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Sim, Boon Seong (2007) A Conceptual Business Model Framework for Strategy and Value Addition: A Case Study of a Middleware Firm. [Dissertation (University of Nottingham only)] (Unpublished)

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A Conceptual Business Model Framework for Strategy and Value Addition: A Case Study of a Middleware Firm

by

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2007

A Management project presented in part consideration for the degree of General Master of Business Administration

Executive Summary

The traditional business model frameworks and concepts have been mainly used in the field of Information System (IS) and e-commerce for explanatory and descriptive purposes. I believe that there is a potential for the business model concept to be expanded for use by general businesses in strategic management. In this report, I will outline a conceptual framework for building a visual mapping of a business model. The conceptual model is a hybrid of two frameworks with the purpose of being used as a strategic tool for gaining new insight and value addition for any business. The model will be illustrated by a case study of a firm offering Massively Multiplayer Online Game (MMOG) middleware solutions for the online games industry.

Contents

1.0   Introduction & Objectives

This report aims to visually represent and map the business model for a Massively Multiplayer Online Game (MMOG) middleware firm which will give fresh insight on strategy and how to create more value for the business. The report will expand on the business model used in the main report; Massively Multiplayer Online Games Industry: A Review and Comparison – From Middleware to Publishing by Almuntaser Alhindawi, Rafiq Javed and Sim Boon Seong.

Traditional business model interpretations have been mainly based on a textual description of a business model which I think are quite limited in their definition and representation. A visual representation of the business will provide a much higher impact in terms of visualisation and understanding of a business model to the reader. My aim was to use the visual business model concept for analytical and strategic purposes that is applicable to all businesses.

Through the literature review, I found there's a limited amount of concepts and frameworks that provides the visual modelling that is suitable for my case study. This is the reason I am proposing a new modelling framework that can be used for my visualisation and analytical model.

I will first use the Hedman & Kalling (H&K) framework which I believe to be most appropriate for specifying the required components of a business model. The resulting model will then be integrated with the value net methodology to produce the new business model framework.

The organisation that will be modelled in the case study is Monumental Games (MG) Ltd, a UK based firm that offers a MMOG middleware solution amongst other products and services to the online games industry.

MMOGs has been attracting a lot of attention by the gaming industry and financial investors alike due to the revenue generation opportunities successfully shown by the games in the eastern countries especially in Korea, Japan and China.

Following successes of eastern publishers, the western counterparts have also started to develop MMOGs to try to tap into the lucrative market. However, the development of high quality MMOGs is significantly more complex than typical video games in terms of both technical and development scope. In addition, MMOGs requires substantial post sales maintenance and services as well as offering a secure and stable gaming environment through a secure infrastructure.

A typical MMOG will easily take 3-5 years of development time if starting from scratch due to the relatively young age of the industry and the immature technology. The current western MMOGs available now are the 'pioneers' that started development early before the current hype in the industry. Game developers and publishers coming late into the market would like to jump on the bandwagon to offer MMOGs to the market as fast as possible.

One possible way of decreasing time to market is by using a MMOG middleware, a development solution platform made specifically for creating MMOGs which will reduce game development time especially from the technical aspect. I believe that MMOG middleware will play a big role in the future of MMOGs as it reduces the complexity and time needed to develop the tools and infrastructure for the game thus allowing the developers more time to concentrate on the content creation aspects which in turn increases the overall quality of MMOGs offerings.

2.0   Literature Review

In this section, I will start with a table listing the concepts and frameworks that will be used in this report. The table will then be elaborated with a full review and explanation of the concepts. As this report will be an expansion of the main report, this section will be heavily based on the literature review section of the aforementioned report.

2.1   Concept, Explanation and Reference

Table 1 lists the concepts and frameworks mentioned in this report as well as a brief explanation/elaboration on their meaning.

Table 1. Concepts and framework

No.	Concept	Explanation	Reference
1.0	Business model	- A framework for modelling how a business works and earn money - The framework includes all relevant parties in a business (e.g. suppliers, customers, the firm itself etc), the working relationships and the roles they play with each party, business activities, the sources of revenue and other relevant components that is in a business. - The revenue model is also described in the framework.	Afuah A, Tucci CL (2001) 'Internet Business Models and Strategies: Text and Cases' McGraw-Hill, Singapore Amitt R, Zott C (2001) 'Value creation in e-business' Strategic Management Journal Vol 22 pg 493-520 Hedman J, Kalling T (2003) 'The business model concept: theoretical underpinnings and empirical illustrations' European Journal of Information Systems Vol 12, pg 49-59 Osterwalder A, Pigneur Y (2002) 'An e-business Model Ontology for Modelling e-Business' 15th Bled Electronic Commerce Conference, Bled Timmers P (1998) 'Business models for electronic markets' Electronic Market Vol 8 Issue 2 pg 2-8
1.1	Competitive advantage	- A condition that enables a firm to have an edge over its competitors either in efficiency in operations or product/service quality which results in higher profits for the firm. - A firm is said to have a competitive advantage when it is implementing a value creating strategy not simultaneously implemented by its current or future rivals.	Barney J (1991) 'Firm resources and sustained competitive advantage' Journal of management Vol 17 pg 99-120 Porter M (1985) 'Competitive advantage' Free Press, New York.

No.	Concept	Explanation	Reference
1.2	Customers	• A person or an organisation that purchases the products or services from a firm.	
1.3	Suppliers	• A person or organisation that supplies the services or materials so that a firm itself can make its own products/services.	
1.4	Offering	• The products and services that a firm produces or made available for purchase by customers. • It also includes how the products and services are delivered to customers and how much.	
1.5	Revenue model	• The way in which a firm generates revenue from its business processes and activities. • It also shows where and how the revenue is generated and by whom.	
1.6	Organisation	• This is about the firm itself; the way it does business, the organisation, human resources and the management.	
1.7	Supply chain	• The network of firms or parties that are involved in production, delivery and sale of a product.	
2.0	Industrial-Organisation view	• Industrial Organisation (IO) is a theory that claims that factors external to the firm such as competitors, suppliers and customers dictate what a firm's strategy is. • These factors will determine how a firm will position and price (the products and services) itself with respect to its competitors.	Porter M (1985) 'Competitive advantage: Creating and sustaining superior performance' Free Press, New York.
2.1	Value Chain	• The value chain is intended to be used as a framework to analyse the internal activities of a firm to discover where and how a firm adds value. • The value of each activity adds up to increase the	Dobson P, Starkey K, Richards J (2004) 'Strategic Management: Issues and cases' Blackwell Publishing, Cornwall Porter M (1985) 'Competitive advantage:

No.	Concept	Explanation	Reference
		margin, ie profitability of a firm. • The value chain is made of primary and support activities.	Creating and sustaining superior performance' Free Press, New York.
2.2	Value System	• The values system is a stream of activities that is made up from individual value chains. • The value chains starts upstream from the supplier until downstream when it reaches the customer. • Value is passed through the system from the supplier until the customer.	Porter M (1985) 'Competitive advantage: Creating and sustaining superior performance' Free Press, New York.
2.3	Porter's generic strategies	• Three separate strategies for a firm to gain competitive advantage recommended by Michael Porter. • The three strategies are cost leadership, differentiator and a focus strategy. • Cost leadership strategy focuses on being the lowest cost supplier and thus achieving profitability from an above average price-cost margin. • A differentiator focuses on differentiating its products/services from its rivals and charging a higher price for it. • A focus strategy concentrates on a particular segment of the market and applying one the previous strategies.	Porter M (1985) 'Competitive advantage' Free Press, New York.
3.0	Resource based view	• The resource based view (RBV) is a theory which claims that a firm should concentrate on its internal resources and capabilities to gain a competitive edge over its rivals. • These internal resources and capabilities needs to be valuable, rare and costly to imitate to sustain the competitive edge.	Barney J (1991) 'Firm resources and sustained competitive advantage' Journal of Management Vol 17 pg 99-120 Porter M (1985) 'Competitive advantage: Creating and sustaining superior performance' Free Press, New York.

No.	Concept	Explanation	Reference
3.1	Firm resources	• Firm resources include all assets, capabilities, information, knowledge etc controlled by a firm to enable it to conceive and implement strategies. • There are three categories of resources. • 1) Physical capital • 2) Human capital • 3) Organisational capital	Barney J (1991) 'Firm resources and sustained competitive advantage' Journal of Management Vol 17 pg 99-120
3.2	Physical capital	• Physical capital resources include the physical technology used in the firm, a firm's plants and assets and its location.	Barney J (1991) 'Firm resources and sustained competitive advantage' Journal of Management Vol 17 pg 99-120
3.3	Human capital	• Human capital resources include the experience, training, judgement and relationships of the employees.	Barney J (1991) 'Firm resources and sustained competitive advantage' Journal of Management Vol 17 pg 99-120
3.4	Organisational capital	• Organisational capital resources include the formal reporting, planning and coordination structure.	Barney J (1991) 'Firm resources and sustained competitive advantage' Journal of Management Vol 17 pg 99-120
4.0	Strategy process	• Strategy process emphasises the process in which a firm formulates its strategy. • Factors that influence the process includes time, managerial cognition (the limited amount of information that a manager is able to process at a single time) and cultural constraints. • This theory takes into account that the situation in the industry changes over time and firms needs to constantly be aware and evolve together with it.	Whittington R (2000) 'What is strategy – and does it matter?' International Thomson, London. Oliver C (1997) 'Sustainable competitive advantage: combining institutional and resource based views' Strategic Management Journal Vol 18 pg 697-813

No.	Concept	Explanation	Reference
5.0	Value net methodology	• Value is what a customer is willing to pay for a firm's product and services. • Value net is a strategic tool to analyse a set of activities (or value creation system) that creates value for customers. It creates a visual map of these activities and shows the relationship with each other. • A value creation system are activities carried out by using a firms resources (both tangible and intangible) linked by flows of information, material and financial components to create value. • The value net brings fresh and holistic perspective to a firm on how it creates value for customers.	Alves TR, Roque L (2003) 'Using value nets to map emerging business models in massively multiplayer online games' Businessmodeldesign.com Parolini Cinzia, 1999 'The Value Net: A tool of competitive advantage' John Wiley & Sons, West Sussex.

Source: Alhindawi A, et al 2007

2.2   Business Model Literature

The term business model is understood as a description of how a business works by a simplified explanation of the key components. However, the term was very popular with the internet community as a buzzword to describe business ideas of e-commerce and start-up businesses especially in the advent of the internet boom in the 1990's. Linder and Cantrell (2000) found that many often confused the term to explain only a part of a business model. For example, an online auction is a pricing component, which is part of the business model.

In academic literature, the term was also more often used in the field of e-business and entrepreneurial research than others. This may be due to the emerging influence of information technology related businesses in that period.

The concept of the business model has 'surfaced' in past strategic and management theories. One of the concepts that bear a striking resemblance that I know of was proposed by Porter (1985) with his three generic strategies. The option of a low cost leadership, differentiator or a focus strategy is essentially at its core, a 'business model'. McGrath & MacMillan (2000) and Schumpeter (1934; 1950) have describe key components and processes which all could be part of the business model concept (Hedman & Kalling, 2003).

What is the accepted definition of the business model? So far there have been two slightly different views of the definition. Timmers (1998, p.4) defines it as 'An architecture for the products, services and information flows, including a description of the various business activities and their roles; a description of the potential benefits for the various business actors; and a description of the sources of revenue'. The view of the business model as an architecture of business components and its processes is shared by Weill and Vitale (2001) who defines it is as 'A description of the roles and relationships among a firm's

consumers, customers, allies and suppliers that identifies the major flows of product, information and money and the major benefit to participants'.

Peterovic et al. (2001) and Osterwalder & Pigneur (2002) however, share a slightly different perspective. They see the business model as a different component from the business processes but state that they are interlinked. Osterwalder & Pigneur (2001) defines it as a conceptual and architectural implementation of a business strategy and as a foundation for the implementation of business processes.

Figure 2.1: Business logic triangle
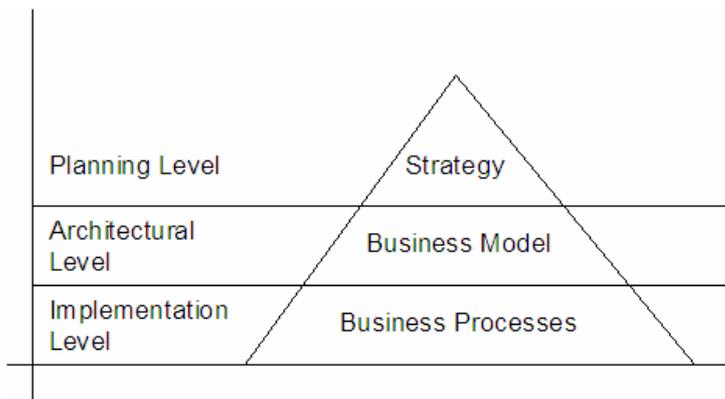
Source: Osterwalder & Pigneur, 2001

Both views of the definition however share the similar view that the business model will require strategy as the tool for implementation.

Most of the earlier research on business models has been concentrated in the field of IS and e-commerce. Hedman & Kalling (2003) grouped the research into two complimentary streams. The first stream aims to describe and define the key components of e-business models. Some of the papers in this stream are by Afuah & Tucci, 2001; Amitt & Zott, 2001; Osterwalder & Pigneur, 2002. The second stream aims to describe specific e-business models. Timmers (1998)

specified 11 different models; Applegate (2001) classified 22 models while Weill & Vitale (2001) defines 8 models.

Pateli & Giaglis (2003) also analyzed the bulk of main e-business research. They came up with a framework to analyse business models which was constructed by understanding the patterns of 22 most cited papers (from 1998 to 2002) in the business model literature. The framework is based on six research sub-domains (which was further elaborated into seven by Osterwalder, 2004).
1) Definitions
2) Components
3) Taxonomies
4) Representations
5) Change methodologies
6) Evaluation Models
7) Ontological Modelling (by Osterwalder, 2004)

They further elaborated the sub-domains into two aspects, integration (the degree to which each sub-domain builds upon research conducted in other domains) and timeliness (the degree of maturity of the sub-domain).
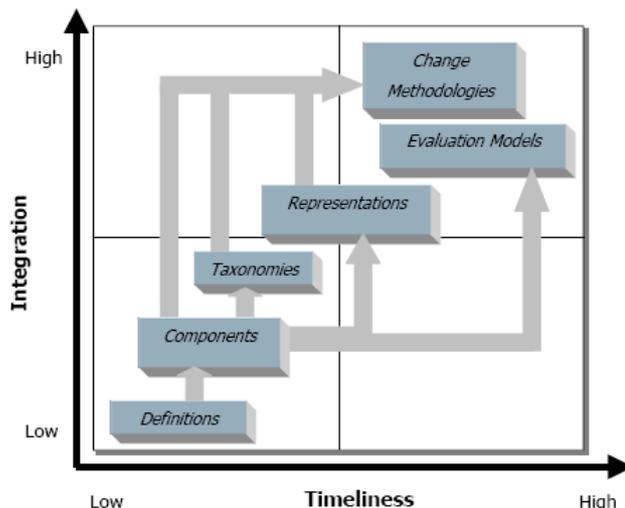
Figure 2.2: Framework for structuring business model research sub-domains
Source: Pateli & Giaglis, 2003

Their analysis shows that the business model field has matured past the initial stages of definition towards in depth analysis. Furthermore they also found the research of business models during that period has little link to strategic and management theories and contends it need this link for business model research to be recognized and independent of e-businesses.

Coincidently, Hedman & Kalling (2003) in that same year produced a business model framework that integrated with traditional theories of industrial organisation, resource base view and strategy process. What they came up with is a generic framework that incorporates seven business components, namely (1) customers, (2) competitors, (3) offering, (4) activities and organisation, (5) resources, (6) supplier and (7) a longitudinal process component (scope of management).

Figure 2.3: The components of the business model
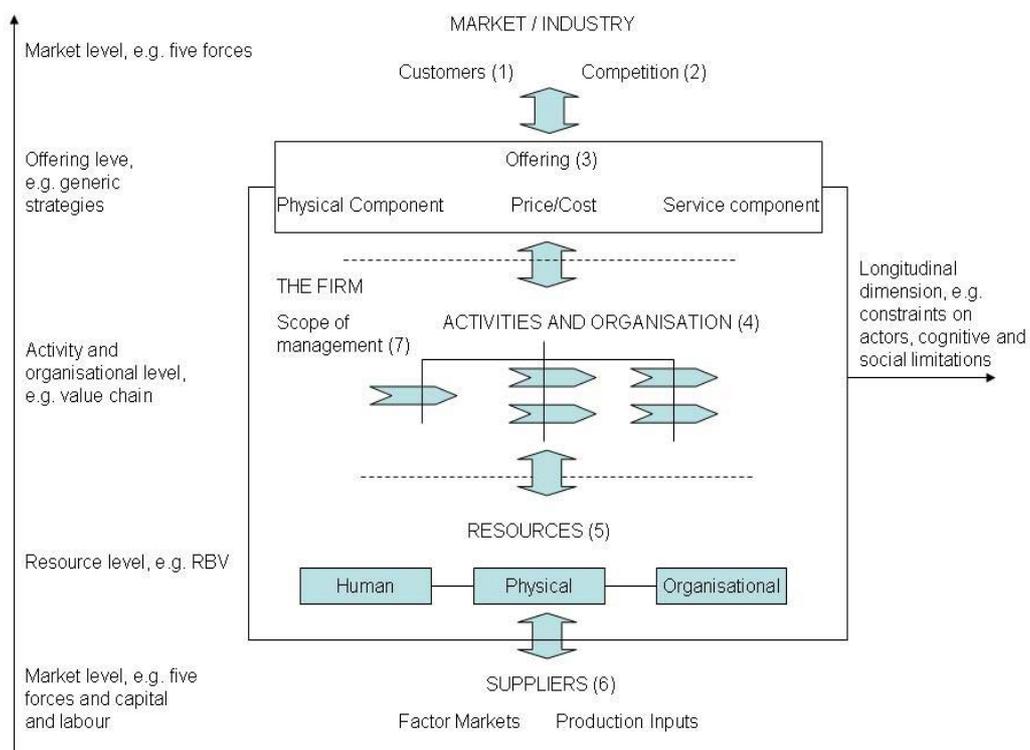
Source: Hedman & Kalling, 2003

The framework shows how the different components internal as well as external to the firm interact (causal relations) with one another. It also includes a process component (scope of management) that handles the dynamics of changes over time and managerial cognition constraints.

A firm converts supplies (supplier component) into products and services (offering component) through organisational activities (activities and organisation component) by the human, physical and organisational resources (resources component). The products and services are then offered to the market where they will compete with other competitors (competitors' component) for customers (customers' component). The firm will also have to be managed and developed over time (scope of management component).

The concept of business models is still very much tied to e-businesses and not into mainstream management. There needs to be more research and development to integrate strategic theories to business models for it to be more recognized in the field.

2.3   The Value Net

The value net methodology was introduced by Parolini (1999) as a strategic tool to analyse the value creation/consuming system of a business. The methodology is based on value-creating systems (VCS) as the fundamental object of investigation. A VCS is defined as:
- As a set of activities creating value for customers;
- These activities are carried out using sets of human, tangible and intangible resources;
- They are linked by flows of material, information, financial resources and influence and influence relationships;

- VCSs also include consumption activities, insofar as the value that final customers enjoy is also a function of the way they use and consume the potential value received;
- Final customers not only receive and consume the value created, but can also participate in value-creating activities
- Activities may be governed by the market, a hierarchy or intermediate forms of coordination;
- Various economics players may participate in a VCS by taking responsibility for one or more activities;
- An economic player may participate in more than one VCS.

There is however issues related to VCS. By its definition, VCS do not have any perceived boundaries of analysis. For example, if taken to the extreme, VCS for manufacturing a laptop computer would include silicone and metal production (for the processor) activities. A VCS could have such a large number of activities that it would be too complex to analyse and render it useless. So it is up to the analyst to define and set the boundaries when specifying a VCS to be analysed.

Others have also explored the subject of a value system. Porter (1985) proposed the value chain as a framework for analysing the internal activities of a firm. The value chain analysis considers where and how well a firm link all of its various activities to add value (Dobson et al 2004). Porter (1985) states that a firm's value chain is embedded in a larger stream of activities called the value system.
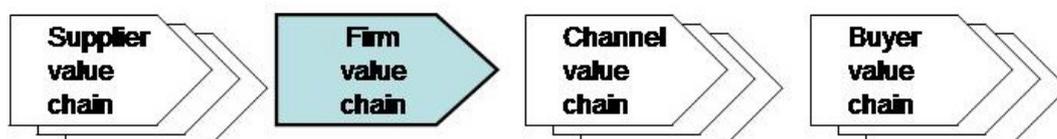
Fig 2.4: The value system. Porter (1985)

Value is passed through the system from the suppliers and eventually ends in the customer. Gaining and sustaining competitive advantage depends on understanding and how well a firm's value chain fit in the overall value system. The Value Net has a fundamentally different perspective. Instead of analysing value through a single chain (Porter's value system) with sets of economic players, the Value Net perspective emphasises on viewing VCSs as set of activities (rather than players). These activities start from the customer's point of view as shown below.
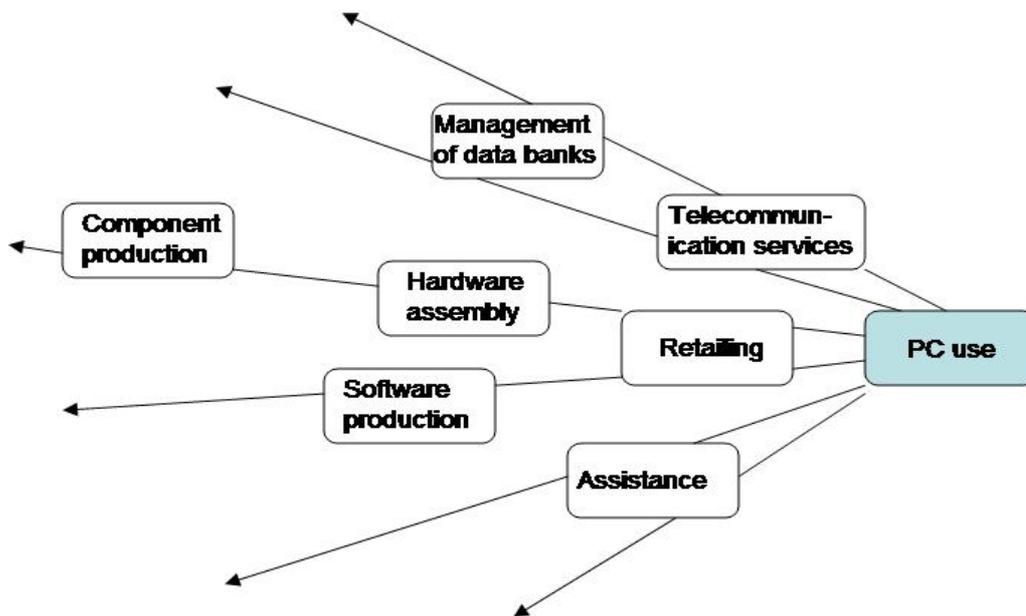
Fig 2.5: The value net perspective (Parolini 1999, pg 71)

As mentioned earlier, VCSs are connected by flows of information, material, financial and relationships. These can then be mapped out using nodes and arrows, which essentially makes up the Value Net.
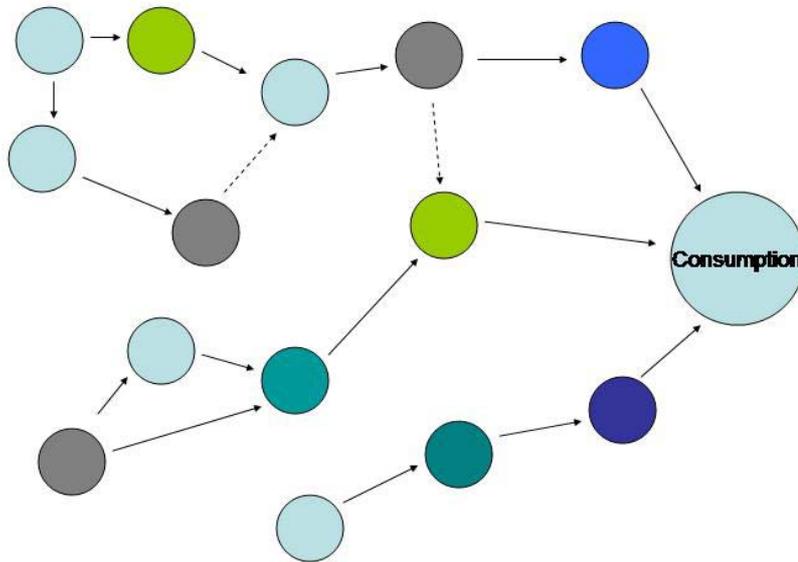
Fig 2.6: The value net (Parolini 1999, pg 81)

There are different nodes and arrows which can be applied to show the different kinds of activities and flows respectively.
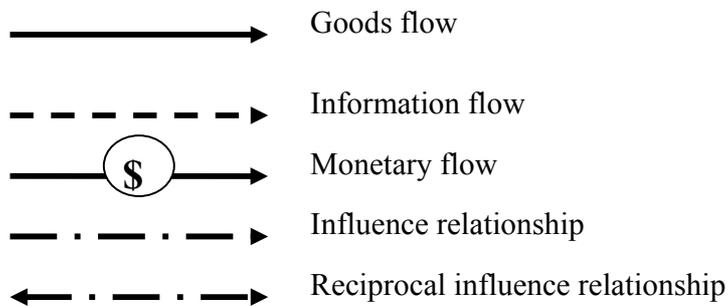
In terms of classification of the VCS, the Value Net is also different from the normal approach to classify activities. Most traditional theories will sub-divide the activities into distinct 'departments' depending on the subject. For example, Porter (1985) in his value chain framework combines primary and support activities.
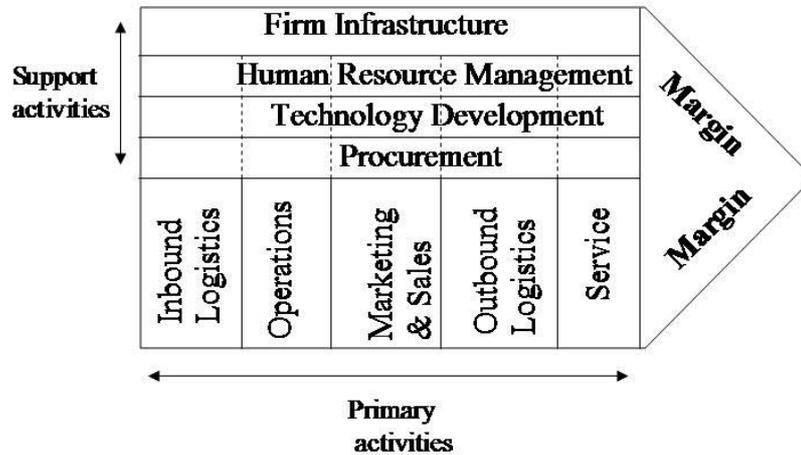
Fig 2.7: The value chain (Porter, 1985)

As can be seen in the value chain, the primary activities are divided into 5 distinct entities; inbound logistics, operations, outbound logistics, marketing & sales and service. Each of these activities has support activities as well, which are divided into firm infrastructure, human resource management, technology development and procurement.

The Value Net has a different classification from the value chain. VCS are classified into three broad groups; external transaction management, support and realization.
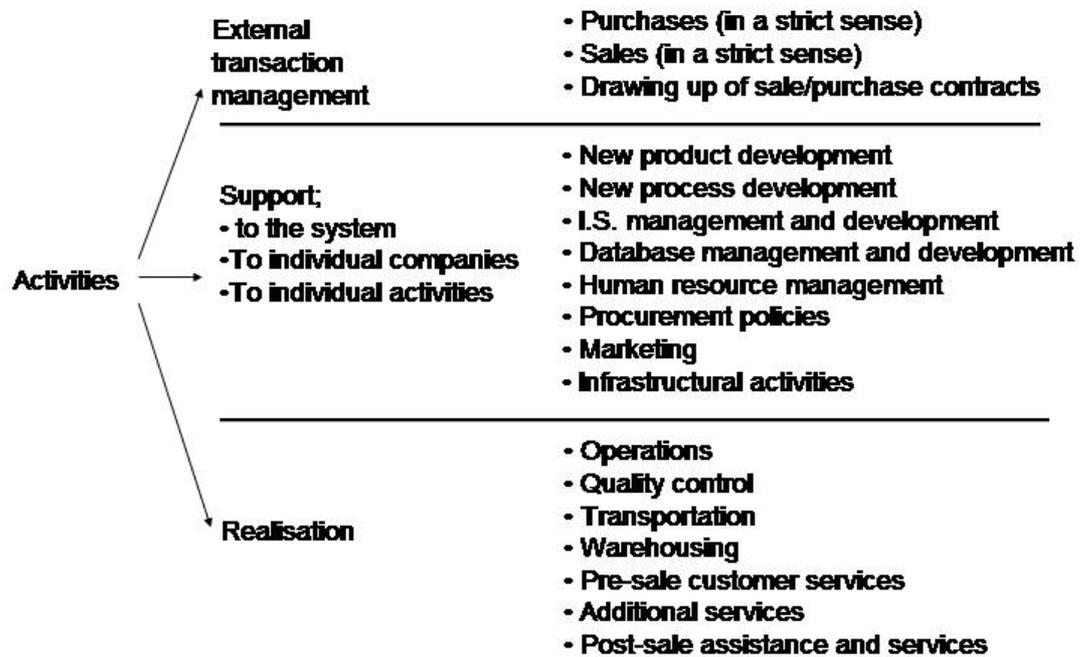
Fig: The classification of value net activities (Parolini 1999, pg 89)

She states that this is due the difference in interpretation of the nature of activities as well as in analytical perspective. The Value Net emphasises the economic structure and the contribution of value of the activities rather than 'part' they play in the 'operations'.

3.0   Methodology

The research methodology in this report relied mainly on the data available from the main group report, Massively Multiplayer Online Games Industry: A Review and Comparison – From Middleware to Publisher.

The main group report relied on primary and secondary data capture techniques.

Primary:
- Interviews with Monumental Games staff.

- A Questionnaire was developed and sent to competitors of Monumental Games in the middleware industry.

- Telephonic interviews with business development and marketing personal of Monumental Games competitors in the middleware industry.

Secondary:
- Industry reports
- Internet research
- Competitors web sites
- Industry related publications
- Academic Journals

In addition, further data for this report was sourced from my own additional secondary data gathering on academic journals and publications, online articles and websites.

4.0   Data & Analysis

Table 2 below represents the examples and data of the concepts used in the report. The main aim of this table is to show and clarify the information and examples on the various components of the concepts shown in table 1. Sources are included to show the reliability and trustworthiness of the data. These components are then used in the analysis and representation of the business model, value chain and the value net frameworks.

Table 2: Concepts, Examples and Sources

No.	Concept	Example/Data	Source
1.0	Organisation (Monumental Games)	Company revenue sources Company current and future plans Company objectives	Company website Group report Online articles
1.1	Offering (Monumental Games)	Products: MMOG Middleware Technical specifications Technological overview Services: Customer service Consulting Game Development: Football Superstars Untitled Game	Company website Group report
1.2	Revenue (Monumental Games)	Licensing options and terms Support services Royalties Upfront fees Other services e.g. consulting	Company website Group report
1.3	Resources	Organisation chart Coding Department Technology Department Operations	Company website Group report

No.	Concept	Example/Data	Source
		Office Hardware	
1.4	Processes	Management Meetings Feedback Market surveillance	Group Report
1.5	Customers (Monumental Games)	MMOG Game Developers e.g. Neogence Studios MMOG Publishers e.g. Electronic Arts, Ncsoft Non Game Applicators e.g. Academic institutions, Government	Company website Group report
1.6	Suppliers (Monumental Games)	Specialized modules e.g. SpeedTree, Havok Hardware suppliers e.g. IBM Human resources e.g. legal solicitors, programmers	Group report
2.0	Competitors	List given by client: Direct Competitors e.g. BigWorld Technology, Simutronics Indirect Competitors e.g. id Software, Epic Games Licensing comparison Upcoming developments	Competitor Website Online Articles/Interviews Press releases Group report
2.1	Offering (Competitors)	Products: MMOG Middleware Technical specifications Technological overview Technical comparison Services: Support, Consulting services Customer service Billing Engineering	Technical brochures Competitor Website Group report

No.	Concept	Example/Data	Source
2.2	Revenue (Competitors)	Licensing options and terms for each competitor Support services Royalties Upfront fees Other services e.g. consulting	Technical brochures Competitor Website Group report
2.3	Suppliers (Competitors)	Specialized modules e.g. Aria Systems, SpeedTree Other services e.g. hosting, bill and customer management Hardware suppliers e.g. IBM Human resources	Group report Competitor Website
2.4	Customers (Competitors)	MMOG Game developers e.g. Bioware, MMOG Publishers e.g. Electronic Arts, Ncsoft Non Game Applicators e.g. Academic institutions, Government	Group report Competitor Website
2.5	Revenue (Competitors)	Licensing options and terms for each competitor Support services Royalties Upfront fees Other services e.g. consulting	Technical brochures Competitor Website Questionnaire/Interviews Online Forums
3.0	Industry (Middleware)	Industry overview Sources of funding Industry players/actors	Group report Competitor websites
3.1	Industry (MMOG)	Industry overview Industry players/actors	International Game Developers Association White Papers Industry reports (DFC Intelligence) Group report

There are three general segments of tables which categorise the information; the first on MG itself, the second on its competitors and the third is on the industry.

The first segment on Monumental Games is aimed at representing the examples of key components of the business model. This will include the internal and external components. Internal components are the offerings, organisation, human resource and business processes while external components are the competitors, customers and suppliers/partners of MG. The main source of data is from the group report while additional secondary data capture was also performed in the form of online research on articles and journals.

For the organisational component (point 1.0), the main aim was to understand what MG is doing as a business so information on the company's objectives, goals and business proposition are required.

To achieve its objectives, the company needs to generate profits which are provided by the products and services offered (point 1.1). MG has a variety of products and services, though for the purpose of this report, the offerings will be limited to the middleware technology and the services associated with it. The revenue (point 1.2) generated by the offerings includes licensing fees, royalties and consulting fees.

The production of the products and services in turn require resources (point 1.3) which consists of human (coding, technology and operations department of MG), physical (hardware and software) and organisational (office facilities etc).

Then there is the business processes (point 1.4) which MG has in place such as board meetings, think tanks and market surveillance activities to cope with the effects of managerial cognition and the fast change of pace in the industry.

The company serves customers (point 1.5) which require the middleware and these could range from game developers (i.e. Neogence Studios) and publishers (i.e. Eidos and EA) to non-gaming applicators (Universities, government, media etc).

MG also has several suppliers (point 1.6) which include software providers like third party modules suppliers (i.e. SpeedTree), hardware providers (IBM, Dell etc) as well as service providers such as legal solicitors and recruitment agencies.

In the middleware market MG has several key competitors (point 2.0) which leads to the second segment of the table. In this segment, details on the competitors are also broken down to the various components similar to MG. This is used in the analysis and comparison of business models between MG and its main competitors. Sources of information are primarily from the main report as well as additional secondary data capture with online research on company websites, articles and journals.

The third segment is to show the information on the environment of the industry of both middleware (point 3.0) and MMOG (point 3.1). This is to get a better understanding of the various factors and players involved in the middleware industry. Key data includes the relationships between the publishers and game developers; industry forecast, latest trends and developments. Information sources are mainly from the main report, industry reports and online articles.

5.0   Hedman & Kalling Business Model

Monumental Games offer several different products and services varying from game development, publishing services to consulting for the online games industry. For the purpose of mapping the business model of a middleware firm, the model above only takes account of the middleware product and services offered by MG, which are for the purpose of creating MMOGs and virtual worlds. As described earlier in the literature review, Hedman & Kalling's framework consists of seven business components.

1) Customers
Customers of MG are basically divided into two different groups. The first group is the ones which are involved in the gaming industry, which are the MMOG game developers. This group constitutes the main source of clientele and revenue for MG. One of the first licensees for the MTS was NeoGence Studios, a game developer working on a MMO Role Playing Game (RPG) title called *Immortal Destiny*.

The other group of customers would be parties that could use the middleware for non-gaming applications, such as the military, health, government and media groups. Currently this group is much smaller in terms of quantity and revenue when compared to the first, but could be potentially a huge market in the future.

2) Competitors
There are also two groups of competitors. The first are direct competitors who have similar offerings (MMOG middleware) and targets the same group of customers. The other would be indirect competitors who currently offer 'specialized components' to MMOG developers and publishers. This group has the potential to leverage their technical expertise to enter the industry and thus should be considered as competitors in the business model.

3) Offering

The third component is the offering which is essentially what products and services the middleware firm offers the market. This consists of the physical, service and price/cost aspect of the offering. The physical aspect would be the middleware itself, which could consist of the server, engine, content creation & management, billing and any other tools required to build a MMOG/virtual world. The service aspect would be the additional support offered in parallel with the physical part. Supports would include customer service, maintenance, training and documentation. The price/cost aspect would be the licensing and pricing options for the products and services offered. Depending on the firm, licensing options could include the commercial, non-commercial, free-to-use and evaluation licenses. Each option would have a different pricing terms and conditions.

4) Organisation

The fourth component would be internal to the firm itself, specifically on the organisational and activity level. This component describes the value chain configuration needed to operate the firm. The value chain consists of primary (inbound logistics, operations, outbound logistics, marketing & sales, service & support) and support (firm infrastructure, human resource management, technology development and procurement) activities. For the primary activities, a middleware firm would not have any inbound logistics because it does not require a constant stream of external resources to produce middleware. Operations essentially are the activities required to produce the middleware itself which includes research and development, design, programming, testing and updating. Outbound logistics are activities related to the distribution of the middleware and updates. Marketing and sales are involved in business development activities such as the promotion of products and services through the internet, trade shows and direct sales. Service and support activities mainly deals with product and customer related support functions.

Each of the primary activities is supported by another set of support activities. The firm infrastructure is made of management functions which includes legal and financial aspect. Human resource would be managed by a human resource department.

5) Resource

The fifth component is the resources that are needed to produce the products and services a middleware firms offers. This consists of human, physical and organisation resource. For human resource, a typical firm would have three tiers of personnel. The first would be the top management (CEO, CFO etc), the second are middle managers (Project managers, department heads etc) and the are third project teams and individuals (specialists, programming, support etc). Physical resources would include the computer hardware and software needed to produce the middleware. Organisational resources are the necessary infrastructure needed for the firm to operate, such as office space and networking facilities.

6) Supplier

The sixth component is the 'suppliers' to the middleware industry. Suppliers would include the labour market and production inputs. Suppliers of labour would include recruitment agencies as well as through network of contacts that provides the human resources for the organisation. Production inputs would include suppliers of IT hardware, programming software and 3rd party modules which are used in the production and development of middleware.

7) Strategy process

The last component would be the strategy process component. This component shows the processes which firms have in place to manage changes over time and overcome managerial cognition. Some of the processes that have been noted are regular think tanks; attending trade shows and seminars; proactive staff training and market surveillance activities.

Fig 5.1 Hedman & Kalling Business Model – Monumental Games Ltd

Customers
MMO Game Developers
Non-MMO Applications Developers

Market/Industry
MMOG Middleware

Competitors
Middleware suppliers – Direct
Game Engine Developers – Indirect

Offering – A Platform for building, managing and hosting MMOG's and Virtual Worlds

Physical Component
Monumental Technology Suite
•Server
•Client
•Content Creation+ Mgmt Tools

Price/Cost
•Prototype License
•Development License
•Commercial Licenses

Service Component
•Training
•Documentation
•Customer Service – forum ,email, phone
•Maintenance – updates, backward compatibility

Process
• Think Tanks
•Seminars, trade shows
• Proactive Training
•Market Surveillance
•Research

Infrastructure – Management functions
Human Resource Management – HR Department
Technology Development – Networking Department
Procurement – Purchasing Department

SUPPORT ACTIVITIES

PRIMARY ACTIVITIES

Inbound Logistics
None

Operations
Middleware Dept
•R&D
•Design
•Programming
•Testing

Outbound Logistics
•Release
•Updates

Marketing & Sales
Business Dev.
•Website, Internet
•Direct
•Tradeshows

Service and Support
Customer Support
•Forum
•Training
•Email
•Phone

Customer Value
Margin

Human
Top Mgmt – CEO and CTO
Middle Managers – Bus. Dev., Dept Head
Staff – Programmers, Operations

Physical
Hardware - Computers, servers
Software - Programming

Organizational
Office Infrastructure
Finance – Internal & External
Intangible networks

Suppliers

Labor Markets
Recruitment Agencies
Contact Networks

Production Inputs
Hardware – IT Hardware
Software - Programming, Specialized Modules

5.1   Discussion

The framework proposed by H&K is simple to model and the explanation of the concepts and components are clear and specific. The framework is applicable to all types of businesses and as such has a much wider scope than Information Systems (IS) specific models proposed by others. Another point is that the framework incorporates traditional theories of management such as the industrial organisation (IO) view, resource based view (RBV) and strategy process which enhances the theoretical background of the framework.

However there are several limitations of the framework. One of them is the interrelationship between the components. The framework does not specify the type of relationship each component has; just mentioning that there is a causal relationship which is a very vague definition. A more descriptive relationship will be beneficial in allowing the reader to reach a better understanding of the business model.

Another limitation is the framework generates a very general view of the business model. It is difficult to pinpoint strategically the locations of where value can be added and where improvements or changes can be made. This could be due to the original purpose of the framework was to outline a conceptual business model, not for strategic analytical purposes.

The framework is also limited to analyzing the components in the first degree relationship, therefore ignoring the possible importance of others in the value chain, for example the MMOG publishers who are customers of the MMOG developer (Monumental Games clientele).

6.0   Proposed Business Model Concept

To summarize the findings in the previous chapter, the H&K framework is easy to use and clear in its definition. However, the framework has several limitations as stated in the previous section.

Using the findings as a reference, I would like to propose a conceptual framework for modelling business models that covers the limitations of the H&K framework while still possessing the ease of implementation and clarity of the components. The proposed framework would be a combination of the H&K framework and the value net methodology.

It includes most of the components of the business model suggested by H&K but representing them in a different way. The value net methodology allows the components to be mapped out and linked together by different flows of relationship visually. Components will be further elaborated into area of responsibilities and activities for a better understanding of the business processes. These responsibilities and activities will be represented by nodes of different shapes. One feature of the framework is that it can be expanded to include activity nodes of any party, for example customers and suppliers to parties in the second or third degree in the supply chain (e.g. suppliers' supplier, client's customers etc). The limit is up to the decision of the management or modeller.

These nodes will be linked to each other by arrows which denote the type of relationships they have. The relationship can be one or two ways and each node can have more than one type of relationship linking them. The type of relationships is also up to the management to decide.

The framework is flexible enough for modelling any type of relationships of any number of parties. For example, the management could decide to model only the flow of information between the organisation, its customers and suppliers.

## 6.1   Proposed business model map: Monumental Games

The components and activities are differentiated by nodes of different shades. Components are divided into external (thick square) and responsibilities internal (thin square).

[ ]	Industry Components
[ ]	Organisation Components

Activities are divided to production (solid octagon), support (dashed octagon) and consumption (oval) which are involved in the production and consumption process of the middleware.

Support Activities   Production Activities   Consumption Activities

Relationships are denoted by arrows which are divided to monetary flow (large arrow), goods flow (solid line arrow), information flow (dashed line arrow) and resource flow (dotted line arrows).

⟶ Goods Flow

•••••••••••► Resource Flow

– – – – ► Information Flow

£ ⟹ Monetary Flow
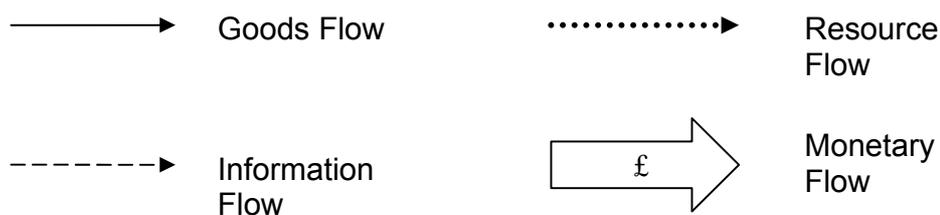
External organisations (square boxes) and resources (dotted box) are also included to give additional detail on the business model.

⬚ Resources   ▮ External Parties

Fig 6.1: Monumental Games Conceptual Business Model
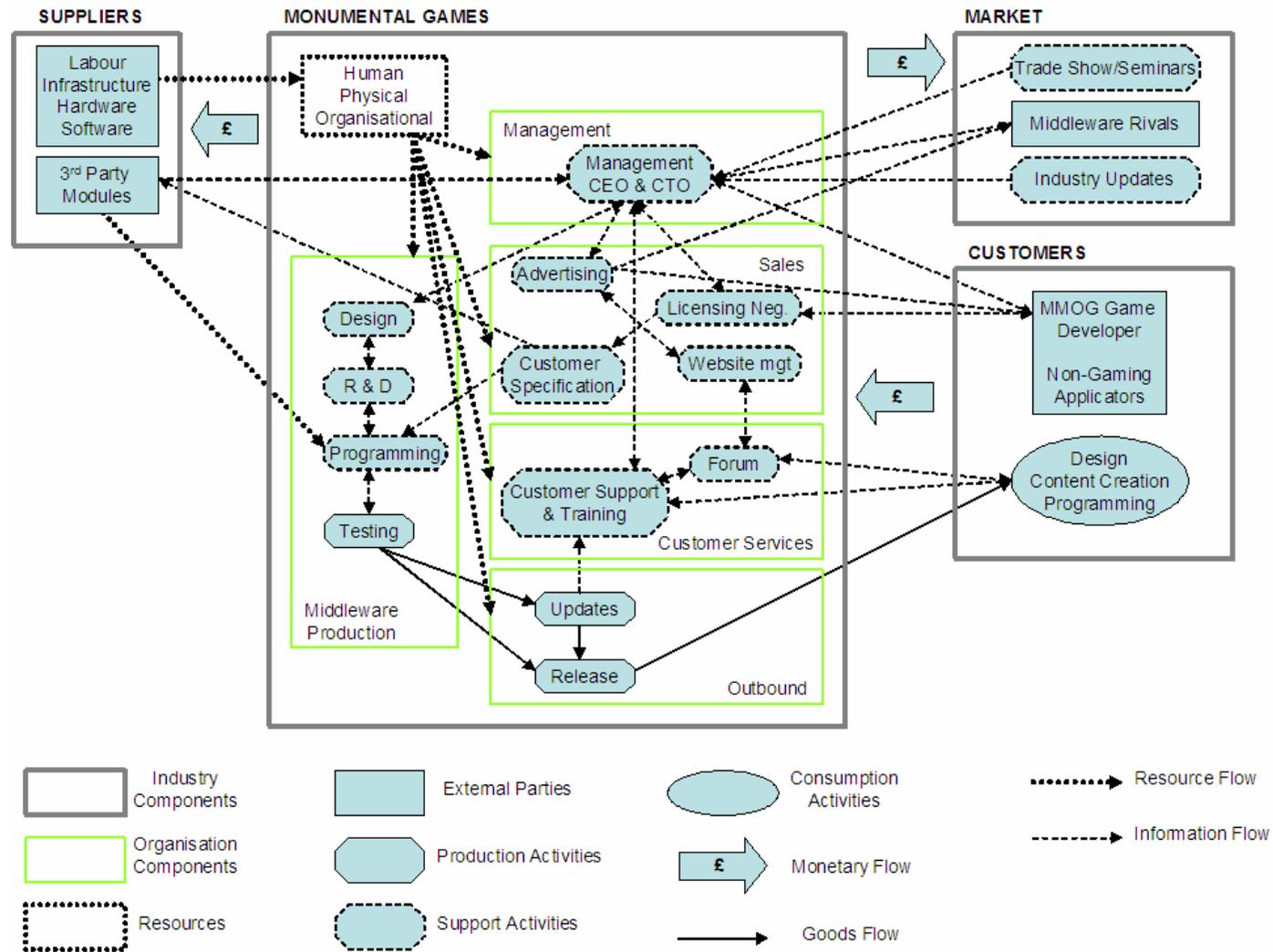
The conceptual model for Monumental Games has been restricted to one degree of relationship, meaning it will not include the publisher and MMOG players who are second and third degree respectively. This is mainly because the consumption of the middleware ends in the customer (MMOG developer and non-gaming applicators) and worked upstream in the supply chain. Although it might be beneficial to model the publishers as well, there is insufficient data to accurately model the business processes of the publishers.

The organisation interacts with external components which are the suppliers, customers and competitors. Suppliers (labour, hardware, software and infrastructure) provide the necessary resources (physical, organisational and human) to MG to produce the middleware. Third party module suppliers are shown separately to highlight the customisation request made by customers and their part in the production process.

Customers (MMOG developers and non-gaming applicators) are shown not just as consumers of the product and services but also exchanges information between MG and the customer in negotiation (sales) and feedback activities (technical forum and customer support). This exchange highlights the importance of customer service in pre and post sales service as well as the updating process.

Competitors form a part of the market component where MG competes and gathers information on the latest trends and developments as part of the strategy process. This would include participation in trade shows and seminars, market surveillance and research activities. Information gathered would used by the management to adjust the overall strategy of MG.

Activities in MG are divided into areas of responsibility, much like the primary activities in the value chain. In this model, the responsibilities are divided into middleware production, outbound (delivery of the middleware), customer services,

sales and management. These are further elaborated into business activities within each area of responsibility. For example, the middleware production has design, research and development, programming and testing activities. These activities and responsibilities are linked to other parts of the model by flows of information, goods (middleware), resources and money.

6.2   Discussion

There are several observations that can be made from the implementation of the above model.

The first is that the model is limited to visual representations of components. As mentioned earlier, visual representation can increase the impact and ease the understanding of the business model. In some cases however, text descriptions are more appropriate for defining and describing certain components. For example, there is no clear revenue model in the proposed framework. Although it is capable of showing the monetary flow between all parties, there isn't a representation of a pricing strategy for the products and services which is an important part for a business model.

There is also no clear representation to denote the strategy to cope with managerial cognition and changes over time. The only relevant point in the model was the input of information from the market and internal activities to the management.

There is also the availability and accuracy of the data. Any limitations on the data will result in an unclear and inaccurate model that might hinder instead of help the management. This is especially true when trying to input data on external parties. The more data that the model has, the more insight it can bring to the management.

One of the main aims of the proposed model was for the strategic and value creation analysis. There are some observations that can be made for improvements to the business based on the model above.

The first benefit of the model is in the actual modelling process when the manager starts thinking on how to build the model. Modelling the business model requires a clear understanding of the organisation, strategy as well as the relevant parties in the external environment. The manager also has to think through the business processes and the type of relationships each activity have with each other. In terms of bringing insight to the business, I would say half the job is done when the actual model is completed. The process of modelling itself would bring new perspective and insight on all the parts of the business.

A study of the completed model may also show new ways of improving efficiency and coordination of the organisation. One example of a possible improvement is on the flow of information from customer feedback. Information from the forum will first go to the customer support team, then to the management which will then relay to the middleware team. One improvement that can be made is that any feedback from the forum be made available to all parties within the organisation. This could help improve customer services/negotiations on the sales team.

From the above observations, the proposed model is still very much in a conceptual stage. There are still issues that needs to be resolve and improved upon. However I believe the model has a lot of potential for use in strategic management or in value addition. Such a model can help the management to visualise their business in a more holistic way and enhance their understanding of the business and its environment.

7.0   Conclusion

- Business model literature, concepts and applications are still mainly concentrated in IS and e-commerce field.
- Most of the business model frameworks are of descriptive and explanatory nature. Is there are a possibility of expanding the scope of the business model for strategic management purposes?
- The proposed business model concept attempts to use the business model concept for strategic and value addition purposes.
- There are benefits and limitations of using a visual map. Benefits include ease of understanding and the large amount of information that can be shown. Limitations include the type of information that can be shown in a visual model.
- Concepts, frameworks and theories are tools that provide different perspectives to look at business. With a new perspective, new strategy can be formulated.

8.0   Recommendation

- Further research on the use of the business model concept for strategic management purposes.
- Further integration of management theories in the business model concept to make it more applicable to other fields.
- The proposed business model concept needs further development to expand and improve the implementation and application of the framework.
- The proposed business model concept can be used in combination with other management theories, for example in strategic networking and marketing.
- Any concept and framework is useful for getting new insights. Do not be afraid to try new ideas and experiment.

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