Rosario Sica, Federico Gobbo

Social network optimization: the case of BTicino

This paper shows how it is possible to mash the different components of knowledge management in a context where knowledge is produced informally by a community of practice spread in different locations. These components – from the sociological analysis of the network to the design and development of the support web 2.0 technology - are put together by the agile methodologies' philosophy. The principles of the agile methodologies are presented, along with their application to contexts different from software production, where they have grown originally. The lesson learned from this case-study of agile methodologies, as used by BTicino producer of industrial electrical equipment and domotics, will bring a comprehensive, multi-level organizational strategy of knowledge management within real situations.

It is well known that "web 2.0", the ambiguous and at the same time fascinating term coined by O'Reilly[1], has deeply changed the reality of the web, putting users, self-organized into social networks, at the center of production and organization of meaningful data of any kind. Now, structured companies are becoming aware of being themselves producers of informal knowledge, as well as structured one, and they want to give value to them, using the new technology paradigm. In fact, companies are made by people, and people aggregate in informal communities: in a "liquid society"[2] daily work of each member is facilitated, as learning becomes a constructive process based on trust where serendipity is welcomed; the final step of this process is to let these social networks emerge through the use of web 2.0 technologies.

This paper updates the case-study described in Scotti and Sica[3], i.e. the process of optimization of the BTicino social network[4]. Innovation is one of the pivotal values of the company strategy, both in the products and services offered to their customers, and also in the way in which the company communicates with the market, namely the sales force. In 2007 BTicino merged with Zucchini and Legrand Italia, thus increasing the sales force from 400 people to 550. This lead to the problem of merging three different communities of practice, in particular what Seb Schmoller considers the key point in Etienne Wenger's definition: how to improve the individual and possibly collective ability to deal with the challenges we face?[5]

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[1] T. O'Reilly, *What is Web 2.0*, http://www.oreilly.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html, [29.04.08]

[2] Z. Bauman, *Liquid Modernity*, Polity, Cambridge 2000.

[3] E. Scotti, R. Sica, *Community Management*, Apogeo-Feltrinelli, Milan, Italy 2007.

[4] BTicino SpA, producer of industrial electrical equipment and domotics, was found after the first world war in Varese (Italy) and became a worldwide competitor after the second world war.

[5] P. Bołtuć, *Communities of Practice and other Issues in Online Education. An interview with Seb Schmoller*, "e-mentor", 2007, nr 3.

The knowledge management project goals

The analysis at a first sight focused on the harmonization of the existing software tools in supply to the sales force, so that the flow of selling and customer care became more fluid and informative, i.e. the informal information daily produced by the network became more effective for the different enterprise components, e.g. the management, but also the personnel of other regions. In fact, each community of practice needed to be reckoned with by the colleagues, which can sometimes be difficult outside one's own Sales Region.

"Sul Campo" (Italian for "On the Field") is a project born to solve this problem and the present writers claim that it can have value in general. The project has three goals, as given by the management. The first aim is to bring together the useful information for the sales force into a single environment, i.e. the communications, documents and applications to support and daily update the sales engineers in the performance of their profession. No less important is the second goal, i.e. the opening of a new channel for listening purposes with the sales force through which their opinions, and those of their clients, regarding the market, the product and competitor activities can be rapidly and extensively gathered. The last goal, but probably the one with the highest added value, is the diffusion of experiences and specialized abilities: the circulation of best practices is one of the most important aspects stressed by Franco Villani, BTicino's Italian Sales Manager, in a video-interview published on "Sul Campo" content management system.

This also shows the innovation in ways of accessing the content that, thanks to the support of the Organisations and Systems Department, has allowed the full exploitation of the opportunities offered by new technologies and the broadband connection to the Intranet. Not only documents and text information, but also more informative films and video-interviews with people of recognised specialized abilities are available. A group of sales engineers were involved from the start in the planning of the environment and actively participated in the definition of the best guidelines to be shared within the Community. The foundations have also been laid to encourage interaction with colleagues on both technical (sales) topics and aspects unrelated to work. The contribution of all the corporate functions most closely in contact with the sales force have been profitable right from the beginning. The teams of the Italian Business Management, from Operational Marketing, to Client Technical Services, Technical Training and Executive Clients, all actively collaborated to give the necessary suggestions and content.

To stress that the spirit of the "Sul Campo" project is transversal to the company, Marketing and Development, E-business and Communication have also participated from the outset with great initiative. All in all real teamwork was coordinated by the Sales & Marketing Intelligence Team, which supervises and builds the site on a daily basis - updating the contents and ensuring timely responses.

The project can be divided in two main phases: (a) the social network analysis; (b) the community of practice synthesis. The second phase strictly depends upon the choices made in the previous one. The next sections present how the project was developed, and why agile methodologies fit this case study.

The social network analysis phase

During the network analysis phase (three weeks long) people were invited to delve into the project within the creative focus group framework known as Metaplan[6], so that focused goals can emerge from the network participants. This phase is important as the project should be known, shared and well accepted by all members, whatever their collocation in the company, at least in its vision, otherwise the next phases simply will not work. The whole structure of the company is touched, at least at an informal level, and this process of awareness results in enthusiasm and fear at the same time. In the case of BTicino, the analysis delved both into the advantages expected by each member type in the network (e.g. sales, manager, etc.) and into the risks, while taking into account the success factors that need to be sustained.

The project was divided into modules, where each module depended strictly upon the results of the previous ones, according to the principle of continuous planning. These are the main needs that emerged during this phase:

- More velocity. The projects for new products should be more timely for the market, even through the use of gradual releases, according to the principles of lean organization[7];
- Conducted system. The explicitation of the community underneath the BTicino social network, where the members produce content on a-priori defined topics, and regulated by a specific editorial staff. This group is formed by members with different competencies and education, so as to represent correctly the different social profiles of the community members;
- More synthesis. The underlying technology should also be able to give back quick charts, measuring the mood of what is happening in the web on specific topics.

Figure 1. The three communication flows between the sales force and the company
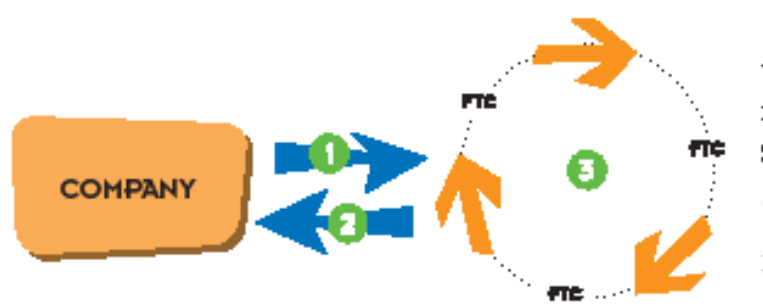
On a more methodological level, each information item was collocated in   one of three communication flows, i.e. company-to-network, network-to-company, network-to-network (see Fig. 1).

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[6] F. Keuper, H. Groten, *Nachhaltiges Change Management: Interdisziplinare Fallbeispiele un Perspektiven* [Persistent Change Management: Interdisciplinary case-studies and persepectives], Gabler, Wiesbaden 2007.
[7] P. Senge, *The Fifth Discipline: The art and practice of the learning organization*, Doubleday New York 1990.

In particular, the main action in the first flow to be done was to optimize accessibility and retrieval of support information, such as price lists, commercial and technical reports, or news about the competitors. Conversely, the optimization of the network-to-company flow should lead to a diversification of the voices talking to the company, meaning not only the sales, but also the customers, so that creative ideas can emerge. Finally, the network-to-network flow should create a support system based on an individual's experiences and best practice, including how to's and tips, to be shared among colleagues.

Interviews with different departments - i.e. marketing, sales, product development, customer care -were done, as well as focus group established with potential users and regional managers. Finally, a quantitative survey to every member of the social network, i.e. the enlarged sales force, was proposed. The final result was a sociogram of BTicino organization (see Fig. 2; see also Moreno[8]).

The first report presents the analysis phase, and consists of 80 pages and 300 attachments. Nonetheless, a short summary was prepared, through the mind map methodology (see Fig. 3; see also Buzan[9]). In brief, four possible directions for the next phases were identified:

- optimization of the technological tools still in use, i.e. document management, salesforce automation, e-learning platform;
- confirmation of the assumptions elicited from the community for design and development;
- design of a totally new knowledge management system, enhancing the role of the internal subject matter experts;
- optimization of the existing communication flows through formation events on target, e.g. team work simulations, face-to-face communication role-games, social networking awareness, etc.

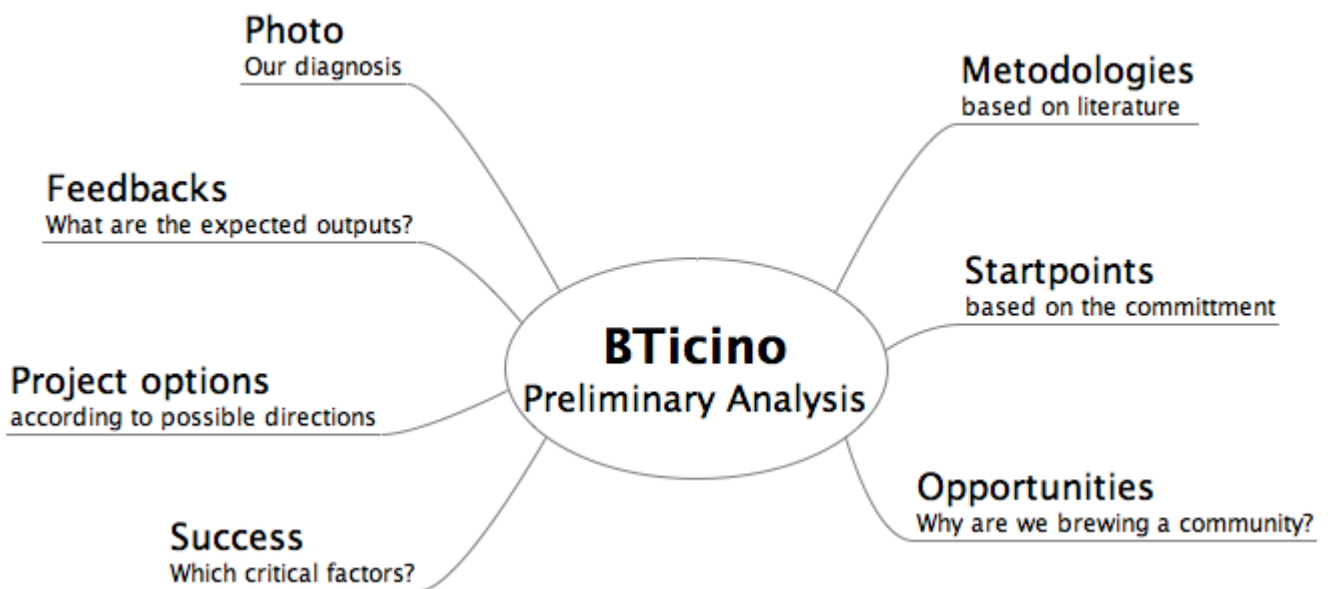**Figure 2. The sociogram system of BTicino organization**

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[8] J.L. Moreno, *Who shall Survive*, Beacon House, Washington D.C. 1977.
[9] T. Buzan, B. Buzan, *The Mind Map book*, BBC Books, London 2000.

Figure 3. The mind map of the analysis report for BTicino

The management has chosen the second direction, where the community is more active in the whole process, for more than one reason. In particular, that direction seems to integrate part of the other directions in a robust fashion. Furthermore, technology can give the value of continuity to the project, i.e. it will continue beyond the project itself, when the community will continue to lead itself from within, so that an expanding circle of value will grow, also thanks to the possibility of acting asynchronously. This last point is crucial. In a highly stressful environment, due to the engagement with customers, this action allows the community members to work quicker and more to the point, through self-regulated informal groups formed on the specific topics.   Finally, the second direction is the more motivating option for the community members, both in terms of knowledge management as well as personal and professional satisfaction.

Agile methodologies applied to BTicino

The direction chosen by the management fits naturally the principles of agile programming for the software development, as stated in the Agile Manifesto[10]. The agile methodologies - where "agile" means "light" - were evolved in the late 1990s by a group of software development consultants as an alternative way to the dominant waterfall approaches, which are typically fine-grained, top-down, and heavy structured. In fact, while in the early days of software engineering waterfall approaches worked well, in the late 1990s the role of customers and end users in the design phase had become crucial in software design, so that the design process could not be done once and for all anymore. Some lightweight methodologies emerged - such as eXtreme Programming[11] (XP), Crystal[12] and Scrum[13]- where the customers and end users came directly into the design process (the so-called "principle of co-design") while iteration cycles became small, even on a weekly basis. Even if each of these principles was not a novelty, the agile approach was strikingly new as a whole[14].

The key points underlined by the Agile Manifesto[15] can be applied even where software design and development are not the core business, for example in automotive companies. In fact, the lean development developed in Toyota -sometimes called the "Toyota Way"- became another agile methodology[16]. This shows that the agile approach is agnostic in terms of methodologies, i.e. take the one(s) you need according to the context.

In BTicino, we used the highly adaptive Crystal methodology as a baseline during the synthesis phase, in particular in the consideration of people as non-linear system[17]. A corollary of this methodology is that there isn't a knowledge management support system ready as it is for the community of practice needs: either the team (formed by consultants and community members after the analysis phase) adapts an existing content management software, such as an open source system, or it creates a new system from scratch, tailored to the community needs. In this case, an open source platform was installed and customized so to integrate with the existing system of BTicino and to respond to the feedback given by the community itself.

The community of practice synthesis

During the analysis phase of BTicino an implicit community of practice emerged. An implicit

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[10] M. Fowler, J. Highsmith, *The Agile Manifesto*, [in:] "Software Development" 2001, August.

[11] K. Beck, *eXtreme Programming explained. Embrace change*, 2nd edition, Addison-Wesley Publishing Company, Boston 2004.

[12] A. Cockburn, *Crystal Clear A Human-Powered Methodology for Small Teams*, Addison-Wesley Publishing Company, Boston 2005.

[13] K. Schwaber M. Beedle, *Agile Software Development with Scrum*, Prentice Hall PTR, Upper Saddle River, NJ 2001.

[14] N. Abbas, A. Gravell, G. Wills, *Historical Roots of Agile Methods: Where did "Agile Thinking" Come from?*, 9th International Conference on *Agile processes and eXtreme programming in Software Engineering* , 10-14.06.2008, Limerick, Ireland, http://eprints.ecs.soton.ac.uk/15432, [29.04.08].

[15] These are the dichotomies stated in the Agile Manifesto: individuals and interactions over processes and tools, working software over comprehensive documentation, customer collaboration over contract negotiation, responding to change over following a plan.

[16] M. Poppendieck, T. Poppendieck, *Lean Software Development: An Agile Toolkit*, Addison-Wesley Publishing Company, Boston 2003.

[17] A. Cockburn, op. cit.

community of practice is a social group that, even if its participants are not aware of it, acts as a community of practice[18]. In fact, they have a specific domain, that should be elicited, for instance through the use of focus groups, and a specific practice, e.g. in BTicino, the arts and crafts depending on members' profession specialties. Moreover, relations - previously given to each region separately- grew drastically thanks to the new communication channels, that became permanently available within the chosen technology framework.

How to extend the project to every member of the sales force, starting from the core team? An internal viral marketing campaign was conducted through the use of mobile phone short messages and small videos (about 90 seconds), sent through e-mail messages.

Figure 4. Screenshot of the community-centered BTicino web portal

The topics covered in the videos were actual topics of the daily work of community members, such as technical information retrieval difficulties, or how to respond timely at work without useless stress, and other (see Fig. 4). The community felt that they will have the answers thanks to the project, even if nobody said anything similar. However, curiosity led to the 2006 convention of the sales force, where the project was formally launched: 95% of the community members visited the web site within the first few days and about 60% wrote a contribution. The degree of use remained high during the entire lifespan of the project.

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[18] E. Wenger, R. Mc Dermott, W.M. Snyder, *Cultivating Communities of Practice*, Harvard Business School Press, Boston MA 2002.

According to Synder and Briggs[19], the first step for establishing a community of practice is to get the core team - i.e. the "natural" leaders of the whole community, no more than 25 members - aware of their role of community support. The core team can be identified through the results of the social network analysis, either quantitatively, i.e. some hubs in the communication flows become evident, or qualitatively, i.e. a group of enthusiasts bring a mood to the community, a way to work or some other indicator to the future trends of the community itself. In this last case the selection is made jointly by the consultants and the organization itself.

Within social network analysis, we identified the BTicino "core" team. The BTicino core team (15 members) was an active member of the web design phase. Creative focus groups were led through the Metaplan metodology, whilst in the launch phase they were the main agents of `spreading the word' among colleagues, also using web forums and blogs.

The main project started in September 2006, and a whole group of sales force acting as project assistants was established. Every unit of the sales force took part in the project. The virtual environment of community management was launched in the 2006 convention of the sales force, November the 22nd .

The community is mainly composed by technicians and sales people. A considerable amount of information is produced, often updated on a daily basis: technical reports, customer care support profiles, marketing action plans, competitors withstanding, news on events, and so on. Previously, such information was spread through more channels with more company audiences in mind, so that sensible information sometimes didn't adhere to the needs of the sales force. The online environment for the whole community was perceived by its members as a real novelty.

The main communication flow for the BTicino social network is nowadays led by the web site. After the elicitation of some members' needs, new channels of direct communication between executives and operating units were opened. The informal dialogues about products, tips, best practices became fully open for the community, so that the domain languages, e.g. in the technical reports for the executives, are now more respected.

The commitment of the whole operation is guaranteed by the sponsor, while the operative legitimacy is given by the community of practice. Furthermore, Geniuses (company experts) take part in the community life through posts in forums, blogs and discussion lists, while Stakeholders are all those members interested in the successful conclusion of the project. Finally, the editorial staff defines the schedule of the editorial projects, while supporting the evolution of web conversations through the add-on of news and data given by the market.

The editorial staff (four people) was made by consultants and company members on an equal basis, who monitored active conversations on a daily basis, added useful information and gave useful advices to participants, also calling other related people to take part in the conversations indeed, in particular in the area covered by the sales department. This activity is still evolving: in fact, after the external support provided by the consultants in the initial phase, now it is the community itself who is the only producer of

[19] W.M. Snyder, X. de Sousa Briggs, *Communities of Practice: A New Tool for Government Managers*, IBM Center for the Business of Government, Washington DC 2003.

content and regulates the active conversations itself.

In June 2007, a new feature was launched on the company blog - indeed one of the first Italian company blogs ever: the CEO and the sales director started a conversation on key strategy topics.

Concluding remarks and further directions

The "Sul Campo" project shows that a multi-level approach is needed to be effective, even in a context such as that of BTicino, well-aware of the presence of a community of practice within the organisation and the need of knowledge elicitation. In other words, the approach that underlined the project took into account not only the technical and technological aspects of the social network involved but also the tacit rules of the social network knowledge production and communication - the two aspects of knowledge management. This also implies that the technologies should adapt and integrate continuously within the community needs. In fact, new functions are currently being developed, such as IVR (Interactive Voice Response) interface and a system of social network endorsements. IVR enables the sales force to interact with automated phone systems, while at the same time providing significant cost reductions. In return, the sales force can be in touch with the latest news on what's going on with the community through dialling into the IVR system using a simple mobile phone, whilst dealing with their daily occupations.

The latest functionality developed for the project is a system of social tagging on the competencies the group of people within a certain organisation, in this case being the sales force of BTicino. A system will then localize the expertise within the group of people based on reputation built on individuals' skills and competencies as created from peer to peer evaluation.

In conclusion, the strategy used in BTicino seems to be a good mixture of the possible ways in which members of a community of practice learn, as reported in Bołtuć[20]: e-modes are present through the community web portal as well as face-to-face modes, in particular under the form of topic-based groups (cohort learning). The common underlying value of both learning styles is that people explicitly share a common set of values and methods, i.e. the sense of belonging to the same community of practice.

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Information about the Authors

Rosario Sica is a Cybernetic Physicist with a Master Degree in Marketing and Social Communication, who was a chief executive officer of Semantic Internet Innovation Ltd. He has vast experience in experimentation with innovative pedagogical methods. Mr. Sica has acted as a consultant in the South Pacific Islands (Fiji) as well as a Project Manager in Chile for the Italian Ministry of Foreign Affairs. In Vietnam, he worked for Médecins sans Frontiers. He has published many articles relating to the application of new technologies in learning processes. Currently, Mr. Sica is an ICT Innovation & Social Network Manager at DICOM, University of Insubria, Varese, Italy.

Federico Gobbo is a Doctoral Candidate of the Department of Communication and Computer Sciences, University of Insubria, Varese, Italy. His research interests lie in agile methodologies for software design and development, web-based interaction, philosophy of computing, computer ethics, learning issues and ICT, as well as in language planning and interlinguistics.