

The 2023 Engineering Ideas Institute – Tackling the Challenges Facing Our World Through Scenario Planning & Collaboration

Guide to Using Scenarios from the 2023 ECL-USA Ideas Institute

At the 2023 Engineering Change Lab - USA (ECL) Ideas Institute, participants took a deep dive into how the engineering community could use scenario thinking to help their organizations, and themselves, become more agile, flexible, and resilient in the face of the increasingly complex, uncertain, and rapidly changing future. As part of that exploration and learning, three scenarios of the future were created and explored during the summit. Those scenarios are now available for others to use as vehicles for their explorations into the future. The three scenarios are available on the Knowledge Hub page of the ECL website.

- **Miami Devastated by Hurricanes**
<https://ecl-usa.org/wp-content/uploads/2024/01/Miami-Devastated-by-Hurricanes.pdf>
- **An Abundant, Inclusive, Innovative and Accessible Workforce**
<https://ecl-usa.org/wp-content/uploads/2024/01/An-Abundant-Inclusive-Innovative-and-Accessible-Workforce.pdf>
- **United Regions**
<https://ecl-usa.org/wp-content/uploads/2024/01/United-Regions.pdf>

We also want to offer a short guide on how to use these scenarios (or any other scenarios of the future that you have produced yourself or accessed).

1. Consider readings or work that you want people to do prior to convening to explore the scenarios. To prepare yourself and participants for this work, we recommend the following.
 - 2023 Engineering Ideas Institute Report
<https://ecl-usa.org/wp-content/uploads/2023/12/Summit-19-2023-EII-Report.pdf>

This report includes an introduction to scenario planning, commentary on how that process was used at the 2023 Engineering Ideas Institute and insights and observations gained during the summit. The three scenarios are also included in that report on pages 20-22.
 - *Imaginable: How to Create a Hopeful Future*, Jane McGonigal Spiegel & Grau, New York, 2023

This book was used as a pre-session reading for participants coming to the 2023 Engineering Ideas Institute and is a great resource for imagining and exploring futures.
2. Next, be clear about what your purpose is in exploring the scenario(s). That purpose could range from incorporating scenario planning into a strategic planning process (helping generate and/or

evaluate strategies), to test-flying and potentially improving a specific decision your organization is facing, to simply stimulating learning and improving strategic agility for people by allowing them to experience the selected future(s).

3. Once you have determined your use or application for the scenarios, think through and craft a set of prompts (questions) that individuals or groups can use to explore the scenario(s) and accomplish your purpose. To assist you in generating the prompts you might like to use, shown below are a set of possibilities, matched to applications we have either designed or experienced in the past, including ...
 - Option One. Application in Support of Generating a Strategic Plan.
 - Option Two. Application to Evaluate a Strategy or Strategic Plan.
 - Option Three. Evaluating an Upcoming Decision.
 - Option Four. Application in Support of Learning / Developing Strategic Agility. *(Could be used in conference session setting.)*
 - Option Five. Quick Exploration of the Future. *(Could be used in conference session setting.)*
4. Create an annotated agenda for your session, adapting the design shown for an exploration using multiple scenarios provided in the attached table.

Applications

Option One. Application in Support of Generating a Strategic Plan. *(Upfront prior to generating goals and strategies.)*

Assign each scenario to a small group for exploration and analysis. After small groups report out their analysis and insights to the whole group, mix participants into a new set of small groups. Ask those new groups to use a second set of prompts to explore “across all of the scenarios” and once again report out their answers and insights. Use the resulting summary thoughts and recommendations as input to the strategic planning process.

Step One: Exploration of Individual Scenarios (Small Groups)

Imagine yourselves in this future scenario ten years from today. Now that you are in this future, reflect on the following prompts ...

- *How might conditions described in the future scenario impact your organization (firm/company)?*
 - *How has the organization’s environment changed?*
 - *What opportunities might be present? What markets might be attractive?*
 - *What threats or challenges are present? What vulnerabilities are revealed?*
 - *What would be “winning strategies” for your organization in this future?*
 - *If you accept that this future was going to become reality, what should the organization be doing today?*
 - *What actions that you might consider today would be obvious mistakes?*
 - *What else have you learned from your exploration of this scenario that might be important?*

Report to Whole Group / Whole Group Discussion.



Step Two: Exploration Across Multiple Scenarios (Small Groups)

Considering the full set of scenarios, answer the following questions:

- What are the “no brainers” ... actions common to all scenarios that will be successful (or necessary) in all foreseeable futures?
- What are “no regrets” actions that may be valuable in some scenarios, less valuable in others, but not damaging in any?
- What actions are “contingent possibilities” ... actions that may be valuable only in selected scenarios and may expose risks and downsides in others?
- What are the “no way” actions that are judged unacceptable, given the risks and prospects for damage indicated in alternative scenarios?
- What red flags, leading indicators, and/or signposts can you identify to watch over time that would indicate which trajectory the future is taking?
- What other insights about the future have you gained from your exploration that might be important?

Report to Whole Group / Whole Group Discussion.

Option Two. Application to Evaluate a Strategy or Strategic Plan. (At the end of a strategic planning process.)

Note. This evaluation can be done using one or more scenarios.

Assign each scenario to a small group for exploration and analysis. After small groups report out their analysis and insights to the whole group, mix participants into a new set of small groups. Ask those new groups to use a second set of prompts to explore “across all of the scenarios” and once again report out their answers and insights. Use the resulting summary thoughts and recommendations to evaluate the strategy or strategic plan.

Step One: Exploration of Individual Scenarios (Small Groups)

Imagine yourselves in this future scenario ten years from today. Now that you are in this future, reflect on the following prompts ...

- What is the likelihood of success for your strategy in this scenario?
- What elements / aspects of the strategy worked particularly well in the scenario?
- Which elements / aspects of the strategy did not work very well or carried significant risks?
- What could be changed about the strategy to improve its likelihood of success in this scenario?
- What other strategic opportunities / vulnerabilities were revealed by your analysis?

Report to Whole Group / Whole Group Discussion.

Step Two: Exploration Across Multiple Scenarios (Small Groups)

Considering the full set of scenarios, answer the following questions:

- How robust is our strategy?
- Are any changes revealed that we should consider?

- *What aspects of our strategy should be monitored most closely to allow for adjustment and change?*

Report to Whole Group / Whole Group Discussion.

Option Three. Evaluating an Upcoming Decision. *(Major investment, acquisition, office expansion, etc.)*

Note. This evaluation can be done using one or more scenarios.

Ask each small group to explore and analyze the upcoming decision within the context of the future scenario you have chosen. After small groups report out their analysis and insights to the whole group complete your evaluation of the upcoming decision.

(Note: If you are using multiple scenarios, assign each scenario to a different small group and then report out answers and insights to allow whole group to reach conclusions/recommendations.)

Exploration Using One Scenario

Small Group Analysis. For your scenario, explore the following questions:

- *How does this decision look, when framed within the context of this future scenario?*
- *If we decide _____, what is the likely result in this scenario?*
- *What would work well? What would be problematic?*
- *What vulnerabilities or risks are revealed when thinking about the future described in this scenario?*
- *If this scenario is the future we are going to experience, what should be doing or learning about now to better inform ourselves before we make this decision? What have we not considered in our current thinking that we should?*

Report to Whole Group / Whole Group Discussion

Option Four. Application in Support of Learning / Developing Strategic Agility.

Assign each scenario to a small group for exploration and analysis. After small groups report out their analysis and insights to the whole group, mix participants into a new set of small groups. Ask those new groups to use a second set of prompts to explore “across all of the scenarios” and once again report out their answers and insights.

Step One: Exploration of Individual Scenarios (Small Groups)

Imagine yourselves in this future scenario ten years from today. Now that you are in this future, reflect on the following prompts ...

- *How might the conditions described in the future scenario impact your community (organization)?*
- *What opportunities can you detect for significantly increasing the contribution that your community makes to society?*



- *How could your community use its unique strengths to help others in this future?*
- *What are the biggest surprises the community will face as society moves into this future?*
- *What actions should members of the community take today (in the near future) in response to the prospective conditions outlined in this scenario?*
- *What actions would be obvious mistakes?*
- *What else have you learned from your exploration of this scenario that might be important?*

Report to Whole Group / Whole Group Discussion.

Step Two: Exploration Across Multiple Scenarios (Small Groups)

Considering the full set of scenarios, answer the following questions:

- *What are “no brainer” actions that will be important for the community (organization) to consider and take?*
- *What are “no regrets” actions that the community could take ... that may be valuable in some futures, less valuable in others, but not damaging in any way?*
- *What are the “no way” actions that would be unacceptable given how the future unfolds across the set of alternative scenarios?*
- *What are the greatest risks for society present across the scenarios? How might the community help mitigate those risks?*
- *What could / should you do as a leader of your organization and as a member of the community?*

Report to Whole Group / Whole Group Discussion.

Option Five. Quick Exploration of the Future. *(Can be done using one or more scenarios.)*

Assign each scenario to a small group for exploration and analysis. After small groups report out their analysis and insights to the whole group, explore the second set of prompts in whole group.

Step One: Exploration of Individual Scenarios (Small Groups)

Imagine yourselves in this future scenario ten years from today. Now that you are in this future, reflect on the following prompts ...

- *What are the most significant “surprises” that could up-end your firms in this future?*
- *In what ways are your firms most “at risk” in this future”?*
- *What are the most significant “strategic uncertainties” present in this future for your firms?*

Report to whole group.

Step Two: Whole Group Discussion

- *What could / should you (your leadership team) do now, given that you cannot predict the future, only prepare for the future that will unfold?*
- *What are the most significant insights you have gained by reflecting on these potential futures?*



Annotated Agenda for Exploration Using Multiple Scenarios

<u>Exploring Individual Scenarios</u>		
Preparation		<p>Distribute the scenario(s) to participants to read before the exploration session if possible.</p> <p>If unable to send out in advance, distribute the scenario(s) at the start of the session and provide approximately 10 minutes at the start of the process to read individually.</p>
Introduction & Directions	5 minutes	<p>Overview the agenda for the session and provide directions for the exploration session.</p> <p>1. If people are not familiar with scenario planning, provide a brief introduction to this process.</p> <p>If you are exploring multiple scenarios, divide participants into small groups (one group for each of the scenarios). Assign one scenario to each group.</p>
Step One: Small Group Exploration	20 – 60 minutes depending on time availability and number of prompts	<p>Direct the groups to explore their assigned scenario using the prompts (either suggested prompts from this document or make up your own set).</p> <p>Counsel participants to suspend any potential “disbeliefs” they might have about the possibility of their particular future – they should be exploring, not critiquing the scenario at this stage of the work.</p> <p>Groups should record their observations and answers to the prompts on flip charts for use in reporting out to the whole group.</p>
Step Two: Small Group Reports	30 – 45 minutes (8 – 10 minutes per group)	<p>Recommend that participants take notes that they can refer to during the next stage of work analyzing across the full set of scenarios.</p>

		<p>After each small group “presenter” has offered their report first ask for any additional thoughts from other members of that small group. Then, open it up for questions by participants from the other small groups to ask questions and clarify their understanding of the presented analysis.</p> <p>After reports from all groups open the floor for additional observations and insights gained.</p>
<u>Analysis Across Scenarios</u>		
Introduction & Directions	5 minutes	<p>Mix small groups so that each group has people from each of the scenario exploration groups.</p> <p>Quickly review the prompts you are using, checking for understanding with participants about the meaning of each of the prompts.</p>
Step One: Small Group Analysis	15 – 45 minutes	Groups should record their observations and answers to the prompts on flip charts for use in reporting out to the whole group.
Step Two: Whole Group Report	15 – 45 minutes	<p>Develop your own prompts for additional reflection in whole group after the reports by small groups of their analyses.</p> <p><i>Option: Working in whole group, ask participants to develop a list of “red flags” that could be watched for or monitored to provide an early warning that the future is unfolding toward or away from each of the scenarios.</i></p>
Next Steps – Further Uses of the Scenarios	15 – 30 minutes	In discussion with the group, identify different ways that the scenarios and/or the insights gained from exploring the scenarios could be used by your organization (or by people outside your organization).

Closing Remarks	10 minutes	Ask for closing remarks about the process and key learnings from each person. Thank everyone for participating and express your appreciation for their creativity, focus, and insights.
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