THE GOOD

REQUIREMENTS SPECIFICATION PROCESS

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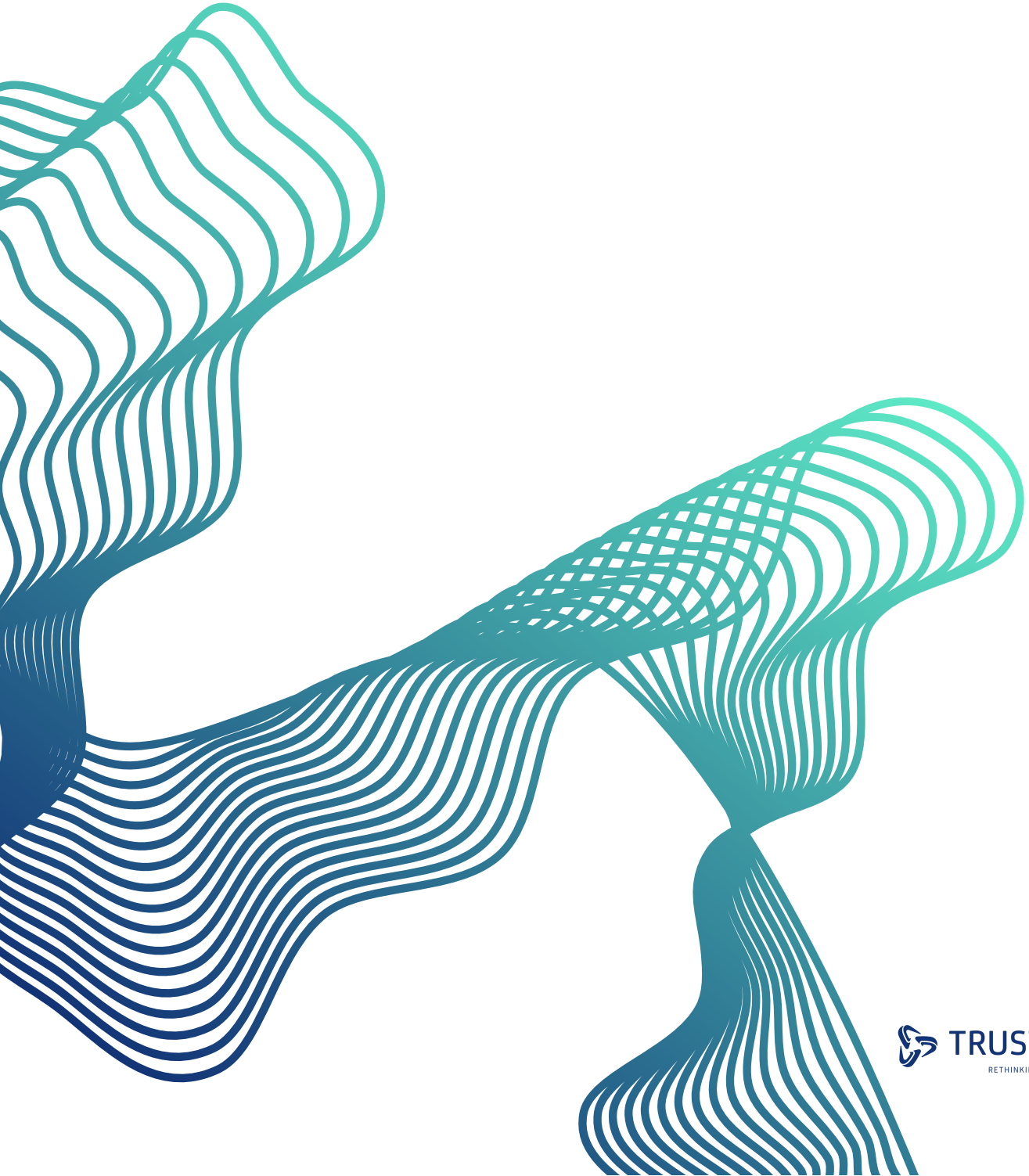


TRUSTWORKS
RETHINKING IT AND BUSINESS

When we are so focused on designing good user-involving and/or interdisciplinary processes, it is because the quality of the result is deeply dependent on it. There are simply too many examples of it not succeeding without a very conscious effort.

TRUSTWORKS

RETHINKING IT AND BUSINESS

01 THE GOOD
REQUIREMENTS SPECIFICATION PROCESS

The good requirements specification process is demanding: Users' needs must be identified, and the requirements must be dimensioned in relation to how critical they are for the business to realize. Both the solution, relevant legislation, rules, and limitations, with respect to an already established system landscape, must be described and much more. All of this presupposes engagement from people with different professional competencies

AS CONSULTANTS IN MANY DIFFERENT ORGANIZATIONS, WE EXPERIENCE TWO PARTICULAR CONDITIONS

1. Many people have difficulty uncovering the need before defining the requirements for the solution.

2. Experts often work independently of each other until late in the process, which results in a lack of mutual understanding.

Both conditions are problematic, as in the end, it can result in requirements pointing in all directions. The result is often solutions that do not meet expectations in critical areas.

THE REASONS FOR THESE CONDITIONS ARE QUITE HUMAN

- We are often impatient and have a desire to fix problems here and now.
- You need to be proactive and have a certain routine in order to plan and manage a process.
- If there is a lack of resources, interdisciplinary work is the first to be deprioritized.
- Working across different fields can be frustrating.

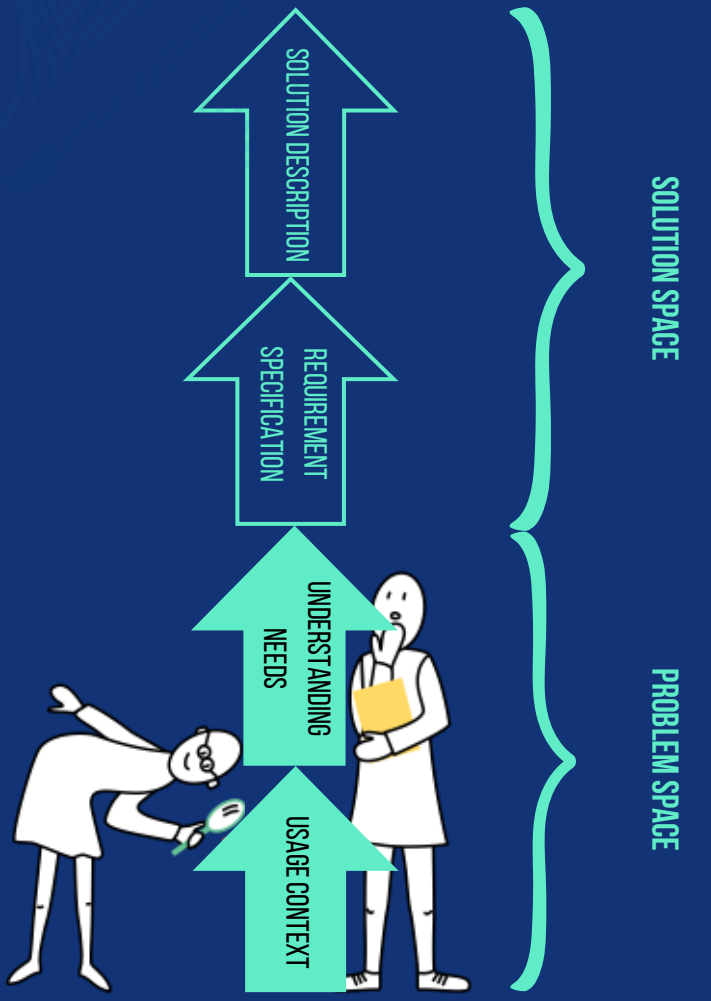
Information technology, however, is associated with so much complexity that those involved need to make many diverse decisions and understand the users' needs in order for the end result to be successful.

Therefore, this article covers what you can do to achieve a better requirements specification process. It will give you a better requirements specification and thus a more suitable solution.

OUR RECOMMENDATION IS

- That all involved professionals should know the context of use and needs before formulating requirements.
- That interdisciplinary collaboration is established for the requirements, including quality assurance of the requirements across fields of expertise.

START FROM THE BOTTOM



Although many IT projects are launched with the motto 'we don't start from the bottom', our recommendation is actually just that.

As illustrated in the figure, we propose that you plan the requirements specification process so that it starts from the bottom with the context of use and gradually moves upward to finally discuss solution proposals with internal or external vendors.

STEP 1
UNDERSTAND THE USER

Often, a demonstration of the current practices and discussions about business needs will be mixed thoroughly with countless solution proposals and desires. These solution proposals and desires may resemble minimum requirements - that is, requirements that appear completely essential for the business to function tomorrow.

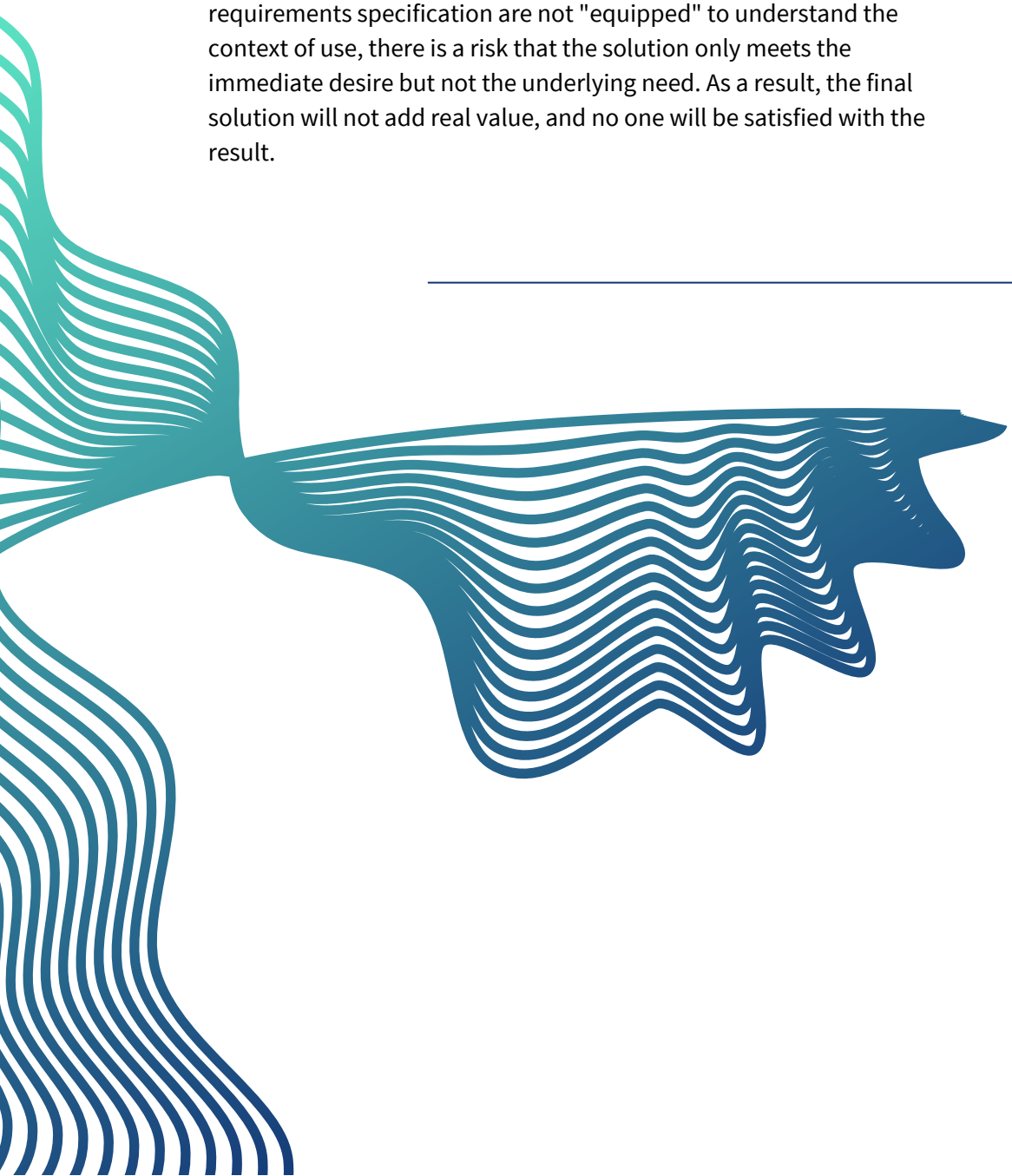
Therefore, tread carefully! There is a great need for everyone in the organization (especially management) to remind each other that we must "understand the problem before we try to solve the problem." That is, you first establish the "Problem Space" - before you move on to the "Solution Space" (1): You must understand the context before implementing a change.

1 The distinction between "Problem space" vs. "Solution space" is a fundamental principle within both Service Design and User-Centered Design according to ISO 9241.

STEP 2
UNDERSTAND THE NEEDS

We recommend that you then identify potential users and their needs. It is crucial for the quality of the requirements specification that relevant professionals have access to this insight so that it can be used to qualify the requirements.

If the employees working on the technical aspects of the requirements specification are not "equipped" to understand the context of use, there is a risk that the solution only meets the immediate desire but not the underlying need. As a result, the final solution will not add real value, and no one will be satisfied with the result.



HOW TO APPROACH REQUIREMENTS SPECIFICATIONS

1

"VISIT" THE USER

Regularly provide opportunities for IT staff to visit users and learn about their daily practices. Make it part of the onboarding process in the organization so that even new IT employees have a basis for identifying with the users.

Regarding the specific requirement work, of course, it requires more than just "a visit" to understand the context of use and user needs sufficiently to move on to formulating specific requirements for a future solution. It requires a thorough analysis, typically performed by business analysts and UX experts.

2

INVOLVE THE RIGHT IT-SPECIALISTS WHEN TALKING TO THE USERS

Involve the right IT specialists when talking to users. For example, if the solution architect participates in selected workshops with the users, the likelihood of ultimately meeting their needs is much greater. If this is not possible, the solution architect must at least assist by defining some questions about the usage situation or user needs that would be useful for them to gain insight into.

Based on this, you can follow up with an interdisciplinary discussion about which technical requirements you believe can be derived from the common insights.

3

PROVIDE A PRESENTATION TO EVERYONE ON THE TEAM

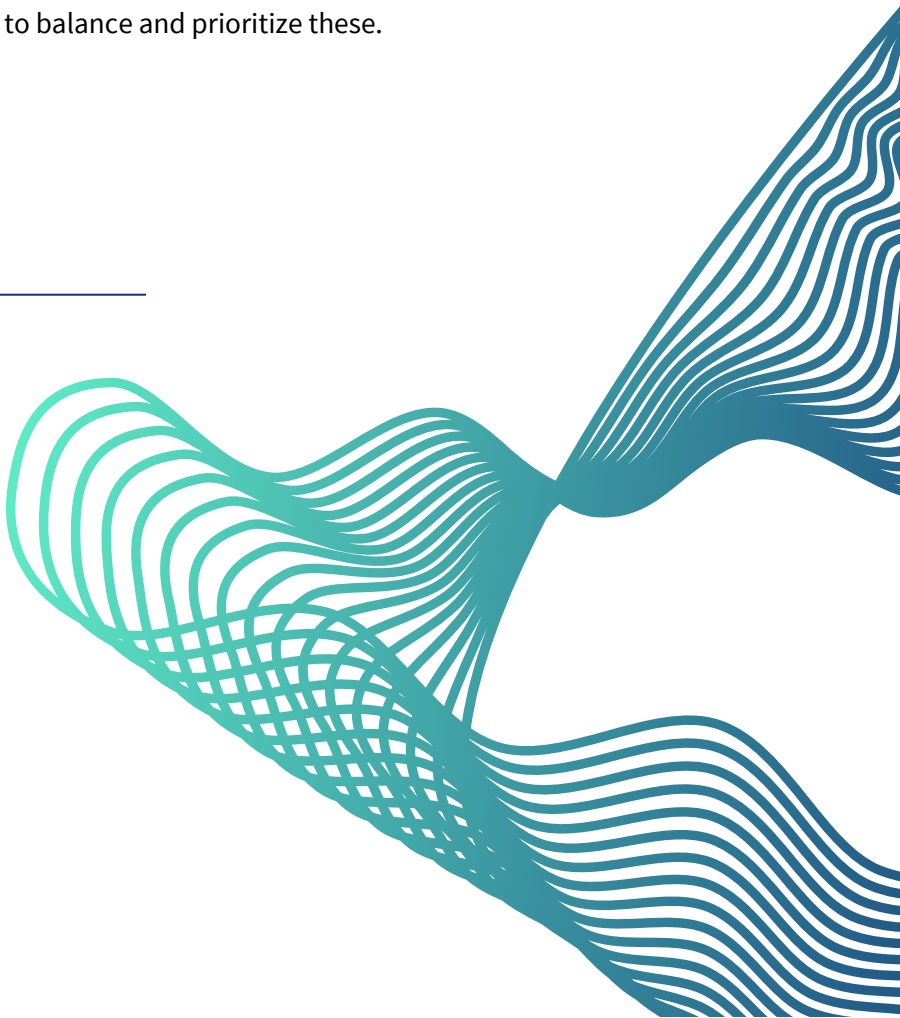
Present the context and needs using business models, photos, and practical examples with stories to your colleagues and everyone who has an influence on the work.

A shared understanding of the needs should be the basis for deciding what the new solution should include.

STEP 3 FORMULATE THE REQUIREMENTS

Once the needs that you want to support in the solution have been identified, they will need to be translated into unique and testable requirements.

In this regard, we recommend that all requirements can be traced back to one or more documented needs, so that you can continuously validate them. It is a fact that needs from different stakeholders can potentially be conflicting. Therefore, part of the requirements specification will be to balance and prioritize these.



EXAMPLES OF HOW
SOME NEEDS CAN BE OVERRIDDEN BY OTHERS

NEEDS

WHICH HAVE TO BE DEPRIORITIZED

The user wants as few administrative actions as possible in the solution.

The employee wants to be able to delete a reservation in the solution.

The employee wants to provide external collaborators with access to documents in the system.

NEEDS

THAT SHOULD BE FORMULATED AS REQUIREMENTS

The legislation requires that the information must be updated regularly.

Management requires that deletion should require personal contact.

The security assessment suggests that no external users should have access to systems where business-critical data is available, which is therefore translated into access requirements.

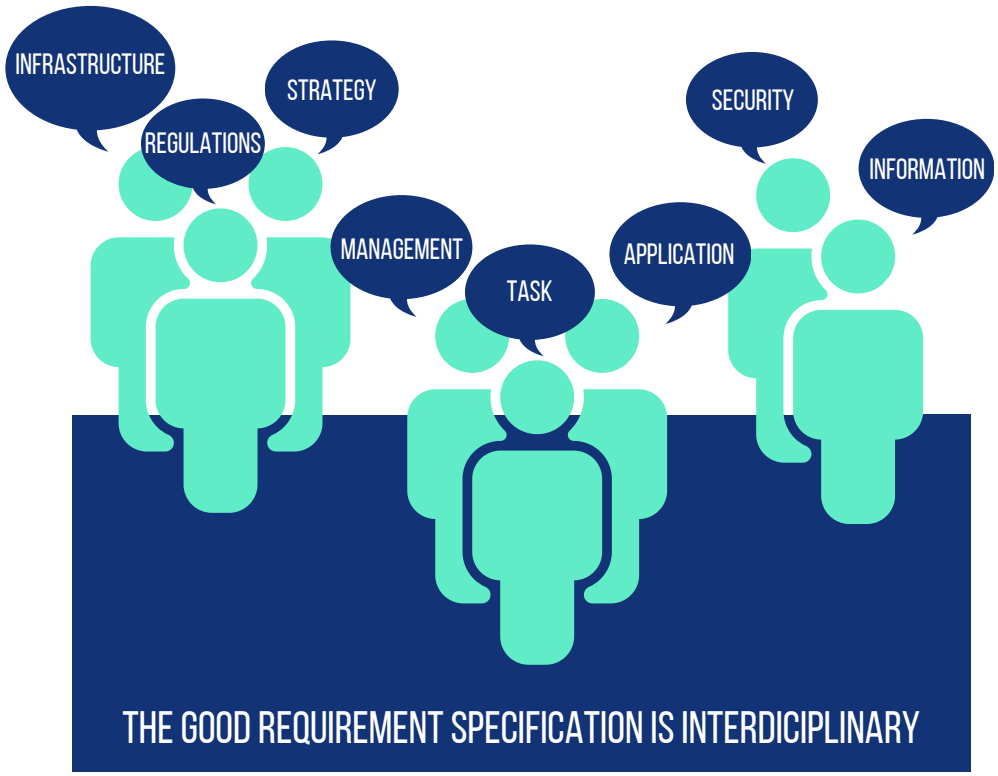
As reflected, requirements related to task solution must be validated in relation to requirements from other stakeholders, such as lawyers, security experts, etc.

Furthermore, any conversation about what the solution should be able to do can lead to additional requirements for how the solution should be able to do it. These requirements are called non-functional requirements and describe the quality of the solution (such as requirements for response time or usability). Conversely, non-functional requirements can also inspire relevant functional requirements (security requirements for rights management entail requirements for functionality for logging in and managing user rights).

The different types of requirements will thus constantly influence each other, which is another reason why an IT requirement process always requires interdisciplinary collaboration.

Step 4 in the model, which concerns the solution description, comes after the requirement specification process and is therefore not described in detail in this article.

02 RECOMMENDATIONS FOR ACHIEVING INTERDICIPLINARY COLLABORATION WITH THE REQUIREMENTS



The close correlation between the different types of requirements makes it advantageous to involve various competencies in the requirements writing process early on. Business analysts should work alongside solution architects, security experts, test managers, and others who are ultimately expected to formulate the relevant requirements.

One of the significant IT risks that we at Trustworks experience with our clients, and that reveals the difficulty of cross-disciplinary requirement collaboration, is that the requirements do not "fit together".

FOR EXAMPLE, WE SEE THE CONSEQUENSES WHEN THE SOLUTION

ENDS UP LOOKING LIKE THIS

The user interface allows the end user to initiate a search that is more extensive and demanding than the platform can handle within an acceptable response time.

The application process is long and requires many pieces of information that the user may not have readily available, but the search portal shuts down after 10 minutes and only saves the entered information when the user completes the application.

The roles in the access control model are not appropriately defined in relation to the tasks that the employees need to perform.

The challenge of creating coherence is due to one of the classic challenges in requirement work, namely that the expert who understands the context of use and user needs may not necessarily communicate (effectively) with the expert who understands the technology and its limitations. Colleagues have different methods, interests, and jargon due to their expertise.

The warning signals should flash when responsibility for the requirement work is delegated to different professional groups because people will immediately run in "different directions" in an attempt to deliver before the deadline.

We recommend instead that you facilitate a systematic, interdisciplinary collaboration in the requirements process. Here are two specific suggestions for where you can take action to create better conditions for success:

1. In the way you register (manage) the requirements.
2. In the quality assurance process.

MAKE THE REQUIREMENTS EASILY ACCESSIBLE TO OTHER PROFESSIONALS

You should ensure in the requirements writing process that domain-specific requirements are easily accessible to colleagues with different specialties. There can be several purposes and models for categorization (tagging), but for this specific purpose, we recommend basing it on the standard *The Open Group Architecture Framework (TOGAF)*, and its *Architecture Development Method (ADM).* Then it does not matter whether the solution is intended for the public or private sector, in a Danish or international context.

EXAMPLES

1. A functional requirement regarding information search to support the core task is tagged with both #Task and #Information.

2. A functional requirement that allows an administrator to manage access rights can have references to both #Security and #Management.

Of course, the effort requires that all involved understand and are aware of which other architecture domains the requirement refers to, just as it presupposes that requirements can be registered, tagged, retrieved, and read by all relevant professionals.

Although applications that support interdisciplinary and dynamic collaboration are clearly preferable, you can still get a long way with an old-fashioned Excel sheet. Here, relevant metadata can be entered in separate columns, you can put an x in multiple columns for agreed categories (so there is the possibility of adding several to each requirement), and you can filter the requirements based on this.

INTERDICIPLINARY COLLABORATION IN THE QUALITY ASSURANCE PROCESS

The more the different specialists are updated on the requirements being formulated, the better and more common understanding and expectations of the upcoming solution. At a minimum, representatives of the different professional groups should proof-read each other's requirements to ensure coherence and completeness.

This provides much better conditions for detecting in time that the requirement is either unrealistic or undesirable - or that the conditions must be significantly adjusted before even an apparently simple requirement can be realized.

Creating conditions for timely action and being able to plan both long-term and temporary solutions is worth the effort. There are three factors that are essential for success:

1. Prioritize and plan the process so that the different specialists have time to read, ask questions, and discuss the topics in a meaningful context.

2. The metadata tags of the requirements should be quality assured in advance, so that you are sure to use the employees' time on the right requirements.

3. Management can contribute to making the process meaningful by explaining that now is the time for each professional to have an influence on how the future work environment will look like.

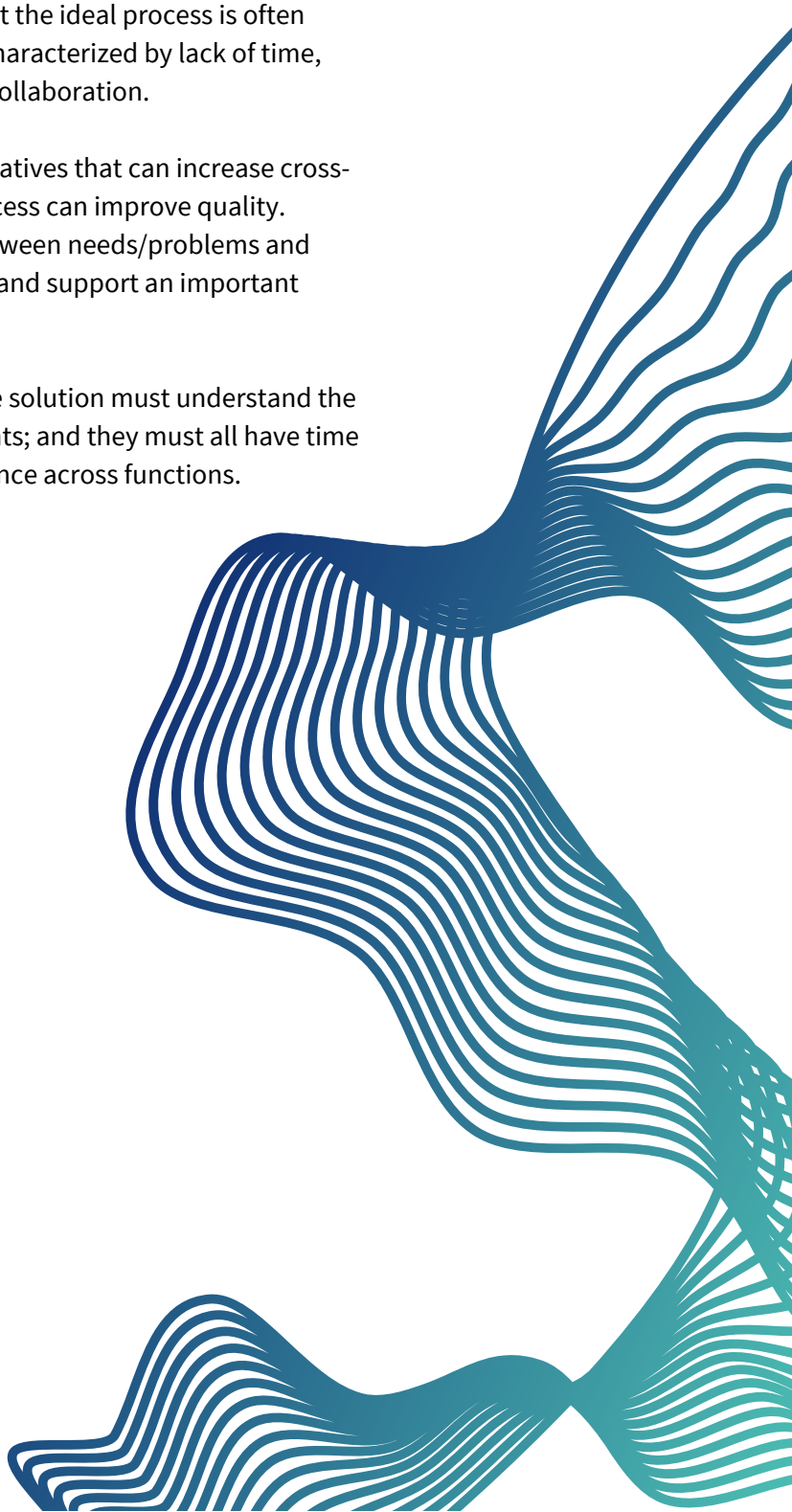
03 SMALL INITIATIVES MAKE A DIFFERENCE AND IMPROVE QUALITY

We have recommended some initiatives that can help ensure a good requirements specification process.

Admittedly, like everyone else, we experience that the ideal process is often difficult to fully realize, as projects are typically characterized by lack of time, resources, and prioritization of cross-functional collaboration.

However, we also experience that even small initiatives that can increase cross-functional collaboration in the requirements process can improve quality. Similarly, a persistent focus on distinguishing between needs/problems and solutions can improve the quality of the solution and support an important prioritization of requirements and deliveries.

So in short: everyone who has an influence on the solution must understand the context of use before formulating the requirements; and they must all have time for mutual knowledge sharing and quality assurance across functions.



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