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## A VIRTUAL BUSINESS MODEL FOR THE NEW ECONOMY

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### Abstract

The new economy brought with it a new approach to designing business models. Not too many years ago the familiar organization structure was dominated by a traditional view

**Key words:** new economy firm, cash flow driven, return on investment, distributed assets (low capital intensity), core assets and distinctive capabilities, value chain positioning.

### INTRODUCTION

Normann (2001) discusses "a new strategic logic" and suggests that: "...managers need to be good at *mobilizing, managing, and using* resources rather than at formally *acquiring* and necessarily *owning* resources"

This new strategic logic is well expressed by McHugh et al (1995) who describe the emergence of holonic, or virtual, organisation structures where :

"...a set of companies that acts integratedly and organically; it is constantly re-configured to manage each business opportunity a customer presents. Each company in the network provides a different process capability and is called a holon" McHugh et al (1995)

An example of the approach to the "new economy is provided by Millennium Pharmaceuticals. This company was founded in 1993 and is specializing in performing basic research on genes and proteins using automated R&D technologies. In an interview with the CEO, Mark Levin, (Champion: 2001)

of managers that was based upon asset ownership and vertical organization structures. The prevalent view was that ownership enhanced control and profit margins. More recently flexibility, cooperation and collaboration have become important features for success. The success of organizations such as Dell and the move by some of the largest corporations in the world towards a model within which assets are managed rather than owned has led to significant changes not only in structure but also in attitudes and managerial behaviour. As a result the "new business model" has five common attributes: the firm should be *cash flow driven*, it should focus on *return on investment*, it should function with *distributed (leveraged) assets or low capital intensity*, to do so with a single minded view on *core assets and distinctive capabilities*, and develop competitive advantage by *relevant positioning within its industry value chain*.

This article reviews these developments and uses the Australian wine industry as an example of the new business model.

described how the value in his particular industry has changed. In particular he suggested that Value has migrated:

"Value has started to migrate downstream, toward the more mechanical tasks of identifying, testing, and manufacturing molecules that will affect the proteins produced by the genes, and which become the pills and serums we sell. At Millennium, we've anticipated this shift by expanding into downstream activities across several major product categories. Our ultimate goal is to develop capabilities and a strong presence in every stage of the industry's value chain-from gene to patient".

Levin argues that the value chain for other high-tech products has, after all, tended to break down into a few separate, largely independent markets (each majoring on specific value positioning characteristics). The computer industry is used as an example with chip manufacturing, computer assembly and delivery, software and support services are now all quite independently distinguishable but interlinked markets. Where once IBM was dominant across the whole industry, Intel, Dell and Microsoft

now coexist as a value chain. Millennium sees problems with the current structure of its industry, particularly as the profitable areas of the value chain are not in the R&D process alone. Levin suggests the future instead lies in personalized medicine: “One day, everyone will have their own genomes mapped out and stored in memory chips, and doctors will look at the information in those chips and prescribe accordingly”.

And:

“We want to be the leader in personalized drug therapies ...our expressed goal is to be the first company to deliver health care tailored to the patient’s genetic profile. To achieve that goal we need to reach all the way to the doctors and the patients”.

A strategy to achieve this goal is based on extending the alliance and partnership models that have proven to be successful. Initially these partnerships were based upon Millennium’s strong R&D capability, the relationship with the partner being simply one of contract researcher. However as the company has moved further along the value chain this has changed with the partnerships becoming fifty/fifty alliances with an increasing ownership stake in the products. This strategy has been based upon identifying and “acquiring” the capabilities that will be required. Levin in fact identifies a major problem for the industry – the huge investment required in R&D, \$2b to \$5 b, sums that are encouraging mergers and acquisitions where individual companies are losing their identities. In contrast he suggests that Millennium will emerge with a strong position in the industry value chain based on this networked R&D.

## A NEW PERSPECTIVE ON BUSINESS STRUCTURE

This raises interesting questions of what business structures are best suited to take advantage of these emerging trends. It is suggested that traditional hierarchical models based on the deployment of ever increasing amounts of capital to achieve market dominance through large scale virtual or horizontal market integration are unlikely to be flexible or adaptable enough. While size still matters and it is not suggested that the large corporates are yet heading the way of the dinosaur, traditional models require re-examination.

In particular it is suggested that the “new economy firm” should focus on five key attributes in developing and designing their business models, all of which are discussed in detail below. These attributes are:

The firm should be *cash flow driven*,

- It should focus on *return on investment*
- It should function with ‘*distributed assets*’ (*low capital intensity*),
- It should develop a more single minded *focus on core assets (R&D, brands) and distinctive capabilities only*,
- A principal element of its competitive advantage should come from successfully and appropriately *positioning itself in its industry value chain*.

Clearly these components are all quite interdependent. See **figure one**

### Cash Flow Driven

The first of these structural imperatives is a focus on cash flow as opposed to traditional notions of profitability. There have been a number of global accounting based crises that suggest the often cited quotation “profit is opinion, cash flow is fact” is a major consideration for corporate governance regardless of size and structure.

It should be pointed out that even the conventional (accounting based) approach to cash flow management is limited, being developed for statutory reporting purposes. An alternative model is offered as **figure two**. This model identifies the operational and strategic decision areas that impact on cash flow planning and management and breaks these down into three broad categories the sum of which gives the firms *Free Cash Flow*.

The first category is quite familiar - *Operating Cash Flow*. Cash flow analysis at this level in the context of a “new economy” business structure allows the identification of options based around delivering both customer and corporate value either by enhancing product features or by reducing costs. These options may be internal to the organization or may be external. Basic options such outsourcing production to lower component costs or to obtain a more reliable component can be evaluated, as can the impact on both customer service (and cash flow) that may result from a shift in the companies policy towards intermediaries.

At the second level the model enables the impact on assets of alternative production and distribution strategies to be evaluated. *Cash Flow From Assets* describes the cash flow profiles that may result from alternative decisions. The options available each have significant implications for inventory, receivables and payables together with cash flow impacts from changes in the “structure and ownership” of production and logistics in the organization.

*Strategic Cash Flow* decisions include investment in long term fixed tangible and intangible assets. They also concern working capital to the extent these are essentially long term, considering not simply work in progress and finished goods inventories but strategic sourcing issues that are involved with the design of products to benefit from the advantages of product platforms and buying exchanges established on an industry wide basis. In addition we are also concerned with the difficult, but nonetheless important, entry and exit costs that are associated with strategic cost decisions.

The eventual success of the business is the *Free Cash Flow* that is generated. To calculate this we need to consider the additional funding required by the business if it is to achieve its objectives. These will be equity and/or debt combinations. This introduces not only the cost considerations but also the perceptions of risk that the “market” may assume and issues of corporate control. The “value of the business” then becomes the discounted value of the free cash flow at a discount rate that is judged to be appropriate reflecting this risk.

The characteristics of the target market have a strong impact on cash flow management decisions. For example highly competitive markets in which margins are ‘difficult’ due to market structure (in which concentration has resulted in a few influential companies with large market shares, seasonal and fashion driven products, or ‘luxury’ products that are prone to mark downs) may require equally competitive pricing strategies if positive cash flow are to be maintained,

### **A Focus on Return on Investment**

While we maintain that free cash flow should be the primary measure of success there are a number of reasons for including ROI within a ‘portfolio’ of performance measures. Using an

ROI measure facilitates comparisons between not only businesses but also components within a business. This is particularly important when considering the potential returns from alternative investments within an organization. The efficiency of capital within specific functions, such as physical distribution and manufacturing within a virtual organization differ widely, and it is for these reasons that decisions to seek partner organizations occur.

Rappaport (1983) offers the *value return on investment (VROI)*. VROI uses discounted cash flows to compare strategic alternatives, Rappaport’s approach is to measure the value created per discounted dollar of investment. Thus it offers management the means to evaluate which alternative offers the largest benefit. Rappaport’s model is simply stated by:

$$VROI = \frac{\text{Post-strategy Value} - \text{Pre-strategy Value}}{\text{Present Value of Projected Investments}}$$

The existing strategy value is derived by discounting the past year’s cash flow. The post-strategy value is similarly arrived at by using a DCF technique but being careful to consider planning horizons and by using a risk adjusted discount rate such as that used by the capital asset pricing model. (The consideration of risk is the subject of another contribution in this volume of readings). One further element is required - the present value of projected investments, which comprises the present value of the stream of incremental investments in fixed and working capital.

The VROI model offers a useful means by which the likely results of alternative business models may be evaluated. Income streams (and their capital and operating costs) can be compared using a *beta adjusted* discount rate to reflect the alternative perspectives of risk that each of the structures would involve. As an example, consider the partnership between an FMCG producer and a consumer durable manufacturer moving into industrial catering systems. Clearly they both lack specific experience in the industry sector and this inexperience should be reflected objectively by considering its impact on the venture. Investors’ views of risk would be reflected in the borrowing rates offered. In contrast in a scenario in which two or more organizations can bring a ‘synergy’ into the organization structure, and in doing so *lower* the risk rather than raise it, then discount rate used for the NPV calculation is likely to be lower.

Clearly VROI must be greater than zero if it is to create value for the shareholder. It can also be assumed that a negative value would indicate that not only is it not creating shareholder value, it is also unlikely that customer value expectations are being met, or if they are it suggests something is wrong with the project costings and that future activities are unsustainable. There are other considerations. An organisation's target ROI and its financial structure are closely related. In turn both are influenced by market characteristics. It follows that operational gearing is closely linked to the expected ROI of the business. If fixed costs are a relatively large proportion of total costs then pricing and gross margin ratios must be made to reflect the financial structure if a required ROI (and cash flow) are to be met. Sensitivity analysis on cause and effect relationships within alternative markets and market segments will add insight into the impact on ROI (and cash flow) on making changes in not only the financial variables but also the structure of alliances and partnerships within the virtual organization.

### **'Distributed Assets'/Low Capital Intensity**

The benefits accruing to this aspect of the model have been well developed by firms such as Dell and Nike. Low capital intensity (investment/sales ratio) facilitates achieving maximised targeted cash flow and rate of return objectives. Furthermore, by adopting this strategy there is an implication that less funds have to be re-invested by each partner, making more funds available for discretionary purposes (i.e., reinforcing their distinctive competences, or distribution to shareholders).

A low level of capital intensity provides flexibility for marketing strategy options. It widens the price point options available by making lower price segments attractive and feasible. High growth markets may be funded from internal funding (with cash still available for discretionary purposes). It is difficult, usually impossible, for capital-intensive businesses to fund high growth rate from internal sources without the 'benefit' of monopolistic price advantages or perhaps some other characteristic that affords sustainable competitive advantage. Furthermore the low capital intensity model also offers operational flexibility. By maintaining an optimal balance between fixed and variable costs production

volumes can be made more responsive to market volumes thereby avoiding break-even crises. At the same time market response times are not inhibited. The application of FMS and JIT philosophies and techniques compensate for the loss of control that a shift from vertical integration to virtual integration *may* imply.

### ***A Hypothetical Example***

Developments in the Australian wine industry are typical of a model based upon distinctive capabilities (discussed below) with little or no fixed investment and the minimisation of working capital. The objective is to achieve a low investment to sales ratio. This takes into account assumptions concerning inventory levels that service target markets, realistic receivables and payables and a targeted pricing policy that generates target gross margins. The compelling philosophical attractiveness of the model can be demonstrated by the following two simple examples that compare a virtual wine business with a typical traditional wine business (which grows, makes and stores around 70% of its sales volumes).

In a low capital intensity (virtual winery) model the investment/sales ratio is typically lower than that of traditional models by a significant amount – 30 percent compared with as much as 120 percent. Assuming similar costs and product quality the *required* EBIT/Funds Employed ratio becomes a much lower figure. For example with a Capital Intensity Ratio of say 40/50 percent compared to the traditional level of between 100 to 200 percent the required EBIT/Funds Employed figure can be as low as 10 percent, considerably less than the 30 percent required for viability by the traditional model. It follows that target revenues are also lower, often by some 30 percent – in retail terms this may be as much as 25 percent less per bottle for the same quality wine! As a result the EBIT/Funds Employed ratio can show an impressive 75 percent for the 'virtual' model versus approximately five percent for the traditional winery model.

Cash flow improvements are equally significant. It can be calculated that, based on the assumptions of same revenues, EBIT/Funds Employed and debt, the cash generated can be shown to improve by a factor of between three and four times.

Clearly, the low capital intensity model begs the question as to whether a secure long term

supply of input product and supplementary services are available from third parties. In the context of the Australian wine industry historically, a significant proportion of the wine industry's production volume has been traded between industry members as bulk "commodity product" and specialist bulk businesses have been established whose sole purpose is to supply bulk inputs (to other businesses). Huge volumes enabled these businesses to supply input product at very attractive prices on flexible payment terms. Rosemount is an example. Until the early 1990's Rosemount was a traditional wine business. It effectively adopted the low capital intensity model in the mid 1990's in order to fund its growth. This was achieved during a period of relative under supply and rising grape prices. The strategy is particularly attractive if it is perceived that over supply and falling prices have at least 3-4 years yet to run.

Under such circumstances a *virtual winery* would adjust the proportion of requirements supplied between "spot" purchases (under short-term contracts), and longer-term contracts. Supplementary services are typically available from third party sources for operational tasks such as facilities where it can "fine tune" and store "product" prior to final processing and contract storage of finished goods.

### **A Focus on Core Resources/Assets**

It follows that the emergent "new economy" focus on virtual structure encourages partners in an alliance to develop their core resources and assets. Indeed it is the reason that each component in an alliance has attraction for the other members. Kay (2000) identifies two categories. The first category are *distinctive capabilities* such as institutional sanctioned items - patents, copyrights, statutory monopolies and so on, but which also feature "... powerful idiosyncratic characteristics ... built by companies in competitive markets." These include strong brands, patterns of supplier and/or customer relationships, specialist skills, knowledge and processes.

In contrast *reproducible capabilities* can be created, purchased or leased by any company with reasonable management skills, skills of observation, and the financial resources. Both process and product technology are reproducible capabilities; the automotive industry is but one example.

Quinn (1992) emphasised the need to cultivate a core competence (capability) and suggests that manufacturing companies are becoming more and more dependent within the value chain on links consisting of services or intellectual activities. Olve *et al.* (1997) suggest that the underlying driver of long term strategic performance is intellectual capital and used Stewart's (1997) definition to give the term meaning, that is "packaged useful knowledge". They suggest it is this approach that is the reason why a company may be valued at more than the sum of its "hard" assets. Other approaches suggest the term "intangible assets" and this has the advantage of including or detailing specifics seen as brand values, R & D and management development.

This is an interesting concept for strategic organisational structures. Given the proposal that the dynamics of the business environment will lead to a situation where knowledge and core capabilities will be viewed as having specific shelf lives, the onus is on the company to identify the core capabilities necessary for its future. Olve *et al* (1997) extend their argument by describing a capability *balance sheet*. They argue that a traditional way of evaluating a company is to analyse its balance sheet and use the notion of gearing to explore the value of the business. A feature of the balance sheet is the ratio of shareholder equity to total assets, that is the financial gearing of the company. They cite the usual arguments concerning the extent, and influence of gearing, suggesting that if the company is overly self financed (i.e. it relies too heavily on its own capabilities), it will need to earn profits in excess of 'normal' levels to ensure shareholder satisfaction. Therefore, they suggest, few companies are totally self-financing.

The analogy of planning capability requirements uses the principles of financing for growth. The 'assets' required for success are identified as capabilities and the 'liabilities' indicate how the capabilities are to be financed – that is who is to provide them. The authors continue with the notion that capabilities have limited life expectancies and therefore suggest that the liabilities reflect a degree of 'capability leverage'. The capabilities are largely 'financed' by value chain partners. The contribution made by partners is large and is complemented by externally sourced temporary capabilities, required to meet specialist needs. Hamel and Prahalad (1994) commented that:

“Preemptive investment in a core capability is not a leap into the dark ... it is the simple desire to build world leadership in the provision of a key customer benefit, and the imagination to envision the many ways in which that benefit can be delivered to customers, that drives the capability-building process.”

They continue by suggesting that capabilities that are most valuable are those representing a gateway to a wide range of potential product markets - a core capability leader possesses the option to be a major participant in a range of end-product markets. This is a particularly important issue for strategic operations management because the options become much wider when a value chains approach is considered. Hamel and Prahalad consider this with their capability matrix. Implicit in Hamel and Prahalad’s original model is the requirement that some forward thinking be undertaken to determine the direction of “potential product markets” prior to investing in core capability leadership. Indeed the virtual organization/value chain approach offers an option to spread risk reflected by an even greater proportion of externally sourced temporary capabilities.

The link here with the cash flow and ‘distributed assets’/low capital intensity’ features of the model becomes quite clear. Organisations in virtual structures are able to focus investment on distinctive capabilities thereby reinforcing their differentiation and that of the alliance. There is a minimum of investment made into what Kay describes as “reproducible capabilities”. More importantly each member is not investing in ‘duplication’ of essential distinctive capabilities as these already exist.

### **Leveraging Competitive Advantage: a “Positioning” Decision**

Potential competitive advantage in the market place and its potential for delivering superior shareholder value (as opposed to market positioning that attempts to deliver superior customer value) is very much based on adopting the low capital intensity model, but also identifying *where within the virtual network the capabilities of individual organisations can best be deployed*. Recognition of the fact that not all of the necessary capabilities and/or capacities are internally available leads the progressive business towards identifying where in the value chain its resources are most effectively applied. Value chain positioning and competitive advantage strategy is therefore a critical activity

In a qualitative context successful “leveraged competitive advantage” is assumed to be the successful management of one or more ‘market based’ characteristics that offer the organization a competitive edge. These may be located in either the demand chain or the supply chain, but for them to be significant they should be exclusive to the organization. It could be argued that effective strategic management identifies what these are and creates an appropriate virtual structure.

Normann and Ramirez (1993) suggested:

“ ... strategy is primarily the art of positioning a company in the right place on the value chain – the right business, the right segments, the right products and market segments, the right value-adding activities”. And: “The focus of strategic analysis is not the company or even the industry, but the value creating system (the value chain) itself, within which different economic actors – suppliers, business partners, allies, customers – work together to co-produce value. Their key strategic task is the reconfiguration of roles and relationships among this constellation of actors in order to mobilise the creation of value in new forms and by new players ... their underlying strategic goal is to create an ever improving fit between competencies and customers ... ”

Of more interest to shareholders and partners is a quantitative measure of ‘value’ delivered by this set of ‘competitive advantages’ Kay (1993) offered an approach. He suggested that the added value generated by an organization could be measured simply and effectively by deducting operating expenses and a ‘cost of capital’ from revenues. If the result is positive the organization is “adding value”, if not then it is “destroying value”. There is a similarity here with the Stern Stewart EVA measure (economic added value). Both approaches use a ‘comprehensive’ cost of capital that includes not just depreciation but interest and dividend payments, management and employee development, and investment in intangible assets.

However, Kay extends his argument by using it to provide a quantitative measure of competitive advantage. Kay’s measure of competitive advantage is relatively simple; it is the added value divided by the operating costs and capital charges. **Figure three** illustrates both added value and competitive advantage. Kay argues that added value and competitive advantage may be calculated from published accounting information. However, it may take some searching of the “notes to the accounts” to identify some of the cost items.

**Figure four** suggests how, using Kay's model, competitive advantage may be further 'leveraged' by exploring the opportunities offered by the virtual organization model. In particular:

*Revenues* may be enhanced by partnerships that result in more effective responses to key customer value drivers (such as time-to-market, QR (logistics responses), flexibility, and customized service packages). Revenues may also be improved by such initiatives as cooperative R & D and product-market development with complementary and competitive organisations.

*Labour cost* profiles are influenced by outsourcing to obtain specialist skills or preferential labour rates. 'Capitalising' production processes is also a well-used alternative. Becoming more important is the use of design (for example by designing around 'platforms') to reduce intra and inter-organisational costs and in some circumstances eliminating duplications of process, activities and, therefore, costs.

*Materials and services* are also influenced by inter-organisational cooperation. The automotive, pharmaceutical and chemicals industries have pioneered web based supply chain partnerships. "Elemica" is a global electronic network comprising 22 of the largest international chemical corporations. By forming a negotiations/transactions hub interactions and transactions costs are significantly reduced and asset productivity throughout the "organization" was improved by the elimination of unnecessary inventories, automated transaction systems, reduced transportation costs (not to mention a vast improvement in 'mode' utilization) and storage costs.

*Capital Costs* are optimized or reduced by improving the productivity of tangible assets such as manufacturing facilities and distribution systems. Partnerships in product-market development or with the application of product innovations (e.g., the biotech industry) increase overall productivity and decreases unnecessary investment. Working capital productivity may be improved by optimizing inventory allocation and location supported by applying electronic systems to intra and inter-organisational interactions.

An effective value chain strategy, therefore, takes an organisation beyond its own boundaries. It involves identifying the core capabilities necessary to compete and to produce and deliver customer value expectations and to *coordinate* the value production process. The well-known examples, such as Dell and Nike have established models that are being implemented by a number of industries through a

value chain approach. But less well-known examples of value chain positioning exist.

Returning to the Australian wine industry, it has clearly undergone some significant changes that have resulted in the repositioning of a number of organisations within the industry value chain (for example, 'brand managers', producers, distributors etc). Given the importance of economies of scale, differentiation and integration, and the fact that lifestyle is an important consideration in wine marketing, the larger companies have been taking steps to acquire and manage major brand names. Companies in other sectors of the industry have driven much of the acquisition activity. Their knowledge and experience, together with a cost efficient infrastructure, has enabled them to invest in brand marketing and to manage the economies of scale and of integration by outsourcing wine production. The result then has been a major repositioning of organisations within the industry. The industry is moving towards brand management as being a major element in its value chain positioning and competitive advantage strategy. Wine production remains important but appears not to be as important as brand marketing when cash flow generation and contribution to earnings is considered

## CONCLUDING COMMENT

The new management model is clearly one in which mutual dependency, cooperation, trust and transparency are major features. Without any of these components the model is unlikely to be successful. The results that are accruing to organizations that identify (and implement) the benefits of the 'new model' are becoming apparent. The potential savings for organizations within Elemica are beginning to appear. Within North America and Europe the potential savings from "e-market" initiatives are estimated to be at \$US 15-20 billion!

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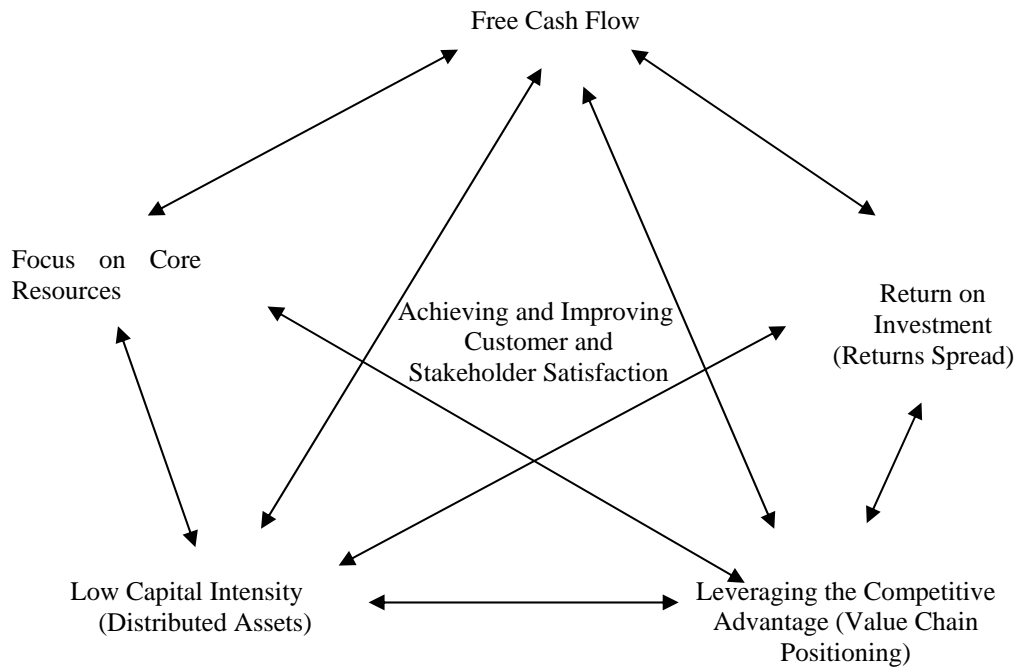
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**Figure one: A Business Model for the New Economy**



**Figure two: The determinants of free cash flow: *the primary value chain objective***

*Revenues Less Discounts less Wages and Salaries less Materials, components and services  
Less Capital servicing costs less Overhead expenses*  
= **Operating Cash flow**



*Operating Cash flow +/- Short-term Working Capital Requirements +/- Capital Maintenance Expenditure*  
= **Cash flow from Assets**



*Cash flow from Assets +/- Fixed Assets (Tangible & Intangible) +/- Long-term Working Capital Requirements +/- "Entry and Exit" Costs*  
= **Strategic Cash flow**



*Strategic Cash flow +/- Changes in Equity & Debt funding*  
= **Free cash flow**

*Nb: Tax payments have been omitted.  
These may occur at operating, asset  
management and strategic cash flow*

**Figure three: Calculating Added Value and Competitive Advantage**

$$\text{Added Value} = \text{Revenues} - (\text{Labour costs} + \text{Materials Costs} + \text{Services Costs} + \text{Capital Costs}^*)$$

\* Capital costs = Interest to investors & dividends to shareholders, interest on working capital items, management & employee development, and asset structure changes during a relevant time period

**Figure four: Influencing Competitive Advantage in the Virtual Organisation**

*Enhance revenues by cooperative:*

- R D & D
- Product development
- Market development
- “Brand” leverage; and
- Responses to key customer value drivers

*Labour, materials and services cost profiles influenced by:*

- Outsourcing
- “Capitalising” the manufacturing & distribution processes
- Purchasing and assembly of components and ‘modules’ rather than ‘materials conversion’
- Membership of web based interaction and transactions structures
- Utilising partner specialisation and differentiation capabilities
- Outsourcing non-core/reproducible service process and activities

$$\text{Competitive Advantage} = \frac{\text{Revenues} - (\text{Labour costs} + \text{Materials Costs} + \text{Services Costs} + \text{Capital Costs}^*)}{(\text{Labour costs} + \text{Materials Costs} + \text{Services Costs} + \text{Capital Costs}^*)}$$

*Capital costs may be optimized or reduced by:*

- Partnerships to leverage ‘tangible assets’ facilities
- Partnerships with owners of ‘intangible assets’