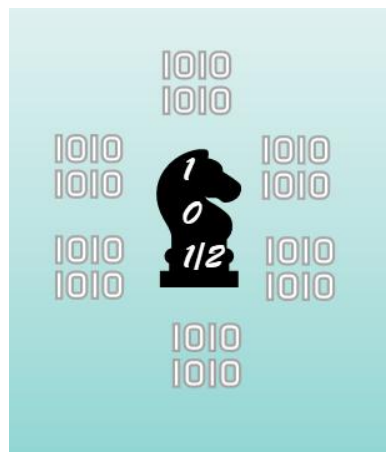


## A HORSE in a world of Booleans: How Mathematics can support Problem-Solving <sup>1</sup>

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### Abstract

Today there is a paradox of augmented technology that declares support in solving problems but complicates problem-solving by adding complexity and uncertainty in business. How do managers respond to this challenge? Do they use appropriate tools to make decisions? This paper presents the HORSE Tool (Hypotheses Organized Responded Selected Executed), an original Tool built for selecting the best solution to a problem given a specific problem complexity and context. The selection of solution is made using predefined criteria and a scoring ternary-based algorithm 1-0-1/2 (True-False-Partial true) for judging the criteria. In a world of computers governed by Booleans 1-0 (True-False), the author encourages managers to stay on-the-loop, controlling the decision making in problem-solving. Unlike the Trojan Horse that is smart but sly, the Ternary HORSE presented in this paper is based on critical-thinking and honesty.



**Figure 1. The Ternary HORSE**

**Keywords:** *Problem-Solving; Decision Making; Project Management; Complex Systems*

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## **1. Problem-Solving Dilemmas**

### **1.1. Business Context**

In a world with increased Complexity and Uncertainty we are faced with an overwhelming rate of problems and decision-making needs.

Surprisingly or not, the technology thought to support us in solving these problems is adding complexity and uncertainty instead of dealing with it. Technology (especially Artificial Intelligence) is sharpening our computational power on one side, but on the other side is adding problems related to data quality, confidentiality, ethics, jobs displacement, burnouts. Managers are trying to balance the impact of these problems by applying soft skills techniques such as active listening, emotional intelligence, empathy, empowering and motivational techniques.

But the author's opinion is that what is missing in many organizations is a structured approach on problem-solving, starting from process and associated tools, and including specific problem-solving skills.

### **1.2. Problem-Solving: Facts and Figures**

Problem-Solving is recognized by competent authorities in the business field as an official essential skill.

The World Economic Forum<sup>2</sup> rated the cognitive components that support problem-solving (analytical skills and creativity) as the top skill for any employee in 2025, and in a Forbes article written by Rachel Wells<sup>3</sup> in 2024, Problem-solving and Critical thinking are listed as the top two must-have skills for workers today.

However, the empirical experience of Problem-solving in teams shows the majority of Problem Solvers usually jump to solutions w/o using a systematic approach.

Are Problem Solvers overconfident in their working experience and their natural capacity to solve problems? Do they simply not have time to apply a structured approach? Or they do not have a process in place, the tools, or skills needed for an appropriate problem-solving?

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<sup>2</sup> 'Future of Jobs report 2025' of the World Economic Forum,  
([https://reports.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_Report\\_2025.pdf](https://reports.weforum.org/docs/WEF_Future_of_Jobs_Report_2025.pdf))

<sup>3</sup> Forbes Article by Rachel Wells "10 Must-Have Skills To Put On Your Resume In 2024"  
(<https://www.forbes.com/sites/rachelwells/2024/05/29/10-must-have-skills-to-put-on-your-resume-in-2024/>)

This paper attempts to close the gap between the 'official' requirement on professional problem solving and its 'real' application in daily business, by proposing a structured process for problem-solving. It also introduces a decision-making tool to judge solutions to complex problems, that is based on multiple criteria and a predefined algorithm.

### **1.3. Three Business Dilemmas**

#### **1.3.1. Troubleshooting vs. Problem-solving**

Are problem solving and troubleshooting the same thing?

*Problem solving* is the process of defining and resolving a problem systematically and logically, while *troubleshooting* is the process of identifying and fixing specific technical problems. They are not interchangeable and the choice between them depends on the specific situation.

#### **1.3.2. Quick Solver vs. Deep-thinking Solver**

To be successful in business you need to be a good problem-solver, mastering solving skills and solving style.

*Solving Skills.* Critical solving skills are: Analytical thinking, Creativity & intuition, Reflection & Speed, Critical thinking, System thinking, Empathy, Active listening, and Leadership Skills (Communication, Motivation, Organization). Some of these qualities can be native, but they can also be trained.

*Solving Style.* The style of problem-solving influences the selection of solutions. According to Merriam-Webster the style is “a particular manner or technique by which something is done, created, or performed.” Using a generic simple classification of Problem Solvers upon their style we could differentiate them in two categories: *Quick-Solver* and *Deep-thinking Solver*.

**Table 1.** includes an attempt to describe the two solving styles upon their attitude towards problems, expectations, results orientation, relationship with other people and attitude towards future. Recognizing their own solving style supports individuals in improving their chances to succeed with problem-solving.

**Table 1. The Problem Solver Profile** (source: author)

#	Criteria / Solver Profile	Quick Solver	Deep Thinking Solver
1	Attitude towards problems	Problems are inevitable. Fail fast and correct fast.	Problems can be avoided. Think twice and decide on the plan.
2	Expectations for problem-solving in your organization	You expect everyone solve its own problem.	You expect the problems to be solved collaboratively.
3	How do you usually treat a problem	You like fast results. Shoot every problem that appears in shortest time.	You are in favor of qualitative results. You think twice before choosing a solution.
4	How do you relate to the other persons participating in problem-solving	You give advices and instructions.	You brainstorm ideas with the others and listen their advice.
5	How does it look your future work after solving a problem	The same as before. Other problems pop-in. This is the usual life in business.	More structured. I use to change the remained work for anticipating future similar problems.

### 1.3.3. Qualitative vs. Quantitative Decision Making tools

Skills and Style are important, but Problem-Solvers operate in a predefined environment. This might be equipped (or **not**) with a Problem-solving process and specific qualitative or quantitative tools.

*Qualitative decision tools* use personal opinions and experience for taking decisions, while *quantitative decision tools* use numbers and data. Determining the type of Decision-Making tool that suits your problem-solving is an important step in the solving process.

## 2. Why to use Mathematics for Problem-solving

Modern methods and techniques of problem-solving are promoting the use of trial-and-error techniques or using AI for problem-solving. These methods are not always applicable or are partially applicable for complex problem solving. Would it be right if the computer would take decisions instead of people? Is our data quality high enough to allow AI alone to take decisions instead of us?

On the other side, consider the diversity of people involved in a business activity: experienced and inexperienced, with different education and mentalities, and biased by their egos. How do they decide which solution to choose? Based on rule-of-thumb or people power? Or based on qualitative or quantitative decision models?

By establishing functions of variables and scoring models that consider the complexity of the problem and the complexity of the context, we are supporting teams in taking better solutions.

### 2.1. Use functions to control Problem-solving

Problem-solving, Problem complexity and Solution can be controlled with three functions.

### 2.1.1 Function 1

$\langle \text{Problem-solving} = F(\text{Problem complexity, Solving process, Tools, Skills}) \rangle$

The ingredients that lead to a good problem-solving are: The adequacy to the problem complexity, a consistent problem-solving process in place, appropriate tools for analyzing root causes and deciding solutions, and solid problem-solving skills. The success of problem-solving in an organization depends on the ability of the organization to control these components.

The *problem-solving process* is a structured approach to find a solution to a problem. According to The American Society for Quality a generic problem-solving process has 7 steps:

- 1. Define a problem >
- 2. Determine the causes >
- 3. Brainstorm solutions >
- 4. Select and prioritize solutions >
- 5. Chart a course of action >
- 6. Monitor the actions >
- 7. Draw lessons learned.

The question is how to select and prioritize solutions for controlling their quality.

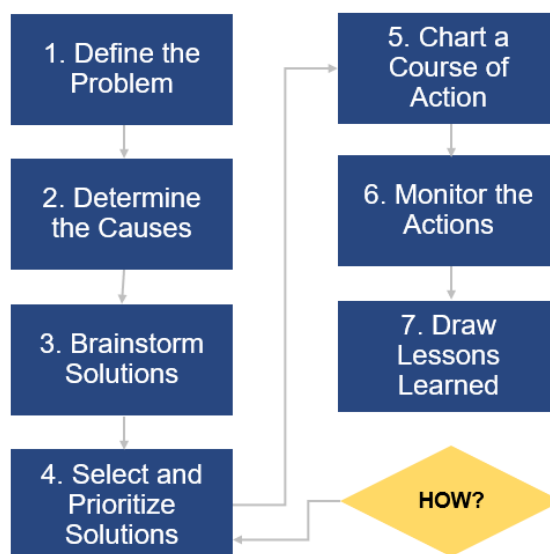


Figure 2. Problem-solving process (source: author)

### 2.1.2. Function 2

<Problem complexity = F (# of components, # of interdependencies)>

There are different theories of problem complexity that we can apply, including methods to measure complexity in computer science. We will use a simple model to categorize problems upon the number of components and number of interdependencies and we will define the problems as simple, complicated, and complex.

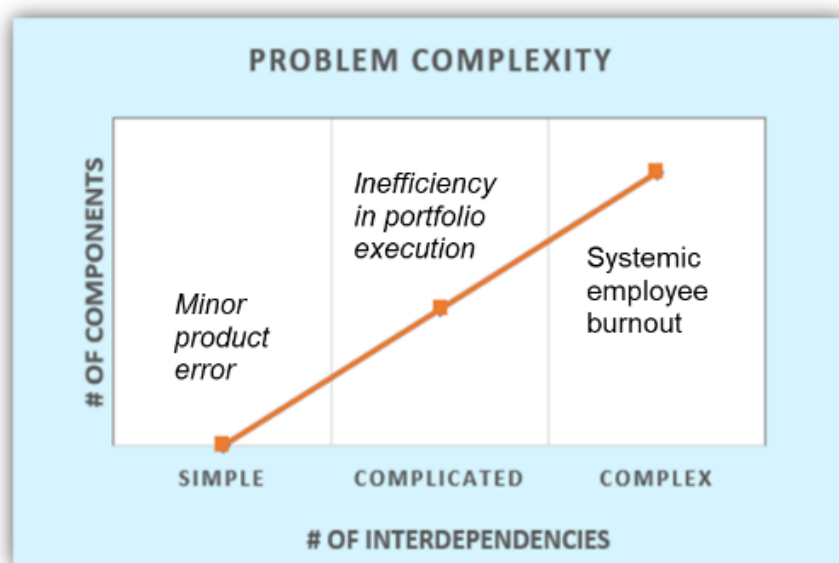


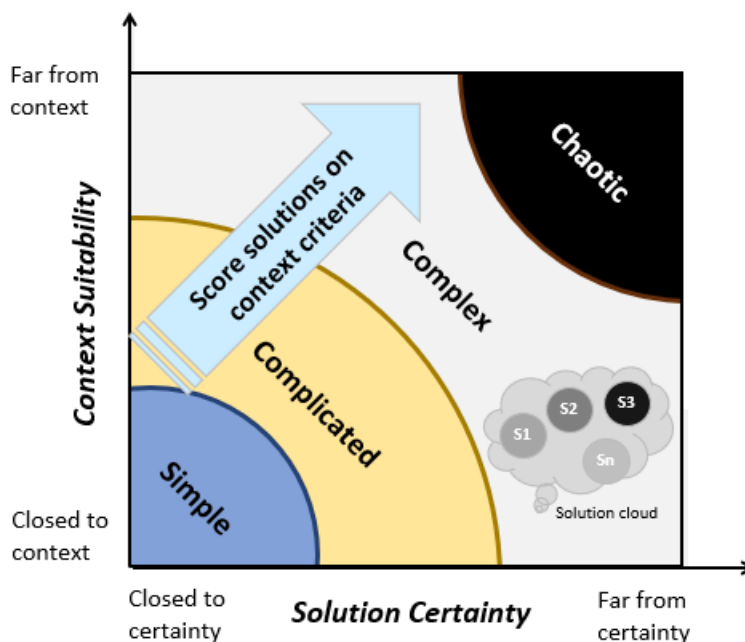
Figure 3. Problem complexity (source: author)

### 2.1.3. Function 3

<Solution = F (Problem complexity, Context suitability)>

The solution we are choosing needs to be adapted to problem complexity and the context of the problem/ context suitability.

*Context suitability.* We will define the Context suitability as a mix of Component integration, Activity planning, Quality of response, System approach, and Solution performance. The degree on which a solution fulfills the Context suitability factors determines the quality of our solution and is cornerstone to the success of our problem-solving process.



**Figure 4. Solution selection principle**

(Problem-Solving Model inspired by Stacey Matrix)

## 2.2. Use scoring models for better decision-making

The Scoring model is a tool that can be used to assign a comparative value to one or more business activities; in problem-solving this tool allows governance teams to rank potential solutions based on different criteria.

The chosen criteria, the decision algorithm, and the team’s practical wisdom make the difference between successful and ordinary models. We can choose between the following alternative scoring models.

### 2.2.1. Boolean or Ternary

*Booleans models* judge solutions in terms of 1-0 (True-False). This means we choose to rate the predefined criteria as 1 or 0.

*Ternary models* instead judge solutions in terms of 1-0-1/2 (True-False-Partial). This means we also consider the possibility of partial fulfillment of a criterion when it comes to scoring solutions.

### **2.2.2. Unweighted or Weighted**

*Unweighted models* consider all the predefined criteria as having the same weight.

*Weighted models* take in consideration various weights for the criteria.

### **2.2.3. Choosing the model**

The organizations and teams can choose the type of model that better suits their needs. In a world of computers governed by Booleans 1-0 (True-False), the author encourages managers to stay on-the-loop, controlling the decision making in problem-solving. Using a ternary based algorithm for judging solutions ensures more sensitivity to the solution. The author of this paper opted for a ternary model for sensitivity but an unweighted scoring model for simplicity.

Independently of the solution chosen, a scoring model brings clarity of the solution and can be even used to generate/ design solutions based on the established multicriteria.

This chapter includes the description of the model, its features, and instructions on how to use the model. Read chapter 4 , 5, 6 for beneficiaries, examples, and interpreting results.

## **3. What is 'HORSE' and how to use it**

### **3.1. Definition**

The HORSE is a decision scoring model for solving problems based on problem complexity and multifactorial context elements. It includes a tabular process template for problem-solving concluded with the scored solutions, as well as a model for data visualization. The name of the tool represents an acronym: 'Hypotheses Organized Responded Selected Executed'.

### **3.2. Roots**

My decades-long Practitioner View in the Project Management field convinced me of the importance of Problem-Solving. Problems cannot be avoided; even managers with exceptional planning and risk management skills must face them. Recently I conducted some coaching sessions for problem-solving and realized again the importance of a decision-matrix in selecting the right solutions, especially for complex problems in an uncertain and complex environment.

I asked myself to what extent the Stacey Matrix<sup>4</sup> about strategic decisions could be migrated in the field of problem-solving, or, if not, what kind of model shall we use to control the quality of solutions we decide to follow. HORSE is the conceptual framework I designed for selecting the best solutions in a complex context.

### 3.3. Features

HORSE is built by adding features to the functions described in the previous chapter and choosing an appropriate algorithm for scoring solutions.

#### 3.3.1. HORSE Process definition

*The problem-solving process is refined by adding the substeps associated with selecting and prioritizing solutions 4a to 4d.*

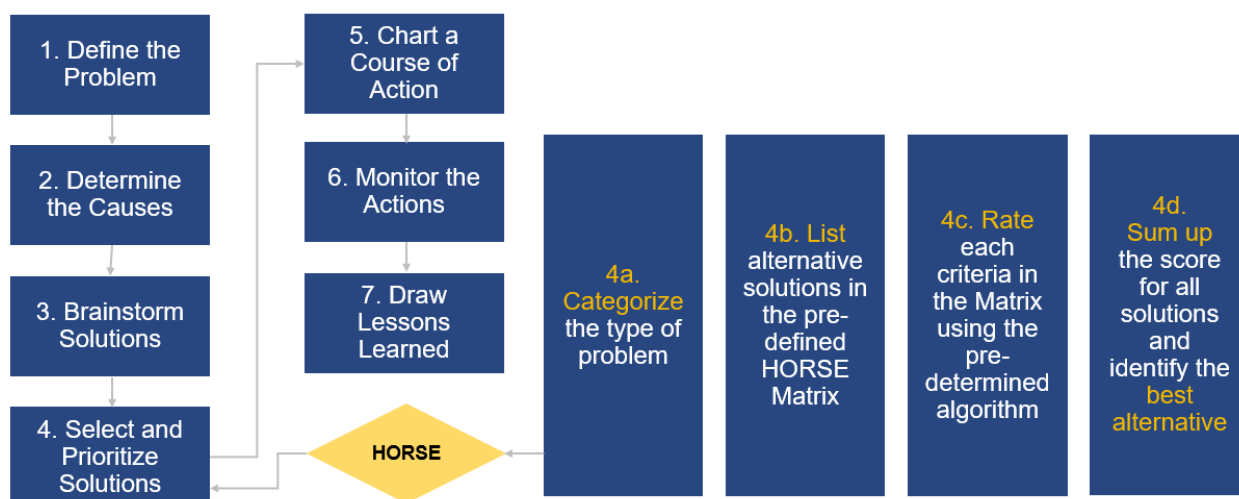


Figure 5. Problem solving steps – Introducing the ‘Decision HORSE’ (source: author)

#### 3.3.2. HORSE Problem definition

*The problem complexity is refined by adding definitions of simple, complicated, and complex problems.*

<sup>4</sup> ‘Stacey Matrix’ was designed to decompose complexity and choose the best management actions to address it/ ‘Stacey RD. Strategic management and organisational dynamics: the challenge of complexity. 3rd ed. Harlow: Prentice Hall, 2002.’ <https://www.praxisframework.org/en/library/stacey-matrix>)

*Simple Problems.* Are problems with few components and clear cause-effect relationships between them. Generally, they do not need an advanced expertise to be solved.

*Complicated Problems.* Have more components & multiple cause-effect relationships between them. The relationships are generally static or predictable. However, these problems need to be solved by experts using detailed analysis and a reliable predictable model.

*Complex Problems.* Have a very large number of components and multiple interdependencies that are dynamic and unpredictable. They generally need to be responded to by highly skilled experts with knowledge of multiple domains and the capacity to find solutions through probing, sensing, and responding to a constant flux of changes in variables.

### 3.3.3. HORSE Solution definition

The Context suitability is refined by considering three levels of tools, each of them with specific criteria for checking the solutions as presented in **Figure 6**. The criteria are explained in detail in **Table 2**.

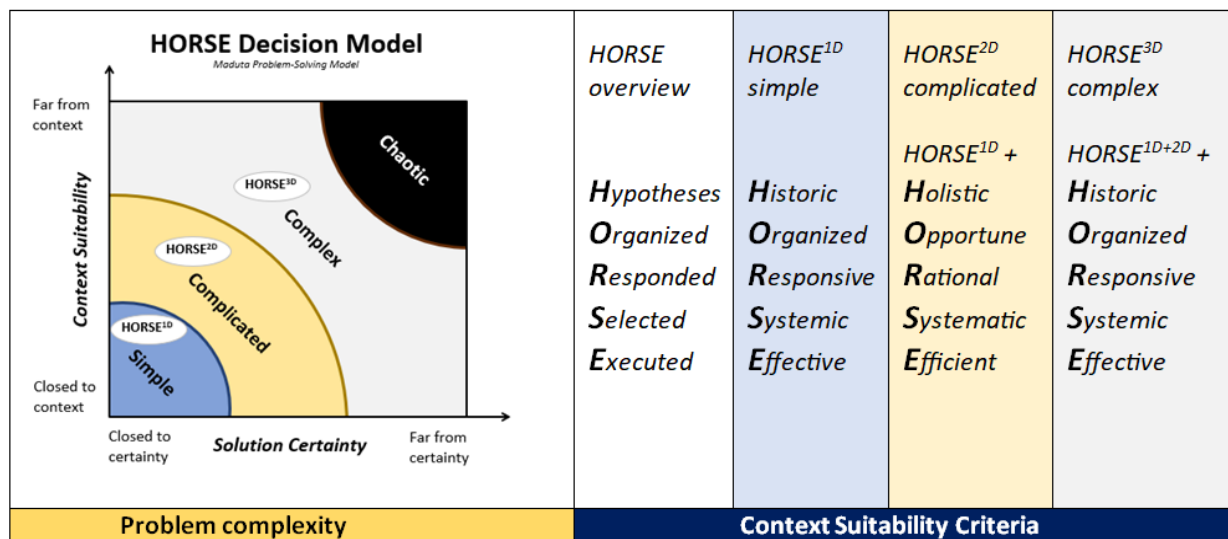


Figure 6. HORSE Decision Model (source: author)

**Table 2. HORSE Criteria Explained** (source: author)

HORSE <sup>1D</sup> Criteria Explanation	HORSE <sup>2D</sup> Criteria Explanation	HORSE <sup>3D</sup> Criteria Explanation
<p><b>H: Historic</b>                      Scroll the historical base for solutions that have been efficient in similar cases in the past. This means having a historical database in place, that is properly organized, and regularly fed by the organization teams.</p>	<p><b>H: Holistic</b>                      Encompassing the whole of a thing, and not just the part. Our solution takes in consideration all the aspects of the problem, concerning various activities in the chain of activities.</p>	<p><b>H: Harmonized</b>                      Ensuring that different stakeholders, plans, and activities to solve the problems are suitable to each other. This is the highest level for organizing the information and work; hitch horses together means act in harmony.</p>
<p><b>O: Organized</b>                      The activities for solving the problems have been planned carefully, including the establishing of a clear timeline and of the person responsible for each activity.</p>	<p><b>O: Opportune</b>                      The time planned for implementation is the one that is the most likely to lead to the success of implementation; key stakeholders participating at the solution need to confirm their availability.</p>	<p><b>O: Optimized</b>                      The solution has been optimized from the point of view of resources to be used for implementation.</p>
<p><b>R: Responsive</b>                      Responding quickly and reacting sympathetically. A qualitative solution needs to come as a quick reaction to persons or events showing emotions such as pleasure and affection.</p>	<p><b>R: Rational</b>                      Being based on clear thought and reason. A clear solution is based on a clear problem definition, a thorough root cause analysis, alternative solutions screening, and a clear decision-making process.</p>	<p><b>R: Reliable</b>                      The solution is consistently good in quality or performance; able to be trusted. This means on one side we have a reliable source of information and on the other side the people involved in the solution design and implementation have the appropriate expertise to achieve the expected results.</p>
<p><b>S: Systemic</b>                      Refers to the application to an entire entity, like the entire organization, and not just a particular part of it. A systemic solution needs to consider associated business processes, and all the stakeholders that might be affected by the implementation of the solution.</p>	<p><b>S: Systematic</b>                      Solution is taken using a system or a methodical structural approach. Using a repetitive structure ensures the solutions are consistent at the entire organization level. An appropriate system makes work easier for all the users, increases the possibility to reuse solutions and increases the rate of success.</p>	<p><b>S: Sustainable</b>                      The solution that the business is able to maintain on long-term without compromising the economy, ecology or environmental equity. Sustainability involves making decisions that prioritize social, economic, and environmental responsibility over short-term profits.</p>
<p><b>E: Effective</b>                      Being successful in producing a desired or intended result. This is a premier quality to be ensured by a solution: to guarantee that it responds precisely to the detected problem. The problem-solving system must include Key Performance Indexes to check the effectiveness of the implemented solutions.</p>	<p><b>E: Efficient</b>                      Achieving maximum productivity with minimum wasted effort or expense. Efficient solutions imply having a well-structured plan with optimized allocation of resources, and a well-organized implementation. Key Performance Indexes ensure the monitoring &amp; control of efficiency.</p>	<p><b>E: Envisioning</b>                      Imagine alternative developments in the future. The best solution is the one that investigates the problem and recognizes a potential opportunity of development for the future.</p>

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### 3.3.4. HORSE Scoring algorithm

HORSE is built as a ternary unweighted model, this means:

- a) The algorithm for judging solutions is judged in terms of 1-0-0.5, where  
1 = criteria fully achieved, 0 = not applicable, 0.5 = criteria partially achieved
- b) All criteria have the same weight.

### 3.4. Instructions for using the tool

To use the HORSE tool, follow the steps as described in the next process:

- Categorize the type of problem
- Establish the root cause
- Brainstorm potential solutions
- List the solutions in a table
- For each criterion, rate the solution as 1,0 or 0.5
- Calculate the total score to find the best solution

## 4. Who can benefit from using 'HORSE' and where to apply it

The HORSE tool supports problem-solvers in selecting a quality solution for a specific problem in a specific context. By using HORSE, problem-solving is done in a structured way with maximum confidence. *This approach benefits managers, team members, and the organization, contributing to business success.*

While all types of problems, simple, complicated, complex, will benefit from a structured solving approach, this approach is *particularly useful for complex problems with multiple components and many diverse stakeholders involved.*

HORSE can be applied in *daily business-as-usual activities and solving running project issues, but also for disruptive organizational transformations* where the uncertainty of solutions is extreme.

The control of the solutions is especially useful *in the context of highly collaborative and dynamic work environments*, where the diversity of opinions is elevated and the probability of taking rash, uninformed solutions, or solutions driven by power is high.

HORSE is also useful in the *in the context of new technologies adoption*, where there might be the tendency to over trust solutions proposed by AI without checking their solidity, adaptability to existing systems or correctness of entry-data.

## 5. The Gamma Cases

### 5.1. Case Study 1. HORSE<sup>1D</sup>

Consider the Case of a Projectized organization in a generic company called Gamma.

**Table 3. Solving Process for Simple Problems** (source: author)

Problem Solving Tool	HORSE <sup>1D</sup>			
Problem Category	Simple			
Problem Definition	Delay of delivery in engineering. Affects one deliverable only. The customer is upset and might issue penalties.			
Root Cause	A slow inexperienced engineer was assigned to this task.			
Brainstorm Solutions	S1. Invite the customer to a dinner. S2. Call the customer and propose him a partial delivery. S3. Involve an experienced engineer to speed up delivery, replan the activity and call the customer to inform him about the recovery plan.			
Select Solution	HORSE <sup>1D</sup> - First screening			
Solution criteria/ ID	Solution 1	Solution 2	Solution 3	Solution 4
Historic	0	0	0	1
Organized	0	0	1	1
Responsive	1	1	0	1
Systemic	0	0	0	1
Effective	0	0.5	1	1
Σ	1	1.5	2	5
Selected Solution (S4)	HORSE <sup>1D</sup> - Improved solution			
Historic	Ask your customer account manager how similar situation has been dealt in the past.			
Organized	Call the customer, communicate the recovery plan and organize a partial delivery if requested.			
Responsive	Respond immediately to the customer with a plan of actions.			
Systemic	Involve manufacturing to understand the impact of this delay on their delivery plan.			
Effective	Involve an additional engineer to speed up the process.			

Step 1: Without HORSE

The team in our Case just faced a problem of delivery delay in a project. They organized a brainstorming session defining the problem and establishing the root cause. Because most team members are Quick Solvers, they proposed some Quick Solutions (Solutions 1,2,3 in the attached **Table 3**).

The dilemma of the team is now what solution to adopt. In absence of a solid Decision-making tool, they might choose an inappropriate solution, failing to respond to the root cause of the problem, disregarding the key stakeholders involved or neglecting other key contextual aspects.

#### *Step 2: With HORSE*

After using the HORSE model, the team decided to apply Solution #4, because it satisfies the essential criteria for the context of simple problems. The HORSE model allowed them to reach a better solution, than the solutions figured out in the vacuum of a decision-model.

#### **5.2. Case Study 2. HORSE<sup>2D</sup>**

**Table 4. Solving Process for Complicated Problems** (source: author)

Problem Solving Tool	HORSE <sup>2D</sup>			
Problem Category	Complicated			
Problem Definition	Delay that will be penalized by the customer and could also jeopardize your future collaboration. Affects a whole range of deliverables in engineering.			
Root Cause	Our main engineering supplier disregarded a customer requirement; all deliverables must be checked and adjusted to integrate this requirement.			
Brainstorm Solutions	S5. Issue penalties to the supplier. S6. Call the supplier, clarify the insertion requirement, and inform the customer about the new delivery time. S7. Organize the changes to be made by your engineering department to speed up delivery. Replan the activity and call the customer to inform him about the recovery plan.			
Select Solution	HORSE <sup>2D</sup> - First screening			
Solution criteria/ ID	Solution 5	Solution 6	Solution 7	Solution 8
Holistic	0	0	0	1
Opportune	0	0.5	0.5	1
Rational	0	0.5	0.5	1
Systematic	0	0	0	1
Efficient	0	0	0.5	1
Σ	0	1	1.5	5
Selected Solution (S8)	HORSE <sup>2D</sup> - Improved solution			
Holistic	Identify the components affected by the change and their connection.			
Opportune	Issue the urgency plan in collaboration with the customer.			
Rational	Inform the customer about the compensation you offer and measurements to avoid this situation in the future.			
Systematic	Design a routine to migrate changes between parts.			
Efficient	Involve your best in-house specialists in changing the design to insert the missing requirement.			

Here is an example of a complicated problem. The criteria on level 2 need to be considered on the top of the level 1 criteria. These new criteria ensure:

- our solution considers the complicated relationship between problem components
- decision is made through a thorough analysis and using a reliable predictable model

The team selected Solution #8, because it satisfies all the essential criteria for the context of complicated problems.

### 5.3. Case Study 3. HORSE<sup>3D</sup>

**Table 5. Solving Process for Complex Problems** (source: author)

Problem Solving Tool	HORSE <sup>3D</sup>			
Problem Category	Complex			
Problem Definition	The delay affects a whole range of engineering deliverables and impacts manufacturing, which has already started. The customer sent a complaint and issued a penalty charge. Both the customer and sponsor are very upset.			
Root Cause	The consequences are the same as before but much deeper because the project is in a more advanced phase of its life cycle.			
Brainstorm Solutions	S9. Withdraw the contract with the supplier and move everything in-house. Inform the customer about these actions. S10. Call the supplier to clarify the insertion requirement and inform the customer about the new delivery time. S11. Organize the changes to be made in a mix of make-and-buy activities that ensure your Engineering is controlling deliverables consistently and involving the customer in incremental solution validation as per an agreed revision plan.			
Select Solution	HORSE <sup>3D</sup> - First screening			
Solution criteria/ ID	Solution 9	Solution 10	Solution 11	Solution 12
Harmonized	0	0	0	1
Optimized	0	0	1	1
Reliable	1	1	0	1
Sustainable	0	0	0	1
Envisioning	0	0.5	1	1
Σ	1	1.5	2	5
Selected Solution (S12)	HORSE <sup>3D</sup> - Improved solution			
Harmonized	Issue a comprehensive change plan harmonized between supplier, internal			
Optimized	Check the resources plan with the key stakeholders.			
Reliable	Involve your SMEs in checking and executing the plan.			
Sustainable	Ensure a highly skilled quality assurance team is involved continuously in the execution improvement.			
Envisioning	Implement wise risk management, plan contingencies, discover opportunities to simplify the design, and regain customer confidence.			

For a complex problem the criteria on level 3 need to be considered on the top of the level 1 and level 2 criteria. These new criteria ensure:

- our solution considers the complex relationship between problem components
- the decision is made considering the management<sup>3D</sup> of changes and the possible impact of risks and opportunities

The team selected Solution #12, because it satisfies all the essential criteria for the context of complex problems.

**Note:**

The three cases are intentionally illustrated as a set of cases for a gradually increasing problem. Each problem not solved when it is simple, can evolve to a complicated or complex problem, requesting a more elaborated solution to be solved, implying more time and resource consuming. The team needs to target the best solutions in the early stage of the problem lifecycle and HORSE is a valuable support tool in this process.

## 6. Comparing Results

For the given Case Study, we can plot the results in graphical form.

Following figures present various alternative of data visualization that can support the team and managers to decide the best solutions:

**Chart 1** - CUMULATED HORSE SCORE -> Scored solutions for the three Case Studies

**Chart 2** - DISTRIBUTED HORSE SCORE -> Scored solutions considering the context suitability

**Chart 3** - COMPLEXITY MODEL -> Solutions plotted on suitability and certainty.

According to these results, following solutions are the best to be applied in the given cases and context:

- Solution 4 - for the Case Study 1 (simple problem)
- Solution 8 - for the Case Study 2 (complicated problem)
- Solution 12 - for the Case Study 3 (complex problem)

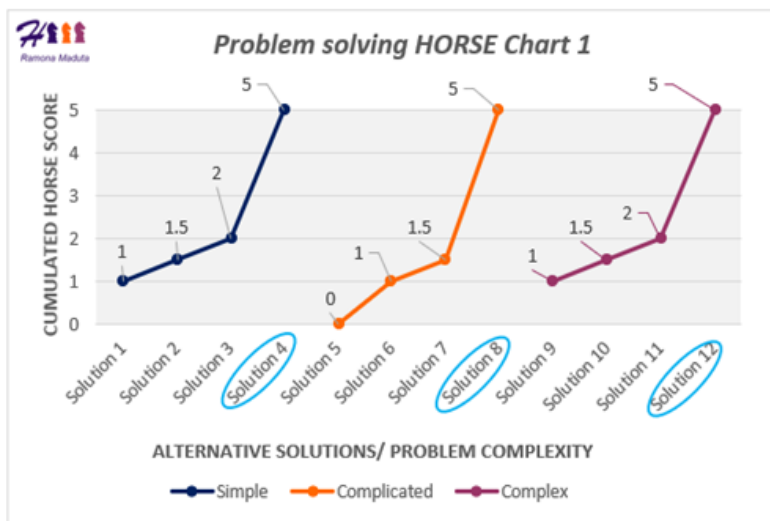


Chart 1. 'Decision HORSE' Results - Cumulated Score  
(source: author)

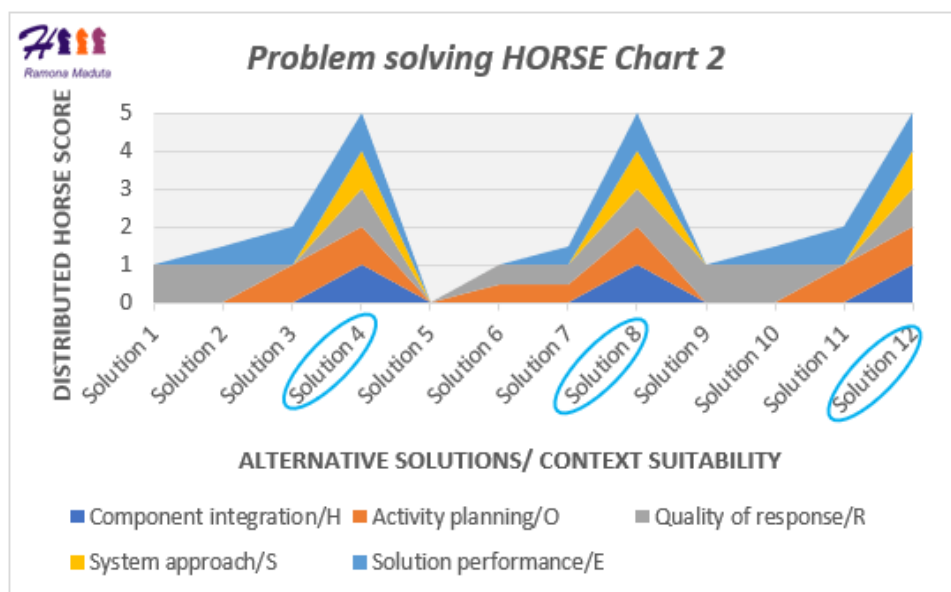
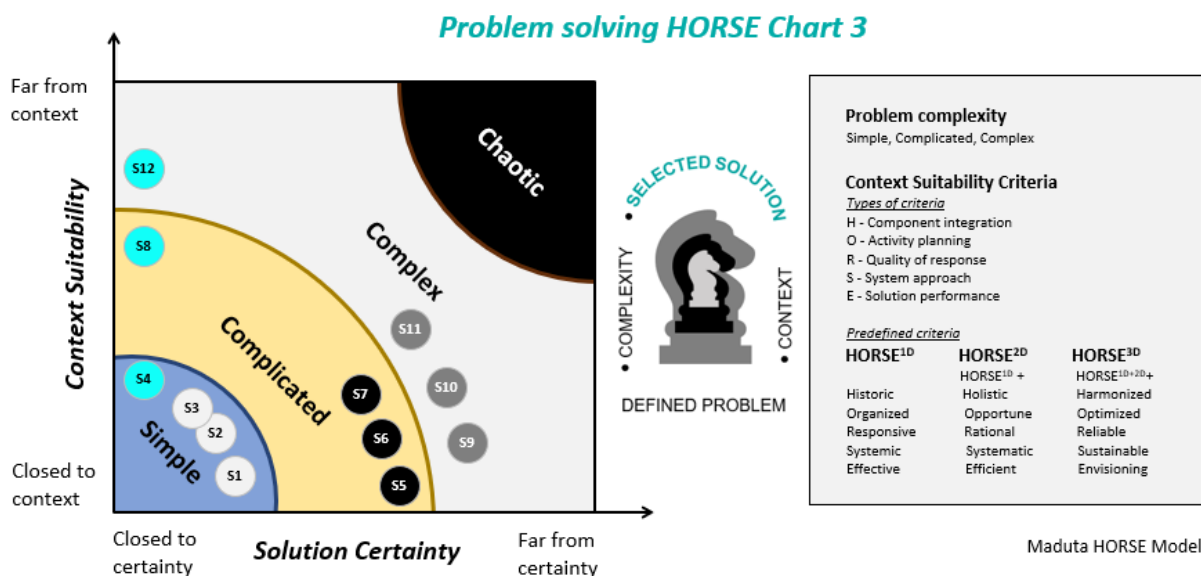


Chart 2. 'Decision HORSE' Results - Distributed Score  
(source: author)



**Chart 3. 'Decision HORSE' Results – Complexity Model**

(source: author)

## 7. Final Considerations

The HORSE is an original problem-solving model and tool that supports users in solving complex problems. By using HORSE, you follow a structured problem-solving process, and adapt methods to problems. This is done by decoding complexity and contextualizing your response to problems through a multifactorial decision-making model. HORSE is versatile - although there are 15 criteria considered at the highest level of problem complexity, you can choose in your organization the criteria that suits your needs. **Practice to Become an Expert in Complex Problem-Solving!**

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**Ramona Maduta** is a Stanford-certified project manager and holds credentials in project, program, portfolio, change management and PMI authorized training: PMP®, PgMP®, PfMP®, MoP®, Change Management Registered Practitioner, PMI-ATP Instructor.

Ramona has 25 years of experience in the Project Management field, including 12 years in an Enterprise PMO at COMAU, a multinational corporation. She contributed to major cross-country business initiatives for transforming systems, processes, and tools, served as Global Project Portfolio Analyst and ran a Global PM Academy with passion and dedication. Currently she is running her own consultancy and training company, TAGORE. She created several courses and trained more than 900 people internationally in project management and related domains.

Ramona was a Public Speaker at several Management Conferences in the USA, Germany, Spain and Japan and is the Author of several innovative business methods meant to support organizations & professionals in boosting their operative performance: Organizational Surfing<sup>1</sup> (2016), Empathetical Transformation Model<sup>2</sup> (2023), HORSE Problem-Solving<sup>3</sup> (2024/structured 2026)

Ramona Maduta speaks 5 languages: English, German, Italian, Romanian, and French. She can be contacted at [rmaduta@gmail.com](mailto:rmaduta@gmail.com) or on LinkedIn at <https://www.linkedin.com/in/ramona-maduta/>

<sup>1</sup> Maduta, R., Organizational Surfing (OS). A Leadership methodology to Manage Organizational Interfaces, awarded with the Best paper prize at SIBR Conference 2016, Osaka Japan.  
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<sup>2</sup> Maduta R. The Empathetical Transformation Model (ETM). A dual process (delivery/empathy) to Manage Business Transformations, launched at PMI Global Summit 2023, Atlanta

<sup>3</sup> Maduta, R., The HORSE. An original Problem-Solving Model, launched at the PMI Global Summit 2024, Los Angeles and presented in this paper in a structured and highly extended form.