The end of symbolic immortality: a non-monetarian collaborative cooperation model in an Internet based groupware service

Roland ALTON-SCHEIDL
Gernot TSCHERTEU
Austrian Academy of Sciences' Research Unit for Socio-Economics
(e-mail: firstname.lastname@oeaw.ac.at)

Abstract

Based on user requirements investigations of typical groupware users, we have elaborated a rating model for collaborative message filtering. In this model, evaluating contributions has a direct effect to the organisational structure of virtual co-operative groups. The model fosters self-organisation and vitalization. The dynamic incentive mechanism mirrors real group dynamics to virtual communities. In that sense, symbolic immortality of human beings (Baudrillard) is reduced for virtual activities, as symbolic capital has to be steadily renewed.

- Introduction
- Role Handling in Groupware
- The idea: linking role assignment and rating
- Linking ratings with functional elements and roles
- Communication environments demand for general accounting systems
- The model as a rating game
- Tuning the rating game
- A rating game for Web4Groups
- Conclusion
- References

Introduction

A user requirements phase of the project Web4Groups, which was carried out by a consortium of European R&D and Industrial partners and has been funded by the European Commission within the "Telematics Application Programme", included archetypical user groups from the research and administration sector. The lack of quality of information in threaded discussion groups has been stressed by the representative of the user groups as an important issue. 43% of the users see collaborative rating as a reasonable way for better filtering and coping with the huge amount of messages in mailing lists or newsgroups.

Within the follow-up project SELECT [8] we propose an architecture for filtering mechanisms both for the world of messaging and documents. The model described in this paper is a candidate for implementation using the general purpose groupware tool Web4Groups.

Role Handling in Groupware

Groupware implementations offer a wide variety of handling roles. A complex role handling mechanism is not necessarily a guarantee for acceptance of a groupware system by the users. Notably, very simple role models are today used for group communication widely and successful: WWW and e-mail.

The authors describe a system of flexible and context-sensitive role assignment in the paper `Social Functions in Virtual Communities' [1]. Like in `real life' roles should change according to the social settings in which a person participates. It is not self-evident that usage rights should be assigned without regard to the social setting in which the usage takes place. CMC should be a socially differentiated cultural space, like cultural spheres in `normal life', and this would for example mean that a participant in a discussion should have certain rights, different from somebody participating in a market situation. Such a change from one social setting to another is described in Figure 1.

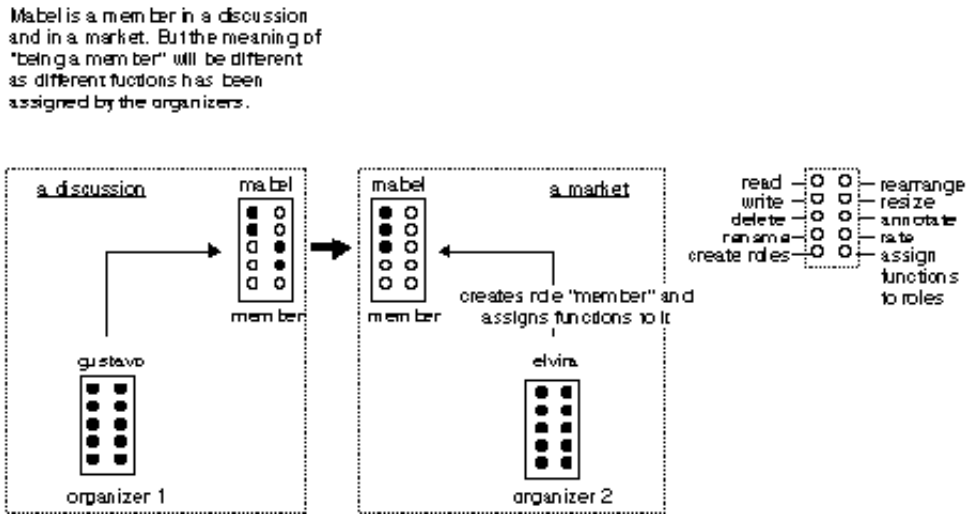

Figure 1: Roles change in different virtual social settings

The point is that there are not only differences between roles but also differences between similar roles in different settings. Being a family member has different implications from being a member in the Houses of Parliament. This is self-evident in `normal life' and should also be the case in CMC.

The idea: linking role assignment and rating

The next observation was that functions and rights should not only be assigned by organisers. In Web4Groups it was tried to avoid such an omnipotent role. The question arose whether rating could be a suitable way to distribute and obtain functional elements. The basic idea was: if a person participated very actively and wrote interesting contributions, s/he would get good ratings. Those could be collected in a personal account. When a person had collected a certain amount, s/he should be assigned new functional elements or a completely new role. Furthermore, persons would be able to gather "symbolic capital" and show it proudly to other users.

Linking ratings with functional elements and roles

Ratings may refer to different aspects of contributions. Therefore different ways of rating units may be used: e.g. a rating unit for innovative ideas: `light-bulbs'. If a contribution gets three `bulbs' it is supposed to contain a lot of brilliant, new thoughts.

Another rating unit - e.g. hearts - could be awarded for sympathetic contributions, a third one - maybe medals - for social competence, and so on.

After having for example received five bulbs, the participant should obtain the right to make annotations to other contributions, or, after having received ten `hearts', he or she would become `man or woman of the month', and find his or her face on the welcome page of that service. There are no limits to inventing new rating units and things that could happen after having received a certain amount of them.

In general one could distinguish between two forms of units depending on the consequences of good ratings:

First there could be some automatic relation:

E.g. after having received ten light bulbs somebody would automatically get the right to make annotations to contributions of other members.

Second there could be free choice among a set of additional rights:

be paid with three `pigs'. What would s/he buy with that `money'? There must be other services in the community that would be interesting for him/her, like the advice of another competent person, e.g. a tax consultant, a translator, an editor, and so on. Such a system of exchange makes sense in rather big communities with a lot of different skills and experts. In such a context money may be a good medium to activate skills which would not be activated without it . Money also seems to be a way of regulating the demand for a good or a service, if no other form of regulation can be found. The crucial question is where money should be used and where it should not.

Communication environments demand for general accounting systems

"Essentially, communities may provide resources for the redress of infractions and forfeitures of debts that might not otherwise be redeemable. Social pressure from insult to incarceration to make good on all debts helps communities maintain the essential collective good of trust. The benefit of maintaining a generalised accounting system (one that allows for credit and does not demand intensive monitoring) is supported by experimental research (Kollock, 1992) in which it was found that generalised accounting systems yield much greater mutual benefit than tight systems that demand in kind exchanges at all turns." [4]

Small and closed communities seem to facilitate the maintenance of generalised accounting systems[1]. Closure and well-defined boundaries seem to be a good way to maximise mutual benefits and to avoid free-riding. Families benefit from the fact that family members are more or less defined by birth or adoption. The fraternal communities in monasteries and convents are also based on well defined rules of incorporation of new members; common goods only belong to members of the community and not to outsiders. If outsiders may benefit is up to the community. It seems to be paradox, but outsiders may profit from the strong boundaries that keep them out if the protected community is able to produce a surplus, because of its special form of co-operation and if that surplus is given to the outsiders. By blurring the boundaries, outsiders would also lose something in the long term.

In summary, there seems to exist a trade-off between boundaries and the need for money and other accounting systems: Strong boundaries allow mutual benefit in very generalised accounting systems. Weak boundaries increase the need for regulation and a rather strict accounting system.

In fact a good deal of experience gained in CMC shows that open discussions with a large number of participants tend to lose quality and social coherence. On the other hand, strong boundaries may not fit many conferences and discussions and may interfere with the open character of the Internet.

The model as a rating game

To give the better impression of how the co-operation in rather complex systems may be designed, the following *game* was invented. The term *game* is used because of the game-like rules. Rules can be seen as automatic relations between the amount of rating units someone has collected and his/her role in the system. Please note that it is not a game in the sense of game theory, but in the sense of party games. Nevertheless it alludes to real social settings and mechanisms. The game introduced here is one of thousands of possible games that may be designed for communities, and its main objective is to discuss the impact of different rules on the development of communities. To enable a better understanding of the game it was embedded in a real-life scenario:

Imagine a trans-disciplinary research context, for example `Artificial Intelligence'(AI) or `Human-Computer-Interaction'(HCI)[2]. In such contexts of knowledge production there is a rather rapid change of themes and opinion leaders. The role structure of a messaging-system should mirror that by allowing maximum flexibility in opening new discussions and in supporting a permanent flow of the members' degree of activity between being active and organising and being a rather passive consumer.

In other words, a person's roles and social functions may vary greatly. There are periods of high activity, when someone is eager to co-operate intensively, and others of lesser activity when someone prefers to lean back or to retire. The assignment of real-life roles therefore is more or less 'soft' and fluent.

The idea behind the following game is that teamwork very much depends on both a clear definition of roles and on the members' flexibility to change roles and to perform other functions. Hierarchy and the will to remain `on top' mostly interfere with common goals or impede defining such goals. Therefore a game with dynamic hierarchies is introduced. A number of rules prevent persons remaining on top and therefore becoming exhausted and obstructing others endowed with fresh forces. It may be assumed that people will accept rotation as something natural and positive for everybody.

Players may hold three different roles shown in the figure below.

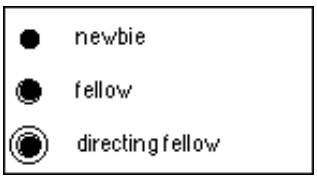

Figure 2: Players

Newbies are newcomers that become normal fellows after a certain time (according to rules to be defined later.) Fellows and directing fellows match the two modes of activities described above. Members are to rotate between the roles of a normal fellow and the role of a directing fellow. Figure 3 is to give an impression on how newbies, fellows and directing fellows may be grouped into several discussions.

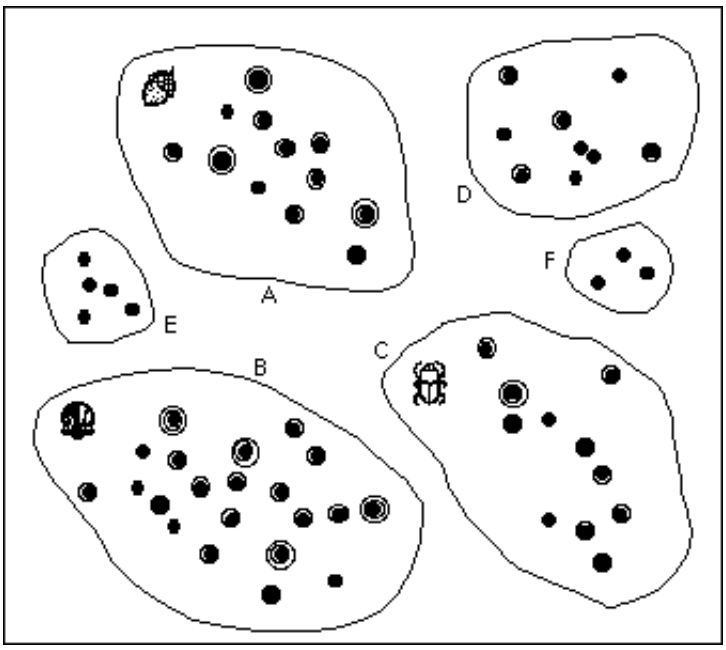

Figure 3: A Field Of Research With Different Discussions

Normally newbies start in open discussions dealing with very general and new topics (like discussions E and F in figure 3).Only newbies who have been personally invited by fellows or directing fellows may enter a closed discussion (like A, B or C in figure 3). Closed discussions deal with more specific topics. Fellows and directing fellows may enter all closed discussions.

The function of rating in the game context

In this context, rating performs two functions:

1. interesting and outstanding contributions are marked (orientation function)

2. people's roles change according to the amount of rating units they have collected by writing interesting and outstanding contributions (role-dynamic function).

Figure 4: Rating Units

Figure 4 shows different ways of rating units to rate contributions. Everybody (also newbies) may rate with *flowers* . Special points named *fruits* are rating units reserved to directing fellows. *Fruits* express appreciation by a directing fellow and are a special honour to receive. E.g. directing fellows of discussion A in figure 3 may rate outstanding contributions with an acorn:

The different kinds of fruits belong to directing fellows in different discussions. The directing fellows of discussion B may only rate with shells. Directing fellows of discussion A use acorns. Acorns and shells, like any *fruit*, cannot only be awarded to contributions in discussion A, but to any contribution in the whole system, as there might be interesting ideas also outside a discussion. When discovering an acorn outside of discussion A, one knows that there is a very interesting idea with respect to the topics belonging to discussion A.

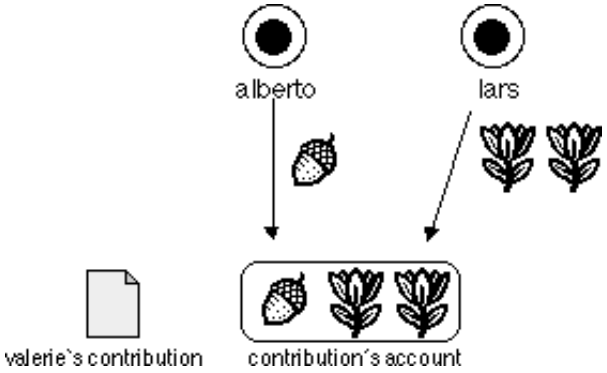

Figure 5: Accounting System (Part 1)

All ratings are collected in the contributions account. Figure 5 shows that different persons may of course rate the same contribution.

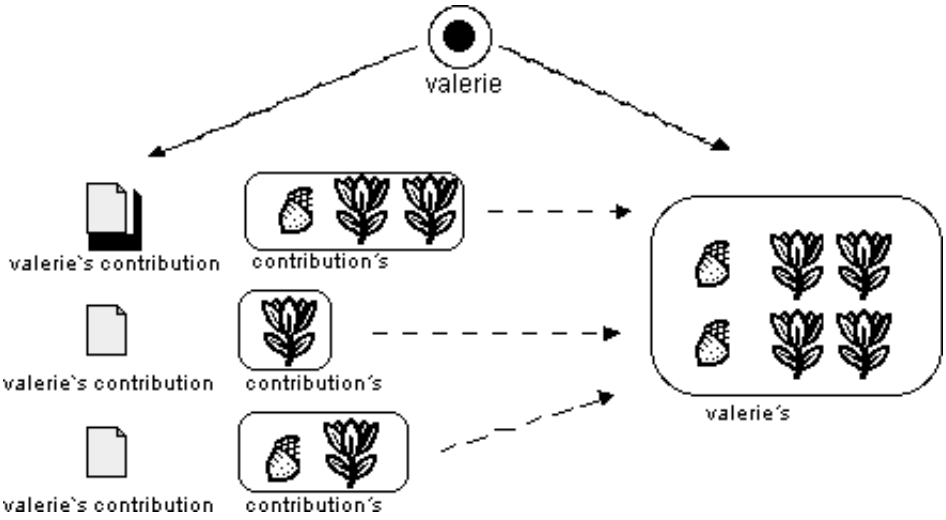

Figure 6: Accounting System (Part 2)

The sum of all ratings for all contributions of a certain person are collected in his or her personal account. The *contributions account* orients the reader about the quality of the content, the *personal account* is important for a person's status within the system.

Rule 1: One to three flowers can be awarded at once. Awarding flowers does not affect the donor's own account of flowers.

Role 2: One to three fruits may be awarded by directing fellows. Awarding fruits reduces the donor's account. Fruits of all kinds can be converted into each other. E.g. if a fellow from discussion A has obtained two shells, three acorns and one cactus, his account of fruits is six. Therefore he is allowed to give six acorns after becoming a directing fellow (because of rule 5) in discussion A.

How to become a fellow?

Rule 3: A newbie becomes a fellow by receiving any kind of fruit from a directing fellow.

Rule 4: A newbie becomes a fellow if he receives three flowers from at least two different persons.

How to become a directing fellow?

Rule 5: After obtaining three fruits of one kind, a fellow becomes a directing fellow in the respective discussion. Example: After obtaining three acorns a fellow becomes directing fellow in discussion A (in figure 3). It is possible to be a directing fellow in different discussions.

Rule 6: After spending all his fruits he returns to be an ordinary fellow.

These six basic rules are very simple, but nevertheless allow a great variety of possible behaviour and tactics by the players that need further discussion and additional rules, which are described in the following section.

Tuning the rating game

Getting and losing access

It is quite easy to become a fellow: The rating mechanisms defined in rules 3 and 4 construct a kind of boundary that keeps unwanted people out. This coincides with what was stated above, that boundaries may increase the mutual benefit of members. It is possible for a `gang' of three people to bypass rule 4 by awarding high ratings to each other. This may be avoided by special rules but such `gangs' may also be regarded to be inspiring and innovating. If their influence on the discussion is considered destructive, they may be thrown out by a special rule, e.g.

Rule 7a: Two directing fellows are enough to throw a fellow out of the respective discussion. If there is only one directing fellow, that one has the right to ban fellows. Their fellowship is not influenced by being banned.

This is a rather authoritarian rule allowing fast reactions to unwanted people. It could be changed into a more democratic rule, like

Rule 7b: The banning of people needs a voting procedure in which all members may take part. Simple majority is needed.

Directing discussions

It is quite easy to become a fellow but not so easy to become a directing fellow. As pointed out above, there should be special rules preventing a directing fellow from keeping that role for life. This may be acceptable in a traditional discipline but not in a context of very dynamic knowledge production. The rules already mentioned do not force directing fellows to spend their fruits. Therefore we have to define an additional one.

Rule 8 A directing fellow must spend at least three fruits within one month. Recipients have to be ordinary fellows.

This rule has two implications. First, it forces directing fellows to spend their fruits, and second it produces a new generation of directing fellows. Rule 8 is the key rule producing role rotation, as it is impossible to create a closed circuit of fruits among directing fellows only. One consequence of rule 8 might be that rotation only takes place among a limited number of persons (see figure 5).

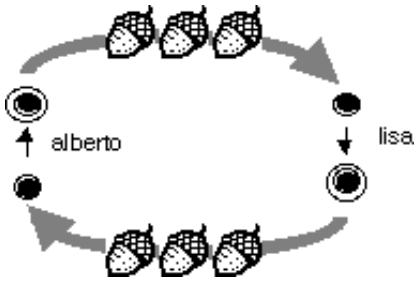

Figure 7: A Strategy Of Mutual Support

Alberto is rating Lisa's contributions with his fruits until she becomes a directing fellow. She rewards this by making him a directing fellow again. This kind of *rotation gang* may be avoided by additional rules, but this feature need not be counter-productive as it provides rotation anyway and is visible for everybody. People may complain about *rotation gangs* , or they may insist on a change in the rules, or simply leave the discussion. One effective measure against small rotation gangs could be an addition to rule 5:

Rule 5.1: To become a directing fellow one needs at least three fruits of one kind from at least two different directing fellows.

To bypass this rule one needs even more co-operation, which may be a wanted side-effect.

How new discussions emerge and evolve

New discussions may emerge for two major reasons:

1. Fellows and directing fellows try to keep newbies out. Therefore they set up an additional discussion which may compete with the original one. But this needs an additional rule like

Rule 10: It needs at least three persons to start a new discussion. Everyone, including newbies, may do so.

2. Another reason could be that there is a real need for new discussions, as new topics have arisen.

New discussions do not have directing fellows. They are more or less anarchic and they have to pass a phase of self-definition and self-construction until they become regular discussions. Examples are discussions D, E and F in figure 3. The change from provisional to regular discussions must be defined as rules.

Rule 11: After a turnover of at least 30 flowers within a month a discussion becomes regular. The two participants holding the largest number of flowers become directing fellows.

There might be another rule influencing the number of directing fellows. If there is a lot of activity in a discussion, a larger number of directing fellows may be needed:

Rule 12: If the number of contributions in a month exceeds 200, an additional directing fellow is nominated. It is the fellow with the largest number of flowers.

There are no restrictions for inventing new rules changing the system's behaviour. All participants may discuss intensively the impact of new rules. Procedures for the introduction of new rules may be introduced as well.

A rating game for Web4Groups

The limitations in the assignment of roles and `social functions' of Web4Groups require certain modifications. Like the above game, Web4Groups contains three roles:

Figure 8: Roles in Web4Groups

The graphical representation of these roles allude to a functional resemblance between visitor and newbie, member and fellow, as well as organiser and directing fellow. These roles are more or less equivalent but certain differences exist: Membership in Web4Groups is limited to a certain discussion (Forum, Workgroup, etc.) whereas fellowship in the game is not. As a fellow you have the same rights and functions in all discussions. That is the reason why the game must be reduced to a single discussion. Nevertheless it is possible to combine rating and role assignment in a similar way as in the game above.

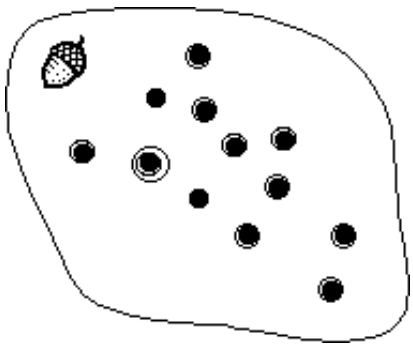

Figure 9: An Activity (Public Forum, Shared Workspace) in Web4Groups

Figure 9 shows that there is only one single organiser. Visitors are not registered, they may read and write but they have no personal account where rating units may be collected. Therefore, no rule can be invented which regulates how a visitor becomes a member. But visitors themselves may have the right to rate. In Web4Groups the main difference between a visitor and a member is registration. Nevertheless it is possible to provide for switching between the roles of member and of organiser. The respective rules are very similar to those in the game above. The main difference is that every member starts with an acorn on his account. Giving acorns is not reserved to organisers.

Rule 1: One to three flowers can be awarded at once. Awarding flowers does not affect the donors' own accounts of flowers. Flowers only serve for orientation and do not influence role assignment.

Role 2: One to three acorns may be awarded by the organiser. Every member starts with an acorn on his or her account. Awarding acorns affects the donor's account .

Rule 3: After obtaining four acorns, a member becomes the organiser of the discussion. The old organiser returns to being a normal member, but keeps his account of acorns. By default, the founder of a discussion is the organiser and has three acorns.

So it needs at least one person's support to become an organiser: Three acorns from the old organiser and a person's own acorn are enough. An additional rule is needed which will make people spend their rating units.

Rule 4: Organiser must spend an acorn every week. Normal members must spend an acorn every month.

Rule 5: Acorns that have not been spent are randomly distributed among people who have obeyed rule 4.

Rule 4 provides for the circulation of rating units. Rule 5 avoids an automatic decrease of rating units. If a person loses an acorn, another person must get one to keep the number of rating units constant.

Please note that there is no boundary keeping unwanted and completely uninformed people out. A group of four new members are able to make one of them an organiser.

Conclusion

We have shown that rating models shall include concepts of group dynamics and general value assignment and circulation to keep a virrtual group vital when exchanging messages. Existing rating transport tools such as PICS [5] can be used to visualize ratings, but they lack of means to gather ratings or assigning user roles. Rating collection interfaces and dynamic feedback mechanisms will be further investigated and tested with real users in the framework of the SELECT project.

Human beings tend to gather symbolic capital all their life long, with hope for immortality through a "place in history" or at least for being kept in mind within specific communities (Bordieu [7]). However, on the edge to a new millenium, chances to obtain symbolic immortality have reduced due to a highly differentiated society. This sociological insight from post-modern thinkers is applied with our model to the virtual society: no one's homepage can make somebody ever or well known, but useful activities for changing groups is a motivation and justification for being active in a virtual society.

References

[1] ALTON-SCHEIDL, Roland, Samba Diallo, Gernot Tscherteu, Social Functions in Virtual Communities; in: Informatik Forum, Vol. 10, Nr. 2 (http://www.Web4Groups.at/w4g/source/RateVoteSource.html), Vienna, 1996.

[2] GIBBONS, Michael et. al., The New Production of Knowledge. The Dynamics of Science and Research in Contemporary Societies, London: Sage 1996.

[3] KOLLOCK, Peter & Marc A. Smith, 1994: Managing the Virtual Commons. Co-operation and Conflict in Computer Communities; Los Angeles: UCLA (http://www.sscnet.ucla.edu/soc/csoc/vcommons.htm), 1994.

[4] SMITH, Marc A., Voices from the Well: The Logic of the Virtual Commons; Los Angeles: UCLA (http://www.sscnet.ucla.edu/soc/csoc/virtcomm.htm), 1996.

[5] Platform for Internet Content Selection: http://www.w3.org/pub/WWW/PICS/

[6] BAUDRILLARD, Jean: Symbolic Exchange and Death.

[7] BORDIEU, Pierre: The Production of Belief: Contribution to an Economy of Symbolic Goods. Media, Culture and Society, 2, 1980: 261-293.

[8] PALME, Jacob: SELECT - Choices in the Implementation of Rating http://www.dsv.su.se/~jpalme/select/rating-choices.html