QLectives – Socially Intelligent Systems for Quality
Project no. 231200

Instrument: Large-scale integrating project (IP)
Programme: FP7-ICT

Deliverable D5.4
Publication and dissemination report

Submission date: 2011-03-01

V1.0

Start date of project: 2009-03-01   **Duration: 48 months**

Organisation name of lead contractor for this deliverable: University of Surrey

Project co-funded by the European Commission within the Seventh Framework Programme (2007-2013)		
Dissemination Level		
PU	Public	x
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

1.1 Author

Author	Organisation	E-mail
Maria Xenitidou	University of Surrey	M.Xenitidou@surrey.ac.uk

1.2 Other contributors

Name	Organisation	E-mail
Nigel Gilbert	University of Surrey	n.gilbert@surrey.ac.uk
Alastair Gill	University of Surrey	a.gill@surrey.ac.uk
Camille Roth	CNRS	camille.roth@ehess.fr
Matus Medo	University of Fribourg	matus.medo@unifr.ch
Sergi Lozano	ETH Zürich	slozano@ethz.ch
Alois Zistler	IRT	Zistler@irt.de
Michal Ziembowicz	UWAR	ziembowicz@gmail.com
Tamas Vinko	TUDelft	tamas.vinko@gmail.com
David Hales	TUDelft	daphal2@gmail.com
Nazareno Andrade	TUDelft	nazareno@gmail.com
Mark Jelasity	USZ	jelasity@inf.u-szeged.hu

1.3 Document history

Version#	Date	Change
V0.1	20.12.2010	Starting version, template
V0.2	16.01.2011	Integrated version with reports from all partners
V1.0	17.02.2011	Approved version to be submitted to EU

1.4 Document data

Keywords	Publications, presentation, impact, dissemination
Editor address data	M. Xenitidou@surrey.ac.uk
Delivery date	17.02.2011

1.5 Distribution list

Date	Issue	E-mail
17.02.2011	Consortium members	QLECTIVES@LIST.SURREY.AC.UK
17.02.2011	Project officer Jose Fernandez-Villacanas	Jose.FERNANDEZ-VILLACANAS@ec.europa.eu
17.02.2011	EC archive	INFSO-ICT-231200@ec.europa.eu

Consortium

University of Surrey (Coordinator)
Department of Sociology/Centre for Research in Social Simulation
Guildford GU2 7XH
Surrey
United Kingdom
Contact person: Prof. Nigel Gilbert
E-mail: n.gilbert@surrey.ac.uk

Technical University of Delft
Department of Software Technology
Delft, 2628 CN
Netherlands
Contact Person: Dr Johan Pouwelse
E-mail: j.a.pouwelse@tudelft.nl

ETH Zurich
Chair of Sociology, in particular Modelling and Simulation,
Zurich, CH-8092
Switzerland
Contact person: Prof. Dirk Helbing
E-mail: dhelbing@ethz.ch

University of Szeged
MTA-SZTE Research Group on Artificial Intelligence
Szeged 6720
 Hungary
Contact person: Dr Mark Jelasity
E-mail: jelasity@inf.u-szeged.hu

University of Fribourg
Department of Physics
Fribourg 1700
Switzerland
Contact person: Prof. Yi-Cheng Zhang
E-mail: yi-cheng.zhang@unifr.ch

University of Warsaw
Faculty of Psychology
Warsaw 00927
Poland
Contact Person: Prof. Andrzej Nowak
E-mail: nowak@fau.edu

Centre National de la Recherche Scientifique, CNRS
Paris 75006
France
Contact person: Dr. Camille ROTH
E-mail: camille.roth@polytechnique.edu

Institut für Rundfunktechnik GmbH
Munich 80939
Germany
Contact person: Christoph Dosch
E-mail: dosch@irt.de

QLectives introduction

QLectives is a project bringing together top social modelers, peer-to-peer engineers and physicists to design and deploy next generation self-organising socially intelligent information systems. The project aims to combine three recent trends within information systems:

- **Social networks** - in which people link to others over the Internet to gain value and facilitate collaboration
- **Peer production** - in which people collectively produce informational products and experiences without traditional hierarchies or market incentives
- **Peer-to-Peer systems** - in which software clients running on user machines distribute media and other information without a central server or administrative control

QLectives aims to bring these together to form Quality Collectives, i.e. functional decentralised communities that self-organise and self-maintain for the benefit of the people who comprise them. We aim to generate theory at the social level, design algorithms and deploy prototypes targeted towards two application domains:

- **QMedia** - an interactive peer-to-peer media distribution system (including live streaming), providing fully distributed social filtering and recommendation for quality
- **QScience** - a distributed platform for scientists allowing them to locate or form new communities and quality reviewing mechanisms, which are transparent and promote quality.

The approach of the QLectives project is unique in that it brings together a highly inter-disciplinary team applied to specific real world problems. The project applies a scientific approach to research by formulating theories, applying them to real systems and then performing detailed measurements of system and user behaviour to validate or modify our theories if necessary. The two applications will be based on two existing user communities comprising several thousand people - so-called "Living labs", media sharing community tribler.org; and the scientific collaboration forum EconoPhysics.

Executive Summary

This deliverable reports the publication and dissemination activities of the QLectives project consortium during the project's second reporting period.

The deliverable is divided into four parts. The first part presents the strategic impact(s) of the project on science and innovation, and on supporting EU leadership in emerging areas of economic significance, as well as outlining the first steps taken to achieve long-term potential impact.

The second part presents the dissemination plan of the project in terms of research and development, as well as management activities.

The third part outlines the external collaborations that consortium members have engaged in in the context of the QLectives project.

The fourth part lists the publications produced by the consortium members: journal articles, peer-reviewed conference papers and compendiums, books and book chapters, and talks and presentations involving QLectives partners.

Contents

1. Introduction

This deliverable reports the publication and dissemination activities of the QLectives project consortium during the project's second reporting period.

The deliverable is divided into four parts. The first part presents the strategic impact(s) of the project on science and innovation, and on supporting EU leadership in emerging areas of economic significance, as well as outlining the first steps taken to achieve long-term potential impact.

The second part presents the dissemination plan of the project in terms of research and development, as well as management activities.

The third part outlines the external collaborations that consortium members have engaged in in the context of the QLectives project.

The fourth part lists the publications produced by the consortium members: journal articles, peer-reviewed conference papers and compendiums, books and book chapters, and talks and presentations involving QLectives partners.

2. Strategic impact

2.1 Strategic impact on science and innovation

During the project's second reporting period QLectives' work on collaboration and peer-to-peer systems included the following:

Emergence of and dynamics of quality

The emergence and dynamics of quality is one of the key themes of the QLectives project. To this end, research conducted during the second reporting period focussed on data collection and analysis of quality understandings – in general and in science. The investigation of general understandings of quality was conducted through two studies, the "Game of trust" study and the study of "Quality Negotiations". In the first study, the emergence of a common quality rating was observed in the group interaction and a theory describing the quality game was developed. The second study, "Quality Negotiations" revealed the temporal structure of the process. The negotiating group's behaviour can be divided into two distinct phases: information structuring and negotiating opinion. These phases occur in bursts. The finding relates to the issue of ranking quality of content, which is crucial to both QScience and QMedia. It questions the validity of one-time assessments often used in online content evaluation. In contrast to that approach, it shows that identification of quality is a social process extended in time. In a similar vein, the model of quality games show how significance of different properties of evaluated objects is determined in a complex process of social interaction.

The investigation of understandings of quality in science was conducted through a research design including quantitative and qualitative techniques in order to better understand how quality is understood and conceptualised in science In particular, this consisted of an online survey eliciting conceptual definitions of 'quality' in a general and a scientific context. In addition, research has focused on the ways in which quality is constructed in various professional contexts and by scientists themselves. This has taken three forms: (i) journal texts collected from journal websites; (ii) online discussions collected from weblogs; and (iii) interviews with scientists. Based on findings from this research, design recommendations have been made for: (i) science-specific measures and algorithms; (ii) different measures, roles and levels within the community of users, including experts, peers and self-report; (iii) the use of automated measures, both in terms of recommender system algorithms, and also in automated measures derived from natural language processing techniques.

Modelling self-organised emergence of human collaboration and peer production

QLectives aims at combining peer production, social networking and P2P approaches in a productive way, in order to develop techno-social systems able to filter for high quality information. This objective requires new models to understand how constructive processes can emerge from users' behaviour and the dynamic social structures that they create. To this end, we have adopted approaches like evolutionary game theory and network theory (among others) to study social phenomena such as cooperation or conflict.

In the specific context of online platforms enabling collaborative user-generated content sharing, we explored distinctions between active content contribution and passive social contribution to groups and showed that there is often a negative relationship between the two. We also started examining quantitative rating systems (e.g. online platforms allowing users to rank cultural products on five-star scales) by linking rating behaviour to both individuals' sociability characteristics (e.g. how quickly they make new friends, follow new users) social characteristics and their position in a social network of online friends. We more broadly aim at distinguishing social- and content- driven effects.

QLectives partners have also worked on developing an agent-based model of peer-to-peer networks. This model represents the various roles involved in a BitTorrent network, as identified in the literature (e.g. seeders, leeches, first-seeders), the swarms that they generate, and the processes of file transfer between agents. The model simulates the behavioural factors hypothesised to motivate participants in BitTorrent swarms, including reinforcement from other members and from the perceived value of the content that the swarm makes available. A prototype of the model has been completed and the intention is now to validate it against data from the Living Archive and to experiment with alternative motivational schemes.

Eventually, at a more normative level, QLectives partners investigated the effect of network topology on the level of individual, group, and overall free-loading in a model of team formation. At each point in time, the sets of agents participating in collectives is selected depending on the relative costs and benefits of interaction to potential members. Initial network topology and connectivity significantly affect free-loading rates at all three levels (systemic, group and agent), while free-loading rates at one level are not always coupled to free-loading rates at another.

Trust in networks

Understanding the dynamics of networks is vital for the goals of the QLectives project. Research on trust networks concentrated on identifying psychological mechanisms responsible for creating higher level social structures and meanings.

The two themes explored in the studies of trust were: social entrepreneurship and role of trust in the economic contexts. Social entrepreneurs were identified as responsible for generating social capital by changing other people's general mindsets and getting them involved in various ways in building locally adaptive social networks. The knowledge of the specific psychological traits and attitudes shared by social entrepreneurs will be useful in the development of sustainable social structures in the online communities in both QScience and QMedia. While research on social entrepreneurship relates to the structural features of the networks of trust, the "Game of trust" study concentrated on different factors influencing the development of trust in social interactions. Regardless of the specific personality traits the mere possibility of choosing the partner for the interaction was identified as the factor responsible for an increase of confidence. This finding can be used in designing rules of interaction for P2P communities.

Algorithmic foundations of human collaboration

During this period research on algorithmic foundations of human collaboration involved both theoretical investigations and design. Theoretical investigations concentrated on algorithms influencing the balance between reciprocity and equity, as well as on resource allocation in multimedia-sharing communities. Current work involves the development of a framework for the evaluation of cooperative content-distribution protocols, the design of P2P algorithms for various areas including recommendation and metadata filtering algorithms, and the modelling of P2P systems that is necessary for the algorithm design.

Improvement of data mining algorithms

Research in information filtering and data mining algorithms is central in the QLectives project. The development of new data mining algorithms has been guided by an emphasis on their use for science-related data (e.g. citation data). QLectives' work during this period was based on the extensive citation data provided by the American Physical Society. We developed a new similarity metric for papers and tested its use in data mining.

A community finding algorithm for networks has been proposed to detect *overlapping* categories while taking into account network evolution. This research achieves comparison experiments on citation networks to detect relevant scientific subfields.

QMedia and QLectives Platform

During this period, QLectives work concentrated on the development of P2P media-distribution software components. The goal is to produce a re-usable P2P platform infrastructure that facilitates peer-production (the QLectives Platform) and create an experimental next-generation user centred and social media distribution platform (the QMedia platform). QLectives partners are developing a distributed permission system and, as an additional layer, the barter-community, which helps agents to determine the sharing behaviour of others in the system. Finally, the release of the second version of the QMedia plaform, including several new features and a more intuitive user interface, had an impact on the dissemination of the research done within QLectives.

QScience Platform

For QScience, QLectives' work focused on rewriting the Econophysics Forum in the open-source content-management system, Drupal. The framework for developing the QScience platform has been planned, its long term vision (which now relies on an evolution-like mechanism) has been improved and its practical implementation has started. This is a crucial area, as many other planned activities in QLectives depend on this platform.

2.2 Strategic impact on media and content distribution

As well as the technological progress and achievements summarised above, the impact of QLectives' work on media and content distribution contributes to the formation of a more decentralized, flat and hence democratic media distribution landscape. The release of QMedia version 2.0 was followed by over 15 thousand downloads and a rapid increase in the number of personal media channels broadcast through the system. The media distribution model advanced by QMedia empowers any user to become a media broadcaster. The adoption of such a model paves the way for a more democratic public sphere.

2.3 Supporting EU leadership in emerging areas of economic significance

Addressing the skills and training gap in P2P technology

The QLectives project continues to address the skill and training gap in P2P technology: for example the TUD group continues to train P2P programmers and researchers at MSc and PhD level and several PhD students are working with QLectives topic areas and contributing to the code base of QMedia. All code developed within QMedia / Tribler is available as open source. TUD was involved with the organization of IEEE P2P 2010, the largest annual conference of the P2P research community, which took place in Delft in August 2010.

Finally, visits between TUD and other partners (USZ and ETH Zurich) to work on skills and technology transfer are ongoing (see deliverable D6.2).

Building the EU complexity community

QLectives partners have participated widely in the EU complexity community within both ASSYST (the associated Coordination Action of the COSI-ICT programme), the Complex Systems Society and the European Conference on Complex Systems (ECCS). QLectives partners participated at the one-day ASSYST workshop on 'Social Intelligence' held in London and in the ECCS2010 conference at the Lisbon University Institute as both invited speakers and organisers of the workshop titled Social Complexity of Informal Value Exchange (SCIVE). Details can be found at: http://cfpm.org/scive/.

QLectives partners were also actively involved in the IEEE SASOS 2010 conference in Budapest as sponsors, organisers, workshop organisers and invited speakers. Interaction in terms of sessions and networking activities within the EU complexity community was further enabled as the 3rd International PERADA-ASSYST Summer School on Adaptive Socio-Technical Pervasive Systems was also held in Budapest at the same time.

2.4 Potential long-term future impacts

The work done in the QLectives project is also predicted to have potential future long-term impacts. The following have been achieved during the second reporting period of the QLectives project:

Techno-social inclusion

QMedia currently allows the creation of decentralized channels that broadcast arbitrarily rich media to their subscribers. The evolution of such channels can lead to an appealing alternative for currently prevalent Web-based media-sharing communities, which have inherent scalability limitations.

Techno-social operating system

The current version of the QLectives Platform provides the necessary primitives and functionality for the creation of arbitrary group-based P2P applications. The development of a simple-to-use yet complete platform is a potential major enabler for the popularization of decentralized techno-social systems among system designers and developers.

Scientific collaboration

The two main functions to be implemented by the QScience platform are (i) a scientific journal and (ii) a discussion/collaboration forum. As soon as they are both developed and thoroughly tested, potential users outside external the QLectives project will be contacted in order to receive independent feedback.

3. Dissemination plan

3.1 Research and development

The dissemination of QLectives results to the research community is one of the key goals of the consortium. To this end, the QLectives partners have engaged in publication and dissemination activities by submitting and publishing articles in international peer-reviewed journals, contributing to and participating in international conferences, workshops and summits. The publications and other dissemination activities of the QLectives project are listed in chapter 4.

Organising workshops, seminars and training events constitutes another important channel for developing ideas and disseminating results from the QLectives project. To this end, the University of Surrey, the University of Szeged, and TU Delft organised the 2nd International Workshop on Quality in Techno-Social Systems in Budapest, Hungary, 28.09.2010 as part of SASO 2010: Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems Budapest, Hungary, September 27-October 1, 2010. The workshop was interdisciplinary, including contributions from sociology and psychology, physics and computer science. The invited speakers were: Mark Buchanan (freelance author, former editor of *Nature*) and Santo Fortunato (Institute for Scientific Interchange, Torino, Italy).

Overall, the workshop was centered around the following technical issues:

- incentive mechanisms for self-organizing and self-adaptive systems
- evolving social interaction structures for quality
- ranking, rating, reputation and recommendation in distributed systems
- conflict and consensus detection, correction in distributed systems
- realistic models of user behaviour and the dynamic social structures that they create
- analysis of empirical and experimental data for quality
- computational sociology of online communities
- distributed social networks
- quality metrics - how to measure quality in distributed systems

This was the second of a series of workshops that was inaugurated by the University of Surrey and the CNRS teams with a workshop titled 'QualityCommons', held at Maison de la Recherce, Paris, France. One of the aims of that workshop was to plan the writing of an edited book/special journal issue with chapters partly contributed by the participants and partly solicited via an open call for papers after the workshop. Therefore, following the workshop a proposal was submitted to the journal *Mind and Society* for a special issue, edited by Dario Taraborelli, Camille Roth and Nigel Gilbert and consisting of revised versions of some of the papers presented to the workshop. The proposal was accepted and eight papers are now undergoing evaluation by referees.

Besides the usual channels of dissemination, QLectives uses two innovative dissemination methods in the form of living labs -- one related specifically to scientific contents (QScience), the other one to media contents (QMedia). The living lab for the QScience platform, Econophysics Forum (www.unifr.ch/econophysics), hosted by the University of Fribourg, has been made available to all those interested, allowing also for distribution of information from the QLectives project. The living lab for QMedia platform, Tribler (www.tribler.org) is also operational and TUD, which is the responsible partner for the software development of the QLectives Platform and QMedia, maintains an open Subversion repository and a Wiki site for disseminating these software products at the source-code level.

There are also plans to demonstrate QLectives to non-scientific audiences. In particular, IRT is considering presenting QLectives at IBC 2012 (International Broadcast Convention). This dissemination will target broadcast and multimedia experts in the dedicated exhibition space for international research projects (called "New Technology Campus").

The QLectives consortium has continued to engage in collaboration with artists with the attempt to disseminate the research results to a wider, non-scientific audience. As part of this collaboration and the previous negotiations with the Centre for Contemporary Art in Warsaw on organising an exhibition on "Quality in self-organisation and emergence on techno-social networks", talks with the artists and complexity scientists have been initiated. During these talks (with art curators in particular) a new venue for the event has been proposed: the Museum for Contemporary Art in Warsaw.

3.2 Management

In order to facilitate the visibility of the QLectives project, the project team has engaged in the following activities:

It refreshed the QLectives Website in compliance with the EU FET FP7 guidelines. New features include a 'Highlights' section and a blog to attract various audiences and users. The website includes the existing wiki for the use of the QLectives consortium partners while the blog is for public use. The QLectives Website is located at www.qlectives.eu, the QLectives Wiki is located at http://www.qlectives.eu/wiki/ and the QLectives Blog at http://www.qlectives.eu/qlectives-blog.
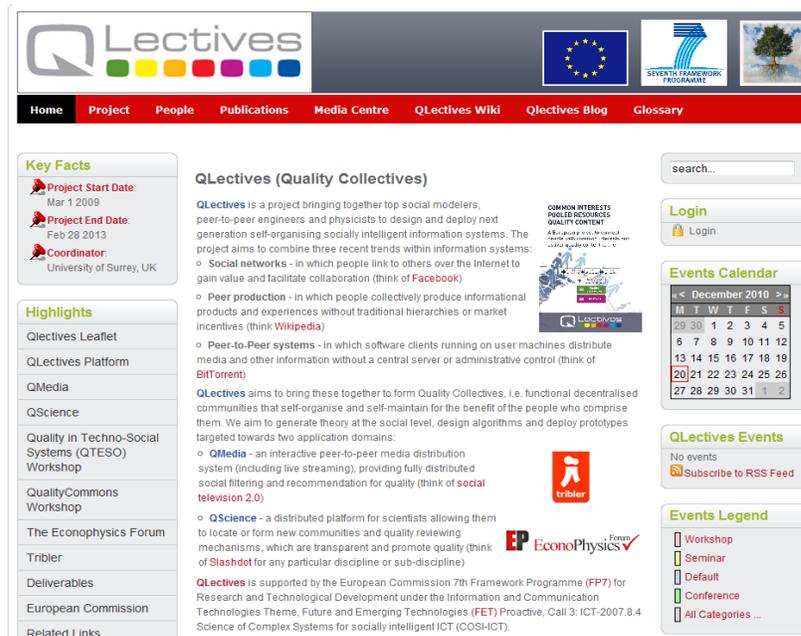

Figure 1: QLectives Website (Homepage)

Consortium partners' websites have been updated to ensure that they link to the QLectives project website.

A leaflet was commissioned for the project. This leaflet is available from: http://www.qlectives.eu/docs/qlectives_leaflet_a5_Final_Web.pdf. All partners have been provided with electronic and print copies.

Figure 2: QLectives Leaflet (cover)

4. Collaboration(s)

QLectives partners engage in various forms of external collaborations, some of which are outlined below:

ETH Zurich

ETH Zurich has developed external collaborations in two research lines, namely evolutionary game theory and Science of Science. Regarding the first issue, several studies on cooperation enhancement have been performed in collaboration with Szolnoki and Szabó (Research Institute for Technical Physics and Materials Science, Budapest, Hungary) and Perc (University of Maribor, Slovenia). Three papers were published in peer-reviewed international journals as a result of this work.

Two Science of Science external collaborations have addressed bubbles and crashes in Science from different perspectives. The influence of citation boosts on scholars' careers and scientific paradigms was studied together with Fortunato (ISI, Torino, Italy), and a procedure to quantify such an influence was reported in a paper currently under review in PLoS ONE. Moreover historical bibliometric data provided by the American Physical Society (APS) is in the process of being analysed in collaboration with Carvalho (Queen Mary, University of London, UK) and Buzna (University of Zilina, Slovakia).

University of Warsaw (UWAR)

UWAR has an external collaboration with Ashoka, Innovators for the Public, an international association of social entrepreneurs. Ashoka, operating since 1980, is known as the leading global association identifying, empowering and linking social entrepreneurs in over 70 countries. Ashoka's Founding CEO, William (Bill) Drayton, is credited with having coined the term "social entrepreneurship". The Ashoka definition of social entrepreneurship is considered as the most comprehensive; according to Ashoka, social entrepreneurship can produce small changes in the short term that reverberate through existing systems, ultimately effecting significant change in the longer term.

One of the Qlectives collaborators Dr. Ryszard Praszkier, has been working for the international association Ashoka, Innovators for the Public for over 15 years, doing second opinion reviews verifying the of candidates to Ashoka's fellowship. Through this partnership there is an access to the Ashoka global data-base of social entrepreneurs, as well as to its archives and human resources. We are able to explore the Ashoka database and archives, which was especially helpful in identifying the specific methods used by social entrepreneurs in pursuing their mission (Praszkier and Nowak, 2011). Moreover, through this cooperation we were able to conduct a comprehensive, multi-pronged research comparing the specific personality traits of social entrepreneurs – Ashoka Fellows with the society's average sample and with the leading social activists.

We plan further collaboration as to study the properties of social networks facilitated by Ashoka Fellows.

University of Fribourg (UniFR)

During the second year of QLectives, the UniFR team collaborated with three prominent Chinese universities on various research topics. We collaborated with the University of Science and Technology of China (USTC) in the areas of information physics, human dynamics and traffic dynamics. In addition, we also engaged in student exchanges (e.g. Mr. Duo Sun), and joint applications for funding (SSSTC 2010, Mr. Han-Xin Yang). We further collaborated with the University of Electronic Science and Technology of China (UESTC), especially in computer science. We also established a joint lab with UESTC and applied to research foundations both in China (NSFC, Grant No. 11075031) and in Switzerland (SSSTC 2010, Prof. Ming-Sheng Shang). We invited two young teachers (Dr. Ning Xi and Dr. Ze-Hui Ge) from the University of Shanghai for Science and Technology (USST) to visit our group and these visits helped to establish interesting research goals. In 2010, two doctoral students graduated from Fribourg and received distinguished positions in those universities: Dr. Jian-Guo Liu became associate professor in USST and Dr. Tao Zhou full professor in UESTC. We also maintain relations with research groups at La Sapienza University in Rome, Italy from where two of our current PhD students come.

CNRS

During the second year of QLectives, CNRS team members engaged in collaborations with researchers residing in other institutions. Namely, an agent-based model of community members' contributions was developed by Chih-Chun Chen (CNRS) and Pablo Padilla (Instituto de Investigaciones en Matemáticas Aplicadas y Sistemas (IIMAS), (UNAM). This resulted in a conference paper which was presented at the International Conference on Intelligent Networking and Collaborative Systems (Chen and Padilla, 2010).

An ongoing collaboration between Camille Roth (CNRS) and Victor Bucheli and Roberto Zamara at the University of Los Andes in Bogota, Colombia, aims at refining hypergraphic measures of group properties, and connecting them with quality measures in the case of scientific teams/groups. Bucheli and Zamara visited CNRS in May and December 2010, respectively. A draft paper provisionally titled "How citable is your team?" is currently in preparation.

TUDelft (TUD)

During the second year, TUD collaborated with Flavio Santos (Federal University of Rio Grande do Sul, Brazil) in doing research on inter-swarm resource allocation in BitTorrent communities. The results of this work have been summarized in a technical report, a conference paper version is under submission, and another journal paper is in preparation.

TUD is involved in two other FP7 projects, namely P2P-Next and PetaMedia. Participation in these projects naturally induces influence from QLectives. Within PetaMedia, collaboration with Raynor Vliegendhart and Martha Larson, Multimedia Signal Processing Group, TU Delft, resulted in the 'Network Buzz' feature of QMedia, which is detailed in the Deliverable D4.3.2.

Through P2P-Next, collaboration with the WikiMedia Foundation led to the development of a peer-to-peer based video-on-demand system for Wikipedia. The technology used is based on the QLectives Platform. The achievements will feed back in QLectives, in particular in the QMedia system (in an ongoing implementation of a wiki) and in the peer-to-peer based QScience which might include video-on-demand service.

5. Collection of publications

During the second year of the QLectives project, the QLectives partners have completed a series of publications, and engaged in the following dissemination activities.

5.1 Journal articles

Cimini, G., Medo, M., Zhou, T., Wei, D. and Zhang, Y.-C. (2010) Heterogeneity, quality and reputation in an adaptive recommendation model, accepted by *EPJ B*.

Gualdi, S. Medo, M. and Zhang, Y.-C. (2011) Self-organized model of cascade spreading, accepted by *EPJ B*, 79, pp. 91-98.

Helbing, D., Szolnoki, A., Perc, M. and Szabó, G. (2010) Punish, but not too hard: how costly punishment spreads in the spatial public goods game. *New J. Phys.* 12**,** 083005.

Helbing, D., Szolnoki, A., Perc, M. and Szabó, G. (2010) Defector-accelerated cooperativeness and punishment in public goods games with mutations. *Physical Review E* 81(5), 057104.

Helbing, D., Szolnoki, A., Perc, M. and Szabó, G. (2010) Evolutionary establishment of moral and double moral standards through spatial interactions. *PLoS Computational Biology* 6(4), e1000758.

Helbing, D. and Lozano, S. (2010) Phase transitions to cooperation in the prisoner's dilemma. *Physical Review E* 81(5), 057102.

Liu, W. and Lü, L. (2010) Link prediction based on local random walk. *EPL* 89 (2010) 58007.

Mazloumian, A., Helbing, D., Eom, Y.-H., Lozano, S. and Fortunato, S. (under review) How citation boosts promote scientific paradigm shifts and Nobel Prizes. *PLoS ONE*.

Nowak, A., Samson, K., Lisiecka, K. and Ziembowicz, M. (under revision) Lovely weather, isn't it? On social dynamics of quality judgment. *Mind & Society.*

Praszkier, R., Nowak, A. and Coleman, P. (2010). Social Entrepreneurs and Constructive Change: The Wisdom of Circumventing Conflict. *Peace and Conflict*, 16, pp. 1–22.

Taramasco, C., Cointet, J.-P. and Roth, C. (2010) Academic team formation as evolving hypergraphs. *Scientometrics*, 85(3), pp. 721–740.

Wei, D., Zhou, T., Cimini, G., Wu, P., Liu, W. and Zhang, Y.-C. (under review) Effective Mechanism for Social Recommendation of News. *Physica A.*

Yeung, C. H., Cimini, G. and Jin, C.-H. (2010) Dynamics underlying Box-office: Movie Competition on Recommender Systems. *arXiv:1005.2533.*

5.2 Peer reviewed conference papers and compendiums

Brockmann, C., Gill, A. J. and Oberlander, J. (2010) *Interactions between Alignment and Personality in Generated Dialogue*. In Proceedings of the 20th Annual Meeting of the Society for Text and Discourse. Chicago, IL, August, 2010.

Capota, M., Andrade, N., Vinko, T., Santos, F. and Pouwelse, J. (2010) *Inter-swarm resource allocation in BitTorrent communities*. Technical Report. under review at IFIP Networking'11.

Cazabet, R., Amblard, F. and Hanachi, C. (2010) *Detection of overlapping communities in dynamical social networks*. In Proceedings of the IEEE International Conference on Social Computing (*IEEE SocialCom*) 2010, pp. 309-314.

Chen, C.-C. and Roth, C. (2010). *Motivations and constraints to member engagement in Flickr groups*. In Proceedings of the 2nd International Workshop on Quality in Techno-Social Systems, Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems 2010 (SASO 2010), Budapest, 28th September.

Chen, C.-C. and Padilla, P. (2010) *A multi-level study of free-loading in dynamic groups: The importance of initial network topology*. In Proceedings of the IEEE International Conference on Intelligent Networking and Collaborative Systems (InCoS) 2010.

Chiluka, N., Andrade, N. and Pouwelse, J. (to appear) *Link Prediction Approach to Recommendations in Large-Scale User-Generated Content Systems*. In Proceedings of the 33rd European Conference on Information Retrieval. April 2011.

Cointet, J.-P. and Roth, C. (2010) *Local circles, local topics: structural and semantic proximity in blog networks*. In Proceedings of the 4th Intl AAAI Conf on Weblogs and Social Media, Washington, DC, 23–26 May.

Delaviz, R., Andrade, N. and Pouwelse, J. (2010) *Improving Accuracy and Coverage in an Internet-Deployed Reputation Mechanism*. IEEE P2P, pp.1-9.

Csernai, K., Jelasity, M., Pouwelse, J. and Vinkó, T. (2011) *Modeling unconnectable peers in private BitTorrent communities*. In Proceedings of MSOP2P 2011. IEEE Computer Society.

Delaviz, R., Andrade, N., Epema, D.H.J. and Pouwelse, J. (2010) *Improved Accuracy and Coverage in the BarterCast Reputation Mechanism*. In Proceedings of the 16th Conference of the Advanced School for Computing and Imaging, pp. 1-8.

Gill, A. J., Xenitidou, M. and Gilbert, N. (2010) *Understanding quality in science: A proposal and exploration.* In Proceedings of the 2nd International Workshop on Quality in Techno-Social Systems, Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems 2010 (SASO 2010), Budapest, 28th September, pp. 2-7.
Abstract available from: http://www.st.ewi.tudelft.nl/qteso/GillXenitidouGilbert2010-QTESO.pdf

Halkes, G. P. and Pouwelse, J. (2010) *Verifiable Encryption for P2P Block Exchange*. In Proceedings of the IEEE Conference on Peer-to-Peer Computing (P2P'10), pp. 65-68.

Jelasity, M., Bilicki, V. and Kasza, M. (2011) *Modeling network-level impacts of P2P flows*. In Proceedings of MSOP2P 2011. IEEE Computer Society

Jia, A. L., D'Acunto, L., Meulpolder, M., Pouwelse, J. and. Epema, D.H.J. (to appear) *BitTorrent's Dilemma: Enhancing Reciprocity or Reducing Inequity*. IEEE Consumer Communications and Networking Conference (CCNC '11).

Jia, A. L., D'Acunto, L., Meulpolder, M. and Pouwelse, J. (submitted) *Modeling and analysis of sharing ratio enforcement in private BitTorrent communities* IEEE ICC 2011.

Ormándi, R., Hegedűs, I., Csernai, K. and Jelasity, M. (2010) *Towards inferring ratings from user behavior in BitTorrent communities*. In Proceedings of the 6th International Workshop on Collaborative Peer-to-Peer Systems (COPS) at WETICE'10, pp. 217–222. IEEE Computer Society, 2010. Best Paper Award. (doi:10.1109/WETICE.2010.41)

Ormándi, R., Hegedűs, I., Farkas, R. and Jelasity, M. (2010) *Novel balanced feature representation for Wikipedia vandalism detection task*. In CLEF 2010 Labs and Workshops. http://clef2010.org/index.php?page=pages/proceedings.php.

Ormándi, R., Hegedűs, I. and Jelasity, M. (2010) *Overlay management for fully distributed user-based collaborative filtering*. In Pasqua D'Ambra, Mario Guarracino,

and Domenico Talia, (Eds.), Euro-Par 2010, volume 6271 of *Lecture Notes in Computer Science*, Springer-Verlag, pp. 446–457. ([doi:10.1007/978-3-642-15277-1_43](#))

Rahman, R., Hales, D., Vinko, T., Pouwelse, J. and Sips, H. (2010) *No more crash or crunch: sustainable credit dynamics in a P2P community*. International Conference on High Performance Computing & Simulation (HPCS 2010), Caen, France, 2010.

Scissors, L., Gill, A.J., Geraghty, K., and Gergle, D. (2010) *Trust through Text: Examining Linguistic Similarity and Trust in Text Chat*. In Proceedings of the 11th Annual Meeting of the Society for Personality and Social Psychology, Las Vegas, NV, January 2010.

Taraborelli, D. and Ciampaglia G. L. (2010) *Beyond notability. Collective deliberation on content inclusion in Wikipedia.* In Proceedings of the 2nd International Workshop on Quality in Techno-Social Systems, Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems 2010 (SASO 2010), Budapest, 28th September.

Vasalou, A., Gill, A. J., Mazanderani, F., Papoutsi, C., Oostveen, M.-A. and Brostroff, S. (2010) *The prototype of privacy: analyzing privacy discourse through its features*. In Proceedings of the Privacy and Usability Methods Pow-wow (PUMP) workshop at the British Conference on Human Computer Interaction (British HCI) 2010. Dundee, U.K., September 2010. (*one of SSRN most downloaded papers*)

Wojciechowski, M., Capota, M., Pouwelse, J. and Iosup, A. (2010) *BTWorld: Towards Observing the Global BitTorrent File-Sharing Network*. In Proceedings of HPDC'10, pp. 581-588.

5.3 Books and book chapters

Hales, D. (2010) Mix, Chain and Replicate: Methodologies for Agent-Based Modelling of Social Systems. In Mollona, E., (Ed.) *Computational Analysis of Firms' Organization and Strategic Behaviour.* London and New York: Routledge.

Hales, D. (2010) Rationality meets the Tribe: Recent Models of Cultural Group Selection. In Mollona, E., (Ed.) *Computational Analysis of Firms' Organization and Strategic Behaviour*. London and New York: Routledge.

Gilbert, N. (Ed.). (2010) *Computational Social Science.* London: Sage (4 volumes).

Mehl, M. and Gill, A. J. (2010) Computerized Content Analysis. In Gosling, S., and Johnson, J. (Eds.) *Advanced Methods for Behavioral Research on the Internet.* Washington DC: American Psychological Association Publications.

Praszkier, R. and Nowak, A. (2011) *Social Entrepreneurship: Theory and Practice*. New York: Cambridge University Press (*in preparation*).

Zablocka-Bursa, A. (2010) *Social change developed by social entrepreneurs.* Unpublished doctoral dissertation, Institute for Social Studies, Warsaw: University of Warsaw.

5.4 Talks and presentations

Bartkowski, W., Nowak, A. and Samson, K., (2010) *How to win a quality game? Towards a Science of Socially Intelligent ICT*. Imperial College London, 3rd August 2010

Brockmann, C., Gill, A. J. and Oberlander, J. (2010) *Interactions between Alignment and Personality in Generated Dialogue*. Paper presented at the 20th Annual Meeting of the Society for Text and Discourse, Chicago, IL, August, 2010.

Cazabet, R., Amblard, F. and Hanachi, C. (2010) *Detection of overlapping communities in dynamical social networks*. Paper presented at the 2nd IEEE International Conference on Social Computing (SocialCom 2010) 2010, Minneapolis, Minnesota, USA, 20-22 August.

Chen, C.-C. and Roth, C. (2010) *Motivations and constraints to member engagement in Flickr groups*. Paper presented at the 2nd International Workshop on Quality in Techno-Social Systems, Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems 2010 (SASO 2010), Budapest, 28th September.

Chen, C.-C. and Padilla, P (2010) *A multi-level study of free-loading in dynamic groups: The importance of initial network topology*. International Conference on Intelligent Networking and Collaborative Systems (InCoS). IEEE Conference Proceedings. 2010, Thessaloniki, Greece, 24-26 November.

Cointet, J.-P. and Roth, C. (2010) *Local circles, local topics: structural and semantic proximity in blog networks*. Paper presented at the 4th Intl AAAI Conf on Weblogs and Social Media, Washington, DC, 23–26 May.

Ciampaglia, G. L. and Taraborelli, D. (2010) *Beyond notability. Collective deliberation on content inclusion in Wikipedia.* Paper presented at the 2nd International Workshop on Quality in Techno-Social Systems, Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems 2010 (SASO 2010), Budapest, 28th September 2010.

Gilbert, N. (2010) *All hands on the model.* Keynote talk at Alaska EPSCoR All-Hands Meeting, University of Alaska Fairbanks, USA, 26th May 2010.

Gilbert, N. (2010) *Modelling complex social systems: opportunities and challenges.* Invited talk at the Second Brazilian Workshop on Social Simulation, Sao Paulo, Brazil, 24th October 2010.

Gilbert, N. (2010) *Trust and Reputation: a social science perspective.* Invited talk at the workshop on Trust and reputation organised by COST (Cooperation on Science and Technology) working group MP0801 on socio-physics, London, 4th November 2010.

Gill, A.J. (2010) *Communicating trust and social information in computer-mediated environments*. Invited speaker: Trust, Collaboration and Fairness in Virtual Social Environments workshop, Polish-Japanese Institute of Information Technology, Warsaw, Poland, 16–17 September 2010.

Gill, A.J. (2010) *Social Information in Computer-Mediated Communication*. Human-Centred Computing Technology Seminar, School of Informatics, University of Sussex, Falmer, June 2010.

Gill, A.J. (2010) *Social Information in Computer-Mediated Communication*. Management and Decision Sciences Seminar, Management School, University of Bath, Bath, April 2010.

Gill, A. J., Xenitidou, M. and Gilbert, N. (2010) *Understanding quality in science: A proposal and exploration.* Paper presented at the 2nd International Workshop on Quality in Techno-Social Systems, Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems 2010 (SASO 2010), Budapest, 28th September 2010.

Hales, D. (2010) *P2P Interacton in Socially Intelligent ICT*. Invited talk presented at the workshop: Towards a Science of Socially Intelligent ICT, Imperial College London, 3rd August 2010.

Helbing, D. (2010) *Scientific collaboration, Publishing and Education in the Future.* Workshop: The Quality Commons, Paris, France, 28-29 January 2010.

Helbing, D. (2010) *Cooperation, Norms and Conflict: Towards Stimulating the Foundations of Society.* James Martin 21st Century School Seminar Series 2010, Oxford, UK, 4th March 2010.

Helbing, D. (2010) *Towards Simulating the Foundations of Society - A Multi-Agent Game-Theoretical Approach*. DPG Spring Meeting 2010, Regensburg, Germany, 21-26 March 2010.

Helbing, D. (2010) Cooperation, *Norms, and Conflict: Towards Simulating the Foundations of Society*. COST MP0801 Annual meeting 2010: Physics of Competition and Conflicts, Sunny Beach, Bulgaria, 26-29 May 2010.

Helbing, D. (2010) *Cooperation, Norms, and Conflict in Peer-to-Peer and Social Systems.* SASO 2010, Fourth IEEE International Conference on Self-Adaptive and Self-Organizing Systems, Budapest, Hungary, September 27 – October 1 2010.

Helbing, D. (2010) *Thoughts on the future of complex systems research.* Complexity-NET outreach workshop, Brussels, Belgium, 9-10 November 2010.

Helbing, D. (2010) *Cooperation, Norms, and Conflict: Towards Simulating the Foundations of Society*. Nuffield Sociology Seminar, Oxford, UK, 17th November 2010.

Helbing, D. (2010) *Network Science and Beyond*. Perspektivenkommission MPG: Network Science (MPI für Physik komplexer Systeme DD), Heidelberg, Germany, 9th December 2010.

Jelasity, M. (2010) *Algorithms for Fully Distributed Techno-Social Systems*. PerAda Summer School, Budapest, Hungary, 22nd September 2010.

Medo, M. (2010) *Theoretical Interdisciplinary Physics in 2010 – Project QLectives*. Department Day 2010, Fribourg, Switzerland.

Nowak, A., Lisiecka, K., Samson, K. and Ziembowicz, M. (2010) *The dynamics of quality negotiations*. Poster presented at European Conference on Complex Systems. Lisbon, Portugal, September 2010.

Roth, C. (2010) *Academic teams: evolving hypergraphs*. Invited seminar at UT Federica Santa Maria, Santiago, Chile, November 2010.

Scissors, L., Gill, A. J., Geraghty, K. and Gergle, D. (2010) *Trust through Text: Examining Linguistic Similarity and Trust in Text Chat*. Paper presented at the Eleventh Annual Meeting of the Society for Personality and Social Psychology Symposium: The Two Faces of Verbal Mimicry: Does Linguistic Synchrony Predict Positive or Negative Social Outcomes?, Las Vegas, NV, January 2010.

Taraborelli, D. (2010) *Online Reputation Systems and the Mechanics of Deference*. Laboratory for Experimentation in Social Sciences and Consumer Behaviour (LESSAC), Burgundy School of Business, Dijon, March 2010.

Taraborelli, D. (2010) *Web Community Dynamics*. Laboratoire Techniques, Territoires et Sociétés (LATTS), CNRS, Paris, March 2010.

Taraborelli, D. and Gill, A.J. (2010) *Crowdsourcing Scientific Impact*. Centre for Research in Social Simulation (CRESS), Department of Sociology, University of Surrey, June 2010.

Taraborelli, D. (2010) *CrowdLinks: Structuring a Body of Scholarly Knowlegde via Collaborative Annotation*. Science Online London 2010 (SOLO 10), British Library, London, September 2010.

Taraborelli, D. and Ciampaglia, G. L. (2010) *Structure and dynamics of collective decisions in Wikipedia's deletion processes*. Trust, Collaboration and Fairness in Virtual Social Environments, Polish-Japanese Institute of Information Technology (PJIIT), Warsaw, September 2010.

Taraborelli, D. (2010) *Dynamics of Online Peer Production and Collaborative Sensemaking*. Knowledge Media Institute (KMI), Open University, November 2010.

Taramasco, C., Cointet, J.-P. and Roth, C. (2010*) Evolving hypergraphs to appraise academic team formation processes*. Communication at Sunbelt XXX Intl Conf Social Networks, Riva del Garda, July 2010.

Vasalou, A., Gill, A. J., Mazanderani, F., Papoutsi, C., Oostveen, M.-A. and Brostroff, S. (2010) *The prototype of privacy: analyzing privacy discourse through its features*. Paper presented at the Privacy and Usability Methods Pow-wow (PUMP) workshop at the British Conference on Human Computer Interaction (British HCI) 2010. Dundee, UK, September 2010.