Collaborative Project Management
Issues, methods and tools

Margarida Silva
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This “cliché” is an inescapable truth. However, the ways of doing are changing. One job in life or a career life in one company does no longer exist. Persons have more work mobility. Teams can be geographically spread, multicultural and variable.
So, how do we manage collaborative projects, in these conditions? And how IT can help to solve these issues…?

FACTSHEET

Nom : Santos da Silva  
Prénom : Isabel Margarida  
Nº Etudiant UdS : 21016645  
margaridasilva2006@gmail.com

Université de Strasbourg  
Faculté de Droit, Sciences Politiques et Gestion de Strasbourg  
Diplôme : MR Gestion & Droit de l’économie numérique  
Etape : M2 Commerce électronique  
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# INDEX

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>2</td>
</tr>
<tr>
<td>French abstract</td>
<td>3</td>
</tr>
<tr>
<td>Key words</td>
<td>5</td>
</tr>
<tr>
<td>Collaborative project management - definition and scope</td>
<td>6</td>
</tr>
<tr>
<td>Collaborative project definition</td>
<td>7</td>
</tr>
<tr>
<td>Virtual team definition</td>
<td>8</td>
</tr>
<tr>
<td>Virtual team’s building</td>
<td>8</td>
</tr>
<tr>
<td>Virtual team’s environment</td>
<td>10</td>
</tr>
<tr>
<td>Collaborative project building</td>
<td>10</td>
</tr>
<tr>
<td>Obstacles of collaborative projects</td>
<td>11</td>
</tr>
<tr>
<td>Solutions to obstacles of collaborative projects</td>
<td>12</td>
</tr>
<tr>
<td>Collaborative teamwork</td>
<td>15</td>
</tr>
<tr>
<td>Collaborative tools</td>
<td>20</td>
</tr>
<tr>
<td>Wiki environment</td>
<td>24</td>
</tr>
<tr>
<td>Collaborative tools choice</td>
<td>25</td>
</tr>
<tr>
<td>Actors and existing business</td>
<td>27</td>
</tr>
<tr>
<td>Innovative projects on the subject that emerge</td>
<td>29</td>
</tr>
<tr>
<td>New business ideas evolution to look closely</td>
<td>31</td>
</tr>
<tr>
<td>Legal issues to be aware of</td>
<td>32</td>
</tr>
<tr>
<td>General conclusion</td>
<td>34</td>
</tr>
<tr>
<td>Identified and hierarchical information sources</td>
<td>35</td>
</tr>
</tbody>
</table>
Abstract

The project management process and its paradigm are changing. With ICT (Information and Communication Technologies) and the development of the web 2.0, it’s possible to put working together heterogenic teams, geographically spread, using web based project management software. In these teams the most important is the process by which the project is carried out. Different dimensions of the project management guarantee its success.

The term “collaborative project” is used in ICT and it’s associated to a virtual team (a team with a real distance between their members), compelled by a purpose. But a good virtual team relies on the inputs brought, the outputs produced, and the process to pass from the first to the second ones. So, through team design, which includes cultural differences, technical expertise and training, team can achieve its performance and satisfaction. All the process is hold with trust, cohesion, relationship, communication and coordination. And this is valid for business environment and non profit projects.

The management process can face difficulties, but the non-technological ones pose greater challenges. After all, teams are composed by persons, who need to collaborate, during a limited period of time. So to face the obstacles it’s necessary to build trust between team members which rarely or never cross each other. This is only possible enhancing communication inside the team, using the right technology and the right method in the right situation. The tools that can be used are diversified and even the “more traditional tools” can not be disregarded. However, to make collaborative projects possible team members must have the right skills to work on a virtual environment. This means to have a pro-active work process, because there’s a lack of daily face-to-face contact.

Although, each team member has a unique personal context, reflected in a different behaviour, collaborative teamwork is still possible. The virtual work has advantages which can motivate the team; however most of its disadvantages come from the lack or insufficient personal contact.

The success of a collaborative project comes essentially from three pillars:

1) The effort of overcoming communication barriers. Behind the “virtual side”, the project management should rely on a human side, promoting, whenever it’s possible, some time spent together, to increase more effectiveness.

2) The architecture of a collaborative project. The project must contain four major components: project repository (project memory), project planning, project execution and project control.

3) The collaborative tools selected. For each component of the project the tool(s) used must be well adapted.

A good architecture creates the project “presence” (the sense of being part of the project), using collaborative supports that allow a concerted collaborative work. When the project takes place naturally, following its own cycle, it creates knowledge that it can be managed and used in futures projects.
Finally, in nowadays there’s a wide range of tools in the market that meets the diverse needs of a collaborative project. Some are better known than others. One way to organise them is according to its main functionality: cooperation, communication, community sense or control. Anyway, most of them are no longer a tool of a single functionality.

The principal issues to take into account when we choose collaborative tools are linked to, team profile, project objectives, costs and the legal aspects behind each tool. In the global market, most of the tools have an Anglo-Saxon conception. This means they are build under that mental frame. However European societies see their personal liberties and the respect of personal information differently. So the big question is: what is “normal and pacifically accepted” in the North American society, it’s not seen the same way in Europe. So this can cause a few problems, namely in what concerns personal information, protection of private live and private data. In France where the law is very restricted in these issues, we must pay a special attention to that.

Besides all that, it’s possible to find innovative projects using collaborative tools in the IT meaning of the concept. These projects are completely different from others found on internet, which the only use of IT they do is to have a web-site to gather contributors to a physical collaborative project (like rebuilding a house or collecting books for disadvantaged children).

The innovations that can emerge in this subject are mainly connected to the increasing of personalization of the tools, the development of the virtual reality and the application of collaborative tools to new domains which are using IT (like e-health or e-elderly).

**French abstract**

Le processus de gestion de projet et son paradigme sont en train de changer. Avec les TIC (Technologies de l'information et de la Communication) et le développement du web 2.0, il est possible de mettre en collaboration des équipes hétérogènes, répartis géographiquement, en utilisant des logiciels de gestion de projet basée sur le web. Dans ces équipes, le plus important est le processus par lequel le projet est réalisé et les différentes dimensions de la gestion du projet garantie son succès.

Le terme «projet collaborative» est utilisé dans les TIC et il est associé à une équipe virtuelle (une équipe avec une distance réelle entre leurs membres), contraint par un but. Mais une bonne équipe virtuelle s’appuie sur les contributions apportées, les résultats produits, et le processus pour passer de les premières aux les seconds. Ainsi, grâce au design de l’équipe, qui comprend les différences culturelles, l’expertise technique et la formation, l’équipe peut atteindre ses performances et de la satisfaction. Tout le processus se tiens avec confiance, cohésion, relation, communication et coordination. Et ceci est
valable pour l'environnement du business (environnement des affaires) et des projets à but non lucratif.

Le processus de gestion peut rencontrer des difficultés, mais sont les non-technologiques qui pose les plus grands défis. Après tout, les équipes sont composées de personnes, qui ont besoin de collaborer, au cours d'une période de temps limitée. Donc, pour faire face aux obstacles, il est nécessaire de construire la confiance entre les membres de l'équipe qui rarement ou jamais se croisent. Cela n'est possible que par l'amélioration de la communication au l'intérieur de l'équipe, en utilisant la bonne technologie et la bonne méthode dans la bonne situation. Les outils qui peuvent être utilisées sont diversifiés et même les "outils plus traditionnels" ne doit être négligée. Toutefois, pour rendre les projets collaboratifs possibles, les membres de l'équipe doivent avoir les compétences nécessaires pour travailler sur un environnement virtuel. Cela signifie d'avoir un processus de travail pro-actif, parce qu'il ya un manque de contact quotidienne en face-à-face.

Bien que, chaque membre de l'équipe a un contexte personnel unique, traduit par un comportement différent, le travail d'équipe est encore possible. Le travail virtuel a des avantages qui peuvent motiver l'équipe, mais la plupart de ses inconvénients proviennent de l'absence ou l'insuffisance des contacts personnels.

Le succès d'un projet de collaboration provient essentiellement de trois piliers:

1) L'effort de surmonter les obstacles à la communication. Derrière le côté «virtuel», la gestion du projet devrait s'appuyer sur un côté humain, faisant la promotion, chaque fois que cela est possible, d'un peu de temps passé ensemble, pour accroître une plus grande efficacité.

2) L'architecture d'un projet collaboratif. Le projet doit contenir quatre composantes principales: le référentiel du projet (mémoire du projet), la planification du projet, l'exécution du projet et le contrôle du projet.

3) Les outils collaboratifs sélectionnés. Pour chaque composante du projet de l'outil(s) utilisé(s) doit être bien adapté(s).

Une bonne architecture crée la « présence » dans le projet (le sentiment de faire partie du projet), en utilisant des supports de collaboration qui permettent à un travail collaboratif concerté. Lorsque le projet se déroule naturellement, suivant son propre cycle, il crée des connaissances qu'ils peuvent être gérés et utilisés dans des projets futurs.

Enfin, il existe aujourd'hui une large gamme d'outils sur le marché qui répond aux divers besoins d'un projet collaboratif. Certains sont mieux connus que d'autres. Une façon de les organiser c'est selon ses fonctionnalités principales: la coopération, la communication le (sens) communautaire, ou le contrôle. De toute façon, la plupart d'entre eux ne sont plus un outil d'une seule fonctionnalité.

Les principales questions à prendre en compte lorsque nous choisissons les outils collaboratifs sont liés à, le profil de l'équipe, les objectifs du projet, les coûts et les aspects juridiques derrière chaque outil. Sur le marché mondial, la plupart des outils ont une conception anglo-saxonne. Cela signifie qu'ils sont construits en vertu de ce cadre mental. Cependant les sociétés européennes voient leurs libertés personnelles et le respect des
informations personnels différemment. Alors, la grande question est: ce qui est «normal et pacifiquement acceptée" dans la société nord-américaine, il n’est pas perçu de la même manière en Europe. Donc, cela peut causer quelques problèmes, notamment en ce qui concerne les informations personnels, la protection des données privées et de la vie privée. En France, où la loi est très restreinte dans ces questions, nous devons concéder une attention particulière à cette question.

Outre tout cela, il est possible de trouver des projets innovateurs qui utilisent des outils de collaboration dans le sens de la notion des Technologies d’information (TI). Ces projets sont complètement différents des autres trouvées sur internet, dont la seule utilisation de l'informatique qu'ils font, c'est d'avoir un site web pour recueillir des contributeurs à un projet collaborative physique (comme la reconstruction d'une maison ou la collecte de livres pour les enfants défavorisés).

Les innovations qui peuvent émerger dans ce sujet sont essentiellement reliées à l'augmentation de la personnalisation des outils, le développement de la réalité virtuelle et l'application des outils de collaboration à de nouveaux domaines qui utilisent des TI (comme l'e-santé ou e-personnes âgées).

**Key words**

![Word Cloud](https://example.com/wordcloud.png)
Collaborative project management - definition and scope

Formerly, to build a project it was necessary to put all the people together in same place, working at the same time, for long days. These kinds of teams were speaking the same language, living in same metropolis, and they knew each other by the first-name. They were frequenting the same restaurants, using the same coffee-machine, and drinking from the same water fountain. And in fact, the key decisions were often taken at the restaurant, or in front of the coffee-machine.

By that time, project monitoring was easy. The progress of the project was detailed in a Gantt chart, for everyone to see. The order of the day was frequent and frequently changed in improvised meetings. Competitors would act the same way, with the same business model, having the same problems (slippages, over-budgets and failures).

Those old times have disappeared. IT (Information Technologies) and IT processes and tools are changing the project management process and its paradigm.

In nowadays, for a project management it’s important: project’s inputs and outputs, as well as the process by which projects are carried out.

In the sequence of the internet revolution it is possible to develop teams, spread by different locations, with different time-zones, using web based project management software. It’s possible to develop different kind of teams: low-cost teams, high performance teams, expert teams… These teams are often heterogenic: their members use different languages, dress codes, working times, and cultures, but they are working together.

So “managing people” is acquiring a complete different meaning. The project members still chat in front of the coffee machine, but they specially interact with crucial partners through video streams broadcast, using high-speed optical fibres, which start cover the entire world.

The difference between traditional and collaborative project management is the distance.

While in the first case, to-do tasks are delivered face to face to the individual team members, in the second case, they are sent by the email or on shared message-boards.

The collaborative project management not only focuses on the use of the project management as a reporting tool (such as Gantt chart or PERT chart generating) but it works also with other significant dimensions of the project management:

- Related artefacts collection (information, decisions, processes, intervenient …);
- Information generation that is collected in a permanent repository;
- Changes tracking which help to follow and understand the wisdoms of the team;
- Earlier decisions study which can be extracted from the repository;
- Greater appreciation of work - why they are doing what they are doing;
- Knowledge and communication become explicit rather then implicit and tacit;
- Information details are shown;
• Dynamic ongoing processes;
• Maximal transparency in processes and of the information;
• Easier managing future, if something changes.

These dimensions ensure the success for collaborative project management, especially in complex scenarios, where business environments can be altered, sometimes dramatically: inputs may change, outputs may be turned inside out, technology and platforms to be used may suffer retouches or disappear, resources originally committed to the project manager may reduce (in terms of time, money, personnel, infrastructure, and so on).

There’s a more broad sense for a collaborative project management: a project which can be schedule in a way that it “chases the sun”. In these conditions, the tasks can be running somewhere around the earth, whenever there’s day light, and the project manager can be fully confident that things will take care of themselves while he/she sleeps. However, there are some points to take care about it, as it will be shown along this technical file.

**Collaborative project definition**

The term "collaborative project management" seems to not have an official definition, at least web spread. One is true: it’s a very wide concept, which always existed, and there are a lot of people using it. It can be applied to a lot of domains and that’s maybe why there’s no official definition.

Going a little deep on the semantic meaning… A collaborative project is a project where persons work jointly with others, having participation in a collective work.

Collaborate = work jointly with other(s), having participation in a collective work ≈ cooperate, assist.

It’s a word coming from *latin* – *collaboro, -are*.

Derivatives: collaboration (*noun*), collaborationist (*noun & adjective*), collaborative (*adjective*), collaboratively (*adverb*), collaborator (*noun*).

Seen this way, all the projects can be considered collaborative, if they involve more than one person. However, the use of this expression in the field of the Information and Communication Technology (ICT), is becoming more and more often and it has associate a *virtual dimension* justified by a *real distance* existing between the actors.

For the scope of this technical file a simple definition of collaborative project is: a project where persons work jointly with others, having participation in a collective work, creating a virtual team, by virtue of using different work places, normally distant from each other and therefore using different work times.
Virtual team definition

A virtual team is also known as a geographically dispersed team; however this is a reductive definition. A virtual team is a group of individual workers geographically, organizationally and/or time dispersed brought together, which links are strengthened by ICT, to accomplish one or more organizational tasks (definition in 2004). Later (in 2009) this definition was slightly revised, focusing in two aspects:

- the type of group – small and temporary group;
- the type of workers – knowledge workers.

The technological improvement in the communication field makes possible the development of virtual teams. Their members communicate electronically and they may never meet face-to-face. This requires new ways of working and leadership, and it also allows companies to search their talents without geographical restrictions.

The purpose is the main aspect for a virtual team. It defines the steps to be done and the goals and results to be achieved. Therefore in collaborative projects, where the hierarchies can be different from the used in companies, it’s the purpose that keeps the team together.

Virtual team’s building

The building of a virtual team must take into account four main aspects: the inputs, the socio-emotional processes, the task processes and the outputs. Therefore, the success and empowering of a virtual team depends on the ingredients of each of these areas.

Virtual team design includes: planning the team, structuring the team and the member interactions, choosing communication tools, previewing face-to-face meetings, sharing of information, norms and models.

Cultural differences must be understood and accepted.

Technical expertise generally has a positive effect on the team’s performance and the satisfaction of belonging to the team.

Team training improves the team performance, and avoids conflicts based in diverse technological skills.

Relationship building reinforces the links of the membership and should be based on face-to-face meetings (even if they are rare) to achieve higher and better social relationship.

Cohesion means the sense of unity in a team.
Trust is important but hard to build because face-to-face meetings are rare and this means a high level of incertitude which must be overcome. Communication is one of the most crucial points in a virtual team. It must be supported by the right technology, to avoid failures in communication, wrong and lacking of contextual information and unequally distributed information. It should also minimise the missing of non verbal communication and improve trust and performance of the team, which is one of the greatest challenges of a virtual team. Coordination must take into account the cultural and mental differences between the member’s team, which can be facilitate with periodical face-to-face meetings or coordination protocols.

Task-technology-structure fit must take into account the individual preferences and experience, because the success of the project depends on the answer’s ability. Different tasks ask for different approaches and different technologies. Performance of the team depends on: training, strategy/goal setting, shared language, team building, team cohesion, communication, coordination, team commitment, task-technology fit, competitiveness, collaboration and conflict behaviour… Satisfaction is one of the most important final results of a project and, as well as performance, depends on all the previous factors.

At glance:
The right choice of the inputs for a virtual team has a direct effect on its processes (social-emotional and task related) and these have a positive link with the outputs achieved in the project. Therefore the design of team must compensate the lack of continuous face-to-face presence. That’s why communication is so important. It increases trust and social and emotional relationships in the team. Communications problems can be reduced by an equitable information level, which can produce a shared language and models. In the training process, mentoring can be a good way to build cohesion and team’s commitment, creating individual satisfaction. Then, a good leadership is able to improve trust and team cohesion, through communication, using the right methods at the
right moment. Therefore, face-to-face meetings or phones calls are appropriate for ambiguous tasks, managing conflicts, managing external resources, brainstorming and strategic talks. Electronic communication is more appropriate for more structured tasks such as routine analysis, examining design tradeoffs and monitoring project status.

A virtual team can be compared to a living organism and its building influences the team’s performance.

Virtual team’s environment

Virtual teams are non conventional organisations and they can be found in business’ environment, or in non profit projects. In both situations the physical presence is very limited and the activities are relying on the use of ICT.

For a company, the activity relying on ICT is considered e-business. The virtual business can be formed also through outsourcing most or all its functions. With outsourcing (which occurs when a company uses an outside firm to provide a necessary business function that might be done in-house), it’s possible to have an entirely virtual company with only the entrepreneur himself, although they are relatively rare. In most of the cases, the core competence or the competitive advantage is something that the companies keep between theirs walls.

In a non profit projects virtual teams are a solution for geographic spread (national and international member teams), for associative, research, sharing knowledge, work platform projects…

The environment where virtual teams are applied can suggest different team’s member engagement. It also can influence the success of the project. The team’s commitment based on profit has a “forced” engagement. But when profit doesn’t empower the team, the team’s purpose must be completely absorbed by the team’s members.

Collaborative project building

The building of a “collaborative project” relies on 5 major steps:

**The first step** is to pick the right people. Sometimes this comes even first than the project definition, and it’s a key factor for the success of the project, because it depends on the engagement of each team member. For this there are some requirements:

- participation must be voluntary - teams are destined to fail if not supported by its members;
- members must have previously demonstrated satisfactory work responsibilities and habits;
• members must have some key social characteristics – to work with limited supervision and feedback, reduced social interaction, good organizational and time management skills, self-motivated, good performance, and ability to be concentrate if away from a workplace.

The size of the team can also have an important role, because if it's too much big, it can have a negative effect: it can make the collaboration more difficult.

The second step is to develop the leadership. Collaborative projects impose specific demands on the project manager, all along the life project. The challenge is to prepare the team for the collaborative work. The leader has to: communicate the vision, develop a mission statement and define the goals. To be fruitful he has to define: norms, work roles, meeting processes, communication processes, and work processes. (Note: it should also be like this for traditional teams.)

The third step is to build and keep the interest and the concern of the team members in the project. For this, the principal elements are: organizational design, job/task design, team design. This includes giving decision making power to the team, discussing compensation and providing feedback for member's recognition and development. The members need: to recognize the team values of the others, to be involved, to know the limits of the team and to be aware of the team’s expectations. In brief: to build team’s identity and to make connections outside the team with strength outside resources and support.

The fourth step is to implement the project, and this depends on the subject of the project. But collaborative projects face additional challenges/obstacles and require more effort to keep open the communication and to develop trust.

The fifth step is to complete the project. The celebration is a good way to mark the end of the project and recognize the members of team. A face-to-face social meeting or a final video conference can provide the appreciation of the team members, especially to increase the visibility of the participation on the project.

Obstacles of collaborative projects

The less frequent or inexistent face-to-face contact in collaborative project can create some obstacles: false consensus, unresolved open conflict, underground conflict, calcified team meetings, unequal participation, lack of responsibility...

A mistake to avoid is thinking that virtual team problems can be solved only by using technology (e-mails, chat rooms, web conferencing...).

Collaborative projects can face technological difficulties - slow network computers, poor architecture, lack of collaborative software, equipment and software design for conventional office, interface problems...

But non-technological difficulties can be more serious in collaborative projects: organizational and cultural barriers, rupture of the team, lost of loyalty, lack of communication...

In the end it simply means that it’s difficult to collaborate on something when the communication process is inhibited.

New technologies just provide new mechanisms to make collaborative teams possible, but they
don’t necessarily make those teams superior to other kind of teams. To solve the collaborative project challenges the emphasis lies on 3 areas: building trust, enhancing communication, and developing virtual management skills.

Solutions to obstacles of collaborative projects

Building Trust

In a traditional project trust is built through frequent interaction. When project team members are located on the same place, they may already know each other and have the advantage of previous interaction with their colleges. Members can observe each other working on the project, discuss issues frequently and build a daily relationship.

In a collaborative project these advantages may not exist. In this field, the accumulated experience reports that it’s important to have some activities that build trust. One of the most important is a face-to-face kickoff meeting – it allows all members to get to know each other. Trust is the oil that allows the engine (project) to work perfectly. It’s difficult to get, but necessary. Team members have to trust that others are doing their work, with quality (even high quality level), satisfying deadlines. Trust is measured almost exclusively in terms of reliability.

Furthermore, language and cultural differences must be taken into account. These are the main causes of misunderstood and different interpretations. In this case, a face-to-face meeting or visual signs regarding the other’s reaction may help to clarify. Simple photos of team members may also help to better “see” the other members. It mustn’t be forgotten that perception is the major factor influencing the level of trust: perception of self, of others, and of the process and activities. So trust is gotten from relationship and perceptions between team members. Therefore activities must take place in order that member’s expectations are achieved and team members appropriate project’s goals as their own goals. This starts with team member’s selection - people with the right personality for this way of working and honest, which inspire confidence.

Enhancing communication

The expression “collaborative team” infers that communication is taking place. And communication builds trust. However it must be a good communication. More than quantity, it’s the quality or “richness” of information that is important. Communication is composed of data capacity and richness. Richness can be enhanced using the right medium to transmit information, using different channels and allowing cultural differences. When these factors are present it triggers the ability of immediate feedback.

In fact in collaborative projects, communication achieves better results if each individual relies on the other. Technologies have simply provided additional mechanisms of communication, but they must be used in the right situation. So depending on the objective: a phone can be high in richness, but low in data capacity, while reports are high in data capacity, but low in richness. So, different ways of communication have a different influence on the levels and on the stability of cooperation in the team.
Communication by reference and identification produces low levels of cooperation, but is highly stable.
Communication by lecture, talk-show and audio conference produces intermediate levels of cooperation, but is unstable.
Communication by video and table conference produces high level of cooperation and is highly stable.

The project implication is better achieved when both auditory and visual communication play key roles, producing efficient outcomes.

When video and audio conferencing are not (always) possible, there are other approaches to handle communication:

- To include face-to face – it gives to the team members a sense of how the overall project is going by providing schedules;
- To establish a code of conduct to avoid delays (ex. acknowledging email);
- To not let team members evaporate – the use of calendars allows better control;
- To use communications with charts, pictures and diagrams;
- To develop trust;
- To prioritize communication, avoiding superfluous information;
- To establish a communication centre – that assures that all the team members have the same level and latest information.

It’s important to know upfront that, in a collaborative project, communicating with a virtual team will takes more to the project manager than working with a local team.

Putting a project on the Internet lends credibility to the information, because it’s in the public domain.

Finally, half of the way of a collaborative project success is: communication, communication, communication!

Developing virtual management skills

A serious problem facing project management is: people are used to manage resources and deliverables, but not project work nor project process. Project managers create PERT and Gantt charts to plan the project timeline, they manage inputs and outputs - human resources, time, money, equipment, and the product. However, they often don’t manage work process, which remains a “black box”. Because of this, frequently the consequence is: when something goes wrong, it’s detected too late, creating large extra rework.

The lack of real time to measure the progress of systems leads to failures and to risks that become real threats.

This tends to make project management a reactive process, rather than a proactive one. Leading a collaborative project requires different leadership approach. It can be said that: instead of working in the system (like traditional projects) the leader is working “on the system”.

In collaborative projects the leadership includes intermediating with head offices, building systems to connect data and introducing members to key contacts (external to the team). The collaborative project manager should have a complex profile with skills of: leader, results catalyst, facilitator, barrier buster, business analyser, coach and living example.

The activities of a collaborative project manager include tasks, resources (both present in traditional projects) and tracking – people and project (the challenge in virtual teams).

Tracking is essential for a good collaborative project management because there are:

1) An increase on the structure of interactions;
2) A flexibility in the work environment;
3) A bigger individuality due to the distance;
4) A bigger teamwork - more unity and commitment by the team members;
5) A decrease in the control of individual worker;
6) An increase in the control over the structure of the group;
7) A team members assessment;
8) A compensation for team members.

In collaborative project, a proactive management includes: adequate planning of the entire project; generate sufficient alternatives at the beginning of the project life cycle; risk analysis and management; not abandon the planning just because there’s pressure, adequate analysis and design, and to be on time with planned tasks.

The collaborative project management requires many of the same skills as traditional project management. However, coordination skills are crucial because of the reduced communication of virtual teams. The manager has to abdicate of part of the control, which may be difficult.
Collaborative teamwork

To have an effective teamwork based on virtual teams, the project manager has to recognize that interaction using technology has advantages and disadvantages over the interaction in person - virtual teamwork vs traditional teamwork. So to make virtual teamwork happens there are three major points: effectiveness, the human side and optimization of the time spent together.

<table>
<thead>
<tr>
<th>VIRTUAL TEAMWORK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effectiveness</strong></td>
</tr>
<tr>
<td><strong>Planning</strong></td>
</tr>
<tr>
<td><strong>Acceptance</strong></td>
</tr>
<tr>
<td><strong>Distance</strong></td>
</tr>
<tr>
<td><strong>Sharing</strong></td>
</tr>
<tr>
<td><strong>Periodicity</strong></td>
</tr>
<tr>
<td><strong>Timing</strong></td>
</tr>
<tr>
<td><strong>Integration</strong></td>
</tr>
</tbody>
</table>

**Tools**
Using the good tools helps to work better. To keep on the top of the developments is good. Better tools don’t mean more expensive tools. There are freeware tools.

**Planning**
Planning team meetings and group activities should be around “peak times” (periods where all team members are working at the same time).

“Off peak” times should be used to individual work (in the non-working hours for part of the team).

To keep some functions “near home” is important

**Acceptance**
It’s important to be sensitive to cultural differences

To use simple language encourages communication. It may be easier to communicate in writing.

**Distance**
The distance shouldn’t prevent people from being human

**Sharing**
To share real things helps to know each other better: photos, family and hometown details, emotions and emoticons, real post cards, biographies of team members… Sharing increases the team cohesion.

**Periodicity**
To get together periodically, when it’s possible, gives more opportunities to the project progress.

**Timing**
Good opportunities to be together:
- project kickoffs,
- brainstorming sessions,
- problem solving/conflict resolution sessions,
- orientations for new team members,
- Milestones or completion celebrations.

**Integration**
It’s good to make everyone feel welcome and make social activities together (dinner, lunch, bar…)

Margarida Silva = May 2011
Advantages and disadvantages of collaborative projects

Because collaborative projects are based on virtual teams, their advantages and disadvantages depend on the virtual teamwork. The advantages help to maintain the team members, which otherwise could go away. The disadvantages are mainly connected the lack of real contact, with all the potential problems that virtual contact can trigger. People don't know each other very well, which is important because knowing better the other, it helps to work better and it increases the daily work satisfaction.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Increasing productivity;</td>
<td>✗ Lost of the “human side” of working with people;</td>
</tr>
<tr>
<td>✓ Personal flexibility on time management;</td>
<td>✗ Missing the informal gathering during the work (in front of the “water fountain”);</td>
</tr>
<tr>
<td>✓ Jobs/tasks (or at least parts of the job), can</td>
<td>✗ Less informal and sometimes valuable information (and perhaps not expected);</td>
</tr>
<tr>
<td>be done from anywhere: home, second home,</td>
<td>✗ Lack of efficient communication;</td>
</tr>
<tr>
<td>hotel, public transports…</td>
<td>✗ Missing body language;</td>
</tr>
<tr>
<td>✓ Reducing travel time and costs;</td>
<td>✗ Virtual communication can cause obstacles to good communication;</td>
</tr>
<tr>
<td>✓ People geographically spread;</td>
<td>✗ Failure of the team can result from:</td>
</tr>
<tr>
<td>✓ Extended market opportunities, coming</td>
<td>✗ Management of wide geographically spread teams;</td>
</tr>
<tr>
<td>from the geographically spread team;</td>
<td>✗ Less efficient work, if it’s not possible to collaborate in “real-time”;</td>
</tr>
<tr>
<td>✓ Increasing knowledge transfer coming from</td>
<td>✗ Poor leadership or not physically present;</td>
</tr>
<tr>
<td>the exchanges between team members;</td>
<td>✗ Team members are not competent, or lazy or if they have insufficient</td>
</tr>
<tr>
<td>✓ Recruiting the right qualifications doesn’t</td>
<td>knowledge.</td>
</tr>
<tr>
<td>depend on location (and it can even save</td>
<td></td>
</tr>
<tr>
<td>money);</td>
<td></td>
</tr>
<tr>
<td>✓ Benefiting from multicultural differences.</td>
<td></td>
</tr>
</tbody>
</table>

Collaboration on virtual teams depends on the “type of team”, and project. A project is a temporary effort undertaken to create a product, service or result unique. This is different from an operation, which is ongoing and repetitive. Projects are typically endorsed as a result of one or more needs. These can be a market demand, an organizational necessity, a client request, a technological or legal requirement.
It’s important not to forget that the main characteristics of projects are:

- Temporary – they have a beginning and an end time;
- Planned, executed and controlled;
- Deliver products, services or unique results;
- Developed in stages and continue to increase with a progressive development;
- Performed by people;
- With limited resources.

So project teams conduct projects for a defined period. The tasks are non-routine and results are measurable. Team has decision making authority. And all this influences the advantages and disadvantages of collaborative projects.

**Collaborative project management architecture**

In a collaborative project, it’s important to well define the Collaborative Project Management Architecture. This is crucial to well choose the most adapted collaborative tools to use.

There are four major components in the project coordination scheme:

- The **project repository** serves as a project memory: all information about the project is stored here;
- The **project planning** allows users to plan the project in terms of time and resources;
- The **project execution** supports workflow management by using the project plan. It allows re-planning and re-scheduling.
- The **project control** supports monitoring of the project, allow users to assess the current state and collect metrics.

These four components are present in traditional and collaborative projects. However, the project repository can be an issue in collaborative projects, especially because of the lack or less frequent face-to-face contact. In traditional projects the repository is just there, in the venue where all team members work, and in case of doubt it’s easy to ask for it to someone. In collaborative projects, the team must count on an electronic repository, to be available to team members. And this is a wide issue in the organization as well as a specific problem of the project.

When teams begin to use IT to manage information, they may end up creating islands of information, which can be not shared. In these cases it’s a lost for the project as a whole.

Project members are usually more concerned with completing current project tasks than with capturing and archiving information that may be useful at a later time. So the lack of an electronic project repository also results in insufficient project documentation. It may lead to rework because project members may not be aware that others have already complete the same or a very similar task. It may also result in losing the opportunity to reuse some project artefacts and processes in the future.
The collaborative tools used in the project need to facilitate project analysis, communication, and process monitoring, to enable a proactive management. For its part, proactive management requires an organizational “project memory” that leads to learning: team members can learn during the project and check backwards on future projects. One way to implement an effective organizational project memory is with an electronic project repository. Tools would allow project members to update, view one another’s work progress, collect project measures (e.g. resource spend on the task), and access the current work of others on time.

The long-term effect of lack of a project repository is a loss of organization memory and learning.

Example of Collaborative Project Management Architecture:

![Collaborative Project Management Architecture Diagram](source_image)

Source: Article: “A Collaborative Project Management Architecture”

**Project Presence**

Presence can be defined as the sense of being within an environment naturally. Misunderstandings of project information (due to reduced communication frequency) must be easy to detect and correct. High levels of project awareness must be developed through explicit knowledge representation and to a better shared understanding of project context, using for instance: project dictionary (key terms, concepts, jargons, and methodology), project rules and policies (how to do to better later retrieval) and project context information (boundary, objectives, available resources...).
Collaborative Support Levels
There are at least three modes in which people can collaborate: collected work, coordinated work, and concerted work.

In **collected work**, the group productivity is simply the aggregate of individual efforts, and no coordination among members is required. Processes are completely individual-centric.

In **coordinated collaborative work**, team members make individual efforts, but the success of the team depends on their ability to coordinate their efforts. There are interdependences between activities. Processes tend to be ordered and characterized by hand-offs and progressive integration.

In **concerted collaborative work**, all members must contribute in concert to the team effort, and each member performance influences the ability of all other members to perform.

---

![Hierarchy of Collaboration Diagram](image)

Source: Article: “A Collaborative Project Management Architecture”

Project Cycle
It has four major steps, and each step has its own group activities and deliverables.

Step 1 – a clear understanding of the project: project scope, objectives, key stakeholders, possible gaps, estimating resource needs (e.g. money, time, and personnel), solution alternatives and risk analysis.

Step 2 – a plan to achieve the project goals with: activities, tasks and subtasks, project team, resources, project schedule, progress measurements, risk and change management, communication plan – Project Notebook which consists of all project related documents.
Step 3 – a execution of the project plan with: project progress information, execute risk and change management, update and maintain the Project Notebook.
Step 4 – a final balance of the project with: sign-off criteria for the project process (comparison of the initial project planning with the actual project process).

**Collaborative Knowledge Management**
Knowledge Management can be defined as “the process of acquiring, creating, sharing, and using knowledge - tacit knowledge (to know how) and explicit knowledge (to know about facts and theories)”. Knowledge management is always ongoing and it’s not necessarily an end in or of itself. Knowledge should be maintained as long as it is useful. This is different from a project management which is a finite effort for a specific period of time, and goal oriented.
For this communication is very important, because it allows people to exchange tacit knowledge, to turn tacit knowledge into explicit knowledge (externalization), to turn explicit knowledge into tacit knowledge (internalization), and to integrate implicit knowledge with explicit knowledge (combination).
So knowledge management can be the objective of a collaborative project itself.

**Middleware for Collaborative Project Management**
A middleware architecture for collaboration may be usefully extended to the larger task of project management – to achieve outside project information and collaboration.

**Collaborative tools**
According to the architecture project building and its objectives, there are different types of collaborative tools.
It's interesting to verify that among people there are different points of views of collaborative tools. Usually this perception is directly connected with the personal experience, with the way each one use IT to collaborate.
I will divide the collaborative tools according to their “CO” factor, which means according its functionality. However the market evolution developed tools with several different aspects. And in nowadays we often find tools with mix functionalities.

<table>
<thead>
<tr>
<th>COOPERATION</th>
<th>OBJECTIVE: team members are working to the same objective. They share tasks, documents, methods, information, and knowledge… to achieve an objective.</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMUNICATION</td>
<td>OBJECTIVE: team members are communicating with each other. For this they can use the traditional ways (like phones, faxes…) or new virtual ways (e-mails, chat-rooms, instant messaging…).</td>
</tr>
</tbody>
</table>
COMMUNITY

**OBJECTIVE:** team members are interacting building team’s cohesion. They use tools that allow the trust building, training and learning, non discrimination between team members, the feeling of belonging to the team.

CONTROL

**OBJECTIVE:** project manager is managing and controlling the project, using traditional tools (Gantt, Perts, calendars…) and sophisticated tools (like time tracking…)

Tools resume according with its primary functionality

<table>
<thead>
<tr>
<th>Collaborative project management tools</th>
<th>FUNCTIONALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>COOPERATION</td>
</tr>
<tr>
<td>Human resources and equipment management</td>
<td></td>
</tr>
<tr>
<td>Time and cost management</td>
<td></td>
</tr>
<tr>
<td>Online chat and Instant messaging</td>
<td></td>
</tr>
<tr>
<td>Telephony and Voice mail</td>
<td></td>
</tr>
<tr>
<td>Video and web conferencing</td>
<td></td>
</tr>
<tr>
<td>Data conferencing</td>
<td></td>
</tr>
<tr>
<td>Application sharing</td>
<td></td>
</tr>
<tr>
<td>Synchronous conferencing</td>
<td></td>
</tr>
<tr>
<td>E-mail</td>
<td></td>
</tr>
<tr>
<td>Faxing</td>
<td></td>
</tr>
<tr>
<td>Wikis</td>
<td></td>
</tr>
<tr>
<td>Web publishing and blogs</td>
<td></td>
</tr>
<tr>
<td>Revision control</td>
<td></td>
</tr>
<tr>
<td>Document versioning</td>
<td></td>
</tr>
<tr>
<td>Document retention</td>
<td></td>
</tr>
<tr>
<td>Document sharing</td>
<td></td>
</tr>
<tr>
<td>Document repository</td>
<td></td>
</tr>
<tr>
<td>Evaluation and survey</td>
<td></td>
</tr>
<tr>
<td>Electronic calendars</td>
<td></td>
</tr>
<tr>
<td>Project management systems</td>
<td></td>
</tr>
<tr>
<td>Workflow systems</td>
<td></td>
</tr>
<tr>
<td>Knowledge management</td>
<td></td>
</tr>
<tr>
<td>Social networks</td>
<td></td>
</tr>
<tr>
<td>Online spreadsheets</td>
<td></td>
</tr>
</tbody>
</table>

Note: Many of these tools have other functionalities than those which are ticked.

To list all the possible tools that are available in the market it’s not an objective of technical file. However it’s important to make some specific zooms above some of the most known examples, according to their finalities.
**Sharing documents**

**Google docs** provide free online spreadsheets and document management with a Gmail/Google Account. It’s particularly useful when it needs to have multiple people working on the same documents *at the same time*. It doesn’t have all of the features of other software, but it’s very useful for collaborative editing of documents (including text files). Google Docs can be used as a company “wiki” where anyone in the company is able to add any information to the document.


**Drop Box** is a storage place for documents independent from the hardware used. It guarantees, whenever something is add to the Dropbox folder, that it will automatically update to the other people that share the same folder and also in another computer used. It doesn’t guarantee the changes in simultaneous. If there are simultaneous edits, separate versions are created that then it has to be manually edited and combined.

https://www.dropbox.com/

**Communication**

**Skype** has become the standard for voice calls over the internet (as well as chat, video conferencing and file transfers). It’s free, although video conferencing with 3 or more people requires a paid service. It’s also free to use across a number of devices, including smart-phones, although for commercial reasons operators don’t allow its use using 3G network, but only WIFI network.

http://www.skype.com/intl/fr/home

**GoToMeeting** is a service to allow remote meeting and desktop sharing via internet in real time up to 15 users (or 25 with multiple organiser option). Connected to this services there are also:

**GoToWebinar** which is a service to make web-based seminars, presentations, lectures, workshops, and that allows up to 1,000 users.

**GoToTraining** which is an online service to hold interactive training sessions, with up 200 users.

All these services allow a 30 days period of free trial.

http://www.gotomeeting.com/fec/online_meeting
http://www.gotomeeting.com/fec/webinar
http://www.gotomeeting.com/fec/training/online_training

**Campfire** is a chat for instant messaging designed for groups.

http://campfirenow.com/
Screen sharing technologies

**Jing Project** is a free collaboration tool (with some features paid). It allows taking a screen or video capture of anything on a desktop. Screen captures can be easily annotated, and recorded with voice along with any video to easily explain something. These captures can be uploaded to Screencast.com and they’ll turn it into a simple link where anyone can view the capture.

http://www.techsmith.com/jing/

Other screen sharing technologies are used to share a screen to another user, normally used for technical support or sharing information that needs a visual demonstration on a person’s computer screen.

There are several companies that provide this technology, like Yuuguu, Team Viewer and Dimdim.

http://www.yuuguu.com/home;
http://www.dimdim.com/

Time tracking

**Time Doctor** it’s a time personal and team time tracking to know exactly in what everyone is working on and how long they are spending on these activities. It increases productivity of a virtual team because it helps to prevent productivity problems (such as personal Internet use during work hours). It can also be used for monitoring attendance of a virtual team. It helps managers and team mates to know at any time what other team members are working on. Daily reports to managers show the top priorities of their team and the tasks accomplished in the previous day.

http://www.timedoctor.com/

There are other time trackers: Clocking IT, Klok and Less Time Spent.

http://www.clockingit.com/
http://www.getklok.com/
https://lesstimespent.com/

Project management

**Basecamp** is an online collaboration tool which can be used to manage projects, tasks lists and team communication. It has an increasing number of new collaboration tools that can be applied to mobile phones and smart-phones.

http://basecamphq.com/

**ActiveCollab** has pretty much the same features as BaseCamp, but it is possible to install it in its own server (an one time paid fee).

http://www.activecollab.com/
Learning environment

Moodle (Modular Object-Oriented Dynamic Learning Environment) is a free source e-learning software platform. It’s also known as: Course Management System, Learning Management System, or Virtual Learning Environment (VLE). Moodle was originally developed to help educators create online courses with a focus on interaction and collaborative construction of content, and is in continual evolution. http://moodle.org/

Groupware

EGroupware is enterprise ready groupware software for network. It enables to manage contacts, appointments, to-do tasks, and wiki for a whole business. http://www.egroupware.org/

There’s a zoom into the wikis as a collaboration tool in this technical file. First it’s a good tool for collaborative knowledge management, because of its philosophy. Second, it’s a tool I particularly appreciate. I use it often during my internship, and the more I use it, the more I recognise its value.

Wiki environment

A wiki is a website that allows multiple users creating and editing any number of interlinked web pages using a web browser. They don’t require users to install additional software but they are powered by wiki software. Wikis were made famous by the open source community. They were used as a documentation tool for projects with specific characteristics: flat hierarchical structure of contributors with a short release cycle (often contributions on the wiki). In a wiki every user is a potential contributor and the sum of small contributions makes the documentation complete.

 Wikis are a tool for the externalization of knowledge - when a contributor writes or changes a wiki article on the wiki. This can also lead to individual learning processes, internalization of knowledge - when he reads the wiki contents.

 Wikis were designed upon the premise that content is never complete or error free.

The philosophy and the approach to collaborative editing web sites are usually more important than the technology that supports it. Wikis fulfil the criteria of the web 2.0:

- Participatory, because every user can participate in the maintenance of the content.
- Decentralized, because the responsibility over the content is shared among the users of a wiki;
- Linked, because single pages in a wiki are often only meaningful in the larger context of the entire content of a wiki.
- Emergent, because they are a relatively new technology, they are still being tested.

A wiki is categorized as a subgroup of content management systems. However its structure is not exactly structured, because wikis allow as many editors as possible and give them as much freedom as possible. That’s why the wiki users often don’t have a hierarchy.
In the UNIDO document about “Virtual Teams: Practical Guide to Wikis and other Collaboration Tools”, is made a comparison between different collaboration tools. This comparison shows that wikis have the same advantages than other collaboration tools, but they allow a different organisation on their contents – namely by subject, instead of chronological organization. It allows also a good respect of the contributors, as well as it respects the authorship of the contents by the tracking of the historic of the contributions. 

EditMe and Mindtouch are some of the most well known wikis. 

http://www.editme.com/  
http://www.mindtouch.com/  

<table>
<thead>
<tr>
<th>Tool</th>
<th>Web forum</th>
<th>Blog</th>
<th>Wiki</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed of publication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Ease of publication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Knowledge representation</td>
<td>Chronological organization</td>
<td>Chronological organization</td>
<td>Topical organization as well as chronology of changes</td>
</tr>
<tr>
<td>Team support</td>
<td>Open or closed set of members; moderators</td>
<td>Individual publishing but some tools offer team support</td>
<td>Inherently open to public but can be restricted to closed groups</td>
</tr>
<tr>
<td>Security</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Version management</td>
<td>Not provided</td>
<td>Not provided</td>
<td>Versions and history changes are provided; rollback possible</td>
</tr>
</tbody>
</table>


Collaborative tools choice

Arriving at this point it’s easy to understand that the choice of collaborative tools depends essentially, but not only, on the architecture project building. An important issue is the team that is supposed to work with those tools. This is connected to the team building, which depends, as we saw, on inputs, emotional processes, social processes, tasks and outputs. 

The natural human reluctance to change it’s something to overcome. When the team is not used to the new tool(s), training is a success critical factor, to raise awareness on the new technologies and to improve team engagement. It’s difficult to ask a team to utilize a tool that she doesn’t like, normally because she doesn’t understand it. So training is a relevant issue to take into account because it supports all the other important aspects within virtual teams: communication, cohesion, trust, and especially performance and satisfaction.
At the time of choosing a tool it’s also important to be aware about:

- The budget required - there are free (unpaid) tools, free versions tools, tools with a free trial period, and paid tools;
- The hosting server – there are tools that need an own server and tools that use could computing to be hosted;
- The maintenance costs.

(three points intimately connected).

Another important issue is the communication plan. It has also a big influence on the collaborative tools chosen. There are a range of different technologies to help gather and distribute information. So the communication method should be the one that best fits the team’s needs.

In most of the times it’s worth it to profit from the free trial period to better choose the collaborative tools, according the project needs. This way the accumulated knowledge about the different options of tools allows better adapting of the tool to: the tasks, the methodology, and the team.

Having a collaborative tool in the “cloud” can have enormous transition costs that usually are underestimated or completely neglected (the cost of change) if the service provider closes or changes its rules. In those costs there are included the physical change costs and also the learning cost of a new tool. One of the last cases known was the end of the Clearwiki services.

In my opinion, it’s preferable to adopt a less potent tool with fewer applications that all the users understand and really use, rather than using a top of the line tool which by its complexity awakes a rejection of the user’s community. I also defend that the personal adaptation to a collaborative tool must be progressive. The upgrading of the tools it’s easier when the learning is progressive. This can also be achieved, restricting the user’s accesses to different functionalities, according their needs.

Then, there’s an aspect related to the collaborative work which is not well accepted by many users. When working in a collaborative project, many people have the feeling of working in a “big brother” environment – they are observed and controlled all the time, by everyone. This is a preconception hard to break. Excepting the tracking time tools, which are made exactly for that, the other collaborative tools give more importance to the work itself and to the sum of all contributors.

This is why normally the moodle concept is not completed explored by the community: the blog attached to the platform is seen by everyone, so teachers and students don’t feel 100% comfortable and free to express themselves.

In my opinion, a moodle platform ends to be not so much collaborative as it could be, exactly because of this. It ends to be a platform to depose information.

At last but not least, there’s an important issue to be addressed. For the totality of the collaborative tools, the “example of the leadership” is very important. There’s no use to oblige the use of collaborative tools inside a project/organisation if the leader, doesn’t use them frequently. The example leads to a better acceptance of the new methodology work and tools.
Once again, making a zoom into the wikis…

To use a wiki it’s not easy, when people are not aware of its possibilities. This is intimately connected to the wiki’s philosophy. Making it simple… The majority of people still live with the following preconceptions and common assumptions:

- It’s danger to share the information.
- To share information is to lose power.
- I don’t show my process of work, I only show the final result.
- I’m afraid of showing my mistakes.
- What I know belongs to me. If I share it, I lose my significance inside the organisation.
- ...

To fight against these preconceptions is a long term “battle” on mentalities’ changing. In a wiki the “good” is enemy of the “optimal”. A wiki don’t have the same layout capacity of other tools (word processors or spreadsheets), and people are too much used to the famous Microsoft tools which have a better layout. The most important in a wiki is to understand the human fails and accept the fact that the final appearance of the work will not probably be perfect, but it’s its contents that it matter!!!

Actors and existing business

Collaborative tools are vast (as we saw). The actors play international roles so it’s hard to reduce the scope to a small region. Therefore the perspective presented here only includes some of the most well know examples for the occidental world. Of course there are also examples from the Asia, but it’s easier to identify the examples that are closer from us.

The actors in this mind map were divided: in the first level by the main functionality of the collaborative tool; and in the second level by type of technology. And because the tools have multiple functions, some of the actors appear more than once.

According to the book “Managing Virtual Teams: Effective Practices and Technology Resources”, by Gary Woodill, and Christina Downs (Director, Research and Analysis and Researcher and Writer, respectively of Brandon Hall Research), in 2009 there were at least:

- 41 Web collaboration software products;
- 12 project and team management software products;
- 32 conferencing and meeting software products.

This mind map is forcibly incomplete, even for this geographical area. Its objective it’s not to identify all the actors but their typology.
Innovative projects on the subject that emerge

We can say that collaborative projects have always existed (according to the definitions saw along this technical file). So, on this subject, the innovations emerge in two different domains. In one hand, innovations are connected to the empowerment of the applied technologies and the related supports. On the other hand, innovations appear in the implementation of collaborative projects (and related methods and tools) to areas that are different from the usual and well know ones.

For the first point, the innovations are essentially connected to the tools which are becoming more efficient and with better performance. Collaborative tools are more and more composite products with different functionalities, which can reach a wider audience and more users simultaneously. The main consequence of this is that the choice of a collaborative tool is becoming more and more difficult, and the change of a tool has bigger and bigger costs.

For the second point, the innovations are the application of collaborative tools to projects that traditionally were made at the old fashion. The most obvious examples are the distance learning platforms (e-learning), which have been adopted by a lot of training centres and universities. These institutions usually adopt "moodle’s kind" tools. (The problems behind this were already addressed).

There are other examples of innovative projects that I particularly find more interesting. They are connected to my internship and the University of Strasbourg. In the first two examples, the application of collaborative tools was made to projects where the partner’s project location is no longer a barrier to participate in a project, but is a requirement to be inside of it.

RETS – Renewable Energies Transfer System

RETS project is financed by the INTERREG IV C programme.

The main objective of RETS project is to improve the knowledge and competencies of local and regional policymakers in renewable energies.

This project is particularly targeted to small local and regional authorities (those with less than 25,000 inhabitants). It counts with collaboration of 12 partners spread by 9 different countries in European Union. Between these partners there are local authorities and experts in Renewable Energies.

The conception of the project relied since the beginning on the IT uses. The partners are working together using a wiki where they build a collaborative work, during 3 years (from January 2010 to December 2012). The success already achieved by its Wiki is due to training made to all the partners in the begging of the project.

http://www.rets-project.eu/
IT2Rhine – the transnational IT-Region

IT2Rhine project is financed by the INTERREG IV Upper Rhine Programme.

The main objective of IT2Rhine project is to enlarge the IT excellence in the territory of the Upper-Rhine. The objective is to optimise the general conditions for IT and for IT-related companies, through the analysis of the statistical data and respective political positions, to better promote the region on the IT domain.

This the project counts with 17 partners spread by three European countries: France, Germany and Switzerland. With such number of partners, the use of collaborative tools is very important to build the work. In this project, which ends by December of 2011, the collaborative tool chosen was a wiki.

http://www.it2rhine.com

Master 2 – "Droit et Gestion des Energies et du Développment Durable"

Master in Law and Management for Energies and Sustainable Development

And

Master 2 – "Droit et Gestion de l'Economie Numerique"

Master in Law and Management for Digital Economy.

Both Masters are lectured at the Strasbourg's University, in the Faculty of Law. In both Masters, the option was to use as collaborative tools: dedicated wikis, dedicated blogs and dedicated web conferencing systems (relying respectively in Mindtouch, Wordpress, and GoToMeeting).
According to students’ opinion, the set of these three tools is enough to their needs. The moodle used by the University of Strasbourg has too much functionality options that at the end students don’t use. It could be argued that there’s a lack of a communication tool. The general feeling is: students prefer to use the e-mails address and the e-mail tools they are used to. Once again it’s implicit a “changing cost”, which most of the students are not available to support. (It’s the cost of changing habits, because these tools have no costs to the students).

http://blog.bio-ressources.com/
http://www.economie-numerique.net/

New business ideas evolution to look closely

The expected evolution regarding collaborative tools depends on the technological development of each collaborative tool and broadband network and also on the e-skills development.

It’s a fact, there will be a deficit of e-skills in the future (supply will not be enough to cover the demand). This has a double effect. On one hand, it may happen that the development of tools slows down because there are no sufficient ICT practitioner skills, to do it. On the other hand, although young people feels all right using IT tools, their interest in IT is falling, which means there’s a chance of being badly adapted to these collaborative tools and its development.

So the new business that we need to be aware about will have these issues as background and other assumptions behind.

Examples

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>New business ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of the broadband network</td>
<td>More powerful and quicker collaborative tools</td>
</tr>
</tbody>
</table>
| Development of the collaborative tools | Simultaneous translation when working on collaborative environments.  
  Personalised collaborative tools (not only by the personal functionalities allowed to the profile) – a  
  collaborative tool made to the image of his user. |
| Schemes of lifelong learning       | Collaborative tools that allow enterprises and employees to make a personalised knowledge repository |
Other examples depending on other kind of assumptions:

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>New business ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development of the augmented reality</td>
<td>Collaborative tools to build the databases behind the augmented reality</td>
</tr>
<tr>
<td>Development and broadcast of smartphones</td>
<td>Development of collaborative tools using this support (besides the already existent, like Skype, Twitter, e-mails…)</td>
</tr>
<tr>
<td>Increasing of the last generation ICT tools</td>
<td>Adaptation of training/education modules of learning platforms to these kind of technologies</td>
</tr>
<tr>
<td>Development of the virtual reality</td>
<td>Adapted tools to make experiences in collaborative environments</td>
</tr>
<tr>
<td>Development of the e-health</td>
<td>Collaborative tools in this field to be applied in hospitals and heath care centres.</td>
</tr>
<tr>
<td>e-elderly</td>
<td>Collaborative tools to help the management of all the different aspects in the cares to the elderly people</td>
</tr>
</tbody>
</table>

To find more examples, in which fields of collaboration between people, it’s necessary to see if it makes sense to have an IT tool behind, to cooperate, to communicate, to be part of a community or to control an activity.

**Legal issues to be aware of**

The legal issues to be aware are vast for collaborative tools, because there are a lot of sub-subjects inside. However I would like to start by the main idea to take into account when we are talking about collaborative tools and which is connected to the actors.

Most of the actors are internationally known, and a large part of them have an Anglo-Saxon origin. This means they have an Anglo-Saxon philosophy behind. So the spirit of the collaborative tool reflects also that.

The point is: the Law in the continental European countries is much different from the Anglo-Saxon ones. So in our European reality some of the collaborative tools, covered in this technical file, relieve some aspects that have no importance in the Anglo-Saxon countries. The Europeans have a different conscience of their personal rights, of the protection of their private lives and of the protection of their private and personal data. In this matter, France is considered the most restrictive European country in its Law. So the legal issues related to the collaborative tools rely mainly on these protections.

If we make a check list with the most important topics on collaborative projects in many of its points we find legal issues to be aware about.
<table>
<thead>
<tr>
<th>Group</th>
<th>Topics</th>
<th>Legal issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Communications tools that better fits to the project</td>
<td>1), 2), 3), 6), 7)</td>
</tr>
<tr>
<td></td>
<td>Integrated audio/video/web conferencing</td>
<td></td>
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<td></td>
<td>Integrated social networking tools (e.g. Instant Messaging, Facebook,</td>
<td></td>
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<tr>
<td></td>
<td>Twitter)</td>
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<td></td>
<td>Integrated control tools (e.g. time tracking, calendars…)</td>
<td></td>
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<tr>
<td>Teams</td>
<td>Team’s building based on:</td>
<td>1), 2), 3), 7)</td>
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<tr>
<td></td>
<td>Mutual trust, respect, justice;</td>
<td></td>
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<td></td>
<td>Association among project participants.</td>
<td></td>
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<tr>
<td>Objective and Performance</td>
<td>Clear and shared goals, expectations, purpose, strategies and vision</td>
<td>1), 2), 3), 4), 6), 7)</td>
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<tr>
<td></td>
<td>Leadership by the example</td>
<td></td>
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<td></td>
<td>Commitments keeping</td>
<td></td>
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<tr>
<td>Communication</td>
<td>Focus on visible and measurable results</td>
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<td></td>
<td>Promoted sharing of information</td>
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<td></td>
<td>Contributions linked to the goals</td>
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<td></td>
<td>Tracking contributions and measurable progress</td>
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<td></td>
<td>Using communications and agendas to guide contributions</td>
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<tr>
<td>Monitoring and behavior</td>
<td>Communication plan with specific objectives</td>
<td>1), 2), 3), 4), 5), 6), 7)</td>
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<td></td>
<td>Communication method adapted to the team and to the project</td>
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<td></td>
<td>Communication technology that creates confidence</td>
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<td></td>
<td>Proactive listening engagement and participation encouragement</td>
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<td></td>
<td>Guide communications to achieve a positive and constructive outcome</td>
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<tr>
<td>Innovation</td>
<td>Project conduction promoting respect and support for team members</td>
<td>1), 2), 3), 4), 5), 6), 7)</td>
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<tr>
<td></td>
<td>and their ideas and opinions</td>
<td></td>
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<tr>
<td></td>
<td>Maintaining team member’s self-confidence and self-esteem</td>
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<td></td>
<td>Focus on the situation, issue or behaviour, not on the person</td>
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<td></td>
<td>Maintain constructive relationships</td>
<td></td>
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<td></td>
<td>Admit mistakes</td>
<td></td>
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<tr>
<td></td>
<td>Information sharing (mission, vision, strategies and goals)</td>
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<tr>
<td></td>
<td>Help all team members understand their roles and responsibilities</td>
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<td></td>
<td>Help team members diagnose and solve problems</td>
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<td></td>
<td>Promoting creativity, innovation and flexibility in undertaking new</td>
<td>1), 2), 3), 4), 5), 6), 7)</td>
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<td></td>
<td>goals or opportunities</td>
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<td></td>
<td>Development of positive approaches to the project’s needs</td>
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<tr>
<td></td>
<td>Challenge assumptions that inhibit progress</td>
<td></td>
</tr>
</tbody>
</table>

Source: This table is based on the Blog “Thinking problem management”, Article – Check list for virtual teams. [http://thinkingproblemmanagement.blogspot.com/2008/01/checklist-for-virtual-teams.html](http://thinkingproblemmanagement.blogspot.com/2008/01/checklist-for-virtual-teams.html)

1) Respect and protection of individual rights
2) Respect of non discrimination based on sex, language, culture, country…
3) Respect of the personal data
4) Respect of the intellectual propriety - copyrights, brands and domains
5) Respect of the distinctive signs – brands, domains…
6) Respect of the consumer protection
7) Respect of the liberties and rights on the internet use.
These legal questions, which seem pretty obvious for Europeans citizens, can in fact put in cause the success of a project, because they can cause friction on the use of the tools. And if the tools are no useful, the project management can be very difficult and it can even cause its falling.

General conclusion

The collaborative project management is an endless subject. Most of the times to reach a successful collaborative project is required a previous investment. An investment on money to experience and chose the right tolls to use it, but not less important an investment of time and engagement, because the choice it's not always easy due to all the constraints they have behind.
Identified and hierarchical information sources

✓ Chen, Fang; Romano, Nicholas C.(Jr); Numaker, Jay F. (Jr) and Briggs, Robert O., “A Collaborative Project Management Architecture”, 2003, Arizona and Oklahoma, USA.

✓ Ravenwerks – Global Ethics, Etiquette and Effectiveness - Advice for Americans that travel or do business internationally – http://www.ravenwerks.com/?page_id=344
✓ Rolfes, Mike, “Virtual Project Management, A term paper for MSIS 489” - http://www.umsl.edu/~sauterv/analysis/488_f01_papers/rolfes.htm#Top
✓

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