The what and why of modelling business processes

'Communication is the thread of which Organisation is woven'

Preface

This article is about business processes, about creating models of them, and about the application of these models. The presented approach is a particular one, it is a way of thinking that radically differs from current theories, views or approaches. The term 'radical' has to be taken very literal: the roots of the presented notions are different from the roots of current notions, including the notions that are applied in the other parts of this book. The more I am grateful towards Baan Business Innovation for having invited me to write this article. The notions are mostly not incompatible though; the contents of this book should be considered to represent a picture in time of an evolving progress both in theory and in practice.

The presented way of thinking is known in the academic world, and for several years now in practice too, by the name DEMO (Dynamic Essential Modelling of Organiations). Despite (or should I say thanks to?) the sound theoretical foundation of DEMO, it is possible to convey the main ideas without having to dwell on scientific details. These ideas can fairly easily be comprehended, and I invite the reader to work through the next pages in order to do this. The reward is that you will never think again about business processes the way you do now. You will also be stimulated by the provoking points of view, that surely will undermine your traditional points of view.

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1 Introduction and problem statement

There is a growing consensus among the professional people involved in the (re)design and (re)engineering of business processes that one should start these activities from a thorough and appropriate understanding of the object of interest: the business process itself. Quite obviously, every intelligent outsider would reply, how could one proceed otherwise? Surprisingly enough however, decades have passed in which information systems have been built and implemented, in which enormous amounts of money have been spent to acquire hardware, software and human competence, without this consensus. Worse still, it has been 'bon ton' among the IT-people nót to pay serious attention to the organisational context, and, if inevitable, to consider business processes as a kind of information processes. After all, they were the professionals, they knew how to program a computer, did'nt they?
At the same time, the professionals on the organisation side, whom I will call from now on the O-people, have not been powerful enough to offer resistance to the arrogance of the IT-people. For one thing, they often took the authority of the IT-people for granted too. For another thing, they were not able to tell exactly what the IT-people did wrong, because their own understanding of an organisation was also

not appropriate for the problems at hand. Therefore, the arrogance of the IT-people could endure almost up to the present time.

The prevailing model of a business process[1] among the O-people is the *functional* model. It means that one views a system as a black-box with input variables and output variables (of whatever kind), and that understanding the system comes down to knowing the relationships between the input and output variables. The functional view has a long-standing tradition, a.o. in the fields of management science, of logistics, of economics and of business administration.
The functional model is very appropriate and effective for dealing with management issues, for controlling the behaviour of a business process or an organisation. In this respect an analogy can be drawn between a manager and a racecar driver. The racecar driver controls the behaviour of the car, i.e. the values of the output variables, by manipulating the control organs (the knobs, the handles and the steering wheel), i.e. by changing the values of the input variables. So does the manager with regard to the business process he controls. The racecar driver knows best to drive his[2] car in all circumstances, and to get incidentally, if necessary, formidable performance. But if the car gets stuck, if it needs repair or tuning up, the driver backs out. Naturally, you would probably say: that is not his job. All right so, but the point is that even if he wóuld like to do the repair or the tuning up himself, he would not be able to, because his knowledge of the car is only knowledge of its behaviour, it does not tell him how the car works or how it is constructed!
Well then, (re)designing and (re)engineering business processes, e.g. by implementing new information systems or by changing existing ones, is modifying the 'construction' of an organisation, and success or failure is related to the understanding of how the organisation 'works'. The functional model is plainly inappropriate for this purpose.

Among IT-people on the other hand, the prevailing model is a *constructional* model. It means that one views a system as a composition of interacting components. This is the right view of a system if one wants to (re)design or (re)engineer it. In the racecar analogy, the racecar mechanic now comes on the stage. He is able to repair or tune up the car because he has a thorough constructional understanding of it. It is of paramount importance to see that his constructional model of the car is fundamentally different from the driver's functional model. There is basically no correspondance between functional subsystems or components and constructional subsystems or components.
Well then, if the IT-people appear to work from a constructional understanding, let them do the job of (re)designing and (re)engineering the business processes! As everybody knows, they actually do, but as everybody also knows, they often don't do a good job. Of course, there are a number of factors that determine the succes or failure of a business process (re)design or (re)engineering project, and the way one understands business processes is only one of them. However, this factor is a major one, and it happens to be badly recognized, often seemingly neglected.

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1 I will conform to the confusing habit to speak of information <u>systems</u> and of business <u>processes</u>, although business systems are meant. The word 'process' strictly spoken refers only to something evolving in time, not e.g. to composition and structure.

2 Throughout the article, the male gender is used for the sake of convenience only, also in cases where there could equally well be referred to female persons.

As we saw, a functional understanding won't do, whereas a constructional understanding will. However, not every constructional model is appropriate, it must also correspond with the *system category* to which the investigated system belongs. Every IT system belongs to two system categories: it is a physical system and it is a rational system at the same time. Only the latter category is relevant for the scope of this article.
The components of a *rational system* are entities that are able to collect, distribute, contain and derive factual knowledge of some world. They act upon each other by emitting commands to each other to perform rational operations. The components are understood to operate in a rather mechanical way, i.e. a command is a cause for some effect, a stimulus to which there is a fixed particular response. This mechanical understanding of how a system works fits perfectly well for rational systems, thus for information systems. The mistake IT-people make is that they consider a business process as a kind of information system, and consequently apply the (rational) constructional model to understand business processes for the purpose of (re)design and (re)engineering. In doing so they fail to appreciate that an organisation is essentially a social system, not a rational one. The notion of social system will be elaborated in the next section.

To complete the current section, a final remark in defense of the IT-people is in order, since their arrogance largely rests upon ignorance and for this ignorance they are not the only ones to be blamed. Take any text book on the analysis and design of information systems and you will see what I mean. It covers extensively an abundance of technological issues, of which many are not relevant at all (like bit coding schemes and the operation of a central processing unit). Many text books even do not cover properly the understanding of an information system. They apply a so-called flow model, which in most cases is a loosely defined neither-flesh-nor-fish model. At best a flow model is meant to be a functional model of which the values of the input and output variables are presented as items that flow from one (sub)system to the other.
Similar remarks hold for text books on the subject of business redesign and re-engineering. If it comes to understanding an organisation, i.c. business processes, invariably a functional (flow) model is applied. As said before, such a model doesn't help.

2 New ideas for understanding business processes

So the main question is how an organisation *works*, how the advancement (or the getting stuck!) of its business activities can be *explained*. This is the question everyone should be able to answer whose task it is to enhance business processes. As I have shown in the previous section, the current ways of thinking concerning business processes fail to provide an appropriate answer. The functional model fails because it is only about behaviour, and the constructional model (as used by the IT-people) fails because it covers the wrong system category. Anyhow, an appropriate answer to the question can only be found by adopting a constructional model that corresponds to the right category, which is the category of social systems. Such an answer will be developed hereafter.

By way of a small exercise, start to think of an organisation with which you are well acquainted. Think of it in an operation-oriented way, such that you see the activities, the work flows, the people that perform actions, the equipment they use, as well as the machines they operate. Now leave out all organisational structures, like the

grouping of employees into departments and business units (or whatever names these groups have in your organisation), like hierarchical relationships, and like the assignments of tasks to employees. Having done this, you only see persons, the equipment they use and the machines they operate.
Next leave out all means for communication, information storage and information processing, like computers and networks, pencils, paper and filing cabinets. Having done that, you see a collection of persons that talk to each other and that do things, with or without machines. The picture of your organisation you have created now, is called its *OER-shape*, its primal shape or archetype ('oer' is the Dutch word for primal; the reason for using the Dutch word will become clear later). Notice that in this OER-shape many employees do not figure anymore, e.g. the employees that operated and managed the computer applications and the computer equipment, as well as all office clerks.

The new system concept
Let us focus now on the communication between the persons, and ask ourselves the question: What do people do when they talk to each other? Because we dropped all technology, it has become rather easy to discover that the basic meaning of the word 'communication' is the sharing of thoughts between human beings. Thát is the core of the notion of *communication*. Because we are interested in business processes, we pay no attention to communication that is not directly relevant for performing the business activities, so we don't consider e.g. all private communication and all expressions of emotions. This sharpens the picture of the organisation further: we only see persons that communicate about a common world and that execute actions of which the effects are changes in that world. Because this world is the object of action and communication, we call it the *object world*. Likewise we call the collection of communicating persons the *subject system*. The word 'subject' emphasizes the important distinction between the talking persons and the things they talk about; it also stresses that these persons are human individuals, no artefacts.
In addition, it appears to be very convenient to abstract from the individual subjects and instead concentrate on the kind of things they do and communicate about. Let us call such an abstracted role of a subject an *actor*. So from now on we mainly speak of actors that execute actions and that communicate. Every distinct actor role can be performed by one or more subjects, and every subject can perform one or more actor roles.

The communication that is left can be divided in two kinds: informative communication and performative communication. By *informative* communication is meant the dissemination of knowledge about the object world. It consists basically of questions and answers. The distinguishing property of informative communication is that it does nót change the object world. By *performative* communication is understood the negotiations for the purpose of getting things done and the negotiations for achieving agreement about results of actions. Performative communication consists of requests and promises, of declarations and acceptances, but also e.g. of declinations (of requests) and rejections (of declared results). The distinguishing property of performative communication is that it is aimed at bringing about changes in the object world.

In both informative and performative communication, but most significantly in performative communication, the subjects are engaged in mutual commitments. The most prominent commitments are the request (for action), the promise (to act), the declaration (of an action's result) and the acceptance (of an action's result). With the notion of commitment we are at the heart of the category of social systems, of which

organisations are a special kind. A *social system* is a system of which the elements are social individuals (human beings) who enter into and comply with commitments. This is the *working principle* of social systems, thus also of organisations.
The entering into and complying with commitments takes place at the background of shared norms and values, and is directly related to the notions of *authority* and *responsibility*: every subject is allowed only to enter into (and consequently comply with) commitments for which it is authorized, and it is held responsible only for those commitments.

The new transaction concept
Changes in the object world are brought about by executing particular actions. Let us call these actions *objective* actions. It is useful to distinguish between two classes of objective actions: material actions and immaterial actions. Examples of material actions are the manufacturing and the transportation of goods. They need no further explanation, you can see these actions being executed and their results being brought about, don't you? (Wrong! What you see does not count as being brought about, as I will explain shortly.) Examples of immaterial actions are making a decision, passing a judgement and determining a position. The problem with immaterial actions is that the results can not be observed, they can only be made manifest by means of communication! Therefore, let us look more closely to the relationship between objective action and communication.

It appears that an objective action is always embedded in communication, more specifically, that it is preceded by a conversation and that it is succeeded by a conversation. Both conversations are performative and are carried out by the same two actors. The aim of the first conversation is to reach agreement about a future objective action to be executed by one of the actors, the aim of the second conversation is to reach agreement about the result of that objective action.
Let us call this pattern of the conversation for an action, the execution of the action, and the conversation for its result, a *transaction*. The three phases of a transaction have been named order phase, execution phase, and result phase. Figure 1 summarizes the following explanation.
The order phase, or *O-phase* for short, of a transaction starts with a request of one of the actors towards the other one. Therefore, the requesting actor is called the *initiator* of the transaction, and the other one the *executor*. The order phase ends successfully with the promise of the executor. It may however also end unsuccessfully, and in either case there may have been a lot of communication back and forth before it ends.
The execution phase, or *E-phase* for short, consists of achieving the (material or immaterial) result the actors have agreed upon by the executor. It may very well, and often does, involve the initiation of other transactions of which the results contribute to or collectively constitute the final result.
The result phase, or *R-phase* for short, starts with the declaration by the executor of the transaction that the agreed upon result has been established and ends successfully with the acceptance of the result by the initiator. Like the order conversation, this conversation may have an unsuccesful termination, and there may be a lot of communication back and forth before it terminates.
(Note. The first letters of the phase names constitute the word 'OER' which has in the Dutch language, as we have seen, the meaning of primal and original.)

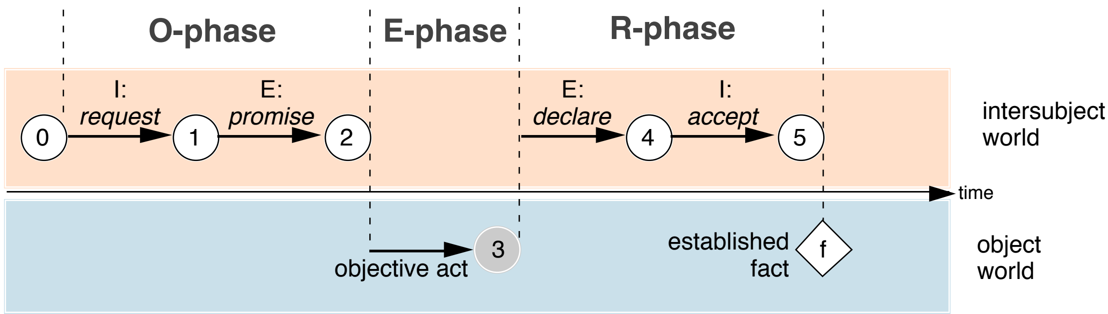

Figure 1 The transaction model

It is important to notice, as figure 1 demonstrates also, that the result of a transaction is not achieved after the objective action has been executed, but only when the result has been accepted by the initiator. This necessarily holds for immaterial actions, but it appears also to hold for material actions (think of examples in your own organisation that indeed not the physical establishment of a change counts as a new fact, but the authorized declaration of it and the corresponding acceptance). Once more this illustrates that an organisation is essentially a collection of social individuals, of human beings that enter into and comply with commitments towards each other. What these subjects constitute in their communication is what really counts. Therefore

In figure 1, the notion of *intersubject world* is introduced also, complementary to the object world. The state of the intersubject world at some point in time is constituted by the collective statusses of all current transactions. The progression of these transactions consequently is the only useful meaning for the term 'work flow', and monitoring work flow comes down to monitoring the succession of transaction statusses.
A state transition in the intersubject world is said to be the effect of an intersubjective action, analogous to object world and objective action. An *intersubjective* action thus is identical to an act of performative communication.

The transaction concept as defined, is the universal building block of every business process. Conversely, a *business process* is a coherent structure of transactions. The most important thing to keep in mind about business processes, is that they are sequences of commitments between authorized and responsible social individuals. This insight at the same time explains the catch phrase right after the title of this article.

The new levels of abstraction

Among the IT-people it is very common to consider information systems and business processes at distinct levels of abstraction. A very wide-spread distinction is the one between the content and the form of information (in linguistic terminology: between semantics and syntactics). This distinction is best known as the logical-physical or the functional-technical distinction among IT-people. Less common is the distinction of a level of abstraction at which one investigates the purpose and the effect of communication (in linguistic terminology: pragmatics). These distinctions are of great help, provided they are drawn clearly and consistently. Unfortunately, here we touch a weak point in many current methodologies. Practice shows that the distinctions are not clear and therefore not applied consistently, which can make things even worse. Hereafter three levels of abstraction are distinguished, all of them clearly defined and clearly distinct from each other. To explain them, let us undertake another exercise.

Think again of your organisation, and leave out again all organisational structures. Then look successively through three pairs of glasses you have at your disposal now: a pair of B-glasses ('B' from Business), a pair of I-glasses ('I' from Information and Intelligence), and a pair of D-glasses ('D' from Document and Data).

Looking through the B-glasses you see what we had found in the first exercise already as the subject system of the organisation, as well as the corresponding intersubject world. The actors you see carry through transactions of which the results are changes in the object world (you know this, but you don't see the object world!). These transactions, as we have found, constitute the business processes.
The actors observed are exclusively *social* actors (human beings who only exploit their social capabilities, who enter into and comply with commitments). You do see them perform intersubjective actions, like requesting, promising etc., but you do not see hów these actions are performed, e.g. whether by the utterance of particular sentences or by producing other signs. The only relevant point is that they just make requests, promises etc. Because what you see now constitutes the essence of the organisation, this level of abstraction is called the *essential* level.

Looking through the I-glasses, you don't see the social actors anymore. Instead you see new, other actors (recall that actor is a role concept; you might see the same persons, but now in a different role). What you see them do is exchanging messages. However you only see the contents of the messages, not their form, so you are not able to tell wether they are spoken or written, or in what language they are expressed. In other words, you are only aware of the meaning of these messages. You also notice that these actors memorise facts (both in the object world and in the intersubject world) and that they calculate or derive new facts from existing ones. This level of abstraction is called the *informational* level.
The actors you observe are exclusively *rational* actors. Some of them are human beings who exploit their rational capabilities, others are artefacts, e.g. computer applications. Apparently and contrary to the essential level, the actor roles at the informational level do not need to be performed by human beings
On closer look you see that these I-actors not only exchange messages among themselves but also with the B-actors on the essential level. You observe that the B-actors use the I-actors as information agents and as oracles.
Looking through the D-glasses, you see again new, other actors. Immediately you notice that there are far less human beings that perform the actor roles at this level than artefacts. What all of them do is handle physical things of various substances that carry information. Let us call all these things documents, and let us consequently call this level of abstraction the *documental* level.
The actors thus are physical actors, they only exploit physical capabilities with regard to the documents. You see them transport documents, store documents, retrieve documents, copy documents and even destroy documents. The actors do not seem to know what the contents is of the documents they handle. Moreover, they also don't seem to care. On closer look you notice that they also receive documents from I-actors , and that they let these I-actors acquire knowledge of the contents of documents.

For the remainder of this article we will only investigate organisations at the essential level of abstraction, in other words we will only deal with business processes. We know that to make business processes really operational, there need to be some 'realisation' at the informational level as well as some 'realisation' at the documental level. However these 'realisations' fall outside our scope.

3 Elaboration and application of the modelling framework

The purpose of this section is twofold. On the one hand the modelling framework as presented in section 2 will be elaborated. In particular it will be shown how an *essential model* of an organisation, i.e. a model at the essential level, looks like, and how it differs from the flow model, that is commonly applied in practice. On the other hand it will be shown how an essential model can serve the (re)design and (re)engineering of business processes, using the well-known Ford Case as an example (as brought to the front by Michael Hammer in his paper 'Reengineering Work: Don't Automate, Obliterate', Harvard Business Review, 1990).

The common way in almost all methodologies or approaches to model the interaction between business functions, is to assume that there is a flow of things (of information items or of physical items) from one function to the other one, as illustrated in figure 2 (the business functions are represented by boxes, the flows by arrows). The example shown deals with orders issued by the purchasing department of a customer to the order processing department of a supplier.

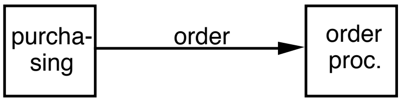

Figure 2 Flow model of the interaction between business functions

Some people think that a model like the one presented in figure 2 is perfect, other people, especially information systems analysts, think it's to simple, there should also be on or more flows in the opposite direction. Figure 3 exhibits an extended version of the flow model of figure 2. It contains two additional flows, both from the order procesing department to the purchasing department. One flow consists of confirmation messages, the other one consists of declination messages. A confirmation message conveys that the order is accepted, a declination message conveys that the order is not acceptable (for whatever reason).

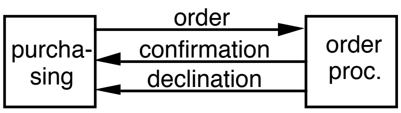

Figure 3 Extended flow model

The goods (or the services) that the order is about have to be delivered some time. In order to model the delivery activity, one usually adds new business functions, for instance those presented in figure 4: shipping on the supplier side and material control on the customer side. There are two flows: deliveries from shipping to material control and signed receiving notes in the opposite direction. Of course there are connections between order processing and shipping, and between purchasing and material control, but I leave these out for the sake of convenience.

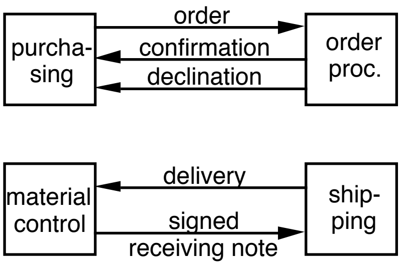

Figure 4   Flow model of the order process and the corresponding delivery process

For many professional people this model is fully acceptable as starting point for the redesign or reengineering a business process. Not so for you anymore, because you know better by now. You have at least the following questions or comments:

- Since the order process and the delivery process are closely related, why are they modelled as separate processes?
- Could both of them be called a business process? Why (or why not)?
- What happens if no signed receiving note is sent by the material control department to the shipping department? Is the delivery process considered to be completed or not?
- There may be more distinct types of communication between the business functions shown. On what grounds are they not included?
- The two processes shown clearly belong to the same (essential) transaction type. Since four 'actors' are exhibited the model clearly does not abstract from organisational structures.

To this list, which is certainly not exhaustive, I add a comment that pertains to all the listed ones. The comment is that there do not exist business flows! Recall the OER-shape of an organisation. What did you observe? You observed negotiations between people, you observed communication back and forth between people, but you did not observe flows. There are no flows at the essential (business) level! There are even no flows at the informational level! You may conceive, if you like, of flows at the documental level, because that level is of a physical kind, and physical things may be said to flow (therefore it is perfectly allright to apply flow models for solving logistic problems).

So, let us drop all flow models, once and for all, if it comes to represent the understanding of business processes. As we saw, the building block of business processes is the transaction concept at the essential level of abstraction. This transaction is really the elementary building block, the atom. A business process cannot consist of less than a transaction, although the complexity and duration of transactions may vary largely. I have also shown, between the lines, that the 'realisation' of a transaction can be widely dispersed across organisational structures and physical locations, and that several persons, several pieces of equipment and several machines may play a role in the completion. The foremost attractive property of the essential level is that it is possible to abstract from all these details in which one can easily get lost, while keeping clear sight on what is essentially going on. Figure 5 exhibits a so-called Communication Diagram, as applied in the DEMO methodology. The circle represents the transaction process, the sequence of intersubjective acts that lead to the completion of the transaction. It is an instantiation of a particular transaction type, in this case indicated by T1. The diamond 'behind' the circle represents the fact in the object world that is the result of the succesful completion of a transaction of type T1. The two boxes represent the two actors involved. The executor is indicated by the 'open arrow point'. Thus actor

A1 is the executor, and actor A0 is the initiator of transaction type T1. Facts of the type F1 can be expressed by a sentence like 'The goods concerning order X are delivered', where X is a variable of which the instances are particular orders, c.q. particular transactions. What is represented by the diagram in figure 5 covers all that was meant to be expressed by figure 4 and even more, as we have seen.

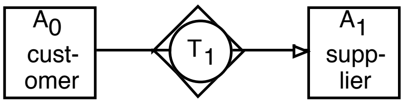

Figure 5 Communication Diagram of transaction type T1: order delevery

Lastly, I will show how the Ford Case would be modelled using the DEMO framework, and how this model can be used for the purpose of (re)design and (re)engineering (only at this point in time I am able to assign useful distinct meanings to these distinct terms, as I will do shortly).
To start, I cite the description of the business activities concerned as provided by Michael Hammer:

'When Ford's purchasing department wrote a purchase order, it sent a copy to accounts payable. Later, when material control received the goods, it sent a copy of the receiving document to accounts payable. Meanwhile, the vendor sent an invoice to accounts payable. It was up to accounts payable, then, to match the purchase order against the receiving document and the invoice. If they matched, the department issued payment.
The department spent most of its time on mismatches, instances where the purchase order, receiving document, and invoice disagreed......
One way to improve things might have been to help the accounts payable clerk investigate more efficiently, but a better choice was to prevent the mismatch in the first place. To this end, Ford instituted 'invoiceless processing'. Now when the purchasing department initiates an order, it enters the information into an on-line database. It doesn't send a copy of the purchase order to anyone. When the goods arrive at the receiving dock, the receiving clerk checks the database to see if they correspond to an outstanding purchase order. If so, he or she accepts them and enters the transaction into the computer system. (If receiving can't find a database entry for the received goods, it simply returns the order.)'

According to Hammer, Ford opted by the chosen solution for radical change, and achieved dramatic improvement. To illustrate this, it was mentioned that initially there were 500 people working at the accounts payable department, and that a 75% reduction of this figure was achieved after the solution had been implemented.
Now, let us analyse this case briefly. To start with, figure 6 exhibits the essential model of the business activities concerned.

transaction type	result fact type	initiator	executor
T1: order delivery	F1: *order O is delivered*	A2: Customer	A1: Supplier
T2: order payment	F2: *order O is payed*	A1: Supplier	A2: Customer

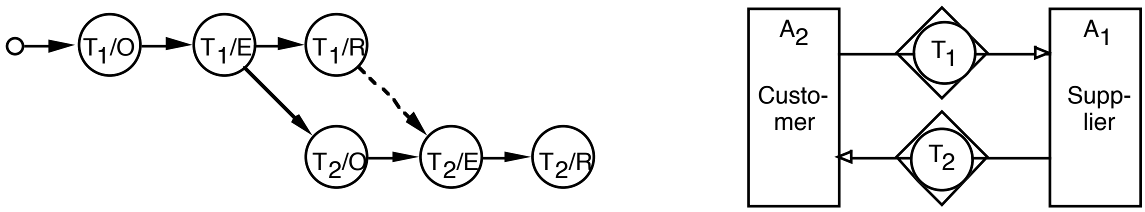

Figure 6 The essential model of the Ford Case

On top of figure 6, a so-called transaction table is shown. It lists the distinct transaction types, including the specification of the resulting fact types, as well as the specification of the initiator and the executor of each transaction type. In the Ford Case there are two transaction types: order delivery, and order payment. In the lower right corner of the figure the Communication Diagram is shown, which can be derived directly from the transaction table. The lower left corner contains a new kind of diagram, namely the Process Diagram. In this diagram each of the two transaction types is divided into its three constituting phases, the O-phase, the E-phase, and the R-phase. The solid arrows represent initiation relationships. Their meaning is that the process or activity at the point side is started from the process or activity at the shaft side. As we knew already, for every transaction it holds that the E-phase is started from the O-phase, and that the R-phase is started form the E-phase. This is shown by figure 6 for the transaction types T1 and T2. Also shown is that the O-phase of transaction type T2 is started from the E-phase of transaction type T1, and that the O-phase of transaction type T1 is started externally (this is indicated by the small circle). Because of the initiating relationship between T1 and T2, they constitute together óne business process.
The dotted arrow from T1/R to T2/E represents a conditional relationship. It means that T2/E can only be completed after T1/R has been completed.

In plain language, the diagrams in figure 6 tell us the following. At the essential level, the activities in the Ford Case are as presented. There are two connected transaction types that together form a business process. This process is the same after the radical (!) change in Ford's way of working as it was before. Therefore, what has been done is only a matter of re-engineering, nót of redesign. There would be question of redesign if the Process Diagram would have been changed. An example of redesign would be that T2/O is started from T1/O. In principle, this shortens the lead time of the total process. However, since T2/E has to wait for the completion of T1/R, this measure probably wouldn't help very much.

So, Ford has re-engineered its business process. It has done this at the informational level by agreeing with the vendors that the receiving of the goods of an order not only counts as the performance of the declaration act in the order delivery transaction, but also as the performance of the request act in the corresponding order payment transaction! Hammer's rather exalted statement that Ford has become 'invoiceless' thus is not true, it never could be the case (provided the vendors keep wanting to be payed for their deliveries). You are now able to understand and explain why the implemented changes work. You can also be

confident that Hammer nor the Ford people understood what has been achieved as clearly and profoundly as you do now!
Lastly, at the documental level, the shuffling around and filing of paper documents is replaced by the 'shufling around' and storing of database entries. This is perfectly allright, at the same time it is nothing new. It is what IT-people do for a long time already.

5 Conclusion

Modelling business processes is a prerequisite for (re)designing and (re)engineering them. Current approaches to modelling business processes however do not embody an appropriate understanding of the notion of business process, and consequently do not provide an effective help. The presented modelling framework of DEMO does offer an appropriate understanding. This has been explained and illustrated extensively.
Because of its firm theoretical foundation, all relevant notions, like e.g. the notion of business process itself and the notions of (re)design and of (re)engineering, can be defined clearly and precisely.
It has been illustrated also that the framework can be an effective help in various activities concerning the optimisation of business processes, thereby applying in an optimal way modern information technology.

In order to definitely get even with the IT-people, the O-people need to adopt an engineering attitude towards their object of interest: the organisation. Not only information systems, but also organisations are entities that can be (re)designed and (re)engineered. Actually, an organisation is also an artefact, be it a special one, namely one of which the elements are subjects: human beings in their role of social individuals. Organisations work because these subjects enter into and comply with commitments towards each other. Anyone who understands this working principle, and who also understands that the business transaction is the atomic building block for constructing business processes, has the ability to work as a real organisation engineer.
Let me finish by calling on the O-people who practise the (re)design of business processes and the IT-people who practise (re)engineering to become OT-people, and by calling on the qualified academic community to further develop this discipline of organisation technology.