

# 國立交通大學

高階主管管理學程碩士班

碩士論文

論半導體設備製造商 ASM 的市場競爭策略

The Evaluation of Cooperate Strategies of A Semiconductor Equipment  
Manufacturer,  
ASM International Co. Ltd.



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中華民國九十九年七月

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Business Administration

July 2010

Hsinchu, Taiwan, Republic of China

中華民國九十九年七月

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## 摘 要

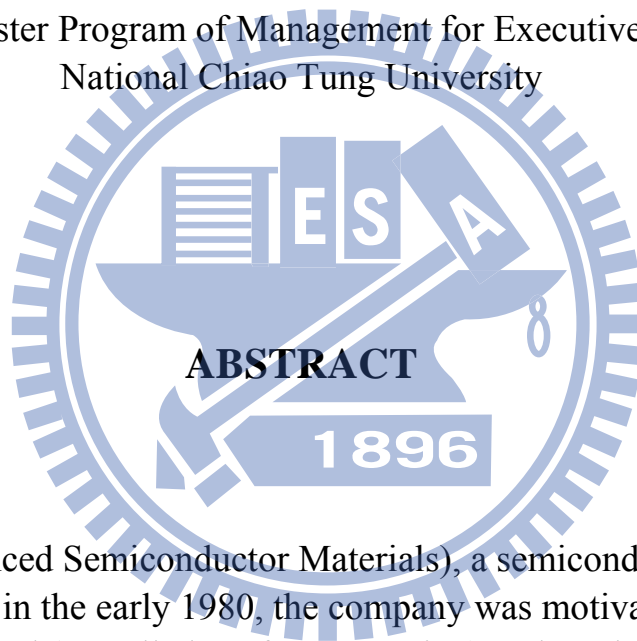
半導體設備製造商 ASM 在 1980 年度創立之時，創業者基於風險分散的策略，即在創立初期跨足晶圓製造與封裝設備(晶圓設備俗稱前段工序，晶圓封裝俗稱。後段工序)，意欲建立一可以提供完整晶圓製造與封裝設備的偉大公司。然而，半導體工藝的多樣性，技術創新的變異性以及公司管理策略的不足，使得在本地化管理策略的不同管理模式發展下的前後段設備製造工廠的創新效益與市場份額有極大的差異，也導致此不同產品配置策略的公司價值變化趨勢往貶抑的方向發展。本文旨在探討 ASM 公司在半導體景氣循環趨緩和市場競爭環伺之下對手，應採取何種策略以對應內外壓力，並提升或能實際反應公司的市場價值，同時能兼顧公司的永續發展。而表現方式以個案討論呈現，希望為 EMBA 高階主管管理學程的論文帶來一種新的表達方式。

# The Evaluation of Cooperate Strategy of A Semiconductor Equipment Manufacturer, ASM International Co. Ltd

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Master Program of Management for Executives  
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When ASM (Advanced Semiconductor Materials), a semiconductor equipments manufacturer, founded in the early 1980, the company was motivated by the founder to involve both Front End (so-called Wafer Processing) and Back End (so-called Packaging process) equipments manufacturing to diverse it's business risk, and intend to become a great company to provide a complete IC manufacturing solution in the industry. However, the comprehensive semiconductor processes evolved, the differentiation of innovative technology and lack of the ability to manage a multinational company in global base, resulting of the performance of both Front End and Back End companies in the group varied in a very wide gap, in terms of management, innovation efficiencies and market share, hence, the strategy of ASM utilized has pushed the cooperate value toward the negative trend. This case study intend to evaluate what kind of possible strategies ASM can take to increase or to reflect it's real value in the market, and enable it's sustainability in the long run.

## 誌 謝

本論文得以圓滿完成，首先要特別感謝我的指導教授 陳安斌 博士。一開始，我個人想的論文方向是做公司價值計算，幸運的，承蒙 陳安斌教授 指導而 改變方向，運用我本身於題目中預研究的公司的高層深入了解，把論文方向轉成一個”個案”研究。於研究期間，從論文題目的擬定、研究方向的選擇、觀念架構的形成、個案公司的討論，乃至於論文陳述的表達方式，陳教授均適時給予周詳之指導與建議，恩師學識淵博，有幸受教，讓我體認到恩師對學生的用心與執著，謹此致上最誠摯之謝忱。

口試期間，承蒙 何天華 教授以及劉敦仁 教授皆對我的論文提出許多寶貴的意見與啟發性的建議，使論文更加充實與完備，特此一併致謝。在此還要感謝國立交通大學資訊管理研究所的 怡涵 和 博文，共同協助校稿，使本論文之可能錯誤降到最低。

同時，也要感謝父母的辛勤栽培，從小到大的求學過程中，他們無怨無悔的付出與支持，讓我能夠擁有接受各項教育的機會。當然，更要感謝內人錦燕的辛勞與持家，讓我無後顧之憂，全心向學，順利完成學業。

最後，謹將這篇論文獻給敬愛的師長、親愛的家人與可愛的朋友們。

王玉揚 謹誌

國立交通大學 高階主管管理學程 碩士班  
中華民國九十九年七月

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# 第一章、緒論

## 1.1 研究動機與目的

一個公司的存續與興衰，除了大環境國家政經情勢的發展外，公司的領導階層的決策幾乎決定這一切。ASM 公司從 1968 年創立到現在，期間經歷草創、快速擴張、經營危機、面臨破產、銀行團接管、整頓、重新站穩腳步，併購危機和再出發，真的是過程精彩。

敝人於半導體設備製造公司 ASM 任職 17 年(1988 到 2005)，於 2001 到 2004 擔任 ASM 台灣區總經理期間，參與或了解公司決策的內幕與背景；由於 ASM International 與持股的子公司 ASM Pacific Technology 分別於 NASDAQ 和 HKSE 上市，但股價體現不公允；與公司度過艱辛歲月，共同成長，覺得過程之間公司決策有值得吾人借鏡之處，故選為論文題目，並把 2008 年 5 月初設為 ASM 公司 CEO 做決策〈本論文的研究主題〉的時間點，而此決策時間點的 2 個星期後是股東會議。

## 1.2 研究方法

原本想以計算合理 ASM International 公司價值為研究方法，用 EVA 的計算模式來導出 ASM 公司的合理價值；由於以數學模式來研究公司合理價值的論文已經很多，經指導教授 陳安斌 博士 指引，轉為以個案討論方式為論文研究方向，所以論文本以個案討論方式呈現。

## 第二章、個案研究

### 真實的個案公司案例研究—ASM International 公司的市場競爭策略

#### 2.1 緣起—ASM 是一家什麼樣的公司

2008 年的春末，位處荷蘭中心 Utrecht 市郊小鎮 Bilthoven 的 ASM International 公司的總部，是一棟不甚起眼的二層樓建築物（圖一），建築相當符合公司創辦人 Arthur Del Prado 的個人行事風格，低調，實事求是，講求實際，建築物融合在附近的住辦混雜的建築群裡，不顯得突兀，而且內部陳設色調簡潔中透著溫馨，好像有家的味道。Arthur 在他的大辦公室裡，時而踱步，時而坐下沉思。



圖一、ASM International 的總部

ASM International，後文皆簡稱為 ASM，創立於 1968 年，這家公司在半導體設備業是其中一家很奇特的公司，公司的產品線橫跨整個半導體工序的前後段，而且公司的創始人仍然擔任公司的執行長，並深深的影響著這個老半導體公司的每一個重要決策。如果沒有公司創始人的堅持，ASM 可能早在幾次半導體周期性的榮衰中，因為外部經濟景氣或內部股東異議因素（附錄一），已經衰亡或分崩離析。

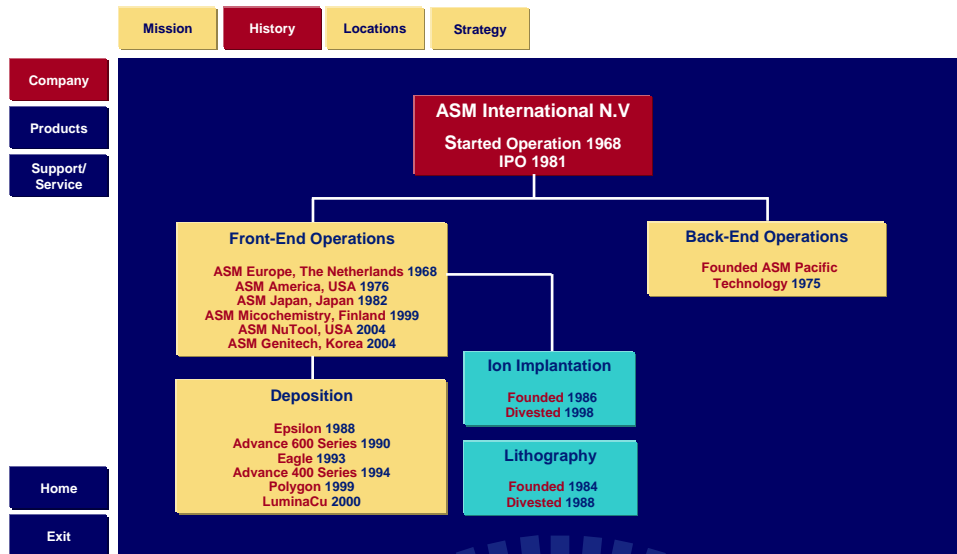
## 2.2 CEO 面臨的難題

現在又是一個關鍵的時刻來臨 (附錄二 & 三)，在今年初面臨兩個主要投資基金管理人 (主要股東 Hermes Pension Management & Fursa Alternative Strategies) 持續並堅定地採取步驟，要求把公司的前工序設備產品從公司的產品結構中剝離和更換公司領導層的一案列入 5 月 22 日的股東大會議題表決，以增進公司的獲利能力，管理層於年初已初步拒絕了其提議 (附錄四)；禍不單行，風波尚未結束之際，初夏時另一個危機(或是轉機)又接踵而來，ASM 前工序設備的最大客戶 Intel 暗示 ASM 把 ALD (Atomic Layer CVD) 和 PECVD 賣給 Applied Material 以增進對 Intel 本身的供應能力與服務效能 (附錄五)，Applied Material 也真的在 5 月份提出了他們的併購方案 (附錄六 & 七)，以美金 4-5 億購買 ASM 的 ALD 和 PECVD 產品線。

再過 2 周，ASM 的股東大會即將召開，Arthur 很確信主要股東 Hermes Pension Management & Fursa Alternative Strategies 會在股東大會上強力主張接受 Applied Material 的併購提議，並且更換管理層；但作為 ASM 現任 CEO，如何說服股東接受他一直強力護衛的對 ASM 最佳的方案，以增進長遠而持續的股東價值？午後的陽光照進來，也在 ASM America 任職總經理的兒子，Chuck Del Prado 敲門走進來，Applied Material 想併購的 ALD 產品線就是在 ASM America 的工廠生產，他對主要股東 Hermes Pension Management & Fursa Alternative Strategies 的逼迫也相當了解，他對 Arthur 說他有對策了……

## 2.3 ASM 的困境

ASM集團在 80 年代，曾經是半導體設備行業裡的前幾名，Arthur 本人也頗有遠見，同時對於未來新技術的趨勢也很有把握，隨著事業的增長，Arthur 雄心壯志，欲成為囊括前工序與后工序垂直整合的公司，所以投資併購成立了 ASM Lithograph (1984，後來成為獨霸微影設備的龍頭公司)，ASM Implanter (1986，後來成為 Varian 的救命產品) 和 ASM PT (1975年，後來成為最大的後段工序設備公司並在香港上市，ASM 占有 53% 的股權)；但是在半導體業 4 年一榮衰周期裡，1986年開始的衰退給 ASM 的收益帶來嚴重的打擊，而且這些雖然先進但還在研發後期階段的前工序產品只是燒錢的火爐，並不能為 ASM 帶來正的現金流；Arthur 為了保住本業，忍痛於 1988 年把 ASM Lithograph 和 ASM Implanter 賣給了 Philips 和 Varian，此後展開了長達 10 年的公司救亡圖存的歷程，也展現了 Arthur 驚人的意志力。(公司歷史結構如圖二和表一)

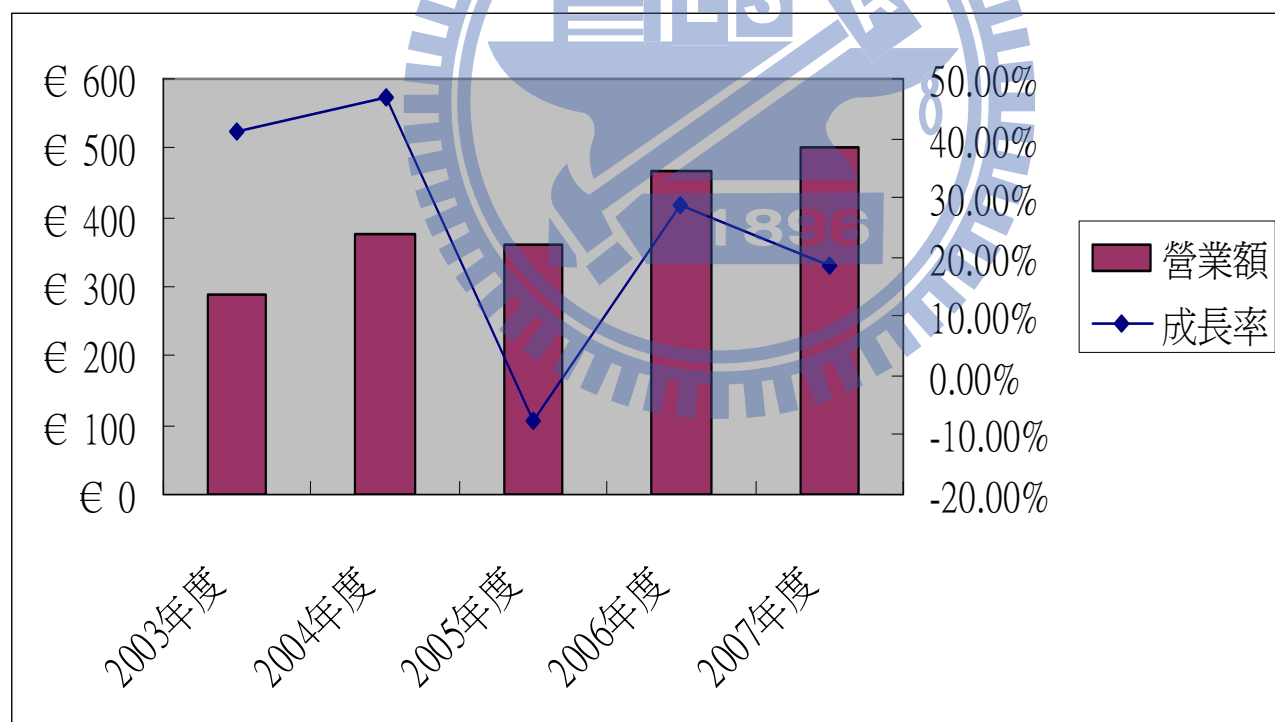


## 圖二、ASM 的歷史

### 表 1、ASM 的歷史

- 1968, ASM 於荷蘭創立，後來這部分成為 ASM Europe，生產爐管
- 1975, 招募 Patrick Lam 轉移 FICO 的技術於香港創立 ASM Pacific Technology
- 1976, 成立 ASM America，研發電漿技術，生產批量式 PECVD 機台
- 1981, 於 NASDAQ 證券市場 IPO
- 1982, 由於日本市場的封閉，設立 ASM Japan 直接生產 PECVD 供應日本。
- 1984, 與 Philip 共同成立 ASM Lithography，後來於 1988 年由 Philip 承接所有股權，then IPO
- 1986, 創立 ASM Ion Implantation 生產 Parallel Beam 的離子植入機，後來亦於 1988 年成為 Varian 的救命旗艦機台
- 1988, 於 ASM America 附近設立 ASM Epitaxy，隨後併入 ASM America
- 1989, ASM Pacific Technology 於 HKSE 證券市場 IPO
- 1999, 為發展奈米及半導體技術 Atomic Layer CVD (原子層 CVD)，併購了芬蘭的 Microchemistry，後來與 Intel 合作開發了 High-K Gate 的量產技術
- 1999, 推出 Low-K 低介電係數製程技術，後來也與 Intel 合作開發了 Low-K 介質層的量產技術
- 2006, 第一次有股東，Mellon HBV Alternative Strategies，嘗試說服其他股東把 ASM 分成 2 家公司，被大多數股東否決 (參考附錄一)
- 2008, 再次面臨 2 大股東 Hermes Pension Management & Fursa Alternative Strategies 挑戰，要把公司分拆並且更換管理層

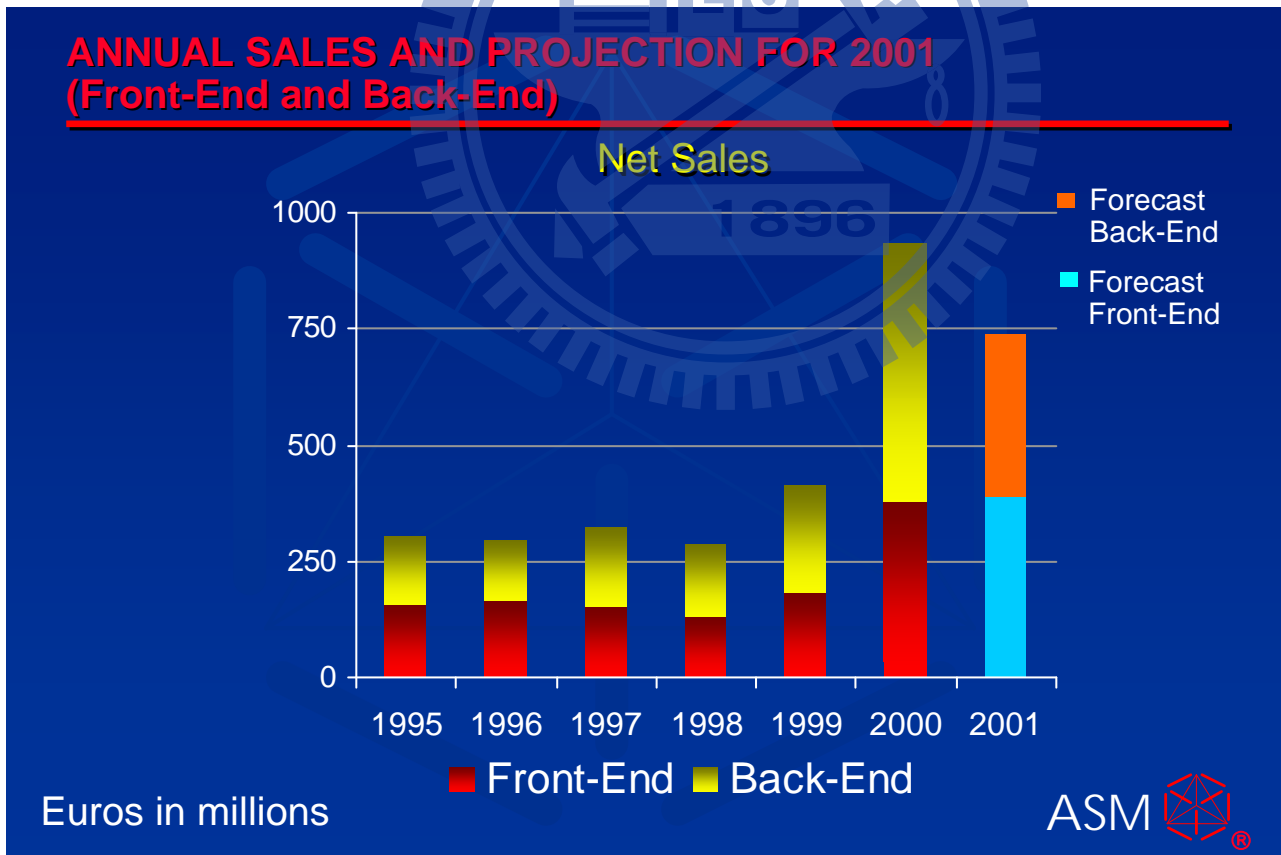
ASM PT 於 1989 年在香港上市，IPO 帶來的現金流給 ASM 有了一些喘息的空間，而且 ASM PT 此後在 Arthur & Patrick Lam 的領導下，平均每年以超過 20% 的成長率增長（圖三），並且股價或得投資人的追捧（圖四），終於在 2005 年超越 Kulicke & Soffa Industries Inc 成為 Assembly & Packaging 設備業的龍頭。在後段設備銷售一路長紅暢旺比較之下，Arthur 親力親為的前段設備銷售卻在高層及組織重整之下慘澹經營，從幾近破產的狀況下努力掙扎，最後在 2000 年世紀初期達到了損益平衡（圖五），不過瓶頸又來了，在過去掙扎的 10 年裡除了宿敵美商應用材料輕鬆超越 ASM 前工序，並擠壓到 ASM 的原有產品線 PECVD，還有美商 Novellus 的崛起更把 ASM 的 PECVD 擠到了邊緣，另外日本半導體設備業隨著日本半導體 IC 廠商也在此時大展身手，在全球半導體業大肆擴張他們的地盤，連帶著 ASM 前工序的擴散區爐管設備也被日本業者打的機無還擊之力，前工序傳統本業也只能在夾縫中求生存，伺機發展。可說 ASM 前工序在 1986 年後一直在危機中度過，幸運的是，後段 ASM PT 的成功在支撐前段的掙扎奮鬥中有不可磨滅的絕大貢獻。（圖六，ASM 的組織結構）



圖三、ASM PT 的卓越表現

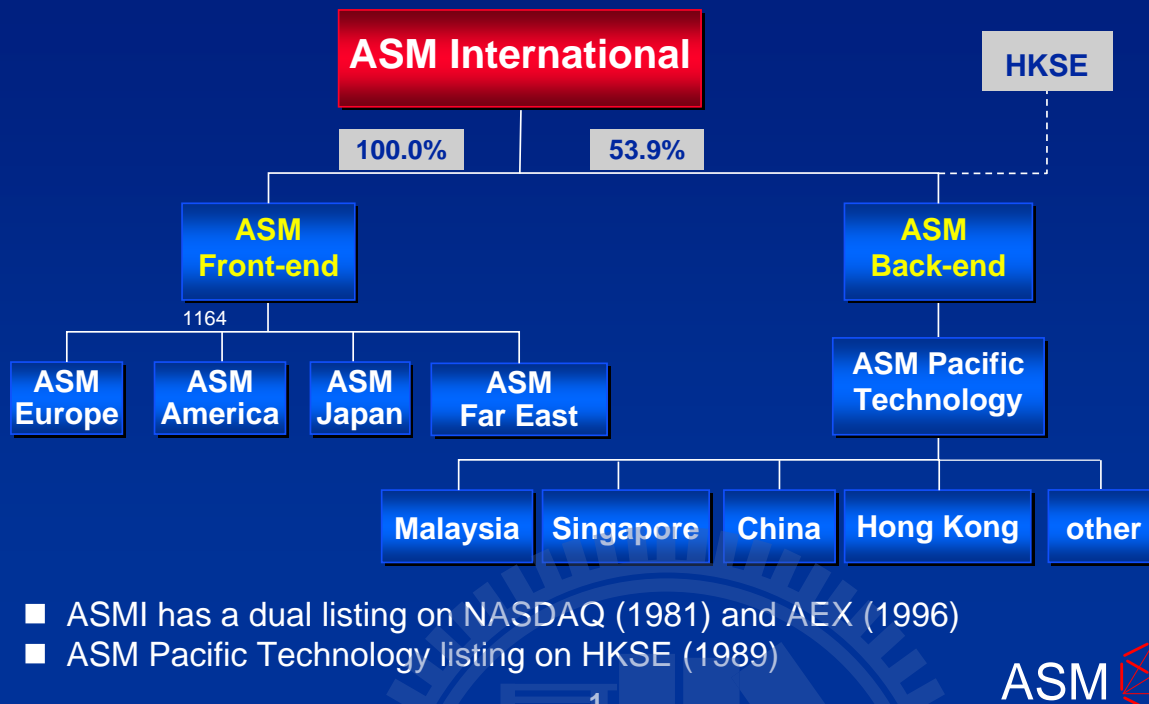


圖四、ASM Pacific Technology 上市以來股價表現



圖五、歷經 10 年整頓，於 2000 年站穩生存腳步

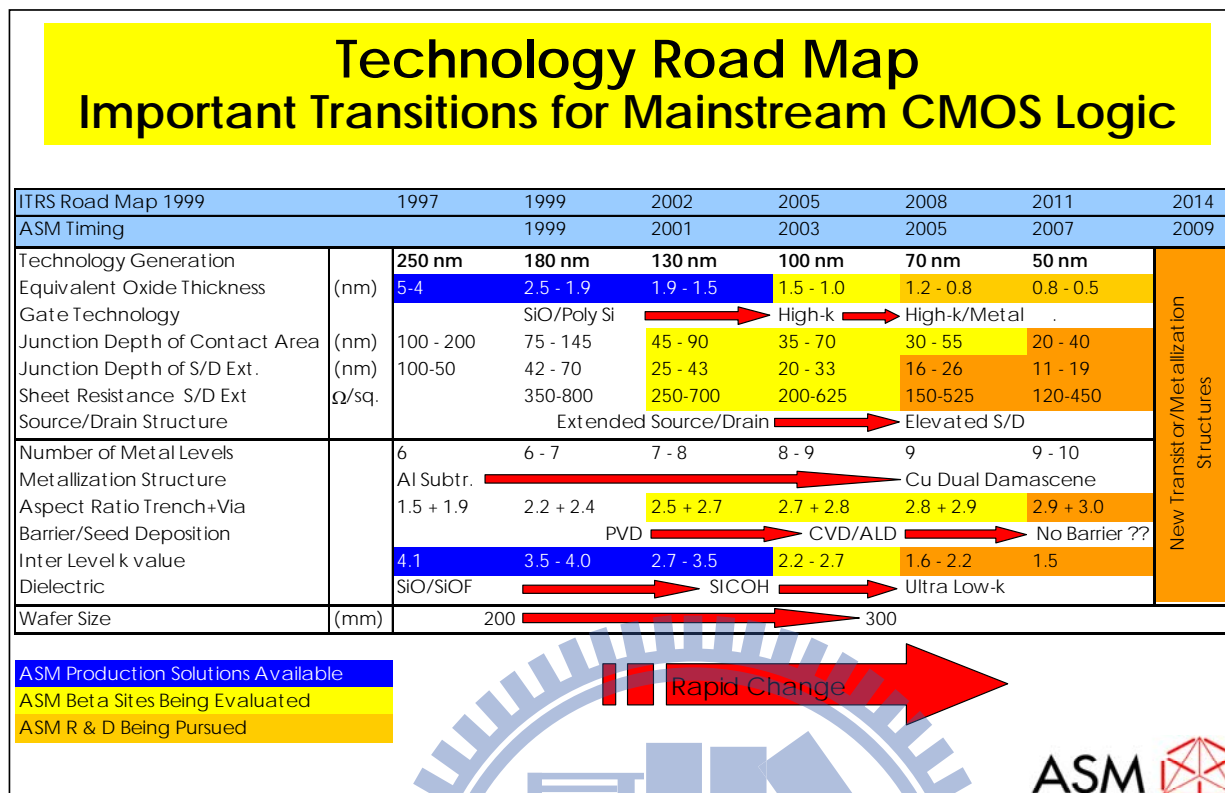
## ASMI's ORGANIZATIONAL STRUCTURE



圖六、ASM 的組織結構

Remark: Y2000, ASMI has 55% share of ASM-PT

Arthur 蠻自信於對將來半導體趨勢在摩爾定律的驅策下的技術走向與選擇，可從 1980 年代時導入 Stepper 微影設備和平行離子植入機可見一斑，雖然後來於 1980 年代末期，由於半導體市場的週期下滑，導至必須把這兩個未來證明是金雞母的產品線忍痛出讓，但也證明了 Arthur 的眼光；所以 90 年代末期，公司就積極導入 PECVD for Low K 和 ALD for HKMG 金屬閘極，為 45nm 的技術做準備（圖七，ASM 技術藍圖）



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圖七、ASMI 的研發技術藍圖

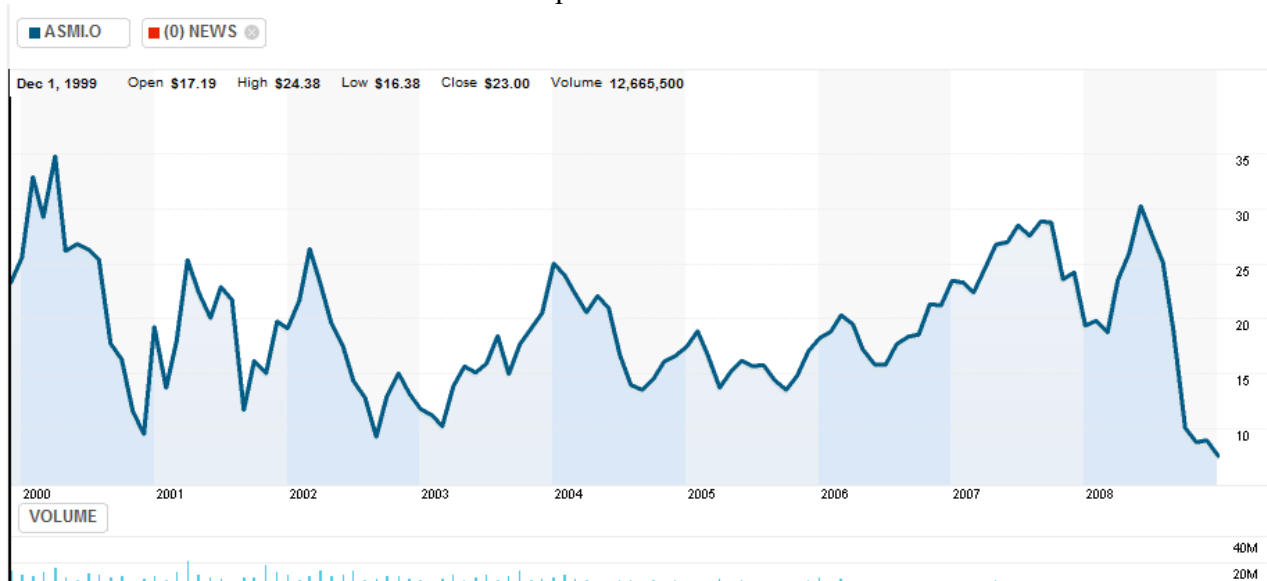
從而在半導體微縮技術進入 45nm 時佔據了先機與一席之地，並在全世界最大的半導體生產商 Intel 的工廠裡占了絕對的優勢，這也是為什麼 Applied Material 想併購這 2 個產品線的其中一個主要原因。

註:ALD 讓 IC 製程裡可以使用很薄的介質層就可以製造更小更省電的 IC 產品。

Low-K 製程可以讓 IC 裡頭的導線之間的寄生電容下降，從而製造更高運算速度的晶片。與ASM PT 後段的股價卓越表現比較，雖然 ASM International 占有 53% 的絕對控股，(Market Cap. 2.66BUS\$) 但相比較於 ASM 在 NESDAG 的弱勢表現 (ASMI market cap. 1.3BU\$)，帶來了 二大法人股東的逼宮，造成 Arthur 今天的困境。參考 ASM International和 ASM PT 的股價圖 (圖八 和 圖九)



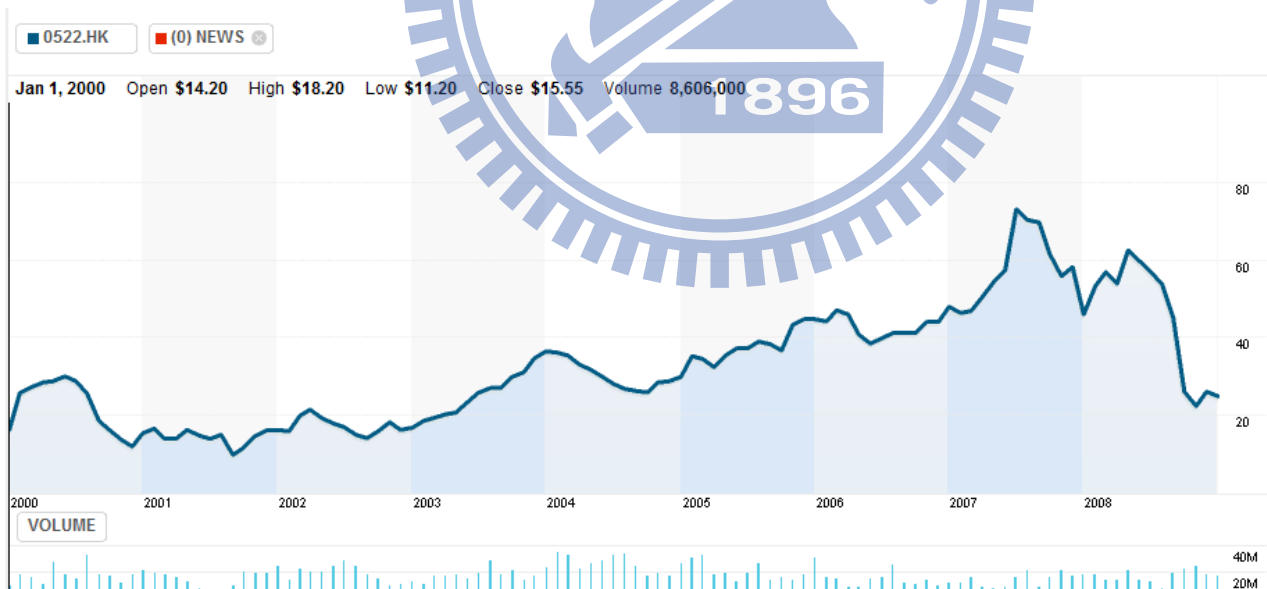
**ASM INTERNATIONAL N.V.** Cap: 54.3M Shares



**圖八、ASM International 股價圖**

Mkt Cap.: 1.3BUS\$ (1.304MUS\$) at May 2<sup>nd</sup>, 2008 (ASM International 股東會前的市值)

**ASM PACIFIC TECHNOLOGY LTD. (0522.HK)** 392.36M Shares



**圖九、ASM Pacific Technology 的股價圖**

Mkt Cap.: 2.66BUS\$ (2.656MUS\$) at May 2<sup>nd</sup>, 2008 (ASM International 股東會前的市值)

## 2.4 CEO 的考慮

Arthur 在心裡盤算著，美國次貸引起的危機會不會很快蔓延開來，訂貨出貨比率已經開始快速下降，而 CFO 把賣掉 PECVD 和 ALD 的資本性收入對 2008 年的 EPS 做了估算，對 2008 年的營運會有很大的幫助；各個區域工廠總經理和各產品線的經理也已經把未來3年的預算，產銷計畫和毛利提供給他，同時 COO，Hans Westerdorp 也把他的想法給了建議書，接下來就是 Arthur 的考慮與選擇了...

放在他桌上的有幾個選擇：

1. 將 ALD 和 PECVD Low K 產品線賣給 Applied Material，以增加資本性收入案（二大法人股東提的）。
2. 將 ASM International 從 NASDAQ 下市，將資產重組帶入 ASM PT，以取得地緣的資本溢價（亞洲新興地區估值較高）。
3. 將前段的所有產品線分拆打包，全部賣給 Applied Material 或其他有興趣的對象，只剩下後段產品。
4. 將所有前段產品的生產線全部移往亞洲低成本的國家，以降低成本而提高毛利。
5. 以不變應萬變，但肯定不可行。

另外，對於法人股東的更換管理層的可能提案，Arthur 更必須小心應對，而且必須極力避免其發生或提案通過，否則奮鬥一生的目標就此控制在別人手裡。

CEO，Arthur 的考量，以 SWOT 分析表示：

<i>Strength</i>	<i>Weakness</i>
<ol style="list-style-type: none"><li>1. 完整的全球化布局</li><li>2. 優秀的研發團隊</li><li>3. ASM PT 的優勢市場地位</li><li>4. ASM PT 的亞洲生產優勢</li><li>5. ASM PT 帶來的現金流入</li><li>6. 符合產業技術趨勢走向的新產品，Low K 和 ALD</li><li>7. 忠誠的高階領導幹部</li><li>8. 穩定的組織架構</li></ol>	<ol style="list-style-type: none"><li>1. 前工序持續的現金流不足</li><li>2. ASM International 前段設備的銷售業績不佳，導致公司整體股價表現差</li><li>3. 部份股東對領導層的不信任</li><li>4. 領導層的可能異動</li><li>5. 效率不彰的矩陣式管理架構</li><li>6. 設備製造前期資金投入大，回收帳期長</li><li>7. 前段設備產品繁複導致平均研發投入不足</li><li>8. 前段產品製造工廠散佈荷蘭，美國和日本，導致固定</li></ol>

	成本高企
<b>Opportunity</b>	<b>Threat</b>
<ol style="list-style-type: none"> <li>1. Intel 的 Low K 和 ALD 的主力供應商，對半導體界有指標性的意義</li> <li>2. 未來半導體微縮技術走向 HKMG 朝 ALD 靠攏</li> <li>3. Applied Material 的併購帶來的資本性流入</li> <li>4. 股價估值可能上升</li> <li>5. 亞洲新興國家對高科技半導體業的鼓勵</li> </ol>	<ol style="list-style-type: none"> <li>1. 急轉直下的全球經濟情勢，金融危機，風雨欲來。</li> <li>2. Applied Material 的併購導致 ASM 前段設備整體競爭力的喪失</li> <li>3. 競爭對手在 Low-K 和 ALD 急起直追</li> </ol>

表二、SWOT 分析

Arthur 把一生奉獻給了 ASM，這是他一手打造創立的 ASM，對半導體科技的熱愛，樂此不疲，讓他能在過去的危機中披荊斬棘，度過難關；1988 年發生的事歷歷在目，今日難道要舊事重演？只為了幾個講求短暫利益的股東的強力進逼，就要把這 10 年來辛辛苦苦維護起來的局面打散？他該怎麼決定提給股東會的方案？



## 2.5 股東會後- ASM CEO 的最終方案

1. CEO 的兒子變成了 CEO。
2. ASM 拒絕了 Applied Material 的 Low-K 和 ALD 產品線併購。
3. 2009 年，所有前段設備生產移往新加坡，只有 R & D 和 Marketing 留在原地，此行動完成日是 2010 年底。
4. 法人股東繼續在要求分拆公司，並訴諸法庭，官司進行中。



## 第三章、問題研究

### Q & A， ASM International 公司的市場競爭策略

註：在進行分組討論問題之前，可要求學員先了解 2008 年及前數年的世界政經情勢背景，以了解本案例分析的主角 CEO 所面臨的內外壓力下，CEO 的考量緣由。

**問題 1：如果您是 ASM International 公司的 CEO，您會對董事會提出什麼對公司和對你個人的最佳提案？**

背景說明：2008 年春末，由於美國次貸危機影響，面對未來景氣的不確定性，以及二法人股東的逼迫更換領導層，ASM 的 CEO 面臨極大壓力，如何化解股東壓力，並且引領公司度過即將面臨的金融危機？

**問題 2：ASM International 公司集團裡的 ASM PT 公司營運卓越，為何在那段奮鬥的 10 年裡 (1990 到 2000 年)，ASM International 的前段設備產品不在亞洲生產 (除了日本之外)？你認為原因是什麼？**

背景說明：請參閱圖六，ASM 組織結構圖，ASM PT 負責所有後段設備與材料的生產，其據點都在亞洲，但前段晶圓生產設備，除日本外，均在歐洲和美國；ASM 標榜本地化的管理，所以 ASM-America 的工廠幾乎都是美國裔，歐洲工廠則都為歐洲裔，日本為日裔，銷售點也是該國人士，所謂的以夷制夷，以漢制漢。

**問題 3：如果 ASM International (Arthur) 決定將前段設備生產移至亞洲來降低生產成本，那麼你認為應該移去哪裡呢？原因是為什麼？**

背景說明：前段設備的 Gross Margin 一般是售價的 50%，雖然機台售價高，但銷售型態是可銷售機台數受限於有限的客戶數目，本身的先進技術能力以及服務能力決定了銷售佔有率。

**問題 4：賣掉前段產品給 Applied Material，而專注於後段產品的發展，會給 ASM International 公司帶來現正急需的(資本性收入)，並將給予公司股價帶來合理估值，但有什麼缺點呢？**

背景說明：如附件(六 & 七)所述，一旦售出 ALD (HKMG) 和 PECVD (Low K) 兩個產品線，立刻可以獲得 500MUS\$ 的資本性收入，對公司的財報，對股東權益有其絕對正面的幫助。

**問題 5：公司創辦人對公司的濃烈情感和使命感，您認為對公司的短長期發展利弊有何影響？**

背景說明: ASM 公司創辦人，自創立 1968 年到本文的背景時間 2008 年，擔任公司執行長 40 年，公司由小變大，興衰更替，免於分奔離析，都有他在照顧著……。

**Q&A 的參考答案：** 提供教師參考運用。(決策存乎一心，繫於當下時空背景，本無絕對正確的解答，此處所提供答案純為參考)

### 問題一的參考答案

可參考 2.5 ASM CEO 的最終提案；不過個人偏向由 Arthur 帶領向亞洲發展，以穩定這重大的布局變化，把前工序的製造移往亞洲，而全球布局的研發與銷售保留以貼近高科技研發中心和市場；尤其 ASM 後工序已經在香港上市，前段資產的注入，可以把 ASM 前段加上後段的實力在香港股票市場獲得完整的溢價體現；在往亞洲轉移過程的數年間，在經營團隊裡選出接手的專業經理人，為 ASM 的永續經營奠基，個人認為是比讓其兒子接任 CEO 的決定會更佳的決策。

### 問題二的參考答案

在 1990 到 2000 年間，半導體設備業是從 6”晶圓轉至 8”晶圓生產的時代，日本藉著本土 DRAM 產業的發展，政府大力扶持產官學一舉從幾乎完全的晶圓設備輸入國轉變為晶圓設備生產國並外銷；半導體設備結合了光學，機械，電子，電機，化學與自動控制，可謂及各科技產業之大成，除受到歐美日各國的重視，也因為亞洲新興工業國家在這些科技產業的進程不一，除日本之外，這些支援半導體設備業的科技產業並不齊備，所以這些半導體設備公司在當時並不考慮韓國，台灣，新加坡或東南亞國家；更為重要的是當時的半導體晶圓生產公司，也就是半導體設備商的大客戶們，如 Intel，IBM，AMD，Siemens，ST，Philip，NEC，Toshiba，Fujitsu 等等都是在歐洲，美國和日本，當時台積電，聯電和三星才剛剛展露頭角，因此市場是在歐美日，為了貼近市場，所以工廠擇址在歐美日就很合理了。

### 問題三的參考答案

Arthur 最終決定把工廠集中在新加坡，決定的原因有：

#### 1. 容易溝通以利技術轉移

新加坡的主要語言是英文，而做為一個全球性的半導體設備公司，其子公司相互間溝通的指定語言就是英文，其他的國際性半導體設備公司亦皆如此；所以新加坡的語言優勢對工廠集中在新加坡導致的大量技術移轉進程有超乎尋常的重要性。

#### 2. 國家與社會連續性和穩定性

轉移一個工廠到另一個地區或國家是一個重大決策，關係到資金與人才的流動，產品的穩定性，和市場的變化，稍一不慎，公司的根本可能就連根拔起；好不容易工廠設立後穩定運作，突然間一個暴動，池魚之殃，工廠毀了；或一個政變，政策改變，禁止出口，收歸國有..等等，一切的努力都泡湯了；突然間，戰爭發生了，材料無從進口，產品不能出口，資金不能流動，結果公司垮了；ASM 的考慮中有台灣，但就是因為國家穩定性的不能確定而從名單剔除。新加坡相對而言，是比較穩定的選擇。

### 3. 政府對產業的態度

新加坡政府對意欲引進的廠商極為支持，不論在租稅優惠，或土地提供，或人才培養與貼補都極為用心；沒有朝令夕改，沒有設廠後環評不通過，沒有勞工抗爭。

### 4. 政府透明度

清廉的官僚體系，不須走後門，不須賄絡地方官員，不須政治獻金給國會議員。

## 問題四的參考答案

賣掉前段產品給 Applied Material，而專注於後段產品的發展，會給 ASM International 公司帶來現正急需的(資本性收入)，並將給予公司股價帶來合理估值；但這兩個產品是 ASM 前段設備的前景所繫，賣掉這兩個產品線就如同 1988 年賣掉 ASM Lithograph 和 ASM Implanter 一樣 (參考表一)，ASM 前段蓬勃發展的機會就拱手讓給了對手，然後賣掉之後再如同 1990 年代一樣苦苦掙扎又 10 年，Arthur 是這樣想的，一樣的錯誤他不會再犯第二次，他是這麼決定的。

## 問題五的參考答案

公司創辦人一直長期擔任著公司的 CEO，是好是壞？見仁見智！個人認為對公司的創立茁壯有著居功厥偉不可或缺的功勞與定位，或者經濟非常時期或者公司有重大變故，公司創辦人的確可以產生振衰起敝或可能起死復生進而中興的功效；但是他在公司的絕對威望和感情的某一弱點也可能導致公司管理僵化或某一環節弱化，長期而言，還是應該把所有權和管理權做個清楚的切割，而已制度管理代替個人威望，這才是公司長久發展之道，歷史已經告訴了我們正確的答案！

## 參考文獻

### 附錄一：個案討論簡報資料

## 碩士論文口試題目

### 論半導體設備製造商 ASM 的市場競爭策略（以個案討論方式呈現）

研究生：王玉揚 學號：9261543

指導教授：陳安斌 教授

日期：2010年7月16日

國立交通大學 高階主管管理學程 碩士班

1

## 研究動機與目的

- 敝人於 ASM 任職 17 年，1988 到 2005，於 2001 到 2004 擔任 ASM 台灣區總經理
- 期間，參與或了解公司決策的內幕與背景
- 由於 ASM International 與持股的子公司 ASM Pacific Technology 分別於 NASDAQ 和 HKSE 上市，但股價體現不公允
- 與公司度過艱辛歲月，共同成長，覺得過程之間公司決策有值得吾人借鏡之處，故選為論文題目

2



## 研究方法

- 原本想以計算合理 ASM International 公司價值為研究方法
- 經 指導教授 陳安斌 博士 指引，轉為以個案討論方式為論文研究方向
- 所以論文本文以個案討論方式呈現

3

## 真實的個案公司案例研究

ASM International Co. Ltd

4

# 時間點

2008年，5月初

1

故事緣起，ASM International 是一個什麼樣的公司

**ASM International N.V.**



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## 故事緣起，ASM International 是一個什麼樣的公司

- 創辦人 Arthur Del Prado
- 個人行事風格，低調，實事求是，講求實際，是一個荷蘭人
- 從 1968 年到 2008 年，擔任公司執行長 40 年，兒子也在集團裡任職
- 公司管理風格介於美日兩國公司文化之間，既講求績效亦照顧到員工情感

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## ASM International 是一個什麼樣的公司

- 在半導體設備業中，惟一產品線橫跨整個半導體工序的前後段的公司
- 公司的創始人仍然擔任公司的執行長
- 影響著這個老半導體公司的每一個重要決策
- 堅持過硬的研發能力
- 公司創始人的意志堅強，使 ASM 度過多次半導體景氣周期和內部股東的異議（附錄一、二 & 三）

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## CEO 現在面臨的問題

- 主要股東 Hermes Pension Management & Fursa Alternative Strategies) 要求把公司的前工序設備產品從公司的產品結構中剝離
- 要求更換公司領導層
- 最大客戶 暗示 ASM 把 ALD (Atomic Layer CVD) 和 PECVD 核心產品賣給最大的競爭對手 Applied Material
- 最大的競爭對手 Applied Material 提出併購, 5 億美金
- 股東會召開在即

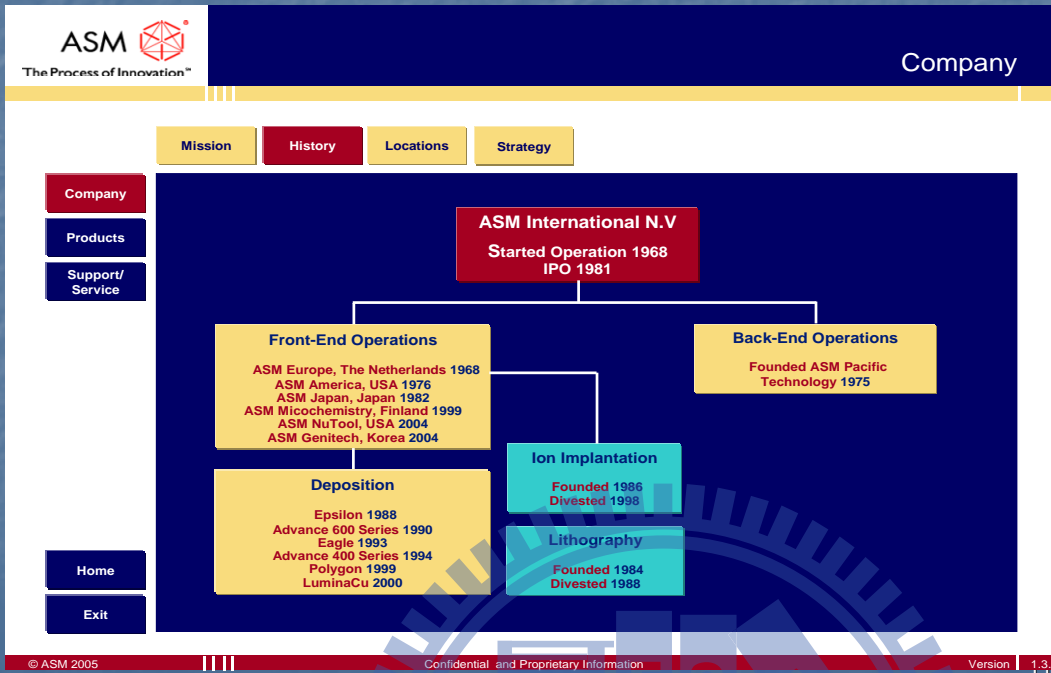
9

## ASM 的困境

- 於 80 年代, ASM International 曾是半導體設備前 5 名的公司
- 投資, 併購, 新創公司, 規模超過公司所能負荷; 再加上不景氣, 公司於 1988 年幾乎破產, 此後一路重整到 2000 年才有獲利
- 1989 年在香港上市的 ASM PT 子公司持續的回饋支持了 ASMI 的重整
- 困境中, 1999 提前投入 45nm 技術, ALD 和 Low K 的研發

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# ASM 的歷史



# ASM 的歷史

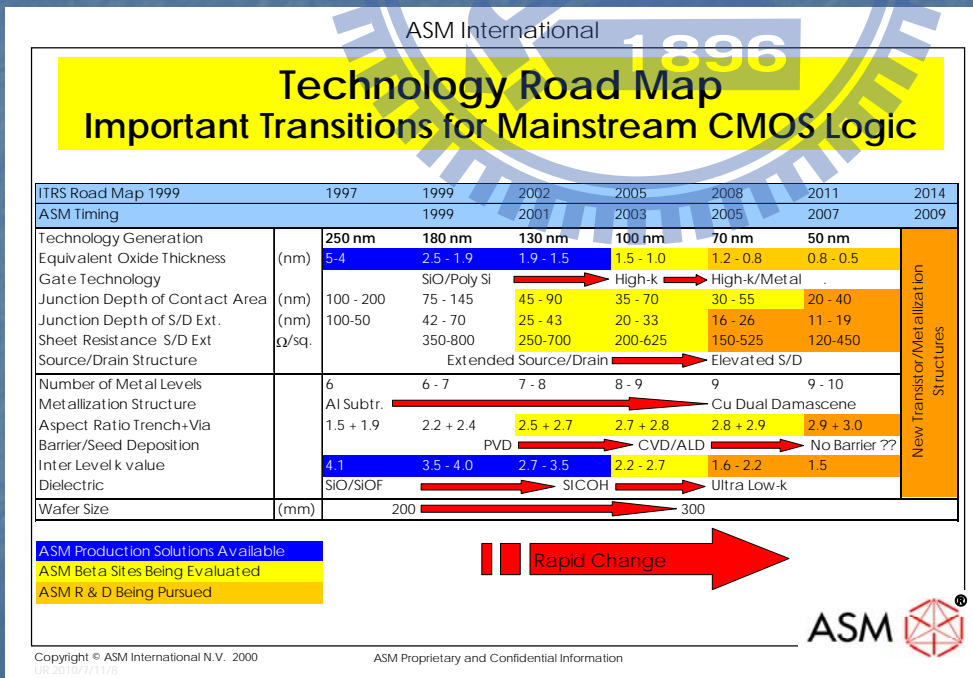
- 1968, ASM 於荷蘭創立，後來這部分成為 ASM Europe, 生產爐管
- 1975, 招募 Patrick Lam 轉移 FICO 的技術於香港創立 ASM Pacific Technology
- 1976, 成立 ASM America, 研發電漿技術, 生產批量式 PECVD 機台
- 1981, 於 NASDAQ 證券市場 IPO.
- 1982, 由於日本市場的封閉, 設立 ASM Japan 直接生產 PECVD 供應日本.
- 1984, 與 Philip 共同成立 ASM Lithography, 後來於1988年由 Philip 承接所有股權, then IPO
- 1986, 創立 ASM Ion Implantation 生產 Parallel Beam 的離子植入機, 後來亦於1988年成為 Varian 的救命旗艦機台
- 1988, 於ASM America 附近設立 ASM Epitaxy, 隨後併入 ASM America

# ASM 的歷史

- 1989, ASM Pacific Technology 於 HKSE 證券市場 IPO.
- 1999, 為發展奈米及半導體技術 Atomic Layer CVD (原子層 CVD), 併購了芬蘭 Microchemistry, 後來與 Intel 合作開發了 High-K Gate 的量產技術
- 1999, 推出 Low-K 低介電係數 製程技術, 後來也與 Intel 合作開發了 Low-K 介質層的量產技術
- 2006, 第一次有股東, Mellon HBV Alternative Strategies, 嘗試說服其他股東把 ASM 分成 2 家公司, 被大多數股東否決 (參考附錄 一)
- 2008, 再次面臨 2 大股東 Hermes Pensio Management & Fursa Alternative Strategies 挑戰, 要把公司分拆並且更換管理層

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# ASMI 的研發技術藍圖



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## ASMI 的研發技術藍圖

- ALD 讓 IC 製程裡可以使用很薄的介質層就可以製造更小更省電的 IC 產品；
- Low-K 製程可以讓 IC 裡頭的導線之間的寄生電容下降，從而製造更高運算速度的晶片

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## 回顧 CEO 現在面臨的問題

- 主要股東 Hermes Pension Management & Fursa Alternative Strategies) 要求把公司的前工序設備產品從公司的產品結構中剝離
- 要求更換公司領導層
- 最大客戶 暗示 ASM 把 ALD (Atomic Layer CVD) 和 PECVD 核心產品賣給最大的競爭對手 Applied Material
- 最大的競爭對手 Applied Material 提出併購, 5 億美金
- 股東會召開在即

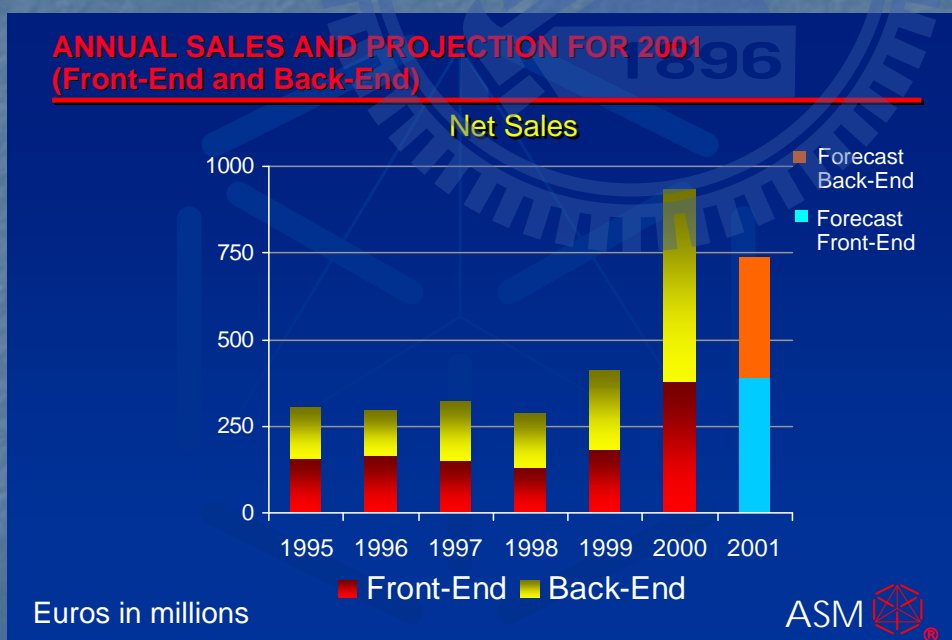
16

## 為什麼總有股東要把 ASM 分拆

- ASM International 的股東十幾年來難得分紅
- ASM Pacific Technology 的卓越表現
- ASM International 和 ASM PT 股價的比較
- 分拆之後，理論上股東價值可以提升

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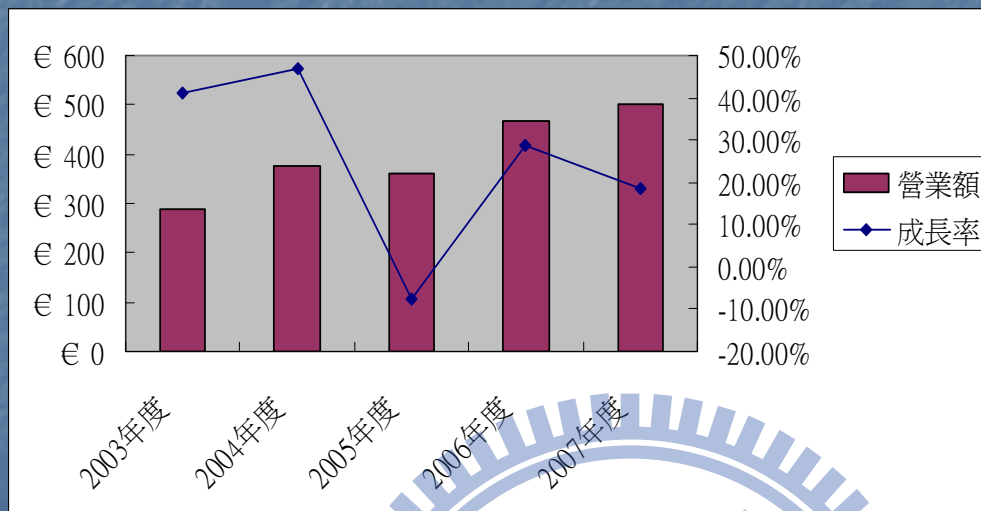
## ASMI 歷經10年整頓, 於2000年站穩生存腳步



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## ASM PT 的卓越表現， 平均 25.5% 的年成長率



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## ASM Pacific Technology 上市以來股價表現



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## 反觀 ASMI 的股價表現



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## 對比 ASM PT 的股價表現



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## 股東會前的股票市值計算

- May 2nd, ASM International 股價，市值為13億美金
- ASM PT 市值為 26.6億美金
- ASM International 持有 ASM PT 53% 的股份，折合市值為 14.1億美金
- 如果股票市場能反映合理估值，那麼 ASM International 前工序的價值為負值或是零

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## 法人股東的訴求

- ASM International 股價低估，原因為領導層的不適任
- 增進股東價值：
  - 分割公司，剝離不良不賺錢資產
  - 把剝離資產出售，提高收入
- 剛好，競爭對手欲收購 ALD 和 Low K，可高價出售

24

如果你是 CEO，你該怎麼做，  
該提什麼方案給董事會？

## CEO 的考量

25

## 經營團隊提供的選擇

- 將 ALD 和 PECVD Low K 產品線賣給 Applied Material，以增加資本性收入案（CFO & 二大法人股東提的）
- 將 ASM International 從 NASDAQ 下市，將資產重組帶入 ASM PT，以取得地緣的資本溢價（亞洲新興地區估值較高）
- 將前段的所有產品線分拆打包，賣給 Applied Material 或其他有興趣的對象，只剩下後段產品，留在 NASDAQ
- 將所有前段產品的生產線全部移往亞洲低成本的國家，以降低成本而提高毛利

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# SWOT 分析

## Strength

- 完整的全球化布局
- 優秀的研發團隊
- ASM PT 的優勢市場地位
- ASM PT 的亞洲生產優勢
- ASM PT 帶來的現金流入
- 符合產業技術趨勢走向的新產品, Low K 和 ALD
- 忠誠的高階領導幹部
- 穩定的組織架構

## Weakness

- 部份股東對領導層的不信任
- 領導層的可能異動
- 效率不彰的矩陣式管理架構
- 設備製造前期資金投入大, 回收帳期長
- ASM International 前段設備的銷售業績不佳, 導致公司整體股價表現差
- 前工序持續的現金流不足
- 前段設備產品繁複導致平均研發投入不足
- 前段產品製造工廠散佈荷蘭, 美國和日本, 導致固定成本高企

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# SWOT 分析

## Opportunities

- Intel 的 Low K 和 ALD 的主力供應商, 對半導體界有指標性的意義
- 未來半導體微縮技術走向 HKMG 朝 ALD 靠攏
- Applied Material 的併購帶來的資本性流入
- 股價估值可能上升
- 亞洲新興國家對高科技半導體業的鼓勵

## Threat

- 急轉直下的全球經濟情勢, 金融危機, 風雨欲來.
- Applied Material 的併購導致ASM前段設備整體競爭力的喪失
- 競爭對手在 Low-K 和 ALD 急起直追

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## Q&A, ASM International公司的市場競爭策略

- 問題 1, 如果您是 ASM International 公司的 CEO, 您會對董事會提出什麼對公司和對你個人的最佳提案?
- 背景說明: 2008年春末, 由於美國次貸危機影響, 面對未來景氣的不確定性, 以及二法人股東的逼迫更換領導層, ASM 的 CEO 面臨極大壓力, 如何化解股東壓力, 並且引領公司度過即將面臨的金融危機

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## Q&A, ASM International公司的市場競爭策略

- 問題2, ASM International 公司集團裡的 ASM PT 公司營運卓越, 為何在那段奮鬥的 10 裡, ASM International 的前段設備產品不在亞洲生產 (除了日本之外)? 你認為原因是什麼?
- 背景說明: 請參閱圖六, ASM 組織結構圖, ASM PT 負責所有後段設備與材料的生產, 其據點都在亞洲, 但前段晶圓生產設備, 除日本外, 均在歐洲和美國; ASM 標榜本地化的管理, 所以 ASM-America 的工廠幾乎都是美國裔, 歐洲工廠則都為歐洲裔, 日本為日裔, 銷售點也是該國人士

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## Q&A, ASM International公司的市場競爭策略

- 問題 3, 如果 ASM International (Arthur) 決定將前段設備生產移至亞洲來降低生產成本, 那麼你認為應該移去哪裡呢? 原因是為什麼?
- 背景說明: 前段設備的 Gross Margin 一般是售價的 50%, 雖然機台售價高, 但銷售型態是可銷售機台數受限於有限的客戶數目, 本身的先進技術能力以及服務能力決定了銷售佔有率.

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## Q&A, ASM International公司的市場競爭策略

- 問題 4, 賣掉前段產品給 Applied Material, 而專注於後段產品的發展, 會給 ASM International 公司帶來現正急需的(資本性收入), 並將給予公司股價帶來合理估值, 但有什麼缺點呢?
- 背景說明: 如附件(六 & 七)所述, 一旦售出 ALD (HKMG) 和 PECVD (Low K) 兩個產品線, 立刻可以獲得 500MUS\$ 的資本性收入, 對公司的財報, 對股東權益有其絕對正面的幫助.

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## Q&A, ASM International公司的市場競爭策略

- 問題 5, 公司創辦人對公司的濃烈情感和使命感, 您認為對公司的短長期發展利弊有何影響?
- 背景說明: ASM 公司創辦人, 自創立 1968 年到本文的背景時間 2008 年, 擔任公司執行長 40 年, 公司由小變大, 興衰更替, 都有他在照顧著…….

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## 股東會後

- CEO 的兒子變成了 CEO
- ASM 拒絕了 Applied Material 的併購
- 2009 年, 所有前段設備生產移往新加坡, 只有 R & D 和 Marketing 留下
- 法人股東繼續在要求分拆公司, 並訴入法庭, 官司進行中

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## 附錄二：Shareholders: No breakup for ASMI



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EE Times:

### Shareholders: No breakup for ASMI

[Mark LaPedus](#) (11/27/2006  
7:09 H EST)

URL: <http://www.eetimes.com/showArticle.jhtml?articleID=196513457>

SAN JOSE, Calif. — Chip-equipment provider ASM International N.V. on Monday (Nov. 27) claimed that its shareholders voted not to break up the company.

Shareholders strongly supported management's position that the present corporate structure combining wafer [processing](#) and assembly/packaging activities offers the greatest potential for ASMI's future and for improving shareholder value. A significant majority of the votes cast voted against a non-binding motion to split ASMI's businesses into two separate components.

[One shareholder](#), Mellon HBV Alternative Strategies, has been lobbying for the breakup of semiconductor manufacturing equipment.

ASMI (Bilthoven, the Netherlands) also appointed Lee Wai Kwong, CEO-elect of ASM Pacific Technology Ltd., to the management board, effective Jan. 1, 2007; and Heinrich W. Kreuzer on his appointment to the supervisory board effective immediately.

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# 附錄三：Firms push for breakup of ASMI



## Firms push for break up of ASMI

(01/14/2008 1:19 H EST)

URL: <http://www.eetimes.com/showArticle.jhtml?articleID=205604498>

SAN JOSE, Calif. -- Two shareholders of ASM International NV--Hermes Pension Management Ltd. and Fursa Alternative Strategies--are pushing to break up the chip-equipment maker, according to *Thomson Financial*.

The two firms plan to publish a letter that will present "ASMI chief executive officer Arthur del Prado with an ultimatum to support their plans to break the company up," according to *Thomson Financial News*.

If ASMI refuses, the firms will push for an "exchange offer, which would involve the two shareholders setting up a new company, incorporating it and listing it," according to the report.

ASMI of the Netherlands has separate front- and back-end units. The front-end unit has performed badly, as compared to the back-end operation.

In 2006, ASMI faced a similar crisis, but shareholders voted to not break up the company.

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## 附錄四：Activists Aim To Oust ASM Management



Market Scan

### Activists Aim To Oust ASM Management

Melinda Peer, 04.01.08, 2:23 AM ET

Even in the best of times for the semiconductor industry, **ASM International** struggled to turn a profit. Now activist shareholders are telling management that their time is up.

**Activist shareholder** Hermes Pension Management Limited called for the dismissal of ASM International's chief executive officer and all five members of its supervisory board on Monday, after ASM said it expected a first-quarter net loss in its main wafer processing business.

ASM's stock closed with a gain of 41 cents, or 2.3%, to \$18.53 in New York trading on Monday.

"As we indicated at the time of our fourth-quarter results, our near-term front-end operating performance is being negatively affected by reduced customer spending and macro-economic pressures, aggravated by the weakening of the U.S. dollar against the euro," said ASM Chief Executive Officer Chuck del Prado.

Recessionary pressures in the United States have been particularly hard on the semiconductor industry, since it relies on large companies and consumers to purchase technology upgrades, which tend to get back-burnered in an economic slowdown. (See: "[Ride the Chip Slide](#)")

But Hermes, which has been badgering ASM to make changes for the last two years, says the company's wafer business wasn't profitable even when the semiconductor industry was booming.

Hermes has submitted its proposals to ASM so that they can be included on the agenda of the company's May 21 annual shareholders meeting, and said it was confident that investors would back its suggestions. Dutch law requires that the proposals be included in the agenda.

Fursa Alternative Strategies UK Ltd., another ASM shareholder, voiced its support for Hermes' proposals.

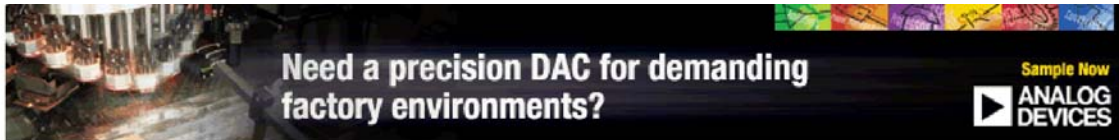
About a month ago, Fursa sent a letter to ASM's management threatening to present an exchange offer in which shareholders would take over the company unless a new board was installed.

CEO del Prado and the chairman of the ASM supervisory board said management changes weren't in the company's or shareholders' best interests, pointing to improved operating profitability in the past two years. Del Prado plans to win back shareholder support by publishing a strategic roadmap prior to the annual meeting, detailing how he will improve ASM's valuation.

The Bilthoven, Netherlands-based company reports its first-quarter earnings on May 5 and expects front-end sales to be between \$121.3 million and \$130.8 million, with the U.S. dollar trading roughly \$1.58 to the euro.

*Thomson Financial contributed to this article*

## 附錄五：ASMI rejects calls for breakup, management changes



### ASMI rejects calls for break up, management changes

[John Walko](#)

(02/28/2008 9:40 AM EST)

URL: <http://eetimes.eu/uk/206900732>

ASM International NV (Bilthoven, the Netherlands) has rejected proposals from investment group Fursa Alternative Strategies to break up the chip-equipment maker and make major management changes.

LONDON — ASM International NV (Bilthoven, the Netherlands) has rejected proposals from investment group Fursa Alternative Strategies to break up the chip-equipment maker and make major management changes.

Another group, Hermes Pension Management Ltd., also made [similar proposals](#) earlier this year.

ASMI has separate front- and back-end units. The front-end unit has performed badly, as compared to the back-end operation.

In 2006, ASMI faced similar calls, but shareholders voted to not break up the company.

Here, we reproduce the letter sent February 28 to the head of Fursa Alternative Strategies by ASMI chief executive officer Arthur del Prado.

*Dear Mr Timmermans,*

*This letter is sent on behalf of the Supervisory Board and the Management Board and is a follow up to our letter of February 11, 2008 and replies to your letter of January 28, 2008, which the Management Board has discussed with the Supervisory Board on February 6 and, again, on February 27. This letter is also a reply to your letter of February 26.*

*As I am sure you know members of our Management Board have had a further meeting with two members of the group of managers with an industry background (the "Team") in Bilthoven on Monday, February 18.*

*In preparation of that meeting we have carefully reviewed the presentation held by the Team on January 10, 2008 and we have verified certain factual information assumed in that presentation. The Management Board has spent considerable time and effort in this exercise and it has made the Supervisory Board aware of its main findings.*

*We have shared our preliminary findings with the Team representatives during the meeting of February 18. That meeting was in many respects positive and constructive. We do value the interest which the Team takes in the development of our front-end business and we have found that on many issues, the analysis and line of thinking of the Team and our Management Board is aligned in many aspects.*

*This means that we can agree to the Team's approach to certain business issues because that approach is in line with our approach. We have explained that on many of the matters identified by the Team we already have plans in place or are already working on resolving these issues. This, for obvious reasons, could not be known to the Team, because they have no insight knowledge of our company.*

*It is true that on a fairly limited number of issues we have a different opinion. During our conversations with the Team we have explained why we felt that their opinion on specific matters was not appropriate. Indeed, on one particular subject, i.e. an allegation as to our*

technical market position concerning one of our established product lines, the Team had made a major mistake and the concerns which the Team had expressed proved to be factually and materially incorrect and ill founded. The Team members present apparently acknowledged this when this was explained to them on February 18.

It is not opportune to discuss in any detail on which subjects there was a basic agreement on the approach and on which subjects the opinions differ, but we trust that the Team has communicated the gist of our discussions to you.

It was a pleasure and a privilege to have serious discussions with knowledgeable persons and we have indeed appreciated the Teams input and willingness to share their viewpoints and analyses with us. As you are aware in 2006 we have achieved our publicly announced financial targets. We are proud to be able to say that we have now also achieved our target of net earnings in our front-end operations for the year 2007, as is apparent from the press-release which we issued today.

This means that we have in the last two years achieved a major improvement of our profitability. We are, as promised, closing the gap with companies which can be considered to be our peers. As indicated earlier we trust that we can realise our milestones also in the future with a view of achieving a profitability level in the year 2009 in accordance with our earlier prognosis.

Having said this, I note that your Team acknowledged that 2008 will be a difficult year and that they aim to head for 2010 to achieve a solid level of profitability.

Against this background the two boards are confident that current management is able to deliver. Therefore, we are of the opinion that it is not in the interest of the company and its stakeholders to now make changes in the Management Board other than already announced.

As you will know, we made good faith efforts to see whether the Team, or members thereof, would consider taking on a consultancy role so that ASMI was in a position to build on these initial meetings, and further draw on their expertise. Unfortunately, these efforts were rejected out of hand. It was made clear to us that there was no interest in assisting the current management team, only in replacing them.

As I have mentioned before representatives of our Supervisory Board and Management Board will be happy to having further discussions with you about our past achievements, our future plans and your proposals. Our secretary will contact you this week to agree a date on short term. Yours sincerely,

A.H. del Prado

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# 附錄六：Intel May Be Pushing Applied to Buy ASMI

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## Intel May Be Pushing Applied to Buy ASMI

David Lammers, News Editor -- Semiconductor International, 6/9/2008 10:37:00 AM

The June 6 offer by Applied Materials Inc. (Santa Clara, Calif.) to buy key parts of ASM International N.V. (ASMI, Bilthoven, Netherlands) raises questions about Applied's intentions in the atomic layer deposition sector, where Applied has taken a low-key approach thus far.

Last Friday, both ASMI and Applied issued press releases saying that Applied had offered \$400-600M for ASMI's atomic layer deposition (ALD) and plasma-enhanced chemical vapor deposition (PECVD) activities. ASMI said it would respond by the end of this week.

Gartner Inc. semiconductor manufacturing analyst Dean Freeman said Applied has several motivations for the bid. ASMI has ALD patents which Applied may need as it broadens its own ALD thrust, he said.

While Intel Corp. (Santa Clara, Calif.) does not comment publicly about its vendors, Freeman said he believes ASMI gained ALD business at Intel for the high-k dielectric deposition, and in PECVD for low-k dielectrics.

"Applied's offer may be to take care of the patent licensing issues. Or, Intel may have come in and said to Applied, 'This might be a good idea for you to take care of. Intel has a way of marrying small companies that have technology they want with larger suppliers. With all the distractions taking place right now at ASMI, that wouldn't surprise me,' Freeman said.

To be sure, Applied has not ignored the ALD business, which Freeman estimates will roughly double between 2008 and 2012. Applied has used its Centura platform to offer its Advanced Gate Stack solution, which combines high-k ALD and decoupled plasma nitridation (DPN) with oxidation and annealing chambers. For tungsten deposition to fill contacts and vias, Applied offers its Centura ISprint Tungsten ALD/CVD system, which combines ALD tungsten nucleation layer technology with CVD tungsten bulk fill.

Freeman said Applied may broaden its ALD offering at the upcoming SEMICON West show. Applied's modus operandi is to get several beta tools out in the field, establish its technology with key customers, and then make a public announcement. That may come at Semicon West, he said adding that "it is hard to tell where Applied is at since they are not being very forthcoming."

Hitachi Kokusai Electric Inc. (Tokyo) has developed a multi-wafer ALD process for silicon nitride deposition that has been well accepted by memory vendors. Thus far, the market leader in single-wafer ALD is Juseung Engineering Co. (Gwangju, Korea). ASMI has solid positions in both ALD and PECVD markets which are set to expand as ALD further penetrates both DRAM and logic dielectric deposition. After the 32 nm generation, logic vendors may adopt ALD for metal electrode deposition, with the seed layer in particular requiring ALD. At the 22 nm node, NAND flash vendors are likely to require ALD for interpoly dielectric deposition.

**Top 5 Companies' (All) Revenue from Shipments of Atomic Layer Deposition Tools, Worldwide (Millions of Dollars)**

CY2006 Rank	CY2007 Rank		CY2006 Revenue	CY2007 Revenue
1	1	Hitachi Kokusai Electric	70.17	115.51
2	2	Juseung	94.03	78.66
3	3	ASM International N.V.	40.04	63.8
4	4	Aviza Technology	23.1	29
5	5	Integrated Process Systems	16.6	20.2
		Others	6.7	6
		Total Market	250.64	305.06

**Top 5 Companies' (All) Revenue from Shipments of Low-Density Plasma CVD, Worldwide (Millions of Dollars)**

CY2006 Rank	CY2007 Rank		CY2006 Revenue	CY2007 Revenue
1	1	Applied Materials	853.4	936.5
2	2	Novellus Systems	411.2	374.7
3	3	ASM International N.V.	70.0	61.0
4	4	Oerlikon	4.9	6.1
5	5	Samco	2.2	2.3
		Others	2.5	0.0
		Total Market	1,344.2	1,380.6

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That raises the question whether the \$400-500M bid is attractive to ASMI's board. Its ALD business of ~\$54M in 2007 comes on a narrow base of Intel and perhaps a few other leading edge customers. Its PECVD business, estimated by Gartner at \$61M last year, also counts on Intel, a company which switches vendors often from one generation to the next.



ASMI's Stellar 3000 is a single-wafer plasma-enhanced ALD volume manufacturing tool for both high-k dielectric and metal electrode deposition.

"They have got Intel, but they haven't been able to leverage that very far," Freeman said, adding that ASMI's investors have been pressing management to improve margins and expand the customer base. Also, Freeman said ASMI's strong focus on logic has meant that it has not devoted enough resources to memory ALD applications.

In metal and low-k, Applied presents tough competition. "ASMI probably won't have much success in breaking Applied's stranglehold on the metal business," Freeman said, adding that metal electrodes will transition to an ALD and PVD solution before moving to a strictly ALD solution.

The technology and patent considerations are complicated by the management situation at ASMI, where founder Arthur del Prado recently passed on the CEO reins to his son Charles del Prado. Investor groups which have large stakes in ASMI have called for the ouster of Charles del Prado, proposing that the front-end equipment business be run by Farhad Moghadam, a former senior vice president at Applied Materials who left soon after Tom St. Dennis was named as head of Applied's silicon solutions group.

Freeman said another former senior Applied executive, David N.K. Wang, former CEO of Chinese foundry **Hua Hong NEC Electronics Co.** (HHNEC, Shanghai), may be playing an advisory role to ASMI.

Freeman said Applied's offer of \$400-500M is roughly four times the value of the annual revenues for ASMI's ALD and PECVD tools, which he said "appears to be a fair price." However, selling off those two attractive product lines would leave the furnace and epitaxy businesses to be dealt with, raising the question whether management would divide the company into pieces.

"It is only natural for ASMI's investors to think that management should be doing better. They have their investors upset with them, so anything could happen. At the same time, ASMI management is adamant that they will continue to run the company the way they see best. The founder still is in charge, and we will have to see what they decide to do with it as they go forward."

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## 附錄七：Applied Materials Wants The Cream

Forbes.com - Magazine Article



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Market Scan

### Applied Materials Wants The Cream

Vidya Ram, 06.06.08, 11:50 AM ET

LONDON - **Applied Materials** is hoping that Dutch semiconductor equipment maker **ASM International** may be so down on its luck that it is willing to sell of some of its choice assets.

On Friday ASM International said it had received an unsolicited indicative offer from Applied Materials for two of its front-end deposition businesses, which make equipment for the production of chips. Applied Materials has put an initial value of between \$400 million and \$500 million on its atomic layer deposition and plasma-enhanced chemical vapor deposition operations.

ASMI shares spiked by 17.1%, or 2.89 euros (\$4.53), to 19.79 euros (\$31.03), in midday trading in Amsterdam. ASMI's management has been coming under a lot of pressure recently, after it said it expected its front-end business to make a loss in the first quarter. Activist shareholder Hermes Pension Management demanded that Chief Executive Chuck del Prado and all board members step down, arguing that the company had failed to make the business profitable even when the semiconductor industry was booming. A Dutch court has set a deadline of June 23 for the shareholders and the company to settle their differences. (See: "Activists Aim To Oust ASM Management" )

ASMI said that the sell-off would have major implications for its strategy and business model and that it would make an announcement about the offer by June 14. Both Hermes and fellow activist investor Fursa Alternative Strategies have declined to comment on the news.

The trouble is that the two assets are the most valuable and highest-margin businesses that ASM International has within its front-end sector, according to Petercam analyst Eric de Graaf. "They probably won't be willing to sell it because that would be like selling their crown jewels. It would leave them with a business that it would be very difficult to return to profitability." He says that the atomic layer project, in particular, is "one of the holy grails" of the semiconductor industry, allowing a very thin layer to be put onto a wafer, to produce a smaller and more energy-efficient product.

In addition to the equipment it makes for chip production, ASMI also has a 53.0% stake in **ASM Pacific Technology**, which makes machines used for the assembly and testing of chips.

*--Thomson Financial contributed to this article.*



[http://www.forbes.com/2008/06/06/asm-applied-materials-markets-econ-cx\\_vr\\_0606markets11\\_print.html](http://www.forbes.com/2008/06/06/asm-applied-materials-markets-econ-cx_vr_0606markets11_print.html)

# 附錄八：ASMI Gets Applied Materials, Francisco Partners Bid

2010/5/17 ASMI Gets Applied Materials, Franci...

## Bloomberg

Last update: 03:25 AM ET, May 17

### ASMI Gets Applied Materials, Francisco

#### Partners Bid (Update2)

*By Celeste Perri and Joram Kanner - June 17, 2008 11:59 EDT*

June 17 (Bloomberg) -- ASM International NV, Europe's second-largest maker of semiconductor equipment, received a combined offer from Applied Materials Inc. and Francisco Partners for its front-end business.

ASMI rose 9 percent in Amsterdam trading. In the indicative offer, Applied Materials again valued two ASM units at as much as \$500 million, while Francisco Partners valued the rest of the front-end business at as much as \$300 million, ASMI said in an e-mailed statement today.

On June 13, ASMI rejected Applied Materials's bid of as much as \$500 million for its atomic layer deposition and plasma enhanced chemical vapor deposition units. The units are key to growth in revenue and profit margins in ASMI's front-end business, the company said. The front-end business makes equipment to turn silicon wafers into chips. ASMI also owns about 53 percent of Hong Kong-based ASM Pacific Technology Ltd.

"ASMI's board should ask itself what happens next if it sells front-end, because then a stake in a listed company and a bag of money remains," Eric de Graaf, an analyst at Petercam SA with a "buy" rating on the stock, said by phone. He estimates Bilthoven, Netherlands-based ASMI may be worth about 30 euros a share for a takeover of the entire company.

ASMI climbed 1.72 euros to 20.92 euros, the highest since Oct. 26. The stock has gained 25 percent this year.

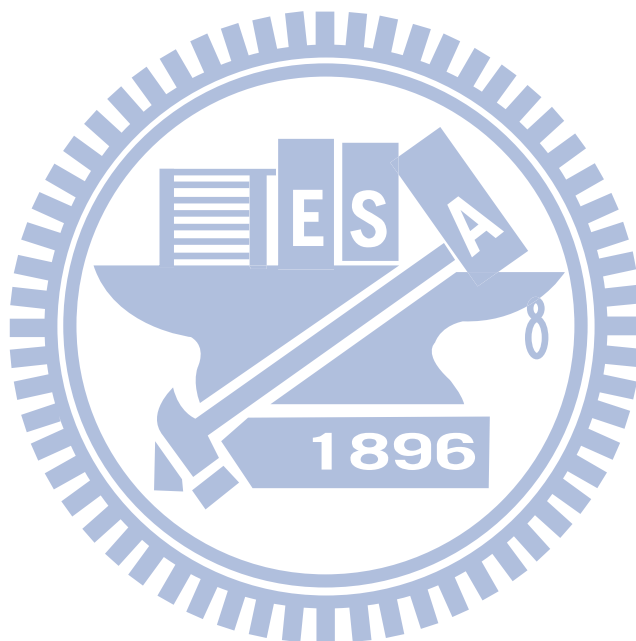
The company's management board and supervisory board will discuss the offer and its implications, ASMI said in the statement.

ASM Pacific is the world's largest maker of semiconductor- packaging machines.

To contact the reporter on this story: Celeste Perri in Amsterdam at [cperri@bloomberg.net](mailto:cperri@bloomberg.net); Joram Kanner in Amsterdam at [jkanner@bloomberg.net](mailto:jkanner@bloomberg.net)

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## 附錄九：Son gets Dad's job as CEO of ASM International



### Son gets Dad's job as CEO of ASM International

Peter Clarke

(05/22/2007 9:02 AM EDT)

URL: <http://eetimes.eu/production/199700824>

As expected Chuck del Prado has been appointed chief executive officer of ASM International NV (Bilthoven, the Netherlands) effective March 1, 2008, when he is due to succeed his father Arthur del Prado.

LONDON — As expected Chuck del Prado has been appointed chief executive officer of ASM International NV (Bilthoven, the Netherlands) effective March 1, 2008, when he is due to succeed his father Arthur del Prado.

Arthur del Prado has served as ASM International's chief executive officer since he founded the company in 1968. Following his retirement, Arthur del Prado will continue to serve as senior advisor to ASMI on strategy and industry issues. Chuck del Prado, president and general manager of ASM America and a member of the management board, has been with ASM International since 2001.

For a son to follow his father into the post of CEO is not common for privately-held companies but it is very rare in public companies, where shareholders insist on due diligence that a well-qualified candidate has been found for the position. ASM International shares are traded on the Nasdaq and Euronext markets.

"Chuck has 20 years' experience working in the electronics industry, an excellent career track record, and has also done an outstanding job leading our activities in the key U.S. market. We believe he brings energy and judgment to the role and is well-equipped to take over the leadership of the company," said Paul van den Hoek, chairman of the ASMI supervisory board, in a statement.

"ASMI is extremely well-placed for strong growth in the years ahead, and I very much look forward,

on behalf of all of our employees, to ensuring that we capture success for the company and all of its stakeholders," said Chuck del Prado, in the same statement. Prior to joining ASM International as director of marketing, sales and eervice of ASM Europe in 2001, Chuck del Prado served for five years as a manager in sales and manufacturing with ASM Lithography NV (Veldhoven, the Netherlands), in Taiwan and the Netherlands. He began his career at IBM Nederland NV after receiving a master-of-science degree with a focus on computer science and technology management from the University of Twente in the Netherlands.

ASM International tipped Chuck del Prado as a likely successor to Arthur del Prado when he was appointed to the board in May 2006 during a shareholders' revolt over business strategy. .

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