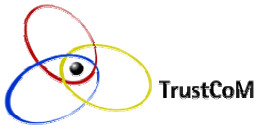

Deliverable

26

Lessons Learned

WP19 General Management

Tomás García, Atos Origin

July 2005

V1

Trustcom

A trust and Contract Management framework enabling secure collaborative business processing in on-demand created, self-managed, scalable, and highly dynamic Virtual Organisations

SIXTH FRAMEWORK PROGRAMME

PRIORITY IST-2002-2.3.1.9

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Atos Origin Sociedad Anonima Espanola,
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Deliverable datasheet

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V.1	31/07/04	All

Table of Content

1 Introduction

The project Trustcom is now 18 months-old and it's time to reflect on the good things and in the bad things that we have experienced and try to extract some lessons learnt that could help us improve our performance as a group, pursuing the planned objectives in a collaborative way and as individuals, enhancing our skills and our personal development.

The aim of this document is precisely to list these lessons learnt in various facets of the project (management level, technical level, communication among partners, etc).

1.1 Trustcom at a glance

Trustcom will develop a framework for trust, security and contract management in dynamically-evolving virtual organisations. The framework will enable secure collaborative business processing within on-demand created and self-managed, dynamic collaborative networks of businesses and governments built on top of the emerging convergence of Web Services, agent and Grid technologies.

Recent years have seen an unprecedented acceleration in the evolution of the Internet as the technological vehicle underpinning the expansion of service provision and inter-/intra- enterprise integration in all market sectors. This brings about the prospect of ad hoc integration of systems across organisational boundaries to support collaborations that may last for a single transaction or evolve dynamically over many years. This sets new requirements for scalability, responsiveness and adaptability that necessitate the on-demand creation and self-management of dynamically evolving virtual organisations (VO) spanning national and enterprise borders, where the participating entities (enterprises or individuals) pool resources, information and knowledge in order to achieve common objectives.

The provision of cost effective trust and contract management solutions for VO ecosystems that enable secure collaborations in such VOs is the most demanding and timely research challenge in this field. In order to achieve this goal, TrustCoM will need to conduct multidisciplinary applied research into complex, adaptive and self-organising systems applied to VO trust and security. The TrustCoM consortium provides a balanced blend of academic and applied researchers, end-user organisations, and enterprises looking to utilise results in products and services. As such it is well-placed to define, conduct and exploit leading edge research that is relevant to the needs of European business, government and society.

1.2 Trustcom in numbers

Number of partners	16
Countries represented	9

Duration	3 years
Current Timeline	Month 18 (Half project)
Total Person-Months	991
Total Costs	10.906.703,92
Total Funding	6.299.998,99
Costs consumed in the first 18 months	2.916.865,05
Estimated costs for the second phase (next 18 months Feb'05-Jul'06)	6.462.595,20
Estimated costs for the last 6 months of the project	1.477.243,67
Deliverables in the first 18 months	23
Deliverables in the second 18 months	40
Number of Work packages	28 (after DoW update)
Delays with deliverables in phase 1 (First 18 months)	D7 Market Study (3 months)

1.3 Structure of the document

This document gathers the feedback, opinion, thoughts and suggestions of the consortium members that consolidates a list of lessons learned in the first 18 months of the project and that, hopefully, will become a good guideline of improvement for the rest of the project.

The method to gather the inputs from the partners was a simple questionnaire addressing 4 relevant topics in the project which can be seen as four different working levels (management, technical operations, conceptual and research operations and communication). The email was the channel to gather the requested feedback.

Following the structure of the questionnaire provided to the partners, this document has been structured in four sections that cover the different topics chosen.

These topics are:

- Management level: issues related to project management (financial statements, contract and legal issues, quality control, work plan, management reporting, IPR, WP structure, management decisions, etc)
- Technical level: basically lessons learned from the technical implementation in Trustcom (AL2)

- Conceptual level: lessons learned from the non technical action lines (good comprehension of the project, framework and architecture, socio-economic and legal aspects, exploitation, etc)
- Communication level: (meetings, communication with other partners, collaborative tools, etc).

The way in which these general impressions are presented consist on listing the positive and negative aspects related to the topic and a final summary table highlighting the principal lessons learned.

2 Management Level

This section will report the problems and feedback gathered from the project partners at management level, i.e. financial statements, contract and legal issues, quality control, work plan, management reporting, IPR, WP structure, management decisions, etc).

2.1 Structure of the consortium

- Experienced partners (in big projects and in IST projects)
- Strong business partners that can take an important role in the future impact and commercialisation of the project outcomes
- Many countries participating. Cultural interchange is a positive experience.
- Many partners did already work in the past in others EC projects. It is very important for the trust and confidence for the future work.

- Small experience with Integrated Projects.
- Administrative management is highly time consuming
- The size of the consortium can become not only an organisational problem (programme management) but also a logistic problem (meetings, etc).
- Project focus and alignment produced several face-to-face meetings and overspending of travel budget in some cases
- Many countries participating. Different cultures, different languages sometimes lead to misunderstandings

Lessons Learned
There is never enough travel budget
Important that many partners already worked together in the past in other EC projects. This strengthen trust and commitment

2.2 Before the start

- A very positive feeling and commitment from the majority of partners from the proposal preparation phase. This is a good start!

- Very long legal discussions about Consortium Agreement took place before the start of the project. These discussions continued when the project already started.
- Consortium Agreement took a long time to agree; that put the project on hold while it was under negotiation, the resulting document is still not accepted by the EC since it includes statements about international affiliate organisations that they do not approve of. It is also unclear that it addresses the serious issues of the project enforcing work on partners they do not want, or taking funding away from partners for failing to complete work to the required standard.

Lessons Learned
Feelings about how the project can progress successfully are initially seen at the proposal preparation phase. In the case of Trustcom it was really positive.
The consortium really should agree the consortium agreement before the contract with the EC is agreed, because by then the lead partner looses control.

2.3 When starting

- A quality assurance plan has been helpful to define responsibilities in internal review of project deliverables (external and internal)
- From the beginning of the project there have been document templates for most of the papers produced (deliverables, letters, fax, etc)
- “To Do” List of all activities in the project shown in the Project Portal
- A List of agreed tools for operation was decided at the beginning (Office 2000, Project Portal, etc)
- Generation of project presentations to better explain and present the project goals and abstract to the world and to brief/induct new workers within the partners

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- Several versions of the internal and external deliverable templates were made in order to capture most of the requirements given by the partners, part of them raised by problems using the template.
- Regarding work plan and work package structure, TrustCoM exhibited a need for restructuring very soon. Instead of targeting the issue immediately, it led to quite a bit of confusion and compensation mechanisms. For instance the number of face2face meetings and conference calls grew rapidly, but those measures were not able to cope with the problem. As a bottom-line, the ability to restructure a project's schedule is a good thing, PM should be able to detect the necessity to do so as early as possible and encourage partners. To avoid a planning "vacuum", PM needs to finalise the new schedule quickly, mainly in order to avoid confusion along which lines of planning partners should work and report.
- We should definitely not have major themes spread across different conceptual, architecture, design and implementation workpackages. Workpackages should be split thematically and not based on the "type of work" required. This cause divisions and imbalances in the project team, as some people were able to move towards development quicker than others, without having reached conceptual or integration agreement.

Lessons Learned
The coordinator must provide templates at the very beginning of the project
The start of the project is always costly for the coordinator when producing all the documentation that will become the basis for future work
Ensure deliverables fall on the review period boundaries and do not cross them
In future, presentations should be consistent with the documents presented for review so that they do not have to be updated.
Workpackages should be split thematically and not based on the "type of work" required
For the second phase of the project management should develop more efficient methods to better integrate/discard the partners who are performing under the threshold. It is a challenge to work with these partners

2.4 Running the project

- A public web site available at the start of the project is also a good tool to develop the project identity. There was a public website available from the proposal phase which then became the official website of the project.
- A good kick-off meeting is important to establish a good basis of cooperation. The following actions became very helpful:
  - All partners attended the kick-off meeting. This provided a good opportunity to know who is who, the role in the project and the expectations

- General rules for performance, communication and initial responsibilities
- A social event is necessary as ice-breaker

WP structure along logical units more sensible than along "tasks".

Implementation and design can be logically separated, but equal knowledge-distribution is mandatory

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A glossary of common terms would have been very useful from the beginning. It was discussed but never put in practice (a model for the glossary was presented for its inclusion as part of the portal but there were no appropriate resources available at that time for the task). This led to different interpretations of concepts in some occasions.

The reporting cycle of deliverables, annual review and next 18 month plan approval, resulting in approved payment appears out of step.

The reviewers found it confusing that they were given presentations at a review that advanced the position over that in the documents they had been sent 3 months earlier.

Lessons Learned
Deliverables with multiple contributors must be also reviewed by an English native person
Empowering partners (WP leaders) enforces commitment in the project

3 Technical Level

This section summarises the feedback and thoughts gathered from the partners basically from the technical work (including technical management) in Trustcom.

- Java is currently far less supported in the web services domain than .NET. Consequences for the project: If Java is less supported then industrial partners' exploitations will be based on other platforms. Results and Java artefacts from academic partners might not be easy to exploit at the "commercial" level.
- The step between conceptual models and design in the project structure causes confusion. Those designing and implementing the system can ignore the conceptual models developed or incorporate them.
- It has taken a long time to agree on common representations for architectures and design details using UML
- In such big projects as IPs it is difficult to align collaborative technical work. In TrustCoM, subsystems and testbed scenarios were identified and development started along those lines. Now, the problem becomes visible, how to integrate the work conducted in separate subsystems.
- On an even deeper technical level, it became apparent that even implementations based solely on comparably mature WS-Standards, such as WSDL, UDDI, and BPEL are not that easily interoperating. Even the specification of a complex message type in a WSDL, when transmitted in a SOAP message requires careful consideration of message encoding. In IP project, design must be done having interoperability in mind; developing for interoperability using incomplete, not compatible standards, may lead to the risk of either "wasting" resources in debugging a particular standard implementation or to not implement some feature simply because it is not supported by available standards.
- We should have been open and honest from a very early stage in the project about our software development resources and expectations. It seems as though the quality of software being produced and standards being affected is not that high, in comparison to the claims of the project. Rather, there is a lot of documentation that informally and verbally describes visions of Virtual Organizations. The move to more formal representations either came too late or was rushed, as we tried to get to a stage of producing software, XML documents and info-sets. We however managed to come up with some very convincing scenarios for how the vast amount of WS standards could be integrated and applied.
- Some of the more important AL2 decisions have not been clearly communicated. One example is at the last AL2 meeting when the Scenarios WP leaders were not told about the demo plans for the two industrial test beds until they began their sessions. This was very embarrassing.

Lessons Learned
The project should make the relationship between conceptual models and design more clear.
We should try to get common UML representations of architectures and design details agreed earlier.
Early "detection mechanisms" to avoid incompatible components later on are direly needed
Interoperability tests need a more timely plan
Partners must be open and honest from a very early stage about the software development resources and expectations
Avoid making important decisions that may affect other parties without previous discussion about intentions and plans.

4 Conceptual and operational level

This section collects all the feedback around lessons learned from the non technical action lines (good comprehension of the project, framework and architecture, socio-economic and legal issues, exploitation, etc).

- There is not a clear view of what a framework is and what should be delivered
- The understanding of the benefits of the game theory work to the rest of the project have not been made clear, so much so that the project and reviewers agree that this line should be dropped in favour of business modelling for dynamic VOs.
- Again, had we split things thematically as opposed to "types of work", we would have had more engagement between computing, socio-economic and legal expertise. We may have perhaps also had even more convincing arguments with regards to innovation. It was as simple as that, work in different action lines progressed more or less without considering cross-action line aspects. AL1 and AL2 showed slightly more coherence, but AL4 was on its own. The danger is of course to end up with orthogonal results in the end, no one can bundle in "the" TrustCoM contribution. Careful monitoring of Action Lines is required and someone should dedicatedly be appointed to do so.
- Through realigning the legal workpackage with the TrustCoM scenarios we were able to identify and focus on the legal issues that were of importance to the rest of the project.
- The legal risk analyses of the TrustCoM scenarios involved people with technical, socio-economic and legal expertise. The participants from other workpackages were motivated and helpful and provided very useful input to the legal work. This multi-disciplinary approach to legal risk analysis proved to be fruitful and facilitated an integrated analysis of security-, trust- and contract-related issues, leading to identification of risks and possible treatments which might not have been identified if the issues had been addressed separately.
- The use of methods and tools from model-based risk analysis, and in particular UML which is also a basis for much of the technical work in TrustCoM, facilitated communication and understanding between the different disciplines involved in the legal risk analyses.
- The initial legal work studied rather abstract questions and was a too detached from the rest of the project. To ensure that the legal workpackage was aligned with the rest of the project, a strong focus was needed on the TrustCoM testbed scenarios, which form a “glue” between the different workpackages and Action Lines.

Lessons Learned
We need to make clear to all partners the definition of what the framework is and what it is delivering
Have a thematic view vs a “type of work” vision will engage more the technical issues with the socio-economic and legal issues
Increase effort in monitoring Action Lines, specially cross-action lines aspects to give a more coherent and consistent view
TrustCoM addresses a problem of a multi-disciplinary nature, however integration of these disciplines can be challenging. This requires not only motivated participants, but also good methods, languages and tools to facilitate collaboration across disciplines

5 Communication Level

This section gathers all the feedback from the project partners around the communication issue, i.e. meetings, communication with other partners, collaborative tools, etc.

- Communication level: Having a source code control system (subversion) for document sharing across project partners is a very helpful thing. People have copies of all necessary documents being pushed to their machines, all partners work on the same documents, all partners see the same documents, people don't have to go to web pages and pull new information and documents. Just like e-mail, documents arrive locally. Being able to link via a URL to the latest version of that document is very helpful, too.

- Document-sharing online meetings support conference call discussions

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- Meetings should be organised on Action Line level
- It was originally planned that the portal would be used as a means of entering exact financial data by administrative staff in partners. Such staff is not willing to do this, so it can only be used to enter approximate effort and cost figures to be used for management planning and not for reporting.
- It may be that the lack of project focus is due to the lack of full project meetings or their poor leadership. However, it is very hard to get the right agenda for all parties to join in with in order to generate focus.
- In the beginning of the TrustCoM project, none of the partners was experienced with IP work. This lead to a considerable amount of "experimenting" among the partners, varying, but growing, numbers of meetings and conference calls were the result. The level of agenda, WP or AL varied as well. In the end, the result which proved most beneficial for project work was regular bi-weekly concalls on Action Line level and WP conference calls on demand in between. Meetings settled to a comfortable number every 1 or 2 month for bigger integration issues. Still, it is difficult to organise meetings with such a large number of participants.
- The Portal used for technical communication in the beginning was quite cumbersome to use and not very useful for collaborative document work with more than 2 or 3 editors. The introduction of subversion improved the situation a lot. Technically, the file repository can be accessed cross-domain from each partner and keeping track of edits is quite simple.
- Several issues could have been solved via email, had we been more "formal" in our discussions as opposed to too much free-form text and face-to-face meetings. The

most effective meetings were those where status updates on different aspects were given. Attempts at doing conceptual or design work over the telephone failed. Face-to-face meetings had too many participants and should have been a bit more disciplined with the agenda and goals to be achieved at each sitting.

- With some notable exceptions the AL2 face-to-face meetings are not very well organised. A better defined agenda, better time-keeping and a stronger meeting management style should be adopted. We need to avoid meetings where there are only debates between a few people while everyone else watches.... Items tend to overrun very badly as well.
- Breakout sessions tend to be much better focussed and so these should be adopted as the norm. The October meeting at EMIC showed how things could be done.

Lessons Learned
Subversion has become a very useful tool for file sharing. Edit tracking functionality and the possibility to work with the same document by several users was one of the reasons to shift from ProjectPortal to Subversion.
ProjectPortal became a collaborative tool for keeping a common agenda, as a repository for final version of documents and as an address book with all the participants in the project rather than a repository of working documents. Subversion showed a better performance for this issue (edit tracking, version control, etc).
Face-to-face meetings should be clearly designed to have the correct number of people and a very specific agenda on goals to achieve.
Break out sessions help focus on the objectives at the meetings
Avoid meetings that turn into a discussion between only a few people