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Collective Intelligence through community-based learning

This paper shows how it is possible for enterprises to capture and effectively use informal networks and knowledge sharing by embracing Web2.0 technologies to cohere new communities of practice. BTicino is a leading Italian company producing industrial electrical equipment and domotics. This case study examines how a Social Network Analysis (SNA – based upon a web-based survey) formed the starting point of identifying where and how some key Web2.0 technologies could be deployed to create an effective alternative knowledge management system. The assumption tested (and overwhelming proved to be correct) was that identifying the informal networks of practice within the company could form the starting point for deploying applications which would allow the easy sharing and spread of knowledge through networked community practices. What was created a highly effective knowledge deployment system (rather than a knowledge management system) at the point of need and on demand. The case study is also an example of how an agile methodology could be applied in contexts, which differs from the development of software. This raises important points for future research on the methodologies underpinning the future evolution and deployment of what we term Enterprise 2.0 applications and services.

‘Web2.0’, the term coined by Tim O’Reilly\(^1\) contains a lot of hype and myth and has been used to conflate a number of recent technological developments and user behaviours. But the key point is the way the web has been reconfigured into a data-centric organism, where data and meta-data now form the key building blocks of all future platforms, applications and services. Web2.0 is thus the convergence of technological trends and user behaviours where users, self-organized into social networks, now form the center of the production and organization of meaningful data. Most significantly, these practices have increasingly begun to impinge upon the corporate enterprise in an unprecedented reversal of technological uptake: for the first time a consumer-based practice has moved into the enterprise rather than the other way round (just think about email, mobile telephony, or word processing which all had their initial roots within corporate life and then spread across social life). Now enterprises have begun to be aware of how social practices are now impinging upon corporate life: they are becoming aware of being themselves producers of informal and formal knowledge creation, formal and informal structures and practices which are becoming increasingly important to the day-to-day functioning of the corporation. The farsighted corporations are beginning to understand the power of informal structures, knowledge and communities of practice and are starting to give value to them, by deploying social media and the new technology paradigm. They have recognized that people and social capital is their key asset and that their people aggregate in informal communities. This is what Bauman terms the ‘liquid society’\(^2\) where the daily work of each member is facilitated through a constructed process based upon trust where serendipity and unexpected connections are to be welcomed rather than shunned. Allowing social networks to emerge through practice and need by intelligently deploying web 2.0 technologies is now being understood as central to making enterprises more effective and competitive. This is a new business paradigm, which is at its very beginning.

BTicino SpA – optimization of social networks

This paper updates the case study described in Community Management by Scotti and Sica\(^3\), which details the process of the optimization of the BTicino social network\(^4\). It is important to understand that for a company like BTicino, innovation is critical. It is one of the pivotal values of the company strategy, both in the products and services offered to their customers, and also in


\(^3\) E. Scotti, R. Sica, Community Management, Apogeo-Feltrinelli, Milan, Italy 2007.

\(^4\) BTicino SpA, producer of industrial electrical equipment and domotics, was founded after the First World War in Varese and became a worldwide competitor after the Second World War.
the way in which the company communicates with the market through its sales force. In 2007 BTicino merged with Zucchini and Legrand Italia, thus increasing the sales force from 400 people to 550. The problem was how to merge three different workforces with different communities of practice. It was a classic case of what Seb Schmoller considers the key point in Etienne Wenger’s problematic: ‘how to improve the individual and possibly collective ability to deal with the challenges we face?’

The knowledge management project goals

The starting point focused on the harmonization of the existing software tools supplied to the sales force, so that the flow of selling and customer care could become more fluid and informative, i.e. the informal information daily produced by the network could become more effective for the different enterprise components. This was regarded as critical to the management, but also the personnel of other regions. In fact, each community of practice needed to be harmonized among the workforce, which was especially challenging and difficult across sales regions.

The solution decided upon was ‘Sul Campo’ (Italian for ‘On the Field’). This solution, detailed below, while specific to BTicino, does however, have broader value and further research potential.

The project consisted of three goals defined by the management.

- The first aim was to bring together all the relevant 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;
- Second and no less important was the opening of a new channel for listening purposes through which the sales force’s opinions and those of their clients about the market, products and competitor activities could be rapidly and extensively captured and synthesized;
- Third, and the one with the highest added value, was the diffusion of experiences and generalization of specialized abilities or skills to establish and circulate best practices. For Franco Villani, BTicino’s Italian Sales Manager, this is regarded as the most important innovation, which he evangelizes in a video-interview on the ‘Sul Campo’ content management system.

This last point also highlights how innovative BTicino were in that they deployed this content, thanks to the support of the Organization and Systems Department, which allowed the full exploitation of the opportunities offered by new technologies and broadband connection to the Intranet. Not only documents and text information was made easily accessible, but also more informative films and video-interviews with specialists with recognized abilities were created and made available. Ensuring buy-in across all departments ensured the smooth adoption and deployment of the system: 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. Most interestingly they have recognized the importance of broadening the appeal of their community network by encouraging interactions on both technical (sales) topics and aspects unrelated to work. This approach has paid massive dividends: cross departmental collaboration has steadily risen ensuring that 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 through offering suggestions and creating relevant content.

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5 P. Bońtuć, Communities of Practice and other Issues in Online Education. An interview with Seb Schmoller, "e- mentor", 2007, nr 3.
It is important to stress just how the spirit of the ‘Sul Campo’ project is transversal to the company as a whole. Marketing and Development, E-business and Communication have all participated from the outset with many unexpected and great initiatives. All in all real teamwork was coordinated by the Sales & Marketing Intelligence Team, which supervised and built the site - updating the contents and ensuring timely responses, on a daily basis.

To see how this was achieved it is necessary to examine the project in greater detail. The project can be divided in two main phases:

(a) The Social Network Analysis phase;
(b) The Community of Practice Synthesis.

The second phase strictly depended 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 could emerge from the network participants. This phase is important as the success of the project depends upon its goals being known, shared and well accepted by all members, whatever their location in the company. At the very least there has to be a shared vision otherwise the next phases will simply fail. The whole structure of the company was covered, at least at an informal level, and this process of awareness resulted in both enthusiasm and fear. In this case 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 needed to be sustained.

The project was divided into modules based upon the principle of continuous planning, where each module depended strictly upon the results of the previous ones. The main needs that emerged during this phase were as follows:

- **More velocity**: The projects for new products needed to speed up for the market, despite the use of gradual releases, (according to lean organization principles)\(^7\);
- **Conducted system**: The structuring of the community comprising the BTicino social network, where the members produce content on a-priori defined topics and which a specific editorial staff regulates. (This group is formed by members with different competencies and education, thus ensuring these different social profiles of the community members are represented correctly);
- **More synthesis**: The underlying technology needed to be able to give back quick feedback; charts or other content that could measure the mood of what is happening on specific topics.

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

This was all executed by an extensive array of interviews across different departments. Marketing, sales, product development, customer care, for example were interviewed as well as focus group established with potential users and regional managers. Finally, a quantitative online survey to every member of the social network, i.e. the enlarged sales force, took place. The final result was a sociogram of the BTicino organization (see Fig. 2; see also Moreno⁸).

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The first report created from this phase consisted of 80 pages and 300 attachments. A short summary was prepared, through mind map methodology (see Fig. 3; see also Buzan⁹), which allowed four possible directions for phase II (the Community of Practice Synthesis):

- **Optimization** of the technological tools still in use, i.e. document management, sales force automation and 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 targets, e.g. team work simulations, face-to-face communication role-games, social networking awareness, etc.

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

The management chose the second direction, where the community would be more active in the whole process. That direction seemed to integrate parts of the other directions in a more robust fashion. Furthermore, it was recognized that any technology introduced would give the value of continuity to the project. In short, this would ensure it would continue beyond the project itself, where the community would continue to lead itself from within such that an expanding circle of value grows, (mainly through the possibility of acting asynchronously).

This last point is crucial. In a high stress environment where sales and marketing require rapid fulfillment, the engagement with customers allows the community members to work quicker and more to the point, through self-regulated informal groups formed around specific topics. Finally, the second direction is always going to be a more motivating option for community members, both in terms of knowledge management as well as personal and professional satisfaction.

Agile methodologies applied to BTicino

The direction chosen by BTicino’s management fits naturally the principles of agile programming for software development, as stated in the Agile Manifesto\textsuperscript{10}. The agile methodologies – where ‘agile’ means ‘light’ – were evolved in the late 1990s by a group of software development consultants as an alternative approach to the dominant waterfall approach, which is typically fine-grained, top-down, and heavily 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 has become crucial in software design. The design process is a constantly evolving iterative process. Some lightweight methodologies emerged - such as eXtreme Programming (XP)\textsuperscript{11}, Crystal\textsuperscript{12} and Scrum\textsuperscript{13} – where the customers and end users came directly into the design

process (the so-called “principle of co-design”) while iteration cycles became smaller, even on a weekly basis. Even if each of these principles was not a novelty, the agile approach was strikingly new as a whole.\textsuperscript{14}

The key points underlined by the Agile Manifesto\textsuperscript{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\textsuperscript{16}. This shows that the agile approach is agnostic in terms of methodologies, i.e. take the one(s) you need according to 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 a non-linear system\textsuperscript{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 community of practice is a social group that, even if its participants are not aware of it, acts as a community of practice.\textsuperscript{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.

The question this then posed was 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.

\textsuperscript{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.
\textsuperscript{17} A. Cockburn, op. cit.
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 others (see Fig. 4). The community’s confidence in the project increased to the point that they felt they would have answers to problems even if everyone said different things. At the 2006 meeting 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 engagement and use remained high during the entire lifespan of the project.

According to Synder and Briggs¹⁹, 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 supporting the community. The core team was identified through the social network analysis. This was done either quantitatively, i.e. some hubs in the communication flows become evident; or qualitatively, i.e. a group of enthusiasts who were clearly marked as working in a different way or represented future trends of the community itself. In this last case, which is based more on interpretation, the consultants and the organization itself made the selection jointly.

Within social network analysis, we identified the BTicino "core" team. These 15 members actively participated in the web design phase of the project. Creative focus groups were led using the Metaplan methodology, whilst in the launch phase the core members were the main evangelists, the agents who ‘spread the word’ among their colleagues, using web forums and blogs.

**The community of practice**

The community is mainly composed of technicians and sales people. A considerable amount of information is produced and often updated on a daily basis. The information ranges from technical reports, customer care support profiles, marketing action plans, competitor intelligence and event news and so on. Previously, this information was distributed through more channels.

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with more company audiences in mind. The problem was a lot of noise to directed information. Information directly relevant to the sales force was lost in information overflows, which were often irrelevant. Once the new community of practice was established its members perceived the online environment as a real novelty.

The main communication flow for the BTicino social network is now led by the web site. New practices more focused on solving problems emerged: after elucidating some members' needs, new channels of direct communication between executives and operating units were opened. The informal dialogues about products, tips, and best practices became fully open to the community, such that technical reports for the executives are now more respected.

It is important to stress that one of the key success factors in this project was the commitment of a senior sponsor who enabled the project to get off the ground and establish itself by changing internal processes. Today, the operational legitimacy of the project is maintained by the community of practice itself and its outcomes. A healthy and respectful dialogue has been established between ‘Geniuses’ (company experts) who participate in the community life through posts in forums, blogs and discussion lists, and Stakeholders (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-ons of news and data given by the market.

The editorial staff (four people made up of consultants and company members on an equal basis) actively monitors conversations on a daily basis, adding useful information and giving useful advice to participants. They also prompt other related people to take part in the conversations particular in the area covered by the sales department. This activity is still evolving. But most positively, the external support provided by the consultants in the initial phase is no longer required as the community itself has become the producer of content while self-regulating active conversations. In June 2007, a new feature was launched on the company blog – the CEO and the sales director started a conversation on key strategy topics! Besides revealing just how this project has been generalized across the entire company, this represented one of the first such uses of social media by Senior Executives in Italian business to-date.

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, which was well aware of the presence of a community of practice within its organization. There was also an understanding and recognition of informal knowledge networks which needed to be embraced in new ways. The approach that underlined the project thus took into account not only the technical and technological aspects of the social network involved but recognized the importance of the tacit rules of the social network knowledge production and communication - the two fundamentals of knowledge management. This also suggests that the technologies need to continuously adapt to and integrate with community needs. In fact, new functions are currently being developed, such as an 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 and what's going on with the community through dialing into the IVR system using a simple mobile phone, whilst dealing with their daily routines.

The latest functionality developed for the project is a system of social tagging based on the competencies of the sales force of BTicino. This will then be used to locate expertise within the community based upon peer-based evaluation of skills and reputation. New metrics of performance and return on investment in such systems now appears as another outcome of the project.
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 interact, learn, and share knowledge. Further research is suggested with respect to future learning methods, practices and processes (roles of web-portals, face-to-face modes, in particular under the form of topic-based groups/cohorts learning). The real gem for the future, however lies in gaining a deeper understanding of what the longer-term impact will be when people explicitly share a common set of values and methods (the sense of belonging to the same community of practice), generate knowledge as a consequence of their interactions, and thus change the way information flows and processes will change within organizations. It’s not about technology but problem solving where Web2.0 technologies, if allied to smart and agile management thinking and leadership can fundamentally transform the enterprise of the future. Enterprise2.0 will then represent a qualitative shift in the experience of work and productivity.

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