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Valuation of M&A
A Case Study: BenQ's Acquisition of Siemens Mobile Device Division

SHU-LING, CHEN

MBA

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by

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Abstract

In order to retain or upgrade core competence and sustainability, companies seek for global expansion and conglomeration. Consequently, mergers and acquisition (M&A) has become the most highly possible route for enterprises to pursue future growth in the fast way. Although the historical record shows a higher failure rate, the M&A waves do not appear to exhibit a declining trend in past decades. This paper illustrates the financial evaluation of a M&A activity. By using the Discount Cash Flow (DCF) method and Market Multiple model, it demonstrates and expresses the value differing from the assumptions and conditions that are adopted in the calculation. Meanwhile, through the specific case study of BenQ's failure to takeover Siemens Mobile Division in handset industry, it brings an argument that is significant in its own right, but is also a mixture of diverse issues involving financial evaluation, culture management in cross-broad circumstance, shareholder value maximisation and agency problem as well. Moreover, the objective of this paper is to stress on the evaluation on the target company during the pre-acquisition period, which requires careful due diligence to minimise potential risks and errors in value prediction in the beginning. Meanwhile, it also points out that the success of post-acquisition integration is highly relevant to the management strategy, but a failure to conduct it could lead to synergy that is not produced as early as expected and continuing operation expenditures that can cause a severe financial burden to the acquirer, which will change its capital structure and undermine its competition and business capability on the market as well. The focus on the M&A case of BenQ merge with Siemens implicates relevant topics, including the conflict between corporate social responsibility (CSR) and shareholder value maximisation. In addition, the interrelation between investment bank and enterprises involved in the M&A activities with the possible conflict against shareholder due to the concern of agency problem results in the inappropriate investment. Finally, it concludes that the future projection needs to be made on the basis of every aspect in business world; financial evaluation cannot be the singular element to accomplish successful M&A unless supported by all other strategic fits in operation.

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Introduction

With information technology becoming more common, internet application and telecommunication, international business connections have became more complex in more recent years. At the same time, national boundaries are getting vague resulting in the fiercely competitive and challenging environment that companies have to face. In order to retain or upgrade core competence and sustainability, companies seek for global expansion and conglomeration. As a result, mergers and acquisition (M&A) has become the most highly possible route for enterprises to pursue future growth. Moreover, due to the deregulation of related M&A rules with the trends of privatisation and liberalisation enables global capital flows to be utilised efficiently, which further foster the M&A environment in the world market.

The most recent curve of M&A activity since 2004 can be attributed to macroeconomic recovery and several drivers. First of all, many firms view M&A as a primary means to pursue higher shareholder return when they utilise cost cutting and operational effectiveness exhaustively to improve profitability. In addition, retain earnings of corporations and share price appreciation in M&A activities have supported acquirers to leverage their internal financing by swapping target firms' valueless private stock. Moreover, relatively low interest rates in historical record enable acquirers employ cost-effective financing costs to support the M&A growth (Sherman A.J. et al., 2006). Meanwhile, 31,233 deals transactions, valued at $1.9 trillion, were announced in 2004. Many large industries, in particular, energy and power, financial services, and telecommunications, leading by their transaction value, have experienced a strong consolidation, and high technology has dominated in terms of the total number of deals (see Table 1). In Taiwan, small and medium sized enterprises (SMEs) have played major roles in economic development. Taiwan has been a member of the World Trade Organization (WTO) since 2002; however, this trend causes instant shock to Taiwan-based corporations because they encounter foreign competitors' abundant resources in capital and advanced technology that may threat domestic growth. Therefore, the Taiwanese government works out the M&A regulation to encourage domestic M&A activities in order to strengthen business operations and to underpin economic development (Tsai H.M., 2006).

Table 1. Last twelve-months' deal activity by industry sector (as of May 2005)				
Target Macro Industry	Deal Value ($Mil)	Market Share	Number of Deals	Average Deal Size ($Mil)
Energy and Power	327,947	15.6	2188	$150
Financials	305,841	14.6	3835	$80
Telecommunications	209,831	10	957	$219
Real Estate	178,132	8.5	1382	$129
Media and Entertainment	165,446	7.9	2363	$70
Industrials	157,365	7.5	3892	$40
Materials	145,673	6.9	3131	$47
Healthcare	141,880	6.8	1699	$84
Retail	128,631	6.1	1467	$88
High Technology	123,727	5.9	4348	$28
Consumer Products and Services	123,163	5.9	2930	$42
Consumer Staples	92,676	4.4	2022	$46
Government and Agencies	903	0	34	$27
Industry Total	2,101,215	100	30.25	$69
Source: Thomson Financials				

This paper illustrates the financial evaluation on M&A activity. In the past, the relevant research of valuation more focus on large and stable business; however, in recent years, the emergence of technology companies, such as computer & peripherals or semiconductors, and new technology firms, such as Dot.Com companies, reveals an interesting argument that how conventional valuation models are adopted in valuing these technology firms with features of limited history and/or negative earnings. Darmodaran (2000) develops some new ways from traditional model by using adjusted Discount Cash Flow (DCF) method to evaluate technology companies.

A specific case study of BenQ's failure to takeover Siemens Mobile Division in 2005 is investigated here. Although the target – Siemens Mobile Device Division is not a dot.com business, its features of negative earnings and limited history in technology firm category are still qualified to be employed by adjusted Free Cash Flow valuation for its business value. Besides, how the discount rate and growth rate play their influential role in the business valuation process is examined as well. Meanwhile, the difference between valuation result and real price in this deal is discussed to explore other implications associating with the motives of the acquisition and other causes influencing value calculation.

BenQ Corp., acting as an original electronics manufacturer (OEM) for global brands such as Nokia and Motorola, is a well-known company in Taiwan but lacks global branding to speed up its own brand mobile phone business. As a result, to change in the company's incumbent business phase through the buyout activity become BenQ's priority to expand its marketing network (Qisda Annual Report, 2004). Siemens AG, the largest engineering conglomerate in Europe, has three major businesses including the healthcare, industry, and energy with 15 operation units (Siemens AG Annual Report, 2004). Yet, the high competition and design lag in new products caused continuous price-wars to its handset sales. Thus, Siemens AG decided to sell the loss-making handset business (Canibol H.P., 2006). In September 2006, BenQ Mobile filed for bankruptcy and it raised a widespread criticism against BenQ and Siemens (Wearden G., 2007).

This case study is significant in its own right but is also a mixture of diverse issues which involves financial evaluation, culture management in cross-broad circumstance, shareholder value maximisation and principal-agent problem as well. The objective of this paper is to stress on the evaluation on the target company during the pre-acquisition period, which requires careful due diligence. Besides, the success of post-acquisition integration is highly relevant to the management strategy. Inefficient managerial practices not only delay the resource transfer and experience sharing but also interrupt the conduction of internal operational policies. The worse matter after an acquisition would be synergy that is not be produced as expected early and continuing operation expenditures that cause a severe financial burden to the acquirer and even change its capital structure. Once the acquirer cannot bear the pressure financially, it has no choice but to give up the merger even and therefore attract criticisms for the resulting unemployment. As a result, this implicate topic in corporate social responsibility (CSR) to go against company's profitability, which represents shareholder value maximisation. Furthermore, the M&A drivers, investment banks, play an important role to match up the transaction in the modern era; thus, this paper also examines the interrelation between their business motives and principal-agent problem in organisations involved in M&A. The extended topics bring cross-border discussion and potential for more in depth research suggested for subsequent investigations. This has both

theoretical and practical implications, which conclude that a single factor, such as financial evaluation, cannot accomplish a successful acquisition; there are other essential and crucial elements that supplement the financial valuation in a more appropriate and objective way. All in all, the future projection is to be made on the basis of every aspect in the business world.

1. Methodology

Shareholder value maximisation is regarded as a goal of an enterprise in order to pursue sustainable growth. In spite of the challenging and competitive environment continuing to weaken business profitability, a foresighted enterprise can still retain or even strengthen its value and core competence through a serious of strategic activities. The strategy of Mergers and acquisitions (M&A) is one of highly possible routes that enable a firm to obtain economic benefits in a relatively short-term horizon. However, the failure of M&A can not only endanger the future growth of a company but can also cause the prompt loss in existing business scope and its financial position. Consequently, evaluation of an enterprise's value plays a significantly influential role in the decision making process of the investment.

This study seeks to understand how an organisation is evaluated by market multiple and discount cash flow approaches. Moreover, in seeking the possible answers and recommendations for the questions, a case study approach is adopted. The case is based on the secondary information which includes annual reports, magazines, newspapers, and official announcement of firms' web sites to analyse and outline the outcomes. The value estimation of the target company will be worked out and compared with its real price of the takeover to arrive at the analysis in depth. Furthermore, a case study is fitting because other non-financial factors should be concerned as well in the evaluation analysis although they are restrictedly incorporated or often ignored in the consideration of M&A activity. The aim in this case study highlights that in keeping with the appropriate financial valuation is a key to step in the successful opportunities of business expansion. In the meantime, the alignment with 'soft' considerations in strategic policies, such as cross-broader management, integration of culture difference, and appropriate recommendations of investment bank to the choice of M&A activity in a changing market underpins a successful acquisition with outstanding performance in the long run. Conversely, the acquirer may be put in a highly risky position with exhausted resource if the takeover fails.

Although the enterprise value has various definitions, such as liquidation value, book value, fair market value, and collateral value, and it depends on different

purposes to deliver meanings for specific users. In this paper, the enterprise value reflects the market value in terms of the financial stance. Prior to the evaluation of the target company, there are essential aspects which should be examined as well. Firstly, the background incorporating its business vision, management goals, product scopes, market position, competition analysis, industrial trends, and future prospects. Moreover, to explore the historical financial statements in terms of ratio analysis is helpful. Even though financial statement is backward-looking, it still implicates useful clues that could be analysed to get further comprehension with regarding to the historic policies and management patterns in companies which are interested in M&A activities. Meanwhile, risk analysis which includes qualitative and quantitative determinations helps investors to well identify the real value of the target firm.

In the process of evaluation, the determinative reasons to appraise the deal of Siemens Mobile Division taken over by the BenQ by using market multiple and discount free cash flows approaches are as follows. Firstly, brand marketing is the primary concern for BenQ to acquire Siemens Mobile Division. Besides, Siemens's completed distribution channels in European market can underpin BenQ to establish and expand its product position to cross Asia and move forward. Thus, the expected revenue of Siemens Mobile Division can be estimated and then discounted to generate its enterprise value. Secondly, globalisation eliminates national boundaries and the merger of Siemens handsets enables BenQ become the 6^{th} largest marker in the world (Nystedt D., 2005). As a result, the comparators can be selected from the major global competitors with public financial statements and their estimates of value can be assessed by market multiples. On the other hands, the consolidated financial statements of Siemens group provide limited information with regard to its mobile division. Therefore, access to two valuation methods could be implemented under conditional assumptions associating solely to merely Siemens handsets business. The detailed assumptions and presuppositions are described in the next section.

Discount free cash flow (DCF) approach focuses on the generation of future cash flows. The value of the firm equals the sum of projected cash flows for a planning period, which pluses a terminal value and then discounts the amount

back to the present date. As a result, synergy is demanded to be included if the information is sufficient to help develop reasonable perdition (Stampf et al.1992). There are three steps of DCF analysis laid out as follows.Step1: estimate the planning time and the amount of expected free cash flows (FCF). FCF can be expressed as the result of formula that Profit before Interest and Tax (PBIT) + Depreciation Expense - [Changes in Working Capital]-Net Investment in Fixed Assets –Tax. The FCF comes from the initial planning periods and the end of projected period. In general, market multiple and perpetuity assumption with appropriate discount rate are two ways to capitalise the expected earnings. Step2: find out the risk discount rate. To an investor, it is an expected rate of return or the required cost of capital. Weighted Average Cost of Capital (WACC) is adopted here to evaluate the risk. However, the inherent limitation probably provides insufficient information. This is because the method merely discounts the cash flow by a singular expected return rate that may reflect restrictively all the cost and benefits if the original capital structure is changed. Step3: calculate the enterprise value (EV), the present value of the expected cash flows, and share value comes out after the EV is divided by the share numbers. Although to project future earnings is difficult, to develop varied business operations and to consider historical operation performance is necessary to narrow down the possible errors and distortions.

Furthermore, a market comparison approach is applied in the analysis as well. How much a company worth, which is trusted by investors, is worth within the market and what a picture that market multiple would like to indicate. Accounting principles and disclosure requirements that vary in different countries may affect results and the ideal comparable company that are similar to the target company is unlikely to be found in every aspect (Stampf et al.1992). Moreover, the well-functioning market is not the proposition; thus, the share price may be affected by subjective factors. Meanwhile, the future growth value is probably underestimated. In spite of the possible drawbacks and limitations for this method, the major purpose of DCF method adoption is to complement with each other and to make the evaluation more reliable. Therefore, in the market multiple analysis, the differences of accounting and related principles in these comparable firms are ignored, and the inflation expectations, general

economic and political risks in this analysis are supposed to be same as well in the market multiple approach.

In this selective case study of Siemens Mobile Division acquired by BenQ, its final result failed and the period of acquisition merely lasted one year after the official announcement. Hence, possible factors which are hidden behind this failed case are worthwhile enough to be examined, except for the company valuation in pre-acquisition. As for what is mentioned in the previous section, resource integration of two different firms bears relatively high risk. If the expected cash flow does not take this aspect into account, overestimated return and underestimated threats can occur. The connection between financial and non-financial considerations before and after the M&A forces the synergy to be generated in different degrees. Moreover, there is no exactly accurate evaluation of an acquisition but how it closes to a real situation in the business world. Different buyers might interpret a same target firm in various values because they aim at creating different synergy from business viewpoints.

Although outcomes of M&A performed relatively high failure according to the historic records, the trend does not be ceased or decreased. In many cases, investment bankers who bring financial expertise and capabilities play an intermediary role in bridging sellers and buyers. Through channels provided by investment banks, the transactions of M&A may not be time-consuming and consist of costly activities because buyers who express an interest in acquiring can find out the target quicker than they process by themselves and vice versa. The abundant resources and information that investment banks have, offer acquirers access to the expertise in valuation and negotiation (Sherman A.J. and Hart M.A. 2006, P38). However, M&A business in investment banks generate their major revenue with relatively lower expenses compared to other business lines. High commission base, at least 1% of the transaction deal, drives advisers to match up the M&A (Mergers & Acquisitions, 2009). Under this condition, would the role of investment banks in the negotiating process of M&A strengthen principle-agent problem in acquiring or target firms? In particular, if managers with a hubris tendency (Roll, 1986) pursue growth maximisation complying with an adviser's attractive packaging on the 'commodity', would it enables the

acquirer overlook potential risk and make wrong decisions? This is another issue that will be explored in this study.

2. Literature Review

2.1 M&A Theories

Mergers and acquisitions (M&A) involves a complicated and challenging processes not only to corporate and financial strategies but also to the management science of buying, selling, and the integration of different companies. "Mergers" and "acquisition" are different in their definitions. In a merger, a new organisation comes out after the combination of two individual firms and both forms end to exist. This pattern, known as "consolidation" as well, produces a new company name and complies with a new branding. Acquisition, which is known as "buyout" or "takeover" synonymously, implies that the power of ownership and management is transferred to the acquiring companies for business operation. There are two basic types in payment implicated here. One is the acquisition of shares. The board of acquirer raises the offer for the voting shares of another company. The target of this offer can be the board of the acquired firm or a tender offer to the public. Another type is the acquisition of asset. Part or all of the assets of the target company involves the title transfer to the acquiring firm (Muller D.C., 1969).

Turning to Buckley P.J.(2002), one finds out that mergers and acquisitions can be conventionally classified in terms of economic effects as well. Firstly, horizontal merger means that two firms produce similar products in the same sector and the combination can enlarge the scale of economic to reduce production cost, expand the market share with better pricing power, increase debt capability and possible tax benefits, and reduce redundant expenditures in R&D, equipments, and related management cost. In addition, vertical merger indicates that two companies in the same industry have business correlation. Forward integration and backward integration are two patterns of this merger. The advantages include reducing transaction cost, stabilizing material supply and quality assurance, completing distribution channels and flexible inventory management, and enhancing technology innovation. Furthermore, two companies that operate different business lines in the same industry are defined as congeneric merger. Finally, two organisations which operate in different sectors without business correlations and are integrated to generate benefits,

such as decreasing financial risk and increasing management efficiency, are called conglomerate merger. To further decompose this merger, incorporating market extension, product extension, and pure conglomerate mergers are three patterns (Kitching J.1967).

A study by Frank J.R et al.(1988) show that M&A can be classified in terms of payment. First of all, cash payment to the target firm is the first way; yet, the acquiring company may bear higher risk in cash capability and interest expense. In the mean time, shareholders of the target company may be required taxation payments of capital gains. Another method is share swap. When ordinary common stock of the acquiring company is swapped, the ownership would be decentralised. The new issuing of common stock would probably dilute the acquirer's share price; whereas, for target firms, remaining as shareholders in the acquiring firm can make the merger succeed more easily. Preferred shares swap could be an alternative to retain the bidder's ownership and provide attractive motives for shareholders of the target company with priority over shareholders of common stock in the payment of dividends. Meanwhile, Brigham E.F. and Gapenski L.C. (1994) classify the M&A as a financial merger and operation merger. The acquiring and acquired companies seek lower operation risk which is the motive of a financial merger. Moreover, the combination of two companies in a related industry is expected to produce operating synergy which enlarges business scales and increases the market share.

Since the 19th century, the world has experienced five waves of M&A, accompanying diverse motives. In particular, many researches discover that M&A often appears to have a multitude of motives rather than single one. Schmidt and Fowler (1990) examine the motives of M&A in terms of value and non-value maximisation. Value maximisation includes the "Efficiency Theory" and the "Information and Signalling Theory", as well as the "Market Power Hypothesis". Non-value maximisation incorporates the "Principle-Agent Problem" and "Managerialism", the "Cash Flow Hypothesis", and the "Value Re-distribution Theory". Brief descriptions are listed in the following paragraphs.

A. Value maximisation

1. The Efficiency Theory indicates that the expected cash inflows of post M&A exceed individual firms' performance. In other words, VT >(VA + VB), the total market value of the combined firm generates more synergy than the individual market value of firm A and firm B. Three other theories are derived from this theory.

1.1 Operating Synergy Theory

This theory illustrates that synergy comes from the scale of economics, transaction cost, and management differentiated efficiency to uplift the production and organisation efficiency (Schmidt&Fowler,1990).

1.1.1 Scale of Economics: A horizontal merger reduces overlapped investments, which enhance production efficiency by the reallocation of production resources. Vertical mergers can help firms decline communication costs and bargaining costs. Conglomerate mergers utilise complementary resources to produce synergy.

1.1.2 Transactional Cost Economics: Williamson (1983) highlights that if a firm engages in a diversified conglomerate merger, the business operation of each division can be well understood and can enable managers to make efficient decisions in resource allocation.

1.1.3 Efficiency of Managerial Difference: Copel and Weston (1979) clarify that a better performing acquirer can manage and improve a target company's operation efficiency.

1.2 Financial Synergy Theory

Diversification of post-M&A can produce a coinsurance effect which enables companies to have opportunities to lower their debt costs. Amit and Joshua (1988) suggest that enterprise should aim at diversification of business operations. Seth (1990) believes that diversified businesses can help to stabilise a company's cash flow, and hence lower the operation risk. However, Sarnat and Levy (1970) explain that in a well functioning market, shareholders can diversify corporate risk through purchasing investment portfolio with lower cost in the market. Therefore, takeover would not be a better alternative to fulfil shareholder's expectations. Lewellen (1971) insists that in a well functioning bond market, the combination of cash flows from acquiring and acquirer firms

create co-insurance function to lower debtors' liquidation risk for creditor to provide more capitals.

1.3 Market Power Hypothesis

Shepherd (1970) indicates that to weaken competitors' competence and to decline the numbers of competitor by takeover could strengthen the firm's market power. Meanwhile, suppliers can obtain abnormal profits in terms of monopoly and oligopoly power. Singh and Montgomery (1987) examines that the higher market power increases a firm's influence on pricing, quantities, and characteristics of products and then synergise the margins.

1.4 Information and Signalling Theory

The information disclosed during the process of M&A enables investors to re-evaluate a company's value and the acquired firm could enjoy increased share price. In other words, the empirical evidence points out shareholders in the target company benefits at the expense of shareholders in the acquiring company.

1.4.1 Kick-In-the Pants Hypothesis

The arrival of share purchase agreements for the target company drive its managers to carry out more efficient operation strategies and ensure the value of the acquired firm.

1.4.2 Sitting-On-A-Gold-Mine Hypothesis

The message with regard to the target company's undervalued share price would be released during M&A activity and it enables market investor's to re-evaluate its share price.

B. Non-Value Maximisation

1. Principle-Agency Problem & Managerialism

Jensen et al. (1976) suggests that managers may have different interests to run the business as what owners wish. Therefore, agent cost is produced to monitor manager's activity and to avoid potential conflict in an organisation.

1.1 Takeover reduce principle-agent problem

Fama and Jenson (1983) claim that in case of the separation of ownership and management in an organisation, internal mechanisms can be adopted in order to

control and evaluate the decisions making process. Manne (1965) suggests that if managers do not perform well and cause share prices to decrease, shares of the company may encounter the risk of being taken over.

1.2 Managerialism

Managers pursue personal interest and decision-making policy of non-value maximisation which scarify shareholders' benefits.

1.2.1 Growth Maximization Hypothesis

Muller(1969) believes that rewards of managers are positive co-relation with scales of companies. Thus, managers prefer to expand the scale by M&A but potential risk of lower expected return may be ignored.

1.2.2 Free Cash Hypothesis

Jensen (1984) claims that if excessive cash, free cash flow, is retained in a company, managers probably invest in unprofitable or lower return projects, such as M&A activity. It is the major conflict between managers and shareholders in an organisation.

1.2.3 Diversification of Management's Personal Portfolio Hypothesis

Amihud & Lev (1981) suggest that managers' worry about losing their jobs if a firm fails to achieve business or confront the bankruptcy risk. Consequently, takeover activity becomes a good strategy to reduce risks of companies by diversification. Yet, Lewellen & Hunstsman (1970) discovered that the rewards of managers are highly correlated with profitability rather than company scale.

1.2.4 Hubris Hypothesis

Roll (1986) suggests that managers fail to evaluate favourable takeovers due to their overconfidence and over-optimistic attitudes, which underestimate the risks. As a result, the acquisitions not only generate no synergy gains but also damage shareholders returns.

1.2.5 Free Cash Flow Hypothesis

Jensen (1986) thinks that the major reason to carry out takeovers is because of the use of free cash flow leads to conflicts between managers and shareholders. On the other hand, this theory claims that free cash flow should be returned to shareholders in terms of dividends or share repurchase plans. Furthermore, managers should invest in projects by debt borrowing and agency costs can be lowered through monitoring by creditors. In other words, increase the ratio of debt to equity to minimise the agent problem is supported under this theory.

Moreover, the research of Kitching (1967) suggests that financial synergy performs better than production and technology synergy, followed by marketing synergy. Ansoff (1971) finds out that in the manufacturing industry, the synergy of distribution channel, sales and marketing, and technology development are highly generated by M&A. Weston & Mansinghka (1971) states that a conglomerate merger enables the company to create higher market value and growth rate. Hoshino (1982) indicates that in the post-M&A, the liquidity of the firm can be improved with decreasing profitability and ratio of debt to equity. Mueller (1985) discovers that acquired firms under conglomerate mergers or horizontal mergers, caused the market share to decline rather than increase to what is expected. Fowler & Schmidt (1989) implies that acquisition does not improve operation performance but also produces negative influence. Healy, Palepu and Ruback (1992) conclude that when an acquirer and a target company are in a related industry, the return on operating cash would be significantly increased. Banerjee& Eckard (1998) investigate that M&A activity enhances a company's market value by 12%-18% as a result of the better operating efficiency rather than gains on monopoly power.

2.2 Financial Valuation of M&A

2.2.1 Defining Values

To investigate potential value, Reilly (1990) suggests that there are preconditions of enterprise value which required clarification before the evaluation. According to Reilly, there are seven definitions of value.

A. Fair Market Value

It is an estimate of the market value of market value of a good, service, and assets.

B. Fair Value

It is identified as an unprejudiced and rational estimate of market prices of a property.

C. Investment Value

It is defined as "the specific value of an investment to a particular investor or class of investors based on individual requirements; whereas, market value is "the value of the marketplace" and it is impersonal.

D. Intrinsic or Fundamental Value

It stands for "an analytical judgement of value based on the perceived characteristics inherent in the investment, not tempered by characteristics peculiar to any one investor, but rather tempered by how these perceived characteristics ate interpreted by one analyst versus another".

E. Going –Concern Value

It represents value in continued use, as a going-concern business entity, and as a grouping of income producing assets, such as intangible assets, goodwill, and talented workers.

F. Liquidation Value

It shows value in exchange, as part of a forced liquidation; this foundation reflects that the business enterprise's assets will be sold individually

G. Book Value

This is the value of an asset shown on the balance sheet in accounting. In traditional term, book value of a firm is its total asset less liability and intangible assets.

2.2.2 Approach of Business valuation

According to Pratt S.P et. al.(2000), there are four major methods of business valuation.

A. Asset-Based Approach

This approach is developed on the basis of a firm's asset cost (Gordon V. Smith, 1987; Robert Reilly, 1992).The net asset value of a target company and the value of equity can be evaluated by subtracting value of liability from the value of assets. When the M&A activity involved in the acquisition of the assets, this approach is the common way to estimate the value on the basis of financial statements. However, the limitation of intangible asset appraisal is its weakness and the various accounting systems probably affect results. In the meantime, this approach consists of book value, liquidation value, and replacement value elements.

(A-1) Book Value Method

The book value of a firm is the historical cost of the firm's total assets less the recorded liability. Meanwhile, it can be also calculated as the sum of the owner's equity investments in the organisation plus the accumulative amount of the firm's retained earnings. However, book value dose not equal economic value

and the cost-based balance sheet ignores intangible assets and contingent liabilities.

(A-2) Liquidation Value Method

The asset value of a company equals the outcome that liquidation value of asset minus liquidation value of liability. This approach ignores a firm's profitability and going-concerned value. Meanwhile, when a company is going bankruptcy or attempting to close business operation, this method may be implemented for further reference.

(A-3) Replacement Value Method

Replacement value is to estimate the cost of replacing the property to be valued with a similar property on the basis of existing price level. Yet, the replacement value of asset is not easy to be calculated accurately and it does not consider going–concerned value of a firm as well. Therefore, this approach could be applied when the target firm with replacement value of asset which greater than that of profitability in the merger process.

B. Profitability Evaluation

Wiese (1930) suggests that to discount expected future cash flows is the appropriate value of security and should be implemented in a firm's valuation. It emphasises that a firm is a "going-concern entity". O'Bryne (1996) points out growth value of a company may accounts for 70% or above of its market value. The disadvantage of this valuation is the ignorance of a target company's asset value and results may be distorted by financial projections, whereas this valuation is commonly recognised as a more suited approach to assess a company because it takes account of profitability, growth value, and business risk. This valuation comprises four major methods.

(B-1)Dividend Discount Valuation

It demonstrates that the value of a share is the present value of expected dividends through infinity.

Value per share of stock= $\sum_{t=1}^{n=\infty} \frac{E(DPSt)}{(1+Ke)^t}$

Where DPSt= Expected dividends per share; Ke= Cost of equity

Nevertheless, to project accurate expected dividends is challenging. A dividend policy belongs to a man-made decision which could not fully represent a firm's value. Furthermore, issuing dividends could not enable a promotion of a company's value because the company may have insufficient working capital to invest, therefore, barriers of the company growth is probably produced.

(B-2)Accounting-Based Discount Valuation Method

This approach substitutes dividends for net profit after taxes as the major source of profitability. In particular, retaining earnings remained in the company would create more cash flows to increase enterprise value. But accounting principles and rules affect results easily and the inflection is not taken into account.

$$P_0=\sum_{i=1}^{\infty}\left(\frac{Xt}{(1+r)^t}\right)$$

Where P_0 = Payoff; Xt =net payments to equity holders;
r = cost of equity; n=the number of period

(B-3) Discount Free Cash Flow Method

It is forward-looking and is not tied to historical accounting values. It focuses on cash flow rather than profits and reflects investment inflows and outflows. It recognises the time value of money. Meanwhile, it could evaluate intangible assets better than other approaches (Bruner R.F. 2004). Conversely, the complexity of getting detailed information to accomplish complete analysis is its weakness.

$$P_0=\sum_{i=1}^{\infty}\left(\frac{CFt}{(1+r)^t}\right)$$

Where P_0 = Payoff; CFt =cash flow in the n period;
r =required rate of return; n=the number of period

(B-4)Adjusted Present Value Method

To determine enterprise value, discount free cash flow at the unlevered cost of capital firstly and then add the present value of financing side effects, such as the interest tax shield, to arrive at the result. Moreover, this method can be implemented when the company encounters a change in its capital structure.

C. Market Comparative Appraisal Approach

According to market efficiency theory, in the long run, market value could be the most valuable signal which reflects a real value of a company. This valuation of a target company in the M&A involves finding out similar companies that are comparable to the acquired firms and then to compare their financial performance and associating linkage of market value. When the comparator and the target firm perform similar features in business operation and explore potential risks in the future, the estimation of the firm's value would be more reliable. The analysis includes various multipliers, such as price/earnings, price/book value, and price/cash flow.

$$V_I = \frac{V}{f} \times F$$

Where V_I = the value of the target firm; $\frac{V}{f}$ = market multiplier of the similar company; F = financial variables of the target enterprise

(C-1)Price/Earnings Ratios: This calculation is an easy and common way to reflect a firm's status in the business market. P/E rises when a firm is expected to have good prospect, and vice versa. Yet, projection with errors could cause the share price evaluated inaccurately. Meanwhile, it is meaningless when the EPS of a company is negative and the accounting rules are varied. On the other hand, this model has positive interrelation with the dividend issuing ratio.

(C-2)Price/Book Value Ratios: This model can be adapted when a firm performs negative profits and it provides relatively stable tool to be compared with market price. On the country, book value is influenced easily by depreciation and an enterprise could manipulate ROE to raise this ratio which mislead investors in the market. Moreover, book value of equity would be negative probably if the firm remains a loss profit in the long run.

(C-3)Price/Sales Ratios: Sales is not tied to the accounting rules, and this ratio possesses smaller variation than prior two ratios. Besides, it can be employed by a firm that encounter difficulties; thus, this ratio is relatively reliable. However, if a firm has the problem of cost control which could not be sort out by this ratio, the valuation may be misguided as well.

D. Real-Options-Based Evaluation

Shareholders have residual rights over the cash flows of the company after the enterprise value is deducted by existing rights of creditors in debt contracts. Therefore, the nature of equity and debt in an option pricing mechanism is worth to be considered. Shareholder equity could be viewed as a call option and the shareholders are the holders of call options, which are under the condition that the value of the call option is defined by market value; subsequently, if the enterprise value does not exceed the exercise price of a call option, the shareholders will not exercise the option, because shareholders do not get any payoff. In contrast, when the enterprise value exceeds the borrowing cost including paying the interest and repaying the debt, the option will be exercised by shareholders and the shareholders obtain the payoff that the borrowing cost is removed from enterprise value. The major advantage of this valuation is capturing the managerial flexibility of a project that may be ignored by traditional NPV analysis. It helps decision maker to consider whether or not to invest in a new project at present or in the near future, or to contract, expand, or give up an ongoing investment. In other words, managers could be capable of adjusting their investment project under various market situations to further pursue profit maximisation for their organisations. Black–Scholes (1973) suggests the following model to value share price.

$$S=V\times N(d1)-B\times N(d2)\times e^{-RfT}$$

2.2.3 Valuation Process of Business

Copeland, Koller, and Murrin(1994) suggest five steps required.

A. Analyse historical performance

(A-1) Calculate NOPLAT and capital investment

(A-2) Work out value drivers

(A-3)Build-up a historical prospect as a whole

(A-4)Analyse fundamental finance structure

B. Project free cash flow

(B-1)Differentiate sources of FCF

(B-2)Develop scenarios of performance

(B-3)Decide assumptions of forecast

(B-4)Examine rationality of the prediction

C. Estimate cost of capital
(C-1)Decide the weight of value of the target
(C-2)Calculate cost of capital of non-equity securities
(C-3)Calculate cost of capital of equity securities
D. Approximate going-concern value
(D-1)Choose adequate instrument
(D-2)Decide forecast periods
(D-3)Calculate parameters and prioritise their importance
(D-4)Discount the value
E. Work out the outcome and give explanation
(E-1) Calculate and examine the result
(E-2) Based on the result to clarify the implications

In the last two decades, the discount cash flow approach is the most popular valuation in the share price of the target company. Yet, in the study of Caugh & Meador (1984), it indicates that the variables of prospect of the industry, expected EPS, and economic environment, and are the most important signals to evaluate short-term of share prices. In the long-run, expected EPS, expected return on equity, and prospect of the industry are crucial accesses to more accurate analysis. Lippitt & Astracchio (1993) conclude that the discounted cash flow (DCF) method and earning capital model are suitable for small and medium size enterprises (SMEs).The earning capital model is based on historical data to project future earnings and it appears lower uncertainty compared to the DCF approach. As Pratt (1989) states the results can be equivalent to the present value of future earnings by adjustment of past earning records, such as inflation, depreciation, and replacement assets.

On the other hand, according to the research of Hickman & Perty (1990), while the target firm is not a publicly trading business, Market Multiple and Dividend Discount methods are appropriate for the valuation. In particular, Price/EPS helps predict more accurate share price than Dividend Discount analysis due to the errors in discount rate that is estimated by CAPM formula. A study by Guatri L.(1994) shows that market value of equity is differ from book value in three aspects. Firstly, the performance of financial activities, sales and marketing management, and innovative capability in research and development are

observed from shareholders' equity on the balance sheet of a company. In addition, in pursuit of shareholder value maximisation is a fundamental objective of the organisation. In other words, to optimize the market value of equity in terms of the net income that a firm produces is what investors concern.

Although varied financial evaluation approaches enable the acquirers' access to relatively reliable value of target companies, the high uncertainty and risk still cause over half of underperformance or failed rate of M&A activities in the historical records. Moreover, Table 2 reveals the announcement period of abnormal return in 1980s and 1990s.It is obvious that the acquirers' share price shows a decreasing trend after the takeover is announced, but acquired companies are in a reversed pattern which increases in its value. In other words, the investors in the market show low confidence to acquirers relating to the creation of additional value by acquisition.

Table2. Announcement Period Cumulative Abnormal Return by Decade

	1980-89	1990-99
Target		
[-1,+1]	16.0%	15.9%
[-20,close]	23.9%	23.3%
Acquirer		
[-1,+1]	-0.4%	-1.0%
[-20,close]	-3.1%	-3.9%
Resource: Andrade G., Mitchell M., and Stafford E. "New Evidence and Perspectives in Mergers" *Journal of Economic: Perspectives*, Vol.15, No.2, Spring 2001, pp.103-120.		

Goold and Campbell (1999) also suggest that the four main reasons which cause the failures of M&A are: the overestimations of synergies, the confidence that synergy can be emerged by strengthening cooperation, underestimation of the difficulties in resource integration, as well as the ignorance of risky probability in synergic production. Haspeslaugh and Jemison (1991) classify activities of M&A as four theories which are illustrated as follows.

1. Capital Market Theory

This theory believes that M&A can create wealth for shareholders and social economy. CAPM, Cash Flow, Efficiency Market, and Agent theories are embodied;

while, they provide limited explanation relating to the underperformance of M&A activities in the world.

2. Strategic Management Theory

It centres on how to generate synergy and reduce conflicts in an organisation by fitting in adjusted strategy after the acquisitions. Fowler and Schmidt (1989) and Kitching (1967) think that market share and market scale are the most possible factors driving the outstanding post-M&A performance.

3. Organisation Behaviour Theory

This theory focuses on the implementation of efficient management which deals with risk, human resource and cultural aspects. In particular, Jenson (1998) and Nahavandi and Malekazadeh (1988) examine the cultural differences between two organisations which may enable the managerial barriers to become enlarged, whereas the successful cultural integration and the efficient interaction of individual strengths within the firm in the post-acquisition that brings positive changes of behaviours are dramatically important.

4. Procedure Theory

This concept integrates theories of strategic management and organisational behaviours. It not only reveals the possible factors which affect the results of acquisitions from the viewpoints of procedure but also provides how the final outcome of takeover is caused by the process of strategic decision-making and integration. Therefore, the efficiently managerial capabilities drive the potentials of synergic creations in post-M&A (Greenwood et al.1994).

2.3 Brand Strategy of M&A

With the development of the global market, brand marketing has become an unavoidable trend to drive higher market share of products and service. Therefore, building up a global strong brand is the most powerful weapon to create a new market. Doyle (1990) highlights that there are two methods for a company to create its brand name; one is building brands and another is buying brands. When an enterprise with strong marketing competence and research capability in a significantly growing market, adopts a "building brand" strategy, this is a good opportunity to foster its branding. However, if a firm does not have advantages in marketing and technological innovation, to acquire a brand by relatively lower costs as an alternative.

Brand formation is a long-term process with the accumulation of experience, knowledge, and competitive resources. The completed international marketing strategy and practical operation with good quality and specific features of products require expensive marketing expenditures. It may become a company's financial burden. Through M&A activity, a firm can shorten its learning curve whilst building a brand and obtain an existing market share of a target company. Furthermore, Aaker and Joachimsthaler (2002) mentioned that acquiring brand, acquired brand, and co-brand are three patterns of brands. In particular, consumers in developed countries have higher confidence and preference in their domestic brand. Under this condition, if the target company is located in developed countries, implementing strategies of acquired brand or co-branding, will create influential power.

Biel (1992) argues that brand equity can be viewed as the excessive cash flow, which is generated after products and services are combined with branding. Simon and Sullivan (1993) suggest that brand equity should be defined as the difference of cash flows between products with brands and non-branded products. Brasco (1988) concludes that brand equity is the total present value of current and future earnings and the brand value should be considered as the intangible asset of a company's financial statement. On the other hand, Stobert (1989) thinks that brand equity is a replacement cost. Brasco and Stobart (1988) define it as liquidation value or synergy which should be taken into account for M&A evaluation. The Marketing Science Institute brand equity is the additional value of a brand name, and it enables companies to obtain more market share and better profitability. Meanwhile, brand equity is a set of customers, channels, and an awareness of branding advantages.

2.4 Cultural Difference of M&A

Hofstede (1994) identifies national cultural differences to five dimensions (see Table 3).

1. Power distance

It is the level which individuals with less power in organisations or institutions accept and desire that the power can be released unequally.

2. Individualism vs. Collectivism

It is the degree to which members are willing to be incorporated in the same groups and pursue success of a team rather than individual achievement.

3. Masculinity vs. Femininity

It indicates the distribution of roles between sexes which is expected to be performed in terms of conventional viewpoints.

4. Uncertainty Avoidance

This implicates the tolerance of a society toward uncertainty, ambiguity, and failure. Besides, it is the extent to which an individual pursues the truth and rejects the unstructured conditions.

5. Long Term vs. Short Term Orientation

It stresses the pursuit of a virtue rather than the truth. Values of long term orientation are thrift and perseverance. Values of short term orientation are giving "face" to someone, fulfilling social responsibilities, and respecting tradition.

In this study, theories of capital market and organisation behaviour, in particular, the cultural issues in the cross broad M&A are stressed in terms of a case research. Consequently, it involves not only the financial valuation that helps firms to evaluate future cash flow and potential financial benefits from branding equity and marketing expansion, but also the integration of national culture, which accounts for fundamental factors to affect related decision-making processes and strategic management. Not all of the risks and problems would be expected to be discovered before the takeover, therefore careful examinations in possible conditions and solutions should be considered and an attempt should be made to find out the correlation between managerial capability and synergy desired after the M&A activities. Finally, the success rate of a M&A may be improved with higher returns that than what are expected.

Table 3: Five Dimensions of National Culture Difference (Hofstede, 1994)

Dimensions	Small Power Distance Societies	Large Power Distance Societies
PDI	Hierarchy means an inequality of roles, established for convenience Subordinates expect to be consulted Ideal Boss is resourceful	Hierarchy means existential inequity Subordinates expect to be told what to do Ideal boss is benevolent autocrat

	democrat	
	Collectivist Societies	Individualist Societies
Individualism vs. Collectivism	Value standards differ for in-group and out-group: particularism Other people are seen as members of their group Relationship prevails over task Moral model of employer-employee relationship	Same value standards apply to all: universalism Other people seen as potential resources Task prevails over relationship Calculative model of employer-employee relationship
	Feminine Societies	Masculine Societies
Masculinity vs. Femininity	Assertiveness ridiculed Undersell yourself Stress on life quality Intuition	Assertiveness appreciated Oversell yourself Stress on careers Decisiveness
	Weak uncertainty avoidance societies	Strong uncertainty avoidance societies
Uncertainty avoidance	Dislike of rules- written or unwritten Less formulisation and standardisation	Emotional need for rules-written and unwritten More formulisation and standardisation
	Long-term orientation	Short-term orientation
Long term vs. short term orientation	Value of thrift and perseverance	Value of the respect for tradition Fulfilling social obligation Protecting one's "face"

3. M&A Case Study of BenQ and Siemens Mobile Division

3.1 Background of Handset Market

According to the research of Wireless Device Strategies (WDS) service, the potential demand of global mobile phone market is expected to grow from 772 million in 2005 to 1,129 million handsets in 2010.The global sales of mobile phones would expand with average growth rate of 8% year-on-year, but the wholesale average selling price (ASP) is predicted to decline 11% each year. The intensive price competition lowers suppliers' profits. On the other hand, expensive research and development expenditures in either low-cost cellular phone or highly integrated handsets increase suppliers' operation risk in the following years. 3G and WCDMA devices with multi-gigabyte memories, stereo sound, VHS resolution video and WLAN functions become the major trend. In the near future, those multimedia handsets called smartphones with an open

operating system which can download related applications, such as advanced imaging, web browsing, music, and email onto the device and run for it. Moreover, as the cost of memory and processing power continue to decrease, it is strongly believed that smartphones will drives the glowing demand and even low cost phones would be added simple applications. Consequently, smartphones which belong to a niche high-end market in 2005 would no longer exist in the following years. It is the reason why holding high-end technology not only in software service but attractive hardware device is the key to win the market and to threaten competitors and new entrants. IDC survey shows that although the global shipments of smartphones merely reveal 5%, the prediction in 2010 and thereafter will over 15%.

According to an investigation by IDC and ITU, in the global market Asia with the largest population and strong demand in the world has become the most powerful market in either growth rate or potential size. In particular, China and India account for 30% and 60% respectively by forecast of shipments growth in 2006. Likewise, the mobile phone market in the Middle East and Africa has expended rapidly; North America complying with 17% growth rate, whilst Western Europe's remaining 18% potential in 2006 is mainly driven by the replacement market.

Table 3 illustrates key players in handset market. Nokia was well positioned to gain the largest market share and continues to remain in its advantages to be the first mover in product development; Motorola has valuable brand equity in North America which in favour of its introduction of new products and market share maintenance. Samsung has obtained stable and growing market share in the recent years and it focuses on the strategy of launching smart phones, which will probably change the future market's dynamics. Moreover, LG, enjoyed good growth rate following closely on after Siemens by merely a slight difference.

Table 4: Worldwide Market Share of Major Handset Suppliers

Company	2004 Sales	2004 (%) Market Share	2005 Sales	2005 (%) Market Share
Nokia	207,231	30.7	265,615	32.5
Motorola	104,124	15.4	144,920	17.7

Samsung	85,238	12.6	54,924	12.8
Siemens	48,455	7.2	54,710	6.7
LG	42,277	6.3	51,774	6.3
Sony Ericsson	42,031	6.2	28,580	3.5
Others	144,644	21.6	166,985	20.5
Total	674,000	100	816,563	100

Source: http://gsmserver.com/articles/mobile_sales_in_2005.php

3.2 Introduction to case

Siemens AG, the largest electronic and engineering conglomerate in Europe, consists of six major business areas with 15 business units, which generated €75,445 million revenue in 2005. Siemens has already produced high-end quality mobile phones since the 1990's. However, the fiercely competitive and highly innovative handset industry drove new players to step forward and any careless delays on the part of the linchpin may result in unavoidable profit loss. The handset business contributes to approximately €4,527 million, 6% of Siemens AG revenue in total (Siemens AG Annual Report, 2004). In contrast, the mobile device division continuously posted sales losses, from €152 million in 2004 to €135 million in the first quarter of 2005. This predicament forced Klaus Kleinfeld, the CEO of Siemens, to carry out the organisational reconstructing plan, which included looking for a buyer to take over the mobile device business (Canibol H.P. 2006).

BenQ, a Taiwanese electronics and computer peripherals manufacturer with approximate annual sales of €4,064 million, is a major original equipment/design manufacturer (OEM/ODM) for global brand customers, such as Motorola and Nokia. It is headquartered in Taipei with factories in China, Taiwan, Brazil, and the Czech Republic, and with over 15,000 employees in the world. BenQ has five main business units, including a Display& Imaging Business Group (DIG), Networking & Communications Business Group (NCG), Digital Media Business Group (DMG), and Storage Business Unit (SBU). In particular, DIG is BenQ's core business, focusing on LDC monitors and generating 45% of overall revenue, followed by SBU, 28%, NCG, 16%, and DMG, 10%. NCG's major business is mobile devices sales; although its revenue had reached €660 million with increasing shipment of 15.5 million units, in 2004, the majority of those

shipments are not sold under the "BENQ" brand name (Qisda Annual Report, 2004). BenQ realised that failing to foster strong brand awareness among the market and consumers would restrict its business scenarios and scopes and hinder diversified developments. Besides, with an absence of the accumulation of customer loyalty due to the brand awareness, the company would be easily stuck in a dilemma relating to new customer creation or relationship maintenance of second-buy consumers. In the mean time, with no well-established mutual interaction with the market and consumers, the company may be insensitive to the fast-changing tempo in product innovation. This is believed to be the major concern for BenQ's business operation.

While the brand 'BenQ' was evaluated as one of the top five brands in Taiwan, the value was is estimated to be worth €268 million which was far behind other global brands, such as Samsung. The brand value of Samsung was 40 times that of BenQ's in 2005. BenQ was ambitious in expanding its business and to build up a valuable brand, although its mobile phones sold under the 'BenQ' brand merely accounted for the minority of its overall shipments. However, the lack of a potential global demand market to underpin its value creation resulted in difficulties in extending BenQ's global marketing coverage. Consequently, M&A turned out to be the most efficient and fastest alternative to strengthen BenQ's global platform (Invest in Taiwan, 2005).

3.3 The Failure of BenQ acquiring Siemens Handset Business

In October 2005, BenQ acquired Siemens's loss-making mobile device division and became the 6th largest handset marker in the world. Meanwhile, the revenue generation by mobile phone outputs would be raised from the original 16% to over 60% in BenQ. With this acquisition, the mobile device division is renamed as BenQ Mobile, which includes R&D design centres in Germany, Denmark, and China as well as manufacturing factories in Germany and Brazil. According to the acquisition agreement, BenQ Mobile obtains the right to sell the Siemens brand handset for 18 months and co-branded mobile phones (BenQ-Siemens) for five years. Moreover, Siemens would offer 250 million in cash to compensate BenQ with over a thousand patents granted as well; it looked like a good free deal to BenQ. On the other hand, the formal announcement of this acquisition caused

BenQ's share price decline over 2.7% on the subsequent day at the Taiwan Stock Exchange Market, while the increased share price of Siemens by over 2.5% reflected investors' reversed expectations toward this event. This phenomenon accords with the "information and signalling theory" mentioned in the earlier session (**The Financial Express, 2005**).

Unfortunately, in September 2006, BenQ Mobile filed for bankruptcy protection after it suffered a huge loss of approximately €840 million within one year (Wearden G., 2007). Although this action directly caused 3,000 German employees to lose their jobs, BenQ, the parent company, had no choice but to stop the money loss which probably endanger its existing operations. On the other hand, although better profitability was gained and it was reflected on the increasing share price after Siemens AG carried out its restructuring programme, the development of mobile phone and periphery industries in Germany faced the breakdown. Why was the outcome beyond all expectations? Was it a definite wrong decision for BenQ to acquire Siemens's mobile division? Or Should Siemens insist on the sale of its mobile division in the beginning (Canibol H.P., 2006)?

There were lots of reasons attributed for the failure of this merger. First of all, BenQ's huge loss of approximately €840 million in this acquisition already surpassed its share capital which was merely €630 million. Meanwhile, a sharp increase in debt, €408 million, already reduced BenQ's book value per share to NTD14. According to Taiwan Securities and Exchange law, if book value per share of a company lowers than NTD10, margin trading and securities lending of the firm in the open market would not be allowed. Therefore, to keep book value per share over NTD10 became BenQ's priority; otherwise, it will also offer competitors a good opportunity to largely acquire BenQ's shares with low price and further dominate this firm and its subsidiaries. In addition, it is crucial that the acquirer operates healthy financial operation before the merger is implemented; in particular, the acquiring firm is smaller than the target company. BenQ's sales already appeared slightly loss in the last two quarters prior to the acquisition; meanwhile, BenQ had to report a tremendous loss around €215 million quarterly from Siemens Mobile Division after the merger. Both unhealthy business and financial conditions strongly weaken the probability

of success of this acquisition. Next, many financial figures of BenQ Mobile predicted in this merger, was based on the market share that would be remained the same as year 2005, approximately 5.2%. However, the market share of Siemens mobile business faced sharply decrease from 5.5% in 2005 to 4.5% in 2006 after Siemens handset business was integrated with BenQ. Two main factors that were considered cause the loss of market share. One reason was that BenQ overestimated Siemens's intellectual property of GSM, GPRS and 3G in the mobile communication field could shorten product development schedule and enhance product functions, because there were merely 7-8 items of thousands patents obtained in this acquisition useful. In reality, Siemens was not well developed in 3G and multimedia mobile handsets as a result of weak software technology and it was a low-price rather than a high-end mobile phone provider in European market. Furthermore, Siemens's fragile sensitivity of consumer market also reflects on its delayed product innovation. This phenomenon soared BenQ Mobile's research expense significantly and destabilise its finance. Finally, culture difference undermined managerial efficiency and slowed down restructuring plan during integration period. Besides, BenQ was over-confident that their successful business experience in computer market development could help their market extension in mobile phone market, although BenQ was less familiar with mobile phone field in operation mode and managerial strategy; but challenging market condition and strong intervention of Siemens labour union in integration progress affected BenQ's cost-saving and expenditure-cutting in the financial burden.

4. Findings

4.1 Valuing Siemens Mobile Division Applying DCF Analysis with WACC

Due to the restricted information with regard to the financial data of mobile division in and prior to 2004 annual report of Siemens AG, the DCF analysis will depends on the financial statements that are built on the basis of existing figures with numerous assumptions and conditions to arrive at the final result. Table 6 details the analysis of the DCF evaluation of business value of Siemens Mobile Division (hereafter 'SMD') with the assumption that the division's operation is a 'going concern entity' in the future. This analysis is divided by three steps (Brealey R.H. et al., 2006).

Step1: estimate the timing and amount of expected cash flows. Panel A and B of Table 6 shows the pro forma financial statements and cash flow forecasts for SMD which is demanded to accomplish Step 1 of the DCF analysis (Titman S. and Martin J.D., 2008). Because the effective date of this acquisition by BenQ was on October 1, 2005, the expected incremental operating cash flow projections comprise planning period from 2006 to 2010 and terminal value which is based on the cash flow for 2011 and afterward. Terminal value is an estimate that encompassed any possible financial value in terminal period and it can be viewed as perpetuity. Moreover, the figures of Panel A are created by the assumptions described as follows.

●The revenue forecast (see Panel 6-A) reflects an assumed rate that BenQ Siemens could remain its market share after the merger at 5.5% between 2006 and 2007 and then followed by the increasing market share, 6.5%, from 2007 to 2008, then followed by 7% in the following periods. Average selling price (ASP) of handsets is kept unchanged, at €97.44. Meanwhile, these figures are based on the 5.8% average growth rate in the worldwide market that is showed in 2005 annual report of BenQ (see Table 5).

●The average production cost of Siemens pre-acquisition is €89 per handset and the cost of goods sold is assumed from 97% of ASP in 2006 to 95% of ASP in 2009 and 2010 gradually.

●BenQ plans to decline material costs of SMD by 10% and this activity is expected to be achieved by 2008.

●The expense of research and development accounts for 4% of revenue.

●Marketing expenditure and after-sales service expense, over €2.5 million, is the majority of selling, general, and administrative expense of SMD before the acquisition. BenQ Mobile intends to strengthen the cost saving on this portion in the following years.

●Tax benefits are assumed to be nil when the income loss comes out and tax rate is supposed to be in line with the standard rate of corporate tax in Taiwan, which is 25%.

In addition, the asset level listed in the pro forma balance sheets in Panel B reveals the assets that BenQ Mobile has to support the predicted sales. The assumptions and conditions which build up the balance sheet are described as follows.

●The basic pro-acquisition balance sheet of the mobile division is founded on Siemens 2005 annual report P.155 and 156.

●The straight line depreciation method is adopted and the useful life of property, plant, and equipment are assumed to be a five-year term without scrap value.

●Siemens AG recognised the €133 million exit related charge and that the commission of investment bank is included (Siemens 2005 annual report, P.155).Therefore, this charge would be ignored in BenQ Mobile financing calculation.

●BenQ plans to turnaround BenQ Mobile business from sales loss to profitability in two years, therefore the capital of approximately €760 million with assumption of 47.36% in bank loan and 46.36% in equity for its mobile subsidiary business to restructure. Therefore, BenQ's debt increases from the original level of €1.05 million up to €360 million. On Taiwan stock market share price of September 30, 2006, the market capitalisation of BenQ's equity was €353.4 million after the merger. Consequently, the capital structure weights of BenQ are 50.46% debt and 49.54% equity in market value.

●Moreover, Siemens AG would provide €250 million cash and service which is supposed to be released in 2005 and 2006.

●Intangible assets of BenQ Mobile comprising brand name, goodwill, and patents are presupposed to be 6% of Siemens 2005 intangible assets which is aligned with the percentage of mobile division revenue to Siemens consolidated sales.

●The current asset in 2005 is supposed to be 5% of sales and its future value of inventory and account receivables are also projected with sales growth at the same rate.

●The current liability is assumed to be 6% of annual sales projections.

Step 2: estimate the risk discount rate. The CAPM formula is suitable here to generate required return and then put it into WACC formula which produces risk discount rate, the return that BenQ expect to earn by the investment finally. First of all, risk free rate is assumed to be the interest rate of Taiwan Bank's one year fixed deposit, 2%. Market expected return is assumed to be the return on average weighted price index of Taiwan Stock Exchange between 1996 and 2007, 9.37%(Bloomberg,2007/12/31).The Bata value, 1.5, is taken from a mobile phone competitor-Motorola as a comparator to evaluate the beta value of Siemens mobile division and it comes from the equity coefficient unlevered to get a beta estimate (ßu) with removing Motorola's particular capital structure. Although Motorola and Siemens are in the same handset industry with similar business risk, their capital structures are varied which influences beta coefficients. Furthermore, to reflect BenQ's det/equity capitalisation ratio and the corporate tax rate by re-levering the unlevered equity beta (ßd) is required, and then a levered beta estimate (ßd) of the BenQ Mobile is produced. The last step, WACC, helps to arrive on to the discount rate (Titman S. and Martin J.D., 2008).

ßu formula = ßd/[1+(1-t)Debt/Equity]
ßu = 1.5/[1+(1-0.25)25.5%/74.5%]=1.19
BenQ Mobile ßd=1.19*[1+(1-0.25)*1.0185]=2.099
CAPM formula: E(ri)= rf+ ßi[E(Rm)-rf]
E(ri)=2%+2.099[9.37%-2%]=17.47%
WACC formula: Ke* We + Kd(1-t)*Wd
WACC=17.47%*49.54%+5% (1-0.25)*50.46%=10.55%
* ßu stands for Beta value without debt
ßd represents Beta value with debt

Moreover, the accomplishment of cash flows during the five year period (see Table 6-B) is followed by terminal value expectation. The 'Gordon Growth Model' is implemented here to calculate the present value of free cash flow which begins in 2011 and continues infinitely. Suppose the cash flow for the year 2011 and thereafter will grow at a constant rate, 5%, and then annually in perpetuity.

Moreover, the cash flow is assumed to be produced after the end of each planning period (Titman S. and Martin J.D., 2008).

Terminal value = FCF2010*[(1+growth rate) / (Cost of capital – growth rate)]
= FCF2010*Gordon Growth Model Multiple
BenQ Mobile Terminal value =60.4(1+5%) / (10.55%-5%) =1143

Step 3: work out the present value of the Siemens Mobile Device business (renamed as BenQ Mobile after the acquisition).Table 6-C shows that Siemens Mobile Division value which employs free cash flow valuation and then discounts it by cost of capital (WACC), 10.55%. Based on the DCF analysis, this acquisition is a positive-NPV investment, 137 million euro. The result seems to show an attractive business by NPV which could be expected in the future. However, the required injection of 760 million euro capital by BenQ will still make this takeover a loss business by 623 million euro.

Moreover, to evaluate merely the cash flows that is showed on Panel 6-C may not be sufficient to cover the market changes because many assumptions which contributed this outcome are based on the varied constant rate to project the demand. There are many uncertainties in the dynamic market, which may distort the original evaluation in cash flow projection. Therefore, as BenQ's managers, to consider some possible variations in projected revenue which helps company to develop vary feasible operating strategies during the decision-making process of acquisition is demanded. This activity would be necessary to enable the firm generate more considerations for potential risks declining when the investment is implemented.

To arrive at this purpose, 'Sensitivity Analysis' could be performed as a tool to evaluate key drivers that cause influences on the cash flows and help company to find out possible variables in specific industry. There should be three important value drivers with regards to the Siemens Mobile Division acquisition. These drives are investigated here and then compared with the real situation of BenQ's acquisition. First one is the estimated sales growth rate in the cash flows of Siemens Mobile business. The terminal value, another key driver, depends on the end of planning period cash flows that is calculated associating with post-

planning period returns. Moreover, the cost of capital plays a crucial role in cash flows amount as well (Titman S. and Martin J.D., 2008, P.290).

1. Sensitivity Analysis - Sales Growth Rate

In Table 5, the revenue forecast is built by the increasing market share projection of BenQ Siemens, from 5.2% to 6% during the periods to estimate the sales growth along with unchanged selling price assumption. However, when the firm faces fierce competitive business environment, to keep selling price fixed could decrease market share rather than remain market share in the same pace of global growth. Furthermore, to steadily reduce the COGS from 97% to 95% of the selling price in the projected periods also shows an unrealistic way. If a firm could not implement efficient managerial strategy, the cost of goods sold could account for the higher percentage to the sales, which might erodes profits; therefore, these assumptions are still optimistic, and cause positive NPV which probably misguide the evaluation result, then result in investment loss; in particular, if the decision marker believe that their managerial ability is capable of achieving challenging goals without careful consideration, the failure of M& A could be caused. BenQ's merger may be an example for this condition.

In 2005, Siemens already experienced a drop in its market share which only accounted for 5% around of worldwide market share. When this trend is adopted into the calculation, a reversed outcome is generated. 5% market share is assumed to be the same during the projected periods with steady reducing selling price ratio per year, 2%; additionally, BenQ failed to employ restructure plan to achieve cost-cutting strategy in Siemens handset business, so COGS should be remained at 97% 0f ASP rather than gradually decreases as the earlier supposition. Therefore, to re-evaluate above realistic conditions, negative NPV, -790 million euros, is produced (see Panel 7-C).This number excludes terminal value due to the negative return continues the whole projected period. Thus to calculate the terminal value is meaningless because the investment appears a loss business definitely. This result seems more close to the real situation that BenQ Siemens faced in 2006 rather than the earlier calculation result of positive NPV, 137 million euro.

2. Sensitivity Analysis – Terminal Value

The terminal value of Siemens Mobile Division in 2011 and thereafter is appraised by the Golden Growth Model multiple (g=5%). In the earlier analysis at Panel 6-C, the Golden Growth Model multiple, 18.9, is used to estimate the €1143 million cash inflows. However, if the growth rate is 0, the growth multiple is calculated by 18, the terminal value would be declined by €55 million. Likewise, this analysis is assumed to hold everything constant except for the Golden Growth Model multiple. While BenQ Siemens's real state is considered with finite timeline (no terminal value), the loss would be diminished by €44 million. It means cash flow of the last year in the projected period could be a major role to contribute the value which influents the valuation estimate.

3. Sensitivity Analysis – Cost of Capital

If BenQ acquires Siemens Mobile business, to pursue a growth strategy is required for future development of company. Likewise, higher return is desirable for shareholders due to the existence of higher risks on the market. Internal Rate of Return (IRR), the simple method as the baseline to measure whether or not the discount rate is required to be higher. The IRR for this acquisition is calculated as follows based on the cash flow that are listed in Panel 6-C and €760 million in investment capital. Those conditions provide the answer that the investment has IRR, 1%, which is lower than appropriate discount rate (WACC), 10.55%. In other words, according to IRR decision rule, this acquisition should not be undertaken because it accompanies higher cost of capital without profitability in the future.

NPV=-760+[-436/(1+IRR)]+[-171.6/(1+IRR)^2]-71.6/(1+IRR)^3
-6.6/(1+IRR)^4 +1203.4/(1+IRR)^5
IRR=1%

Table 5: Mobile Phone Market Demand Forecast

Mobile Phone Market Demand Forecast						
unit: m handsets	2005	2006	2007	2008	2009	2010
Worldwide Market potential	772	817	864	914	967	1023
BenQ Siemens Market Share	42.46	44.92	56.17	59.43	67.71	71.64
Remark: 1.Worldwide market potential is assumed to increase at 5.8% average growth rate ; 2.BenQ Siemens market share is assumed to be 5.5% between 2005 and 2006 ; 6.5% market share is expected to be achieved from 2007 to 2010						

Source: Nokia/BenQ 2005 annual report

Table 6: Estimating Siemens Mobile Division Value Using DCF Analysis with WACC

Estimate the Amount and Timing of the Planning Period Future Cash Flows

Panel 6-A: Pro Forma Financial Statements

	Pre-Acquisition	Post-Acquisition	Pro Forma Income Statement				
Unit: m€	2005	2005	2006	2007	2008	2009	2010
Revenue	4137	4137	4377	5473	5791	6598	6981
Cost of Goods Sold	4013	4013	4246	5254	5501	6268	6562
Gross Profit	124	124	131	219	290	330	419
Research and Development	165	165	175	219	203	231	244
Selling, General and Administrative	250	250	200	180	150	100	100
Other income	0	0	0	0	0	0	0
EBIT	-291	-291	-384	-191	-63	-1	75
Interest Expense	0	0	9	7	5	4	4
Tax @ 25% (2005)	0	0	0	0	0	15	20
Net(loss) Income	-291	-291	-210	-198	-68	-20	51

(continued)	Pre-Acquisition	Post-Acquisition	Base Line Pro Forma Balance Sheet				
Unit: m €	2005	2005	2006	2007	2008	2009	2010
Current Assets							
Cash and Cash Equivalent			58	58	58	58	58
Inventory	104	104	107	128	107	143	140
Account Receivable	89	89	100	125	130	140	160
Fixed Assets							
Property, Plant and Equipment	52	52	52	41.6	31.2	20.8	10.4
Depreciation			10.4	10.4	10.4	10.4	10.4
Net Property, Plant, and Equipment	52	52	41.6	31.2	20.8	10.4	0
Intangible Assets	200	200	200	200	200	200	200
Total Assets	445	445	507	542	516	551	558
Current Liability	228	228	248	303	320	350	360
Long-Term Liability							
Bank Loan@ 6%	0	0	150	120	85	70	65
Other liability	61	61	59	69	61	81	83
Total Liabilities	289	289	457	492	466	501	508
Equity	0	50	50	50	50	50	50
Total Liabilities and Equity	289	339	507	542	516	551	558

Panel 6-B: Cash Flow Estimate

Unit:m €	2005	2006	2007	2008	2009	2010
Net Operating Income	-291	-384	-191	-63	-1	75
Less:Taxes @ 25%	0	0	0	0	0	18
NOPAT	-291	-384	-191	-63	-1	57
Plus: Depreciation	0	0	10.4	10.4	10.4	10.4
Operating Cash Flow	-291	-384	-180.6	-52.6	9.4	67.4
Less:Changes in Net Working Capital	0	52	-9	19	16	7
Less:Capital Expenditure in fixed assets	0	0	0	0	0	0
Free Cash Flow	-291	-436	-171.6	-71.6	-6.6	60.4

Panel 6-C: Divisional Value

Updated Value (in millions of euro)	2005	2006	2007	2008	2009	2010
Free Cash Flow of Assets		-436	-171.6	-71.6	-6.6	60.4
Terminal Value of Assets						1143
Discount @10.55% for P.V.	0	-347.4	-156.3	-47.6	-0.7	905
PV Value (Total)	137					

Table 7: Estimating Siemens Mobile Division Value Using DCF Analysis with WACC(Sensitivity Analysis)

Panel 7-A: Pro Forma Financial Statements

	Pre-Acquisition	Post-Acquisition	Pro Forma Income Statement				
Unit: m€	2005	2005	2006	2007	2008	2009	2010
Revenue	3761	3761	3941	4127	4321	4526	4743
Cost of Goods Sold	3648	3648	3823	4003	4192	4345	4554
Gross Profit	113	113	118	124	130	181	190
Research and Development	150	150	158	165	151	158	166
Selling, General and Administrative	250	250	200	180	150	100	100
Other income	0	0	0	0	0	0	0
EBIT	-288	-288	-384	-191	-172	-77	-76
Interest Expense	0	0	9	7	5	4	0
Tax @ 25% (2005)	0	0	0	0	0	0	0
Net(loss) Income	-288	-288	-210	-198	-177	-82	-76

Panel 7-B: Cash Flow Estimate

Unit: m €	2005	2006	2007	2008	2009	2010
Net Operating Income	-280	-384	-191	-171	-78	-77
Less: Taxes @ 25%	0	0	0	0	0	0
NOPAT	-280	-384	-191	-171	-78	-77
Plus: Depreciation	0	0	10.4	10.4	10.4	10.4
Operating Cash Flow	-280	-384	-180.6	-160.6	-67.6	-66.6
Less: Changes in Net Working Capital	0	52	-9	19	16	7
Less: Capital Expenditure in fixed assets	0	0	0	0	0	0
Free Cash Flow	-280	-436	-171.6	-179.6	-83.6	-73.6

Panel 7-C: Divisional Value

Updated Value (in millions of euro)	2005	2006	2007	2008	2009	2010
Free Cash Flow of Assets		-436	-171.6	-179.6	-83.6	-73.6
Terminal Value of Assets						0
Discount @10.55% for P.V.	0	-394.4	-140.43	-130	-82	-44.5
PV Value (Total)	-790					

Table 8: Market Multiples

Panel 8-A: Equity Multiple

Equity Multiples	Nokia	Motorola	Sony Ericsson	Average
Price/1Y Sales	1.7	1.3	2.6	1.9
Price/2Y Sales	1.9	1.4	2.8	2.0
Price/1Y Asset	2.6	1.3	1.9	1.9
Price/2Y Asset	2.6	1.4	2.0	2.0

Panel 8-B: Total Capital Multiples

Total Capital	Nokia	Motorola	Sony Ericsson	Average
EV/1Y Sales	1.9	1.7	3.06	2.2
EV/2Y Sales	2	1.8	3.3	2.4
EV/1Y Asset	2.9	1.8	2.2	2.3
EV/2Y Asset	2.9	1.9	2.4	2.4

Panel 8-C: Expected Share Price of Siemens Mobile Division

8-C-A	(1)Averaged Multiples	(2)Siemens handset Share price(€)	(3)Weight	(4)=(1)*(2)*(3) Total
Price/1Y Sales	1.9	0.7	30%	0.4
Price/2Y Sales	2.0	0.7	20%	0.3
Price/1Y Asset	1.9	0.7	30%	0.4
Price/2Y Asset	2.0	0.7	20%	0.3
Expected Share Value				1.4
8-C-B	(1)Averaged Multiples	(2)Siemens Handset EV(m€)	(3)Weight	(4)=(1)*(2)*(3) Total
EV/1Y Sales	2	9884	30%	5930.40
EV/2Y Sales	2.2	9884	20%	4348.96
EV/1Y Asset	2.1	9884	30%	6226.92
EV/2Y Asset	2.2	9884	20%	4348.96
Expected EV				20855.24
Less: liability				4899
Expected Equity Value				15956
Number of Shares				891,075,711
Expected Share Value				18

Panel 8-D: The Final Expected Share Value of Siemens Handset Division

€1.4*40% + €18*60%=€11.36

4.2 Market Multiple Approach

There are two multiples applied in the calculation. The first one is the equity multiple. It equals the figure that common share price divided by specific numbers on the financial statement, such as price/EPS, price/sales, and price/assets. The other is the total capital multiple. It can be used to decrease the distortion of these companies if their capitals structures appear varied patterns. This multiple is produced by enterprise value divided by sales and assets (Stampf et al.1992). However, because mobile division is a loss-making business which brings negative impact to Siemens AG group's EPS; therefore, the PE ratio is not adopted here. Due to the lack of detailed financial statement of Siemens mobile division, its related financial figures, such as asset value which is calculated here, are assumed to be proportionately equal to the weight of its divisional sales to Siemens AG revenue in total, 6%, in this analysis.

On the other hand, Nokia, Motorola, and Sony Ericsson are selected as the comparable firms to Siemens mobile division. In these three comparables, Nokia and Motorola are profitable company; however, Sony Ericsson seems to have a more similar background with BenQ-Siemens. Ericsson, the Swedish telecoms equipment maker, desired a merger to save its loss-making handset division. Meanwhile, Sony, was a marginal handset supplier. A merger from joint venture was formed in 2001(Dominic W., 2001). Moreover, a new firm "Sony Ericsson" also experienced a business loss period after the merger. In 2004, Sony Ericsson finally turned around to be a profitable company (Foo F.,2001).

In the Panel 8-A, Price/1Y Sales represents the 2004 market price divided by 2004 sales; Price/2Y Sales depicts 2004 market price divided by the averaged sales of 2004 and 2003. Likewise, the following columns of Price/Asset ratios are listed and calculated in the same way. The averages are produced and then given weights which represent the importance in various levels. The year which closes to the date of acquisition, 2005, is considered as priority to be assigned higher weights. In other words, the ratios of 2004 would be given higher weight than the average ratio of 2004 and 2003. Moreover, the weight of sales directly links with profitability performance which would be also offered more weights than the asset ratio. These rules are applied to Panel 8-B as well. Furthermore, in Panel 8-B, enterprise value (EV) is the sum of debt and all equity at market

value lessen cash and cash equivalent. Moreover, EV here stands for the mobile division value.

Panel 8-C lists the calculation which is composed by four parts. The first element is the averaged multiples of comparable firms. The second element is the Siemens handset division share price and divisional value (EV) separately. This column assumes that mobile division's contribution to the share price is as same as the ratio of divisional revenue to Siemens group (see 8-C-A). Moreover, in the 8-C-B, EV of handset division is calculated at certain percentage of Siemens Group EV, which is assumed to be as same as the ratio of divisional revenue to Siemens group. Then the fourth element is multiplied by averaged multipliers, different weights and the handset divisional value. Then the expected total EV deducts liability to generate the expected equity value. The outcome of expected share price is produced by expected equity value divided by the number of outstanding shares. The weights here are also assigned according to the same rule in Panel 8-A and 8-B. The results disclose the expected share price of Siemens mobile division in terms of equity multiple and total capital multiples individually. As a result, as what Panel 8-D demonstrates, the expected share price in equity multiples would be multiplied by 40% weight in equity multiple and 60% weight in capital individually. After that, the expected share value of Siemens mobile division is generated at €11.36 in total. The reason to give 40% and 60% weights individually is because the comparable firms are in debt; under this condition, the capital multiple is considered to be an evaluation tool which is less influenced by debt than the equity multiple. Therefore, the total capital multiple is assigned with more weights than the equity multiple at this evaluation.

4.3 Comparison of Financial Evaluation

It is obvious that DCF analysis as well as a valuation which employ comparables-based multiples are implemented here to supplement each other. When the analysis comes out the figures, it still left with problems of how to select these estimates with utilising certain judgement to arrive at the final investment conclusion. The judgement is achieved by the quality of available information and the evaluation purpose- does this investment is worth for BenQ

to acquire a loss-making business, although Siemens is an attractive brand name to consumer product market?

In the late 2006, BenQ-Siemens already suffered a huge lose around 840 million euros in the first year of post-merger. If we compare outcomes of DCF and comparable multiples methodologies with BenQ's real situation, the differences are showed apparently.

The reality is that using DCF requires rough estimate of future free cash flow and discount rate. An optimistic projection to future business indeed influences investment value a lot. A fixed selling price, fixed cost of goods sold, and even projected market share which brings an attractive investment with high NPV showed a strong contrast to BenQ-Siemens's post-merger real situation. When the market share did not remain in the same position or even decline than before, selling price fall down, and cost-cutting policy in an organisation did not implement well, an valuable investment which was earlier expected became a serious damage to the acquirer finally.

Utilising valuations ratios to appraise investment value can avoid dramatic projections; in particular, these projections of cash flow and discount rate are not easy to be accurate all the time. However, to identify comparable transitions or comparable firms are challenging. Because each investment in different timeline has its unique value which is difficult to be quantified completely. BenQ is a relatively smaller company to Siemens AG group, but it chose to take over Siemens handset division. It is a rare case in the M&A historical record. On the other hand, to select a set of comparable companies for BenQ in the same field might be not difficult, but to acquire a bigger business than BenQ's own scale with specific enterprise purpose is not easy to search comparables. Moreover, a loss-making Siemens handset business is hard to find similar comparable, because Noika and Motorola are profitable companies; although Ericsson was a loss-making firm before the merger with Sony, these two firms' scales are relatively equivalent than the scale difference between BenQ and Siemens. This is also the reason why to apply the average value of Nokia, Motorola, and Sony Ericsson together in the ratio valuation. Because to search a perfect comparable

in every aspect is approximately impossible, the selection is likely to comprise a subjective element to some extent.

Panel 8-D demonstrates BenQ-Siemens share value which is a positive sign as well to this merger. But real share value to BenQ in the post-merger did not perform a good trend. BenQ's own financial structure with unexpected mobile market reversal also contributed the falling share value. In other words, to select an appropriate metric to assess an investment also depends on the supposition that a scaled value of the metric where the investment attributes is the scaling variables. BenQ's financial position is relatively weak to support this merger to be successful because it is a small business to acquire a big one. We might explain that in reality, the metric value is impossible completely equal the investment attributes and then contribute to BenQ's evaluation toward Siemens handset division in the beginning. This is also the reason why the weights are given during the calculation process of market comparable method. It might be subjective but necessary.

5. Discussion

5.1 The Motives of BenQ's Acquiring Siemens Mobile Business

In reality, handset suppliers seeking for collaboration in terms of efficient resource utilisation and co-branding benefit is not uncommon; but the actual effect is probably disputable. Take the acquisition of Sony and Ericsson as an example. The integration of these two companies' handset business initially brought a significant sales loss of 28%, registering a mere 6 million shipment volume, which undermined its previously projected economic benefits on the market (Foo F., 2001). This acquisition took several years for the new company, Sony Ericsson, to be directed on the right track. In particular, this event was not a case of the small firm taking over a larger one but a combination of two entities with an equivalent business scale. To some extent, mergers and acquisitions incorporate diverse challenges and uncertainties on a case by case basis. The motives for BenQ in completing this merger were as follows:

First of all, building and developing a global brand. This is the most crucial driver in this M&A. In the previous three years, marketing expenditures cost BenQ

roughly €70 million. As a general rule, to obtain one company's brand for marketing, 2% of its sales has to be paid as the royalties. If BenQ has to pay for "BenQ-Siemens" for 5 years, the license fee would be 450 million. From this stance, the acquisition seems valuable to BenQ, which strongly desired a powerful brand name. In addition, to acquire key technology contains patents and experienced R&D teams. BenQ believed that Siemens's core patents, such as 3G, GPRS, and GSM, and its focus on technology development is not only significantly helpful to future development of new products, but also improve BenQ's innovation technology. Thirdly, the aim was in expanding geographical markets and increasing market share. Asia is BenQ's chief marketplace while Siemens hold stronger sales channels in Europe and Latin America. Therefore, the integration of these two firms can be completed to reinforce the global platform. At the same time, the total outputs that under the mark of "BenQ-Siemens" extended BenQ's brand awareness to more consumers (Wei L.Y., 2005).

Finally, the merger was to enhance BenQ's scale of economics. BenQ aims at becoming a well-known global brand since the brand's early days in 2001. However, the huge amount of marketing expenditure and relatively short-term brand cultivation cannot afford to cope with competition coming from other powerful brand equities. As the shipment of BenQ's own brand of handsets was extraordinarily small, it did not bring sufficient visibility to consumers given the relevant marketing expenditure. But, when the quantities are combined with shipments of Siemens mobile division, projected to be 40 million to 50 million units, the brand visibility will be highly intensified.

5.2 Failures to the Merger

Conversely, the exit from this M&A by BenQ in 2006 caused controversial discussion not only in Taiwan but in Germany. Taiwan market was concerned that if local manufacturing suppliers cannot break the current destiny of OEM and ODM business models to pursue establishment of brand equity establishment successfully in the global marketplace. In contrast, Siemens and the German society protested against this behaviour because it damaged employees' rights for jobs, and the Siemens AG group was also blamed for dealing with its handset business, which was tough to be salvage, in wrong and

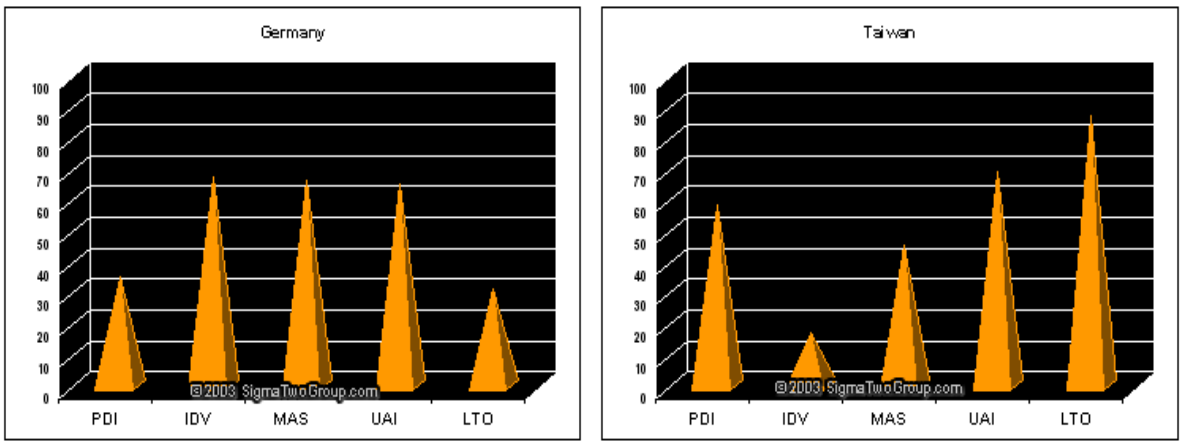
unfair way (Wearden G., 2007). To examine the failure of this case, many aspects of considerations have to be covered to discover implicated clues and causes.

First of all, the decrease of its own business destabilised BenQ's finance situation. Before the formal acquisition, BenQ's own business had experienced a €22 million sales loss in the earlier three quarters, and this performance had already destabilised its original financial position in 2005. Likewise, this misfortune had continued to spread in 2006, with the handset market share, regardless whether they are sold under the BenQ or BenQ-Siemens brand, shrinking by 3% in total as compared to pre-acquisition figures. Moreover, its own business of handset OEM manufacturing seemed to be affected due to its intention to cultivate a brand for the mobile devices. In all probability, BenQ might have already been viewed as a potential competitor by its original OEM customers such as Motorola, and this phenomenon could be observed from the reduction in its orders, which prompted BenQ to look for other cooperative partners (Wei L.Y., 2005). According to the definition of M&A by Buckley P.J. (2002), this case fits in not only under horizontal but also vertical merger classification, because BenQ and Siemens sold similar products in the same field. Although Siemens was not BenQ's original OEM customer, BenQ's manufacturing ability along with Siemens's existing marketing platform apparently threatened BenQ's OEM mobile phone customers, who did not undertake production but were Siemens competitors. This influence, I believed, should be incorporated as a form of vertical forward merger. Meanwhile, it could be found that when horizontal and vertical merger co-exist, conflict may come before synergy; in particular, if the company run specific business patterns on the market.

In addition, the culture difference caused the difficulty in integration (Wei L.Y., 2005). As Table 9 shows, Germany has a lower score in power distance and long term orientation but quite a high and masculinity compared with Taiwan. Meanwhile, both countries appear to the same degree in uncertainty avoidance. The above summary points out the roots of cultural differences. In other words, German believes that hierarchy is designed for convenience with the tendency of tasks prevailing over relationships. They respect traditional values and take social obligation seriously, with the characteristics of assertiveness and decisiveness, shown to be a little bit higher tendency than Taiwan figures.

Conversely, Taiwanese have a higher intention to be a follower rather than a creator, and is concerned more with relationship maintenance rather than task achievement. Meanwhile, the people in Taiwan stress on the future orientation of perseverance and thrift. Besides, the gap between man's values and woman's values is smaller in Taiwan than in Germany. Therefore, the management activity in one country is culturally dependent, which means what works in one country may be not fit in another; in particular, when the obvious difference exists in the eastern and western countries. In order to keep talented people in the mobile division and show respect for autonomy, BenQ appointed its former executive – Chemens Joos as the new executive who was in charge of the business operations in the new subsidiary, BenQ Mobile. The purpose conducting this management practice, in terms of keeping original middle and top managers, also includes retaining good communication with union organisation. However, this management pattern did not bring any interaction between the parent company and its subsidiary and instead enlarged the detrimental gap. Assertiveness was probably another problem associated with compromise regardless of product design or business goal. Besides, the Taiwanese follows a hierarchy and feedback system, which goes along with each layer; but a German with high confidence has gotten used to breaking the line, which often makes other members lose faces and worsen the relationship and cooperation on both side.

Table 9: Geert Hofstede Culture Dimensions-Germany and Taiwan



Resource: http://www.geert-hofstede.com/hofstede_germany.shtml
Resource: http://www.geert-hofstede.com/hofstede_taiwan.shtml

Moreover, delay in production development weakens the result of integration. Handset technology involves the development of both hardware and software, whereas the design of software cannot fit in the mobile phone as what BenQ expected in the beginning and after it passed the test condition which resulted in the order loss in retailer market. Meanwhile, the tempo of changing market cannot accept an extremely complex design which is out of date and test procedures without any flexibility and compromise which protracted time to market. Thus, there were merely two models which are being mass production. Conversely, failed projects were extremely costly but gained nothing.

Conclusion and Recommendations

This was a rare case in the record of M&A activities because BenQ, a small entity, took over Siemens Mobile Device Division, a larger business unit. According to Y.H. Yeh (2005), "Growing strong must come before growing big. A huge amount of money is required to deal with future uncertainties." In other words, BenQ must be strong in its financial operation with quite healthy and stable business growth.

The motives of this acquisition displayed the different stances of Siemens and BenQ. First of all, Klaus Kleinfeld, the CEO of Siemens AG, took over this position in 2005 and aggressively enforced the restructuring plan in order to bring Siemens AG back into profits. Therefore, addressing the concern with regard to sectors that fail to achieve business goals and undermining business risk through top managers is an essential motive (Amihud et al. 1981) for this M&A. Furthermore, top managers' held over-optimistic manners with respect of Siemens AG, in believing that BenQ can afford to turn the loss-making mobile division around where Siemens AG failed; at the same time, BenQ's managers overestimated their capability to deal with complicated cross-board business operation and managerial issues during the integration of two firms; this situation is called "hubris Hypothesis" (Roll, 1986). BenQ would like to pursue fast sales growth with a strong brand, accompanying managers' belief of their rewards co-related with sales to some extent, and it is believed a case of the "Growth Maximisation Hypothesis" mentioned by Muller (1969).

The behaviour of suspending obligatory capital injection in this takeover by BenQ raised another surmise in the market. Since BenQ acquired the Siemens mobile division, the average loss per day was 2.3 million complying with its share price falling from NTD 35 to NTD17 in the end. The shrink of BenQ's shrinking market value endangered its position because the low price shares were at risk to be acquired unfriendly in a hostile manner by other competitors. If this situation happens, BenQ would not only lose its own business along with difficulties in liquidation but also jeopardize its ownership in other subsidiaries. Some theories suggested that M&A activity can weaken the principle-agency problem because managers would perform better to avoid being acquired. However, if the acquirer does not select and evaluate the target company well, it may become other competitors' prey as well. Consequently, the principle-agency problem is reinforced in the organisation due to the wrong investment decision. Likewise, as Jenson (1986) highlighted that wrong utilisation of free cash flow in a takeover may lead to another conflict between managers and shareholders.

Management model affects the successful integration in the post merger. It is difficult to judge whether the acquisition is a good investment or not at that moment, but to manage it in an appropriate manner is an alternative that can be chosen afterward."The underlying belief is that, the sooner the integration effort comes to an end, the sooner the business can proceed with 'business as usual'. Alternatively stated, speedy integration is risky to operations and can lead to untagged synergy potential due to the limited knowledge merger parties have with regarded each other's operations." (Papathanassis A.2004, P.26)

As has been mentioned in the earlier pages, BenQ's parent company implemented a gradual revolutionary style in cross-board management. BenQ mobile (Siemens Mobile Division renamed in the post acquisition) enjoyed a high degree of autonomy in terms of management, practices, and culture. Yet, the company's operation efficiency was extremely minimised and it went along with financial destabilisation. In reality, to appoint the same group of managers who came from a former loss-making division and to ask them to turn the business around by bringing efficient changes to the organisation was a big mistake by BenQ, which incorrectly weighed in its managerial strategy. At the same time, BenQ itself lacked sufficient information associating with Siemens union which

possess strong power to intervene in the decision-making process. To underestimate the union organisation in Germany is another fault. It caused the related revolutionary policies that were beneficial to BenQ business being hindered. A slow integrated process accompanies inherent strains because mutual intentions relating to the acceptance of each other's best practices and underperforming activities required to be adjusted. Thus, to demand a fully consolidated culture and operation takes lots of time and is definitely a dilemma. Losing in timing equals losing the market. Most important of all, the adoption of management patterns significantly affects the outcome of complex challenges encountered.

However, how to choose managerial practice to speed up the integration in terms of resource transfer and declining exposure to the negative effects depends on the thorough understanding of the target company that the acquirer intends to buy. "Due diligence" is the best tool to provide related information which supports the evaluation. As a result, the acquirer has its responsibility to examine the accuracy in the acquisition agreement and fulfil investors' requirements and concerns. After all, the incompleteness of due diligence not only wrongly connect with performance of post-acquisition which provides incorrect financial projections to evaluation in pre-acquisition but also underestimate business risks. Under this circumstance, it will contribute to the failure of the merger and diminish shareholders' profits ultimately.

There is no single element that can accomplish a perfect investigation associated with the value of an acquisition. The financial evaluation of DCF approach in terms of WACC requires many presuppositions to work out the result which demands as much objective information as possible to overcome subject factors. Likewise, the use of the Market Multiple approach also requires detailed information of market competition with similar comparators and relatively rational reflections of market and investors for decreasing errors possibly occurred in the findings.

On the other hand, regardless of the high risk and failure rate in the M&A waves, there are still many companies seeking powerful growth through acquisitions. The major driver, I personally believe, are investment banks which play key roles to dominate the M&A market. The emergence of investment bank

accelerates the transaction of M&A. In many cases, sellers hire advisors to search for the buyers. Through the successful match up, the intermediaries obtain at least 1% of transaction amount and it is quite a profitable business scope in banking field (Mergers & Acquisitions, 2009). Although buyers can also save time and money to acquire representation of the target firm through investment banks, to those intermediaries, to some extent, target firms are their products with attractive packaging for promotion. The professional consultancy on negotiation and valuation is the existential value of those advisors. Similarly, screening exactly useful analysis and ignore dissembling information demand the managers of companies to express interests in acquisition to conduct well. Meanwhile, any possibility that managers and intermediaries both pursue the same interests and then put their mutual interests at the expense of shareholders' value creation to worsen principle-agency problem is a crucial topic for further investigation. Moreover, to some extent, M&A activity involves an opposite stance against corporate social responsibility (CSR). When the firm faces fierce competition on the market and has no choice but implements cost-cutting measurement for restructuring, should the social obligation fulfilment over a firm's profitability? The controversial issue can also bring in the impressive implication and deepen the discussion as well.

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