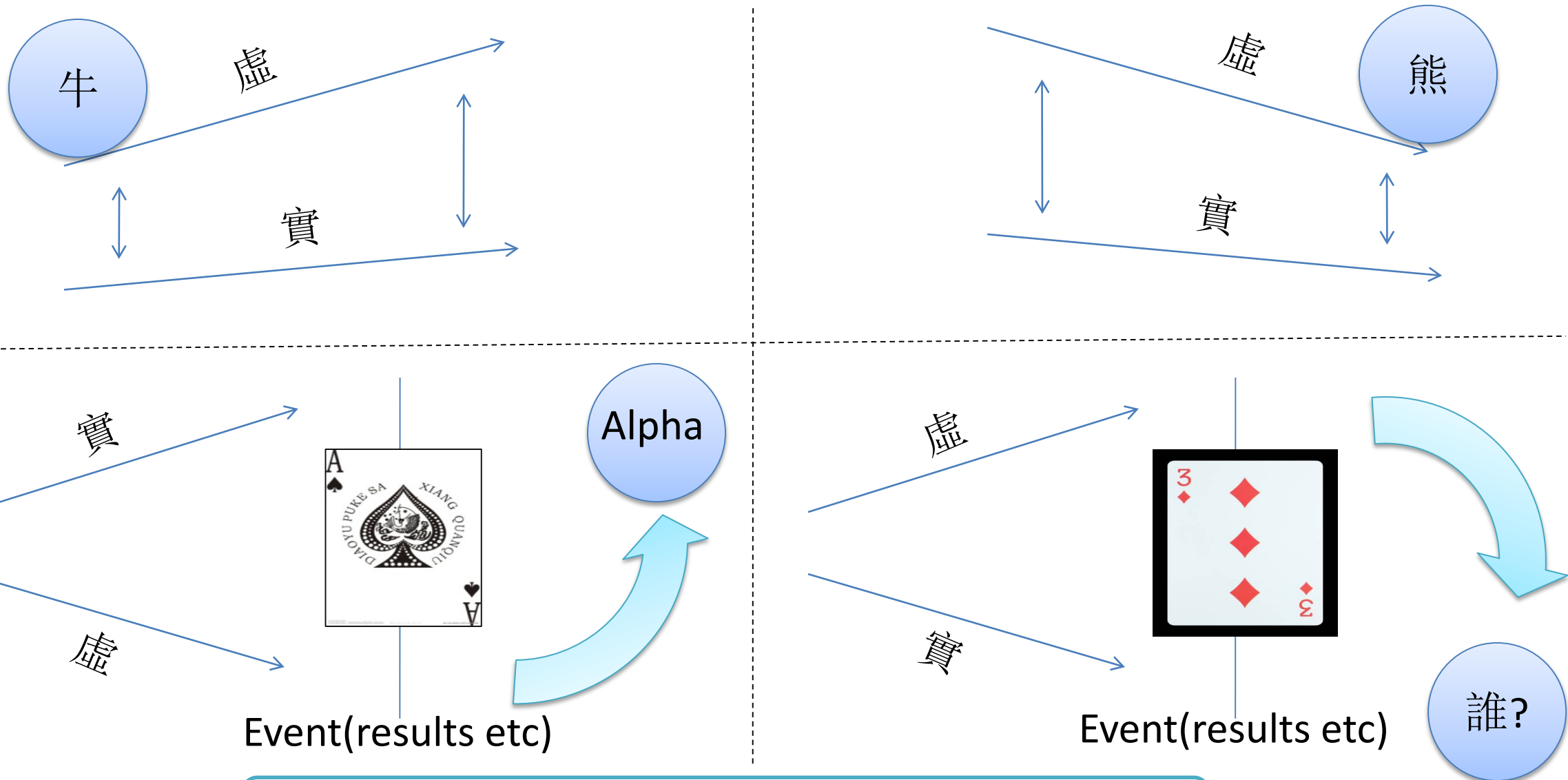
內容

Anti-
Trust

Digital
Tax

*bubble size based on IDC/Gartner etc and our estimate of market size

Fundamental(實) + Sentiment(虛) + Sensation(虛)



Stock + Sector + Macro

B2B

半導體, 硬件, AI, Fintech, 互聯網, 電商, 品牌, Icon

B2C

分析腦

實

- 1) 慢慢想
- 2) 找不同
- 3) 合理=>快樂

內容
EPS-g, Sales-g

捉重點

以偏概全

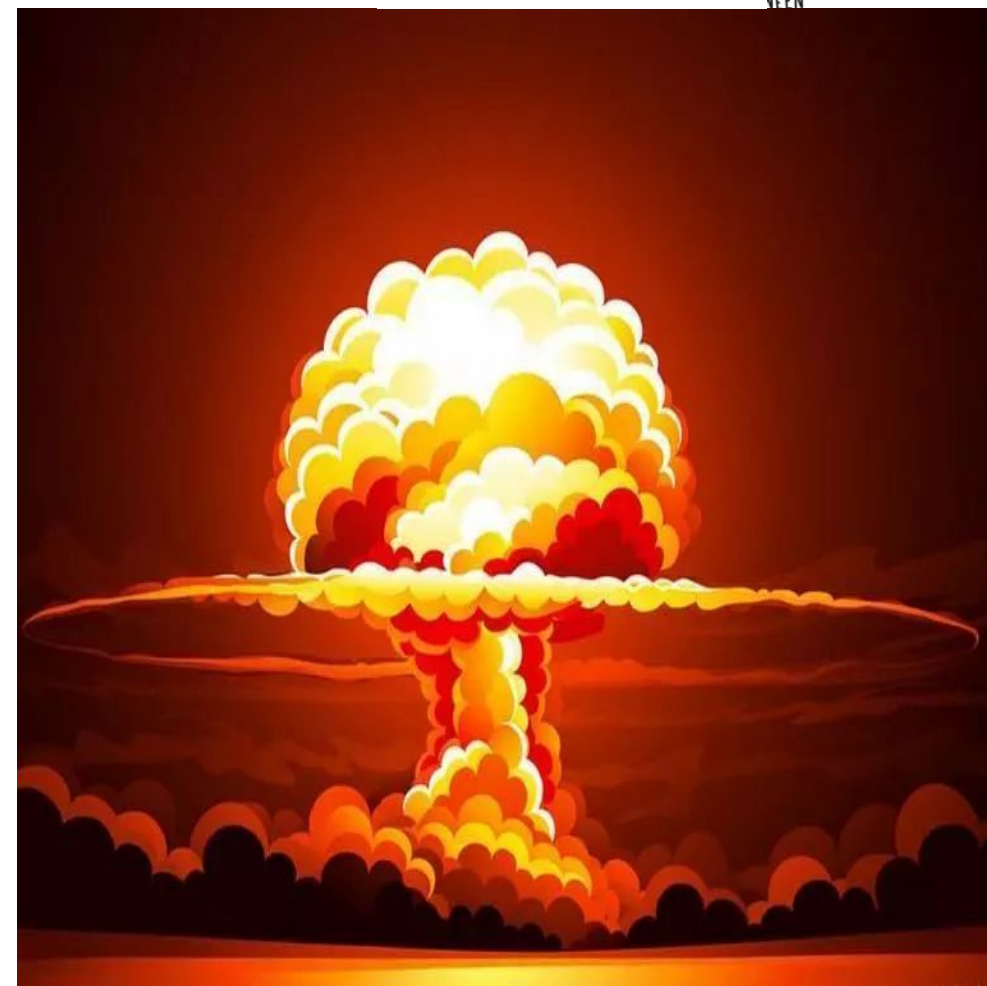
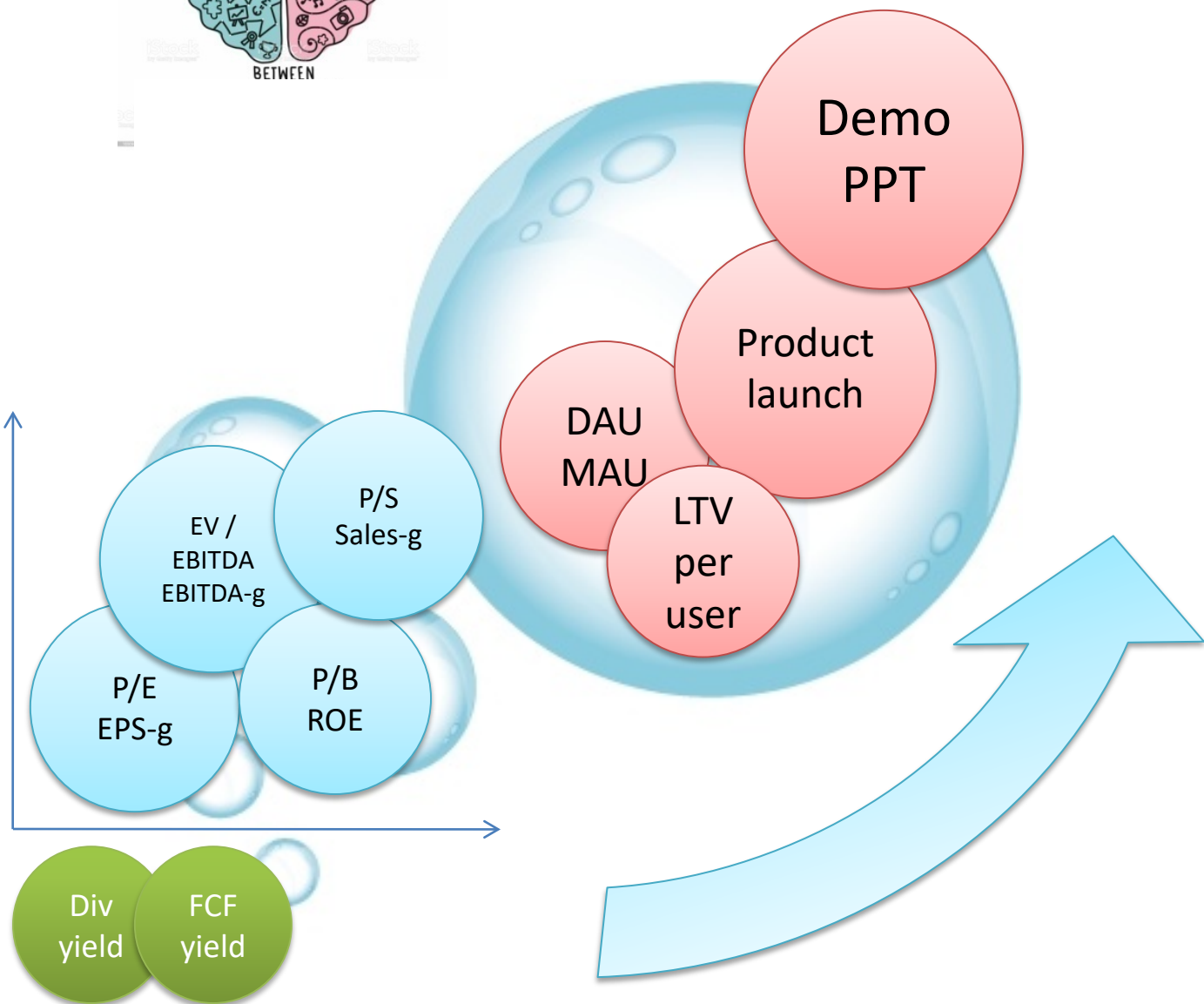
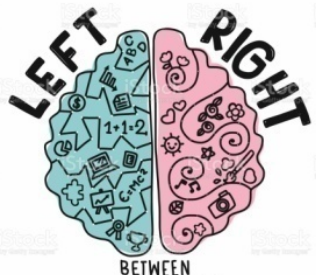
標籤

感受腦

虛

- 1) 快快動
- 2) 找相同
- 3) 快樂=>合理

形容詞
P/E, P/S



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