

# Distributed film production: Artistic experimentation or feasible alternative? – The case of ‘A Swarm of Angels’

Irene Cassarino

DISPEA, Polytechnic of Turin

Aldo Geuna

SPRU, University of Sussex & Department of Economics, University of Turin

Correspondence: Irene Cassarino, Polytechnic of Turin, Department of Production Systems and Business Economics, c.so Duca degli Abruzzi 24, 10129, Turin, Italy ([irene.cassarino@polito.it](mailto:irene.cassarino@polito.it))

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## Abstract

Films are powerful instruments to generate and spread ideas. The way such an instrument is produced and distributed affects the freedom of our society. That is why the movie industry has gone through critical appraisals several times. Thanks to the digital revolution, a possible, radical alternative is arising: it is called remixing cinema, it is based on the web, and works as a social peer-production and distribution system. Is it a viable alternative? In order to try to answer this question we developed a case study of ‘A swarm of Angels’ ([www.aswarmofangels.com](http://www.aswarmofangels.com)), an ongoing project whose aim is to make a feature film with the collaboration, both creative and financial, of 50,000 people. Even if the Swarm has not yet produced the movie, the community has been active since early 2006 and relevant products are already available. Our initial findings are showing that a movie, as a product and a process, is modular and granular enough to be produced with a distributed problem solving approach. However, the first assessment of the governance of the Swarm and of the underpinning business model underlines the existence of unresolved and possibly critical issues. This is not surprising, because A Swam of Angels is the first experiment in open content movie making with such level of complexity.

**Keywords:** Disintermediation, web 2.0, distributed problem solving, collaborative creation/art, user-centered innovation, creative commons.

## 1. Introduction

Cinema making is an industry with 120 years of quick development according to technological, economical and social factors. Its main outputs are products (documentaries, movies, short-movies, animation movies, etc.) that, in order to “reach” the end-user, need to be produced and distributed.

At the end of the value chain of a movie there is a *user* rather than a *consumer*, a movie, like other cultural goods, is not subject to the laws of entropy that effects physical objects, its value stays constant (or may even increase) with the passing of time. The “consumption” of a cultural product like a movie refers often to the possibility of fruition. But even in this case, the life-cycle of the consumed product is potentially endless, because after its decoding, its meaning will potentially never be lost by the consumer and it is often expected to grow over time, rather than disappear. This does not mean that a movie does not have any material dimension. The necessary condition for it to follow such an intriguing immaterial life path, is that it has to be produced. First to be considered as a cultural good, the film has to be treated as an economic commodity, or as many pointed out (Pendakur, 1990; Moran, 1996; Elsaesser 2001), as both a tangible product and an intangible service.

The realization cycle involves four main stages (treatment, preproduction, production, postproduction) traditionally organized in a very hierarchical and expensive structure, and the distribution could involve several channels, usually organized within the so-called ‘windows’ system (Currah, 2006; Peretti and Negro 2003).

Cinema 2.0 is a new approach to movie/video making, grouping a set of more than 20 independent experiments<sup>1</sup> sharing some form of *openness* in phases of the realization cycle, characterised by the collaboration of distributed and self-selected groups of people wishing (1) to participate in the creation of the content (from the script to the editing), and/or (2) to be involved in the product financing, and/or (3) to be active in the content remixing thanks to the openness of some distribution channels.

In order to investigate the Cinema 2.0 (also called collaborative cinema, open content cinema, remixing cinema, etc.) phenomenon, the case study of “A Swarm of Angels” (ASOA - [www.aswarmofangels.com](http://www.aswarmofangels.com)) has been selected. The reason for this choice is that ASOA embodies and challenges all three axes of the movement:

- the co-creation of the content
- the co-funding of the production
- the remixing/free distribution of the results, even work-in-progress

A Swarm of Angels is a project aiming at creating a “£1 million feature film and give it away to over 1 million people, using the Internet and a global community of members”<sup>2</sup>

The ASOA project began in January 2006 at the initiative of Matt Hanson, a 36-year-old visionary, longsighted director from Brighton, UK. The basic idea was to gather people from around the world, who wished to take part in a film-making process. The participation was supposed to be ‘creativity/passion/curiosity’ oriented, as opposed to profit and ownership focused. The distribution was expected to be free, because “you can’t control

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<sup>1</sup> See for example My movie mash up – My space (<http://www.myspace.com/mymoviemashup>); Now the movie ([www.nowthemovie.org/](http://www.nowthemovie.org/)); Jathia’s Wager Free Science Fiction Movie - Open Source Collaborative Filmmaking ([www.solomonrothman.com/solomons-corner/jathias-wager/](http://www.solomonrothman.com/solomons-corner/jathias-wager/)); The Role Player ([http://www.theroleplayer.it/home\\_ita.asp](http://www.theroleplayer.it/home_ita.asp)); The collaborative web-movie project (<http://webmovie.blogspot.com/>); The 1 second film (<http://www.the1secondfilm.com/>); Straycinema (<http://www.straycinema.com>). These web sites and all the other referred to in the text were last accessed on 6/12/2007.

<sup>2</sup> From the ASOA project web site <http://aswarmofangels.com>. All quotations not associated to a specific source, refer to this web site, the author is Matt Hanson

media these days. You need to go with it, rather than fight it. We're part of the remix generation, with the DIY digital tools to make our own digital media, whether that's film, music, or whatever."<sup>3</sup> Going with the media means leaving the video free to flow over the internet through increasingly improving digital communication technology. That way, the product is ready to be used, not just consumed, and the users could be allowed to watch it or remix it, and, at the end, spin the wheel forward. "If you look at the Greek epics", Hanson says, "the story-tellers that were recounting their tales always put their own spin on it".

Going along with the "free culture"<sup>4</sup> movement raises the known problem of reward, dealing ultimately with the incentives to give money for the production. ASOA, as a business model, was designed to be "a valid new alternative, maybe more enlightened..." to the Hollywood entertainment world. It was not thought to be a business investment to make a profit - even if, as discussed below, this issue still remains a little bit controversial. "I didn't want A Swarm of Angels to be a massively distributed investment opportunity" Hanson says. The solution for the production money could only have come from an angel, an unfeigned person. Not even a 'business angel' that plays an exact function in an early stage business initiative, and takes a lot of risks in expectation of a very high return. "I'm for ROE (Return On Entertainment) rather than ROI (Return On Investment). Maximising ROI would likely clash with artistic decision": Hanson needed a real genuine angel. Or, better, a crowd of genuine angels, keen to give a little, reasonable amount of their money for sustaining altogether a groundbreaking movie making project in which having "an unprecedented opportunity to become involved in the creative process of making a feature film". A real "swarm of angels" has been the answer.

£25 was the amount of the minimum subscription fee in order to enter the experience and to micro-fund the movie. Founders have the exclusive right to take part into the decision process (through a web based poll system), the script editing and all other creative/advising process (through a discussion forum); while visitors can assist but they cannot actively collaborate. "One head one vote" is the governance rule within the community, but that is the only slight resemblance with a Ltd ownership model: "this is a more unique project as a crowd-funded 'subscription model'. After all, plenty of films have tried the 'many producers/investors route', but none have tapped into the wisdom of crowds<sup>5</sup>".

Apart from the genuine intentions of the founder and the subscribers, such a powdered ownership seemed good in order to avoid claims with possible rewarding opportunity. £25 "It's the price of a couple of CDs, a DVD or a magazine subscription. I think people would rather pay £25 to be part of a more innovative, adventurous entertainment experience which also offers networking opportunities and media downloads", and people spending such a small sum do not usually expect to gain over it.

"Sites like Wikipedia and Creative Commons regularly get \$100,000s in donations from thousands of people in supporting a common cause," says Matt Hanson in early 2006. "The [www.milliondollarhomepage.com](http://www.milliondollarhomepage.com) showed me one man can raise a million using the Internet in less than four months. I thought if people will give money to buy a pixel ad on a simple homepage, then I should be able to get enough people from around the world

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3 Matt Hanson comment from the discussions forum on ASOA web site. All quoted statements not associated with a specific source refer to his comments on the discussion forum or his interview..

4 "Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity" (2004) is a book of Lawrence Lessig, addressing the theme of the social dimension of creativity: how creative work builds on the past and how society encourages or inhibits that building with laws and technologies. The digital format is downloadable at <http://www.free-culture.cc/freecontent/>

5 "The Wisdom of Crowds" (2005) is a book written by the New Yorker business columnist James Surowiecki. He explores the idea that large groups of people are smarter than an elite few, no matter how brilliant—better at solving problems, fostering innovation, coming to wise decisions, even predicting the future.

inspired by this groundbreaking project to make my first feature film by raising a similar amount.”

Despite Hanson’s comparison, the ASOA business model is different: the Wikimedia Foundations sustain the Wikipedia project based on donations. The contributors to the free encyclopedia do not pretend to be donors, and vice versa. The content is released with a GNU Free Documentation License, in order “to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or non commercially.... derivative works of the document must themselves be free in the same sense.”<sup>6</sup> Such licences, like FLOSS (Free Libre Open Source Software) projects, are designed to radically disconnect the production of content from its distribution process.

The licence associated with ASOA content and its derivatives is the Creative Commons *by-nc-sa* (attribution-non-commercial-share alike) 2.5.<sup>7</sup> *by* means that “You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work)”<sup>8</sup>. *sa* means that anyone can remix and modify the content so long as the result is released under the same sort of licence. Both *by* and *sa* concepts are similar to “copyleft”.<sup>9</sup> The openness of the product to future users’ remixes is not just a statement in the Terms/Conditions agreement: it is a matter of community identity and recognition, it is a vision and a strong belief. The tagline of the project, voted for by the Swarm is “Remixing cinema”. The Creative Commons licence was chosen to protect and safeguard identity. *nc* means that the commercial exploitation of the product and/or its derivatives (by natural person or legal entities) is not allowed without the explicit consent of – and likely negotiation with – the author(s). In other words the authors retain exclusive rights to gain over the content or its derivatives, and licensees can freely copy, distribute, display, and perform the work and make derivative works based on it for non-commercial purposes only.

Every business and governance structure is grounded within a contractual framework, and the *nc* option represents a major difference from Wikipedia and similar models. The Swarm identifies a multitude of creators *and* donors, entitled by the chosen licence to gain “from media companies and distributors who might want to broadcast or use assets from the production for their own commercial endeavours”, and from other “opportunities for the project which don’t conflict with ASOA’s general principles, such as sponsorship, equipment partnerships”. The ASOA project seems to have a multi producer/multi distributor structure. Section 3.2 in this paper describes briefly how the issue of ‘profit sharing’ was dealt with. The legal framework that underpins the ASOA organization, which is an alternative to GNU, is new and offers new directions for analysis and investigation from both a juridical and an economic point of view, which would require separate investigations. This report provides some initial thoughts and consideration about it (Sections 6).

Hanson was the first subscribers, on January 16<sup>th</sup> 2006 while the second angel joined in only on March 13<sup>th</sup>. The first milestone was reached on Saturday 6<sup>th</sup> May, 2006, when – after about 5 months from the start – the 100<sup>th</sup> person, *stevko*, joined the swarm. The 7<sup>th</sup> July 2007 Hanson said “We can call ourselves a movement now”, because the second milestone of 1000 members had been reached. In managing such a project, the main recommendation is to “be very careful how you balance and grow the community” (see Section 5 on *Governance*). That is why at that moment (Autumn 2007) the joining process was ‘frozen’ and prevented to continue virally: only invited members are accepted, until the leader decides to “open the doors” again. In September 2007, project members were about 1200, the last 200 being invited by ‘senior’ angels. The first development phase has been running for about 1 year, and the main outcomes have been two draft scripts (“*The*

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6 [http://en.wikipedia.org/wiki/Wikipedia:Text\\_of\\_the\\_GNU\\_Free\\_Documentation\\_License](http://en.wikipedia.org/wiki/Wikipedia:Text_of_the_GNU_Free_Documentation_License)

7 <http://www.creativecommons.org>

8 <http://creativecommons.org/licenses/by/3.0/>

9 <http://www.gnu.org/copyleft>

*Unfold*” and “*Glitch*”), the trailer and the poster of the project and the poster of “The Unfold”. Hanson, a few months from the project beginning, “made a deliberate decision to concentrate on ASOA and cancel other work such as upcoming book projects, consultancy and other production”, he is totally committed to the project management and periodically engaged in promotional events around the word.

Matt Hanson has been classified by Forbes as one of the ten revolutionary people of the year 2007, along with inventors and researchers wishing to make stem cells without embryos, to alter human memories, to measure the universe, reprogramming life and give the ecosystem its own rights<sup>10</sup>. Is ASOA a process or product revolution? “It’s not just revolutionary in either aspects, it is experimental in both. Very rarely are the first attempts to do anything *revolutionary*. The revolution is just coming along after that. They are the *first movers*.”<sup>11</sup> ASOA is, actually an experimentation, that is an early stage *process* innovation in making feature films: “We would like a product to turn out as professional as possible, which means not widely different from a really good sci-fi film.” (*greg m*), “the innovation will be mostly in process” (*Jean Philippe Drecourt*, leader of the Glitch scripting process), “process will be the most original thing here, because it has never been done before. My past work has seen me doing much more experimental film work, but this is not the place for it in this project” (*Matt Hanson*).

For such an experimentation to become a viable innovation in movie making, four main sustainability issues should be considered. The first is related to product and process architecture: modularity of the product and the granularity of the process are favourable characteristics for a social peer production process to grow and succeed (Lerner and Tirole, 2002; Benkler, 2006). Does the feature film and its production process fit such architectural requirements? The second is more directly related to economic behaviour issues: who is supposed to do what and with what motivations? Who is supposed to manage the community, what is the scope of leadership and what kinds of management problems do they face? The third sustainability issue refers to the underpinning ‘business model’, that is, the way of coordinating resources to get the expected result: market usually uses money. To what extent should money be avoided as a coordination / cooperation incentive / obligation of human / material resources? The answer is strictly related to the previous point, as it regards persons. But, unlike the FLOSS (Free Libre Open Source Software) case, a movie requires expensive physical resources to be collected, envisaging the need to discuss a new hybrid model. If money is necessary, who is providing it and who is expected to profit by it? Finally, the last sustainability issue concerns the rights to exploit the products (both the end and the intermediate ones) and its derivatives. IPRs are critical to the movie industry and they are particularly so in the case of ASOA. Like in FLOSS communities, the contribution is open and not forced. The contributors are hard to organize (they are supposed to self-organise) and to recognize properly. The openness of the product to future users’ remixes, is not just a statement in the Term/Condition agreement: it is a matter of community identity and recognition, it is a vision and a strong belief. The tagline of the project, voted by the Swarm is, in fact “Remixing cinema”. The Creative Commons license has been chosen to protect and safeguard such a identity factor. Is the CC *by-nc-sa* licence able to deal with a multi producers / multi remixers model, especially if money could be involved for static and dynamic reasons?

This paper focuses mainly on the first two issues and provides only some preliminary thoughts on the last two: each of them deserves a separate work to be dealt with properly. The structure of the paper is as follows. Section 2 presents a description of the development of the ASOA project. Section 3 explores what could be the determinants of a process innovation in the movie making industry while Section 4 discusses the

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10 [http://www.forbes.com/2007/05/23/innovation-world-changing-tech-cx\\_07rev\\_ee\\_0524worldchangers.html](http://www.forbes.com/2007/05/23/innovation-world-changing-tech-cx_07rev_ee_0524worldchangers.html)

11 greg mary, ASOA forum moderator - travel agency/ blogger/ IT programmer - hawaii/beijin – interview.

sustainability of such innovative process with respect to the architecture of the product (the movie). Section 5 is devoted to an analysis of the governance of the project while Section 6 discusses briefly the business model and proprietary issues. Finally, in the conclusions we briefly discuss other ongoing experiments in open content movie production and compare them to ASOA.

## 2. The ASOA story and identity: chronological history highlighting milestones and main outputs of the project

Matt Hanson is a film director, and has worked in the TV and Cinema industry for some time. He has directed and produced over 40 short films and two TV series. He also founded the *onedotzero* digital film festival which he directed between 1996 and 2002 and defines himself a digital-film pioneer. Nevertheless he has never produced nor directed a feature film, except the ongoing experience of ASOA. He acts as the chief script writer for one of the two scripts (*The Unfold*) and he is going to be the movie director. His daily job, nevertheless, is to keep the swarm together and to manage the community.

Trying to explain why a possible new member should consider him to be a good project leader and a good director (granted that he/she could need to be sure of that before joining the project and giving his/her money for it) he claims: "Previous project I've initiated or being involved with have been innovative and critically acclaimed".

It is unknown how many angels joined the project thanks to his reputation and – much more interestingly – how many would have joined the project if the leader had been another much known director. Interviews are revealing that the most part of them did not check it: it was an impulse joining behaviour.

Both for a traditional film producer, who is used to investing millions of dollars and wants to make profit, and for Angel, investing £25 and wishing to enjoy, there is no way to reduce risk associated to a film project outcome through the choice of a well known (with a good reputation) director. Statistics results are contradictory and the answer on whether such a choice is or is not able to influence the success (in terms of distribution > profits) of a movie, is definitely unclear; Shugan (1998) says that a famous director is more likely to perform a successful movie, while Litman (1989, 1983) and Sochay (1998) did not find any evidence of that correlation.

Every movie incubation begins with the development of the script. MH started the project wishing to accomplish it within a year, and, at the very beginning when nobody besides him had joined the swarm, he wrote in the "Script development" topic of the discussion forum: "I have been working on outlines for the two scripts to be developed. Should be posting final draft outlines for these screenplays this week soon. The working titles I have come up with: The Unfold, and Glitch." And he continued: "Both could loosely be described as contemporary thrillers with 'soft' sci-fi elements, although these basic frameworks may become twisted in development". Only one of them will be produced, and the swarm will be asked to vote for the preferred one as soon as final releases of both are available.

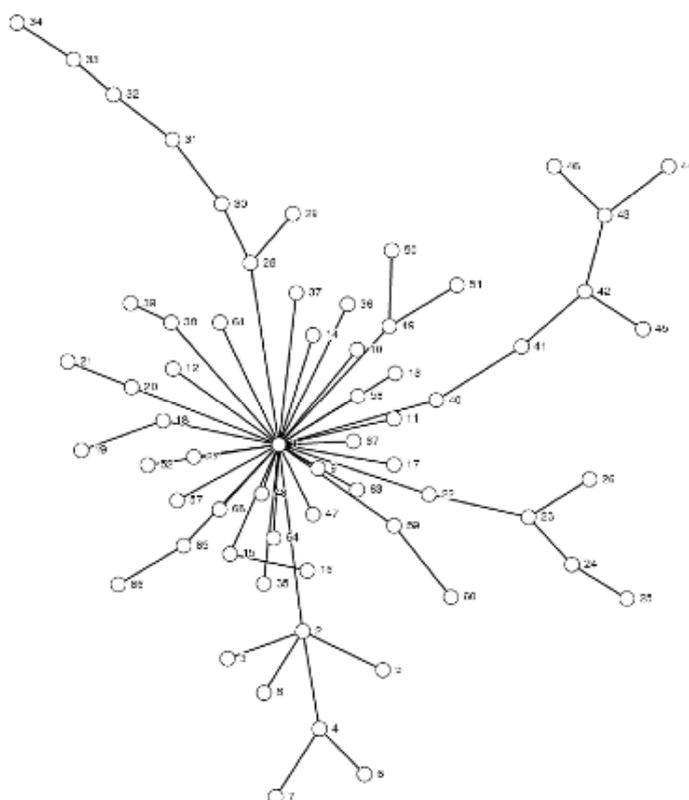
On April the 20<sup>th</sup>, 2006, MH published the two initial ideas, or better "notes/scene ideas [...] themes and visual motifs". *Chadu* (Alexandria, VA, USA) was the first to answer 15 days later, and to add the first spin to the discussion development. The initial debate about these two ideas took place in a single thread: until about June 2006 it involved 25 people (posters) who wrote in total 68 posts. *Chadu* made 26% of the contributions, while half of the posters contributed each with 1% of the total posts. This figure is similar even within the other two threads in which the first discussion split after June 2006 (30% and 24%, respectively). Figure 1 shows the centrality level of the discussion: is there one person who speaks at the centre and many answering at the bounds, or do people 'socialize', i.e.

cluster is several subgroups with different subjects and different centres? While a little level of decentralization could be perceived, the graph highlights a huge polarization on the node number 1 – the topic starter, Hanson: nevertheless, while he is the hub of the conversation, he is not the main poster. The relatively high number of Hanson's posts is due to the fact that he has to answer to Angel's questions: he usually put two or more posts within a few minutes in order to split the thoughts. But, his intentions seem to be "really fascinating to see it develop, I've been trying to be quite non-interventionist so I don't step on any discussions too quickly, especially when they are so fruitful."

*Gegrmay* (from Beijing) tries to explain the condition of the Angel who decides to participate actively in the first development phase: "It's kind of a "prime mover" model - he sets the pieces up, we create the rules, and it starts out more efficient (if less democratic). So basically, yeah, Matt doesn't really need or care about our input at this point. He'll do his thing until he's ready to post his sketches, and then we definitely need to look at how to approach the script editing process (and the snowflake model looks interesting, seemingly obvious but brilliantly laid out)." (May 6<sup>th</sup> 2006)

Nobody complains with that view, while several raise questions about the process structure that seems to be always unclear. When will the first script release appear, and how? What are the Angels supposed to do? The answer changes over time because "some of the comments on wiki/script development are making me change my plans to incorporate more of the flexibility mentioned, while still providing spine/structure". Anyway, "The idea is to build the scripts up from skeleton to initial draft stage in this phase 2, and then develop drafts in phase 3 (1000-5000 members). So we are past a pitch, and I'm converting elements/script ideas/notes/framework into the initial drafts, based on monitoring threads/feedback now. I would like specific feedback in the appropriate script threads on everything I post, in terms of queries/suggestions/criticism/possible directions / plotpoints / characterisation. But I'm not going to input radical/random suggestions until we have the initial drafts (as I think this will keep things on course in terms of the vibe and general direction of the story I want to tell, and have a connection to directing)."

Figure 1: Discussion centrality for “The Unfold” script writing thread



In June 2006 the discussion split into two “appropriate script threads”: the first dedicated to ‘The Unfold’ and the second to ‘The Glitch’. Afterwards the debate on the Unfold shifted into a swarm-only dedicated space with three partial releases – “anchor drafts”<sup>12</sup> - of the script (10 min, 1<sup>st</sup> Dec 2006 – 28 min, 22<sup>nd</sup> Dec 2006 – 41 min, 2<sup>nd</sup> Feb 2007) published and followed by comments/suggestion of the community. Some new entrants claimed that it was not easy to follow the script discussion, and to find where exactly it is taking place. The three releases of the Unfold had been “not for circulation”. Only “final anchor draft and subsequent script releases will be freely distributable under: CC-NC-SA 2.5 (creativecommons.org)”.

At the end of February 2006 MH said: “My initial drafts will be posted online as part of a wiki, so any writer input will be properly credited and tracked through ‘page versioning’. This process should also highlight any areas that need special attention or additional expertise.” The final draft is still pending, as well as the wiki system that will enable Angels to doctor it. It will open in phase 3,<sup>13</sup> the next one, aiming at reaching the target of 5000 angels and at finalising the scripts’ development. MH makes clear that “the Unfold and Glitch script processes have diverged slightly. [...] The Glitch story will be released in outlines and scene breakdowns, and the collaborative process will start in essence in a more nascent form. The spine of story strands and structure are more open to collaboration and suggestion in the first instance than The Unfold.”

Actually the Glitch development has been much more transparent, participative (70 posts and 31 posters, with *Jean-Philippe Drecourt* from Reading UK playing the role of hub and biggest contributor, as well as promoter of two polls), and regular – even if very slow - in its

12 “In essence these are pre-first draft, because they are deliberately less edited than a normal first draft would be as we want them to be more malleable as part of the participation process.”

13 The whole project duration is split in 5 milestones, each one identified by the target number of angels to involve in the project, the creative activities to accomplish and the promotional activities recommended: the first two milestones have been completed, while the third is “beginning shortly” (<http://aswarmofangels.com/fund/mission-milestones/>).

development trajectory, that its twin. The debate focused quite orderly on the main characters and on the scene breakdown, and after the last poll in early Sept 2007, *Jean-Philippe Drecourt* along with Matt worked to prepare the release of a “full synopsis” (released in mid October 2007).

ASOA has also realized the project poster, in May 2006, the poster of one of the two scripts – *The Unfold* – (Feb 2007 – August 2007), and the trailer of the project (Sep 2006 – July 2007). The production of these outputs is analysed in Chapter 4.

### 3. Understanding peer-production innovation in making movies

Peer-production in movie making can be examined with two approaches: the first one assesses if there are demand side and/or supply side forces at the origin of the process innovation, while the second one is grounded on the comparison with the recognized successful application of peer-production approach to software development, the FLOSS movement.

#### 3.1 Determinants of innovation

The ‘digital revolution’ is offering the opportunity to transform traditional movie making practice (the result of a century of industry development) into a radically innovative process. The impact of digitization has been studied and analysed from the media and legal perspectives, focusing mostly on piracy and illegal copyright, but “the revolution is perhaps somewhere else” (Ravid, 2005, p. 52). Following the first legal action against unauthorized copying (1908) (Ravid, 2005), when technology enabled the easier reproduction of intellectual property (IP), changes in legal and business models in relation to both movies and music have continued. The most recent adjustment to the legal framework and business model concerns legal music downloading services and, despite resistance from the movie industry (Currah, 2006; Wasko, 2005) it is expected that there will be similar arrangements in relation to movies (Daily, 2007). Whether illegal downloads of movies affect producer revenues has not been proved although in the case of music some evidence indicates a small negative effect (Bangeman, 2007; Cooper, 2005).

The real impact of the digital revolution, however, is occurring at the production cycle level and could threaten the actual organizational structure and related business model, which are far from perfect. Hollywood is being criticized more and more for the poor quality of its products, for the core rigidities of its production/distribution process, and for the distortions in resources (overpayments, etc.) that are ‘drugging’ the production sector. Many independent film producers claim that in this new technological age, billion dollar budgets are not necessary to produce a good movie, but to justify the existence of the studios. Consistently, there seems to be no clear relation between budget size and the quality of the end product.

Cinema has been described as the art of dream and illusion (Wasko, 2005). A common illusion is that cinema is a democratic form of entertainment because customers vote with their wallets from among a wide offering oriented to audience demand. Audience choice is in fact constrained by the basket of films that producers perceive to be profitable or represent low risk, which makes some genres more available than others until demand is saturated (for example, the production of westerns). Since the industry’s main target is young people, the focus is on action, sequels and remakes, and movies featuring current stars while other segments of demand are ignored. So audience choice is limited to choosing among the movies that are actually available. As Moran (1996, p.2) describes, in the cinema 1.0 system “production exists to meet the demand created by the mechanism of distribution rather than distribution existing to serve production”.

Another of the controversial effects of this system is that because Hollywood is a dream factory, films tend to provide a vision of the world as it should be and the lessons they offer related to living in that world. Movies not only have an economic importance, they are also “ideological products and thus socially and politically significant as well” (Wasko, 2005, p. 18). They constitute powerful instruments to generate and spread ideas and the way they are produced and distributed affects the freedom of our society (Benkler, 2006).

In other words, films - like other forms of entertainment - are produced for the masses by an elite of creators. This proportion is fragile because the mass of users is becoming split into many elites (Anderson, 2006), that demand targeted products, and creators are becoming a crowd, asking for the right to express themselves (Tapscott and Williams, 2006). These latent and essential needs are demanding satisfaction because *it is* now seen as entirely possible in the networked information economy, thanks to information technology (IT).

Although we do not have exact figures for the movie industry itself, a recent study (Boshma, 2007) estimates that on average, in a sample of five European countries, only 0.5% of workers are employed in ‘bohemian’ occupations (which is the description commonly applied to those working in the creative industries; UK Design Council, 2005). Clearly, given job opportunities, a person with creative, ‘Bohemian’ skills may pursue a career in the much wider class of ‘creative occupations’ (Florida, 2004), outside the creative industries, which involves them in “identifying problems, figuring out new solutions, and combining pieces of knowledge in new and innovative ways” (25% of overall employment) (Boshma, 2007).

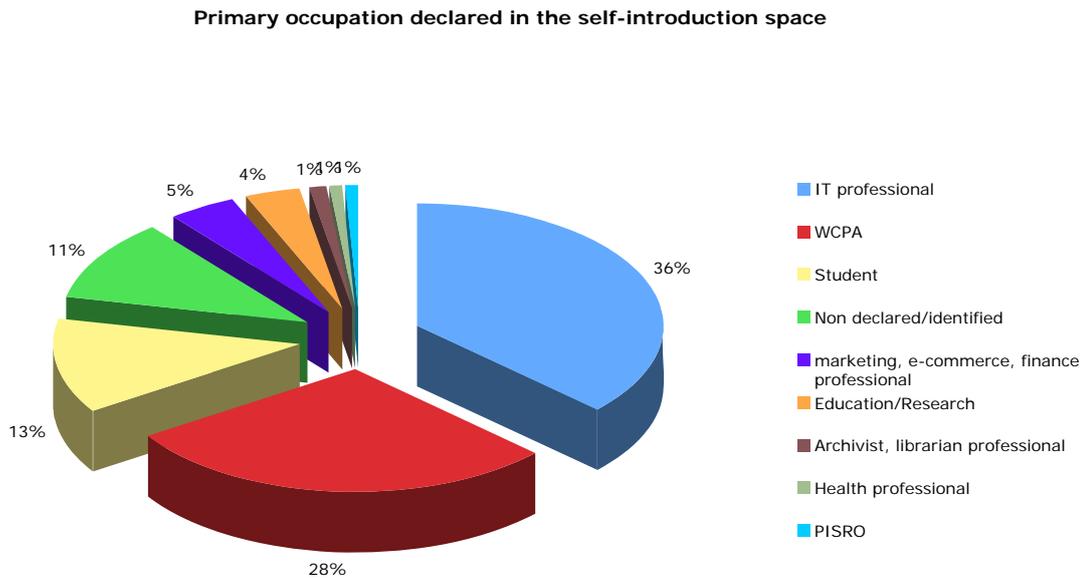
On the basis of the descriptions that 100 angels (10% of the members) gave in the ‘Angels Introductions and Projects’ thread in the ASOA forum, we can largely identify their occupation(s) and how they got to know about the project.<sup>14</sup> The most common profile is of a young male (20-40 years), keen on music/movie/design *making*, who chooses to indulge his passions in his spare time, and/or studied arts or a related topic and/or has an information and communication technology (ICT) background. Figure 2 depicts the distribution of typical professions and skills.<sup>15</sup>

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14 One example is Terry: “I could post my resume or do a little shameless self-promotion ... I have my degree in computer science; done web design and technical support. Currently, I work for a printing company providing customer service and web support. Been a big film buff for the past 20 years and have been known to blow an entire paycheck on movies! I like to reference IMDB regularly and am guilty of using it when playing 6 degrees... My biggest reason for joining is first, read a great posting on BoingBoing and second, I'm interested in seeing the future of cinema. I do get tired of reading about how the big studios or record labels are suing the very same people who purchase their products. Anything that can show the big boys how to do it differently-I'm for!”

15 We interviewed 15 participants who provided self-descriptions; they confirmed what they had written.

Figure 2: Day job



For participants declaring an occupation in the arts which straddled two or more ‘creative industries’, we adapted Boschma’s (2007) taxonomy which splits Bohemian occupations into: writers and creative or performing arts (WCPA in the figure), photographers and image and sound recording equipment operators (PISRO), entertainment and sports associates professionals, and fashion and other (not applicable to ASOA). 29% of them declared a second occupation as well or a professional past experience they found relevant to show. In order to explain such a condition they referred to day/night job. As it was not a question but a self expression, it cannot deduce that the 71% have no “night job”. The night job seems to be not usually rewarded with money. It is a project, a voluntary activity, taken seriously and professionally as if it were a job.

The sample of the 5% top contributors (in terms of number of posts) surveyed (response rate 30%) confirmed this to the extent that 37% of them are IT professionals and 21% are employed in the WCPA sectors. Their average age is 32.

There is a relationship between ICT and creativity. As *urzumph*, 20, said : “I am a creative person, but I am terrible at art or music. IT requires a certain level of problem solving, and problems solving opens up a lot of opportunities to be creative, especially to make simple and elegant solutions to problems”.

Since Bohemian occupations require expensive resources to deploy/show off the creative skills, in the past there was little opportunity for creatively inclined individuals to emerge or receive training outside the creative industries. The introduction of ICTs has provided them with:

- cheap digital equipment (a dedicated and passionate team with complementary skills and a good idea, can produce a short movie of average quality using a £500 camera, and a personal computer (PC) for the editing/post production work). Digital cameras enable film makers to repeat shots at low or no cost (Ravid, 2005);
- cheap network infrastructure<sup>16</sup> and broadband (good network capacity is required to distribute medium quality content and the bandwidth now widely available is adequate).

<sup>16</sup> In early 2006, Internet users were more than 1 billion. On average, they are quite active: about the 40-60% of them put contents on-line (few lines of texts, music, videos, lyrics, blogs, etc.), and a recent survey showed that 32M of US citizens define their selves a creative person (Horrigan,

This has been proved by the 10 million or so 12 minute videos that can be viewed on YouTube and the even greater and growing number of pornographic content videos available on the net);

- cheap data storage capacity;
- OS software for editing (video, photo, audio).

Use of ICT means that in the context of digitally alterable cinema, it is possible to envisage a progressive 'flattening' of the movie production process, giving increased importance to the editing over the shooting of a film (Hanson, 2003; Ravid, 2005). This is enabling a more horizontal and participative structure to the process, with several participative editing platforms available on the Internet.<sup>17</sup>

As the experience of Straycinema<sup>18</sup> shows, it is possible, over the web, to offer a series of film shots on a server, to numerous editors located around the world and for each to propose his or her personal version of the movie based on these clips. One director many editors, many different movies.

ICTs are having an effect on the capacity and potential of individuals. They are enhancing people's capacity to produce by themselves, enabling loose organizational forms, making non-market coordination easier (Benkler, 2006), constituting a community of people who can become peer-contributors in the co-production of a *result*, co-own it and freely share it with one another. If the community is open, then the ownership belongs to everyone and sharing 'rights' can be extended to anyone.

This is not to say that producing a movie is easy: it requires strong artistic-technical-organizational skills. But the new technologies are empowering people to organize, produce and distribute content.<sup>19</sup> This trend, which is increasing, represents the transition from the web 2.0 to the web 3.0 era.<sup>20</sup> From the point of view of web cinema, in the web 2.0 scenario the main actor was the individual filmmaker who wrote, shot or created, directed and edited; the web 3.0 context emphasizes the concept of distributed intelligence since it makes it technologically possible to interact and organize more loosely, even when large quantities of data (images, sounds) are involved. In the former scenario we could identify a clear individual voice; in the latter we should expect a chorus.

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2006). Similar figure could be mentioned about the open source software system: professionals software developers would be about 15M, but those who are able to do limited interventions on software scripts could be about 100M.

17 see e.g. <http://www.eyespot.com/>, [www.kultura.com/](http://www.kultura.com/), <http://www.jumpcut.com/> - and in the music sector: <http://www.kompoz.com/>, <http://musigy.com/>

18 Straycinema ([www.straycinema.com](http://www.straycinema.com)) allows users to download and re-edit raw footage from a film shot in New Zealand. In the past edition on 2006 the shootings were taken in London and artist from all over the world posted 70 different edition of the short movie. They are all showed in the Straycinema website and in the You Tube platform of video sharing.

19 The networked information economy improves the practical capacities of individuals along three dimensions: (1) it improves their capacity to do more for and by themselves; (2) it enhances their capacity to do more in loose commonality with others, without being constrained to organize their relationship through a price system or in traditional hierarchical models of social and economic organization; and (3) it improves the capacity of individuals to do more informal organizations that operate outside the market sphere (Benkler, 2006).

20 "Web 2.0 is well documented and talked about. The power of the Net reached a critical mass, with capabilities that can be done on a network level. We are also seeing richer devices over last four years and richer ways of interacting with the network, not only in hardware like game consoles and mobile devices, but also in the software layer. You don't have to be a computer scientist to create a program. We are seeing that manifest in Web 2.0, and Web3.0 will be a great extension of that, a true communal medium...the distinction between professional, semi-professional and consumers will get blurred, creating a network effect of business and applications." Jerry Yang, founder and Chief of Yahoo, in Dan Farber & Larry Dignan TechNet Summit: The new era of innovation, ZDNet blog, November 15th, 2006.

### 3.2 FLOSS and ASOA: Similarities and differences

Even if the ASOA experiment of peer social production, presents, as we mentioned in chapter 1, some radical differences with other experiences such as FLOSS or Wikipedia, the comparison with FLOSS as the most recognized example of social production is useful to set ASOA in a known economic and technological reference frame. Both ASOA and FLOSS, in fact, are participated by “many individuals contributing to a common project, with a variety of motivations, and sharing their respective contributions without any single person or entity asserting rights to exclude either from the contributed components or from the resulting whole” (Benkler, 2006, p.63). A recent research question is how far the OS model can be transposed to other industries, beyond software (Lerner and Tirole, 2004; Shah, 2005; Tapscott and Williams, 2006). Is ASOA addressing the same model?

The reference production model of both experiences is *peer-production*: “Radically decentralized, collaborative, and non proprietary; based on sharing resources and outputs among widely distributed, loosely connected individuals who cooperate with each other without relying on either market signals or managerial commands. It refers to production systems that depend on individual action that is self-selected and decentralized, rather than hierarchically assigned.” (Benkler, 2006; p. 60) To what degree is the production model of the ASOA project similar to a big FLOSS project and at what degree do both shift from the ideal/radical decentralized/collaborative/non-hierarchical structure? The main feasibility conditions of a peer-production project are said to be the ‘*modularity*’ and the ‘*granularity*’ of tasks (Benkler, 2006; Lerner and Tirole, 2002). The production of a movie is a modular project and it requires several different and complementary competences. Is it ‘granular’ enough with respect to participants expectations and peculiar skills?

By *decentralized/distributed* is meant that “Actions of many agents cohere and are effective despite the fact that they do not rely on reducing the number of people whose will counts to direct effective action” (Benkler, 2006; p. 62). Is that completely true in both communities? Is there any effort to control the number/role/type of participants?

FLOSS and ASOA share as their highest reference the concept of *freedom* (Ljungberg, 2000). However, FLOSS projects do not use the same intellectual property model and they apply this concept (that OS software is generally accessible, usable, and modifiable for free over the internet) in different ways (Bonaccorsi Rossi, 2003). As well as ASOA is. But in the case of FLOSS, anyone could freely choose to sell a copy of the product for profit, while in case of ASOA nobody is allowed to do so without asking the creator. Section 5.2 explores some open issues with respect to the intellectual property scheme of ASOA, opening the way for further in-depth examinations.

The motivational pattern has always been one of the main foci of economic studies about the FLOSS community: “the large free software projects might integrate thousands of people who are acting primarily for social psychological reasons—because it is fun or cool; a few hundred young programmers aiming to make a name for themselves so as to become employable; and a dozen software programmers who are paid to write free software by firms that follow non proprietary strategies.” (Benkler, 2006; p. 102). Is this proportion respected in the ASOA project and/or are there structural reason why this could be possible/impossible in such a movie product/process?

The analysis of the determinants of innovation in the movie making industry and the comparison with FLOSS have identified a set of open questions: in the next section (on the basis of a very detailed analysis of the messages in the forum, a set of interviews and a questionnaire) we endeavour to provide a first tentative answer to them, within the framework of a sustainability analysis of the ASOA model of movie making.

## 4. ASOA analysis: movie production as social peer production system? Sustainability issues

The first sustainability issue concerns the product and process architecture. In order to be suitable for a distributed peer production, the process should be modular enough, and the process granular (Lerner and Tirole, 2002; Benkler, 2006).

### 4.1 Modularity

Feature films crews are often identified with a small group of actors and the director. But actors and director are at the pinnacle of a large group of people working together, including writers, audio/video/light technicians, costume designers, editors, lawyers and so on. And all these people provide complementary capabilities: the news is very recent (November 16<sup>th</sup> 2007) about the strike of scriptwriters that substantially paralysed Hollywood.<sup>21</sup> The movie as a product can be split into several small parts (and then small production processes), each one of them requiring different competences. Only the pre-production involves the cast / crew / location selection, the realization of the trailer, the poster and so on. Even each one of these single phases can be split in smaller parts.

The poster of the movie, for example, is the combination of a visual concept, a background image and a graphic elaboration of it. The Swarm realized the poster of *The Unfold* by taking advantage of different competences (so different pools of people), for each one of these parts. *Palla*, 38, an architect, from Osaka was the coordinator of this realization process. He has a studio and works in 3D modelling and architectural rendering. Matt was a donator for his book in 2003, and he joined the ASOA in May 2006 for repayment. Matt noticed it and remembered he has been impressed by his work. Then in late 2006 Matt asked him to work for ASOA. He does not know English very much, but he does not need words to express himself, and accepts.

In February 2007 the swarm selected by a web poll the visual concepts form among five photos realized by *Palla* (see Figure 3).<sup>22</sup>

**Figure 3: Visual concepts - Author: *Palla***



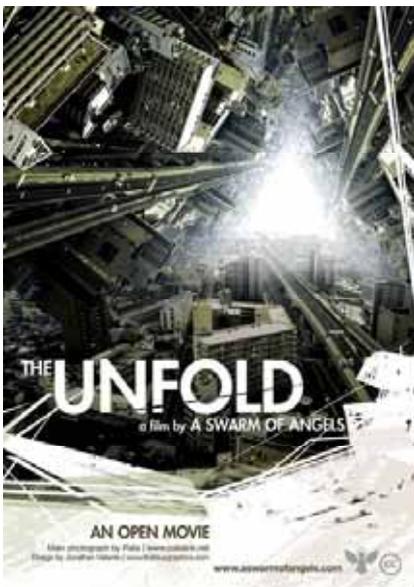
The third one won. In March 2007 *Palla* began to work on the background picture, posting his works in a forum thread and improving it on the basis of angels' feedbacks. At the end of this sort of laboratory, angels participating on it acclaimed the following image (Figure 4), and *Palla* accepted its release under a CC *by-nc-sa* licence for the poster competition in April 2007.

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21 J. Steinhauer, Nov 16, 2007, Writers' Strike Opens New Window on Hollywood (<http://www.nytimes.com>)

22 <http://www.pallalink.net/>

Figure 4 Winning image (by Palla) and winning poster (by J. Valiente)<sup>23</sup>



The poster competition took place in July 2007 and was open to non-angels through a public wiki.<sup>24</sup> It resulted in 34 entries and 41 different proposals. Palla chose a shortlist of five proposals, which were voted on by the angels in August 2007.

Why did these competitors give their work for free and agree to release it under a CC licence? Who were they? The following is taken from the information gleaned in interviews.

Jonathan S. is 25 and comes from Washington DC. He is a design and marketing consultant: "I was interested in participating mostly for the challenge, but also because of the views of ASOA. I did enjoy the experience!" Tim F., 22 from Oregon, USA, is a Digital Arts student and edits an on-line magazine: "It looked to be a bunch of fun. It would have been a great piece to use in portfolio too. It was a great experience, I love competitions when artists are taken seriously" Paul, 32, from Brooklyn, USA is a professional film director and a designer: "It has been one of the only real opportunities to contribute to ASOA so far. I love to design and I thought it would be fun. I always enjoy creating, it was a nice little challenge". Vincent, 23, from Montreal, Canada is a student, and works for a not for profit design company: "I was looking for some kind of context to test my skills against some other designers". Maribeth, 26, from Davao City, the Philippines, is a professional designer and one of the few women that participated in the competition: "I did it because it was fun, challenging, and it offered international exposure. Well, I just love

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23 Jonathan Valiente, <http://www.firebluegraphics.com/>

24 The proposals submitted can be viewed and compared at <http://aswarmofangels.com/2007/05/the-unfold-poster-design-contest/>

joining these. As long as I can do it.” Peter, 20, from Slovenia, is an Arts student: “I found it a great idea to try and make something for the community, as well as being a challenge and the photograph was so great!”. Finally Vincent, the winner, is a freelance graphic designer and illustrator, who said: “I was interested in the project mainly because of the beautiful image by Palla and at that time I was trying to expand my portfolio by creating new pieces and joining contests”. Most of these answers indicate that ‘fun’ and ‘pleasure’ were incentives, but that competition and reputation also play a role in explaining why people submitted their work.

The project trailer was achieved in three phases, and drew on three main capabilities. In September 2006, through a web poll, angels voted for the project slogan tagline from five proposals put together by Matt Hanson from an angels’ discussion thread. “Remixing cinema” was the winner. In January 2007 Mark Hough, a professional video designer from London who had been contacted by Hanson, began work on two visual versions of the digital trailer, the ‘geometry’ and the ‘vertex’. In February 2007 geometry was chosen by an angels’ web vote and in March 2007, they were asked to vote on the music genre from four proposals. The ‘orchestral-minimal’ type was chosen.

Using the same discussion thread, Hanson appealed for a music editor, and received a reply from *Timo Hummel* from Germany. Hummel is 27 and, despite his young age, is very experienced.<sup>25</sup> In May 2007, after several test pieces shared with Hanson and the angels within the forum or through personal messages, the music was released, and the completed trailer (tagline plus digital animation plus music) have been available online since June 2007.<sup>26</sup>

The examples above show how the product splits into several parts, each requiring different competences. Although not completely independent, some can run simultaneously (script, trailer, poster) and have an independent life beyond the movie project of the script, music and shooting, and especially if they can be circulated under the appropriate licence. For example, *Jean-Philippe Drecourt* has and is investing a great deal of time in editing one of the two scripts (‘Glitch’). What if ‘The Unfold’ is selected? “Oh, it’s 50-50 actually. I don’t mind, it will be CC. Another director might choose it”, was his reply.

## **4.2 Granularity**

The product architecture for the product released up to the present, is sufficiently modular. In order to evaluate whether the process can also be considered to be granular, it is necessary to look at the breadth of the contributions to product development, in terms of time and attention devoted by a potential contributor. The process seems to gain even from minute contributions. As Drecourt put it: “It is very useful even if someone reads the script and says: ‘yes, cool!’ or ‘I don’t like it.’” We can identify four levels of contribution/responsibility levels, relating to different levels of personal commitment.

The first is leadership of the various tasks. Matt Hanson, as the project ‘entrepreneur’ is the main leader and coordinator, but there is a system of meritocracy similar to that in OS software communities: “In a way this scripting process is similar to programmer involvement in open source software. A programmer could get involved in coding through bug-testing and correction, then move up to responsibility over a particular role/section of code: as they prove themselves, this scope for input increases corresponding to a level of trust and evidenced application of a skill” (Matt Hanson). This applies to the script for ‘Glitch’. *Jean Philippe Drecourt*, 32, has a doctorate in IT Sciences. Two years ago he

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25 “I’m doing music and sound-related work for nearly 10 years now, so I would consider myself as a semi-professional. Doing techno for a long time and also being a DJ, I also produced a lot of music which was mainly, but not limited to, electronic music. I also did a lot of digital mixing and mastering. I quit techno music production 2 years ago. I am working as computer engineer, and always operated my music business in my spare time.”

26 <http://aswarmofangels.com/sting.html>

decided to quit his academic career in order to write (he has written another script while working on 'Glitch', which was released in November 2007). He resides in Reading, UK and makes a living from translation work. He joined the swarm in 2006, because it was compelling, exciting, promising, and in 2007 he was given leadership of the most experimental process in ASOA: collaborative script editing. How did this come about? By "just asking Matt, proposing ideas and trying". He sees his ASOA experience as a positive addition to his CV.

The second level relates to the contributions to tasks related to content production and applies to the work of Timo Hummel and the 34 individuals that submitted poster proposals. The third level is the forum attendance and occasional posting, as *Fiona May*, 45, says "I join in the forums whenever there is a new post, sometimes I give it some thought first, sometimes I research, sometimes I just respond intuitively, I post occasionally." The fourth level of contribution to the project, which has the finest granularity, is the yes-no suggestions/poll voting. *Dadioflex* said about it "Wow a poll at last: I have no time to contribute to the discussion but I like voting because it is a way to live the process!!".

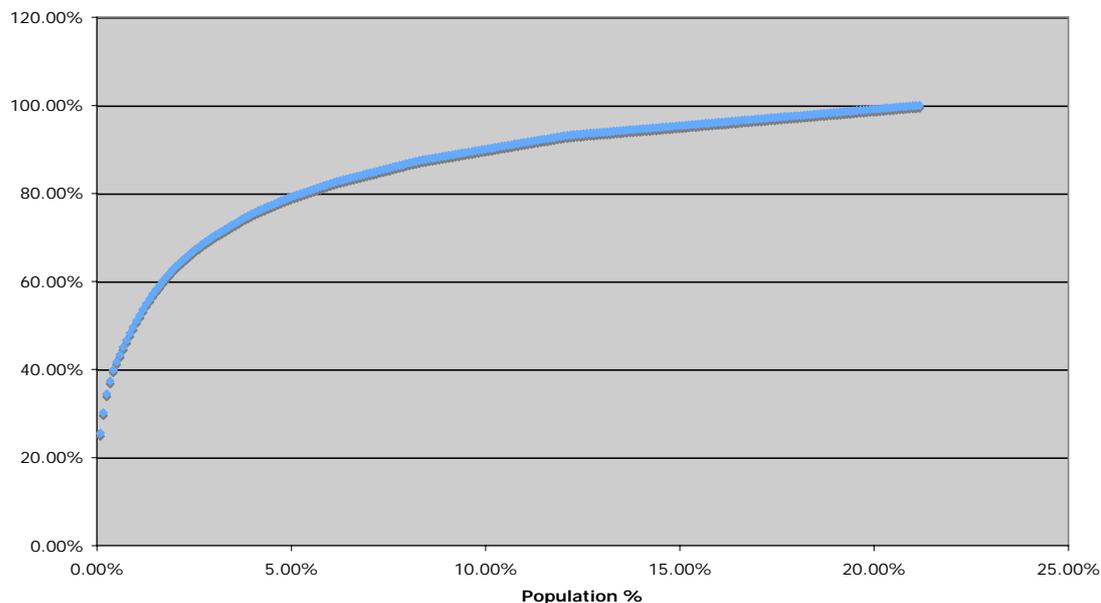
Summarizing the structure of the three spaces in which discussion of the script took place (see Section 2 - initial/both, 'The Unfold', 'Glitch'), the scripts ideas/process involved a total of 58 (about 5% of total members) people and 164 posts. Seven per cent of these 58 posters were involved in all three discussion spaces, and 12% were involved in two of them. The remaining 79% clustered around a particular discussion topic, which is an index of 'devotion', involvement and interest (non-indifference) to the particular creation process. In addition, if we explore the content of these threads more deeply, we can see that these contributions, however small, are all useful. From an analysis of the postings we can see that none of them can be categorized as 'spam', 'destructive', 'impolite' or 'irrelevant' and that the quality of the contributions is very high.

ASOA is an ongoing experience, but the architecture of the product released so far and of the production process seems to fit the basic requirements for benefiting from a distributed collaborative production model. Our analysis shows that both are sufficiently modular and granular. Although this preliminary evaluation seems to indicate a potential for success, only further analysis and observation of the progress of this project will allow us to assess whether open distributed collaboration is applicable even to the production and post-production phases of the realization of a movie, resulting in the production of a feature film.

## 5. The governance of the ASOA project

As the *Participation* graph shows (Figure 5), the occasional posters are the most part of the ASOA community, where 5% of people are doing 80% of the contribution (in terms of posts in discussion forums). MH is proud of this percentage "It's good, breaking the rule of 1% of Wikipedia content producers", and he is even worried about a more significant participation, especially in this treatment/production phase of the process, because it would compromise the consistency of the result: "50,000 people will not be editing the script, that would be a disaster (in terms of putting out a consistent vision)". That is also the reason for not starting the wiki platform for the script until now "In order to make massive participation effective, you have to rely on a solid and fixed synopsis."

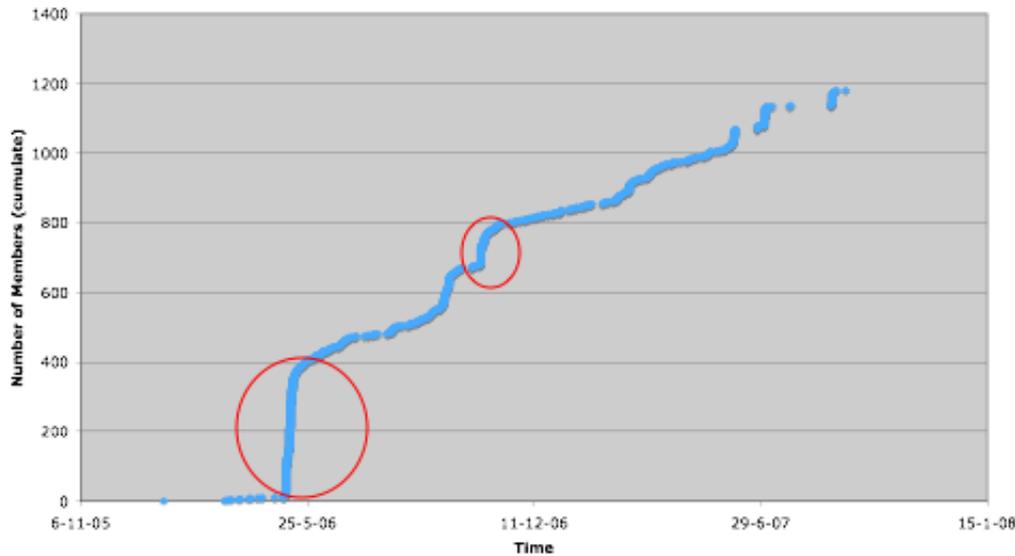
**Figure 5: Participation**



The distribution of contribution in open source projects appears to be quite similar (Lerner and Tirol, 2002, Benkler 2006, Gosh and Prakash, 2000). “More than three-quarters of the nearly 13 thousand contributors made only 1 contribution, only one in 25 made more than 5 contributions, yet the top deciles of contributors accounted for the 72% of the codes and the top two deciles for the 81%”, but this distribution “could be even more skewed if those who simply reported errors or bugs were considered: for every individual who contributes with code, five simply reports errors”. So we can deduce that considering all the contributors (even bug finders), the 4% of contributors in FLOSS programs, according to Lerner and Tirole (2002), are doing 80% of the total work. This is consistent with our findings within ASOA, but it must be noted that this may change as the project evolves.

These results point to the fact that, probably, in ASOA, like other open and distributed projects, the production of content remains quite elitist, even in the absence of market-endogenous entry barriers such as in movie 1.0 industry. However, in contrast to traditional movie production, the elite content producers are self selected and could benefit from a myriad of singular contributions that may very well affect the overall characteristics of the final product.

Figure 6: Joining process



About 5% of the community chose to join the script writing process as well. 5% of 1000 is 50 angels, and, despite *JPD's* having appreciated greater participation (“I would have liked to read more comments about the script, because even the littlest impression is relevant..”), MH believes that 50 people are enough, and more would have been dangerous for the consistency of the result. The leader is not able to control the participation of registered angels in the content production, but he is able to control the community dimension. Not only freezing the joining process. Observing the joining trajectory, *Joining time* graph (Figure 6), it is possible to recognize relevant discontinuities (red circles): Hanson seemed to be confident with this figure and he has been able to remember and explain what happened in each point of the curve (on line – ex *beingboing.net* quotation from Cory Doctorow – and off line – participation in conferences or public events – advertising of the project). What he said is confirmed by the angels’ declaration that can be found in their introduction space: when introducing themselves, about 50% declared how they got to know the project and the results are consistent with Hanson’s reading: the May wave was brought to ASOA by the post of Cory Doctorow (one of the advisors of Hanson<sup>27</sup>) on *beingboing.net*. Other minor sources are the post of Warren Ellis (English comic writer) on his website, *digg.com*, *netmag.com.uk*, the website of The Kleptones, *theregister.co.uk*, a quotation from a friend and off-line meetings with Matt in public events.

The control of the community dimension and of how it grows seems to be one of the biggest concerns of Hanson. He wrote: “Gated community members can evangelise a project, but this needs to coincide with appropriate project phases. If you are in a ‘development’ phase rather than a recruitment phase there’s no reason for larger scale promotion: you are over promoting a project that isn’t tangible enough for larger audiences. Targeted promotion to those who already share common values with the project is more effective and appropriate. By having an ‘incomplete’ project from the beginning, one that is not comprehensively packaged, the opportunity for the Swarm to feedback, suggest and improve on the initial concept and ideas becomes available.” Such a strong view could be challenged by some studies about the development of the community as will be shown below.

MH envisages a list of possible angels who could find it convenient to join the project, a complex set of occupations, interests and motivations:

27 <http://www.aswarmofangels/film/team>

“1. Bloggers - a landmark project to cement the increasing power of the blogosphere and the social Internet to sustain truly innovative projects, engender mass collaborations, and promote Creative Commons work.

2. Downloaders - we want to create and legitimize a new model of making films that will show filmmakers there is a way to allow free download of movies without the need for copy protection, and DRM. The main distribution of ASOA will be through Bittorrent and podcasts.

3. Activists/Copyfighters - A Swarm of Angels is intended to be a showcase project for Creative Commons licensing. The project is developing a large-scale media work which is remixable and shareable by a global audience.

4. Filmmakers - the filmmaking process will be transparent. You gain access to real documentation and discussions on the process. Besides opportunities for crewing and participation, networking.

5. Film/media students - Study and learn from an evolving model of digital-age media creation.

6. Job hunters - All crew and project jobs will be available to members first and foremost. The idea is to draw on and create a benevolent and creatively rich community. That means join up, and you get a great opportunity to work on a feature film” ([www.aswarmofangels.com/FAQ](http://www.aswarmofangels.com/FAQ))

Are these representative of the population of angels? The most part of the angels surveyed with an open interview and those that stated in their introduction on the ASOA website why they joined, declared that they joined the project for fun, because it was cool, exciting, because of “a moment of weakness”, because it was nice and £25 is not too much, because they need to train their creativity and to feel a sense of community belonging.<sup>28</sup> When questioned “why did you give not only money but also the cost of your time?”, most of them *also* suggested more market oriented reasons, especially those involved in some specific activity of content creation (*JPD, Palla, Timo*, poster creators, etc.): the opportunity for a CV or portfolio entry, possible recognition in the film credits, visibility in a community of experienced people and visibility *ex post*, outside the community, thanks to the project reputation (ASOA has 77.500 Google references on 23-11-2007).

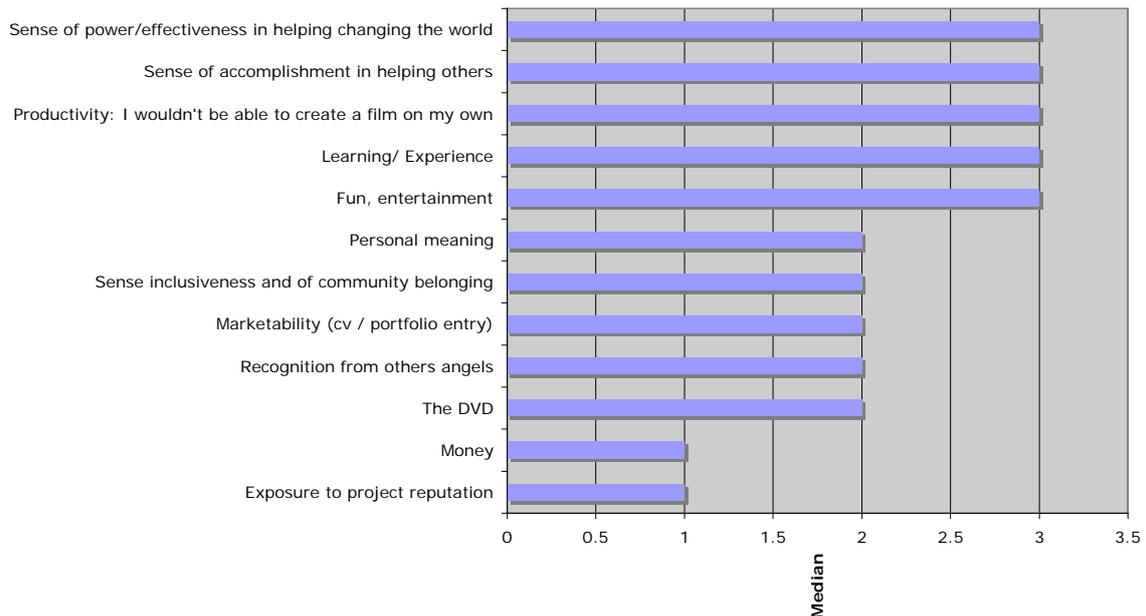
In the sample of ‘poster creators’ (three students and five professional designers), four designers and two students declared that their aim was to enrich their own portfolio, to gain a kind of international exposure, to challenge their design capabilities and to benefit from ASOA views. In fact the poster competition had some quotations in the web.<sup>29</sup> But they also declared to us that they did it because the *Palla* image was cool, because the competition was fair, transparent and serious, and to enjoy a sense of community.

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28 The picture that Owen gave of himself ranges a set of such intrinsic motivations: “I am a Flash Actionscript developer. In programming circles, the idea of open source has been around for a long time and I was interested to see how this approach could be applied to other fields. Since I spend most of my day in front of a computer, it makes a nice change from writing code! Although I see programming as being extremely creative, I think that to avoid stagnating in any artistic area, it is important to try different things out and I have always found collaborative projects to be a very rich area. My background is in Fine Art video and digital media (I completed my degree in 2001), so it is also an area that I have a strong interest in. I don't think that I would be able to create a film on my own, certainly not on this kind of scale, and it is something that I would like to do, so I guess this project is a way for me to be included in the process. I think that fact that I can contribute as little or as much as I like is important. Also, Matt is from Brighton, which is where I'm from, so I'm supporting local creativity!”

29 14 quotations, e.g. <http://www.thewavingcat.com/2007/05/24/a-swarm-of-angels-movie-poster-competition/> - <http://www.thinkartificial.org/technology/worlds-first-open-source-movie/>

**Figure 7: What do you think the project could give you? By the participation of this project I would expect to have back (1=Not Important, 5=Critical)**

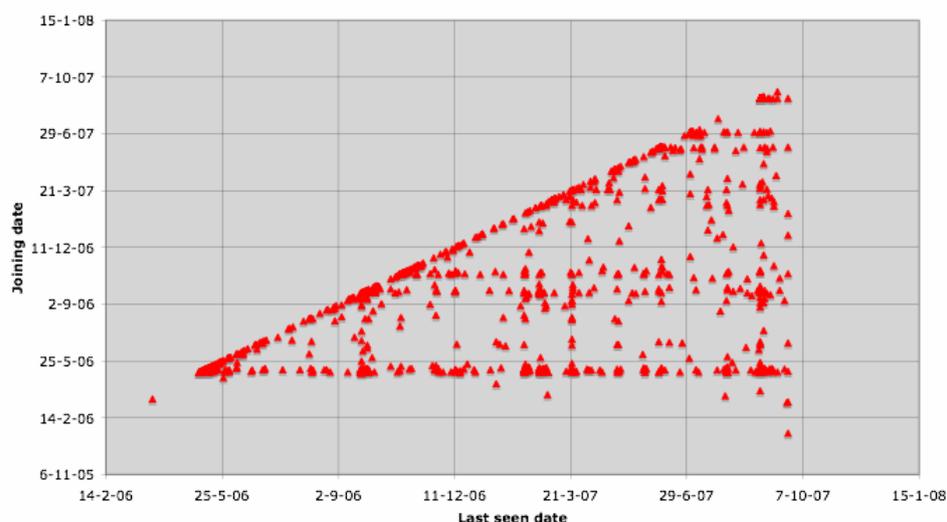


The survey of the top 5% contributors revealed the following assessment of the expected benefits (Figure 7). We chose to represent them by the median indicator, because it allows a clearer reading of the results. Angels were asked to rate the importance associated to a closed set of motivations (1 = Not important, 2 = Slightly important, 3 = Important, 4 = Very important, 4 = Critical). The fact that there is not any median preference stronger than 'important', may reveal that the respondents do not have a sharp awareness of the expected rewards. The top five expected benefits are related to intrinsic motivations, while others much more related to money or professional gains, seem to be not so relevant. In particular it is interesting to note that while, when asked about the future of the project, they are sure the movie will be finished (median value: 4 – sure), they think that it is unlikely that their single contribution will somehow be recognized and then they are not expecting to gain from project reputation (a potential cause of 'free riding' behaviour).

While the respondents are in the top 5% of contributors, they do not have a clear and identified task in the content production (all the producers of specific content have been interviewed separately) and that may explain the low rating of extrinsic rewards (money, marketability, exposure, recognition).

On the basis of the preliminary data collection it seems that, like in most OS project, the participants instant reward is intrinsic and completely disconnected from money (perhaps negatively correlated with money). It could be explained (Hars and Ou, 2002) like an inborn need to self determine one's relation with one's environment, or also with the "desire for a stable, firmly based, usually high evaluation of oneself". In the same category of intrinsic needs we would put altruism (seeking to increase the welfare of others) and the need of community identification. But, especially those involved in some definite creative task, they are also somehow expecting a 'future personal reward' or 'delayed payoff', likely related to money as well (we could consider professional affirmation related to money). It derives from human capital (personal skills, capabilities and knowledge) increase, to self-marketing within the community and beyond, and slightly to peer-recognition.

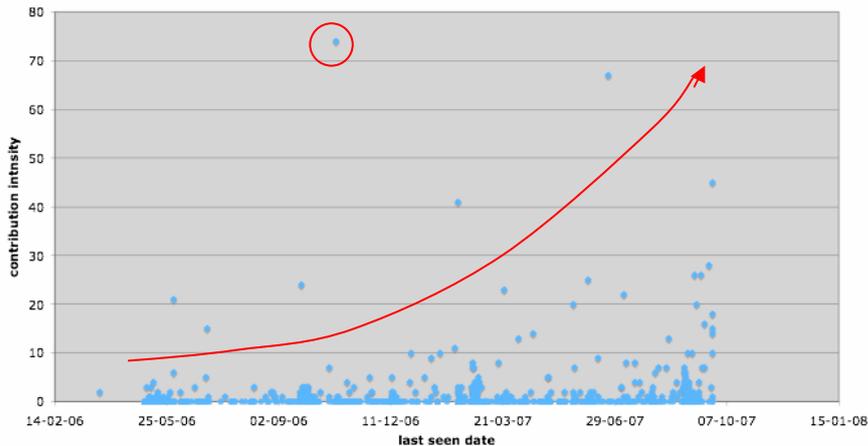
Figure 8: Last seen date w.r.t. Joining date



However, as the last seen wrt joining date graph (Figure 8) shows, the motivation to join is different from the incentive to stay and there is a significant percentage (31%) of 'occasional joiners' represented by the 45° line. That is a community management problem. MH is not concerned about the presence of occasional joiners, he considers them physiological, as if the process did not really need them till now. Instead he is worried about the potential creativity embedded in those persons that risks to be lost. They have been unnecessary till now, but they could be in the future. How to harness them? A possible solution would have been to know them a little more in depth concerning their age, place, attitudes and in what way they would have liked to contribute to the project. In designing the joining process, MH believed that too many question would have discouraged a potential angel, more than the money asked. He decided to simplify the information required as much as possible (only the nickname and the mail address are mandatory). Now he considers that precaution an error, because at this moment he would like to know more about the potential of the community and treat it as it was a self-selected work group. For the next round of adhesions he is planning something new in this direction: exchanging information with money, he is envisaging an intermediate level of free membership allowing persons to see all the 'creative laboratory' (now reserved to registered angels) but without having the possibility to contribute to it. In order to have this right they will be asked to provide more personal information.

Occasional joiners are not the only management trouble. Sometime the most active contributors, those who attend the community with constancy and build a sort of creative core on which the project could flourish (Figure 9), leave the swarm. For example take the case of Chadu. With his 74 posts he is one of the major contributors to the project, especially within the script writing threads ("The Unfold" in particular). But he left the project in October 2006 (red circle) "in mid- to late-2006 I started working more on a project of my own, my most recent roleplaying game book, THE ZORCERER OF ZO. Then, in October of 2006, my wife and I separated, and dealing issues relating with that kind of took up much of my available time."

**Figure 9: Contribution intensity w.r.t. last seen date (proxy measure of participation persistency)**

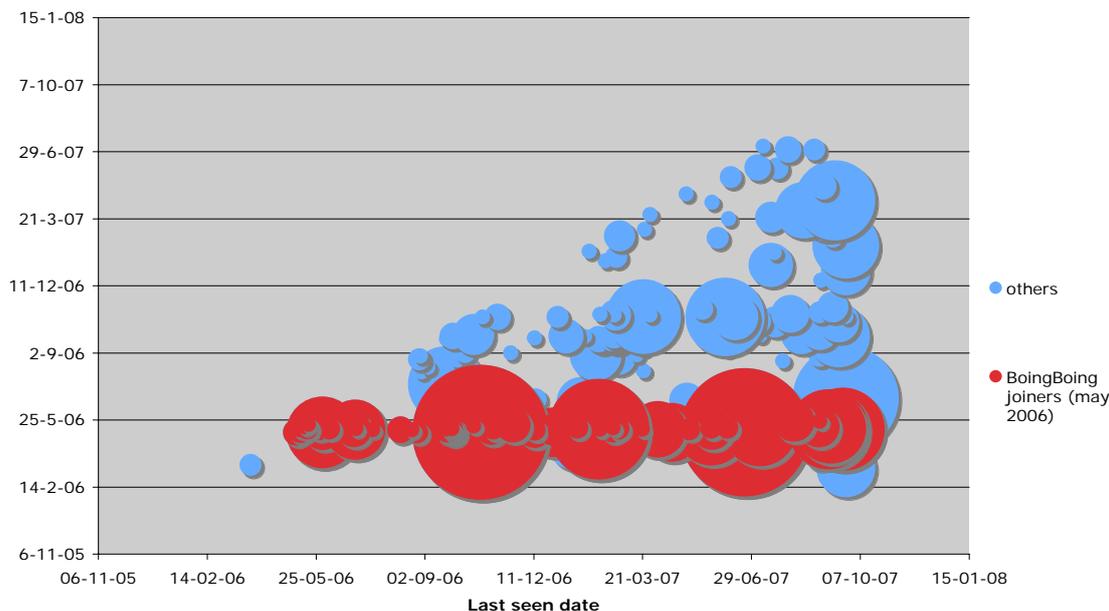


Nobody could force *Chadu* to stay despite his personal and professional reasons but it is not clear yet if it represents a real problem for the community, at least bigger than it would have represented in a traditional workgroup of paid persons. If Hanson were able to gain a better knowledge of his swarm, even the impact of this potential problem of incentives could be reduced and *Chadu* (as well as similar cases) could be more and more replaceable. Another example is *Paul Freeman* with 24 contributions, who joined on the 17<sup>th</sup> of July 2006 and quit on the 22<sup>nd</sup> of September, after almost 3 months in which he gained a prominent role within the community. He explains what happened: "I quit mostly due to a change in situation, work getting busier, and my home computer breaking! Which ties in with the next question, I once read somewhere a quote which said "You can't ever be a newbie again" - and that kind of sums up how I feel. Once you've lost your footing in something like this, it's very difficult to get back into - you've already had the learning curve, and yet it's all changed, so finding your voice again to me at least is very difficult. Feeling disconnected, and not sure how to get back into the flow." Similarly, *Cyberia girls*: "I joined just after moving to a new city where I didn't know anyone, but at the end of 2006 I got back together with my boyfriend and spent a lot less time in front of the computer. So I guess I quit because my social life picked up. Also I thought the scripts on offer were a bit generic. It seemed quite hard to influence anything practically..."

As Lerner and Tirole (2002) argue about programmers' motivation in FLOSS communities, OS contributors incur two type of costs: the current cost (the monetary compensation he would receive if he were working for a commercial firm or university), and the delayed cost, ie the cost of not focusing in his primary/daily mission. The size of this opportunity cost depends, in general, on the pressure of the job. Cost reasons seem the main cause of such a noticeable abandonment cases. However other explanations could be put forward, relating for example to the decreased or delayed benefits due to the relative slowness of the project progress. Delayed benefits are related to peer recognition from the community and to signalling. Since signalling power depends on the project success, and with a potential success apparently so far in the future, the relative benefit is low (high discount rate). Also, since the community dimension has been kept intentionally low, it may have produced a sort of saturation effect in peer-recognition expectation of such members.

Matt Hanson has not the right receipt to manage such an experimental organization, and he has not many reference points in the past. He is the first mover in the Cinema 2.0 field and even if ASOA fails, he and his crew of contributors are sure that it will provide invaluable lessons for the future.

**Figure 10: Last seen date wrt Joining date wrt Contribution intensity (diameter) except MH - the "encouragement effect"**



Nevertheless the literature provides very challenging studies of agent behaviour in large scale public projects. For example Yildirim (2006), relying on previous work by Palfrey (1991), tries to analyse with a game approach the problem of “getting the ball rolling” in such networks and gets different conclusions depending on whether the contributors are perfect substitutes or they are complementary. The paper considers the situation in which costs of contribution are a private information and they vary over time and agents. The case of ASOA is quite complex as it regards actual complementarities of angels’ contributions. They are perfect substitutes as regards the money contribution. They are quasi substitutes as regards some kinds of activities (like voting, general advising) and almost complementary for other kinds of activity involving specific competences (as explained above) or considerable sunk learning costs about the project. If, for example, JPD quit the project, it will not be impossible to find a substitute, but it will likely take a considerable amount of time. Yildirim argues that the first stages of a public project are characterized by perfect substitution of participants, each agent raising their effort as the project moves forward, because the encouragement effect outpaces the free-riding issue and agents consider their own efforts as “strategic substitutes for others’ current efforts and as strategic complements to future effort”. But, when the community dimension becomes sufficiently large, the encouragement effect shrinks together with the total incentive to contribute because the free riding effect becomes stronger. This is a crucial issue, especially considering that the ASOA project is not strictly ‘public’. We could find some evidence of an encouragement effect pushing angels not only to contribute more at the initial stages but also to advertise the project in order to collect more potential contributors (see Figure 10 Last seen date – Joining date – Contribution intensity).

AOSA can be considered as semi public since Matt, as shown before, has a better control of the community dimension than single angels, and this could influence the mechanism that Yildirim is showing. On the one hand, MH is right to be afraid of the community growing too quickly, not only because of the danger of inconsistency of the content, but also because it compromises the future of such a ‘long’ project. But on the other hand, it reduces the angels’ encouragement power, and then increases the relative weight of the free riding effect, discouraging them to contribute.

According to Yildirim’s simulation, the addition of a new member to the community benefits present members (that is probably the reason for which FLOSS projects accept contributions from programmers all over the world rather than restricting the group to just a

few). A possible partial solution with respect to the decrease of incentives to contribute when the community is large enough, could be found in product/process architecture and in the new entrants: in fact (Brooks, 1995), speaking about FLOSS projects says: “if a project’s tasks are partitionable, you can divide them further and assign them to people who are added late to the project”. This is a strong reason in favour of letting the community grow virally, but it rises the question of why Hanson seems so keen in controlling the community dimension. The answer underscores a peculiarity of ASOA as a social peer production system. The contributors are not always substitutes: that reduces the free riding problems (that are low also according to the questionnaire answers) but exacerbates coordination problems and costs, requiring an initial strong help from ‘outside’ – the leader for example – to ensure that the rest will be finished through voluntary contributions (in fact, simulations reveal that after such an initial stage the relationships among agents grow like in the substitute case). Thus, Hanson is right and at the initial stage ‘many’ is not good. But preventing the community to grow virally and, at the same time, asking angels to do by themselves, perhaps could not be the best strategy to get the ball rolling.

The theoretical analysis would suggest that he do more by himself (or ask for extra help from outside the community) in the initial stage and then let the project open as much as possible. Since the project is ‘long’, in each stage it should be able to allocate the work to new entrants, in order to reduce the lowering of contributions in the mature stages. In order to be able to do that, he should know as much as he can of the new entrants’ attitudes and motivations, and, even without the power of forcing them, give them enough reasons to contribute in what they wish to do. But the encouragement to do more by himself (more than he has already done) in this initial phase when he chose to control the community dimension, could crash with the following consideration about the delicate role of leadership in such a projects.

Another important management issue, in fact, is the leadership. In the case of ASOA, there are no doubts that *open* does not mean *flat*. Matt is by far the most active poster and topic starter, he takes care of the website, he is the founder, he is the most committed, he is paid for it because a few months after the project beginning he ‘made the deliberate decision to concentrate on ASOA and cancel other work such a upcoming book projects, consultancy and other productions’. Nevertheless, so far, the 100% of interviewed recognized the importance of Matt’s leadership and do not feel constrained by it. As *Marc* pointed out: “I think strong leadership is needed in any collaborative project. Most decisions made throughout the lifecycle of the project are subjective decisions, there is no right or wrong. The project could never finish unless there is someone at the top with the ability to make the final decisions. In my experience with directing live theatre, it’s always been important for me to have a firm vision of the project. Collaboration is always well and good, but when a difference of opinion starts to get out of hand, it’s for everyone’s benefit the director to be able to say “that’s my decision, let’s move on”.”

Hanson seems to fit the main features that are considered favourable for a FLOSS leader: he provides a vision (the project needs to be challenging to attract other contributors), attracts other programmers and, last but not least, keeps the project together and alive. In FLOSS as well, it is very common that the leader assembles personally a critical mass of code to which the programming community could react. Matt Hanson, like Linus Torwald (Linux), Larry Wall (perl) and Eric Allman (Sendmail), started his project because of a ‘personal need’ – he wanted to make a feature movie (he never made one before), he had not enough money but a big vision. Also, like most FLOSS leaders, he could be considered a sophisticated user<sup>30</sup> (Von Hippel, 2005). However, unlike Eric Von Hippel lead users his main aim, for now, is not *only* doing a (better) product -the movie-, but *also* a new production process for it. This aim is shared by his angels, as well.

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30 Hanson define himself a “digital pioneer”. In 2003 he published the book “The End of Celluloid, Films Future in The Digital Age”.

As in other OS projects the governance structure is not flat at all. “A strong centralization of authority characterize OS projects [...] While the leader has no ‘formal’ authority, she has substantial ‘real authority’ ” (Lerner and Tirole, 2002, p. 220). There is a head who takes care of the process life and consistency, who ‘moves it on’ and seems to have the right ‘touch’ (Matt Hanson defines himself a “benevolent dictator”).

Maybe too soft a touch, because the main claim is: “yeah, I am happy with the project, but I think it should go faster. I do not know how and if it is right. Nobody knows, it’s the first time.” However, as MH himself noted, the duration of the project, so far, is not alarming with respect to how off-line movies’ projects usually works. From the first idea to the release of the film could pass a lot of time, sometimes because the treatment phase is very fuzzy, sometimes because the movie waits a lot, after being produced, to go through the distribution funnel. Ravid (2005) recalls for example when in 1995 the historical novelist Patrick O’Brian met in Hollywood with Charlton Heston and Samuel Goldwyn Junior to discuss the translation of his literary work into the language of movie. Despite the great success of the book, it took eight years for O’Brian work to become “Master and Commander: The far side of the world”, released in December 2003.

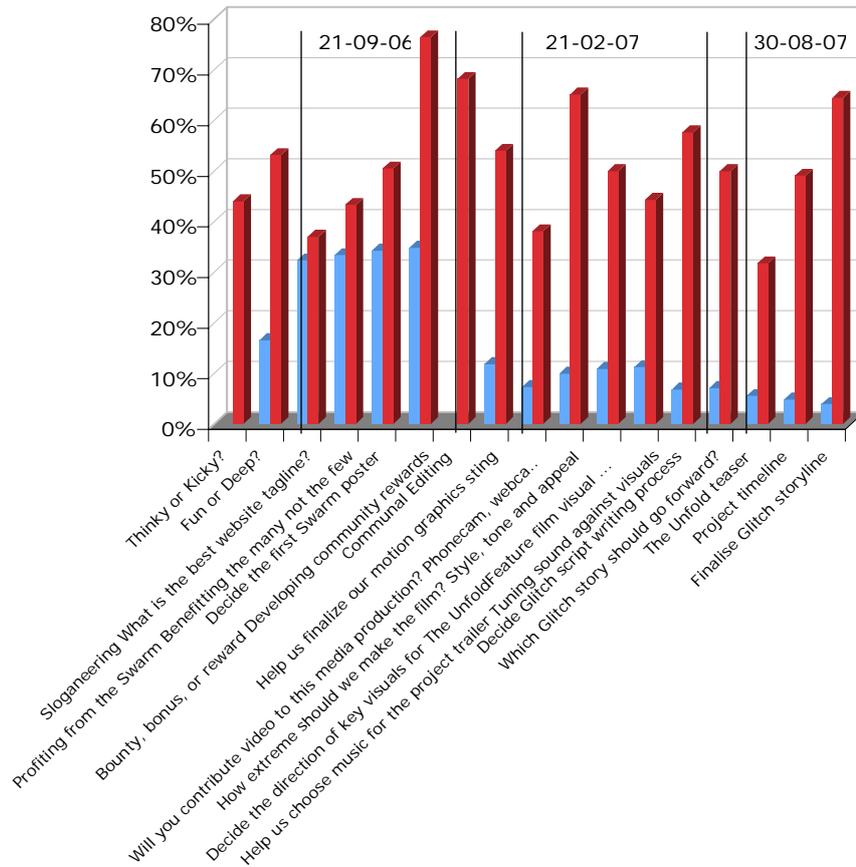
The importance of suitable leadership is also highlighted by an unsuccessful experiment of cinema 2.0 pushed by the public administration of an Italian Region, the Piedmont. The project was expected to be very similar to ASOA, but in Italian language and supported by regional funds. The goals were to harness the creativity embedded in self-selected citizens and to try an innovative way to fund movies: in Piedmont in fact – as well as in Italy and in Europe in general –the movie industry is largely funded by public funds (Peretti and Negro, 2003). The leader of the project was supposed to be selected and paid by the public administration (as well as the web-site developer). But the project ([www.cinetma.net](http://www.cinetma.net)) has not yet started after more than 3 years because of a problem of initial too scarce commitment. When asked why he did not try to ask for public support for his project, Hanson explained that the British Film Council needed to evaluate the script, and he rated such a founding system as “outdated”. But in the case of Piedmont, the project was developed by the Regional Department for Innovation: it was not a problem of funding scheme rigidity. A UK public funding body, NESTA (National Endowment for Science, Technology and the Arts) in fact, was able to fund an early experiment of cinema 2.0 ([www.nowthemovie.org](http://www.nowthemovie.org)) within a funding scheme ‘on-demand’. Nowthemovie and ASOA had a leader. Cinetma has not.

For the majority of decisions involving:

- critical aspects of project management (e.g. how to deal with the project timeline, with developing community rewards, or with profits likely gained from the film distribution...);
- nodal points of the creative development (e.g. which of the two or three proposals of trailer/soundtrack/poster to choose, which of the multiple versions of the script should go forward etc);

MH asks the community to get angels’ advice through a poll system, organized through ‘voting weeks’, and he takes the outcome as final decision (even if different from his own personal advice). He has veto power, but he has never used it. So far, the community has had 17 polls, with an average quorum of 15% (blue bar of Figure 11, the red bar represents the preferences percentage of the winning choice), though second year polls had a much lower share of participants. The decision-making process is intended to be as transparent as possible. While MH still has a rolling view of goals and expectation (especially as regards the ‘time’ factor), and is trying to improve on the road the organization structure, he tries to give regular explanation/sharing of what he is doing and what his plans are for the future of the swarm.

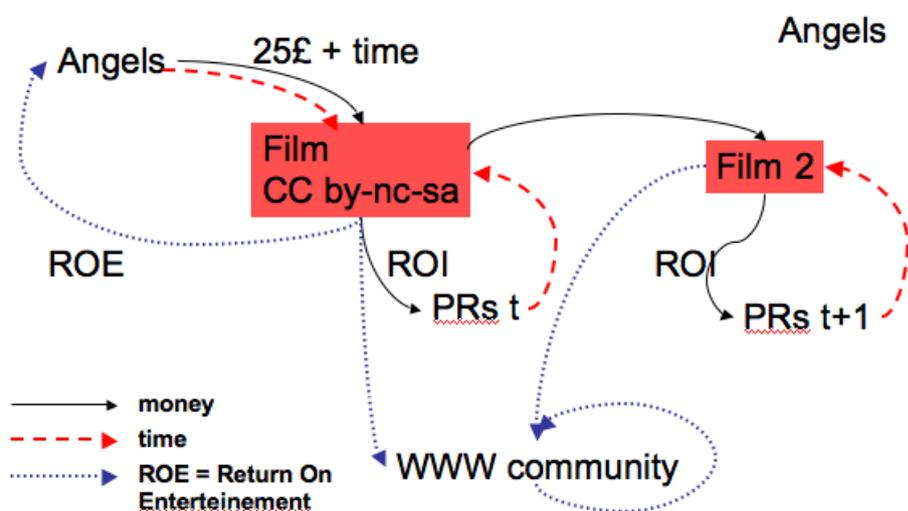
Figure 11: Polls, voting weeks, quorum (blue bar) and percentage of the winning choice (red)



## 6. The business and IPR framework

Posting on [www.openbusiness.cc](http://www.openbusiness.cc) within a very animated thread devoted to ASOA, Matt Hanson wrote, in September 2006: “.. In fact, we are looking at creating a viable business model rather than a utopian idyll..”. The same day, 21<sup>st</sup> of September, the Swarm began to vote on two hot points with respect to the definition of such a business model. The first one was “Profiting from the swarm”, wondering how to deal with possible extra-community earnings, and the second one was “Bounty, Bonus or Reward”, asking which kind of rewarding an angel would have desired/deserved from his “extra mile ”contribution to the realization of the movie.

Figure 12: A scheme of ASOA business model



In market organizations, money is usually adopted as a coordinator incentive for human and material resources. We already argued that in the movie industry the market coordination is all but perfect, but it worked for a century. Within ASOA, money is also explicitly needed and requested. It is needed to pay resources ( $PR_c t$ ) that are not available in the community (human and physical). “Well I would expect some kind of reimbursement of costs, not more” *the kleptones* (soundtrack coordinator). Money is intended to be an incentive to those who do not belong to the community. Money is given, at the beginning, by Angels. “Then the movie could gather additional funds from media companies and distributors who might want to broadcast or use assets from the production for their own commercial endeavours”, and from other “opportunities for the project which don’t conflict with ASOA general principles, such as sponsorship and equipment partnership” (MH). The CC *by-nc-sa* licence has been chosen in order to allow and welcome possible earning for authors from commercial exploitation of the product(s): in that case angels agreed to invest the earnings in a future similar project ( $ROI$ ), as represented in the ASOA business model scheme (Figure 12).

Angels are expected to raise the money for the production upfront (£25 each). Some of them are willing to contribute as well to the development of the product. The level of the effort could be different, as discussed above. For angels whose contribution goes the extra mile, the Swarm voted for a form of reward consisting of “A gift, item, or experience rather than a purely monetary transaction” (76% of 195 voters: one of the most attended polls with one of the most resounding preferences). Such a form of reward is not of course free in terms of money - neither are the DVDs that each angel will receive when the movie is released; however, it could be included in the category of ‘ROE: Return of Entertainment’. This category also includes fun, learning, sense of community belonging, friendship and other forms of personal reward already discussed in the analysis of motivations and expectations in the previous section.

The whole web community as well is going to have ROE thanks to the possibility of freely downloading the movie and re-using / re-mixing it or part of it. The production crew “will receive ‘proper salaries’ based on their involvement, and ‘market rates’ for a 1 million feature. I intend production fees for crew to be at ‘scale’ levels. These will be published in the relevant budgets for Angels, and the public, to peruse.” Matt Hanson receives an income from this project because he “invested [his] time in this project and covered expenses up to now from [his] own pocket, without any remuneration” and because he “made a deliberate decision to concentrate on ASOA and cancel other work such as upcoming book projects, consultancy and other production”. In Phase 3, Matt Hanson intends to provide full details on all expenditure and remuneration, so that “Angels will

have the ability to feedback on budgets, etc as they are produced for relevant phases/production”.

Money is also seen by Hanson as a sort of protection for the quality of the community: “phased and paid membership positively affects the community by weeding out spammers, and ambivalent participants.[...] Members hold more weight and power than open online social networks.” Of course money is not the only possible barrier and other methods could be applied.

## 6.1 IPR concerns

The most controversial part of the model is related to what is going to happen when someone is willing to use the product or its derivatives for commercial use. The licence used<sup>31</sup> is the Creative Commons *by-nc-sa* (attribution-non-commercial-share alike) 2.5.sa, which means that anyone can remix and modify the content so long as the result is released under the same sort of licence. The concept is similar to “copyleft”. *nc* means that the commercial exploitation of the product and/or its derivatives (by natural person or legal entities) is not allowed without the explicit consent of – and likely negotiation with- the author(s). The choice of the Non Commercial license originated a huge and interesting debate within the community and beyond. On [www.openbusiness.com](http://www.openbusiness.com), for example, when *zots* got aware of the NC clause, he exclaimed: “Well then, they can count me out, I am not paying for the creation of NC content. [...] NC is not good for community projects”.

The claim against the *nc* option was not merely technical. It is a matter of project mission, identity and, actually, of business model. Matt Hanson does not want corporations to gain from ASOA while some Angels object that the generation of income (even if for future productions) should not be part of the model, because it is potentially dangerous; the needed money should always come upfront from angels or similar economic players “so that interested people could fund artistic people to generate interesting work and all of our lives can be enriched by the result” (*JoeK*). Actually the ‘model’ seems to be the issue, rather than the relationship between input and output of the production process. Matt wants “a model that can be emulated “, but *JoeK* thinks that charging big companies for commercial use of the movie “goes against the way that this \*new model\* of production should work and in fact would carry with it the danger of killing off the whole process”. *Barsoomcore* seems to marry the same opinion: “As soon as you start trying to gather revenue, you’re going to fall into the traps commercial artistic production is already mired in. There’s just no way around it”.

With the exception of *JoeK* and *Barsoomcore*, the majority of angels involved in the discussions related to this topic seemed to agree on the fact that since money is needed to move every movie project on, then it is welcome. However, ASOA is not supposed to be an investment opportunity neither for angels nor for others. It is supposed to enable the possibility to create, but not to make money from it, at least without the swarm to have a say on that. Still, there are conflicting views on who can use ASOA products - can a Majors pay to use some of the ASOA projects? Some of the Angels are against it because it would be like supporting the current system. What about non-profit organizations and other small businesses? They will be allowed, at the Swarm’s discretion, to use the product commercially without paying any fee to the Swarm.

How the production/business model should be different from the cinema 1.0 system and how close it is supposed to be with the FLOSS framework is the core unresolved question facing ASOA. The possible involvement of extra money in the second stage of the model, gathered from off-line product exploitation by third parties, introduces a big difference with respect to the first stage (angel funded) and may compromise ASOA’s original vision. Like

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31 Since ASOA is at the moment (Nov 2007) no longer accepting new members we used the Internet Archive to simulate the process of joining ASOA and thereby also got access to the membership agreement available for incoming members.

in any 1.0 business model, the choice of the license is at the downstream level of a deeper analysis about the goals and performance indicators of the concerned activity. As Cory Doctorow points out, the swarm must agree first with what ASOA stands for. Is it for foddering new filmmakers? Is it for producing a lot of films like a 'production foundation'? Is it for rewriting the rules of movie production? Is it to undo the Hollywood system?

Putting in the background the concerns with the aims and *raison d'être* of ASOA and focusing on the licence chosen does not simplify the picture too much. The CC *by-nc-sa* licence says that the commercial exploitation rights of the products or its derivatives have to be asked and negotiated with the author. In the ASOA case the authors are a lot and not at all recognizable. So, who's the author to ask and negotiate with? Matt Hanson stresses that "the author and the owner is the Swarm, and it will be represented by a professional negotiator, not me!". However this answer seems a bit simplistic from a legal perspective.

The model envisaged is complex both from a legal and an economic point of view. From a legal point of view it is particularly interesting to see how the organizational structure of the Intellectual Property rights involved based on the CC *by-nc-sa* license will be able to deal with a massive multi-creators / multi-funders context. The legal model between the Swarm, its members, and the general public could be described as a *m:n* relationship with a multitude of creators *m* agreeing to individually, but collectively license their contribution under the CC *by-nc-sa* license to the general public *n*. The Swarm representative is the critical player to represent the massive partnership of creators in contracts negotiations, right enforcement, liability issues, and several other aspects. Without a Swarm representative and an agreement of the power of the representative and the individual members, it seems questionable if the general rules of the partnership, and the right of each partner to represent the Swarm on behalf of its members, are helpful. The model chosen by the Swarm is in stark contrast to the model dominating the FLOSS environment, where strong copyright holding entities, e.g. the Free Software Foundation, or the Debian Foundation, are the copyright holders of all contributions made by their members, and act accordingly in representing, licensing, and enforcing the content produced by their members. The FLOSS model is a *m:1:n* model, characterized by the right holding entity in the centre of the hour-glass, mediating the contact between the creators and the general public. So far, no Swarm representative has been appointed and the discussion about the power and the internal organization is still on-going. Other than the well-established and codified practices in the FLOSS industry, Open Content Film is still an emerging field, which is struggling to produce an appropriate model of organization and legal structure.

From an economic point of view, it is unclear how far the project life is relying on its funders/creators (it is a matter of motivations, as we said before) to reach its final aim (the movie) and what kind of benefit/welfare would like to create in the economic system around it. Is the economic system composed of economic agents willing to create and make a living from creation? Angels are supposed to have an indirect profit generator mechanism. Why then they should care about direct profit? The project tagline is 'remixing cinema'. The NC option, somehow, constraints remix activity when the remix result is expected to be a commercial product. Is not the SA option the most important part of the model, like in OS software? In OS software the development phase is disconnected from the business phase. Red Hat is not the FLOSS community - it is a company offering his services on what the FLOSS community produce. The Mozilla foundation lives with donations, and it is not a commercial body. In ASOA the donation mechanism is intrinsically related to the production opportunity. And, with the NC option, the producers are 'exposed' to possible earnings, as producers and as donators. In fact the earnings are supposed to reinforce the effect of donations. Such an apparent short-circuit, never seen so far in the web 2.0 landscape, asks for a much more deeper analysis and evaluation, whose conclusions could contribute to the understanding of the next generation of web-based production and business models.

## 7. Conclusions

The origins of open distributed collaborative movie making can be seen in the so-called web cinema. Web cinema is “cinema created specifically for viewing on the Internet. Stories are always shaped by the medium in which they are presented and the technology of that medium and the web cinema is no different” (Barry, 2003, p.554-555). According to Barry (2003), from 1997 the history of web cinema can be split into two main periods. The trend in 1997-1998 was influenced mostly by television, with soap opera becoming one of the first online video streaming experiments. New forms and narratives, many of them interactive, were experimented with up to 2000, when it seemed as though everyone, and especially those involved in the USA movie industry, wanted to participate and satisfy the accelerating demand for online content. From the end of 2000, when Internet content began to lose its appeal, the only web-cinema showcases were Streaming Cinema<sup>32</sup> and in 2001 there was a new category in the Sundance Film Festival devoted to Net films.<sup>33</sup> In the early years of web cinema American and Canadian voices dominated, probably because of the cheaper telephone and Internet costs, which made it easier for the artist to be on line. But from mid-2000 and the advent of flat-rate Internet access in Europe, European filmmakers became more active, receiving encouragement from festivals and showcases around the continent. In 2001, the feature film was an impractical format for the digitally networked medium, and shorter mixed video-animation formats were preferred. Since then, web filmmakers have continued to experiment and construct their stories, challenging the technology to mirror the reality they want to portray. Their demands have pushed engineers and developers to expand the capabilities of the technology, allowing for new art and new contexts in which this art can flourish. The ultimate evolution is web 3.0, the rich, loosely connected information environment that resulted from the web 2.0 paradigm.

This paper is a first attempt to analyse what is probably the most complex and important of the ongoing experiments, “A Swarm of Angels”, which is coordinated by Matt Hanson, who is located in Brighton, UK. The Swarm of Angels distributed collaboration is particularly interesting because it encompasses: (1) collaborative peer production of content by a self-selected group of creators; (2) collaborative and distributed micro-funding of the production; and (3) open access to the content by anyone that wants to see it or remix it. ASOA is the only case that we found that aims to implement all three aspects.

The other ongoing experiments seem to progress but they are mainly focusing on one or maximum two of the three identified axes. For the sake of brevity, we will shortly describe just one or two examples per lever.

*Bloodspell* (<http://www.bloodspell.com/>) is a feature-length Machinima<sup>34</sup> animated film. It has been realised by Strange Company, a production company funded in 1997 and specializing in 3D animation and virtual worlds. The producers describe it as the “largest Machinima film ever created. It’s an independent film that, because it is using Machinima technology, isn’t subject to the usual limitations of smaller films. But, at the same time, we don’t have the politics, money and producers of a Hollywood production involved, so we can experiment with ideas, styles and attitudes that wouldn’t be possible in a more top-heavy Hollywood production.” *Bloodspell*, as with other projects from Strange Company<sup>35</sup>,

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32 <http://www.streamingcine.com>

33 <http://www.filmfestivals.com/sundance/2001/index.shtml>

34 Machinima (machine cinema) is a collection of associated production techniques whereby computer-generated imagery (CGI) is rendered using real-time, interactive 3-D engines, such as those of games, instead of professional 3D animation software.

(<http://en.wikipedia.org/wiki/Machinima>).

35 <http://www.strangecompany.org>

is released under a Creative Commons *by-nc-sa* 2.5<sup>36</sup> licence (the same as ASOA products), because Hugh Hancock, one of the two producers, thinks: "I want people to be able to show my movie to their friends. I want them to be able to make music videos from it, or fan-fiction, or whatever. If they're doing that, they're talking about our work, they're getting their friends involved in it, they're spending time in our universe". We do not have any clues as to whether and how Bloodspell increased the profit of Strange Company, but people are actually talking about it and showing it to others: it has 106,000 Google quotations<sup>37</sup>, more than one tenth of the 2003 acclaimed "The Lord of the Rings: The Return of the King".

*My movie mash-up* (<http://www.myspace.com/faintheartthemovie>) is a collaborative movie project structured as a competition. It is open to the participation of all English members of MySpace<sup>38</sup> (roughly eight million in total). It is sponsored by Fox Interactive Media UK Limited along with other private and public bodies (including the UK Film Council and The Times), with a total budget of £1 million. Members are allowed to propose themselves as director, actors, technicians, musicians and/or to vote in order to choose the winner. The result is not just co-created, but the selection of resources is supposed to be as open and transparent as possible, even if some dispute about being co-created arose between the participants.<sup>39</sup>

*My Role Player* (<http://www.theroleplayer.it/>), an Italian project, is instead envisaged as the possibility to interact with other people through a forum (like in ASOA), in order to suggest and propose some modification to the initial script of a movie. But till now the members are only 120 and the creation process is going to open the doors after the milestone of 500 members because "we think it could be better to interact with many people since the first access."<sup>40</sup> In this model the subscribers do not pay any money in order to enter the process but commit themselves to pay the cost of the DVD (€8) when the film is finished.

A micro funding experience has been experimented with by an Italian project, *Produzioni dal basso* (Bottom-up Productions, <http://www.produzionidalbasso.com/>), allowing everyone to call for pre-funding for their own creative project (movies, cds, posters, paintings, books, etc.), at the cost of one copy of the final product. They have already completed 39 creative products (three movies). "SelfCinema - Adopt-a-movie" (<http://selfcinema.it/home.html>) is a similar experience, enabling spectators to pre-buy the cost of the ticket of an "independent" movie in order to push theatres to show the movie, against the well known distribution funnel.

The composition of the challenges to co-produce/co-fund/co-remix that ASOA tries to implement in a very unprecedented way, generates two layers of complexity: the first one relates to the feasibility of collaborative peer production of a movie as a particular combination of several contents; while, the second one, pertains to the governance structure and the underpinning business and legal framework. ASOA is an ongoing experience, but the architecture of the product released so far and of their production process seems to fit the basic requirements to benefit from a distributed collaborative production model: our analysis showed that they are respectively *modular* and *granular* enough. Even if from both the demand and technology side there seems to be the condition for such innovation to flourish and succeed, only further analysis and observation of the progress of the project will allow us to assess whether open distributed collaboration

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36 "If you want to remake it as a big-budget Hollywood blockbuster starring Tom Cruise and Kiera Knightly, you can't do that without talking to us either. Although we'll probably say yes. Or "gublyouwantodowhat? Basically don't be evil and we won't be either"" (<http://www.bloodspell.com/commons>).

37 Last check 4 Dec 2007.

38 <http://www.myspace.com/> is a social networking platform.

39 See, for example, the thread "Not a user generated film at all!" in the website forum.

40 <http://www.theroleplayer.it/faq.php>

is applicable even to the production and post-production phase of the realization cycle of the movie, therefore resulting in the production of a feature film.

The project seems to have a multi producers / multi distributors structure. However, the legal framework that underpins the ASOA organization, as an alternative to GNU, is new and opens a new direction for analysis and investigation both from a juridical and an economic point of view.

The economics of ASOA refers both to the assessment of motivations and incentives to make the project rolling, and to the business model, that is supposed to be an 'alternative' to the established movie making system. While the first result of the motivational assessment seems to recall the FLOSS experience which in some notable cases has already been revealed to be successful and viable, ASOA - as a semi-open community made of both complementary and substitute resources – presents a inedited problem of management which the leader is still dealing with. Since the Swarm is supposed to collect money for the next production through the exclusive commercial exploitation of the results, this may generate a collision between the production and the distribution commitment – traditionally separated in open content projects such as FLOSS or Wikipedia. The analysis of the dynamic impact of this novelty in motivational asset of the angels is an open issue which deserves further investigation.

From a legal point of view it is particularly interesting to see how the organizational structure of the Intellectual Property rights involved based on the CC *by-nc-sa* license will be able to deal with a massive multi-creators / multi-funders context. The *m:n* model chosen by the Swarm is in contrast to the model dominating the FLOSS environment, with a multitude of well-established licenses adjusted to the needs of massive collaboration and mass licensing and strong organizations, e.g. the Free Software Foundation, or the Debian Foundation, which back the license and enforce the terms of the license against infringers. So far, no Swarm representative has been appointed and the discussion about the power and the internal organization is still on-going. Opposite to the well-established and codified practices in the FLOSS industry, Open Content Film is still an emerging field, which is struggling to produce an appropriate model of organization and legal structure.

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## Appendix 1: Data gathering for ASOA project analysis

### Web data analysis

quantitative: db members, forums statistics (who, how many, centrality degree of conversations..)

qualitative: what are they talking about?

### Written interviews/questionnaires:

Main leaders, main players  $\geq 5$  posts

### Voice interviews

Matt Hanson

Jean-Philippe Drecourt

Greg Mary

Marc Hough

The Kleptones

### Main leaders/players:

| Person asked (Nickname) | Where              | Special role/function/motivation of the interview (if present) | Accepted | Written / Voice           |
|-------------------------|--------------------|--|----------|---------------------------|
| Matt Hanson             | Brighton (UK)      | Project leader   | yes      | Voice (by person)         |
| Jean Philippe Drecourt  | Reading (UK)       | Chief scriptwriter for 'the glitch'                            | yes      | Voice (Skype voice + cam) |
| Gregmary                | Beijing (China)    | Forum moderator  | yes      | Voice (Skype)             |
| Chadu                   | Alexandria (USA)   | Early abandoner, high poster                                   | yes      | written                   |
| Uzumpur                 |                    |  |          |                           |
| Marc                    | Adelaide (AU)      |  | yes      | written                   |
| Zeno                    | Brighton (UK)      |  | no       |                           |
| Benjamin Dean           | Indianapolis (USA) |  | yes      | written                   |
| Tomaso                  | Venice (IT)        |  | No       |                           |

|              |                 |                              |     |         |
|--------------|-----------------|------------------------------|-----|---------|
| Paul Freeman | Warrington (UK) | Early abandoner, high poster | yes | written |
| Cyberia girl | Australia       | Early abandoner, high poster | yes | written |

**Leaders: Angels responsible for the production of a piece of content**

| <b>Person asked (nickname)</b> | <b>Where</b>  | <b>Which piece of content</b>        | <b>Accepted</b> | <b>How</b>         |
|--------------------------------|---------------|--------------------------------------|-----------------|--------------------|
| The Kleptones                  | Brighton (UK) | Soundtrack of the two scripts        | yes             | Voice (by person)  |
| Palla                          | Osaka (Japan) | Photo of the Unfold poster           | yes             | Written            |
| Timo A. Hummel                 | Germany       | Soundtrack of the project trailer    | yes             | Written            |
| Mark Hough                     | London (UK)   | Digital video of the project trailer | yes             | (still to be done) |

**Contributors: persons participating in the Unfold poster competition**

| <b>Nickname</b>            | <b>Available address</b> | <b>Angel*</b> | <b>Answered</b> | <b>Affiliation</b>              |
|----------------------------|--------------------------|---------------|-----------------|---------------------------------|
| Brian Smith                | Y                        | N             |                 | private agency                  |
| Codplay                    |                          | N             |                 | private agency                  |
| Chris                      |                          | N             |                 |                                 |
| GK Farmer                  |                          | N             |                 |                                 |
| Lincoln                    |                          | N             |                 |                                 |
| Daniel Ferguson            |                          | N             |                 |                                 |
| Maribeth G Rivas           | Y                        | N             | Y               | design corporation, Philippines |
| Joemar Lamata              | Y                        | N             |                 | creative studio, Pilippines     |
| ferg flannery              | Y                        | N             |                 | creative studio                 |
| Vince, Vincent Archambault | Y                        | N             | Y               | creative studio, Canada         |
| Carolina Monteiro          |                          | N             |                 |                                 |
| Jason Large                | Y                        | N             |                 | freelance illustrator           |
| Steven Chan                |                          | N             |                 | creative studio, just rising    |
| matthew ng ch              |                          | N             |                 | creative studio, just rising    |
| eugene low ek              |                          | N             |                 | creative studio, just rising    |
| Simon Potter               |                          | N             |                 |                                 |
| Luke Avery                 | Y                        | N             |                 | creative studio                 |
| Dan                        |                          | N             |                 |                                 |
| Peter Čuhalev              | Y                        | N             | Y               | creative studio, slovenia       |
| Itrionic                   | Y                        | Y             |                 |                                 |
| Jonathan Valiente          | Y                        | N             | Y               | creative studio, us             |
| Jonathan Silberman         | Y                        | N             | Y               | graphic designer                |
| Kole Krstev                |                          | N             |                 |                                 |
| David Nguyen               |                          | N             |                 | graphic designer, London        |
| Nicolas Kole Krstev        |                          | N             |                 |                                 |
| Tim Forden                 | Y                        | N             | Y               | Creative person                 |

|               |   |   |   |                       |
|---------------|---|---|---|-----------------------|
| Carlmeo Booc  |   | N |   |                       |
| Neema Sadeghi |   | N |   |                       |
| MC3           | Y | N |   | Creative studio, AU   |
| Pk            | Y | Y | Y | Professional director |
| Nicholasg     |   | N |   |                       |
| Jennifer E.   |   | N |   |                       |

\*It is not clear how many of them are actually registered angels, because the nickname they used during the competition could be different from those one used as 'angels'. In case of doubt we coded NO, but the only right answers are those provided by person who actually answered the interview.

We have also carried out a few test interviews to other contributors with (6-2) posts: Fiona mac, Alex nestor and Marklennox.

### Questionnaire

We have surveyed the 5% of top contributors (post number  $\geq 5$ ), except those surveyed with open interviews (see above). Total questionnaires sent: 47, Total answered 15 (32%)

The questionnaire is available from the corresponding author.