

The Power of True Collaboration in Business Process Modeling

# COLLABORATIVE MODELING

When asked about their experiences with business process modeling many participants in such an exercise will relate stories about long and boring sessions with brown paper, sticky notes that are hardly readable and constantly fall down, a messy arrangement of arrows that reminds you more of a jungle than a well-structured process, and so on. And then these annoying two colleagues who always want to have the word and give others no chance to have their say. Many group members tire long before the day is over.

Door Peter Rittgen

**A**nd what is the consequence? The model is of poor quality and the participants are not very motivated to see the new process implemented. Many improvement and re-engineering projects fail already in the modeling phase but this failure is often seen only much later.

The person who leads these sessions, the facilitator, is certainly competent and does his job well but is he really using the best method, the best way of organizing such a modeling session? Is brown paper really the best tool for group modeling in the 21st century? I think that we can do much better than that.

According to recent research results the main drivers behind successful modeling sessions are a high degree of participation and activity. This means that *every* group member has to contribute in an *active* and creative way. It is not enough to write a few words on a sticky note and let the facilitator do

the rest. Everyone has to become part of a team that creates the model; everyone needs to become a modeler.

But wait, do text books on modeling not teach us that this is impossible? That only highly skilled experts can model? And imagine the chaos we would get if we allowed the whole group to stand in front of the brown paper moving around the sticky notes and drawing arrows all at the same time.

So motivating people to do the modeling themselves and coordinating their efforts are key factors but how can we achieve them? Can we assume that laymen, even if they are motivated, will produce anything useful? Can it be done with the conventional tools of brown paper and sticky notes?

COMA (Collaborative Modeling Architecture) claims to have an answer to all these questions. Let me start with the last point. Case studies in many organizations have shown that virtually anybody can model when equipped with the right tool and after a short introduction of one hour that takes on

the form of a game. The purpose of this game is not only to teach modeling but also to motivate the group members for the learning.

Research in psychology has proved that playing is a powerful intrinsic motivation in human beings. We rather play a computer game 10 hours for nothing than work 1 hour for 5 €. COMA makes use of this fact to motivate people not for learning about modeling alone but also for the real modeling exercise.

But games become only interesting when there is an element of competition in them. It is not enough to achieve some game goal; you also want to be better at it than others. That is the reason why many games let individuals or teams play against each other.

COMA introduces the scoring of individual models as an incentive for participants to go for the best model. The scores are given by the other teams (COMA is usually "played" in 2-8 teams of two). The team with the highest average score is the winner and their model is selected as the basis for the next round. But even the best model will rarely be a perfect model. So before we continue we need to consolidate the winning model. In the consolidation phase the best model is shown to everybody on a large screen and the whole group can make suggestions for improvement based on their own model which they still can see on their computer screens. In this phase there are typically very few changes to the model itself but rather to the layout, which is often not done well by inexperienced modelers.

If we apply these ideas to the conventional procedure for business process modeling we arrive at the COMA method as shown in Figure 1.

I already mentioned above that another key issue is that of tool support. A group of around 10 people cannot work on the same brown paper at the same time. So we need a more sophisticated tool. It is natural to turn to the computer as the most versatile tool. The result is the COMA tool. It requires only a laptop or PC for each team of two and access to a LAN with a shared network drive.

### How does it work in practice?

The tool offers three windows or tabs that allow for different views (see Figure 2). The leftmost tab is called "My Model" and it allows a team member to draw a business process model in the form of an activity diagram of the Unified Modeling Language (UML).

The middle tab is called "Group Model" and it shows the currently valid version of the process model that was accepted by the whole group. A team member can look at it and even copy and paste parts of it but not change it. This is indicated by the grey background.

The rightmost tab is called "Proposal" and here a team member can load a proposal made by another team. In the

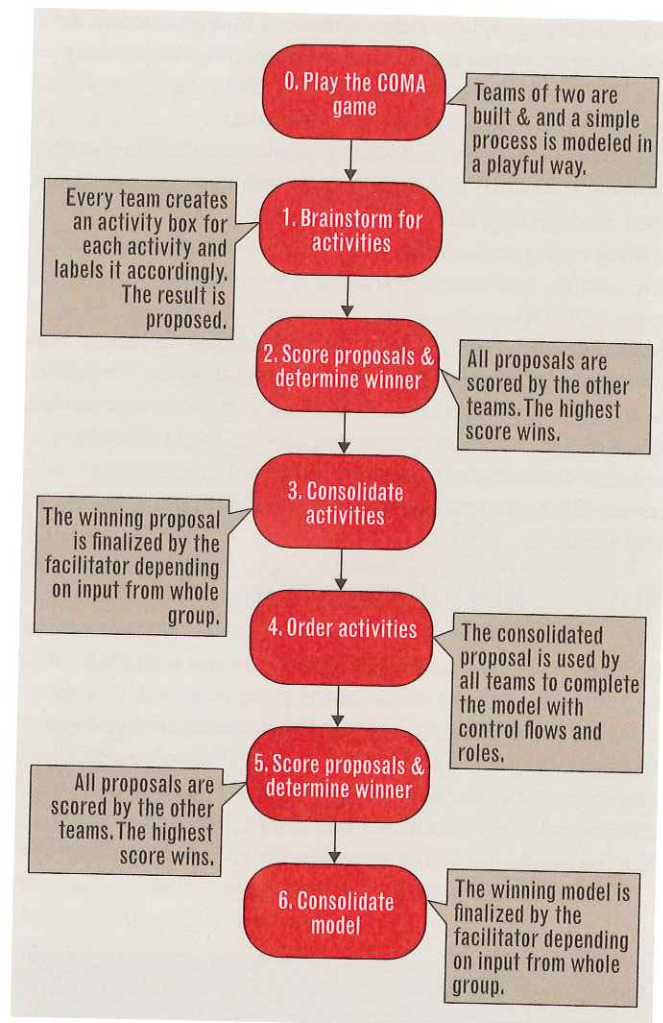


Figure 1. COMA modeling method for business processes.

example in Figure 2 a team consists of only one person and we see that Paul's proposal has been opened.

Paul's proposal describes the way in which he thinks the processing of problem goods is handled at their company. Problem goods are goods where the internal recipient cannot be determined in a straightforward way. In such a case the warehouse worker receiving the goods first searches for information on the recipient on the waybill, then inside the package, then in the order management system, then on the bill of lading, then he phones the purchase department and at last he delivers the package to the recipient.

Paul has worked in the warehouse a few years ago and he is pretty sure that these are the steps taken and he is also confident about the order. So he has drawn a respective diagram and proposed it to the group.

Now, Mary has opened his proposal and is not satisfied with Paul's diagram. She has never worked in the warehouse but she thinks that the process makes no sense in this way.

Will the remaining search steps still be performed when the information has already been found? She thinks not and she

writes a corresponding comment to Paul and also makes her own proposal based on Paul's model but with a conditional exit after each search step that leads right to the delivery activity if the information has been located.

She submits this proposal and the facilitator asks the participants to stop their modeling work immediately and to propose their model if they have not already done so. After that the scoring round commences: Peter gives a score to Mary and one to Paul. Paul scores Mary and Peter, and Mary scores Peter and Paul.

After the scoring the facilitator calls for the participants' attention and everybody is keen to know his score in relation to the others. How good am I? Was my idea the best one? One press of a button by the facilitator and the final judgment appears on the big screen: Mary has clearly won and her model will be the one that is selected for final adjustments (see Figure 3).

## What are the benefits of collaborative modeling?

Everybody accepts that collaboration is necessary in business process modeling and there is also consensus that good collaboration will lead to good results. But what the prerequisites are for good collaboration has so far remained elusive. Focus theory claims that it is the consequence of the group goal coinciding with the individual goals. So if everybody wants a good model, then we will get one. But that does not exactly help us as we still do not know how to get people to really

want a good model. Participants are usually not keen on having a model at all, let alone a good one. And it is hard to motivate people for something that is as abstract as a model and for which they personally do not have a use and for which they can hardly imagine any use.

So if we cannot motivate people for the product of modeling, maybe we can still motivate them for the modeling itself? Can we turn modeling into something that is fun? And this is the place where psychology comes in. Gaming motivates people even if there is no apparent purpose or goal. People play even if there is no money to win. Can we not just turn modeling into a game? And that is exactly what COMA does. It introduces scoring which combines the elements of gaming and competition, both of which are strong stimuli.

Because of that all teams will work very hard on their models and make sure that they give everything they can to increase their chances of being the winners. So in terms of our initial definition of true collaboration: everybody contributes and everybody is also actively and creatively involved in the development of the model. They know that they have to deliver something and they know that it will be judged by their colleagues, and nobody wants to look stupid in the eyes of their colleagues. This is true collaboration.

But there are also other benefits when working in this way: The fact that people work in small teams of two means that many of the discussions that would be ineffective in the large

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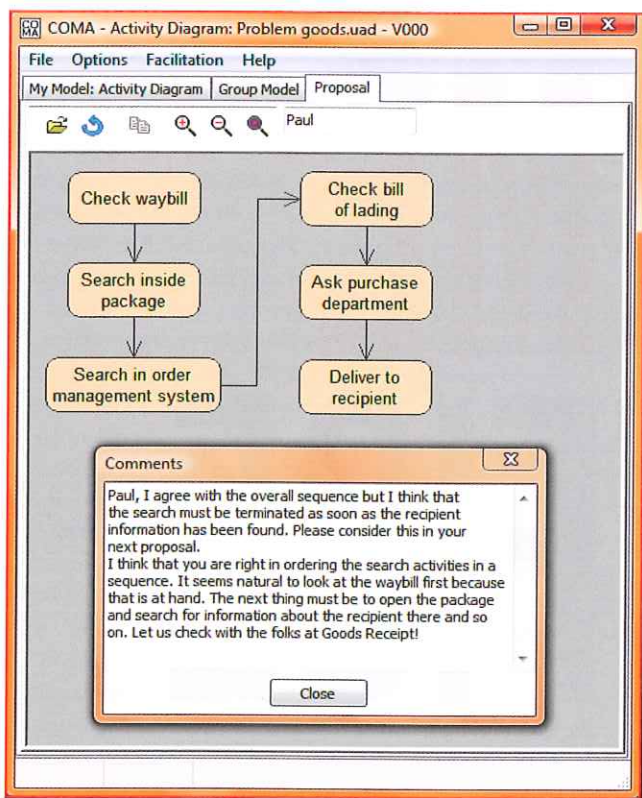


Figure 2. Paul's proposal and Mary's comment.

group are now settled effectively and efficiently in the small teams. Together with the consolidation phase this implies that we can establish a strong consensus on the resulting model, which in turn means that the participants are committed to the result and will support the change project. Experience has shown that the reason for project failure is often the lack of stakeholder buy-in in the early phases. Stakeholders feel that they were not really asked even if they have been involved in the process modeling sessions. The conventional way of working does not really make the

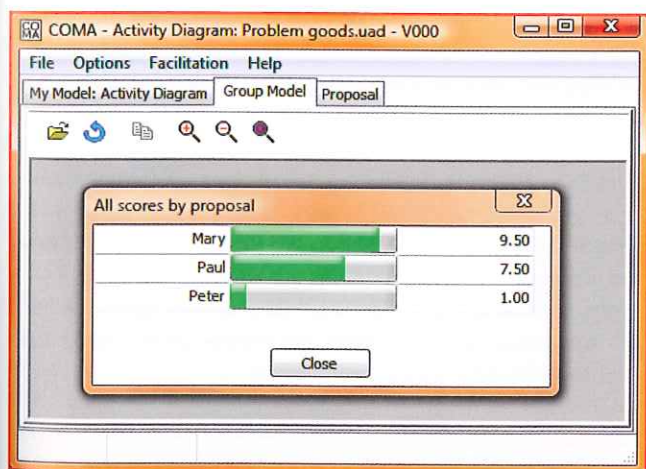


Figure 3. Scores of all teams.

participants active partners in the process design project. As a consequence they are not convinced of the new process design and are not committed to the ensuing change project. This might lead to anything from lack of support to open sabotage of the change. It is this kind of internal resistance that jeopardizes so many change projects.

### And does it really work?

Now, so far all the things that I have said are only claims. They are nice ideas but do they really work in practice? I have built a tool that is able to support collaborative modeling in the way I described above. The tool was first used in simple case studies to improve its functionality and to develop a method that makes process modeling as collaborative as possible. Both tool and method have been developed in iterative circles of testing them in practice and then improving them in the laboratory.

The current version 3.0 can be downloaded for free at [www.COMA.nu](http://www.COMA.nu) together with documentations on the method and the tool as well as instructions for the COMA game. These tests have shown that COMA works and that process managers, facilitators and participants are very satisfied with the results. But strictly speaking (in a scientific sense) they still do not show that COMA works indeed better than brown paper. In order to prove this I have performed a comparative experiment at a large Belgian insurance company. The same group of people modeled two different parts of the same business process, one with the standard brown paper method and the other with the COMA method.

After the experiment all participants had to fill in a questionnaire with 12 questions regarding the quality of modeling and the model. For each question they had to decide whether brown paper or COMA reached a higher quality in the respective category.

The result was overwhelming: In 7 categories COMA performed much better than brown paper, in the other 5 there was no significant difference.

COMA delivered better quality in:

- More & quicker insight into the business process;
- A better shared view;
- A stronger individual influence on the model;
- A stronger individual feeling of ownership of the model;
- A better result;
- A better way of working;
- More progress.

Similar results, even if not quantified, have been reached in many other cases spanning most industries, both in the public and the private sector. I am therefore confident that this approach will also improve your change project.

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