

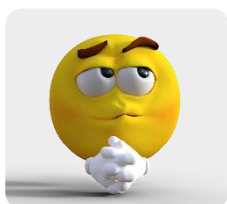
How A Fresh Approach Led to a Structural Reduction of Bureaucracy and Complexity



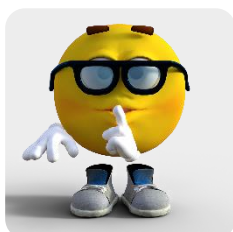
What Made Lack of Interest and Resistance Change Into Interest, Support and Demand



Over the years, we have seen numerous projects attempting to reduce bureaucracy and complexity. However, both seem to have grown to unbearable levels. Emotions run high. The health of people, processes, businesses and institutions is undermined day in and day out. Communication practices, decisions and activities that worked well in the past now create a lack of interest or resistance. One wonders, what is missing in our solution approaches?



With this white paper's project, preventing negative emotions was at the core of the project's design. (Highly) effective solutions were a little bit more important than best practices. This led to somewhat different practices than those usually applied. The paper describes the practices through which lack of interest and resistance changed into interest, support and demand; and how this led to a drastic reduction of the time-consuming obstacles bureaucracy and complexity had created.



The approach consisted largely of cross-industry practices that had delivered needed results after popular practices had delivered insufficient results. Well-functioning parts of best practices remained in place. Because of the importance of emotions, they are visualised through emojis.

Foreword

In today's world, complex projects are usually executed by applying best practices and predetermined rules. This project was directed by only two fundamental goals. With these goals, the primary emphasis became identifying practices that would provide the highest value in the given situation. In a field with high project failure rates, they provided the foundation for a successful project without escalations and costly corrections. Sincere thanks are due to all those who contributed to this project's success. A special thanks goes to the managers who made this approach possible.

Parties involved

The following parties participated in the project. Since the public-sector client is bound by regulations and cannot comment on whether a collaboration was a success, the perspective of the external analyst, consultant and coach (E. Oetringer) is provided.

			
Client	Contributing party of the practices	Contributing party of the practices	Service provider
zit-bb.brandenburg.de	www.LoN-Manifesto.org	www.comdys.com	www.sysback-solutions.de

¹ A state agency of the Ministry of the Interior and Municipal Affairs, Potsdam, Germany. The agency provides data centre services for the ministries of Brandenburg

IT: Information Technology

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Given Situation

As seen with other data centres around the globe, the environment of IT service provider ZIT-BB had become highly complex. To maintain an overview and provide a foundation for automation projects, a Configuration Management Database (CMDB)¹ was in production.

The CMDB was primarily used to manage the data centre's computers. With the growth of services, the need arose to keep the services manageable. It involved the need to find the hardware, applications, services, dependencies and structures used for each customer quickly. These components were brought together in business processes.

To keep the complexity, bureaucracy and manual efforts low, only the essential elements of each business process were documented. For the department with the most business processes, the CMDB had become the primary application to document their processes. The process coordinators maintained and used it because it had become integral to their work and had partially simplified their tasks. One process coordinator referred to it as his 'source of truth'.

In the next step, the service elements inside the CMDB had to be brought to a higher level. Other departments had to be supported to achieve this level as well. During these activities, it became apparent that the CMDB structures and the standards for documenting in the CMDB were at high levels. Only a few opportunities for improvement could be found. In contrast, the procedures for documenting in the CMDB were experienced as too bureaucratic and too complex.

Even for process coordinators who had brought their processes to the minimal required level, there were too many obstacles. For less experienced colleagues, the obstacles turned out to be insurmountable. This would have far-reaching consequences. Sooner or later, this Tipping Point would be crossed:

The environment would change more quickly than the CMDB could be updated.

This had to be avoided.

Complications

With the support of experienced colleagues, the department with the most business processes had achieved the minimum documentation level required. Because of too many obstacles, however, the effort required was too high. Other, more pressing tasks were given higher priority. In this situation, a structural capacity bottleneck arose for the one expert with the knowledge needed for complex matters.

The matter was further complicated because IT environments consist of a vast number of visible and invisible components, such as services, hardware, software, processes, regulations and human interactions. Their multidimensional dependencies and interactions can only be partially stored and visualised with the exact techniques of programming and two-dimensional screens. This, plus ongoing changes, makes CMDBs highly complex. Although today's users expect intuitive CMDB screens, they are typically user-unfriendly. This was also the case for the particular CMDB application. It makes it difficult to motivate people such that they keep the content up to date. This was also the case with the concrete CMDB.

The matter was yet further complicated because the current wave of automation and the growth of services would further increase complexity. The consequence was a high risk of crossing the above-mentioned Tipping Point in the coming years. This led to the following requirement:

The CMDB had to be positioned such that, with the growing complexity, it did not cross the above Tipping Point.

Solution Needs

Based on the expected growth of services and complexity as well as the need not to cross the previously mentioned Tipping Point, the following solution needs emerged:

1. The number of obstacles when updating the CMDB manually had to be reduced drastically.
2. A substantial number of the process coordinators had to be educated such that they could bring their CMDB documentation to a higher level without further support.
3. The approaches had to be practical and executable. Ideally, they had demonstrated their value in highly complex situations.
4. The primary approach had to intervene where the highest impact could be made with the lowest costs and risks.

Given that with complex matters, every situation can be different, very few key performance indicators (KPIs) were used. This reduced the risk of too much focus on KPIs leading to insufficient focus on reducing the obstacles.

Instead of KPIs, there was listening to employee reactions, two Laws of Nature, how obstacles were reduced and, of course, visible improvements in the CDMB.

Applied Practices


The solution needs led to practices of the highest value. The applied practices are provided in the following table.




The practices applied were selected via this question:






Across industries, what practices have delivered the needed results after multiple attempts with standard practices delivered insufficient or no results?



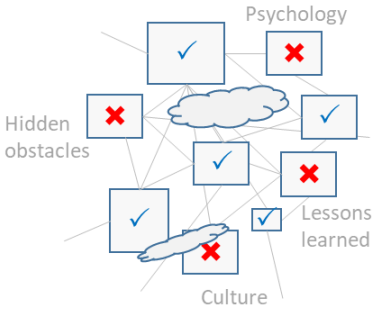
They came from


- Industries such as manufacturing, business services, health services and the public sector
- Disciplines such as management, mathematics, communication, psychology and IT
- Relevant Laws of Nature
- Best Practices such as those of Agility, Service Management (ITIL) and Quality Management

#	Traditional Practices	Experiences in (Highly) Complex Environments	Applied Practices
1.	Communication with 'loaded' expressions, such as <i>control, quality assurance, process, Best Practice, method, definition and theory</i>	<p>Too often, projects that used such expressions with complex matters have delivered insufficient results or failed.</p> <p>Using such expressions in this project would have communicated that compliance with the standards was more important than solving the obstacles that employees faced. <i>Control</i> would have communicated a lack of trust in employees and triggered conclusions such as 'Why bother?'</p> <p> This would have fostered a lack of interest and resistance. It had to be avoided.</p>	<p>Avoiding loaded expressions</p> <p>Instead of 'quality assurance', an expression was searched for that aligned with the colleagues' interests. The expression became 'updating the CMDB' ('Aktualisierung der CMDB').</p> <p>Instead of contributing definitions and theories, open questions were answered in places where they would pop up when the CMDB was updated.</p> <p>Instead of creating linear processes, natural process flows were searched for or created when needed.</p> <p><u>Please observe</u></p> <p>In situations with low levels of complexity, loaded expressions could work. Requirements are that clear definitions are possible and that the exact practices are practical, executable and sustainable.</p>

#	Traditional Practices	Experiences in (Highly) Complex Environments	Applied Practices
2.	<p>Demanding compliance with (mutually agreed on) regulations, Best Practices and so forth.</p>	<p>Unfortunately, the writing style for regulations, Best Practices and the like is still “If [this] is the situation, here is what must be done: ...” When the environment is complex, however, every situation can be different. Quite often, this is the case. In such situations, this writing style resulted in too many gaps and conflicts.</p> <p>At the 2008 Gartner Symposium, this was already pointed to. Instead of providing predefined decisions, a new style should provide the rules for making decisions.²</p> <p> This practice would have been perceived as out of touch with the real world. It had to be avoided.</p>	<p>Listening to the specific situations:</p> <ul style="list-style-type: none"> • What is the specific situation? • What are the (hidden) obstacles? • What do the employees and management need to fulfil the tasks expected of them?
3.	<p>Training Coaching</p>	<p> When a subject is complex, training is quite often experienced as too theoretical. What is too theoretical tends to be forgotten quickly.</p> <p> An often-heard expectation of coaching is that those being coached can find important insights and effective solutions themselves.</p> <p>This expectation conflicts with the experience that when things are complex, decades of experience in multiple fields are needed to find deep insights and effective solutions (with exceptions granted).</p>	<p>Coaching with External Experiences and Co-creation</p> <p><u>Step 1: Normal Coaching</u></p> <p>Through their update activities, process coordinators were guided to find new insights and solutions. For instance, when an update in the CMDB was perceived as too bureaucratic and resistance arose, questions such as the following were asked:</p> <ul style="list-style-type: none"> • Would the entry help you or your colleagues? • Would the entry help the complete organisation? • Would the entry help you or your clients with client inquiries? <p>When negative responses were made, hidden obstacles could exist. Such obstacles had to be identified and solved. When, for instance, a good reason was found as to why such an entry made sense, this was typically sufficient to do the update.</p> <p><u>Step 2: Coaching with External Experiences</u></p> <p>After the possibilities of ‘normal’ coaching were exhausted, external insights and solutions were brought in. Right away, this rule was applied:</p> <p style="text-align: center;">The employees decide whether external contributions are relevant.</p> <p>With negative responses, these contributions were not pursued further. Later and in a different situation, they could be contributed again. The same rule was applied in the new situation.</p> <p><u>Step 3: Co-creation</u></p> <p>Co-creation involved employees to the extent that they could see or experience their contributions being incorporated. This didn’t involve creating extensive lists and working through them step by step. Quite the opposite. The approach was as follows:</p> <ol style="list-style-type: none"> 1. Where could the highest impact be achieved at the lowest costs and risks? That’s across the boxes and obstacles. 2. Note obstacles and possible solutions during CMDB update sessions. Those were sessions with the coaching applied.

#	Traditional Practices	Experiences in (Highly) Complex Environments	Applied Practices
			<p>3. Who of the employees had the best experiences and knowledge to find the solutions?</p> <p>During subsequent update activities, the incorporated improvements were tested and, if necessary, further adjusted.</p>
4.	<p>Exact practices from engineering, physics and mathematics</p>	<p>Since about the turn of the century, exact practices have been applied to <i>manage</i> complex situations. There is, however, a Tipping Point. Beyond this Tipping Point, the exact practices do not work anymore. One word tells when either the exact or other practices work well. In one of his TV broadcasts, Prof. Harald Lesch also pointed to this Tipping Point and provided the same word.³</p> <p>The ongoing use of the exact practices beyond this Tipping Point has resulted in the following complications:</p> <p> An unnecessary exponential growth of bureaucracy and complexity. One of the consequences became high project failure rates.⁴</p> <p> After two decades, large groups have learned to recognize intuitively when the exact practices are applied at the wrong side of the Tipping Point. As this happens, it triggers lack of interest and resistance.⁴</p>	<p>Applying relevant Laws of Nature to complex matters⁴ (see also point 5)</p> <div data-bbox="831 533 1465 920"> </div> <p>Complexity ≈ The number of <i>bits and pieces</i> in the system + The number of <i>dependencies</i> + The number of <i>changes</i> with the bits and pieces and dependencies</p> <p> Visible and invisible capacity bottlenecks</p>
5.	<p>Missing relevant Laws of Nature</p> 	<p>When environments are complex, the Tipping Point and Capacity Bottleneck Laws of Nature are almost certain to occur.⁴ Both laws and more such laws are applied in physics, engineering and mathematics.</p> <p>With COVID-19, practices of these two laws were summarised as 'Flatten the Curve'. These practices are usually applied when capacity bottlenecks can be calculated mathematically. On the road, we experience bottlenecks as traffic jams. We use one of their practices when we follow the advice for an alternative route.</p> <p>As the Level 1 Tipping Point is crossed, bottlenecks cannot be calculated anymore. Different practices are required. Various such practices are available from these Laws of Nature. Unfortunately, they have been lost.</p> <p> Large groups have learned to recognize intuitively when decisions conflict with Laws of Nature.</p> <p>For this concrete situation, it was necessary to demonstrate practices of the relevant Law of Nature.</p>	<p>Applying the Tipping Point and Capacity Bottleneck Laws of Nature</p> <p>(Further information via the Law of Nature Manifesto)⁴</p> <p>As these Laws of Nature occurred, it became necessary to drive for the following:</p> <ul style="list-style-type: none"> • As little documentation as possible, as much as necessary. • Avoid passing the Tipping Point where the environment changes more quickly than the CMDB can be updated. <p>In addition to the Tipping Point levels, there were different Tipping Points for manual and automated tasks.</p> <ul style="list-style-type: none"> • Reduce the obstacles standing in the way of manual CMDB updates drastically (practices that made this possible are available via this column). • Create natural process flows where possible. This included the integration of solutions to hidden obstacles between the CMDB application, the standards for manual updates, technical terms of vendors and psychology. • Automated and manual activities complement each other to create the optimum value for situations between Level 1 and Level 2 Tipping Points.

#	Traditional Practices	Experiences in (Highly) Complex Environments	Applied Practices
6.	An expectation that IT applications for highly complex matters must be user-friendly as well	 <p>The multidimensional and dynamic nature of (highly) complex situations can only be partially handled via the exact practices of programming and visualisation possibilities of two-dimensional screens.</p>	<p>Explaining why IT tools for complex matters are user-unfriendly by default</p> <ul style="list-style-type: none"> • In situations such as those at the left, the acceptance of limited user-friendliness provides a value far beyond what is possible otherwise. • See point 7 as well, from “Identify the changeable root causes ...” onwards.
7.	Breaking complex matters into parts (and going about it step by step)	 <ul style="list-style-type: none"> • Nobody feels responsible for solving an entire problem • Too many obstacles remain unsolved • Falling back into old habits occurs • Solved problems reappear  <p>The diagram illustrates a complex network of interconnected elements. At the top, a box labeled 'Psychology' contains a checkmark. Below it, a cloud labeled 'Hidden obstacles' is connected to several boxes: one with a checkmark, one with a cross, and one with a checkmark. To the right, a box labeled 'Lessons learned' contains a checkmark. At the bottom, a box labeled 'Culture' contains a cross. A blue arrow points from the 'Lessons learned' box towards the 'Culture' box. The overall structure suggests a web of factors influencing a central outcome, with some elements being successful (checkmarks) and others being problematic (crosses).</p>	<p>Intervening where the highest value can be made at the lowest costs and risks</p> <ul style="list-style-type: none"> • Go directly to the system level. • Take on responsibility for the whole matter, including <i>lessons learned</i>, culture and hidden obstacles. • Identify the few root causes of the highest damage: They provide the intervention points of the highest value. In this specific situation, only one such root cause surfaced: <i>too many (hidden) obstacles for manual updates</i>. • Identify the <u>changeable</u> root causes hiding behind the identified root causes. This and the Laws of Nature provided guidance to the needed solutions: <ul style="list-style-type: none"> – The standards for manual CMDB updates had to be changed from the expert language of vendors to the language of users. – The documentation of the standards had to be synchronized with the flow of manual updates in the CDMB. – Likely questions had to be answered where they would occur: via the standards for CMDB updates. – Tips & tricks had to be created for further questions. – A substantial number of the process coordinators had to be educated via <i>coaching, coaching with external experiences</i> and <i>co-creation</i> (see point 3). – To support others, a process coordinator had to be educated in advanced CMDB knowledge, coaching and maintaining the new CMDB standards. • Solution elements of the highest value at the lowest costs and risks had to be integrated into an overall solution package. They came from exceptionally successful projects in complex environments as well as traditional and agile Best Practices

#	Traditional Practices	Experiences in (Highly) Complex Environments	Applied Practices
			<ul style="list-style-type: none"> Multiple tasks had to be integrated into one process. The coach and analyst, together with the process coordinator: <ol style="list-style-type: none"> Update a business process in the CMDB with the CMDB standards at hand. Listen to experiences, questions and (hidden) obstacles. Coach and co-create per Point 3 above: This provided on-the-job training for the process coordinators. Integrate the experiences, lessons learned, solutions and answers to questions into the CMDB standards. Test the updated CMDB documentation during the next update sessions.
8.	A package with solutions for the concrete matter	 Because of Point 7: By default, too many structural gaps, conflicts and obstacles in complex environments.	Positioning of a package with (simple) solutions such that it passes the Tipping Point where <ul style="list-style-type: none"> The package becomes practical and executable It can function in the foreseeable future

Results

The applied practices led to the following results:

- Initial lack of interest and resistance changed into interest, support and demand.
- A drastic reduction of time-consuming obstacles and non-productive activities during CMDB updates.
- A substantial number of updates, which could not take place because of too many obstacles, became possible and were done.
- A drastic risk reduction of the project being stopped, especially with the integration of multiple tasks into a single process (see point 7 in the table: “Multiple tasks had to be integrated ...”).

This led to the most important outcomes:

- A drastic reduction of the capacity bottleneck of the CMDB’s senior expert.
- Positioning the CMDB to prevent passing the Tipping Point at which the environment would change more quickly than the CMDB could be updated, even with growing complexity.

For point 6, it is important to note that predictions for complex matters are rather limited. It was recommended to reassess the CMDB’s position against the Tipping Point once a year at a mini workshop with process coordinators.

Bio Eugen Oetringer

At the IT service company EDS (taken over by Hewlett-Packard), Eugen Oetringer received on-the-job training to find and solve root causes of tough problems. Applying the Flatten-the-Curve practices of the Tipping Point and Capacity Bottleneck Laws of Nature was part of his job with data centre computers, projects and organisational matters. At the time, EDS had happy clients and motivated employees.

At EDS, Mr Oetringer experienced how formal Best Practices were implemented. At first, they worked. But then, compliance with them became more important than solving root causes, happy clients and motivated employees. EDS, an agile and prospering company with 80,000 employees, changed. It became a bureaucratic and troubled company with unhappy clients and employees.

In this situation, E. Oetringer became one of a few colleagues who reapplied the lost practices. With these practices, he became the main designer of a solution that re-enabled agile yet reliable decision making for 30,000 employees. He had leadership positions during the solution's implementation and in its operations.

Later, he discovered that other organisations had achieved extraordinary project results as well when the lost or similar practices were applied. In parallel, it became increasingly difficult to get such practices and solutions through approval and innovation processes. Eventually, a possibility emerged at the Brandenburg IT Service Provider ZIT-BB. Applying these experiences and the lost practices led to the results presented in this paper.

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Illustrations and Photos

Illustrations and photos from Pixabay. In order of appearance, from Gerald Altmann, Sergei Tokmakov (front page emojis), Pixaline (small emojis) and 51581 (lightning)