Functional Analysis for Document Design

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INTRODUCTION

Design is the development of new artifacts under constraints. Constraints range from obvious ones such as required functionality, cost, and safety to more subtle ones such as originality and (conversely) compatibility with existing practices. (Ormerod 2000, p. 182)

Functional analysis is a conceptual tool to be used in the first stage of the document design process. Given Ormerod's definition of design, we may expect that the design process begins with articulating and evaluating different kinds of constraints, and weighing them against each other; and this is the kind of work functional analysis is meant to help with. However, we do not sharply distinguish among stages in the design process. In fact, the entire design process can be seen as a progressive specification of constraints, in which global requirements are replaced by more and more detailed representations of what the document must look like (Chevalier and Ivory 2005). Still, the start of this process is of extra importance. It is here that a careful look at the functional context of the document will be most profitable.

A central component of this context is, of course, the communicative purpose of the document. Purposes do not only guide the design team through the collaborative planning and drafting of a document, but may also serve as a standard for measuring success when it comes to reader-testing drafts of the document.

Although the importance of purposes in communication design has already been emphasized by Anderson (1987), it is often unclear how communicative purposes should be described. For instance, in a study largely dedicated to defining communicative purposes, Askehave (1999) has described one of the main goals of company brochures as presenting the company as a qualified partner. In her study, Askehave rightly points out that we need to know more about the context to be able to analyze the purposes of a document. But what should we look for when studying this context? And is presenting the company as a qualified partner a helpful description of such a purpose?

We do not believe it is. According to Anderson (1987), purpose descriptions should concentrate on the final result that is aimed for when readers use the document. This means that the purpose should not be described in terms of author intentions, such as

I will advise the manager to accept the new policy.

Rather it should mention the desired effects on readers. But what kind of reader effects? Which of the following statements is most useful for document design?

The manager is willing to implement the new policy.

The manager proposes the new policy in the management team.

In 2004 the new policy will be the standard procedure in the whole company.

In the first part of this article, we will distinguish between individual cognitive and behavioral effects, and organizational results. We will also show how a main document purpose may be decomposed into a hierarchical network containing sub-goals.

But a functional analysis needs to do more than describe single purposes. Single communicative purposes are an important source of design constraints, but not the only.
source. Often the most critical questions in document design concern the consequences of combining different purposes and different audiences in the same document, and of combining purpose-related considerations with other considerations like financial and legal ones. These issues can best be discussed by analyzing the multiple constraints that may be derived from different components of the functional context. That will be shown in the second part of the article.

THE COMMUNICATIVE PURPOSE
In our view, the communicative purpose of a document should be analyzed in terms of four elements:
1. The intended communicative effect as a cognitive result
2. The topic(s) of the document
3. The target group(s) of the document
4. The organizational goal as a social result

An example of a communicative purpose for a patient information leaflet would be:

Patients suffering from AIDS know how to correctly administer Drug Y to achieve an effective use of the drug, so that the number of people with AIDS is reduced.

**Intended communicative effect:** Knowing how to

**Topic:** Administer Drug Y

**Target group:** Patients suffering from AIDS

**Organizational goal:** More effective use of Drug Y leads to a reduced number of people with AIDS

We will now discuss each of the four elements of our framework in more detail.

**Communicative effect**
Every communicative effort can be directed at three kinds of effects:
- A cognitive change in the mental state of the reader, who learns something or forms a particular attitude
- A change in the reader's behavior, such as handling a machine or buying a product
- A change in social reality as a result of the collective behavior of readers, such as the sale of a product

These different kinds of effects can be seen as links in a chain. A change in the mental state of a reader may result in changed behavior. And as soon as many readers perform this new behavior, it results in a change in social reality. Communicative effects focus on the first of these three effects. In our view, the intended change in mental state (or cognition) of the reader is the only effect for which the communication team has some kind of responsibility. If the readers of a document do not show this cognitive change, then the message did not come across, for which the communication team might be blamed. Why did the document not enable the readers to learn? Or why did the document not succeed in leading readers to accept a statement?

The other two effects can be seen as consequences of the cognitive change. Nevertheless, a cognitive change does not necessarily lead to a change in behavior and social reality. There may be other factors that prevent readers from changing their behavior. In AIDS campaigns, for example, communication teams may well succeed in bringing about a cognitive change (people know about safe sex and have a positive attitude to it), but if the target group has no money to buy condoms or when shops in the neighborhood refuse to sell them, this cognitive change will not result in a change in behavior. Technical writers are not to blame here. In this case, the campaign managers would have been responsible for being aware of the price of condoms or the attitude of shopkeepers and the effects these would have on their target group. This demonstrates why it is so important to clearly identify communicative effects: evaluators of campaigns should focus on all three effects, but document evaluators should concentrate on communicative effects only.

We distinguish six categories of communicative effects (see Table 1).

As for the first two categories in Table 1, we should note that although informative purposes are characteristic of documents for which information is a purpose in itself, information often also allows readers to make an assessment, on the basis of which they make a decision. For instance, information about cars often serves this purpose; and the same applies to stock market reports (Should I buy or sell certain stocks?) and weather reports (Will the weather be good for fishing tomorrow?). Similarly, instructive, persuasive, and motivational purposes are often achieved by giving factual information. Later we will see that this is not the only example of subordination relations between document purposes.

Let us now discuss the way purpose descriptions should be phrased and return to our earlier example, repeated below, which belongs to the instructive category (its intended cognitive effect being knowing how to take the drug).

Patients suffering from AIDS know how to correctly administer Drug Y, resulting in an effective use of the drug, so that the number of people with AIDS is reduced.

The focus on the intended cognitive change implies
TABLE 1: SIX KINDS OF COMMUNICATIVE EFFECTS

<table>
<thead>
<tr>
<th>Label</th>
<th>Intended cognitive effect</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informative</td>
<td>Factual knowledge (knowing that . . .)</td>
<td>News-report</td>
</tr>
<tr>
<td>Supporting assessment</td>
<td>Knowledge needed to make an assessment (being able to decide)</td>
<td>Test report</td>
</tr>
<tr>
<td>Instructive</td>
<td>Knowledge about actions (knowing what to do and how)</td>
<td>Software manual</td>
</tr>
<tr>
<td>Persuasive</td>
<td>Attitudes (believing that . . ., evaluating x as . . .)</td>
<td>Political pamphlet</td>
</tr>
<tr>
<td>Motivational</td>
<td>Intentions (intend to, be willing to . . .)</td>
<td>Advertisement</td>
</tr>
<tr>
<td>Affective</td>
<td>Feelings (for example, feeling concerned, amused, offended)</td>
<td>Letter of apology</td>
</tr>
</tbody>
</table>

that the communicative effect should not be described as

Giving advice and instructions about the use of drug Y

Giving advice is not something that happens in the mind of the reader. Giving advice simply describes the task of the document producer. This may seem a rather subtle point, but it is important for two reasons. First, a description in terms of effects will help the design team to make a more accurate analysis of the document’s requirements. In this case, we should not ask ourselves What should we do to give advice? but rather What should the reader know to be able to use this drug in the right way?

The second reason is related to usability testing. If the producer wants to evaluate a prototype of a document, the evaluation team needs exactly the same reader-focused perspective. The basic question is After reading this document, will the readers know what they must do to use the drug correctly? This means that the result of the functional analysis is also the input for an evaluation study. Purposes defined in terms of communicative effects are the best guide when designing the evaluation study.

There is a simple rule for describing communicative purposes in terms of effects: Make the reader the subject of the description sentence. Compare the following two descriptions again.

(a) Instruct patients suffering from AIDS to correctly administer Drug Y to achieve an effective use of the drug, so that the number of people with AIDS is reduced.

(b) Patients suffering from AIDS know how to correctly administer Drug Y, resulting in an effective use of the drug, so that the number of people with AIDS is reduced.

Description (a) starts with a speech act verb and has the reader in object position, thus focusing on the design team’s activity. Description (b) focuses exclusively on the cognitive effect in the mind of the reader. And this is the effect that counts when the effectiveness of the document needs to be assessed.

**Topic and information need analysis**

To specify the topic(s), we need to determine the information needs of our readers. It is the reader who must act on the information the document offers. This is why handbooks on technical communication often mention reader task analysis in relation to communicative purposes. However, it is often unclear where the reader task analysis ends and the functional analysis begins. For example, Hackos (1994, pp. 233–239) offers an illustration of the purpose of a manual that reappears in almost identical phrasing a few pages later as an illustration of a task analysis.

In some design contexts, a detailed task analysis may be needed. For instance, Ormerod (2000) proposes to make exhaustive lists of actions and sub-actions to be performed, together with information on the order of actions and the information requirements for each action. This approach may be profitable in cases where readers frequently rely on the same document to perform repeatedly complicated courses of action. The design of a software manual may be such a case.

Often, however, a more general level of analysis will suffice. Consider the description we presented above, in which the topic is “administering Drug Y.” This description does not make clear what information must be presented in the document. To determine the desired content of the document, we recommend analyzing the actions that the reader must be able to perform after using the document.
In our example, using the drug is the first action, but there is a second: stop using it at the right time. To select the information required to enable correct use of the drug, the first action needs to be decomposed into three components: choosing the time, choosing the dosage, and actually administering it. Hence our purpose statement runs as follows:

*Patients suffering from AIDS know what dose they need to take of Drug Y when they should take it, how they should administer it, and when they should stop taking it.*

In the next stage of design, we need to determine what the reader should know to be able to perform these actions, and to what degree he or she already possesses this knowledge. But for the first design stage this description will probably suffice.

For persuasive, motivational, and affective purposes, the document design team will need to engage in attitude analysis to know what subtopics should be presented in the document. This can be done by a rational reconstruction of a set of beliefs that are deemed essential for the main purpose of the document. But sometimes an empirical method will be needed. For instance, when the designer wants to know the most important arguments for the audience in making a decision, he may organize focus group discussions or distribute a questionnaire among a sample of the audience (see Hoeken, 1995, pp. 71-92).

A more general question regarding information needs analysis is *What is the desired level of detail for this kind of analysis?* This is an important issue, as pointed out by Ormerod (2000, p. 184): “Too little detail and the designer does not receive a full specification of requirements; too much, and the designer’s options are overly constrained.” Although the level of detail can only be determined for each design situation individually, a general rule can be given. The information need analysis stops at the level of unproblematic elements.

For instructive contexts, this means that we do not specify sub-actions that our readers will probably perform without any problem. In other words, the analysis is guided by a cost-benefit consideration: only actions with some probability of inefficient task performance are worth our attention. Conversely, worrying about actions that readers have no trouble with not only is a waste of time, but also may lead to inefficient documents.

The same line of reasoning can be applied to persuasive contexts. Here we are dealing not with knowledge about actions but with beliefs. The cost-benefit consideration implies that we concentrate on the beliefs that are really important for the attitude in question. Two kinds of beliefs must be considered: beliefs that are helpful but are not held at present by our readers, and beliefs that may threaten our persuasive purposes but appear to be held by the target group. Helpful beliefs must be supported; unhelpful beliefs need to be challenged. In the case of the drug leaflet an unhelpful belief may be “I can stop taking the drug as soon as I begin to feel better.” For too many patients, this belief leads to premature stopping and thus to inefficient use of the drug. The document should address this belief. However, just denying it will not work; that is why in a case like this we recommend including a topic component such as *The patient knows the consequences of stopping too early.*

**Target group**

The description of the target group must also meet certain requirements. Consider the following target group description for a leaflet about the courses offered at a training center for technical communication.

*Potential clients [target group] feel motivated [communicative effect] to subscribe to writing course X [topic] so that the course will be cost-effective [organizational goal].*

In this description, it is totally unclear who the “potential clients” are. Are they academics in the field of technical writing? Secretaries with writing problems? Although the formulation of the target group does not have to offer all the results of an audience analysis, it should at least help to start such an analysis. The document design team must be able to ask targeted questions, such as “What are the characteristics of secretaries with writing problems?” Thus, a target group description should at least identify a certain group. Such a description can be achieved if it is defined in terms of the following two kinds of characteristics:

- Demographic variables, such as age, profession, religion, sex, or country of origin
- Communicative predispositions, such as reading experience, attitudes toward the topic, prior knowledge, and involvement with the topic

For a functional analysis to work well, we must select the relevant variables per project. In a campaign about AIDS, for instance, variables such as sex, age, and religion may be more important than professional background. The description of the document purpose could then include a well-defined target group as follows:

*Young male homosexuals with little or no sexual experience and hesitations about coming out [target group] feel motivated to use condoms and have safe sex in their first sexual contacts so that the number of people with AIDS is reduced.*
Having formulated the target group, we have by no means finished the audience analysis. We still need to ask a number of important questions: Why do young homosexuals take risks in their first sexual contacts? Is it a matter of attitude or lack of knowledge? Or do they already have a positive attitude toward having safe sex, but simply do not behave accordingly? The answers will crucially affect the design of the document.

Another aspect related to the target group is the situation of use. Will readers have enough time to read the document, and will they be willing to spend time using the document? Will there be other people who might influence the reading process? And what are the physical conditions like when the document is used? For example, the design of an instruction for workers on an oil platform at sea must meet specific requirements because the document may have to be read in stormy weather.

Organizational goal
The desired communicative effects are to be achieved in the mind of each individual reader. In the example above, the reader should change his attitude and decide to use condoms. This cognitive effect is aimed at changing something in the world: reducing the number of people with AIDS. And that is exactly what the fourth element of the purpose description is all about. It tries to answer the question Why do you want to influence cognition? It tells us what we would like to happen after the document has accomplished its communicative purposes. And it helps an evaluation team to decide what should be the yardstick for the success of the campaign as a whole. Since most professional communicative activities take place in the context of organizations, we use the term organizational goals.

When describing organizational goals in our document purpose, we should beware of formulations that do not add anything to the communicative effect and the topic. For instance:

Buyers of the Philishave know how to use the appliance so that they will know how to operate it.

Of course, it is true that information about how to use the appliance will help people in operating it. The problem with the description above, however, is that both the communicative effect and the organizational goal are formulated in terms of knowing how. This knowing is a mental state, while the organizational goal should concern a "state of the world at large," such as a 10% reduction of complaints about the Philishave. A clear distinction must therefore be made between communicative effects and organizational goals.

On the other hand, the two elements should also be related to each other. It should be clear why the combination of communicative effect + topic(s) + target group helps to achieve the organizational goal. This is sometimes not the case, however. Consider the following:

Buyers of the Philishave know how to use the appliance so that pressure on the repair department is reduced.

In this description, it is unclear what the relation is between the repair department and the instructions to the Philishave users. Perhaps the company hopes that less damage will be done to the appliance so that fewer people will need to approach the repair department with problems. In that case, a good revision would be

Buyers of the Philishave know how to use the appliance so that (a) people will cause less damage to the appliance, as a result of which (b) the pressure on the repair department is reduced.

In this revision, two consequences are given of a successful change in the cognitive state of Philishave users. The first is a behavioral consequence; the second is the actual organizational goal.

Functional networks
Documents almost always aim to achieve several purposes at once. These purposes are related to each other. Together, they constitute a functional network that can be represented as a tree with higher- and lower-order purposes. Lower-order purposes are often a prerequisite for accomplishing higher-order purposes. In Figure 1, a functional network is presented for a patient information leaflet, based on Pander Maat and Lentz (1994).

We should emphasize here that Figure 1 simply presents a hierarchy of goals and does not say anything about the structure of the document. Neither does the arrangement of the four elements at the bottom of the tree reflect the order of presentation in the document.

In this functional network, the lowest-order purposes are the most specific ones. Nevertheless, even these specific purposes can always be specified further. For example, the purpose Patients know how to act correctly in the case of complications during drug use can be further specified as:

Patients know how to identify dangerous complications and what to do about them (for example, stop using the drug, visit the doctor) to prevent serious side effects.

Patients know how to identify harmless side effects that will disappear without intervention so that they will not stop with the drug unnecessarily.
The functional network helps the design team understand in what perspective of higher-order goals specific information should be presented. For instance, in the case of the two purposes above, the information on side effects is primarily important to explain to the reader how to identify side effects and how to react to them (see also Pander Maat 1997). The information need analysis could then lead to the topic descriptions such as the following:

- The reader knows that X and Y are symptoms of side effect Z.
- The reader believes that this side effect must not be neglected.
- The reader is willing to contact the doctor to inform him or her about the side effect to discuss the consequences.

On the other hand, we might propose that the side effects information should be related to the second lowest order purpose in Figure 1: Knowing how to determine whether the drug is safe. In that case, the text should be designed in such a way that it clearly states the risks involved in using the drug so that they can be compared with the benefits of using it. The information need analysis for this assessment may lead to the following topic descriptions:

- The reader knows that using Drug Y may have the consequence of side effect Z.
- The reader knows that 5 in every 10,000 users of the drug experience this side effect.
- The reader knows that the possible consequences of this side effect are . . . .
- The reader knows that the risk of not using the drug is . . . .

Of course, this assessment perspective will not be adopted when we feel that a doctor needs to decide about whether or not the patient should continue using the drug.

**MUTIPLE CONSTRAINTS AND DOCUMENT DESIGN**

In the examples discussed previously, the documents either served just one specific purpose or they had several purposes functioning in a network to achieve one main goal (for example, Promoting the health of patients suffering from X). But often a given document aims to accomplish several purposes and addresses several audiences at the same time. The need to address different audiences and to achieve several communicative effects in one and the same document may give rise to functional strain (we have borrowed this term from Samp and Solomon 1999).

To analyze this phenomenon, we introduce a way of viewing document design that we call the multiple constraints approach. In the introduction to this article, we mentioned our conceptualization of document design as an ongoing process of constraint specification: starting with a few global requirements, we develop a more and more detailed representation of what the document must be like (see also Chevalier and Ivory 2003). In this approach, components of purpose descriptions are seen as restrictions on the set of design options for a given document. This set is referred to as the design space. The design space contains all the options that are initially open regarding the content, structure, style, and visuals to be used in a given document. It is subsequently restricted by purpose constraints (that is, constraints stemming from the purposes of the document) and non-purpose constraints.
In the following section, we will discuss frequent combinations of purposes. First, we concentrate on combinations of different audiences. Then we will discuss more complex sets of purpose-related constraints.

**Multiple purposes**
In traditional models of communication, we find the simple dyad of the sender (or author) who wishes to convey information to the listener (or reader). However, both in natural conversation and in documentation processes, more than just two participants may be involved. For conversational interaction, this was demonstrated by Goffman (1974) and Clark and Carlson (1982). The latter authors pointed out that utterances may not only involve addressees, but also side participants, who are supposed to know what has been said, and bystanders who are openly present but do not take part in the interaction.

For our purposes, some of the distinctions made by de Jong and Schellens (2000) are relevant. Building on their work, we propose to distinguish between four kinds of combinations of different audiences.

**Readers and co-readers** Co-readers are persons in the direct environment of the primary reader who play an important role with regard to the topic of the document. For instance, documents on financial aspects of academic education often primarily address the students, but are also designed to inform the parents of the students as co-readers.

**Readers in different stages of the same process** Documents may address different groups of readers who are in different stages of decision making. A brochure on how to stop smoking could be explicitly designed to serve different parts of the target group and use headers such as:

- You are still looking for more reasons to stop smoking.
- You know you really ought to stop smoking, but you doubt whether you'll ever succeed.
- You tried to stop but started smoking again.

The first group of smokers may later enter the stage of the second and third group.

**Readers with different information needs** Some documents address different groups of readers who will never share the same perspective, simply because they have different information needs. For example, a brochure on regulations for changing one’s name may be addressed to readers who are considering changing their family name, as well as to those who want to change their first name or who want to change the name of their child. All readers are interested in the topic of changing name, but no one will ever want to know everything about all subtopics (see...
Schellens and others 1997). They are addressees for one subtopic, but bystanders for the other subtopics.

**Readers with different interests and responsibilities**

Some documents address different groups of readers who have different positions and therefore different attitudes toward the tasks that the document promotes. For example, a safety regulations document about working on railway tracks functions as a work order for the workers in the field. For the manager, it serves as a tool to motivate the workers to read the orders and behave accordingly. And if a serious accident happens, lawyers and judges will read the same documents from a legal perspective to decide who is to blame.

The last example shows how multiple audiences and other components of purpose descriptions may be related. Compare the different communicative effects of safety regulations when read by a judge and when read by the worker who has to fix a piece of broken track. We will now discuss some more complex sets of multiple purposes.

In Figure 1, the functional network of the patient information leaflet had a single purpose at the top of the tree. The other purposes in the network were subordinate to this main purpose. More complicated functional settings cannot be represented as a single tree. In fact, this is a very common phenomenon in persuasive and instructional documents.

De Jong and Schellens (2000) distinguish among several configurations of multiple purposes.

**Specific purposes wrapped up in more general purposes**

Wrapped-up purposes can be found in persuasive documents aiming to achieve purposes that are not judged as important by the audience. To gain attention and create a feeling of being helped, other purposes are added to the document. The main persuasive purpose is wrapped up in a more attractive purpose, like a medicine dissolved in a sweet drink. For instance, a brochure meant to promote behavior that protects the natural environment gives a list of more general tips for daily life that are entirely unrelated to environmental issues. But the crucial passage provides information about how to reduce air pollution resulting from fireplaces.

**Primary purposes and secondary purposes**

Documents may have a central purpose that is supplemented
with one or two secondary goals. For example, as demonstrated by Jansen and Lentz (1996), Mårdssjö (1994), and Farkas (1999), instructive texts have as their main purpose to explain to people how to use a product, but they often also attain secondary persuasive purposes (see Figure 5)—for example, acceptance of a new technology. This persuasive purpose is not only relevant for a specific part of the text but also for the document as a whole.

**Specific purposes and general purposes** In many communicative situations, one may wish to distinguish between a purpose that is specific to the message in question (for example, motivating the target group to do X) and more general purposes with respect to the relationship between the sender of the message and the target group (see Wilson 1997, pp. 23–25). These relational purposes may certainly influence our document (for instance, politeness considerations will partly determine our style). Although the relational purposes are not document purposes in the strict sense, they clearly imply additional constraints on the design space.

In the next section, we will mention different kinds of non-purpose constraints: restrictions of the design space that are unrelated to the purposes of our document. Finally, we will show how our conceptual framework may help to clarify disagreements about design constraints.

**Non-purpose constraints** In an ideal world, designing documents would only need to obey purpose constraints. But in practice, document designers also deal with considerations that have nothing to do with the purposes of the documents. Although these non-purpose constraints can be of many different kinds, we confine ourselves here to legal, technical, financial, and time constraints.

Chevalier and Ivory (2003, pp. 68–70) have distinguished between prescribed and inferred constraints. Prescribed constraints are explicitly given by an external source, for instance by the client of the designer. Inferred constraints are articulated by the designer during the design process. While purpose constraints will often to a large extent be specified by the design professional, non-purpose constraints tend to fall into the prescribed category: there is not much the designer can do about them. At the same time, they need to be reckoned with, preferably at an early stage of the design process.

**Legal** constraints are generated by legal obligations with which an organization must comply. In the most simple case, the document needs to include a disclaimer to protect the producer against claims for damages. In more complex cases (for example, patient information leaflets in the European Community), legal constraints influence content, structure, style, and layout to such an extent that we may speak of mandatory genres (Askehave and Zethesen 2003).

Even if a usability test has proven that the document works very well, it may be rejected because some formal requirements have not been met. As a consequence, the primary concern of the author is to satisfy the official of the controlling department. The regulatory affairs department (and not the patient) is then the most important target group for the designer of the document. Moreover, such patient information leaflets do not stand alone, but will be closely related to a far more elaborate set of documents reporting on the clinical research carried out to prove the effectiveness of the drug. The information in the leaflet must also correspond to this documentation.

**Technical** constraints concern the producer’s technical production facilities and—in the case of digital documents—the reader’s technical facilities. For instance, some printers are unable to produce certain font types. And readers with relatively old hardware may not be able to see all the visual features of a Web site. Patient information leaflets often need to be folded into the small packages of the medicine. All of these technical constraints have to be taken into account in a document’s design process.

**Financial** constraints and **time** constraints always hover in the background. Technical constraints can sometimes benefit from financial decisions. For instance, if the producer is willing to invest in a new printer, important technical constraints may disappear. As for time constraints, there are, of course, planning and deadlines. These, too, almost always influence decisions in design processes.
Disagreements about purposes and constraints
People may disagree about document purposes and constraints. Different stakeholders in the organization may have opposing views on the purposes of a document, but disagreements may also arise within the design teams themselves, or between professional designers and their clients. But conflicts about goals are not to be confused with conflicting goals. Conflicting goals are in fact far less common than disagreements about goals. Our framework may help to clarify and resolve disagreements and apparent goal conflicts.

1. Disagreements about the primary document purpose
A disagreement may arise about the necessity to produce a document about a certain topic for a certain target group. For example, if a health organization proposes to produce a brochure that warns smokers against health risks, some stakeholders may protest against this idea, arguing that smokers can only be persuaded by their relatives, friends, or doctors. Fundamental discussions about communication campaigns often concern this question: Will we be able to change attitudes or behavior by means of our communication? In such cases there are no conflicting goals, but the people involved disagree about the chances of achieving the intended communicative effect and hence also about the organizational goal (reducing the number of smokers).

Another kind of disagreement about primary purposes may concern the definition of the topic, the communicative effect, or the target group. The topic and communicative effect together form the central part of a purpose. If one party wants a document to warn against the risks of behavior X and another party prefers to recommend the benefits of behavior Y, this difference leads to different definitions. In one instance, the negative outcomes of behavior X are to be emphasized, while in the other instance the positive aspects of the alternative behavior are to be described. Again, this is not a matter of conflicting goals.
The two goals are perfectly complementary.

Discussions about how the topic, communicative effect, and target group are to be defined are essential in the first stage of the document design process. It often helps to focus the discussion on the perspective of the organizational goal. As we already saw in our example of patient information leaflets, higher-order goals normally co-determine the means chosen for achieving lower-order goals.

2. Disagreements about supplementary purposes
Stakeholders in the organization often want to add purposes to the primary purpose. When we address the audience next month about topic X, they may argue, would it not be sensible to tell them about topic Y at the same time? In a medical context, stakeholders may propose that a document meant to inform patients about medical treatments should also be addressed to their relatives to tell them about visiting times in the hospital, thus adding a target group, a topic, and a communicative effect. Other members in the design team may propose that such a purpose should be dealt with in a separate document. The two opposing parties can be referred to as “splitters” (one document for one audience about a specific topic) and “jumpers” (let’s do it all in one and the same document).

In most cases, a closer inspection of the two purposes reveals no fundamental incompatibilities. In the hospital example, it could even be argued that the two purposes support each other, because both patients and relatives are concerned with medical treatment and visiting hours. Once the two target groups share this information, they might even be more willing to behave as desired, even though the final document may become a little more elaborate than originally planned.

How should members of a design team proceed in resolving this kind of disagreement? We suggest they focus on the constraints that each of the two purposes yield for the design variables: content, structure, style, and visuals. These constraints should be listed and inspected for incompatibilities. Only if clear contradictions emerge should one consider producing two separate documents. If the various stakeholders keep disagreeing, the best option is to test prototypes of both options with the target groups and let the results determine the outcome.

3. Disagreements about the compatibility of purpose and non-purpose constraints
The design team may also disagree about the relationship between purpose and non-purpose constraints. In a document informing about taxes, for instance, legal experts may demand that all details and exceptions should be discussed in the document. In their view, the document should be legally safe; on the other hand, the communication experts claim that adopting this legal constraint would have serious consequences for achieving the communicative effect. They fear that the target group will refuse to read an exhaustive discussion of the new tax regulations.

An apparent disagreement between purpose and non-purpose constraints frequently arises when the design team proposes beautifully colored visuals in the document to enhance attention and comprehension, while management refuses to invest in the technical resources needed to achieve this design. They are likely to argue that a rather more modest design will also achieve sufficient attention and comprehension.

Generally, these kinds of disagreements can only be really solved by reader-testing the document and by consulting the literature in the field. But in practice the outcome of such conflicts are more likely to be determined by
the balance of power between the legal, financial, and communication departments in the organization.

4. Disagreements about design constraints So far, we have assumed a rather transparent relationship between components of purpose descriptions and the design constraints they yield. Unfortunately, this relationship is often disputable. Of course, document design experts have more knowledge about the design constraints that result from certain functional settings than other stakeholders in the process. But even professionals may go astray here.

Recently, an editor of history textbooks for vocational education—and thus for pupils with relatively low reading scores—decided that sentences should never have more than 12 words and every sentence should begin on a new line. This editorial policy led to a staccato style that the authors disliked. This is a clear example of a disagreement about design constraints between two parties who share the basic assumption that the text should enable pupils with low reading abilities to learn about history. But apparently it was not clear what kinds of constraints should be derived from this indisputable purpose. In cases like these, we can only recommend either doing a thorough search of the readability literature or testing to determine which design option gives the best results.

CONCLUSION
We have proposed a conceptual framework for discussions about communicative purposes of documents and the design constraints they will have to meet. We believe that this framework would be helpful in the communication between document design teams and stakeholders not only in the initial stage of the design process but also later on, when drafts are to be pretested and clear thinking about communicative purposes continues to be essential. The usability expert needs to have functional knowledge to choose the correct method for the pretest and to weigh the importance of problems that will be revealed in the pretest. Furthermore, the revision process (based on such a pretest) should remain guided by the results of a functional analysis.

We argue that communicative purposes should be described in terms of (1) the communicative effect, (2) the topic, (3) the target group, and (4) the organizational goal. The relationships among the different functions can be represented by means of a functional network that helps to understand in what perspective of higher-order goals the specific purposes are to be achieved.

Finally, documents are often directed at different purposes, which imply different kinds of constraints on the design. On top of this, non-purpose constraints have to be considered as well. This may at times lead to seemingly incompatible requirements. However, expertise in document design is nothing more or less than being able to juggle constraints in situations of functional strain. TC

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