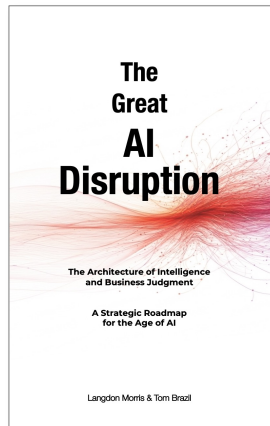


THE GREAT AI DISRUPTION CANVASES

Companion worksheets to



About

In *The Great AI Disruption* we explore the future of AI and the massive impact it is having on corporations and governments around the world. The book concludes by describing a new operating model for organizations in which AI is embedded as a thinking partner to help leaders apply sound judgment to reach good decisions quickly.

It includes a set of four “canvases,” worksheets that are designed to help you think through significant issues and problems.

This packet contains all four worksheets plus the accompanying narrative that describes why they may be useful, and how to use them.

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Four Canvases: Problem, Root Cause, Solution, and Stress Test

A Strategic Roadmap

Everything we're considering here describes imperatives that now confront all leaders: you have to understand the problems of adaptation and change at a deep level, and bring exceptional rigor to the search for solutions.

In particular, this matters now because unfortunately AI can be used to help people solve the wrong problems, and it can do it faster than any previous technology in history. That's not a good thing. In fact, it's a glaring weakness, and a major trap.

So how do we know when we have identified the right problem? Or, stated differently, what does better reasoning look like?

To help you think through an important situation or problem, and to begin framing possible solutions, we've created four canvases, or templates, that are structured tools for thought experiments: a problem canvas, a root cause canvas, a scenario-to-solution canvas, and stress-test canvas.

The idea of a "canvas" as a thinking tool originated with Toyota, which is renowned for the rigor it has brought to all facets of its operations. To help its staff develop a thorough understanding of any problem they may encounter, and to push them toward solving it rather than just noticing it, they developed a simple tool with powerful implications. It's called the "A3 Problem-Solving Method."

It originated during the 1960s in Toyota's quality control practices and the Toyota Production System, and was designed to distill a complex operational challenge into a concise visual narrative. Rather than filling binders with lengthy reports, Toyota expects employees to capture an entire problem-solving initiative on a single sheet of paper. The name comes simply from the size of the paper they use, international A3 (297×420 mm, or roughly 11×17 inches).

The A3 works by mapping W. Edwards Deming's Plan-Do-Check-Act (PDCA) cycle onto a structured visual template. The document is refined through an iterative dialog between the person who found the problem and their manager.

Four Canvases, continued

The physical constraint of the single A3 sheet size forces them to synthesize their observations, separate symptoms from underlying causes, and eliminate fluff, thereby promoting disciplined critical thinking. As a communication tool it helps create immediate alignment because it helps all stakeholders to grasp a complex issue, its evidence, and the proposed path forward as a single coherent visual.

Toyota also uses the A3 as a technique for talent development and continuous improvement. It's been effective at shifting the company's culture from one of issuing top-down directives to one of asking probing, capability-building questions.

Another reason it's so effective is that when a problem arises for the first time, it's common for a group of people to sit around discussing it, quickly arrive at a plausible solution, and stop there, as though the very first idea that came up was inevitably going to be the best one they could possibly come up with. The lesson is not to come to closure too soon, not before carefully defining the problem, exploring many possible solutions, and stress-testing the most promising.

The A3 originated as a tool for making continuous improvements to the high-volume operations of an auto manufacturing plant. But the lesson about writing down the full thought process on a single sheet of paper is valuable because doing so requires that you think it through, get to the point, and create an artifact that concisely conveys the full story.

With that in mind, we've adapted the approach to problems that may not be related to an assembly line, but deeper and more challenging strategic issues and problems that come forth because of accelerating change, new technologies, and of course, because of AI.

Speaking of AI, it may be tempting to get AI to do all this thinking for us, but since, as we noted above, AI is exceptionally skilled at helping us solve the wrong problem, we are best served by getting clear about our situation before we start asking AI for help, lest it take us very far down a very wrong road. So these worksheet templates are designed to help you understand a situation before you start asking AI for advice. They lead you through a disciplined framing process to discover exactly what is the problem you need to solve, which quite often is not the one that initially seemed to appear before you.

The Problem Canvas

The Crucible Problem Canvas™		Crucible AI	
1. Signals Received	2. Evidence	3. Obstacles	
4. Contradictions, Tensions, or Dilemmas	5. Boundaries	6. Desired Outcomes	7. Where is there a legitimate conflict of objectives?

The Problem Canvas is intended to help you describe both the problem and the context of the system in which the problem exists so that you have a clear picture of what you strive to achieve.

Thus, the first question simply asks exactly what signal you received that indicates something important has occurred that may constitute a problem.

Next, it asks you to describe and examine the evidence. Do you think it's strong, reliable, and credible, or weak and wishy-washy? Is it consistent with other signals or evidence you've received?

Step 3 on the template assumes that the signals are credible and important, and it's worth continuing with the exercise. The situation that you are beginning to describe inevitably presents obstacles, so record them here.

You may also have to grapple with the likelihood, especially in regard to large and complex issues, that there are contradictions inherent in the evidence that confronts you, or in the situation itself. These will have to be resolved, but not necessarily right now. Note them and you'll come back to them later.

You've now defined some of the critical context, but notice that you haven't yet attempted to frame the problem itself. It may also be tempting to try to solve it right away, but if it's a complex situation then that would probably be premature, and would be likely to lead you astray.

Instead, note the boundaries in which the system exists. This is generally a matter of scope – what scope is relevant to this issue, and what boundaries are therefore defined?

It may have taken only a few minutes to note down these elements, but nonetheless by now the situation should now be a lot clearer. So clear that you can possibly now define the outcomes you want to achieve.

And when you know what you want to accomplish, you may also have a clear picture of what the actual problem is that needs to be solved. It may or may not have been the problem that you had in mind when you started filling out the template a few minutes ago, but either way, the clarity you now have will be useful both for your own purposes, and for discussing with your colleagues.

1. Signals Received

What we have learned that suggests there is a problem to be solved:

2. Evidence

We know there is a problem because...

Quality of the evidence is (circle one):

Low Medium High

The source of the evidence is:

3. Obstacles

That the solution will have to overcome:

4. Contradictions, Tensions, or Dilemmas

Conflicting needs or objectives
that are inherent in the situation:

5. Boundaries

That the solution must recognize and respect:

6. Desired Outcomes

What we want to achieve is ...

7. Where is there a legitimate conflict of objectives?

That tells us what we need to solve.

The Root Cause Canvas

The Crucible Root Cause Canvas™

1. Which objectives are in conflict?	2. Evidence	3. What does each side legitimately require?	4. Can the conflict be addressed by:
5. Which alternatives preserve both objectives?	6. What authority can safely be delegated?	7. What must remain reversible (if things go wrong)?	8. Who owns the residual risk?

Crucible AI™

The Root Cause Canvas helps you explore the objectives that are inherent in the problem or situation and that may be in conflict. After all, if there weren't conflicts then there probably wouldn't even be a problem to solve, or a decision to make.

Begin by identifying specifically which objectives are in conflict, the evidence behind them, and the requirements to satisfy each.

Then you can consider pathways to resolution that don't require compromise, such as timing or sequencing, role definitions, or shifting the scale.

You may then be able to devise alternatives that go beyond compromise and constitute a higher level solution. As that becomes clear, the scope of authority for implementation can be determined, and in case things go wrong, the extent and scope to which actions must be reversible.

Finally, what risks remain, and who will have responsibility for it?

The Crucible Root Cause Canvas™

Use this template as a thought-starter to help you think through complex situations or problems. The purpose here is not to solve the problem here, but to understand where objectives may legitimately be in conflict, and how the conflict might be solved without resorting to compromise.

1. Which objectives are in conflict?

Conflicting needs or objectives
that are inherent in the situation:

2. Evidence

What evidence shows that the conflict is real?

3. What does each side legitimately require?

4. Can the conflict be addressed by:

Time or sequence:

Role:

Condition:

Architecture:

Shift of scale:

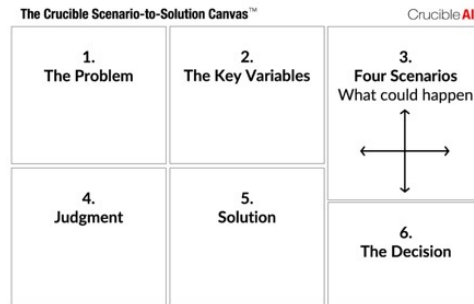
5. Which alternatives preserve both objectives?

6. What authority can safely be delegated?

7. What must remain reversible (if things go wrong)?

8. Who owns the residual risk?

The Scenario-to-Solution Canvas



The Scenario-to-Solution Canvas is based on the premise that there may be critical uncertainties in the situation, and that it's important to model them through to understand the bigger picture context in which solutions may have to work. It also helps you avoid fixating on one preferred future, by setting up a logical structure to explore alternative futures using the scenario planning format that we have described in prior chapters.

Its format invites you to identify the two key variables that are both uncertain and important, and then to define and consider possible scenarios about how the situation of those variables may unfold. This continues thought experiment stage by modeling through alternative possibilities so that you don't get attached to one and only one idea about what will happen. Most complex situations are too nuanced to know for certain what will happen, so thinking through alternatives will free you remain open-minded and avoid trying to fit the evidence to your preferred conclusion.

This should provide a much deeper context to help you can think usefully about the bigger picture, and this is where your judgment comes in: What does it all mean?

The Crucible Scenario-to-Solution Canvas™

Use this template to help you hone your judgment about complex situations or problems.
The purpose here is to take the thinking you recorded on the Problem Canvas and now explore how the situation may unfold, and what judgment results. You may also be able to define a legitimate solution.

1.

The Problem

We defined it on the Problem Canvas. Repeat it here:

2.

The Key Variables

Can you identify two key variables that will shape how the situation in which the problem exists will unfold?

These will be the two axes on the 2x2 matrix.

Key Variable 1:

Left Extreme:

Right Extreme:

Key Variable 2:

Top Extreme:

Bottom Extreme:

4.

Judgment

What this thought experiment tells you.

Note that if multiple scenarios are plausible, then it may not be possible to make a decision now, but you should be better prepared for when the time comes to make it.

5.

Solution

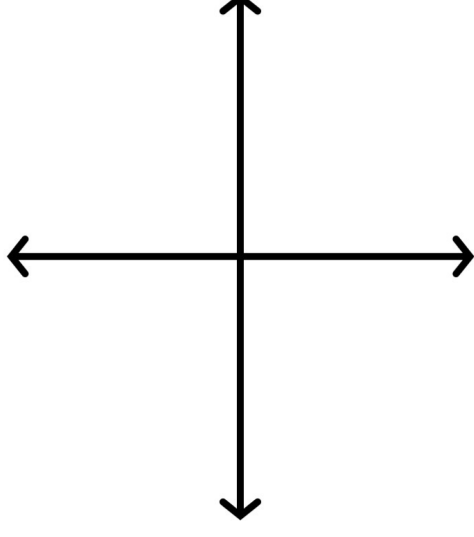
Is there a clear solution now?

(It may not be, yet, in which it might be premature to try to solve it today.)

3.

Four Scenarios

What could happen ...



6.

The Decision

Write it here if you are ready to make a decision.

The Stress-Test Canvas

The Crucible Stress-Test Canvas™		Crucible AI
1. The Solution	2. Weaknesses & Assumptions	3. Capabilities & Resources
4. Leading Indicators	5. New Opportunities & Risks	6. Now, Next, Later

The Stress-Test Canvas is most useful once you've got a clearly articulated problem and you have begun to solve it. Now you need to stress-test the various alternatives.

This may reveal hidden weaknesses, or identify critical assumptions that need to be true for the proposed solution to actually work the way you want it to.

In addition, you can consider what capabilities your organization needs in order for this solution to be effective. Do you have them now, or do they need to be developed or acquired? What about resources?

And as you pursue this approach, what would tell you that you're on the right track? What would tell you that something is wrong and you need to reconsider?

What new opportunities does this solution open up, and what risks does it open up as well?

Finally, what does the solution mean in three time horizons, now, next, and later?

The Crucible Stress-Test Canvas™

Use this template as a thinking partner to help you assess your proposed solution more thoroughly.

1.

The Solution

What did you write on the Scenario-to-Solution Canvas?
Now that you write it out it again, does it still sound right?

2.

Weaknesses & Assumptions

What are the possible weaknesses of this solution?
What assumptions have to be true for this solution to work?

3.

Capabilities & Resources

What organizational capabilities do we need to successfully implement this solution?
What resources are required to successfully implement this solution?
Do you have them?

4.

Leading Indicators

What events or evidence would indicate that you're on the right track?
What events or evidence would indicate that the solution is not going to work and you should change course?

5.

New Opportunities & Risks

What new opportunities might arise from the successful implementation of this solution?
What new risks? (And who owns those risks?)

6.

Now, Next, Later

How should this solution play out over time?
What does it do now?

What will enable in the near future?

What will mean in the longer term?