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Organization and regulation of a virtual community

Introduction

A MUD is a computer system that allows many participants to connect to the system at the same time. It can be characterized as a virtual reality system where the environment is entirely constructed by text and where all social interaction is based on a nearly synchronous (real time) conveyance of text (Curtis, 1992). The communication itself takes on characteristics of both written text and spoken language.

Most MUDs are Internet-based and consequently – no matter where the host computer and the MUD system itself is located – the participants in a system can be located anywhere in the world.

The MUD system described in this paper differs from most other MUD system in one important respect. While it is Internet-based, it is one of the very few (between 1-2%) MUD systems where the English language is *not* used. In SvenskMud[1] the Swedish language is used throughout, thereby effectively restricting use to Swedes (or more correctly, to people who speak Swedish).

The question of interest here is how SvenskMud as an example of a virtual community has managed to organize and regulate its activities in such a way that a sustainable community has developed and is maintained over time. The question will however not fully be answered here. The implications of the question are immense, but parts will be explored and answered in this text. The end result at this point might very well be that more questions are raised than answered.

Two different frameworks will be used to explore the question. The first one regards SvenskMud as a public good and explores how a number of critical "design principles" of successful (real-world) communities are handled in SvenskMud. The second one regards SvenskMud as an activity system and explores some implications that has.

Virtual communities and collective goods

Collective goods

All communities and all societies have to face tensions between individual and collective rationalities. What is in the best interest of the individual is often not in the best interest of the community and vice versa.

In creating a public resource (such as a virtual community or an improvement in the local community), some put effort into creating something from which many can benefit. The risk is that too many settle for benefiting from the public resource while too few contribute to its production.

Ostrom (1990) studied a number of face-to-face communities in order to find factors that contributed to failure or success in creating and managing collective goods (public resources). In studying both

[1] SvenskMud means "SwedishMUD".

communities that has failed as well as communities with successful histories of creating and managing collective goods, she extracted seven design principles that characterized groups that were able to successfully organize and manage themselves.

Collective goods and Usenet News newsgroups

Kollock and Smith (1996) transferred the discussion of collective goods into cyberspace by analyzing how public goods are created, used (and abused) in Usenet News newsgroups. The collective good in a newsgroup is its bandwidth, referring both to limitations in technical capacity and in the capacity of newsgroup members to attend the information. The challenge becomes to use available resources wisely, both to foster relevant contributions and to discourage non-relevant contributions, unacceptable behaviour or other "bandwidth-wasting" activities.

Kollock and Smith compare the "conversation" in a newsgroup with face-to-face conversations, where both kinds require maintenance and coordination work in order to function: "if access to the floor [i.e. the limited bandwidth of the newsgroup] is allocated in an ordered way by speakers exchanging "turns", each has the opportunity to accomplish his or her interactional goals, but if all crowd in, the communication breaks down. Similarly, the interactional work that is necessary to keep a conversation going is a kind of public good in the sense that it is possible to free-ride on others' efforts, using and abusing the conversation without contributing to its maintenance." (Kollock and Smith, 1996, p.115)

Drawing on Ostrom's work, Kollock and Smith group and apply her design principles to Usenet newsgroups under three general headings dealing with 1) group size and boundaries, 2) rules and institutions and 3) monitoring and sanctioning.

Group size and boundaries

In face-to-face groups, larger groups equals greater problems of focus, coordination and cooperation and common interests. This is not necessarily the case in electronic groups where the low cost of communication and coordination are important factors that enable communities to form around newsgroups in the first place (Kollock and Smith, 1996). Ostrom found that clearly defined boundaries is one of the most important factors of successful groups. For newsgroups, boundaries are defined and constituted primarily through the newsgroup name, and sometimes through access barriers and barriers to posting messages to the newsgroup (Ibid.). Group boundaries are often not very effective in cyberspace and there are many examples of groups that intentionally or unintentionally have been disturbed or disrupted because of it.

Rules and institutions

Explicit and implicit rules exist in all communities. Ostrom formulated three principles of successful groups; 1) their rules are well matched to local conditions, 2) most individuals affected by the rules can participate in the process of changing the rules and 3) external authorities respect the right of the community to make their own rules. In Usenet News, there is a general, or global level on which rules of conduct, etiquette and bandwidth usage have been outlined that apply to problems that all newsgroups share. On a local level (i.e. in a specific newsgroup), many newsgroups have made *some* rules of conduct that match local conditions explicit by creating a so-called FAQ, or a file with Frequently Asked Questions. A FAQ contains guidelines to acceptable behaviour in a newsgroup and collections of common questions and answers to those questions. It is however impossible to *make* people subject to the rules in a FAQ, or indeed even to make them read the FAQ, and, "these documents contain no specific recommendations for dealing with violations of their rules" (Kollock and Smith, 1996, p.122).

The production of a FAQ can either be a collective process, the effort of a small group or of an industrious individual. There are no strong influences in Usenet News from external authorities at the present. (Ibid.)

Monitoring and sanctioning

Rules that adhere to the principles stated in the previous paragraph are not enough in themselves, but need to be followed up and enforced by effective means of monitoring and sanctioning the actions of members. Sanctions that are gradual are best and there should also exist some system of low-cost conflict resolution between members (Ostrom, 1990). While monitoring is very easy in newsgroups, sanctioning is not. Sanctioning by necessity usually stops at social gestures, such as ridiculing, ordering or requesting proper behaviour or just providing information about acceptable and unacceptable behaviour. In this way, teaching about (informal) rules, sanctioning and socialization float together into one single category of "soft", or informal instruments of control.

The limitations of these informal methods were apparent recently when a Swedish Usenet newsgroup was destroyed single-handedly by one person. The newsgroup was dedicated to discuss risks from a variety of disciplinary perspectives, but one person (who had no particular reason for being in the newsgroup in the first place), managed to lower the level of the discussion and produce such a volume of postings that he drove away other participants, silenced all discussions and eventually killed the group (or forced the group to commit suicide). The same fate has befallen other virtual communities, including the first bulletin board service (BBS), CommuniTree, that specifically tried to create an on-line community (Stone, 1991, pp.88-92). Stone dryly comments that:

> "Within a few years there was a proliferation of on-line virtual communities of somewhat less visionary character but vastly superior message-handling capability – systems that allowed monitoring and disconnection of "troublesome participants (hackers attempting to crash the system), and easy removal of messages that did not further the purposes of the system operators."
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> Stone, 1991, p.91

As for conflict resolution, no formal system yet exist in Usenet News. (Kollock and Smith, 1996)

On the organization of a MUD

All virtual communities are totally dependent on the technological infrastructure (Ågren, 1997). The coupling between the technical system and the social system is even stronger in a MUD. In a MUD, technical design choices always have social implications and social design choices have technical implications (O'day et al., 1996). A MUD is in fact a social system *within* an artifact.

To understand how a MUD is organized, it is necessary to understand some about the history and developmental path of MUDs. MUDs have primarily been developed near technical universities and they embody much of the hacker ethic (Levy, 1984, pp.39-49, Raymond, 1996, p.234). This includes a willingness to give away the efforts of one's work for free and let others use it and build on it, as well as a positive attitude to computer access and opportunities to learn how to program. To this day, anyone can download the software from the Internet to start a MUD of their own.

As a MUD is both a technical and a social system at the same time, many social values are reified and built right into the code of the technical system. A mature MUD that has been used for some years is the result of the efforts of many individuals. Not only of those who have belonged to the community and developed that MUD from when it was started, but also of many others who developed the original software that was used to start up the MUD.

A central principle of sociocultural theories is that we do not act *directly* upon the world, but that tools *mediate* human action. We are dependent on cultural tools in our actions – including intellectual ones – and many of the tools we use have long histories. We metaphorically "stand on the shoulders" of previous generations as we draw on their experiences by internalizing a pre-interpreted world (Säljö, 1996) and as we use their artifacts. In an example, Wertsch (1997, pp.28-29) shows how difficult it is for us to multiply largish numbers without resorting to powerful cultural tools. The tool can be the spatial organization of arranging number in a specific way and then applying rules for breaking down a complex task into a series of simple operations (his example), or the tool can be a calculator. As mentioned, in many of our day-to-day actions we stand on the shoulders of previous generations and the same is true also for a MUD. The social system in a MUD is dependent on the technical system, but

many decisions that affect how a specific MUD is to be organized was taken long before that MUD was started up!

There is a traditional distinction in adventure MUDs between those who use the technical system and those who extend and maintain. Someone new to a MUD has to start out as a player, living in the MUD world, steadily gaining experience and power within the game and rising through the experience levels. When a player has "done it all", solved all quests in the MUD and fulfilled all other demands, he or she graduates from player status to that of a wizard. As a wizard, the gaming aspects are over and done with, but new "career opportunities" in programming ("extending" the world of the MUD) instead open up.

This division between players and wizards is hardcoded into the technical system of all adventure MUDs. There are implicit values built into the system that can only be understood if the origins of the systems are taken into account. It is for example more or less taken for granted that the goal of all players is to become a wizard and that all wizards will want to learn to program.

SvenskMud as a collective good

SvenskMud as an example of a text-based virtual reality system constitutes of many thousands of separate spaces, or "rooms" that can be traversed. A substantial part of the player activities in the MUD consists of exploring the SvenskMud world and solving different quests. While doing this, a player will meet and socialize with other players many times. Some players are more keen to connect to SvenskMud in order to socialize and meet their friends than to solve the different quests. As most other MUDs on the Internet, SvenskMud is an example of an adventure MUD, but during the last decade a number of MUDs that are purely social, and that have done away with all gaming aspects, have also appeared. Although there are many similarities, these MUDs differ in key aspects from adventure MUDs regarding what challenges they face and how they organize themselves.

As apart from a newsgroup, a MUD is not organized around a specific subject that is to be discussed, and the common resource is not the bandwidth of a communication channel (the metaphorical "floor" of an ongoing asynchronous conversation). But in the broadest sense, the public resources to be managed in a MUD as well as in a newsgroup are the things that make players come back again and again. Since SvenskMud is a more complex environment than a newsgroup and since different people use SvenskMud for different purposes, the public resources offered are also more complex. A suggestion is that the collective goods that SvenskMud offers its players can be divide into three different parts; the technical quality of the system (i.e. the computer program) that mediates all activities[2], the quality of the virtual environment (i.e. the content of the MUD) and the social environment in the system (i.e. how comfortable a player feels in the system). If any of these parts failed, that would be reason enough to drive away many players or to fail to attract new players. Different parts, or different mixes between the parts, are of different importance to different players.

It is more difficult to answer what the driving forces are that makes the magicians come back again and again to spend time and energy taking on responsibilities to maintain and extend SvenskMud. This is an open question, but a guess is that social issues are very important as well as issues of power and responsibility; it is possible to "make a career", to gain power and respect in SvenskMud no matter who you are outside of the MUD. A survey that was sent out during the spring 1996 gave that the youngest magician (who answered the survey) was 14 years old!

Group size and boundaries

Group size can indirectly cause problems in a MUD. A MUD system is there to be used and it doesn't run down because many rather than few use it, but many simultaneous users means a higher load on the computer system. This can result in slower response times and longer delays in the communication with the system and with other players (so-called lag). But delays in a MUD can also be caused by

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[2] It would for example be intolerable if the system was unstable and often crashed or if many simultaneous players led to unacceptable response time and delays that would slow down all interaction (so-called lag).

ineffective programming and it can be remedied by throwing more computer power at the MUD. It is not primarily a social question of players misusing public resources, but a practical, technical question.

Boundaries are a problem in SvenskMud as well as in many other virtual communities. The Swedish language is the most important and effective boundary in SvenskMud, but no strong boundaries exist except for that. Different MUDs have different criteria for membership, but they all strive to get members that will contribute to the community over time through their presence and through their actions in the system.

SvenskMud has no criteria at all for membership, anyone can immediately become a member and start playing. Unfortunately, this has at different times caused problems. Some have for example created characters and entered the game for the sole purpose of annoying others. If they are kicked out, they then create new characters and return to the game immediately.

Rules and institutions

The rules in SvenskMud have always been created by the community with no interference from the outside world. As there are two different classes of characters in the MUD, players and wizards (called *magicians* in SvenskMud), there are two different sets of rules that apply to them. Players can do less than magicians and many of the limitations (the rules) that apply to players are hard-coded into the system and are just not possible to break. The rules that apply to players are implicit and must be learned. On the other hand, the general rule is that anything that is possible for a player to do is OK.

The magicians on the other hand are surrounded by rules. Some have been formalized in a "handbook for SvenskMud-magicians" (Tolke, 1993). The handbook is written by the one person who created SvenskMud in 1991 and who has the title "god" in the game[3]. One part of the handbook enumerates rules and decrees for magicians and magicians are for example not allowed to hurt or to help players in any way.

A large part of the handbook strives to create a common understanding for what SvenskMud is supposed to be. The means to reach this goal is described both in general terms and in terms that are relevant to the hands-on task of programming and extending SvenskMud. An important goal of the handbook is therefore to socialize new magicians, to teach them why it is desirable to reach certain goals, and how to do it practically. The practical part includes instructions how program in such a way that the quality of the technical system and the virtual environment (the content of the MUD) is maintained. One suggestion for how to accomplish this is by looking at the code of other magicians, borrowing parts of that code and altering it to adapt it to new purposes. This is *explicitly* encouraged and goes to shows how deeply embedded the hacker ethic is in SvenskMud.

In SvenskMud, as in other adventure MUDs, the magicians decide how the MUD should be run. Players have very limited possibilities to change the rules. The basic option they have is to stay in SvenskMud or to find another one they like better.

Monitoring and sanctioning

It is technically very easy to record, or log, all interaction in a MUD and any player can easily log his or her own interaction in SvenskMud. But as apart from in a newsgroup, extremely large amounts of text are produced every day in a MUD. Most of the interaction is game-related or purely social and not very interesting to keep records of even if this would have been possible.

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[3] The title "god" is partly a joke, but it is still quite appropriate. God created the SvenskMud world and it is formally in his power to destroy it. God is responsible for SvenskMud in relation to the sponsoring organization that put neccessary compuing resources at SvenskMud's disposal. But in the day-to-day care of the MUD, god has since a few years back an unobrusive presence and lets others take care of most problems.

As mentioned before, annoying and deviant behaviour can be punished by throwing the perpetrators out of SvenskMud (if they don't heed appeals to stop[4]). There has at times been concentrated attacks by "unserious players", that being a euphemism from on-line discussions for players who display unacceptable behaviour. An easy way to defend SvenskMud from these attacks would be to disallow connections from the site(s) from where the behaviour originates. This action is unfortunately not very discriminating and strikes also innocent bystanders, i.e. other persons at this site (for example a specific high school) who have not misbehaved.

This is an example of a problem that arises because it is impossible to recognize the real-world individuals behind the SvenskMud characters (and adapt ones behaviour accordingly). It is only possible to trace a person back to the computer host which he or she connects to SvenskMud through. Since "the ability to recognize other players from past interactions [...] is necessary to sustain cooperation" (Axelrod, 1984, p.139), this constitutes a formidable challenge to SvenskMud and other virtual communities. Even in the rare case when someone has been excommunicated, it is in practice still impossible to bar that person from further participation.

Since there is a formalized hierarchy of power in SvenskMud (as apart from newsgroups), conflicts are simply resolved by appealing to the powers-that-be. As no formal system for conflict resolution exists, they in turn solve problems on a need-to basis as they arise. A simple explanation for this reactive (instead of proactive) behaviour is that monitoring and sanctioning takes time, and performing these tasks are not something that most magicians prefer to spend their time on.

In SvenskMud, most the rules as well as the procedures for monitoring and sanctioning transgressions are flexible and unformalized. The informal organization can be both a strength as well as a weakness. There has been clashes and struggles when opinions diverge regarding the "right" way to run SvenskMud. As little is formalized, diverging opinions can exist side-by-side for a long time and make themselves known only as problems arise in concrete situations.

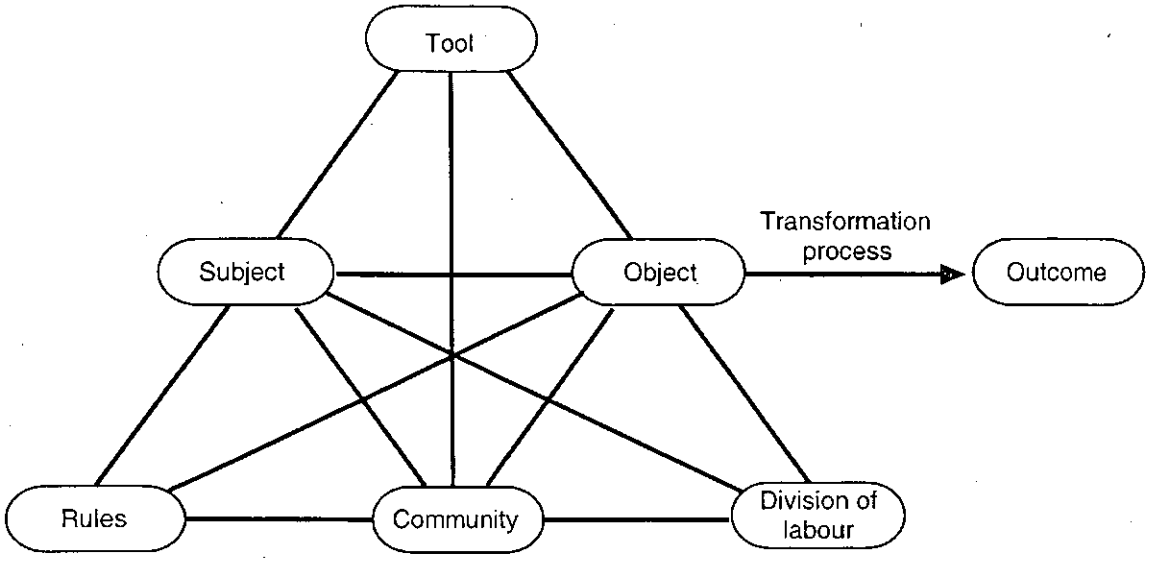
SvenskMud as a activity system

A basic tenant of activity theory is that all (goal-directed) human action (and all higher psychological processes above the elementary forms of behaviour) is mediated. As opposed to psychological theories of stimulus-response, in activity theory human action is not regarded as a direct response to a stimulus, but is mediated by technical and psychological tools (of which language is the most important tool) (Vygotsky, 1978, p.39-40). That our actions are mediated means that we never experience or act on the world directly, but rather interact with it by means of material or mental artifacts that metaphorically stand between the individual and the world (Säljö, 1994). It also means that it is difficult to separate our actions from the social, cultural and historical context in which it is carried out (Wertsch, 1991).

Leont'ev, a student of Vygotsky's, in developing activity theory also attended to the nature of collective human activities and the relationship between collective activities and individual actions (1978, 1981). An example from Leont'ev (1981) is when a group of hunters take on different roles for a hunt. An individual hunter may be assigned the task of beater, i.e. of making noise and frightening a herd of animals to run in the direction of the other hunters. From the point of view of the individual beater, his actions does not make sense in relation to the goal of hunting, but can only be understood in relation to the larger goal of the collective activity of hunting.

Engeström (1987) further developed a model of the basic structure of human activity (picture 1) that has been used in several studies of developmental work research (see for example Engeström, 1993 and Cole and Engeström, 1993).

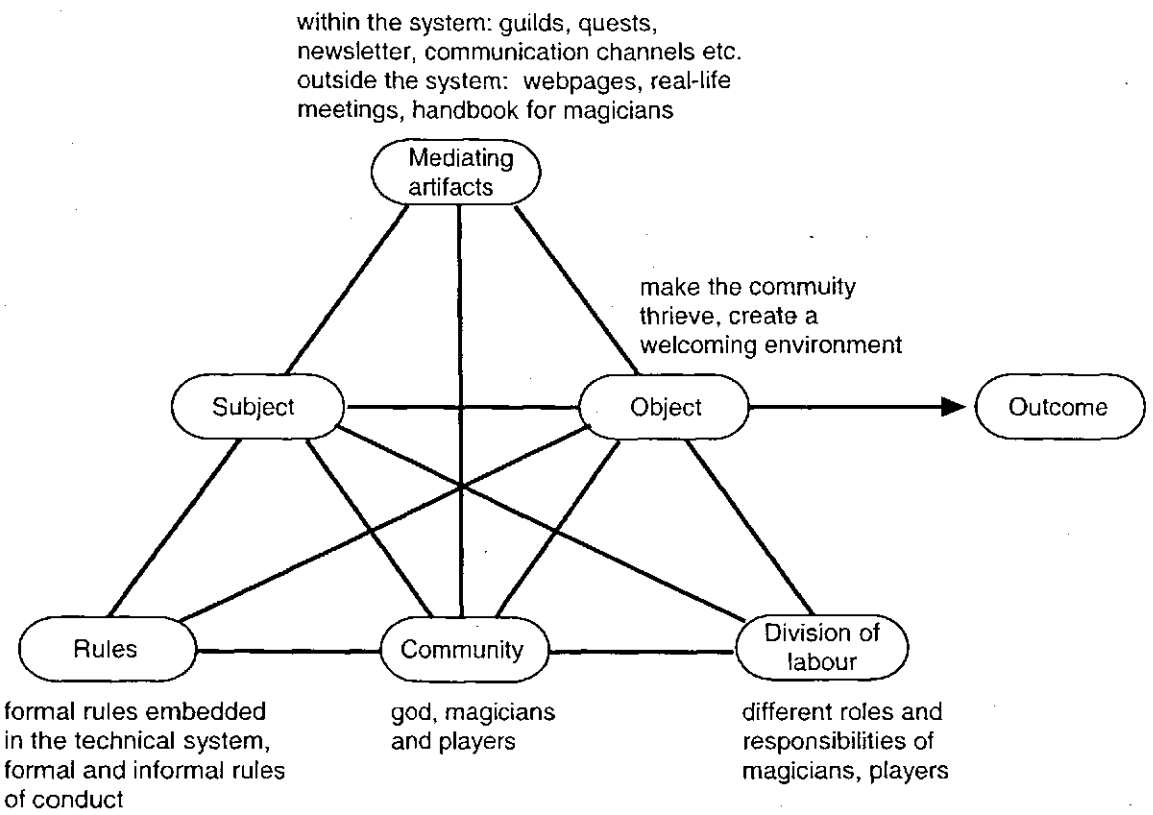
[4] It seldom happens that there is not a magician logged in who can preform this service



Picture 1. The basic structure of human activity (Engeström, 1987).

According to the model, the individual or subgroup (subject) is part of a community that has a common goal, or *motive* (the object of the activity). The subject works towards accomplishing this through the use of different tools (mediating artifacts) that can be both physical tools and tools for thinking. The relation between the subject and the community is in its turn mediated by conventions, norms and sanctions (rules). The community organizes itself explicitly and implicitly to divides tasks among the participants (division of labour). The outcome is the actual output of the activity which might or might not differ from the intended goal.

Developmental work research usually takes work-related activities as its object of study, but any complex on-going activity, such as the activities in a formal school setting (Bellamy, 1996), or the activities of SvenskMud as they develop and unfold over time can be productively analyzed with this approach. Just as a newsgroup, but apart from many other (work-related) activities, there is no instrumental, goal-oriented *purpose* of SvenskMud. SvenskMud is not run *in order to* accomplish anything specific.



Picture 2. Using the model for an activity system to analyze SvenskMud.

The original goal of SvenskMud has been defined in the "Handbook for SvenskMUDmagicians" (Tolke, 1993). Under "the goal of SvenskMud", the creator of the system states that" the original goal of SvenskMud is to offer an alternative to the English-speaking American-influenced culture that exists in the Swedish hacker society and especially in the supply of MUDs" (Ibid., p.2, my translation). This goal is further operationalized in the handbook in a decree that states examples of desirable and non-desirable content in SvenskMud. Non-desirable content reflects Anglosaxian culture or other non-Swedish cultures as well as elements that in other ways do not fit Swedish conditions. Specific examples of features that should be avoided includes hamburgers, Chinese food, tacos, the Grimm brothers, Tintin, Snoopy, baseball, basketball, volcanoes, deserts, cannibals etc.

The original goal is still valid, but it is not strictly enforced when it comes in conflict with another goal, that of encouraging contributions of time and creative energy of the magician-programmers (Tolke, 1996, personal communication). Another important goal that emerges in private conversations with the two most powerful persons in the MUD, is to create the conditions for a thriving community by offering a welcoming, secure and fun environment that appeals to players and magicians. This includes trying to keep the gaming aspects and the game-play in balance in the MUD. If new magicians created better weapons, more dangerous monsters and more valuable treasures all the time, this would create a virtual inflation that would decrease the value of the existing content in SvenskMud (Tolke, 1993, p.33). Some technical mechanisms are in place to control this, but the best solution to this problem is not technical, but social; to get new magicians to "buy in" on the existing concept and understand the goal of SvenskMud and some of the dynamics that are involved in reaching this goal.

Activity systems are complex and they are never harmonious, but are rather in constant flux and change. As the activity changes and as different actors or groups have their own goals within the larger framework, inner contradictions such as misunderstandings, breakdowns, disturbances and conflicts are always present. It is through working through theses contradictions that any development can appear in an activity.

> "When a strong novel factor is "injected" into one of the components and it thus acquires a new quality, pressing secondary contradictions appear between that component and some other components of the system. For example, when new types of patients begin to enter a medical activity system, the doctors' material and conceptual tools for diagnosis and treatment may become inadequate"
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> (Engeström, 1993, p.72)

In a similar way, when new types of players, and a later magicians, entered SvenskMud a few years ago, the material and conceptual tools for reaching the above stated goals became inadequate. Younger players were not a great problem, because players never have a lot of power and generally have to content themselves with the situation they are in (see "rules and institutions" above). But, some of the young players soon became young magicians, and magicians do have the power to change the game and thereby affect the balance of the socio-technical system. Not all of the young magicians understood or consented to the informal rules. When this was perceived as a threat the balance of the game-play by the most powerful magicians, drastic actions to remedy this problem was taken in order to limit the power of new magicians until they "had proved themselves worthy" of larger powers and responsibilities in the SvenskMud world.

Conclusions

Some insights have been gained regarding how a virtual community manages to organize itself. The basic token in SvenskMud is a massive influx of time spent in the Mud by the participants, both players and magicians. The challenge becomes to use this "capital" in such a way that a flexible and sustainable structure (i.e. a community) is created.

Since most participants in SvenskMud are in their teens or in their twenties, most use the system for some time and sometimes even for several years, before they move on in life and leave SvenskMud. To foster a continuos regrowth of both new magicians and new players is therefore of great importance in SvenskMud. After seven years of existence, SvenskMud must be said to have succeeded in solving this task in a satisfactory way. It is however more difficult to answer exactly *how* this is accomplished. Recruiting new players, socializaing new magicians (both in social issues and coaching them in programming), and most important; making players and magicians stay in the system are all tasks of prime importance, but they are not raised and explicitly discussed in SvenskMud as such.

A new study about who uses SvenskMud and what the driving forces are for spending time in the system is planned in order to answer this important question.

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