

2012

Genesis Case Study

**Shadow
Management**

Group C

Technology Entrepreneurship

CMP7037

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1 Business Strategy

1.1 **Introduction**

In order to best advise Genesis on business strategy it is first best to describe and review the specific overall business strategy theories that will be applied. The specific theories that will be looked at in this piece are Porter's Five Forces Model, Porter's Five Generic Strategies, Value Chain Analysis and Ansoff's Growth Vectors along with an overarching view of what Business Strategy is with a view to gaining a sustainable Competitive Advantage and why this is important in any business market, and specifically technology entrepreneurship.

Following on from the literature review of these theories, they can be applied for the Genesis Case Study, in order to best advise Genesis on general business strategies for them to best move forward in their business.

1.2 **Literature Review**

1.2.1 Business Strategy (Gaining a Sustainable Competitive Advantage)

A company's strategy consists of the competitive moves and business approaches that managers are employing to grow the business, attract and please customers, compete successfully, conduct operations, and achieve the targeted levels of organisational performance (Thompson et al, 2010).

A Competitive Advantage is described by Michael Porter (1985) as being at the heart of a firm's performance in competitive markets. Porter goes on to say that Competitive Advantage grows fundamentally out of the value a firm is able to create for its buyers.

In addition Grant (2008) states that when two or more firms compete within the same market, one firm possesses a competitive advantage over its rivals when it earns (or has the potential to earn) a persistently higher rate of return.

As Thompson et al (2010) state, there are 4 different levels of strategy within a company. There is the corporate strategy; this is the overall companywide 'game plan' or vision for managing the business as a whole. The corporate strategy is created and managed by the

company's executive, often with the Chief Operating Officer (CEO) ultimately accountable. Below this, in a hierarchy, there is the business strategy; this looks at how to strengthen market position and gain a sustainable competitive advantage. The business strategy is usually managed by the general managers within an organisation. Below this there is the functional strategy; this adds detail to the business strategy and is usually managed by the heads of any specific functional areas. Finally there is the operating strategy; which adds further detail to the functional strategy with the day to day running of the business and is usually managed by the middle managers. An example of this type of hierarchy for company strategy can be seen in figure 1.1 overleaf.

However, Grant (2010) focuses on there being two basic levels of strategy within an enterprise; Corporate Strategy and Business Strategy. Grant describes corporate strategy as that which, "defines the scope of the firm in terms of the industries and markets in which it competes" and Business Strategy as "how the firm competes within a particular market or industry. (Grant, R. 2010. *Contemporary Strategy Analysis*. p19)

There are two main views that can be considered when thinking of a strategy for an organisation. A Market Based View is one where the external environment is analysed in order to have the greater influence on a chosen strategy. Or a Resource Based View is one where the internal capabilities and organisation are key in formulating strategy to achieve sustainable competitive advantage in its markets and industries (Henry, 2008).

Key in the case of Genesis will be creating the best overall strategy dependant on how they are best to locate and direct themselves in the market space.

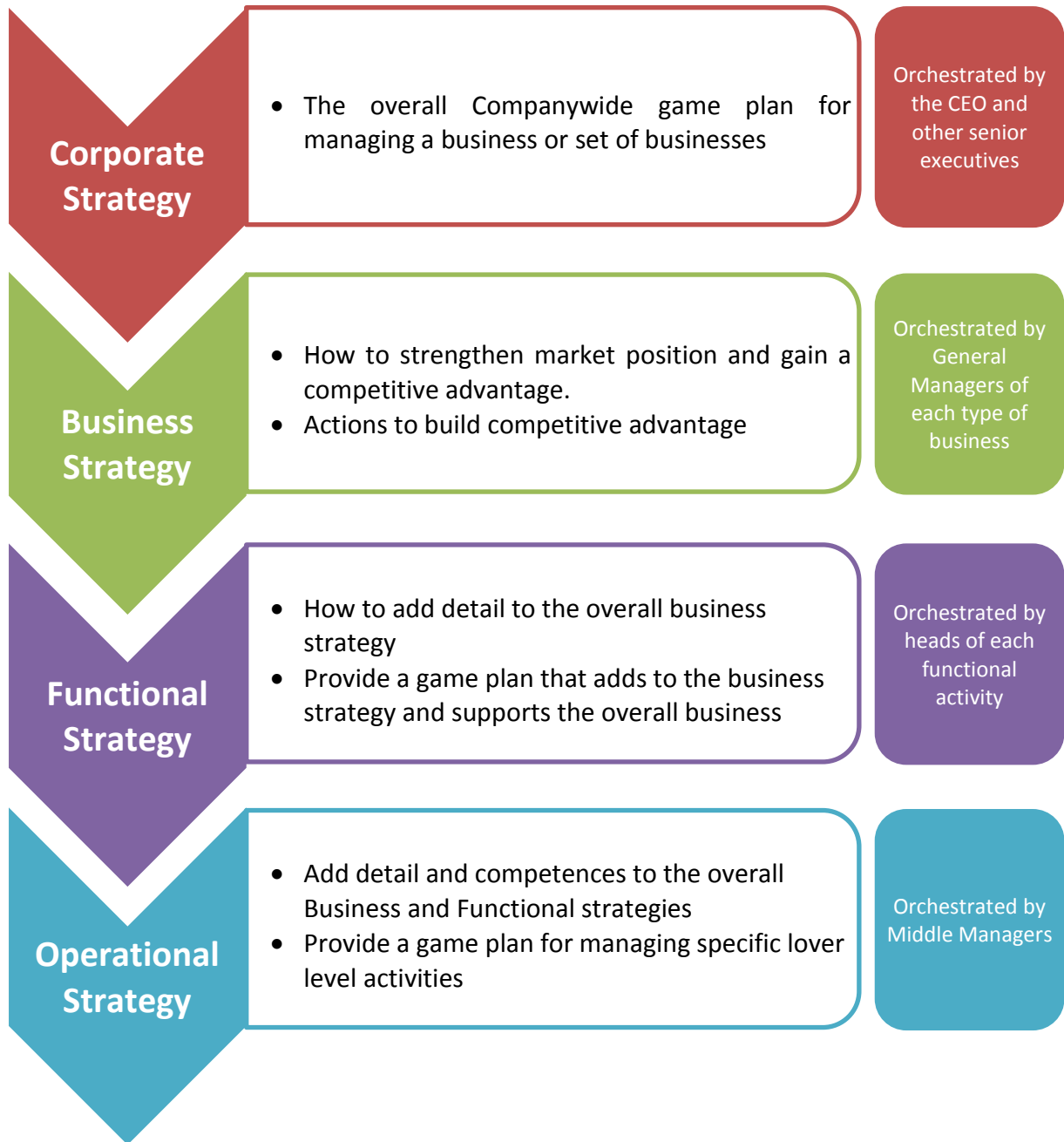


Figure 1.1 - Four Level Company Strategy Hierarchy.
Adapted from Thompson et al (2010).

1.2.2 Porter's Five Forces

When analysing an organisations ability to find a sustainable competitive advantage, one need to look no further than Michael Porter's Five Forces Model of Competition for a key tool in doing so; see figure 1.2 as will be used further in the case of Genesis.

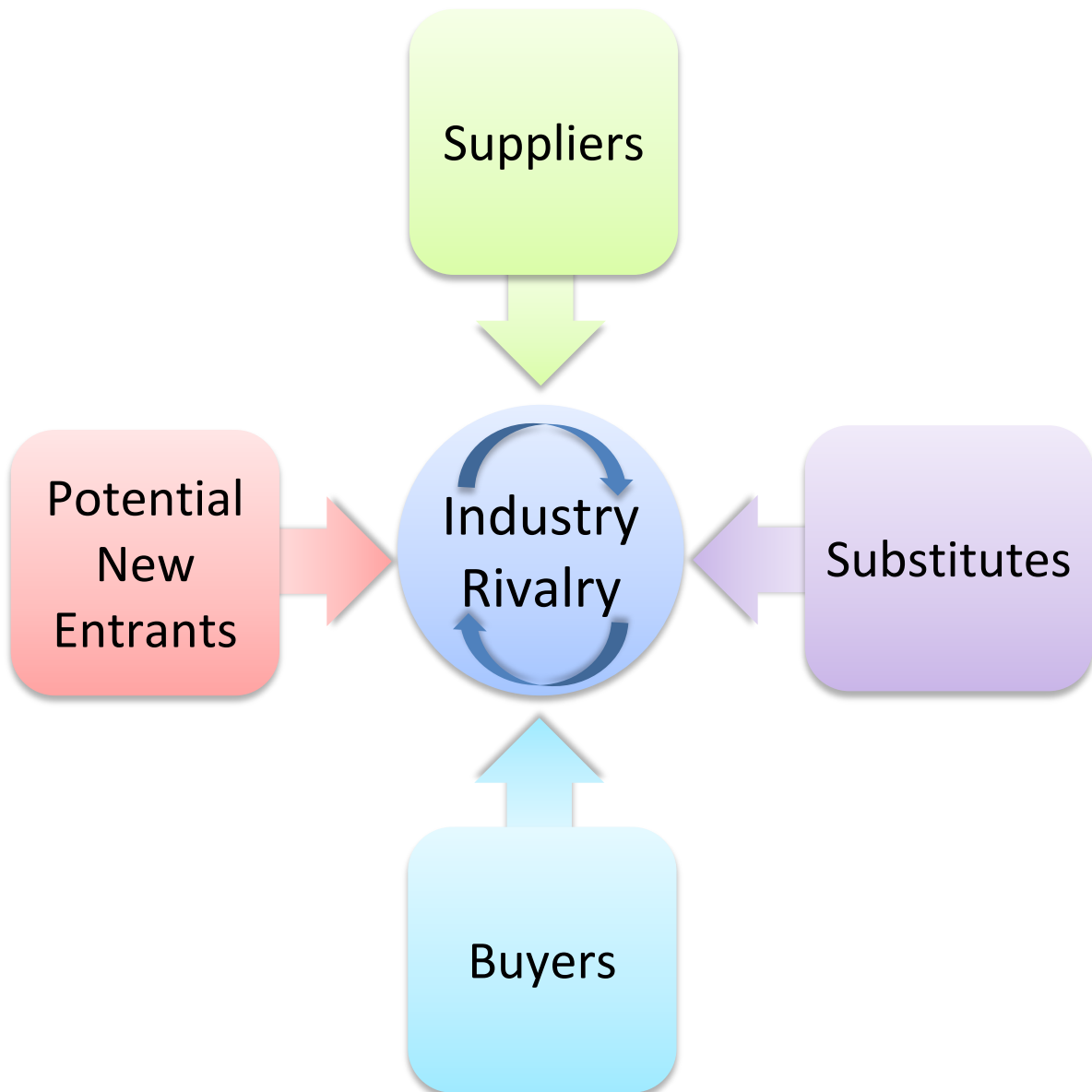


Figure 1.2 - Porter's Five Forces Model of Competition
Adapted from Thompson et al (2010).

In Porter's Five Forces Model he defines what forces are in operation and need to be considered whilst attempting to create a business strategy.

Industrial Rivalry refers to the level of competitive rivalry within a sector, and it is affected by a number of factors including the market structure, the maturity of the industry, the degree of differentiation within the market and the size of exit barriers within the market.

The Threat of Potential New Entrants refers to how likely it is that new entrants may come into the market that may threaten the organisations already in it. Such an existence is dependent on the existence and level of barriers to entry, for example the cost of entering a market may be vast such as in laying fibre optic cabling which is why there are only two real options in the UK market for physical landlines (BT or Virgin Media). Alternatively, are there any legislative barriers, such as a need to be certified to work on gas central heating systems?

Another of Porter's Five Forces is the power of an organisation's suppliers, so if there are fewer suppliers in a market they can have more power over the organisations that buy from them, they are often able to demand higher premiums on the products they provide, holding more of a monopoly. Conversely, if there are more high quality suppliers within a market, prices are often forced down, benefitting their buyers, such as is the case with office suppliers often competing for very small margins on products in a very competitive market.

Porter then looks at the power of an organisation's buyers. Similarly to suppliers, the amount and quality of buyers can affect an organisations ability to create a sustainable competitive advantage. If there are relatively few buyers for the products an organisation produces then their bargaining power is increased and they are often able to force prices and margins down. And again the converse is applied should there be numerous buyers, giving more power to an organisation to raise its prices and margins; albeit dependent on industry rivalry.

Finally Porter looks at what he calls the threat of substitutes. Are there alternative products that a buyer could turn to? Porter suggests that the greater number of substitutes there are within the same relative price and quality bracket the more inherent danger there is within a specific market.

1.2.3 Porter's Five Generic Strategies

Porter (1985) said, there are two basic types of competitive advantage a firm can possess, low cost or differentiation. In other words, no matter what smorgasbord of strengths or weaknesses an organisation has in comparison to its competitors, if it is to achieve above average performance it must have something fundamentally different. Again this will be key in creating the correct strategy for Genesis as will be shown later.

In Porter's Five Generic Strategies matrix (Figure 1.3), we can see some generic options an organisation has which may lead to it being able to gain a sustainable competitive advantage in its marketplace. A strategy where an organisation attempts to achieve lower overall costs to its rivals whilst appealing to a broad range of customers is termed an *Overall Low-Cost Leadership Strategy*, which is the sort of strategy utilised by the likes of supermarket chain Aldi. However a strategy where an organisation attempts to again achieve lower overall costs to its rivals yet appeal to a narrow range of these customers is termed a *Focused Cost Leadership Strategy*, which using the UK supermarket marketplace as an analogy might apply to the Somerfield supermarket chain.

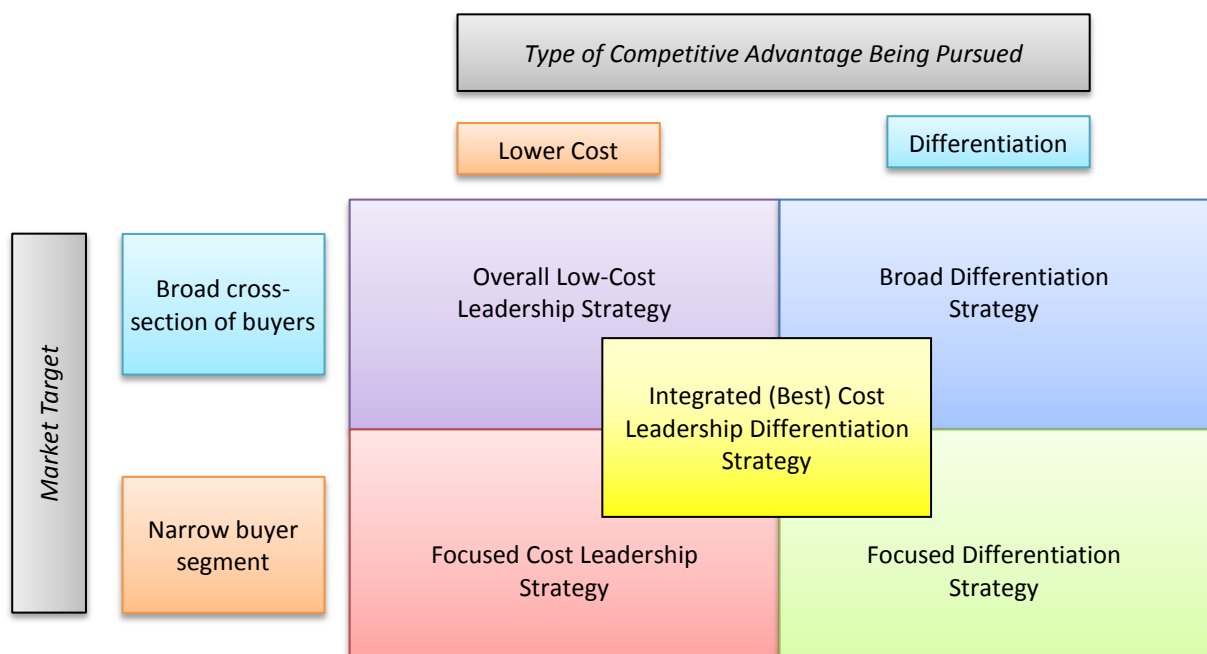


Figure 1.3 – Porter's Generic Strategies (1985)
(Adapted from Thompson, Strickland and Gamble (2010))

Alternatively an organisation may pursue a differentiated strategy as opposed to lower cost, so a differentiated strategy where an organisation seeks to differ from their rivals, but offer products which they wish to appeal to a broad range of customers is termed a *Broad Differentiated Strategy*, and this can be seen with supermarkets such as Sainsbury's. Yet, if an organisation is still trying to pursue a strategy where they seek to differ from their rivals, but appeal to a narrow range of customers Porter terms this a *Focused Differentiation Strategy*, which can be seen in places like M&S, or in the extreme niche end, Harrods' Food Halls.

Finally, a newer addition to Porter's original Generic Strategies Matrix, which initially had just the four above detailed areas, is the *Integrated (Best) Cost Differentiation Strategy* (Thompson et al, 2010). In this fifth strategy the organisation still attempts to give customers excellent value for money, but at the same time offers the best of the other sectors with as many attractive attributes as it can. It attempts to appeal to all potential customers, pitching itself right in the centre ground of the market place, an example of this being the Tesco supermarket chain.

1.2.4 Porter's Value Chain

Another view to look at whilst creating strategy to gain a sustainable competitive advantage is a resource based view, such as can be seen with Porter's Value Chain (Porter, 1985); figure 1.4 overleaf. Porter's Value Chain shows different value adding activities within an organisation. It shows what an organisation does and in what order it does it.

Porter's Value Chain can be used to compare more than one organisation which whilst they may appear to be functioning similarly in a similar sector may have intrinsic differences in the way in which they do so. To this end, these differences could be what makes one organisation profitable and another loss making. It can be very helpful in showing where the margins are in certain areas and show where economies of scale or other efficiencies could be made, however these must also be done without stifling creativity and innovation.

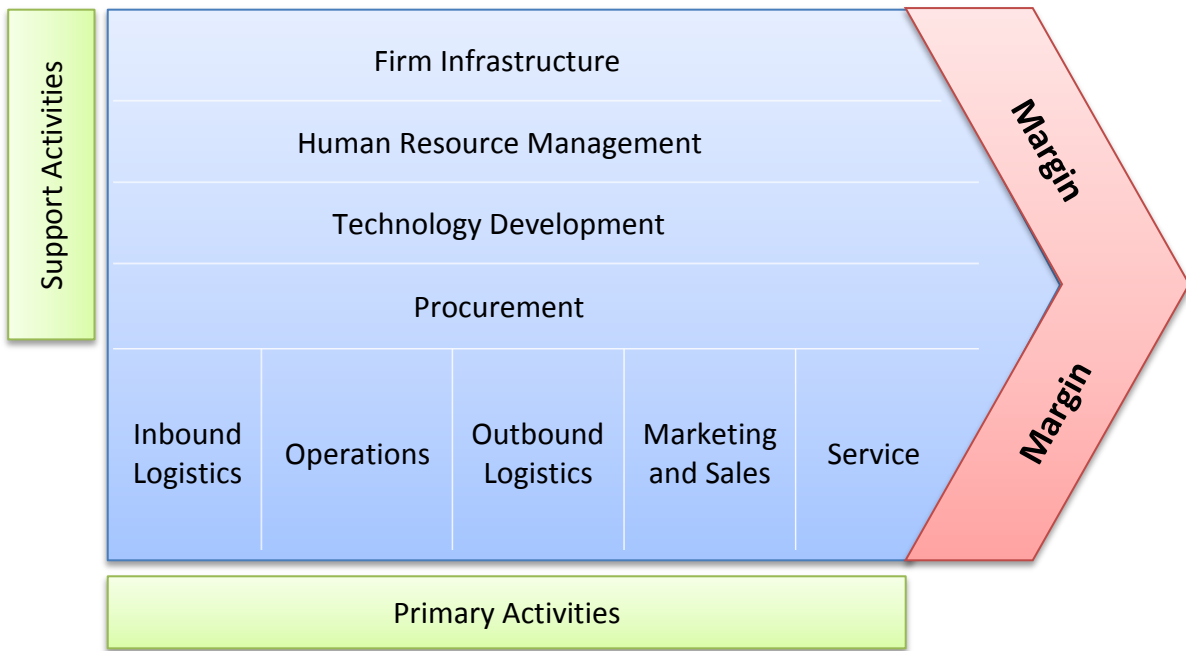


Figure 1.4 - Porter's Value Chain (Porter, 1985)
(Adapted from Henry (2008))

The primary activities within the value chain are those that specifically generate the products or services for which an organisation makes an income. These primary activities are then made possible internally by the support activities.

A value chain analysis has the benefits of showing the sequential order of activities, and provides a framework for analysing an organisation's capabilities; however it does not show how these activities interact with each other, or their inherent hierarchical structure.

1.2.5 Ansoff's Growth Vectors

Mintzberg et al (1995) says that an organisation can expand its business in a number of ways. In short it can develop new markets, or new products, or simply push its existing products harder in its existing markets.

Ansoff (1965)'s Growth Vectors shows this again in a matrix grid form, which has often been adapted by contemporaries and later works. The four main segments of Ansoff's growth vectors are; Market Penetration, Market Development, Product Development and Diversification (see figure 1.5 overleaf).

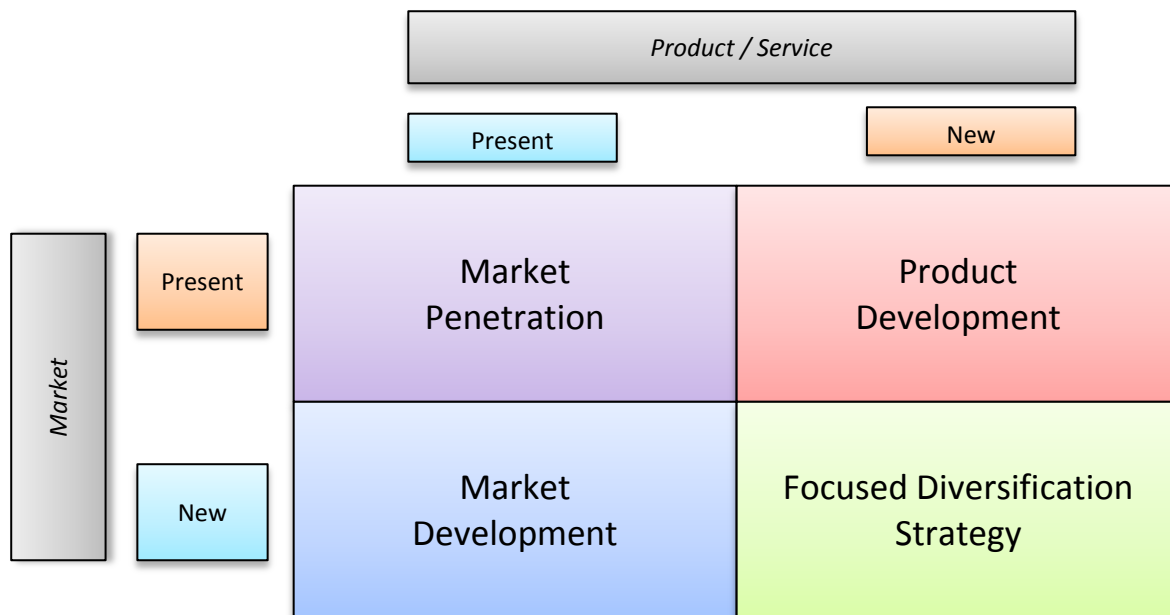


Figure 1.5 – Ansoff's Growth Vectors (1965)

Market Penetration (sometimes referred to as Penetration Strategies) is a strategic process where an existing company's existing products are promoted and marketed at greater levels and with more force in its existing markets. Market Penetration has an emphasis on stability and it particularly well suited to growing markets. The two main ways in which this strategy is usually carried out is through expansion or acquisition of main competitors.

Market Development refers to the promotion of existing products into new markets. A Market Development strategy is particularly suited to new and emerging markets, but is also seen occasionally when the original purpose for a product is changed to suit a new market. So for example mobile phone operators are currently targeting the emerging markets in North Africa and Sub-Continental Asia, with the same offerings they have perfected in the now nearly saturated markets of the western economies. Also a product such as Listerine which was originally manufactured as an all-purpose antiseptic cleaner became a mouthwash when it was decided that through careful marketing this new market could be not only created but monopolised.

Product Development refers to the offering of a new product into an existing market. Quite often companies with a core skill set have the ability to diversify this in order to alter products enough to be able to make brand new offerings. For example Apple Computers

Inc. already had the designers and manufacturing operation to be able to make a handheld music player after German experts developed the MP3 format, this product became the iPod and led in turn to iPhones, iPads and potentially iPannels (Apple's mooted name for its television offering).

This kind of product development is also an example of 'economies of scope' and can very easily lead to full *Diversification* (the fourth sector of Ansoff's Growth Vectors) where an organisation then moves on to market these new products it had originally made for its existing markets into brand new markets. At other times however an organisation may use economies of scope or simple diversification out of necessity to develop new products to new markets. For instance BSA (The Birmingham Small Arms Company) initially began life as a weapons and munitions company profiting from weapons sales in the late 19th century. However as times changed they realised that the margins were getting less and less, so with the advent of the motorcycle in the early 20th century they diversified completely to manufacturing a new product for a completely different market to what they'd always previously known and throughout the early to mid-20th century were very successful; at their peak BSA were the largest manufacturer of motorcycles in the world.

Depending on recommendations, Ansoff's Growth vectors could be the most influential driver in the Genesis case as will be discussed later.

1.3 **Application to Case Study**

1.3.1 **Corporate Strategy**

Genesis is in a strong financial position, with no debt, a good return on equity, a good return on assets (see financial report) and has market leading products. This already puts Genesis in a good position to gain a competitive advantage, but as we have seen with Sony and Nokia, resting on one's laurels and complacency can easily lead to being overtaken by more agile companies in the fast moving technology market.

Genesis' current market segmentation sees the majority of its business being in the 'Western' markets of North America and Europe, with a smaller amount of business in Japan and similar size for the rest of the world (see figure 1.6 overleaf).

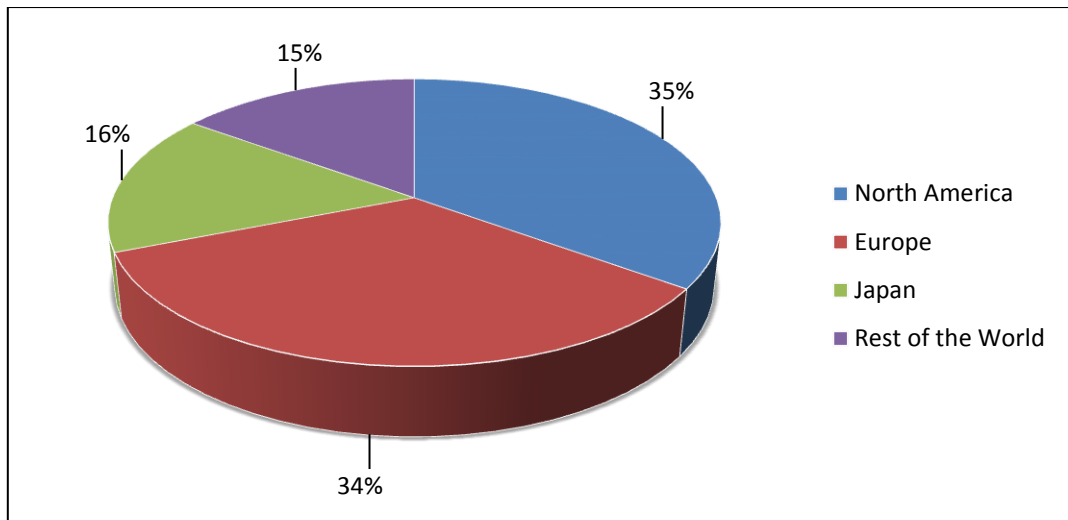


Figure 1.6 – Genesis' Market Segmentation
From Financial Section of Report

In the case of Genesis, Shadow Management has budgeted for a recommended target of 20% growth predominantly in the emerging markets to expand 'Rest of the World' market segmentation.

The first decade of the 21st Century has seen the emerging markets of the so called 'BRIC' nations; Brazil, Russia, India & China. The BRIC nations had fast growing economies so were ideal for investment in and as new markets to bring a company's products or services to. Now in the 2nd decade of the 21st Century the early mover advantage to investment in the BRIC nations is falling due to fast moving entrepreneurial companies already investing there. There are however now the CIVETS, the nations of Columbia, Indonesia, Vietnam, Egypt, Turkey and South Africa, along with Mexico which are all similar in that they have large, young populations, with high growth rates and a strong outlook for their respective economies, making them ideal places for expansion into. (Greenwood, 2012)

It is felt that an overall growth plan will be the best way to sustain a competitive advantage, working in an agile manner, with complex adaptive systems and team research and development and proactive sales with various routes to market being developed and actively targeted.

1.3.2 Porter

1.3.2.1 Five Forces

From a market based view, the technology sector is one of the fastest moving sectors in the business world. The current industry rivalry for Genesis' market place is relatively small, and substitutes to the products supplied by Genesis are limited, however whilst Genesis are currently a leading supplier of simulation software the threat of new entrants to this market is always clear and present. Genesis is currently fortunate to be in a situation in this market to make the power of both suppliers and buyers limited due to its monopoly of products but if history has taught us anything in the technology sector it is that this is unlikely to remain *ad infinitum* therefore it is imperative that Genesis continues to research and develop new and existing products to sustain its competitive advantage.

1.3.2.2 Integrated (Best) Cost Leadership Differentiation Strategy

From Porter's Five Generic Strategies it is recommended that Genesis actively seeks to target an Integrated (Best) Cost Leadership Differentiation Strategy. As discussed earlier, there are various options of broad or narrow market segments and low cost or differentiation strategies; however a combination of all of these would be the recommended direction for Genesis to go in order to be able to maximise sales into all sectors. Indeed with the large number of wide ranging products currently in the Genesis portfolio there should be a product for every end user's potential requirements already available.

1.3.3 Ansoff

Due to the overall growth strategy being recommended by Shadow Management, there are several areas from Ansoff's Growth Vectors (1965) that would be recommended to pursue.

1.3.3.1 Market Penetration

Initially Shadow Management recommends a Market Penetration growth strategy, pushing existing products further into existing markets in particular those existing 'Rest of the World' markets detailed in the Genesis Annual Report Form 10-K. *We are making the assumption that these 'Rest of the World' countries are predominantly made up of the so*

called *BRIC nations*. This will include an increase in sales force as well as exploration and development of alternative and new routes to market; shown in other relevant sections.

1.3.3.2 Market Development

Further to the Market Penetration strategies, Shadow Management recommends that Genesis also look to develop new markets with its existing suite of products; or a Market Development strategy. This is to further target emerging markets namely any of the BRIC nations where Genesis does not currently have a share of the national market, along with those other emerging markets such as the CIVETS (as previously mentioned) and Mexico.

1.3.3.3 Product Development

Finally Shadow Management recommends further Product Development. The Budget for growth as detailed in the financial report shows how 25% of the growth budget is earmarked for Research and Development and it is imperative that Genesis continues to develop new products and technologies for direct sales as well as IP and licensing opportunities in order to sustain its competitive advantage. *More specific details of this will be given in later sections of this report.*

1.4 Conclusion

In conclusion the theories behind gaining a Competitive Advantage, Porter's Five Forces, Porter's Five Generic Strategies and Value Chain Analysis, along with Ansoff's Growth Vectors have been discussed and critically evaluated. Then in turn the relevant and salient points of these have been used to influence and guide the application to the requirements as outlined in the Genesis Annual Report Form 10-K.

Genesis are currently in a strong position, however if they do not continue to grow and adapt there are always strong threats in the technology sector for new organisations to enter and existing organisations to diversify, which could see Genesis' market share eaten away. Adaptability and agility are the keys to the future success of Genesis in being able to drive forward into the future and their next 40 years as is desired and detailed in the Annual Report.

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2 Financial Analysis

2.1 Introduction

This is the research report on Genesis's financial statements to analyze its business and financial sustainability. The Raleigh, North Carolina based company's total sales and profitability have varied widely over the last 5 years. Sales peaked at over \$580 Million in 2010 registering an increase of 12.2% over 2009. Despite the job cuts and restructuring in 2009 which was likely to have an impact on the sales, Genesis has continued to register strong revenue figures and significantly improved on the net income levels. This is a clear indication that the Genesis's business model is strongly related to its variable cost.

Section 1 of the financial report lays the theoretical and analytical framework of the research by the use of ratio analysis and detailed understanding of what does these ratios mean and its relevance in context of Genesis.

Section 2 presents the discussion by critically analyzing current business model and revenue streams.

Section 3 reports and analyzes the future strategy to assess its impact on the financial position. Finally the report will present the financial projections for the next three years and will also state the basis for the projections.

Finally, Section 4 concludes by discussing the overall situation and making recommendations for sustainable future.

2.2 Ratio Analysis

According to Eisemann, financial ratios are an important ingredient of any credit evaluation and if properly interpreted, they provide keen insights into the sources and adequacy of profits, efficiency of assets committed to the firm, solvency risk and liquidity risk. (Eisemann, 1997) The purpose of ratio analysis is to measure profitability, asset efficiency & leverage and forecast the ability of a borrower to meet its debt obligations as they arise. Analyst would expect to see a higher operating margin for a pharmaceutical or software company typically 20% plus than one engaged in steel fabrication that operates on 4%. When comparing ratios between the same firms, the analyst must consider industry dynamics such as technology and R&D expenditures involved. (Hitchings, 1999)

In reference to the company under consideration, we have performed horizontal analysis or comparing a company's performance over a number of years to determine the present health of the company and formulate projections of the future growth potential.

2.2.1 Profitability Ratios

Profitability ratios are used to evaluate the firm's earnings as compared to expenses over a specific period of time. Having a higher value compared to a competitor's ratio or the same ratio from a previous period suggests that the company is doing well. Calculation of Operating Margin and Net Margin is based on the percentage of Net Sales.

i. Operating Margin

This ratio indicates that for each dollar of sales, the company generated 37.79 cents of operating profit in 2010, up from 35.50 in 2009 and has constantly increased in the last 5 years. This ratio is largely influenced by variable cost primarily R&D and Selling & Administrative expenses.

	2006	2007	2008	2009	2010
Operating Income	36,156	126,769	169,731	183,477	219,268
Net Sales	263,640	385,340	478,339	516,885	580,236
Operating Margin = Operating Income / Net Sales	13.71%	32.90%	35.48%	35.50%	37.79%

Table 2.1

Therefore, layoffs and downsizing in 2009 swiftly reflected in higher operating margins in the following year. This is reasonably high but it is expected for a software company to work at high levels of net margins because unlike other industries, firms in software industry

make significant investments in R&D and operates in high degree of uncertainty. So in order to offset the costs and make a profit the figures indicates that Genesis has an ability to pass along increased cost to consumers.

ii. Net Profit Margins

This tells us that for each dollar of sales, company generated 26.39 cents of net profit in 2010 registering an even greater increase than operating margin during the same period.

	2006	2007	2008	2009	2010
Net Profit	14,156	82,392	111,671	116,391	153,132
Net Sales	263,640	385,340	478,339	516,885	580,236
Net Profit Ratio = Net Profit / Net Sales	5.37%	21.38%	23.35%	22.52%	26.39%

Table 2.2

The net profit margin of 26.39% is a positive sign which explains the price acceptability among the customers. On the other hand, if Genesis decides to operate in the price sensitive markets the company can willingly accept a reduced NP margin in order to boost market share.

iii. DuPont ROE

ROE indicates dollars of profit margin generated for each dollar of net worth of the company or in simpler terms, ROE measures the return to owners. According to the Eisemann, DuPont analysis is an organization paradigm that includes three fundamental ratios to derive one summary ratio i.e. ROE and provides the necessary structure and linkages. The ratios that determine ROE reflects three major performance dimensions of interest to all business analysts. One aspect relates to Income Statement management or how much profit a company can generate per sales dollar. The other two are aspects of Balance Sheet Management i.e. how well assets can generate sales and the amount of solvency risk. The application of DuPont to measure financial performance is attractive because of its focus on the return earned by firm's owners as the key ratio. Businesses exist because owners commit capital to a venture in order to generate a return commensurate with risk. (Eisemann, 1997)

	2006	2007	2008	2009	2010
Net Profit Margin = Net Income / Rev	0.053694	0.213816	0.233456	0.225178	0.263913
Asset Turnover = Rev / Total Assets	0.292058	0.397548	0.256549	0.269185	0.272811
Equity Multiplier = Total Assets / Equity	1.687935	1.511661	1.576224	1.46285	1.39018
DUPONT ROE = Net Profit Margin * Asset Turnover * Equity Multiplier	2.65%	12.85%	9.44%	8.87%	10.01%

Table 2.3

In the case of Genesis, ROE has increased to 10% signaling that the firm has a strong growth potential and generate sufficient retained earnings. A strong ROE places a company in a strong position for access to raising additional equity which is considered as internally generated funds.

iv. Return on Assets

This calculation measures the company's ability to use its assets to create profits. Principally ROA indicates how many cents of profits each dollar of asset is generating. The lower the profit per dollar of asset, the more assets intensive a business is and vice versa. Anything below 5% is very asset intensive business (manufacturing companies) and anything above 20% is considered asset light.

[<http://beginnersinvest.about.com/od/incomestatementanalysis/a/return-on-assets-roa-income-statement.htm>]

	2006	2007	2008	2009	2010
Net income	14,156	82,392	111,671	116,391	153,132
Total assets	902,696	969,292	1,864,514	1,920,182	2,126,876
Return on Assets = NP/ TA	1.57%	8.50%	5.99%	6.06%	7.20%

Table 2.4

Genesis being the software manufacturer has gradually progressed since 2008 to reach around 7% return on total assets but still needs to improve and must aim at increasing its ROA in order to compete successfully without being highly asset dependent.

2.2.2 Working Capital and Measures of Liquidity

Liquidity ratio indicates financial flexibility. In assessing the creditworthiness of a company, a major consideration is management's ability to maintain sufficient liquidity to pay its obligations as they arise. (Hitchings, 1999) Since the need for WC is directly related to firm's growth, all precautions might be taken for the effective and efficient management of working capital.

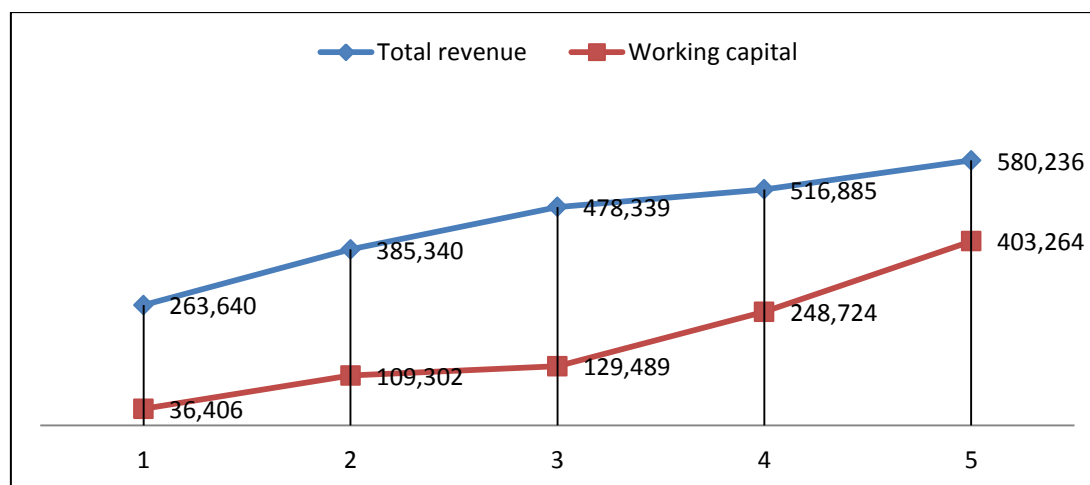


Figure 2.1 – Working Capital and Total Revenue

During this period of study the average amount of WC was increasing year by year corresponding to sales. In the year 2006 WC was \$36,406,000 and sales were \$263,640,000 i.e. 14% of sales. In the year 2010 WC was \$403,264,000 and sales were \$580,236,000 i.e. 69% of sales. It indicates an effective utilization of current assets and current liabilities.

i. Current Ratio

Add-on to working capital analysis Genesis has a very strong Current Ratio of almost 2 and a half time to cover its short term obligations. The observation that the ratio is beyond 1:1 leads to the conclusion that Genesis is highly liquid and in a solid short term liquidity position than the average firm in the industry it operates.

	2006	2007	2008	2009	2010
Current Assets	215944	305169	397153	515490	714633
Current Liabilities	179538	195867	267664	266766	311369
Current Ratio = CA/CL	1.20	1.56	1.48	1.93	2.30
	1.20 : 1	1.56 : 1	1.48 : 1	1.93 : 1	2.3 : 1

Table 2.5

Genesis may want to reevaluate its liquidity position to determine if perhaps not reinvesting or utilizing additional cash is negatively impacting its opportunities of further growth thus restricting greater revenues.

2.2.3 Asset Management Ratios

Asset management ratios measure the efficiency level of using the assets to generate revenue.

i. Fixed Asset Turnover Ratio

This measure shows the multiple of annualized sales that each dollar of fixed asset is producing. This indicator measures how well fixed assets are 'throwing off' sales and is important to the business required to make significant investments in such assets. (Brownlee, 2012) In the case of Genesis, the ratio has constantly increased over the last 3 years after falling off the peak in 2007 which indicates that the Fixed Assets are being utilized effectively to generate sales.

	2006	2007	2008	2009	2010
Net Sales	263,640	385,340	478,339	516,885	580,236
Fixed Asset = TA – CA	686752	664123	1467361	1404692	1412243
Fixed Asset TOR = Sales / FA	0.38	0.58	0.33	0.37	0.41
	38/100	58/100	33/100	37/100	41/100

Table 2.6

Genesis must focus on this ratio in the long run to ensure the company is asset light than asset intensive to generate revenues.

ii. Total Asset Turnover Ratio

The Asset TOR helps to assess the relationship of company's revenue generation ability and asset requirements. (Warren, Reeve & Duchav, 2009) With respect to Genesis, asset reliance to create revenues have been relatively stable since 2008 illustrating that for every one dollar of asset company is generating 27 cents of sales.

	2006	2007	2008	2009	2010
Net Sales	263,640	385,340	478,339	516,885	580,236
Total assets	902,696	969,292	1,864,514	1,920,182	2,126,876
Total Asset TOR = Sales / TA	0.29	0.40	0.26	0.27	0.27
	29/100	40/100	26/100	27/100	27/100

Table 2.7

There is also a strong correlation between the pricing strategy and assets turnover ratio; For Instance - Dell's business is based on volume and operating efficiency therefore gives a higher turnover in assets. Whereas Apple's product mixed, strategy price is based on higher margins and less on volume therefore Apple has higher profit and lower Assets Turnover ratio in comparison to Dell. (Lin, 2005)

2.2.4 Financial Leverage

Leverage attempts to measure the risk to creditors as reflected by the company's capital structure. A high level of debt is generally considered risky because of the comparatively thin level of equity available to absorb the losses. (Hitchings, 1999) A heavy debt burden also impacts onerous interest charges.

i. Debt Equity Ratio

With respect to Debt Equity position, it is evident that Genesis is relying more upon the internal financing than the debt financing. During this period of study it was observed that the average debt equity ratio was significantly lower than the ideal ratio of 1:1. The ratio showed a declining trend from 0.35 in 2008 to 0.19 in 2010 which indicates that the Genesis had paid off a significant amount towards debt reduction and relied more on internal funds rather than the long term borrowings. This confirms that the company followed a conservative debt equity policy.

	2006	2007	2008	2009	2010
Debt	188,365	132,215	413,951	340,785	285,578
Equity	534,793	641,210	1,182,899	1,312,631	1,529,929
Debt to Equity Ratio = Debt /Equity	0.35	0.21	0.35	0.26	0.19

Table 2.8

On the positive note, the lower debt levels will be favorable towards Genesis's ability to acquire long term debt at favorable rates in the future. If funds are needed beyond what are available internally, Genesis will have a choice of raising long term loans than to raising additional equity. However another view to look at the current debt equity situation, one can argue that such low level of leverage could mean paying more taxes and not availing the tax benefit which could considerably be much higher than the interest charges as long term interest payments are deducted from the Profit before taxation. Thus the company analysts must take a closer view at the appropriate amount of leverage in order to balance the tax benefits of increased debt against the financial distress cost associates with increased debt.

2.3 Business Model Analysis

Genesis is a technology company that develops and markets engineering simulation software. The core operations of the company are developing and selling the software through lease or perpetual licenses. Thus it is expected that the primary source of revenues should be derived from the sales and thereafter through maintenance and service. Even

though there has been an increase of 12.3% in revenues in 2010 over 2009, but the management must assess the proportion of individual components fueling the growth. Looking at the last 3 year trend, it is evident that the company is experiencing a shift in revenue stream contribution.

Revenue:	2008	% Rev Share - 2008	2009	% Rev Share - 2009	2010	% Rev Share - 2010
Lease licenses	177,427	37.09%	181105	35.04%	184539	31.80%
Perpetual licenses	140,727	29.42%	134528	26.03%	166494	28.69%
Maintenance	135,773	28.38%	182786	35.36%	211465	36.44%
Service	24,412	5.10%	18466	3.57%	17738	3.06%

Table 2.9

2.3.1 Revenue Streams and Trends over Last 3 Years

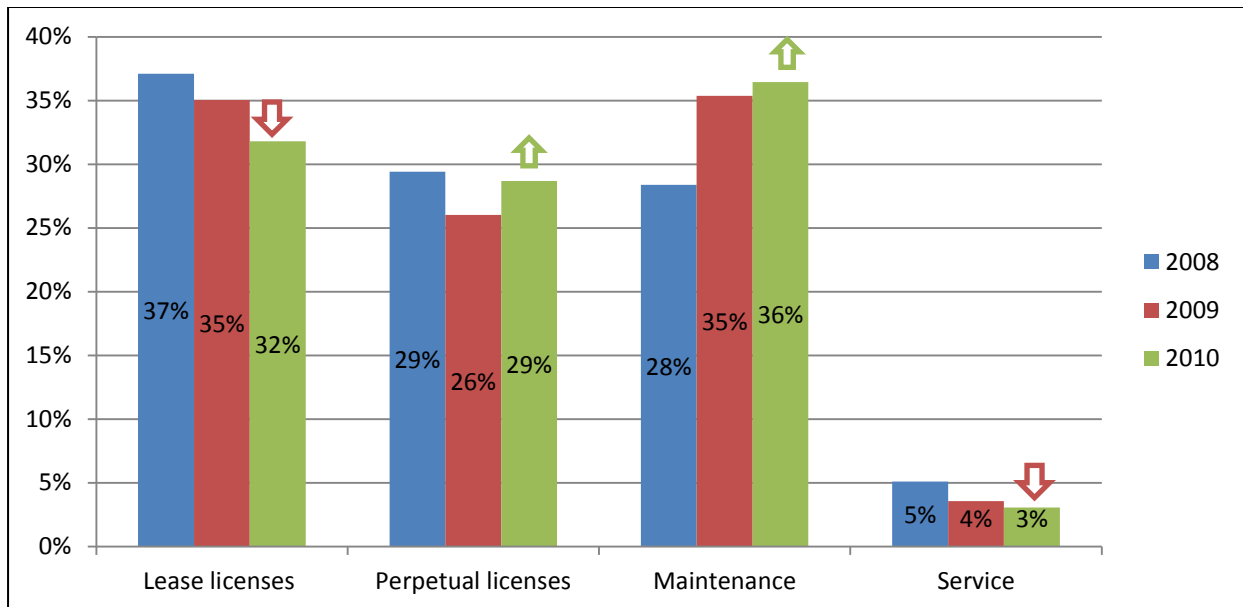


Figure 2.2 - Revenue Streams and Trends over Last 3 Years

As shown in the graph, the contribution of lease Licenses towards Total Revenue has been reduced to 32% in 2010, lower than the level of 35% and 37% in 2009 and 2008 respectively. Given the figures, we can see that the contribution of maintenance revenue has increased by over 8% in last two. The contribution of perpetual licenses towards revenue has recovered since last year but the main area of concern for the company is the lease licenses which is losing grip towards its overall contribution towards total revenues. It is necessary for the company to ensure that the growth is fuelled by durable factors i.e. License Fees and Perpetual licenses as such durable factors result in sustainable earnings over long term.

◆ Cash Flow from Operating Activities

Operating cash flow is the lifeblood of a company and the most important indicator that investors often deploy to measure cash generation ability of a firm. Though the company is registering double digit growth rates but one area of concern is the falling Cash from Operating activities over last 2 years when compared to Operating income.

	2006	2007	2008	2009	2010
Operating Income	36,156	126,769	169,731	183,477	219,268
Cash provided by operating activities	89,697	127,128	196,708	173,689	166,884

Table 2.10

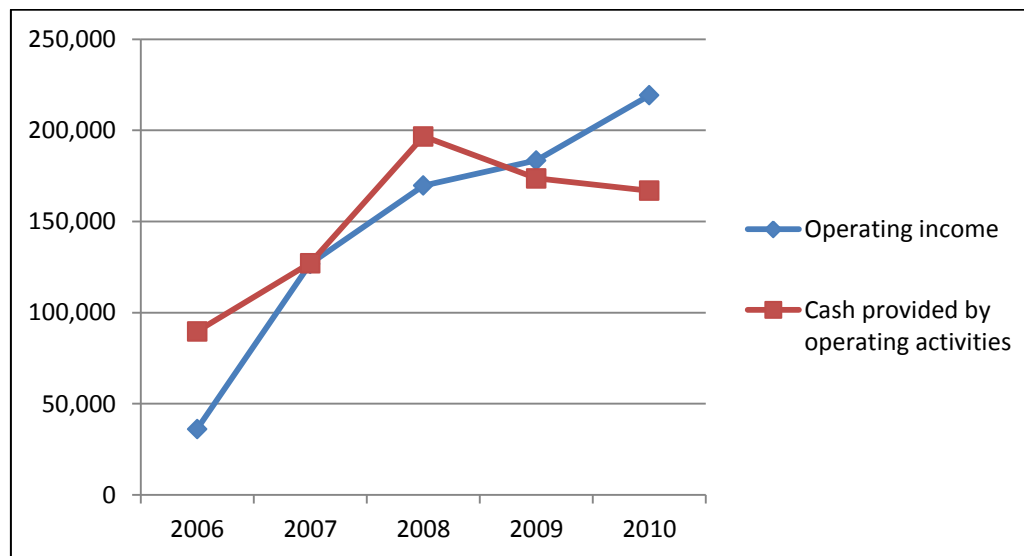


Figure 2.3

Although many investors are inclined toward net income, operating cash flow is a better metric of a company's financial health firstly because cash flow is harder to manipulate than net income. And secondly, a company that does not generate cash over the long term will find it difficult to survive in the long term. This further demonstrates the urgency for the management to determine the root cause of falling cash flow that could severely hinder long term goals.

(<http://www.investopedia.com/articles/analyst/03/122203.asp#ixzz1tQjVwvnY>)

2.3.2 Geographical Distribution of Revenues

Analyzing the geographical breakdown of revenues, it is clearly evident that the company till date has focused on the developed economies and draw almost 70% of revenues from North America and Europe. Another growing market for the company is Japan which generates 16% of total revenues whereas the rest 15% is derived from rest of the world.

Therefore from the business & financial perspective it is important for the company to expand and diversify in emerging markets thereby mitigating the risk of reliance on fewer economies.

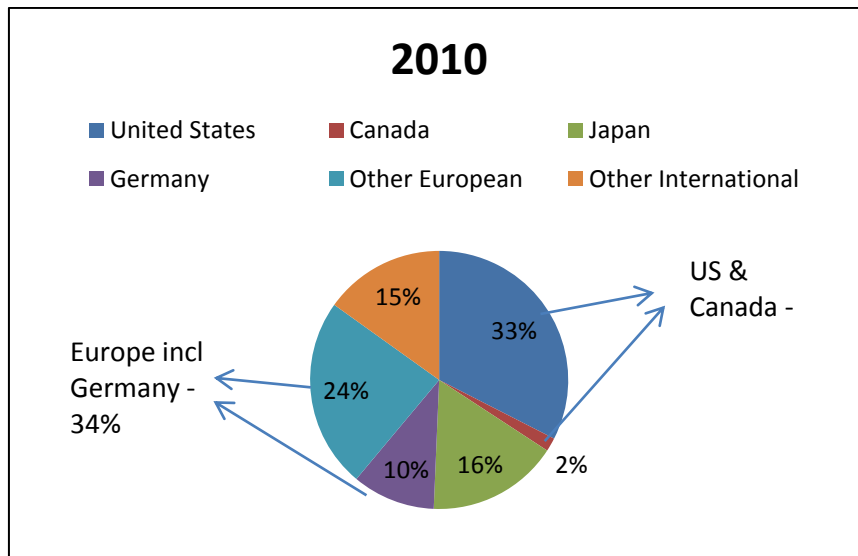


Figure 2.4

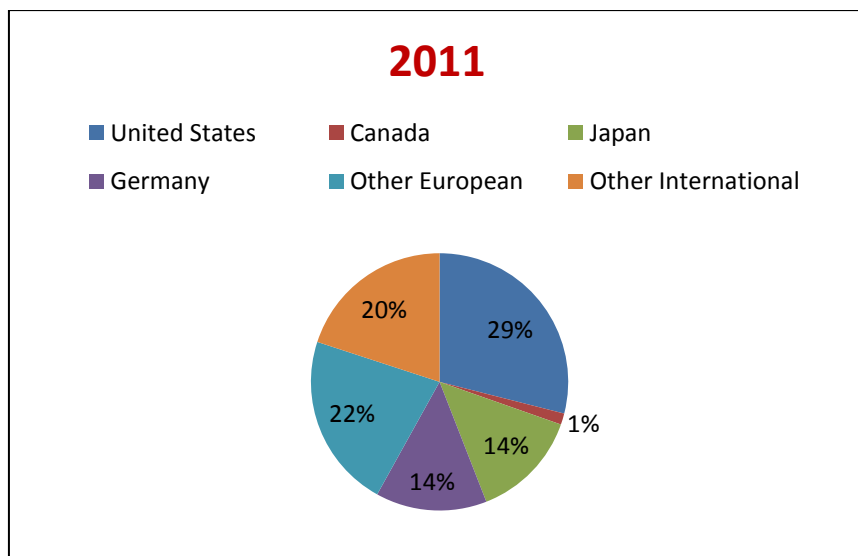


Figure 2.5

To align the financials with business strategy, the proportion of ‘Other International’ must increase from 15% to 20% in view of the expansion strategy with increase in the sales force primarily in BRIC (Brazil, Russia, India and China) markets. Targeting increased share in Emerging economies does not mean fall in revenues from US and European economies. Moving forward the strategy is to maintain the existing sale figures from respective markets same as last year, and in addition, generate additional revenues from the emerging countries.

2.4 Future Projections

◆ Increase in Headcount

To execute the expansion plan, it is necessary for the company to increase the workforce by approx. 20% over the next two years. It has been planned to increase the headcount by 10% in 2011, followed by another 10% in 2012 to gradually expand over the next two years without putting excessive burden on the finances. Overall the increase in employees on the payroll is estimated to increase by 21% over the next two years. The breakdown of the numbers has been shown in the table below:-

	2010	2011	2012
R&D staff	530	572	617
Sales staff	430	513	604
Other Administrative	700	742	787
Total	1660	1827	2009

Table 2.11

The increase has been distributed in a manner to focus more towards the Sales side of business with the gradual and equivalent increase in R&D and other support administrative staff.

Out of the increase of 10% in 2011 i.e. 167

- Forecasted Increase in Sales employees - 50% of the 167 – 83
- Forecasted Increase in R&D employees - 25% of the 167 - 42
- Forecasted Increase in Other employees - 25% of the 167 - 42

Table 2.12

Same formula of increase will be applied in 2012.

◆ Setting up KPI's to Monitor Performance & Determine Future Projections

The estimated increase in overall employee headcount must be followed by setting up performance criteria to monitor progress and establishing controls. One such criteria is measuring Productivity Per employee – this will further enable us to compare past trends in 2010 and future level of productivity we need to achieve to calculate realistic revenue figures relative to the increase.

	Current 2010 (1660 Employees)	Forecasted 2011 (1826 Employees)	Forecasted 2012 (2009 Employees)
Total Revenues	580236	638259.6	702225.3759
Sales Per Employee (1660, 1826, 2009)	349.539759	349.539759	349.539759
Sales Per Sales Employee (430, 513, 604)	1349.386047	1244.17076	1162.624795

Table 2.13

As shown in the table above, the 2010 level of productivity per employee is approx. \$349,000. If we go by the pessimistic view without expecting any increase in revenues, the company should still be generating the above revenue figures keeping in account the constant level of productivity.

The more realistic way of estimating future revenue projections is strike a balance between past trends and future expectations. Looking at the past trends the revenue base has increased by approx. 8% and 12 % in 2009 and 2010 respectively. Therefore we expect that the revenue levels must grow by at least 15% in 2011 and 2012 & 20% in 2013 considering the increase in employee base at several global markets.

	Current 2010 (1660 Employees)	Forecasted 2011 (1826 Employees)	Forecasted 2012 (2009 Employees)	Forecasted 2013 (2009 Employees)
Total Revenues	580236	667271	767362	920834.532
Sales Per Employee (1660, 1826, 2009)	350	365	382	458
Sales Per Sales Employee (430, 513, 604)	1349	1301	1270	1525

Table 2.14

The above figures project more realistic view of what a company can achieve over the course of next 3 years. The 2013 revenue figure is estimated to increase by 20 % keeping in consideration the increase in levels of productivity of Per Sales Employee.

♦ **Software License Revenue vs. Maintenance & Service Revenue**

Currently the approximate ratio between license revenue and maintenance is 60:40. In tune with the future strategy of increasing sales we expect a considerable shift in the ratio with License revenues contributing 65% of total revenues and the rest 35% by maintenance and services. This shift is also indicated in the projected income statement for next 3 years.

2.4.1 Funding Future Expansion Strategy

Taking into account the capital required to maintain the level of growth that the company expects over the next three years, funding the expansion merely through retained earnings or working capital will put heavy financial burden on Current Assets. As the company grows the level of Current liabilities are also expected to rise but if the company decides to depend on working capital for the above purpose, this is likely to create problems for the company because by the end of 2013 the level of CA will be less than CL making the company cash strapped to meet its short term obligations. Hence the two options at disposal are to either raise capital through debt financing or equity financing.

It should also be noted that it is not in the best interests of the company to significantly alter the equity structure of the firm by raising high levels of equity to fund the expansion process which does not involve any mergers or acquisitions. Therefore it is intended to adopt a more cautious approach by striking a balance between the Long term borrowings and Equity that do not change the equity structure but at the same time does not expose Genesis to onerous interest payments.

- Raising additional 10% equity in 2011 and 2012.
- Raising additional Long term loans by 10% in 2011 and 2012 respectively. In 2013 the company expects significant increase in revenue figures with additional Working capital at disposal therefore raising 15% additional borrowing will be a suitable option.

(Figures are stated in the balance sheet)

Future Projections (2011-2013)

◆ Income Statement – Future Projections for 2011 – 2013

Year Ended December 31, (in thousands)	Current 2010	Future 2011	2012	2013
Revenue:				
Software licenses	351,033	433726	498785	598542
Maintenance and service	229,203	233545	268577	322292
Total revenue	580,236	667,271	767,362	920,835
Cost of sales:				
Software licenses	10,770	13011.79	14963.56	17956.27
Amortisation	32,757	40036.28	46041.73	55250.07
Maintenance and service	57,352	66727.14	76736.21	92083.45
Restructuring charges	0	0	0	0
Total cost of sales	100,879	119,775	137,741	165,290
Gross profit	479,357	547,496	629,621	755,545
Operating expenses:				
Selling, general and administrative	155,096	180163.3	207187.8	248625.3
Research and development	88,990	100090.7	115104.3	138125.2
Amortisation	16,003	20018.14	23020.86	27625.04
Restructuring charges	0	0	0	0
Total operating expenses	260,089	300,272	345,313	414,376
Operating income	219,268	247224	284308	341169
Interest expense	-4,488	-4,926	-5,418	-6,231
Interest income	1,911	1,911	1,911	1,911
Other (expense) income, net	-297	-297	-297	-297
Income before income tax provision	216,394	243912	280503	336552
Income tax provision	63,262	70,735	81,346	97,600
Net income	153,132	173,178	199,157	238,952

Table 2.15

Notes to the Accounts (Net Income Statement)

1. Revenues

- Software Licenses – 65% of total revenues from 2011-2013
- Maintenance and Services – 35% of total revenues from 2011-2013

2. Cost of Sales – Estimation based on the past trends

- Software Licenses - 3% of Software License Revenue or 2% of Total Revenues
- Amortisation – 6% of total revenues
- Maintenance and Service cost – 10% of total revenues or approx 25% of Maintenance and service revenues

- Restructuring – Has been assumed to be 0 as the strategy is more to do with expansion than making any radical changes involving Layoffs or any mergers.
3. Operating Expenses
 - Selling, General and Administrative – Estimated increase of 16% in 2011 over 2010 figures absorbing increase in headcount of 10%.
 - Research and Development - Estimated increase of 12% in 2011 over 2010 figures absorbing increase in overall R&D headcount of 8%.
 - Amortisation – 3% of total revenues
 4. Interest Expense – The interest on the long term loan is calculated as 1.568%. The amounts will increase commensurate to the increase in the long term liabilities for the following years (Figures on Long term liabilities are in the Balance Sheet).
 5. Other Income (Net) – This is also assumed to be constant as there has been no mention of where this income is being generated such as Level of investments in stocks or shares.
 6. Income Tax Provision – Estimated to be 29% based on the level of 2010.

♦ **Balance Sheet – Future Projections for 2011 – 2013**

Year Ended December 31, (in thousands)	Current 2009	2010	Future 2011	2012	2013
Current assets	515490	714633	714633	750365	900438
Property and Equipment	35131	36921	42459	48828	48828
Goodwill	960091	1063438	1191051	1333977	1520733
Other Assets	409470	311884	409470	409470	429944
Total Assets	1,920,182	2,126,876	2,357,613	2,542,639	2,899,942
Current Liabilities	266766	311369	360555	345876	651347
Total long-term liabilities	340785	285578	314136	345549	397382
Total Stockholders' Equity	1312631	1529929	1682922	1851214	1851214
Total Liabilities and Equity	1,920,182	2,126,876	2,357,613	2,542,639	2,899,942

Table 2.16

Notes to the Accounts (Balance Sheet):-

1. The value of Goodwill is valued at 50% of the total company assets. Considering the takeover of Ansa in 2008 the Goodwill was valued at 70% of the total Purchase cost. It has also been noted that the goodwill value in software industry in majority of the cases varies between 44% and 60%.
2. Goodwill increase in 2010 is commensurate to increase in Net revenues. When the net revenues of the company increased by 12% in 2010, the Goodwill increased by 11% showing directly proportional relationship. In 2011 and 2012 the company expects the net revenue increase by 15% each year thus the goodwill must increase by at least 12%. Whereas in 2013 we expect revenue increase by 20% thus the goodwill value must increase by 16% over 2012 figure.
3. Although the company intends to work on the asset light model and not asset intensive. But for the purpose of expansion we expect the company to invest in additional property & equipment. The expected increase is likely to be 15% in 2011 and 2012 to provide the infrastructure to additional staff.
4. As per the calculation the variable 'other assets' in the asset side of Balance Sheet decreased by almost 24% in 2010 but we expect this figure to go up to the same level as on 2009 and remain relatively stable in 2011 and 2012 while we expect it to grow marginally by 5% in 2013 with the growth of the company as a whole.
5. Though the level of Current Assets are expected to grow at the same percentage as last year which was 39%. But these funds will be partially used over the year to fund expansion considering the company is raising low level of additional equity over the next two years. So by the 2011 year end we expect to keep the same level as of 2010 and then expect that to increase by 5% in 2012. While in 2013 we expect the levels of CA to grow by 20% as the funds will not be required to support expansion activities.

2.5 **Summary and Recommendations**

Evaluating Genesis relative to the software industry, we first note that Genesis is more liquid than the average firm in the industry. Both Fixed asset TOR and Total Asset TOR are above industry averages indicating that Genesis is using its assets more efficiently than the industry average in generating sales. Genesis's Total Debt Equity ratio indicates that Genesis is less leveraged than the average firm in an industry. The lower the leverage, in part explains Genesis's strong financial performance relative to the IT industry because the current level of leverage do not commit Genesis to onerous interest payments that must be paid regardless of economic and market conditions. The financial projections have been made keeping in view of expanding in emerging markets with existing product lines and diversifying in price sensitive markets with the low cost technology will strategically improve firm performance and also reduce risks.

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3 Marketing and Sales

3.1 Introduction

Marketing is one of the core functions of organisations, without which they cannot exist. It paves the way for the organisation to reach the customer, persuade the customer to do business with it, and retain the customer for future business. Marketing is defined by the United Kingdom's Chartered Institute of Marketing as "the management process which identifies, anticipates, and supplies customer requirements efficiently and profitably" (Lancaster et al, 2002, p. 5). It is also defined by the American Marketing Association as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large" (American Marketing Association, 2007). Both definitions have something in common; the delivery of value to customers in a profitable manner. And their end result is geared toward sales. Marketing aims to satisfy customer needs and demands, by targeting specific market segmentations based on factors such as demographic, and offers value propositions to the customer through marketing channels (communication, distribution, and/or service channels) (Kotler & Keller, 2012, p. 32-33). Efficient and effective marketing should get the customers faster, and keep them for longer, than the competition, and is a source of sustained competitive advantage.

The aim of this report is to provide a consultation to Genesis Inc. about its marketing strategy, which will help in its decision as regards the future ownership of the company. As a result, Shadow Mgt. has carried out a research, including a literature review, to determine the best course of action for Genesis Inc. It covers all aspects of marketing that will enable the increased mind and market shares of the company in its current market, from improving the product suite through implementing effective route to market options.

3.2 Literature Review

Marketing cuts across all facets of an organization. It is existent in R&D, business processes, sales and distribution, IT, etc. Therefore, for effective marketing, a holistic approach is needed. There are marketing concepts that focus on the product, production, selling, or just marketing. However, the holistic marketing approach is “based on the development, design, and implementation of programmes, processes, and activities that recognize their breadth and interdependencies” (Kotler and Keller 2012, p. 40). It recognizes that marketing spans across an entire organization, and not just a particular process. Hence, it covers Internal marketing, Performance marketing, Integrated marketing, and Relationship marketing (Grundey, 2010).



Figure 3.1 - Holistic Marketing (marketingholistics.com)

3.2.1 Internal Marketing

Organizations generally have a marketing department that carries out marketing functions. However, most employees in modern organizations with networked functional areas interact with the customer in different capacities. Internal marketing requires that employees, irrespective of their job descriptions, engage “in choosing, providing, and communicating customer value” (Kotler and Keller, 2012, p. 645). The employees are seen as “internal suppliers” and “customers” (Roberts-Lombard, 2012), because their input to the organization affects its external reputation. An organization focuses on training and development, motivation, empowerment, performance appraisals, and rewarding of employees in order to ensure that the employees perform their duties well (Steyn et al, 2004).

Internal marketers use motivation theories to motivate employees. Whether it is David McClelland's need for affiliation, achievement, and power (McClelland, 1987) or equity theory (Miner, 2007, p. 95), they aim for the same output; improving employee productivity and efficiency by providing the right incentives. Another way of achieving this is through implementing motivational leadership styles, such as transformational leadership, where the leader "engages with others and creates a connection that raises level of motivation and morality in both the leader and the follower" (Northouse, 2010, p. 172). This style has been proven to have a positive relationship with performance (Dvir et al, 2002). These theories have the tendency to improve Genesis Inc.'s employee productivity.

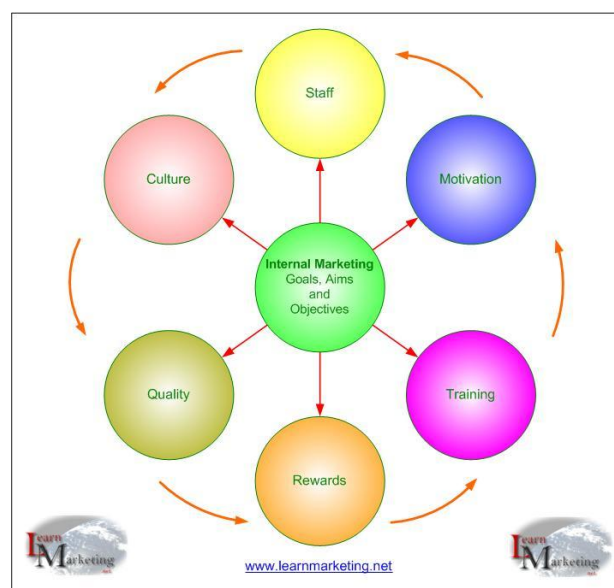


Figure 3.2 - Internal marketing (<http://www.learnmarketing.net/internalmarketing.htm>)

3.2.2 Integrated Marketing

Kotler and Keller say that integrated marketing is a concept that requires all marketing activities that "create, communicate, and deliver value for customers" to be performed with all the others in mind (2012, p. 42). It follows the systems thinking paradigm of "the whole is greater than the sum of its parts". Most importantly, this is done through integrated marketing communication (IMC) strategies that complement each other. IMC ensures that "brand positioning, personality, and messages are delivered synergistically across every element of communication and are delivered from a single consistent strategy" (Smith et al, 1999, p. 166). Integrated marketing brings together advertising, personal selling, sales promotion, public relations, and direct marketing amongst others, to create a marketing

communications mix (Kotler et al, 2007, p. 540). It also brings together internal marketing, performance marketing, and relationship marketing strategies as regards Genesis Inc.

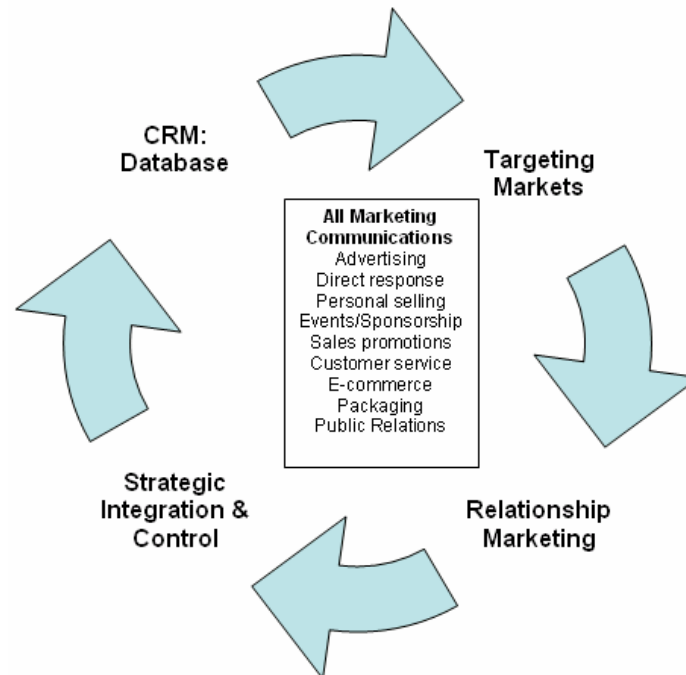


Figure 3.3 - Integrated Marketing Communications (Google images)

3.2.3 Performance Marketing

Organizations now recognize that both financial and nonfinancial returns from marketing programs have a very big effect on the organization and society. Sales revenue is not the only scorecard used to determine customer gain and loss rates, customer satisfaction, and product quality. In addition to the sales revenue, ethical, legal, environmental, and company branding are used in a more balanced scorecard (Kotler and Keller, 2012, p. 44). Organizations nowadays have social responsibilities, which they address through Corporate Social Responsibility (CSR) schemes that ensure an ethical culture, and respect to its societal environment. They also partake in philanthropic duties, all of which eventually broaden its “mindshare” in the market. These activities also help in improving the brand, which identifies the organization and differentiates it from the competition (Lake, nd).

Many theories are used within this segment. Among them is Ansoff’s growth matrix, which represent product/service strategy in its four segments (Market penetration, Product/Service development, Diversification, and Market development) (Lancaster et al, 2002, p. 214). Another tool is SWOT analysis which is used to analyze the strengths, weaknesses, opportunities, and threats of the organization (Lancaster et al, 2002, p. 374).

	Existing Products	New Products
Existing Market	Market Penetration	Product Development
New Market	Market Development	Diversification

Figure 3.4 - Ansoff's growth matrix (Google images)

Porter's five forces is a market based approach to studying the market. It "simplifies micro-economic theory into just five major influences ... [that] predict the long-run rate of returns in a particular industry" (Grundy, 2006). Porter stipulated that organisations need to study the market in terms of buyer power, supplier power, threat of new entrants, substitutes, and competitive rivalry (Grundy, 2006).

The Five Forces That Shape Industry Competition

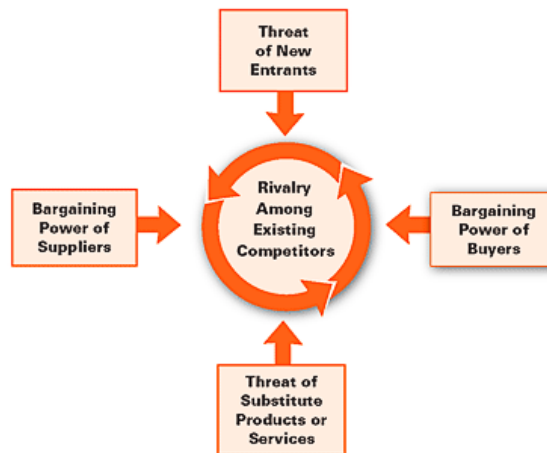


Figure 3.5 - Porter's 5 forces (Google images)

Thompson, Strickland and Gamble (2010, p. 312) define corporate social responsibility as "a company's duty to operate in an honorable manner, to provide good working conditions for its employees, to be a good steward of the environment, and actively work to better the quality of life in the local communities where it operates and a society at large". MTN, a major telecommunications company in Africa and the Middle East, operate several CSR schemes. Through the MTN Foundation, MTN Nigeria "strives to improve the quality of life

in the areas of economic empowerment, education and health on a sustainable basis in such a way as to impact positively on the MTN brand.” (About MTN Foundation, 2010).



Figure 3.6 - Porter's value chain (Google images)

In addition, an organization needs to utilize a pricing strategy that offers value to the customer. A customer that believes he/she's getting a quality product/service at a deserving price will be retained. Product life cycle, the product line, and interrelationship of products need to be considered when choosing the appropriate strategy. Pricing decisions should also be proactive, flexible, and have a high-risk tolerance (Lancaster et al, 2002, pp. 240-242). These techniques will basically provide an understanding of the market and of Genesis Inc. itself, with a view of determining what to improve or shed in order to improve the company's stance in the market.

3.2.4 Relationship Marketing

Organizations cannot survive in isolation. They interact with people and organizations directly or indirectly, hence the need for a good relationship between them. Relationship marketing “aims to build mutually satisfying long-term relationships with key constituents in order to earn and retain their business...including customers, employees, marketing partners, and members of the financial community”, with the end result being a “marketing network” (Kotler and Keller, 2012, p. 42).

Customer: The products/services of an organization end up with the customer; therefore it needs to understand the needs, wants, and requirements of the customer. It needs to keep

the customer loyal by fostering a good relationship with them, including the customer buying behaviour (Webster-Wind model, Sheth model) (Lancaster et al, 2002, p. 90-91). Customer Relationship Management (CRM) is “a strategy to learn more about customers' needs and behaviours in order to develop stronger relationships with them” (Customer relationship management). CRM is multidimensional, and is composed of customer focus, CRM organization, knowledge management, and technology-based CRM (Sin et al, 2005). It provides personalised marketing, customer empowerment, and customer retention (Kotler and Keller, 2012, pp. 157-61). Retailers like Tesco and Sainsbury's use loyalty schemes to understand customer purchase habits and provide customer retention by awarding redeemable loyalty points and personalized shopping (Case Study: Tesco, nd). Major CRM solution vendors include SAP, Microsoft, and Oracle. Organisations also partner with consumers in the development of their products/services, following Prahalad's theory of co-creation (Prahalad and Ramaswamy, 2004).

Partnerships and sponsorships: While keeping a good relationship with customers, organisations also need relationships with marketing partners. Strategic alliances are formed with other organisations by way of product, promotion, logistical, or pricing collaborations. These partnerships help complement organisational strengths and offset weaknesses in the market (Kotler and Keller, 2012, p. 73). They broaden the reach of an organisation into its target market, while increasing marketing budget and reducing costs (Pollack, nd). An example is channel partnerships, where an organisation forges a long term partnership with its distributors (Kotler and Keller, 2012, p. 450).

An effective marketing strategy is what an organisation needs to pull ahead of the competition. It must conform with the organisation's overall business strategy, its vision, and its mission. Marketing activities are geared toward achieving the right marketing mix. This originally entailed the 4P's; Price, Place, Promotion, and Product, but have now been extended to include People, Processes, Programmes, and Performance, to cater for the more complex and dynamic modern data market environment (Kotler and Keller, 2012, p. 47). The right combination of the P's will provide an organization with sustainable competitive advantage.

3.3 **Genesis Inc.**

Based on financial figures from 2008, 2009, and 2010, Genesis Inc. appears to be in a strong financial position, with high liquidity and equity. Financial data also show that 69% of its revenues come from licenses and maintenance fees in the North American and European markets, while 31% come from the emerging markets (assumed to be the BRICS countries). Financial data also show that revenue from long term lease licenses has been dropping over the past 3 years, with the effect cushioned by the rise in revenues from maintenance costs. As such, Shadow Mgt. recommended a market penetration strategy through which Genesis Inc. would strengthen its market position and improve revenues from the emerging BRICS countries. By so doing, new and existing licenses will be sold that will increase the company's revenue stream. There will also be an increase in maintenance revenue. Simultaneously, Genesis Inc. will improve its revenue stream from its current largest revenue contributors in North America and Europe. Strengthening the company's position in the BRICS economies will also dampen the effect of seasonality that Genesis Inc. experiences. Details of the business strategy are located in the overall business strategy section of this document.

In accordance with the overall business strategy, marketing activities need to be conducted to target the emerging markets of the BRICS nations. In order to accommodate this, Shadow Mgt. recommends an increase in Genesis Inc.'s overall marketing and sales staff from 430 to 596. This is reflected in the 20% total staff increase suggested by the HR and Finance departments, 50% of which will belong to Marketing and Sales. Majority of them, approximately 101, will be based in the BRICS markets. The main aim of this staff increase is to increase the number of lease and perpetual licenses, by tying new and existing customers to long term contracts.

The BRICS economies provide a profitable market, at least for the foreseeable future. They are the fastest growing economies in the world, and are on the verge of toppling the established western markets (O'Neil, 2003). This economic growth will provide bigger opportunities of Genesis Inc., as its customers will benefit from the growth. Porter's 5 forces (P5F) technique is used to analyse the market:

- **Competitive rivalry:** Organisations in the BRICS economies already use simulation software from Genesis Inc.'s rivals. They include MATLAB from MathWorks, EMCAD, and ExtendSim. Genesis Inc. aims to take market share from these competitors and eventually become the market leader.
- **New entrants:** The barrier to entry in the simulation software industry is relatively high. A highly complicated skillset, along with deep industry connections, are needed. However, there are a number of new entrants into the software simulation industry.
- **Suppliers:** Genesis Inc.'s suppliers will continue to be its current suppliers. They have little control over Genesis Inc. due to the organisation's strong position, and the availability of many suppliers. They include Intel, AMD, and HP.
- **Buyers:** Shadow Mgt. has identified possible customers based in the BRICS economies. They include Embraer (the Brazilian aircraft manufacturing company), TATA Motors (the Indian automobile company), Tupolev and Sukhoi (the Russian aircraft manufacturers), and Foxconn (the Asian electronics manufacturing company). These are large organisations that are heavily dependent on simulation software in the development processes of their respective products.
- **Substitutes:** Using simulation software greatly reduces cost of production and risk. In this era of using prototyping and other agile techniques in hardware and software development, there are no real substitutes for simulation software.

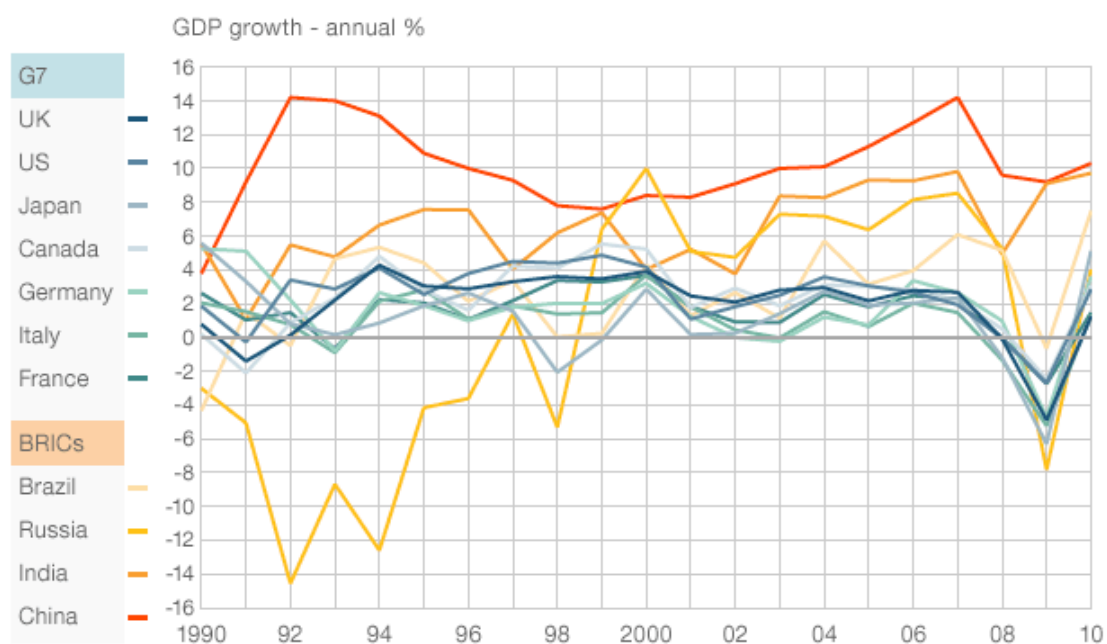
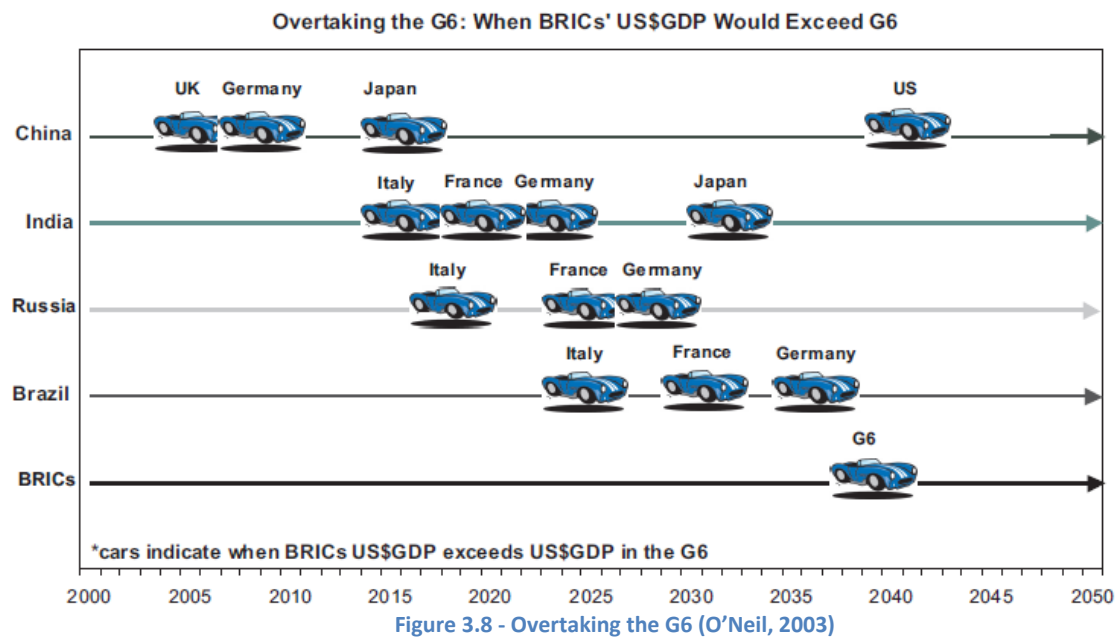


Figure 3.7 - BRIC GDP growth, BBC news



Shadow Mgt. recommends to Genesis Inc. to implement a holistic marketing approach to the organisation. Marketing encompasses every aspect of the organisation in this approach, as stated in the literature review. Therefore, it will span across all departments and have far reaching positive effects. This can be implemented as follows:

3.3.1 Internal Marketing

This is mainly the job of the Human Resource department. The department needs to find ways to increase the productivity of Genesis Inc.'s employees by implementing proven motivation techniques and by providing incentives. The staff should be treated as a corporate family, in which every person has a stake in the organisation. This will also create innovative tendencies in the employees that will be beneficial for research and development. For excellence in an extremely dynamic technology market, Shadow Mgt. recommends that Genesis Inc. to develop frequent updates to its current suite of products using agile techniques. Details of this are in the Human Resource and Research and Development sections of this document.

3.3.2 Relationship Marketing

Genesis Inc. should strive to keep positive relations with its customers. A more efficient customer support system and customer relationship system should be implemented. In addition, the company should form partnerships with existing technology companies in the market. Its partnerships with IBM, Oracle, Dassault, and other organisations should be strengthened, while creating new ones with large manufacturing organisations in the BRICS. In the Buyers section of the 5 forces analysis, potential customers of Genesis Inc. were identified. These are companies that will benefit from the increasing economic strength of the BRICS market, as there is an increasing number of international governments and organisations willing to do business with them. The Brazilian Embraer is the third largest aircraft manufacturer in the world, with a strong presence in the US, France, Portugal, and China (Gonzalez, 2012). Genesis Inc. will develop strategic partnership agreements with Embraer and other similar companies listed in the P5F, so as to become their preferred providers of simulation software.

Sponsorships: Several IT organisations have in the past sponsored technology expos, sports events, and other events in order to market itself to a broader spectrum of potential and existing customers. Currently, Cisco is a major sponsor of the London 2012 Olympic Games and will provide \$33 million to the games (Fraser, 2009). In the same vein, Shadow Mgt. recommends that Genesis Inc. becomes one of the sponsors for the 2014 Asia Games to be held in Incheon, South Korea. This will provide more exposure to the Asian market, including India and China. Genesis Inc. will also sponsor technology expositions in Brazil, Russia, and South Africa.

Fostering these relationships will provide a better understanding of the customer, as well as the market. As a result, customer needs will be known by the company as soon as they arise. This will enable a pulling effect, where the organisation provides services as needed by the customers and not as deemed appropriate by the company.

3.3.3 Route to Market

Cloud distribution: Currently, Genesis Inc. distributes its suite of simulation technologies through direct sales offices. The company has let known its desire to keep this sales model.

However, there are other routes to market that can be implemented. With emphasis on the BRICS nations, Genesis Inc. should opt for a more effective and cheaper alternative to having direct sales offices in each BRICS nation. The company's President and CEO famously said regarding Genesis Inc. that "we were cloud before cloud was cool". It has the needed infrastructure, including high speed computing and high storage volumes, to provide direct sales of its suite of simulation software to its customers. Genesis Inc. can implement one of the following:

- Host all its simulation software on the cloud for its customers to use online. This becomes a Software-as-a-Service approach, where Genesis Inc.'s licensed customers and partners can have access to the cloud environment to perform their tasks. This will reduce the risk of copyright infringement and patent related issues. In addition, Genesis Inc. will save costs from distribution of disks to its customers.
- Distribute soft copies of its suite from one centralised location, such that it saves money from distribution of disks. With today's high speed computing and data transfer, this is a feasible option.

Partnerships with IT services organisations: The first route to market option has the ability to limit the number of sales outlets Genesis Inc. needs in its target markets. In the same vein, the company can choose to partner with major IT services providers in the BRICS regions. Instead of building and staffing its own sales offices, Genesis Inc. can have agreements where IT services companies can provide sales and support of Genesis Inc.'s suite of software to local customers. Genesis Inc. will provide a percentage of the funds needed to train the staff of the partners, and launch an advertisement campaign. Revenue generated will then be split between the organisations.

3.4 **Conclusion**

Genesis Inc. is a company in a good financial position. However, so many risks threaten to derail the company's growth in the near future. It has become imperative to alter its long-term strategy in order to ensure survivability in an extremely dynamic global technology industry. Shadow Mgt.'s recommendations provide a basis for the company to expand and strengthen its reach across different economies. The presence of potential customers like Embraer and TATA Motors in rapidly growing economies and emerging world powers will be

beneficial to Genesis Inc. In addition to this expansion, Genesis Inc.'s route to market needs to be altered in order to reduce cost from owning/leasing and staffing sales and support offices by improving its cloud services to include online sales and support. These changes, coupled with the implementation of a holistic marketing approach covering the entire organisation, will take the company to new heights. Its aim of being at the pinnacle of simulation software development and delivery is certainly achievable.

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4 Human Resources

4.1 **Introduction**

This report gives recommendations to improve the performance and revenue of engineering simulation software developing company Genesis Inc.

Possible recommendations have been suggested in the following sections of Genesis Inc.

- ◆ Organisational structure
- ◆ Learning culture
- ◆ Hiring staff
- ◆ Training policies
- ◆ Quality assurance
- ◆ Health and safety
- ◆ Key Performance Indicators
- ◆ Intellectual Property Rights

4.2 Literature Review

4.2.1 Maslow's theory

To motivate employees, there are several theories that can be applied. In Maslow's theory biological factors are emphasized. Maslow structured a hierarchy of needs in five-stage model. Once the needs in the lower level are satisfied, an employee can be motivated to have the next need up in the hierarchy. Therefore a company should offer different motivation to employees to help them achieve the needs in turn. All the employees cannot be motivated in the same way. So the managers have to use different types of motivation for each employee (tutor2u, Accessed 26 April 2012).



Figure 4.1 - Maslow's hierarchy of needs chart

(Adapted from http://www.abraham-maslow.com/m_motivation/Hierarchy_of_Needs.asp
Accessed 26 April 2012)

According to Smith (2010), Maslow's theory and McClelland's motivational theory help the employers to find out why people make every effort to achieve a work-life balance. Work-life balance plays an important role in job quality, job satisfaction and performance of the job.

To adapt to a changing business environment, the industries have to give their employees training. Employees must be motivated to get their knowledge updated and help the organisation to adapt in the competitive market world. Wilson and Madsen (2008) discussed about Maslow's motivation to influence the learning of employees. They analysed that by collaboration (by achieving organisational goals, the employees can benefit from it), by giving rewards (such as good salary, job security), structuring training opportunities, career

growth and development, the employees can be motivated to learn new skills or update their knowledge.

Some researchers argue that self-actualisation is a process and cannot be ended (Kiel, 1999). According to Kiel (1999), the triangle model of Maslow should not be closed, but open.

<u>Maslow's level</u>	<u>What the organisation could do</u>
Physiological	Competitive salary
Safety	Safe working condition
Social	Work social events
Esteem	Feedback via appraisal, generally praising staff
Self-actualisation	Allocating more challenging and stimulating responsibilities

Figure 4.2 - Application of Maslow's theory within the workplace

(Adapted from <http://www.learnmanagement2.com/maslow.htm> Accessed 2 May 2012)

4.2.2 Frederick Herzberg's motivational theory

Herzberg's theory is known as two-factor theory. In this theory, motivational factors are divided into two categories. They are hygiene factors and motivation factors. "Herzberg's Two-Factor Theory develops a concept that satisfaction and dissatisfaction are not on a continuum with one increasing as the other diminishes, but are independent phenomena." (Wang and Zhang, 2009).

Hygiene factors include supervision, salary, physical working conditions and interpersonal relations. Motivation factors include responsibility, recognition and achievement (envision software, Accessed 27 April 2012). Hygiene factors are considered as dissatisfiers, which produce negative job attitudes, when they are not present. Motivation factors, when they are present, they act as satisfiers towards employees job attitudes (Ewen, 1964). He analysed some deficiencies in Herzberg's theory. According to Ewen (1964), salary can be a

satisfier as it may be the result of achievement and recognition, which are satisfiers. But in Herzberg's theory, salary is classified as dissatisfier.

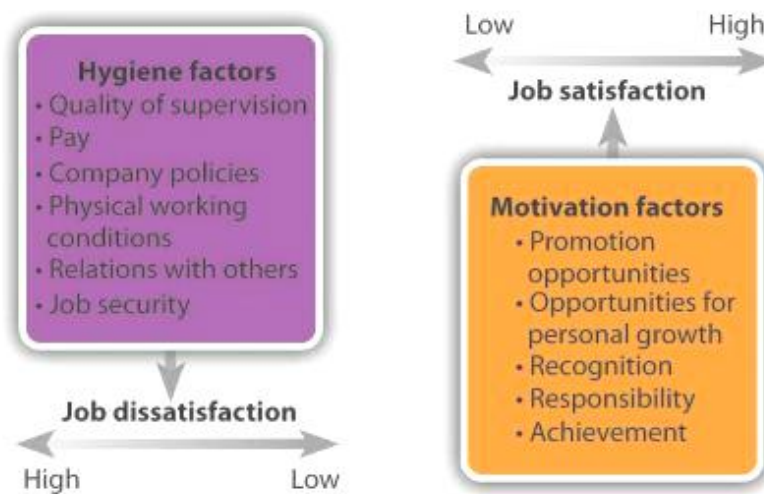


Figure 4.3 - Herzberg's Two-Factor Theory

(Adapted from <http://www.web-books.com/eLibrary/NC/B0/B66/057MB66.html> Accessed 7 May 2012)

4.2.3 Elton Mayo's theory

Elton Mayo's theory is referred to as Hawthorne effect. According to Elton Mayo, the problems in some of the industries arise where the work environment and the employees do not match. To reduce this problem, he suggested that by modifying the work environment human needs could be matched (Ananaba, 1981).

Elton Mayo did some experiments, such as, introducing breaks between work performances. From this, conclusions have been made. Motivating employees does not depend only on salary. It can be other factors including work condition, moral, psychological factors and social factors. Other important factor is need for the recognition (business studies motivation, Accessed 9 May 2012).

4.2.4 McGregor's X and Y theory

McGregor introduced two theories called X and Y theory regarding human behaviour at work. When Stewart (2010) analysing about McGregor's theory, workers who lack ambition and dislike changes or responsibilities are categorised under X theory. Workers who seek for responsibilities and active are the Y-types.

4.3 Application to Genesis Inc.

4.3.1 Organisational Structure

Genesis Inc. Company's strategy has to be modified to achieve more revenue by the Company. The main consideration is to target the existing market with new products and concentrate on emerging markets as well. To accomplish this, it has been suggested that the Company is to employ 20% more staff. Among this 20% staff, 50% is for sales force, 25% is for research and development and 25% is for support staff.

The structure of the Company has to be adapted according to this change or increase in staff, so that the commitment of the employees can be promoted.

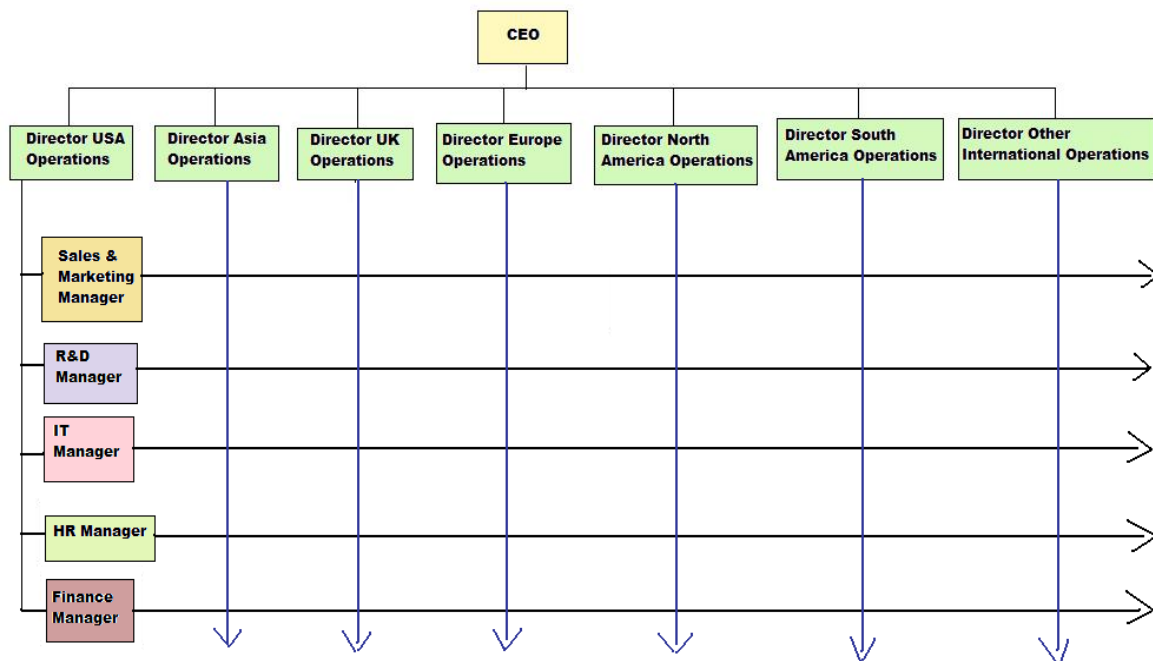


Figure 4.4 - Organisational Structure of Genesis Inc. (Matrix Structure)

Figure 4.4 shows global organisational structure of Genesis Inc. Each and every departmental manager reports to their branch director. All the directors in each country report to the Chief Executive Officer. The departmental managers in each country will be able to communicate with other corresponding managers in other branches. This structure will facilitate Genesis Inc. to achieve the revenue target they aimed for.

When the internal structure of the Genesis Inc. is considered, figure 4.5 illustrates the organisational structure of a particular branch. All the departmental managers report to their director.

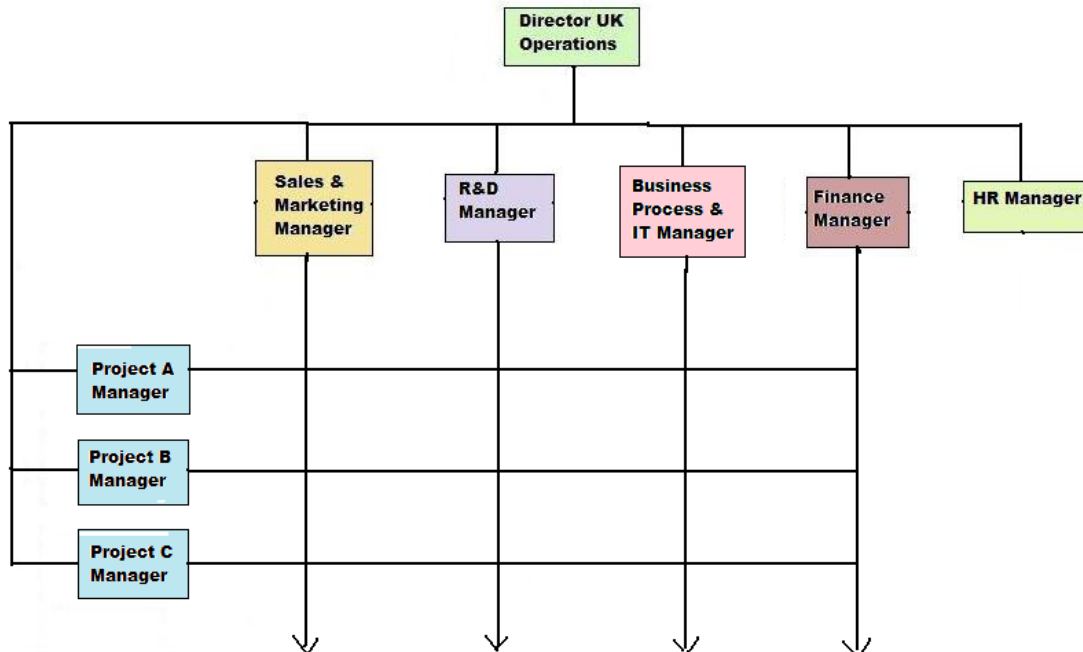


Figure 4.5 - Internal Organisation Structure of Genesis Inc.

The purpose of structuring the organisation is to offer a unique mixture of values to the company (Porter, 1996). Chandler (1962) discussed that the structure should follow strategy because when the strategy is changed, it might put demands on resources, which need a structural change.

Matrix structure is chosen for the formation of lines of reporting, because it is more efficient for the companies whose target is task focused. Its increased flexibility is useful for creating cross-functional teams. As Genesis Inc. is a task focused global company, matrix structure is suitable for this.

Matrix structure is highly recommended for the companies, which have high technology, and for the biomedical engineering firms (George and Jones, 1999 cited in Periasamy, et al., 2002, p.599).

According to Gordon (1996 cited in Periasamy, et al., 2002, p.599), matrix structure gets the strength from expertise of cross-functional team. This enables the projects to be managed by people with multiple disciplined skills.

4.3.1.1 Recommendation to Genesis

For Genesis Inc. the matrix structure is recommended for the following reasons:

- Genesis Inc. is a task-focused company
- It is a highly technological company
- It is project-based
- Genesis Inc. has employees with multiple skills.

4.3.2 Learning Culture

Learning is important for individuals, teams and organisations. Genesis Inc. has to accept the values, attitudes and practices, which support the learning process, and to become a learning organisation. Learning organisation is different from traditional organisation.

4.3.2.1 Recommendation to Genesis

By enabling employees of Genesis Inc. in the following ways, this company can achieve more than traditional companies.

- Enable the employees to adapt to change
- Grow through innovation
- More responsive to market place
- Generate employees with goal orientation

(Progress International, Accessed 11 May 2012).

4.3.3 Hiring Staff

Hiring staff is a process of different steps, as shown in figure 6. The current human resources should be analysed. Then the required workers to achieve the company's target have to be forecasted. When the demand is high for the products, more workers need to be hired.



Figure 4.6 - Illustration of forecasting staff hiring needs

(Adapted from <http://www.web-books.com/eLibrary/NC/B0/B66/055MB66.html> Accessed 9 May 2012)

4.3.3.1 Recommendation to Genesis

- As Genesis Inc. concentrating on emerging markets and introducing new products to existing markets, the demand for the products will be increased. So the current human resources might not be enough to achieve the company's target. Therefore it's been suggested to hire staffs.
- When recruiting employees for Genesis Inc. HR Manager needs to identify suitable candidates for the appropriate positions. This can be done by differentiating the applicants by their qualifications and then by interviewing them, suitable employees can be selected.

4.3.4 Training Policies

To survive in the competitive market world, providing training for the employees is one of the important tasks. By offering training to the employees, the organisation's and the individual's performance will be increased. Skills and knowledge of the employees are being maximised by giving them training. Thus, increase the competitive advantage. The success of the company depends upon the employees' skills and their ability to change and adapt to the business environment (Vemic, 2007). According to Vemic (2007), the only sustainable competitive advantage may be the ability to learn quicker than the company's competitors.

The employees can be motivated by offering them competitive salary. The employees can be assured of this, after completing the training or learning new skills. This scenario relates to the bottom level in Maslow's hierarchy triangle, as shown in figure 1. With good salary and/or bonus schemes their physiological needs, such as, food, shelter and water, may be satisfied. Once this level is fulfilled the workers can be motivated to other levels.

Not all the employees are motivated by same methods. The managers need to know in which hierarchical level each employee stands. By knowing this, the workers can be motivated by different approaches to get more potential results from the workers.

When training is provided to the employees, there is an opportunity for personal growth. So, when this motivation factor is present, it acts as a satisfier, as explained by Herzberg in his theory (figure 3).

4.3.4.1 Recommendation to Genesis

- Genesis Inc. has to implement a training programme to ensure that employees have gained necessary qualifications relating to their positions, and have experience and capability.
- Training programmes should be reviewed by the management of Genesis Inc regularly, according to the need of changing technologies, industry standards and market requirements.

4.3.5 Quality Assurance



Figure 4.7 . Illustration of Quality Assurance

(Adapted from <http://www.dreamstime.com/royalty-free-stock-images-royalty-free-stock-images-quality-assurance-image15811879> Accessed 8 May 2012)

Quality assurance is one of the key processes to be done during the life cycle of the production of simulation software. As shown in figure 4.7, during the process of creating prototype, designing, research, analysing, training, planning, delivery and support to the customers, quality should be assured.

According to Taylor (1987), quality assurance is composed of quality control and quality assessment. To implement the control and assessment of the quality of the product, suitable facilities, including well-maintained laboratories, should be provided to the employees. When the employees are not given proper working conditions, it can demotivate them, which will affect the company's target. That factor acts as a hygiene factor in Herzberg's motivational theory.

By providing hygiene factors in Herzberg's theory (figure 4.3) to the employees, job dissatisfaction can be reduced. To increase the job satisfaction, motivation factors can be offered to the employees.

4.3.5.1 Recommendation to Genesis

To implement the quality assurance, a plan should be prepared by the company Genesis Inc. During this process, several steps have to be taken.

- Find out the requirements
- Project team should be formed
- Procedures are planned
- Quality assurance plan should be written
- Plan is reviewed
- Get the approval and plan is distributed among the team members
- Implement the work
- If there are any changes,
 - ◆ Changes should be recorded in the Plan
 - ◆ Get re-approval
 - ◆ Distribute the updated document.

(EPA, 2002, Accessed 9 May 2012).

4.3.6 Health and Safety

To improve safety of the workers and the workplace, health and safety issue should be considered significantly. Information can be gathered from the workers' compensation insurance carrier (Waterman and Peteros, 1992). Help may be obtained from industrial hygienists or from insurance companies to determine the steps, which can be taken to improve the safety of the workers.

By giving importance to health and safety, the company can avoid higher payment of compensation to workers for the injuries happened at work. The reputation of the company in corporate responsibility is also maintained.

4.3.6.1 Recommendation to Genesis

- Health and safety has to be reviewed at board level.
- Steps have to be taken to ensure that Genesis Inc. receives competent health and safety advice.
- All staff from Genesis Inc. should be trained in health and safety responsibilities.
- When health and safety matters arise, these have to be consulted with health and safety representative, and if necessary, the concerns can be taken to the consideration of the board.
- A system should be prepared to assess the risks in Genesis Inc. Measures have to be taken to control and maintain these risks. Risk registers can be used for these purposes.
- Reports about injuries and work-related ill health should be taken into an account of the board.
- Actions to be taken to improve health and safety.

4.3.7 Key Performance Indicators (KPI)

Key performance indicators (KPIs) have to be identified and used effectively to increase the performance of the company. These indicators are helpful to measure the progress of the company. They are quantitative measurements used for evaluating organisational and managerial performance. To measure the performance of employees and company, financial and non-financial KPIs can be used. KPIs have to be associated with the company's strategy, employees' motivation and work environment (Hoque, 2009).

No	Key Result Areas	Key Performance Indicators	Weight of KPIs	Target	Actual	Score	Final Score
1	Recruitment	Average lead time to recruit employees					
		Performance score of new employees within 6 months					
2	Training & Development	Training Hours per employee / year					
		% difference in the rate of productivity before and after training					
3	Performance & Career Management	% of employees that fully execute their Individual Development Plan					
		% of employees that participate in career coaching program					
4	Employee Retention & Productivity	% of employees that leave the organisation in a given time period					
		Profit per employee					

Table 4.1 - Illustration of KPI Table

(Adapted from <http://www.slideshare.net/nusantara99/kpi-for-hr-manager-sample-of-kpis-for-hr>

Accessed 11 May 2012)

4.3.7.1 Recommendation to Genesis

- HR Manager of Genesis Inc. has to complete the key result areas, as shown in table 4.1.
- The employees' performance level is evaluated by measuring the KPIs.
- Each KPI's weight should be defined, according to the priority.
- Targets have to be defined depend upon future expectations.
- Score can be calculated as $(\text{Actual} / \text{Target}) \times 100$
- Final score is calculated as $(\text{Score} \times \text{Weight}) / 100$
- The total of final score can be used to determine the employee's salary increase, promotion and bonus.

4.3.8 Intellectual Property Rights (IPR)

Intellectual Property Rights are important to give protection to the company's innovation. For the technology development companies, like, Genesis Inc, getting patent for the new products are essential.

Patent is one of the Intellectual Property Rights, given by the Government to the patentee. This prevents the others from making, selling, importing or using these newly invented products, without paying licensing fees. Patent obtained in one country is not valid in other countries (CGPDTM, Accessed 11 May 2012).

4.3.8.1 Recommendation to Genesis

Genesis Inc. has to apply and get the patent for every new product invented, in each country.

4.4 Conclusion

The recommendations mentioned in the following sections of this report can be followed by Genesis Inc. to achieve better performance in the current competitive market world.

- ◆ Organisational structure
- ◆ Learning culture
- ◆ Hiring staff
- ◆ Training policies
- ◆ Quality assurance
- ◆ Health and safety
- ◆ Key Performance Indicators
- ◆ Intellectual Property Rights

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5 Research and Development

5.1 **Introduction**

In order to best advise the company, the research and development needs to critically increase the creative to increase the stock of knowledge, and to use this stock of knowledge to improve the company and device new product and market.

R & D can be funded either by public or private firms. Both publicly supported and privately funded R&D produces ideas and information about new materials or compound, about new ways of arranging or using them, or about new ways of designing new goods or services for the satisfaction of potential wants of consumers and producers. Griliches (1992)

Research and development is all about the innovation management of the company. A combination of past and present research is used to determine factors crucial to successful innovation (Quinn 1985). The factors can range from the effective technological innovation to the expansion of the capabilities of the company's flagship products with its broad portfolio of simulation software, evolution of its genesis workbench platform and on-going integration.

According to (Cohen et al., 1990), most innovation result from borrowing rather than invention. This observation was also supported by other researches such as (Mueller 1962; and Hamberg 1963) among others. So the ability of a company to exploit external knowledge is a critical component when it comes to innovative capabilities. (Cohen et al., 1990) argued that "the ability to evaluate and utilize outside knowledge is largely a function of the level of prior related knowledge." In this case the prior related knowledge may be the most recent scientific development, sometimes even technological development in the given field.

Mowery (1983), believes that companies that conduct their own research and development are better equipped to use external available information. This means that the company that has its own R & D which is directly involved in manufacturing is better equipped to recognize and exploit new information relevant to a particular product market. Other

researchers like Resenberg (1982) believed that a company can recognize and exploit new information which may be relevant to the particular product market if its R & D is directly involved in manufacturing.

5.2 **Literature Review**

The conception of innovation has change or rather evolved over the past few years. In the past, innovation was considered as a discrete event which results from knowledge developed by isolated inventors and isolated researchers. These days, innovation is considered to be as a result of a process which success rests upon the interactions and exchanges of knowledge involving a large diversity of actors in situations of interdependence. This evolution in conception of innovation has generated some consequences, one of which is that innovation is no longer conceived as a discrete event only involving the development of technical solution, but as a process also involving social interaction. Another consequence is that innovation is no longer explained by sole combinations of intangible forms of capital, especially social capital (Landry et al., 2002).

Now we will try to review these points in brief, first by reviewing the changes that have occurred regarding the understanding of the concept of innovation. Then review the major theoretical frameworks, and then distinguish some theories like the engineering theories from the social organizational theories of knowledge based innovation.

5.2.1 **How It Went From Discrete Event to Process Conception**

Knowledge based innovation is no longer conceived as a discrete event. It is considered as a process, more specifically a problem solving process (Dosi, 1982). This process occurs primarily within firms. It is viewed as an interactive process which involves relationship between firms with different actors of their environment (Kline & Rosenberg, 1986). This relationship may be either formal or informal. Pater & Pavitt (1994) claimed that the process may involve the exchange of codified knowledge. Pater & Pavitt (1994) also wrote that the exchange of codified knowledge may be essential but insufficient.

(Landry et al., 2002) wrote that “the emergence of this new conception of innovation has considerably renewed the theories of innovation”. This theoretical evolution can be

characterized by the increasing importance of social ingredients into the explanations of innovation.

5.2.2 From Engineering to Social Theories of Innovation

Social ingredients are progressively included into the theory of knowledge based innovation. This is well exemplified by reviewing five successive theories of knowledge based innovation that have been deemed to be important by the researchers of innovation: knowledge based innovation derived from science, knowledge based innovation derived from market needs, knowledge based innovation derived from linkages between actors in markets, knowledge based innovation derived from technological networks, knowledge based innovation derived from social networks. (Landry et al., 2002)

5.2.3 The Engineering Theories of Innovation

This theory is the innovation opportunities which are the opportunities to improve the products or the manufacturing processes that are found in the uptake of research results. In this theory, basic research and industrial R&D are the sources of new or improved products and processes. (Landry et al., 2002) explained that the production and uptake of research follow a linear sequence from the research results to the definition of a product and specifications of production, and the application of technology to make a product that conforms to the specifications defined by research that has resulted into patents and scientific publications. Bush (1945) wrote that “In this theory, production is a solution to an engineering problem” such as Genesis. This theory believes that innovation is solely explained by the combination of tangible forms of capital only (technological, physical, manpower and financial forms of capital).

5.2.4 Application to Case Study

This theory basically states that basic research and industrial R&D are the sources of new or improved products and processes. This theory can be applied directly to Genesis, because Genesis is a company that mainly produces engineering simulation software and licenses. Since Genesis is basically an engineering company. As R&D, we are supposed to be the source of new or improved products and processes to bring or maintain competitive

advantage to the Genesis. But the Company makes significant investments in research and development and emphasizes accelerated new integrated product releases. In the 2008, 2009 and 2010, about 15% of its revenue was allocated to the R & D. The strategy which the company uses when it comes to product development centres on on-going development and innovation of new technologies to increase productivity. So after looking at all this, we can conclude by saying that the company already uses the theory engineering theory of innovation, and it already has a competitive advantage. So all we need to do now is maintain this competitive advantage.

5.2.5 The Market Pull Theories of Innovation

The Market pull theories of innovation were generated because in the 1960s' and 1970s', the alternative view supporting that the sources of ideas for solutions should originate from the market. This is because of the limits of the engineering solutions generated during that time. This theory still gives a central place to research as a source of knowledge to develop or improve products and processes. Even do they represent the first insertion of organizational factors in their explanation, (Myers and Marquis, 1969) believed that "the technical feasibility was still considered as a necessary condition of innovation, but no longer a sufficient condition of successful innovations". But to ensure a successful development of innovation, the organizational feasibility has to be taken into account. In these theories, innovation is explained by combinations of tangible forms of capital and one intangible factor (data about markets).

5.2.6 Application to Case Study

This theory believes the alternative view supporting that the sources of ideas for solutions should originate from the market. The theories also give R&D as a source of knowledge to development or improve products and processes. So if we are to apply these theories to our company (Genesis), what we need to do is as R & D is to generate solutions from the market. Hence, we need to make sure if the market is good enough to sustain the company's competitive advantage. But the theories explained innovation by combinations of tangible forms of capital and one intangible factor (data about market). So basically for Genesis to sustain or maintain competitive advantage, it needs to combine its tangible

capital (Physical, financial and so on) with data about market. This theory will be very good for Genesis if it wants to go into a new market, because it will help them know which market to go into and which one not to go into.

5.2.7 The Chain Link Theories of Innovation

You may have noticed that the linkages between knowledge and markets are not as automatic and as immediate as assumed in the engineering and market pull theories of innovation, new theories have emerged in two phases. Mowery and Rosenberg (1978) suggested that scholars should pay more attention to the linkages existing between research and the market via engineering, production, technology development, marketing and sales. After some years, some scholars such as (Franke et al., 1988) suggested that the stress should be laid on the information generated through the linkages existing between the firm and its customers and suppliers. In this theory, innovation is explained by combinations of tangible forms of capital in conjunction with one intangible form of capital (data about customers and suppliers that are organized to become information for innovators).

5.2.7.1 Application to Case Study

In this theory, innovation is explained by combinations of tangible forms of capital in conjunction with one intangible form of capital (data about customers and suppliers that are organized to become information for innovators). So if we are to apply this theory to Genesis, we need consider the data about customers and suppliers. According to my understanding of this theory, if Genesis wants to sustain or maintain competitive advantage using this theory, it will need to gather data about its potential clients and even its current clients and that of its supplier, even do these theories only talks about the linkage between the clients, suppliers, and so on. It will need to put its clients and suppliers into consideration. This is because if they are to go into a market for instance, they should consider how it will affect its suppliers and may be its clients. So Genesis will have to put into consideration the linkage between clients and suppliers to the production which will help in sustaining or maintaining competitive advantage.

5.2.8 The Technological Network Theories of Innovation

Around the early 1990s, a new group of scholar developed the technology networks theories of innovation under the label “systems of innovation” (Lundvall, 2002; Edquist, 2001). The scholars and those who support the theories assumed that innovative firms are linked to a highly diversified set of agents through networks of collaboration and exchange of information. This theory stresses the importance of the external sources of information of a firm (clients, suppliers, consultants, etc.). It believes that for a firm to have an uptake of information there have to be more sustained and intense interactions between the firm and external sources of information. In other words, the development and improvement of products and processes must meet simultaneously criteria of technical feasibility, market feasibility and network feasibility (Landry et al., 2002). In this theory, the exchange of information is discussed in terms of collaboration, network, and partnership in laying the stress on the importance of technological networks.

With the technological networks theories, innovation is explained by combinations of tangible forms of capital in conjunction with one intangible form of capital (technological networks as tools to acquire and absorb data transformed into information). (Landry et al., 2002)

5.2.9 Application to Case Study

In this theory, innovation is explained by combinations of tangible forms of capital in conjunction with one intangible form of capital (technological networks as tools to acquire and absorb data transformed into information).

If we are to apply this theory to Genesis, external sources of information such as consultants will have to come in. this is because for network collaboration and exchange of information to take place, we need someone or the something that can link the company to a highly diversified sets of agents. For example, if Genesis wants to expand its market and sustain or maintain competitive advantage, it will need a network where it can get and exchange information that will help them going forward. This information exchange will be done by the R & D throw some external sources. The exchange of information will be discussed in

terms of collaboration, network, and partnership in laying the stress on the importance of technological networks.

5.2.10 The social network theories of innovation

The social network theories of innovation are basically based on a new insight and two old ideas. The insight is that knowledge plays a very important role in fostering innovation. This is because knowledge is playing an importance role as a production factor and as a determinant of innovation. This can be explained by the continuous expansion of the amount of technical knowledge accumulating over time, and by the use of communication technologies that makes the knowledge available very rapidly on a worldwide scale such as the internet (Arundel & Kabla, 1998). The old ideas are that innovation is determined by research and by disorderly interaction processes between firms and other actors.

Lengrand and Chatrie (1999) stated that “Productivity is no longer seen as an additional productivity of operations but rather as a systemic productivity of relations where a firm’s competitiveness depends on the productivity of its interfaces or interactions”.

These new criteria require a new organizational and functional paradigm where the performance of firms depends on the density and pertinence of relations and cooperation between the actors of the productive system through collaborative networks and clustering. Thus, knowledge networks represent a further step, where capacities and rights to access a value located outside the company are developed. Lengrand and Chatrie (1999)

In this theory, knowledge is embodied in networks and communities, and social capital becomes an essential ingredient to understand innovation.

In the social network theories, innovation results from combinations of tangible forms of capital in conjunction with intangible forms of capital characterized by disorderly and sustained interactions occurring between firms and diversified sets of actors. These interactions are holistic, influenced by history, social values, institutions, and interdependence. (Landry et al., 2002)

5.2.10.1 Application to Case Study

Basically what this theory is talking about is that for a company such as Genesis to be able to sustain or maintain its competitive advantage, it needs to add the new insight into its production to sustain innovation. So since information is becoming very important and rapidly growing, Genesis needs to be able to keep up and it needs to stop seeing productivity as an additional productivity of operations but rather as a systemic productivity of relations where a firm's competitiveness depends on the productivity of its interfaces or interactions as stated by Lengrand and Chatric (1999). They will need a new organizational and functional paradigm where their performance will depend on the density and pertinence of relations and cooperation between the actors of the productive system through collaborative networks and clustering.

5.2.11 Joseph Schumpeter's theory of innovation

Schumpeter believes that innovations should include the introduction of a new good, the introduction of a new method of production, the opening of a new market, the conquest of a new source of supply of raw materials or half-manufactured goods, and the carrying out of the new organization of any industry (such as the creation or breakup of monopoly). O'Hara (1994)

Schumpeter (1911) stated that "Development is the process of discontinuous change and disequilibrium brought about by innovation: the carrying out of new combinations". In the Schumpeter's theory, innovation results from the combination of tangible form of capital and the intangible form of capital.

5.2.11.1 Application to Case Study

This theory was written by Joseph Schumpeter (an economist). He talked about innovation in general. This is because he talked about introduction of new products, new methods of production, opening new market and so on. He believes innovation results from the combination of tangible and intangible capitals. So how will this be applied to Genesis? It can be applied not only to Genesis, but to any and every firms or companies that are available in a certain way. Genesis according to the case study needs to sustain competitive advantage. This theory can be characterized as the combination two or more theories. If so,

Genesis will benefit hugely from this theory. The R &D will then have the opportunity to choose the theories that when put together will take Genesis forward. This is how I understood the theory because it talks about innovation in a general way.

5.2.12 Conclusion

Here we need to answer the questions will the company achieve and sustain competitive advantage after looking at all the theories above? Will the R&D be able to come up with the solution that will bring competitive advantage to the Genesis? Does Genesis need to go into a new market? Do they need to start producing new good or different good?

The R&D of Shadow Management believes that Genesis already has competitive advantage because of the revenue it generated from 2008 to 2010. The numbers are displaced below in table 5.1, and further described using bar chart, which shows that Genesis has a lot of money and is getting lots of revenue all across the world.

	2010	2009	2008
United States	\$188,649	\$172,275	\$151,688
Japan	\$95,498	\$75,207	\$66,960
Germany	\$60,875	\$55,652	\$68,390
Canada	\$9,875	\$8,068	\$8,033
Other European	\$138,157	\$134,869	\$127,246
Other International	\$87,658	\$70,814	\$56,022
Total Revenue	\$580,236	\$516,885	\$478,339

Table 5.1 – Showing the revenue by geographic area

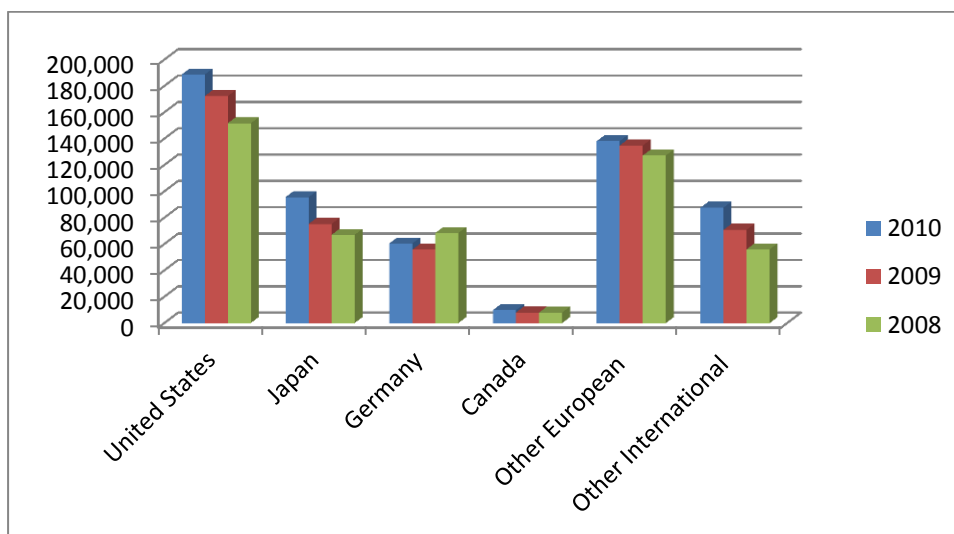


Figure 5.1 – Bar Chart showing the revenue by geographic area

Table 5.2 shows the property and equipment across the world and bar charts are used to further elaborate. With this, you can see that Genesis has competitive advantage. But the R&D needs to find a way to sustain the competitive advantage.

	2010	2009
United States	\$25,156	\$24,565
India	\$2,846	\$2,882
Japan	\$1,493	\$1,814
United Kingdom	\$2,316	\$1,708
Germany	\$1,709	\$1,648
Canada	\$1,014	\$577
Other European	\$1,959	\$1,631
Other International	\$428	\$306
Total property and equipment	\$36,921	\$35,131

Table 5.2 - Showing the property and equipment by geographic area

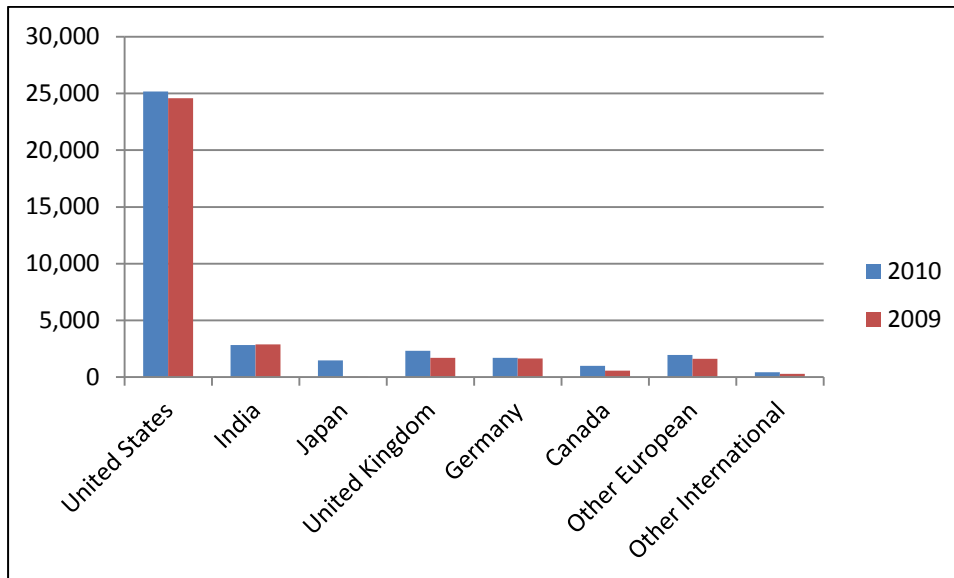


Figure 5.2 – Bar Chart showing the property and equipment by geographic area

Genesis makes significant investments in research and development and emphasizes accelerated new integrated product releases. This shows that Genesis is determined to maintain the competitive advantage, because it allocates approximately 15% of its revenue to R&D in 2008, 2009 and 2010 respectively. This goes in accordance with the engineering theories of innovation, so as stated earlier, Genesis already follows this theory.

Genesis doesn't need to go into new market. It only needs to expand in some of the markets where they make like money like Asia and other third world countries. To achieve that they will need to use the market pull theories of innovation if they want to be successful.

Shadow Management will not recommend that Genesis should go into new products. This is because Genesis has many products which it produces for now and it needs to focus on them and find ways to improve them so that it can adapt to the rapidly changing technology.

Finally, shadow Management will recommend that Genesis should consider all the theories that were explained above, because it will help them to sustain competitive advantage. This is because all the theories above talked about different ways to sustain competitive advantage.

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6 Business Systems, IT and Quality Assurance

6.1 **Introduction**

This section of the report will cover theories regarding Business Process Improvement (BPI), also known as Business Process Optimization with consideration of IT capabilities. Quality Assurance is another important area, which to a certain degree, intersects with BPI and therefore will be included within the literature review. Latter will help to define the most suitable strategy to be undertaken by Genesis Inc. Theoretical base is discussed in the literature review, whereas the analysis of practical use is described in “Application to case study” part.

6.2 **Literature Review**

6.2.1 **Business Processes Improvement and QA**

Nowadays business processes play crucial role in enterprises, as they determine the firm competitiveness. What is a business process? Davenport and Short (1990) define business process as “a set of logically related tasks performed to achieve a defined business outcome.”

At the beginning of the twentieth century, Frederick Taylor revolutionized the way the companies functioned. According to Davenport and Short (1990), Taylor suggested decomposition of large tasks within business processes into small, as well as introduced job measurement. Unfortunately, traditional approaches for keeping the business success do not work in countries with developed economy today. Mertins et al. cited by Lee and Chuah (2001) state in their work: “high level of customer orientation which results in fast and reliable delivery of high quality products or product-innovation no longer ensures competitive advantage”. The companies who want to maintain their profits and market share should focus on core processes and “pull” all supporting processes to them (Hindle, 1997). Alternatively they must improve their existing processes on a continual basis to ensure their effectiveness. This is particularly relevant to Genesis Inc., as they operate in highly competitive environment. There are various approaches, theories and methodologies

for optimising processes within a company. Business Process Improvement (BPI) is among them.

The concept of BPI, claims Nickols (1998), was coined within IBM Corporation and first documented by Harrington, former employee, in 1991. With help of this method, a company can increase their performance, cut the cost of end product by astonishing 90% and contemporaneously improve its quality by up to 60%, claims Harrington (1991). The core outcome of wise BPI appliance is utilization of the use of various resources, including “facilities, people, equipment, time and capital” (Zairi, cited by Lee and Chuah, 2001). BPI incorporates activities like Continuous Process Improvement (CPI), Business Process Reengineering (BPR) and Business Process Benchmarking (BPB). It is important, that execution of BPI takes form of a project, and therefore the project management principles apply to it.

Six Sigma is an effective method used in BPI, particularly in the field of Quality Assurance. It was invented by Motorola in 1986 (Ayad, 2010) for minimizing the number of defects in production to 3.4 per 1000000 opportunities. Its today’s application is much broader, than the original intent as Six Sigma is practiced in various industries. It helps to reduce the cost of production and improve customer satisfaction by finding out the root problems that cause major defects. Motorola themselves claim “\$17 billion in savings as a result of Six-Sigma efforts over a period of 18 years”(Ayad, 2010). Six Sigma method can take the form of Five Whys strategy, which in simple terms is the discovery of faults in a process through asking questions ““Why?” and “What caused this problem?”” (Ayad, 2010). Lean Six Sigma is a combination of both Six Sigma (reduces the number of defects) and Lean (improves the speed of process) methods. Leans Six Sigma approach is portrayed as “foundation to innovation” (Byrne, Lubowe and Blitz, 2007). Moreover, the approach is particularly effective for creating an innovative climate in the practitioner company.

Six Sigma approach tends to be very reasonable for BPI, however, it has some flaws, especially in terms of Five Whys strategy. As Ayad (2010) writes in his paper, the answers to the questions “Why?” and “What cause this problem?” can be ambiguous, not full and false, due to the human’s nature, because employees often tell what management wants to hear and not the genuine cause of a problem. In addition, employees of different departments

view these questions from their narrow professional perspective, which does not give the full understanding of a problem.

Lee and Chuah (2001) described a new approach, framework for BPI called SUPER. It consists of five phases that lead to process improvement:

S – Select the Process

U – Understand the Process

P – Process with the Process

E – Execute the Process Improvement

R – Review the Improved Process

The main advantages of SUPER framework are simplicity and the fact that it covers all three activities of BPI: CPI, BPR and BPB. It is easy to follow and it has shown its usefulness for enterprises in Hong Kong.

Plan-Do-Check-Act (PDCA) is another technique used for process improvement to consider. The roots of it go back as far as 400 years, and today's version was shaped by Deming (Moem and Norman, 2006). It is particularly relevant to Constant Process Improvement (CPI), where continuous revision is in place. The concept is very similar to SUPER approach; however, it is more cyclic (Figure 6.1).



Figure 6.1 - PDCA approach (Moem and Norman, 2006)

The combination of both SUPER and PDCA approaches potentially is beneficial, as SUPER focuses on more general picture, whereas PDCA on a particular process. PDCA can be also

applied in QA department of Genesis Inc. in order to deliver the best quality software product.

6.2.2 Information Technology and Business Processes

IT has a great influence on business and its processes. According to Jain, Chandrasekaran and Gunasekaran (2010), BPR (BPI activity) focuses on rethinking and redesigning of the way the processes within organisations are carried out, and the emphasis in this approach is made on IT infrastructure. “Information technology should be viewed as more than an automating or mechanizing force: it can fundamentally reshape the way business is done”, state Holtzman (2011). Figure 6.2 illustrates the dependency of IT and BPR.

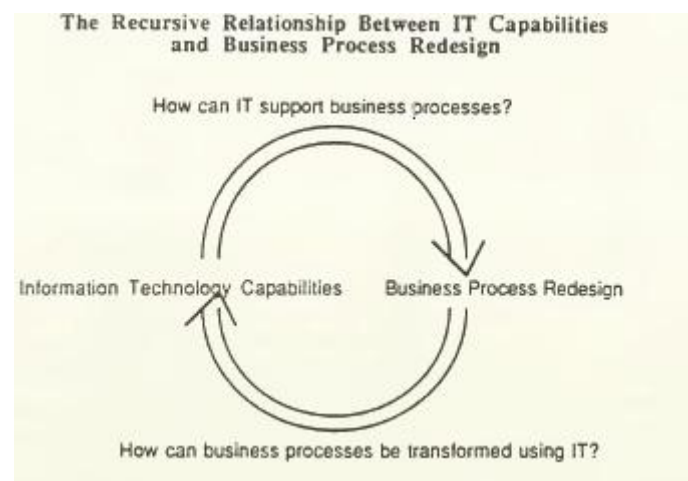


Figure 6.2 - IT and BPR (Davenport, 1990)

Hosseini (2005) supports the argument in his paper: “It has been proved that IT services directly effect on business processes performance and organization success”.

Later, Hosseini (2005) describes a set of steps for measuring IT-support of business process. Firstly, the process should be selected with priority given to main (core) processes as their performance is essential. Secondly, visualisation techniques such as flow charts or UML activity diagrams should be drawn with intention to reflect each step within the process in detail. Arlbjørn (2011) also agrees the importance of visual tools in BPI: “Visualization is closely linked to cognition, which is the process of thought to knowing”. Graphs, diagrams and similar tools can help to understand the problem or simplify it by abstraction. Business Process Model and Notation (BPMN) is one of the modeling languages that can be used for

BPI purposes. Modarres (2006) proposed using simulation tools for evaluating and redesigning business processes. According to the author, simulation had proven to be far more accurate than static modeling. There are several tools available for simulation, analysis and modeling business processes: Protos, ARIS, Arena and other (Jansen-Vullers and Netjes, 2006). Genesis Inc. have their own simulation tool “GENESIS Engineering Knowledge Manager™”, which can be utilised for the needs of BPI.

Nichols (2007) also underlines the positive effects of introducing Agile Business Process Automation into the high-technological and innovative companies like Genesis Inc. It diminishes bureaucracy and adds flexibility into Software Development Process, at the same time maintaining extensibility to existing products. This could be vital for Genesis Inc. future growth and advantage over competitors. According to Agile manifesto, the principles “customer collaboration over contract negotiation” and “responding to change over following a plan” lead to a better quality product and improve customer satisfaction. As part of agile techniques, it is proposed to “use tools that automate the generation of documentation to reduce the resource utilisation” (Theunissen, et al, 2003). This can also reduce the cost of the end product, because fewer man-hours are required for this task and developer’s team can focus on other important issues.

All discussed theories and approaches regarding Business Process Improvement, Quality Assurance methods and IT will be analysed and considered as a part of the Genesis Inc. proposed development strategy further in this report under corresponding section.

6.3 **Application to case study**

Genesis Inc. can benefit from adopting techniques described in the literature review. Shadow Management strongly recommends the client establishing, organising and executing the Business Process Improvement project. SUPER framework for BPI, described earlier, does not require experts to be involved in the project or sufficient funding to be injected into this area. It can be mastered and followed by current management team. Genesis Inc. already has a product for simulating and visualisation of business processes called “Engineering Knowledge Manager™” (see p. 8 of case study), which can help in understanding the current problems and existing bottlenecks. It is recommended for Genesis Inc. to form a small group of employees, up to eight experts, from both software development and project management backgrounds, who would be in charge of BPI execution, trying to match business processes to overall company strategy. They would be working under agile paradigm.

Constant Process Improvement and Business Process Benchmarking should become fundamentals of company operation. This will result in better product quality and reduced production costs, which is important for maintaining competitiveness on the simulation tools market. Licence prices therefore can be lowered for attracting potential customers in developing countries, who struggle to pay the amounts proposed by Genesis at the moment. Thus, the customer base will grow, which fits the proposed business strategy.

Agile development can help achieving better statistics in user acceptance and adapting to the needs of customers in developing countries, where the requirements may differ from those known to Genesis Inc. from experience. Potentially, appliance of agile methodology will lead to reducing the number of bugs in the software, especially if pair programming technique is undertaken. The Genesis Inc. HR department has to support the process of going agile by revising motivation at work and other important aspects. Risk of product defects can be significantly lowered by applying PDCA for problem resolution in addition to Lean Six Sigma approach, which has proven to be effective by technology giants Motorola, IBM and others. When introducing a new feature to the existing software packages, the development team has to plan it. On this stage, required minimum of documentation must be produced, but it should not be considered as the main project artefact, unless the client

demands it. Because of growing income from software maintenance (p. 29 of case study), Genesis Inc. has to produce two versions of documentation: free version with minimal description and more advanced documentation that would come with support subscription. When making changes to the existing products, agile method called Test-Driven Development should be used as a part of Six-Sigma approach, meaning the software has to be tested throughout development. This will correspond to “Check” phase of PDCA cycle.

Agile methodology also simplifies the process of knowledge sharing by eliminating a vast amount of bureaucracy and unnecessary formality. When working on software projects, it is advised for Genesis Inc. to pair programmers of little experience (students who cooperate with the company or new employees) with senior developers who have relevant skills. This way dependence on key technical personnel will be diminished over a short period of time.

As regards company operations, the BPI techniques combined with effective IT infrastructure can help creating the streamlined supply chain. As the result of it, the shipment time will be reduced to 7-14 working days from 30 days currently (see p.12 of case study) in case of physical distribution and to immediate if purchase is made at online store.

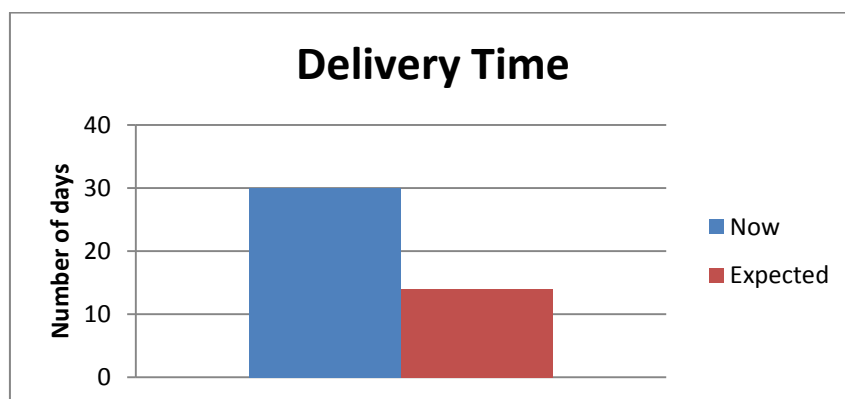


Figure 6.3 – Delivery Time: Now and Expected

Genesis Inc. should make use of cloud technologies for taking regular backups of servers containing vital information to lessen the effect of natural disaster occurrence. Zmanda Cloud Backup can be a preferred solution provider to the problem due to its reliability, security (up to 4096-bit key encryption, information is located on trustful Amazon servers) and affordability. Figure 6.4 shows the proposed solution of network architecture, which is

based on today's existing system, therefore no fundamental change will be required apart from installing special software provided by Cloud Service Provider.

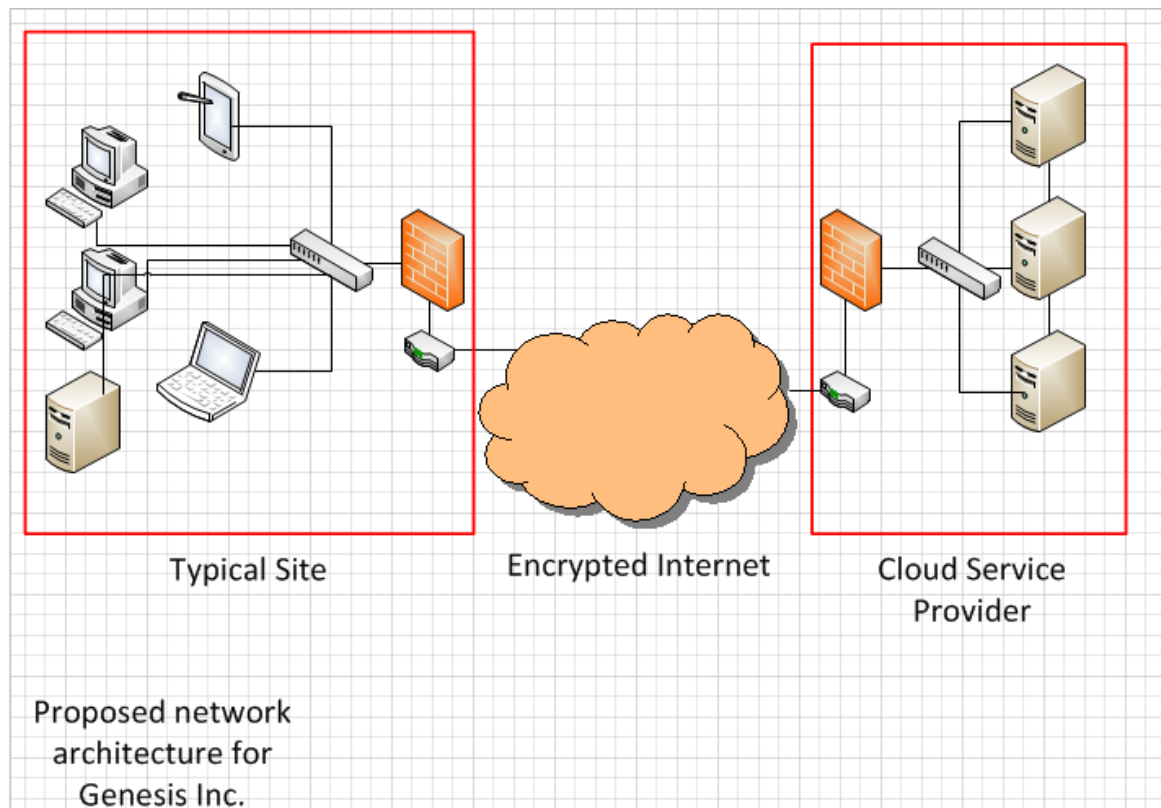


Figure 6.4 – Proposed Network Architecture for Genesis Inc.

6.4 Conclusion

Shadow Management recommends Genesis Inc. to focus on their Business Process Improvement, adopting Lean Six Sigma approach with support of SUPER framework and PDCA technique. A special team should be formed who will be in charge of BPI execution, including measuring support of business processes by IT infrastructure through business process benchmarking, redesign of existing processes with the aim of simplifying them and utilizing existing resources. In addition, the company should look towards changing their practices in software development and project management and adopting Agile practices, which will help to deliver better quality products, that are more customer-focused, in shorter time. Agile development will also tackle the problem of company's dependency on Senior Management and Key Technical Personnel by eliminating bureaucracy, helping in strengthening innovative corporate climate, simplifying information and knowledge sharing between experienced and new employees. Also, attention should be brought to Cloud Computing, which will ensure company's safety in case of natural disasters.

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7 Group Meetings



TECHNOLOGY ENTREPRENEURSHIP

PROJECT GROUP MEETING MINUTES

PROJECT TEAM: GROUP C

DATE: 8th March 2012

NAME	PRESENT/SIGNED	APOLOGIES	
Abubakar Garba	✓		
Oleksiy Pavlenko	✓		
Ankit Sofet		✓	
Anne Lesley	✓		
Richard Wilkinson (Chair)	✓		
AGENDA			
1. Introduction to Project			
2. Initial Action Setting			
3. Any Other Business			
BRIEF COMMENT/DISCUSSION & SUMMARISED ACTION POINTS		Action by	By when
The project was introduced to all present.		No action	N/A
All members introduced themselves.			
Initial discussion decided the group will take the coming week to read the project brief and case study documents, identify any questions or queries from the document and then reconvene at next meeting to decide upon course of action for the project.		All group members	Next meeting 15/03/2012
Meeting minutes to be passed on to Ankit Sofet, who has sent his apologies		Alex	09/03/2012
No further business highlighted.		No Action	N/A
Meeting Adjourned.			

TECHNOLOGY ENTREPRENEURSHIP**PROJECT GROUP MEETING MINUTES****PROJECT TEAM:** GROUP C**DATE:** 15th March 2012

NAME	PRESENT/SIGNED	APOLOGIES	
Abubakar Garba	✓		
Oleksiy Pavlenko	✓		
Ankit Sofet	✓		
Anne Lesley	✓		
Richard Wilkinson (Chair)	✓		
AGENDA			
1. Minutes from previous meeting (pinned to all agendum)			
2. Questions arising from Case Study and Brief			
3. Discussion on Roles			
4. Discussion on next steps in project			
5. Any other business			
BRIEF COMMENT/DISCUSSION & SUMMARISED ACTION POINTS		Action by	By when
Minutes from previous week's meeting read and agreed upon		No Action	N/A
<u>Questions from case study.</u> <ul style="list-style-type: none"> Discrepancies between case study and brief. Lack of Organisational Structure included within brief. Can we create our own templates for minutes and project report? All questions have been answered within lesson, and no further clarification is required. 		No Action	N/A
<u>Discussion on Roles.</u> RW suggests that group do not chose roles until after strategy has been decided upon. This is agreed upon without further discussion being requested. Conclusion: Roles will not be chosen until after the strategy has been decided upon.		No Action	N/A
<u>Discussion on next steps.</u> RW suggests that group spend the week before next meeting to think of individual strategies based upon the project brief, these can then be presented and discussed at length at next week's meeting, where a final strategy can be decided upon. Following this, individual roles can then be chosen. <i>This is agreed upon without further discussion being requested.</i>		All group	Next meeting 22/03/2012



<p><u>Any other business.</u> OP raises question about which templates the group are going to use. It is agreed to use RW template for minutes. It is agreed that OP will adapt template for business report.</p>	<p>RW to circulate template (minutes). OP to adapt template (report).</p>	<p>RW 16/03/2012 OP 22/03/2012</p>
<p><u>Further other business.</u> Chair to compile minutes and circulate to group. Chair for next week's meeting will change and rotate throughout the project's life cycle.</p>	<p>RW to circulate minutes</p>	<p>RW 16/03/2012</p>

TECHNOLOGY ENTREPRENEURSHIP**PROJECT GROUP MEETING MINUTES****PROJECT TEAM:** GROUP C**DATE:** 22nd March 2012

NAME	PRESENT/SIGNED	APOLOGIES	
Abubakar Garba	✓		
Oleksiy Pavlenko (Chair)	✓		
Ankit Sofet	✓		
Anne Lesley	✓		
Richard Wilkinson	✓		
Yahaya Bashir Shettima	✓ (New Participant)		
AGENDA			
1. Minutes from previous meeting (pinned to all agendum)			
2. Further discussion of the case study			
3. Report structure discussion			
4. Brainstorming in order to identify the preferred overall business strategy			
5. Roles assignation			
6. Any other business			
BRIEF COMMENT/DISCUSSION & SUMMARISED ACTION POINTS		Action by	By when
Minutes from previous week's meeting read and agreed upon. YS was introduced to the group and previous meetings' outcomes.		No Action	N/A
<u>Further discussion of the case study</u> 1. OP gives a quick overview of the PEST analysis conducted. 2. AS shares his findings regarding financial situation of Genesis Inc. 3. AS, RW and OP discuss the consultancy company name 4. AL asks the questions about the roles and responsibilities.		No Action	N/A
<u>Report structure discussion</u> RW suggests the general report structure. It is agreed upon without further discussion.		No Action	N/A
<u>Brainstorming in order to identify the preferred overall business strategy.</u> Initially the group splits into two camps. One party (AG and OP) recommend Genesis Inc. to be absorbed by other larger businesses because of uncertain future and other factors taken from PEST analysis. The other party (RW and AS) convince the rest keeping the company independent based on financial report investigation. RW reads out his ideas about new product lines,		All Group	Immediately

<p>market penetration based on Ansoff matrix. RW suggests starting selling software products online. The group discusses new application of Genesis software products in entertainment industry, mainly sports.</p> <p>AS shares his opinion about company's new route to market: increasing work force, narrowing the market to most important geographical regions; RW suggests working in partnership with other companies abroad. The group comes to conclusion about the overall strategy</p>		
<p><u>Roles assignation.</u> RW proposed choosing roles based on personal preferences and abilities. As the outcome</p> <ol style="list-style-type: none"> 1. OP is responsible for Business Processes & Operations 2. Human Resources are undertaken by AL 3. RW is in charge of Sales & Distribution Channels 4. AS is assigned as a Team Leader?? responsible for Business Strategy 5. Marketing is covered by YS 6. AG defines strategy for Research & Development department 	All Group	Immediately
<p><u>Any other business.</u> Chairman for the next week is appointed (AG)</p> <p>Minutes for this meeting to be completed.</p> <p>Agenda for the next week's meeting to be prepared</p>	<p>All Group</p> <p>OP</p> <p>AG</p>	<p>Immediately</p> <p>22/03/2012</p> <p>29/03/2012</p>

TECHNOLOGY ENTREPRENEURSHIP**PROJECT GROUP MEETING MINUTES****PROJECT TEAM:** GROUP C**DATE:** 29nd March 2012

NAME	PRESENT/SIGNED	APOLOGIES	
Abubakar Garba (Chair)	✓		
Oleksiy Pavlenko	✓		
Ankit Sofet		Apologies sent	
Anne Lesley		Apologies sent	
Richard Wilkinson	✓		
Yahaya Bashir Shettima	✓		
AGENDA			
1. Minutes from previous meeting (pinned to all agendum) (correction of the roles assigned: AG is marketing, YS is R&D)			
2. Further discussion of the case study			
3. Define objectives of Genesis Inc. (Strategy, market, products in R&D)			
4. Report structure discussion			
5. Roles assignation			
6. Any other business			
7. Schedule next meeting and assign chair			
BRIEF COMMENT/DISCUSSION & SUMMARISED ACTION POINTS		Action by	By when
Based on the discussion with Opkar, the role assignments were changed. <ul style="list-style-type: none"> • Richard: Team leader • Ankit: Finance • Abubakar: Marketing • Alex: Business systems/IT • Anne: HR • Yahaya: R&D 		No Action	N/A
It was agreed upon that all group members would write literature reviews related to their respective roles. These will be due on resumption week after the Easter break.		All Group	26/04/12
The name Shadow Management was chosen for our consultancy organisation, by flipping a coin. The choices were Shadow Management and AOARAY.		No Action	N/A

Next meeting scheduled for 26 April 2012. Alex agreed to compile all our individual work.	No Action	N/A
Final submission date of the assignment is 15 May 2012, and the presentation will be on the 17 th .		

Have a wonderful Easter vacation!!!

TECHNOLOGY ENTREPRENEURSHIP**PROJECT GROUP MEETING MINUTES****PROJECT TEAM:** GROUP C**DATE:** 26th April 2012

NAME	PRESENT/SIGNED	APOLOGIES	
Abubakar Garba	✓		
Ankit Sofet		Apologies sent	
Anne Lesly (Chair)	✓		
Oleksiy Pavlenko	✓		
Richard Wilkinson	✓		
Yahaya Bashir Shettima	✓		
AGENDA			
1. Minutes from previous meeting (pinned to all agendum)			
2. Discussion of Literature Reviews			
3. Questions about finances			
4. Discussion about theories			
5. Any other business			
6. Schedule next meeting			
7. Assign chairman for next meeting			
BRIEF COMMENT/DISCUSSION & SUMMARISED ACTION POINTS		Action by	By when
Minutes from previous week's meeting read and agreed upon		No Action	N/A
Each member's Literature Reviews were looked at and discussed. AS emailed his report to RW.		No Action	N/A
Based on the discussion and questions, agreed to complete the Literature Review, and ready to choose a strategy.		All Members	02/05/12
RW suggested to write down all the names of theories taken from the Literature Reviews of all the members and plan a strategy for the case.		All Members	02/05/12
YS questioned about mentioning Genesis Inc. in the Literature Review, based on Opkar's suggestion. AL talked about her Literature Review, and some points were added to it by RW. OP mentioned about Agile techniques for his role. AG talked about his Literature Review and mentioned about ERP.		No Action	N/A

<p>OP and AL have to discuss their theories in the next meeting.</p> <p>RW talked about case study financials and mentioned about the company's financial status. He also mentioned about licensing fees.</p> <p>AG asked about financial matters. Agreed to make some forecast.</p>		
<p>Minutes for this meeting to be circulated</p>	<p>AL</p>	<p>26/04/12</p>
<p>Next meeting scheduled for Wednesday 2nd May 2012 at 12 noon (Meet - 3rd floor waiting area).</p> <p>Chairman for the next meeting is assigned as Ankit Sofet.</p>	<p>No Action</p>	<p>N/A</p>

TECHNOLOGY ENTREPRENEURSHIP**PROJECT GROUP MEETING MINUTES****PROJECT TEAM:** GROUP C**DATE:** 02-May-2012

NAME	PRESENT/SIGNED	APOLOGIES	
Abubakar Garba	✓		
Oleksiy Pavlenko	✓		
Ankit Sofet	✓		
Anne Lesley	✓		
Richard Wilkinson (Chair)	✓		
Yahaya Bashir Shettima	✓		
AGENDA			
1. Minutes from previous meeting (pinned to all agendum)			
2. Financial Report (by Ankit)			
3. Individual Theories Reports (by all)			
4. Confirmation of all Strategies			
5. Any Other Business			
BRIEF COMMENT/DISCUSSION & SUMMARISED ACTION POINTS		Action by	By when
Minutes from previous meeting read and agreed		N/A	N/A
<u>Financial Overview given by Ankit.</u> <ul style="list-style-type: none"> • No Debts • Good Return on Equity • Good return on Assets Revenue from (three year trends): <ul style="list-style-type: none"> • Licensing – Decreasing Year on Year • Maintenance – Increasing Year on Year Market Segmentation <ul style="list-style-type: none"> • North America – 35% • Europe – 34% • Japan – 16% • RoW (assuming mainly BRICs) – 15% Budgeting for 20% growth of Full Time Equivalent Employees (FTEs), made up of; <ul style="list-style-type: none"> • 50% Sales (160 FTEs) • 25% R&D (80 FTEs) • 25% Support Staff (80 FTEs) 		N/A	N/A

<u>Individual Theory Breakdown</u>	N/A	N/A
<p>RW – Team Leader / Business Overview</p> <ul style="list-style-type: none"> • Competitive Advantage • Porter’s 5F • Porter’s Gen Strategies • Porter’s Value Chain • Ansoff’s Growth Vectors <p>AB – Sales and Marketing</p> <ul style="list-style-type: none"> • Porter’s 5F • Porter’s Value Chain • Ansoff’s Growth Vectors • Motivational Theory <p>YB – R&D</p> <ul style="list-style-type: none"> • Innovation Theories • Social Networking Theories for R&D • Technology Theories <p>OP – Business Processes</p> <ul style="list-style-type: none"> • Taylor Business Opt • BPI – Various theories • Quality Assurance <p>AS – Financial</p> <ul style="list-style-type: none"> • Ratio • Return on Investment • Return on Equity • Return on Assets <p>AL – Human Resources</p> <ul style="list-style-type: none"> • Motivational Theories (Maslow, Mayo, MacGregor) • Organisational Structure • Change Management / Organisational Development 		

<p><u>Confirmation of Strategy</u></p> <ul style="list-style-type: none"> • Overall Growth Strategy • Targeting existing markets in BRIC/Emerging Markets <ul style="list-style-type: none"> ○ (Currently 15% of revenue). • Increase revenue from licensing and IP • Route to market view resellers, partnership agreements and also online • Using Agile techniques • To benefit from economies of scope <p>Budgeting for 20% growth of Full Time Equivalent Employees (FTEs), made up of;</p> <ul style="list-style-type: none"> • 50% Sales (160 FTEs) • 25% R&D (80 FTEs) • 25% Support Staff (80 FTEs) 	All members	N/A
<p>Agreement made between all members that individual assignment pieces will be completed by 10th May 2012 and passed to OP at next meeting (on that date).</p> <p>Next meeting to be on 10th May 2012 (following class)</p>	All members	10/05/12
<p><u>Any other business</u></p> <p>None raised</p>	N/A	N/A



Created by;

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(2012)