다중이용자 온라인 게임에서 신규 비즈니스 모델의 도식화에 관하여

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Mapping Emerging Business Models in Massively Multiplayer Online Games

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Abstract

The authors map some of the current Business Models in the Massively Multiplayer Online Player scenario. These maps represent Value Creation Systems by resorting to Value Net constructs and notations, and are offered here as a proof of concept and utility. The authors claim that these mappings can enable readers, managers and IT experts, to build new insights onto such Business Models and develop requirements for Information System infrastructure. When approaching the Value Creation System as a Value Net the goal is to think outside the conceptual box of Value Chains and understand how the different activities interact, by exposing the multiplicity of value types and flows. In doing this study the authors are attempting to synthesize a new Business Model proposal that could underlie the development of an infrastructure for the collaborative creation, distribution and exploration of online massively multiplayer games, beyond the traditional producer-consumer roles.

1. Introduction

The invention of the first Role-Playing Game(RPG), by Dave Arneson dates back to when the internet was taking its first steps. Soon the technology allowed the implementation of the first Multi User Dungeon(MUD) and in 1978 the MUD1 platform was written (Ralph, 2005). Since then, the concept of an online virtual world where players experience the game together with other players has been much explored. The first commercial use of online games started a few years later on 1984 with Islands of Kesmai for $12 per hour[10].

Nowadays, Massively Multiplayer Online Role-Playing Games(MMORPGs) evolved significantly. The simple command line has been replaced by stunning 3D graphics, the text commands by other modes of interaction and the plots have evolved. Despite the advanced technology applied in current MMORPGs, the game concept and associated business model of most MMORPGs is basically the same as Islands of Kesmai back in 1984. Some new MMORPGs are breaking with traditional business models, requiring the expansion of the MMORPG concept to simply Massively Multiplayer Online Games(MMOG). Their approaches include integrating the virtual(in-game) business with the business model of the underlying platform and giving the player the possibility to create their own content.

Two aspects frequently considered when talking about sustainability in MMOG are longevity of gameplay and the scalability of the infrastructure. With this article we intend to contribute to new insights on business modeling by mapping them as value creating systems. Our goal is to understand how the different activities and parties interact, while showing the different value flows across a network of activities.

The authors test their assumptions while attempting to synthesize business models, current and new, that could underlie the development of infrastructures for the collaborative creation, distribution and exploration of online massively multiplayer

games, beyond the producer-consumer roles traditional in this industry. In spite of being presented mainly as a proof of concept, this article is useful for those studying or building new business models, since this approach is more sensible to social and technological aspects of digital economies.

2. Business Modeling

The state-of-the-art in business models is still in a divergent state. There are many authors elaborating different proposals, each one with its own ontology (a framework consisting of concepts and definitions). Pateli and Giaglis elaborated a framework that permits a comparison of business modeling approaches based on six aspects (definitions, components, taxonomies, representations, change methodologies and evaluation models)[9]. With this framework they map several approaches by different authors. We will resort to this framework to locate our proposal in current literature.

Our main contribution to business modeling in this paper is the use of a conceptual and representational approach based on the Value Net. The Value Net methodologyis based on the use of concepts such as business entities, activity systems and value flows, to map value networks at the level of value-producing and value-consuming activities, within and across business boundaries[8]. Value Nets can be used to design or describe a business model, in a manner consistent with the state of the art in business modeling, as shown next.

The Value Net approach fits both these definitions since it describes the product, service and information flows, for the various actors and their benefits and sources of revenue. The business model designed with a Value Net defines an implementation of a strategy without detailing operational aspects. Osterwalder and Pigneur made the most extensive work in decomposing the business model in their parts, including a map of the proposals from most of the other authors into their own framework[7]. Their ontology is based in four main pillars: product innovation, infrastructure management, costumer relationship and financial aspects, each one divided into sub-components. The concepts used in the Value Net enable us to study the business model in the full extent of this ontology, yet the value network does not explicitly separate these business concerns, leaving such a decision for the modeler.

3. The Value Net

We were initially prompted to analyze MMOG Value Creating

Systems(VCS) from the perspective of value networks because in these business models we can have a somewhat complex network of value flows and forms of value, involving more parties than just the game producer and the player, that influence each other in many ways.

Value Net mapping includes the activities that contribute for the creation of value in multiple forms and the different types of value flows, which are interesting for a study of value relationships in the study of massively multiplayer online games creation, distribution and play. Three types of value flow will be considered: goods flow, information flow and monetary flow, although these concepts will be adjusted to the reality of this kind of business. In a first approach, there are no goods flowing on a MMOG, because all contents could be described as information flowing on the Internet. Some game producers actually ship the client software, but the main product consumed by the clients is the online content, so this content will be our goods. In-game currency plays an important part not only for the operation of the game itself, but also for the company business model, so monetary flows must be described in our value net mappings. Our Value Net diagrams will be created from the elements depicted in table 1.

|	
	Individual company
	Realization activities: activities aimed at the creation of virtual content and their transportation in the Internet.
	Support activities (with dashed outline): activities aimed at improving other activities, but do not intervene in the production of individual virtual content.
	Consumption activities
	Virtual content flow.
	Information flow.
	Real monetary flow.
	In-game monetary flow.
	Set of illegitimate activities or flows.

Table 1 - A Value Net Notation Adapted

4. An Analysis of MMOG Business Models

In this section we will describe some business models currently being operated by multiplayer online game providers. These examples are presented here as prototype cases, and not as a full taxonomy. They were chosen with the purpose of illustrating the edge of emergent business models. In their analysis we will be looking into the revenue model, the game contents production and other content related

businesses, and the business architecture will be depicted as a value network of value creating system of activities and value flows.

4.1 Traditional Time-Based Subscription Model

Most of the current MMOG still fit into this category. Among the most popular, we currently have Sony's Star Wars Galaxies, Blizzard's World of Warcraft and Final Fantasy XI.

A representation for the value creating system, typical in this category, is depicted by the Value Net in figure 1.
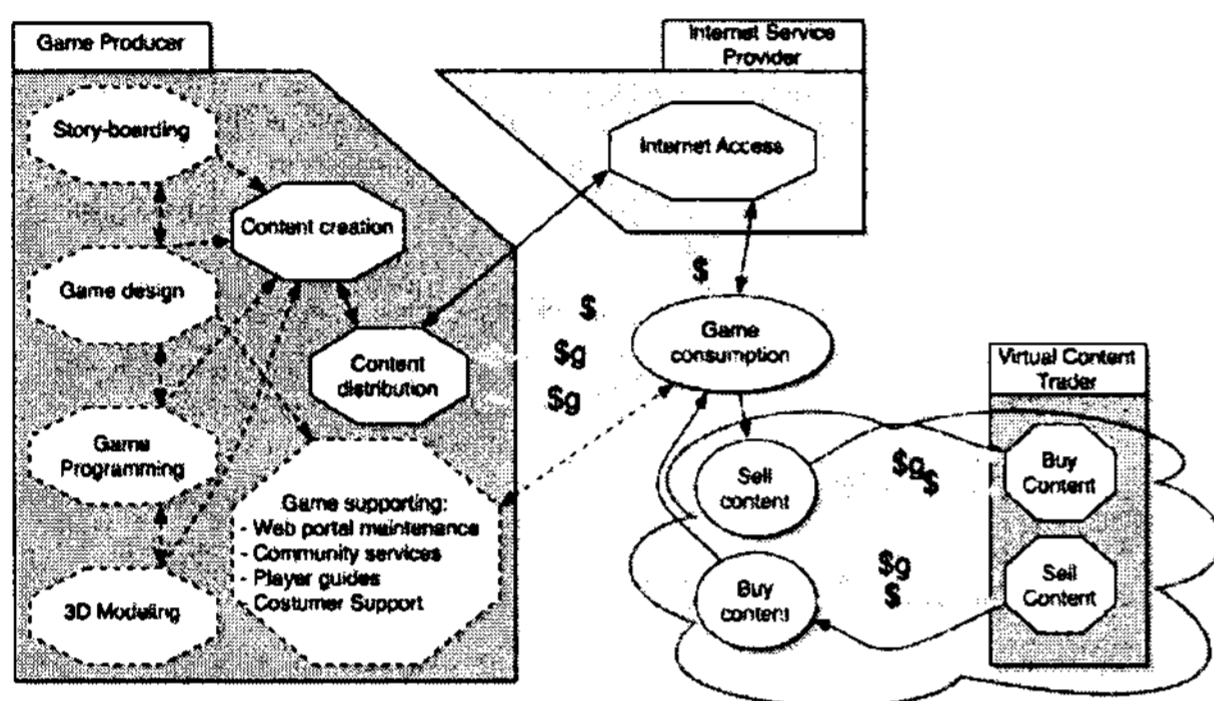

Fig.1 Value Net of a Traditional Time-based Subscription MMOG

In this diagram we identify the principal actors: the game producer, the internet service provider, the players and the non-legitimized virtual content traders. Game service provision defines service frontier that includes the organization of a set of activities including design, production and distribution.

The revenue model is based on a simple fee, which gives unlimited access to the game during a certain period of time, usually a month, but with other subscription rates for three, four, six or twelve months. The price usually goes from US$10 to US$25 per month.

In this kind of MMOG, the creators of the game produce all content and manage the intellectual property rights on them. It's not legally possible for players to create their own content or other special customizations. The End User License Agreements(EULA) and the Terms of Service(ToS) often forbid users to sell or buy any content outside the game. Their vision is that getting some kind of advantage outside the game is a kind of cheating and as such is not fair to the other players, and as such may hinder business.

Efforts to try to stop some players from making a business out of selling game associated content seem to be in vain. Sony managed to get EverQuest related sales banned from eBay, but this only moved the business to other places[6]. Game related business can be found not only on general purpose online stores like eBay, but also on stores specifically dedicated to this kind of transactions, like IGE and PlayerAuctions. Currently there are several online stores for virtual properties, where any player can buy or sell currency, items and even game accounts(avatars).

So, while MMOG publishers ignore or explicitly try to forbid it, the trading of virtual content among other actors in this context is increasingly becoming a significant part of the value system. Many positive value flows can be hinted from these activities that can reflect positively on game adoption and but also on gameplay longevity, as these game related flows enable new player relationships. In order to provide enough virtual content, game producers have to spend huge resources on programmers, 3D designers and plot writers. In this content production and trading by players we can read the signs of a movement towards an extended publisher-player relationship.

4.2 Virtual Currency Model

There are variations from the previous model. Some MMOG are emerging with a different perspective on buying and selling virtual items. Among them we chose as prototypical the Project Entropia[2].

Project Entropia Revenue model is based on selling currency for use in a virtual in-game economy. According to Project Entropia's Director of Concept Development, Marco Behrmann, the entire game was built from the business model[1]. In order to progress in the game, the player has to buy in-game currency, Project Entropia Dollars(PED), which has a fixed exchange rate: 10 PED is worth $1 US. The player needs virtual money not only to buy items (from other players or from the game), but also to fix those same items, since every object inside this MMOG decay. There is always the possibility to exchange PEDs back to US dollars, but the item trading is done uniquely inside the game. There is no subscription or periodic fee and the game can be downloaded for free.

The Value Net diagram in figure 2 represents the value-creating system in this business model. An adaptation in game contents production and management is noticeable.

Like in the traditional model, the game company produces all initial content but now the players can trade virtual content(game items), although the company still owns intellectual property (IP) rights over it. The question over management of
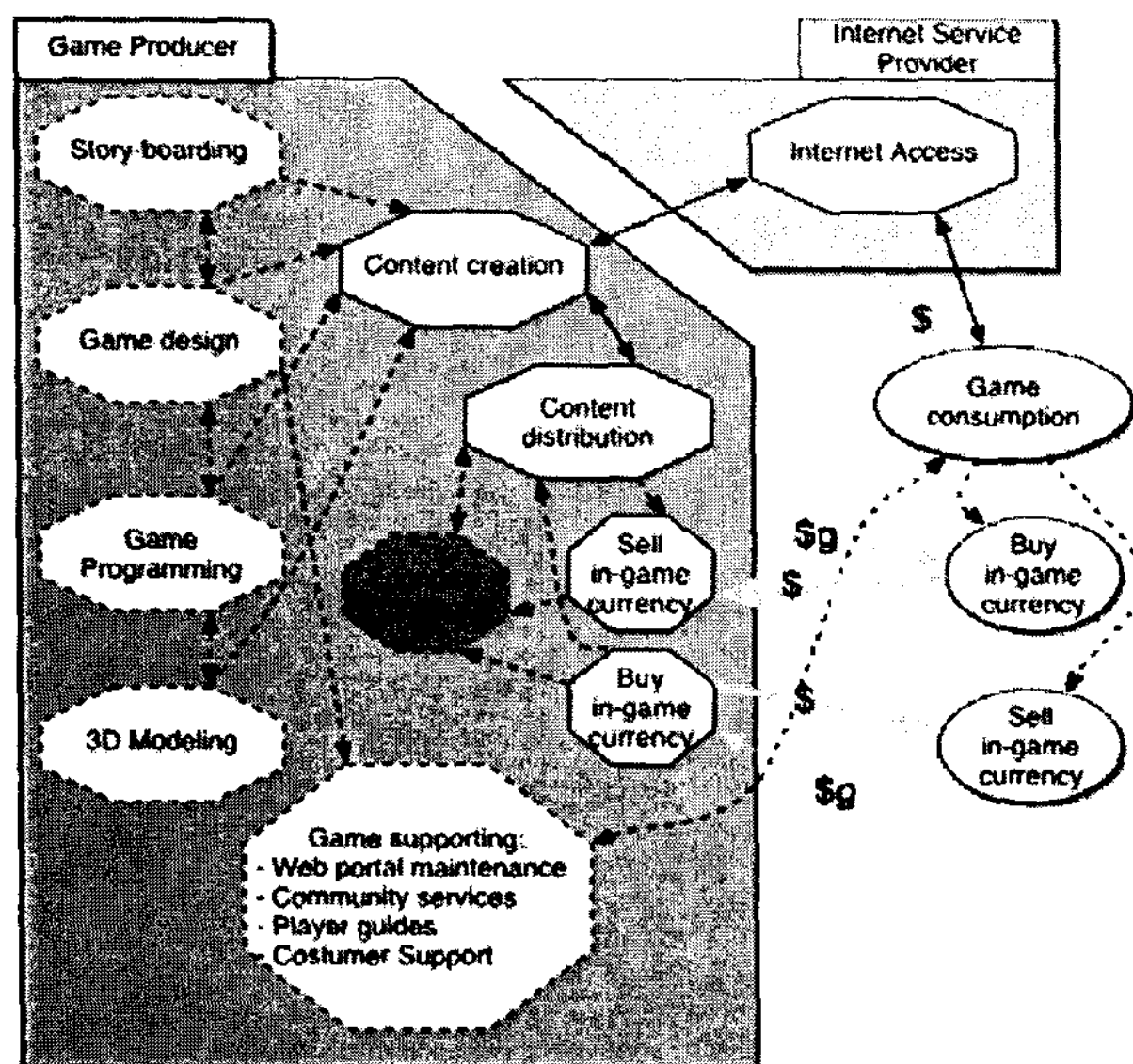
Fig.2 Value Net of a MMOG Based on a Virtual Currency

(IP rights is a tricky one as for the company to be able to operate a service that includes player produced content without being subject to any legal consequences or obligations it may require that players relinquish any previous rights when entering content or operating changes to game content already on the infrastructure. Content business becomes an integral part of the revenue model as explained earlier. Because virtual items can be traded inside the game, there is no reason for an illegitimate business outside the game, unless the operator of the game infrastructure starts taxing transactions. This business model, unlike the traditional subscription model, embraces the players' rights to the content they own inside de game. The player can buy or sell the items.

To operate this kind of business model, an economy monitoring activity assumes a critical role. Although the evolution of the economy inside the game is tied .to the fixed exchange rate between in-game and real money, inflation can become a common problem within such MMOG. Project Entropia appears to be dealing with this potential problem very well.

4.3 Virtual Real Estate Ownership Model

Second Life came with a new concept of MMOG. Their producers, Linden Labs, provide the infrastructure: an open virtual word[5]. Their expected revenue will come from subscription fees, in US dollars, and land taxes, in Linden dollars (the in-game currency). These Linden dollars (L$) that can be traded for real money, at a variable rate, depending on the law of supply and demand. Currently there are two types of subscribing plans:

· Basic – one single payment of $9.95 US that allows unlimited time access to the world and grants a small weekly allowance in game currency.

· Premium – $9.95 US billed monthly that allows the player to own land and grants a bigger weekly allowance in game currency.

As to game contents production it is expected for the players to produce all the content. A set of building tools are provided that enable players to build in the virtual world:

· 3D models can be made inside the game in a easier way, and deployed in real time;

· There is a scripting language that can be added to models in order to make different animations, defining object interactions or behaviors,

· There is support for audio streaming,

· Users can import 3D models, textures and sounds into the virtual world.

These tools enable the player to build simple objects like houses or perform avatar customizations. In order to build complex objects, with complex models or interactions, more advanced technical skills are required, like 3D modeling and programming skills. Some valuable objects customizations are based almost entirely on artistic work (e.g. cloth design) or in the combination of artistic and technical skills.

All kinds of content related business opportunities appeared since Second Life is online. There are people making and selling many kinds of objects like vehicles, clothes, accessories, animations and other avatar customizations. The technical and artistic skills required to make these objects are perceived as valuable by players which engage in production and trading activities. Some are using land to build business places like stores, casinos, discos or theme parks. There are even some companies that buy big parcels of land to rent. This model suits individual content producer interests because they can make a profit based on a professionalized service, and players that mostly assume the role of consumers get a more diversified offer.

The value creating system of Second Life gets more complex than the previous. Basically, Linden Labs just proposes to manage a way to enable the activity of creating and distributing content, with all corresponding support activities, to third parties and players. All they focus on is the creation and technical support of a virtual world infrastructure with a powerful set of tools to enhance it. The quality of the content depends largely

on the adoption by professional or semi-professional builders, which in turn depends on the creation of contents becoming a profitable activity. The value net for this value creating system is described in figure 3.

Second Life started with a slightly different business model, based on creation costs, taxes and stipends, and monthly subscriptions. These taxes had to be very high in order to maintain the platform, making more difficult the creation in
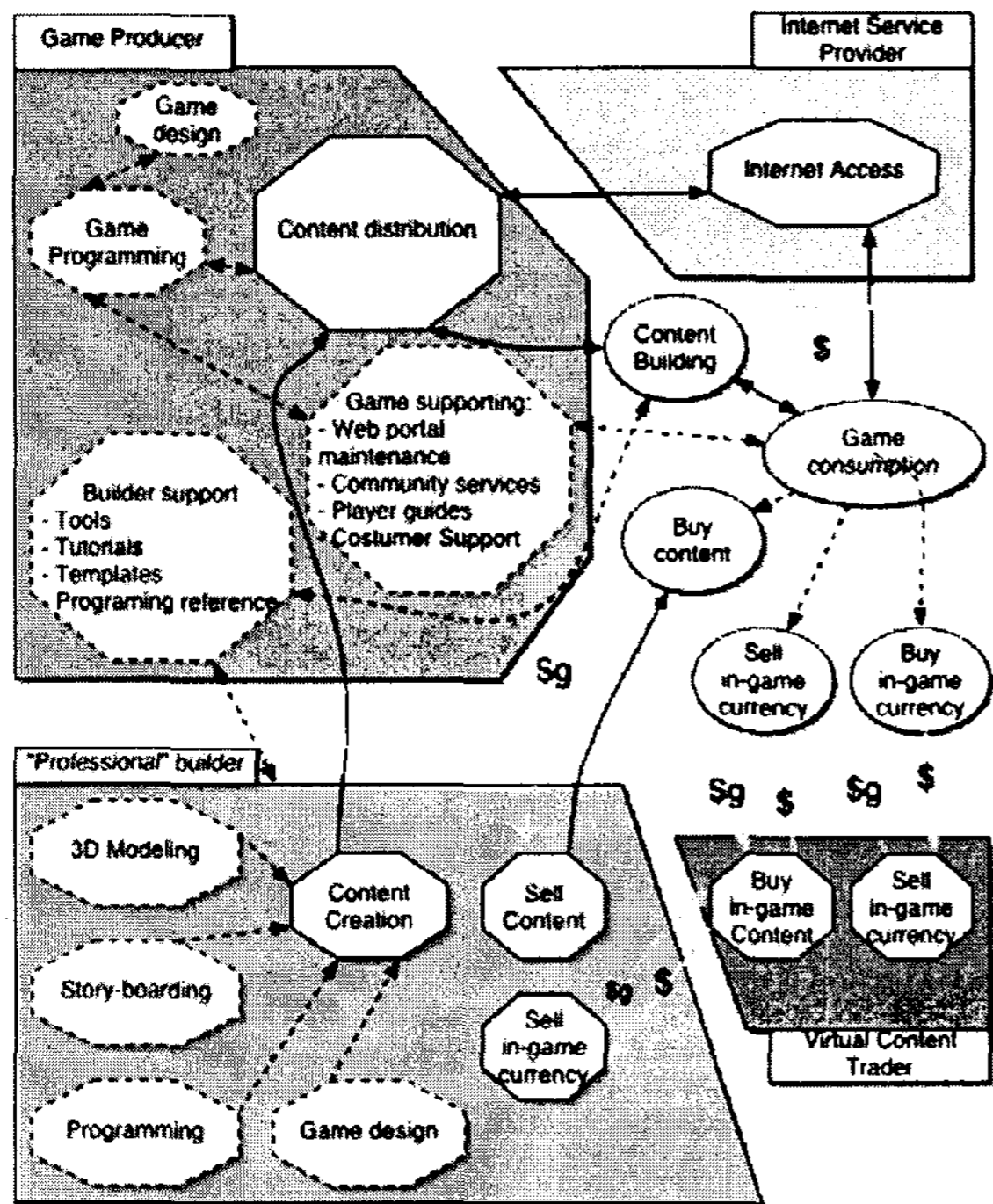

Fig.3 Value Net of virtual real estate ownership model

large scale and its maintenance[6]. The existing model, based on land taxes, is working quite well since it evolved. Only time can show the long term success of this business model and platform but for now everything points to success.

5. The Emancipatory Model Proposal

The Value Net has been used so far as an analysis tool for existing MMOG business models.

In this section we will use it as a business model design tool. Analyzing the previous business models it's possible to speculate a next step in MMOG business models. Second Life succeeded in delegating the construction of virtual content because they created a system where the entrusted parts (content creators) added value to the system that could be perceived by their clients and get adequate return for that value. The distribution of this virtual content management infrastructure in a scalable way still remains an open issue an

the actual ownership of the infrastructure by a single actor can lead to a monopoly positioning. As with content creation, distribution could also be delegated to many content providers. Again, such a delegation must ensure that the entrusted parts will have appropriate return. The proposed value network is depicted in figure 4.
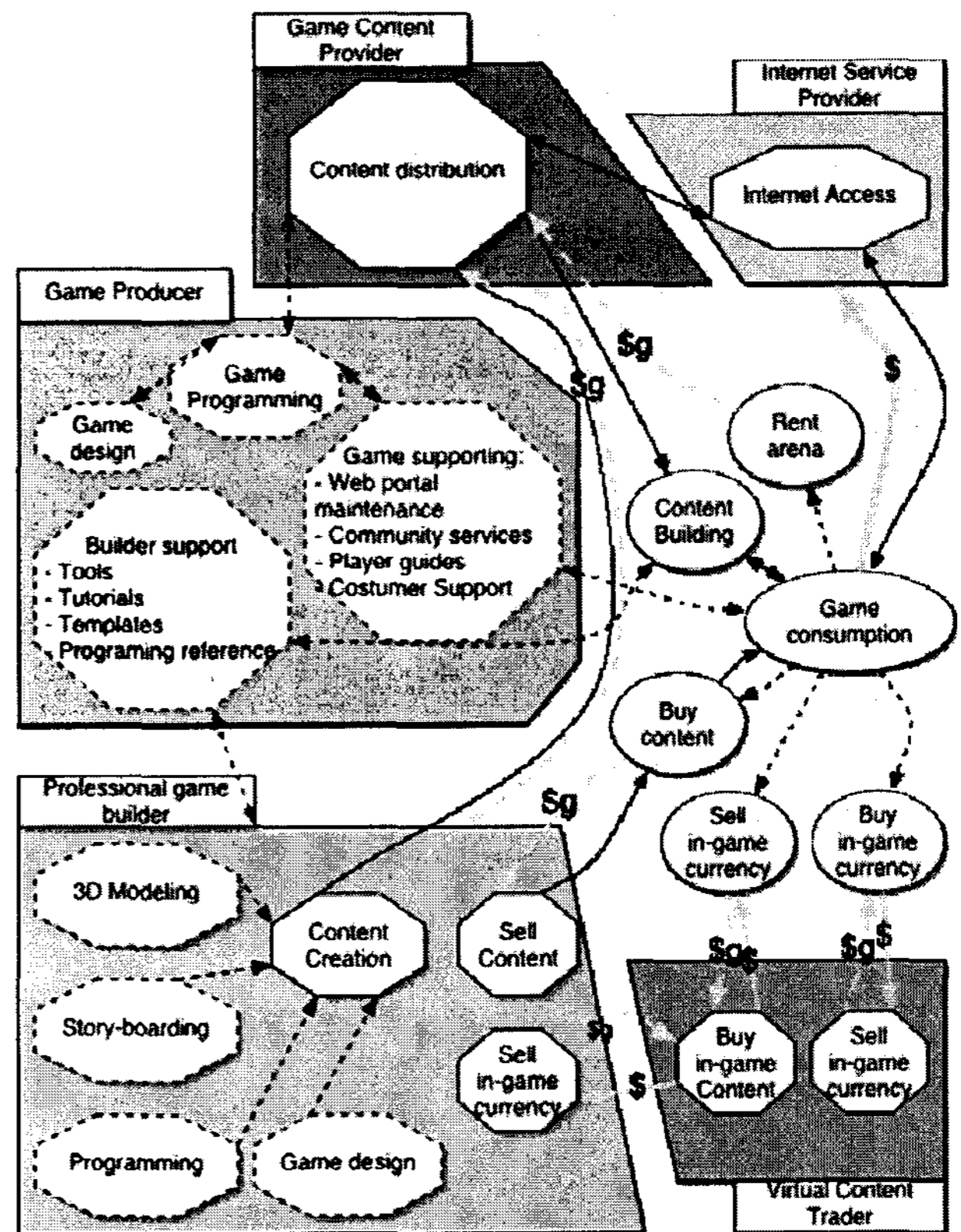

Fig. 4 Value Net for the Emancipatory Model

This Value Net is quite similar to that of Second Life. The main difference is that we now split the concerns with game production and from those relating to distribution the operation of the technical underlying infrastructure thus limiting the conflicts of interest. We are taking the activity of Content Distribution to another actor that we called Game Content Provider. These providers would get their revenue by renting their hosted game arenas to individual players or professional content creators. The scope of business opportunities could now be explored is new ways:

· Game Content Providers could sell Quality of Service to their hosted arenas. Hosting with premium QoS guarantees could be sold an added fee while basic service could come cheap or even free.

· Companies could create and distribute various content as

online game experiences;

- ISPs will want to host game arenas to maximize traffic within their network, or as part of providing an extra service to their clients.
- In-game currency conversion or trading services become regulatory and assume more importance in a business scenario with many infrastructure operators or providers. They should offer conversion rates for virtual currency from many different territories to and from real world currency.

The revenue for platform builders could come from setting up their own provision services, by licensing infrastructure rights to operators or from the provision of infrastructure related consulting services. The software produced could become freely distributed as open source, including clients, content servers and building tools, so that the software platform could benefit from a large rate of diffusion and adoption. Looking at open source business models, one can extrapolate that such a product could:

- Be sold as a consumer-driven service, i.e. by offering associated services like technical support, directory or discovery services[3];
- Obtain indirect revenues by selling related or value added products[3];

From this business model description, it is also possible to construct some of the requirements for such a platform:

- The players must be able to assume the role of game creators, authors or actors in the virtual world. The platform should implement simple game creation instruments and a Digital Rights Management (DRM) system that protects authorship and enables routing of benefits to creators.
- The persistence of the virtual world must be assured even if an item is not requested for a significant period of time, as there are vested interests in that content.
- Platform services should be freely and easily distributable across many hosting servers, enabling capacity expansion without requiring a centralized topology.

6. Future Work

The proposed emancipatory business model and the adoption of the supporting infrastructure depend on the people that take part in virtual gaming communities. To model and evaluate this business model we think we must study this project under a socio-technical perspective that can map the alignment of interests across time and the socio-cultural factors involved that can influence the adoption. As outlined in (Roque et al., 2004) to understand the interplay of the actors in information system development, one can take a context engineering approach that takes the proposal of a business model as an innovation movement contributing to a model of the context of intervention[11]. The study of the dialectics between a model of context and models of the artifact being developed, e.g. by evaluating prototypes against a model of context, could empower intervening actors to influence the emergence of a desired socio-technical context configuration. With such a purpose in mind, we will proceed by further investigating the actor-networks governing the adoption of such a proposal. In that study we will attempt to use Actor-Networks Theory constructs to model socio-technical perspectives of the development context as a means for evaluating business models proposals at an early stage, attempting to identify relationships that could be mobilized by developers[4].

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