Navigating Uncertain Futures with Scenario Planning

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Americans for the Arts Webinar, 10/7/20

Overview

• Competing Planning Approaches
• Scenario Planning Defined
• Urban Planning Examples
• Overview of Bridgespan Group’s Scenario Planning Tool
• Questions/Discussion
Why is an urban planner talking to arts groups?

Part 1. Foundations
1 The Kind of Problem a City Is
2 Scenario Planning Defined
3 Competing Approaches

Part 2. Urban Scenario Planning Practice
4 Scenarios in Urban Planning
5 Digital Scenario Tools
6 Effective Scenario Practice

Part 3. Project Outcomes and Evaluation
7 Defining Scenario Project Outcomes
8 Scenario Outcomes Research
9 Urban Scenario Outcomes Evaluation Framework

Part 4. Transformation and Conclusions
10 Toward Transformative Scenario Practice
11 Conclusions

Key: Chapters partly or mostly about scenario planning in general

What is Scenario Planning and Why is it Used?

Urban Scenario Planning is a form of strategic planning that creates multiple representations of plausible urban futures in order to manage uncertainty and envision transformation. It can be used to:

• **Build consensus** and reframe issues among diverse stakeholders
• **Analyze connections** across functional domains (land use, trans., etc)
• **Synthesize** values and technical analysis
Scenario Planning Helps Planners Respond to Contemporary Planning Challenges

**Transformation:** How can the physical and functional pattern of a city be changed to improve sustainability?

**Resilience:** How can cities be prepared for uncertain external forces, such as climate change impacts or new technologies?
Addressing Racial Equity Through Transformative Scenario Practice

• **Two Types of Planning** (Sandberg, 1976):
  – **Colonizing**: “today’s powerful interests, organized in established institutions, prolong the prevailing situation into the future by anticipating and counteracting crises and threats, accomplishing this *inter alia* through future studies and planning”
  – **Emancipatory**: “good futures research does not present any self-fulfilling prophecies. Conditional prognoses and conditional plans oppose reification of developments, and demonstrate alternative sand possibilities for change through active measures (257)

• **Strategies**:
  – Participation & collaboration
  – Analyze patterns with opportunity mapping
  – Analyze equity impacts of plans, propose more emancipatory scenarios
  – Analyze race and ethnicity within plan

Supporters of the 6 Wins for Social Equity Network attending a San Francisco MTC meeting to advocate for the inclusion of the EEJ scenario (See Box 7 in Goodspeed 2020)

Planning Approaches

Visioning
Planning Approaches

• Whose vision?
• Data?
• Plausibility?

Visioning

Planning Approaches

Visioning

Forecasting
Quantitative Trends Are Difficult to Predict…

Note: VMT estimation methodology varies between studies. Data Sources: SEMCOG, Richard Murphy

… and Technological and Economic Trends Aren’t Easier

“Heavier-than-air flying machines are impossible.”
– Lord Kelvin

“I think there is a world market for about five computers”
– Thomas Watson, IBM Chairman, 1943

“With over fifty foreign cars already on sale here, the Japanese auto industry isn’t likely to carve out a big slice of the U.S. market for itself.”
– Business Week, 1968

“One year from now, we will have more than one million fully self-driving robotaxis on the road.”
– Elon Musk, April 2019

Planning Approaches

- Visioning
- Forecasting
- Strategic Planning

Strategic Planning

1. Initial Agreement
2. External Environment
   - Forces-Trends
   - Mandates
3. Mission/Values
4. Stakeholders
5. Internal Environment
   - Resources
6. Strategic Issues
   - Opportunities
   - Threats
7. Strategies
   - Strengths
   - Weaknesses
8. Vision of Success
   - Action

Results

Source: Bryson, John, Strategic Planning for Public and Nonprofit Organizations
Planning Approaches

Visioning
Forecasting
Consensus Building
Strategic Planning

Future Focus
Single Vision

Present Focus
Anticipates Plural Viewpoints

Internal Project Focus
Mutual Understanding

External Focus
Trends & Systems

Visioning
Forecasting
Consensus Building
Strategic Planning
Scenario Planning in Urban Planning

Elements Found in Scenario Planning Practice

Visioning
- Inspiring visions
- Charrettes

Forecasting
- Plausibility
- Trend analysis

Strategic Planning
- Strategic Issues
- Values
- Goals
- Strategies

Consensus Building
- Stakeholder Engagement
- Participation

Scenario Planning Ideas

Urban Scenario Planning Practice

A Forecasting Metaphor

How to anticipate the road ahead?
Curvy or straight? Types of obstacles?

What Are Often Analyzed in City Scenarios?

- Uncertainties:
  - Population or employment growth
  - Location, type, and density of new development
- Predetermineds
  - Existing housing and infrastructure
  - Current institutions such as private property markets


Scenario Can Describe Trends, Decisions, or Events
## Why create scenarios in urban planning?

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Goal</th>
<th>Measures of Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normative</td>
<td>• Create a shared vision through creating and comparing several scenarios</td>
<td>• Consensus on vision, implementation strategies, goals, indicators, etc…</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Quality of vision(?)</td>
</tr>
<tr>
<td>Exploratory - Focused on Decisions</td>
<td>• Make better decisions through creation of scenarios</td>
<td>• Plans which allow for better decisions (robust, contingent strategies)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Number, quality, analysis of strategies</td>
</tr>
<tr>
<td>Exploratory Projects</td>
<td>• Improve understanding of uncertainty and future trends</td>
<td>• Foresight?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Enlightenment?</td>
</tr>
</tbody>
</table>

In all cases, the goal is achieved through the comparison of a set of scenarios, designed to be similar in some ways and different in others.

### Normative Scenario Projects

**Oregon Model for Normative Scenarios**


**Backcasting**

Project Success Measures

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Goal</th>
<th>Measures of Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision Projects</td>
<td>• Create a shared vision through creating and comparing several scenarios</td>
<td>• Consensus on vision, implementation strategies, goals, indicators, etc…</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Quality of vision(?)</td>
</tr>
<tr>
<td>Decision Projects</td>
<td>• Make better decisions through creation of scenarios</td>
<td>• Plans which allow for better decisions (robust, contingent strategies)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Number, quality, analysis of strategies</td>
</tr>
<tr>
<td>Exploratory</td>
<td>• Improve understanding of uncertainty and future trends</td>
<td>• Foresight</td>
</tr>
<tr>
<td>Projects</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Bannock, ID MTP 2040

- Small regional agency, hired consultant with scenario expertise
- Created four conceptual scenarios to clarify vision
  - The Trend scenario
  - The University/Active Living scenario.
  - The Great Place for Business scenario
  - The Outdoor Life scenario
Bannock, ID MTP 2040


DenveRight Internal Scenario Workshop

DenveRight Internal Scenario Workshop

Critical Certainties:
1. Aging Population + Net Population Growth; Hearing 4.5 M in DRCOG
2. Longer, More Frequent Drought + Extreme Weather Events
3. Water is a Commodity, Continued Water Gap;
4. Access to the Outdoors and Recreational Tourism Remains a Major Value

Critical Uncertainties:
1. Development Capacity
2. Political Will
3. Mode Shift
4. Population Change

Analyze Blueprint Denver Strategies in light of scenarios
Nonprofit Scenario Planning During a Pandemic

• Many different flavors of scenario planning
• The Bridgespan Group has proposed on version tailored to the needs of nonprofits during a pandemic
• Like any specific method, it has strengths and weaknesses (your mileage may vary)
• Article and tool: https://www.bridgespan.org/insights/library/strategy-development/nonprofit-scenario-planning-covid-19

Scenario Planning Process

1. Identify key drivers at risk
   • Identify the drivers (i.e., major elements) of your organization's economics and impact
   • Note which drivers are at both a high level of importance and a high level of risk—you will use these in step 2 to develop scenarios

2. Develop and model scenarios
   • Construct best-, moderate-, and worst-case scenarios anchored in the key drivers highlighted in step 1 and relevant external factors outside of your control
   • Translate scenarios to reflect their impact on your ~6-12 month revenue forecast

3. Create a portfolio of actions
   • Develop a set of actions that would allow you to effectively manage against each scenario
   • Quantify the financial impact of these actions to understand total estimated savings achieved or costs incurred

4. Determine key trigger points
   • Determine concrete and measurable trigger points that will help prompt your organization to act at the right time
   • Monitor them regularly to help your leadership team make and execute decisions quickly as circumstances evolve
Guiding Principles

Before you begin the scenario planning process, consider aligning on a set of guiding principles—values based criteria—with your leadership team to inform decision making in the face of uncertainty.

- Explicit principles to guide decision making can help in several ways:
  - Align organization’s leadership to make tough decisions in the face of uncertainty
  - Ensure equity-related considerations receive proper attention
  - Allow leadership to communicate rationale behind key decisions to stakeholders

There is no checklist of off-the-shelf guiding principles to use in a crisis; each nonprofit must chart their own course.

In general, principles should reflect an organization’s mission, values, unique circumstances and an equity lens.

Examples include:
- We will find ways to safely and effectively continue our most critical programs
- We will prioritize the well-being of our people through the crisis
- We will avoid programmatic or operational shifts that disproportionately harm people of color
- We will preserve the long-term financial health of our org by maintaining X months of reserves

Step 1: Identify key drivers at risk

Nonprofit leaders face an unprecedented number of uncertainties and risks amid COVID-19 that span all aspects of their organization—only a subset of these matter most and it is critical to prioritize among them in scenario planning. To complete the worksheet, first identify the drivers (i.e., risks elements) of your organization’s economics and impact across three categories: programs, operations, and funding. Next, assess the level of importance of each driver to your organization and the level of risk each faces. In evaluating levels of risk, consider three questions: (1) What is the nature of the risk? (2) What is the likelihood of the risk? (3) What is the level of impact of the risk? After completing the chart, state which drivers are at a high-level of importance (to organization economics and/or impact) and a high level of risk—you will use these in the next worksheet to develop scenarios.

<table>
<thead>
<tr>
<th>Identify key drivers of organization economics and impact</th>
<th>Level of IMPORTANCE*</th>
<th>Level of RISK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• E.g., student enrollment, patient volume, etc.</td>
<td>Low / Med / High</td>
<td>Low / Med / High</td>
</tr>
<tr>
<td>• ...</td>
<td>Low / Med / High</td>
<td>Low / Med / High</td>
</tr>
<tr>
<td>Operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• E.g., facilities, operational staff capacity, etc.</td>
<td>Low / Med / High</td>
<td>Low / Med / High</td>
</tr>
<tr>
<td>• ...</td>
<td>Low / Med / High</td>
<td>Low / Med / High</td>
</tr>
<tr>
<td>Funding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• E.g., fee for service revenue, government grants, etc.</td>
<td>Low / Med / High</td>
<td>Low / Med / High</td>
</tr>
<tr>
<td>• ...</td>
<td>Low / Med / High</td>
<td>Low / Med / High</td>
</tr>
</tbody>
</table>

*Level of importance is this context refers to the driver’s contribution to your organization’s economies (e.g., percentage of revenue or expenses) and/or your mission (e.g., role in achieving target outcomes).
Step 2: Develop and model scenarios

Consolidate the best data available to construct best-, moderate-, and worst-case scenarios that reflect the full spectrum of possible outcomes for your organization. First, elevate which external factors (factors outside of your control) will directly impact your organization—these may include shelter-in-place restrictions, unemployment rates, the pace of economic recovery, etc. Next, estimate the potential impacts that these external factors could have on the key drivers of your organization’s impact and economics prioritized in step 1. Once you have developed these scenarios, translate them into their related impact on your organization’s revenue forecast over a six-to-medium term horizon relevant for your organization (e.g., ~12 months).

<table>
<thead>
<tr>
<th>External factors that directly impact our organization</th>
<th>BEST CASE</th>
<th>MODERATE CASE</th>
<th>WORST CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.g., shelter-in-place restrictions</td>
<td>June 30th release of restrictions</td>
<td>Aug 30th release of restrictions</td>
<td>Oct 30th release of restrictions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prioritized key internal drivers from step 1</th>
<th>BEST CASE</th>
<th>MODERATE CASE</th>
<th>WORST CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programs (e.g., program volume (patients served))</td>
<td>Slight decrease (e.g., 10-15%)</td>
<td>Moderate decrease (e.g., 15-30%)</td>
<td>Major decrease (e.g., 30-45%)</td>
</tr>
<tr>
<td>Operations (e.g., frontline staff capacity)</td>
<td>Slight decrease (e.g., 10-15%)</td>
<td>Moderate decrease (e.g., 15-30%)</td>
<td>Major decrease (e.g., 30-45%)</td>
</tr>
<tr>
<td>Funding (e.g., fee-for-service revenue)</td>
<td>Slight decrease (e.g., 10-15%)</td>
<td>Moderate decrease (e.g., 15-30%)</td>
<td>Major decrease (e.g., 30-45%)</td>
</tr>
</tbody>
</table>

Projected impact on our organization’s revenue forecast:

$33 $3 $5

Step 3: Create a portfolio of actions

Develop a set of potential actions that would enable your organization to successfully manage against each scenario, preserving both your financial viability and your ability to deliver impact. Actions typically fall into one of three categories: (1) appropriate for any scenario, (2) smaller-scale and more flexible, (3) larger and more permanent. As you identify potential actions, weight the pros and cons of each and ensure they fall in line with any guiding decision principles agreed upon by your leadership team. Most of these actions will likely have some economic cost or benefit. Quantify the potential costs incurred and/or savings achieved for each action over the time horizon the action would be implemented, then calculate the total estimated costs incurred or savings achieved by each set of actions for your best-, moderate-, and worst-case scenarios.

**Case Scenario** (create one action plan for each scenario, ‘appropriate for any scenario’ will be the same in each)

<table>
<thead>
<tr>
<th>Category</th>
<th>Definition</th>
<th>Actions</th>
<th>Estimated cost (± or 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate for any scenario</td>
<td>Actions that will positively affect your organization’s ability to deliver impact and financial position under any future scenario</td>
<td>• E.g., eliminate discretionary budget expenses—travel, office supplies, etc.</td>
<td>$</td>
</tr>
<tr>
<td>• $</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smaller-scale and more flexible</td>
<td>Smaller-scale, flexible investments or cost reduction measures that can be executed quickly (and reversed) if various scenarios come to fruition</td>
<td>• E.g., reduce executive-level salaries by 10%</td>
<td>$</td>
</tr>
<tr>
<td>• $</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Larger and more permanent</td>
<td>Large-scale investments or cost reduction measures that may be more permanent in nature</td>
<td>• E.g., layoff nonessential staff</td>
<td>$</td>
</tr>
<tr>
<td>• $</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total estimated costs incurred or savings achieved

$34
Step 4: Determine key trigger points

Many of the potential actions outlined for each scenario in Step 3 (with the exception of ‘appropriate for any scenario’) will only make sense under certain circumstances. Determine concrete and measurable trigger points for each action in the ‘smaller scale and more flexible’ or ‘larger and more permanent’ categories. Some actions you outline may be relevant across different scenarios. Likewise, you may find that one trigger (e.g., extension of shelter-in-place restrictions) is the best gauge for multiple actions. This worksheet will help consolidate your list of potential actions and related trigger points, serving as a dashboard for your leadership team to support continuous monitoring and rapid decision making as circumstances evolve.

<table>
<thead>
<tr>
<th>Actions</th>
<th>Scenarios</th>
<th>Key trigger points (to prompt action at the right time)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• E.g., Reduce executive-level salaries XX%</td>
<td>Best case</td>
<td>• E.g., Total projected revenue falls XX% below budget</td>
</tr>
<tr>
<td>• • • • • • • • • • • • • • • • • • • • • • • • • •</td>
<td>Moderate case</td>
<td>• • • • • • • • • • • • • • • • • • • • • • • • • •</td>
</tr>
<tr>
<td>• • • • • • • • • • • • • • • • • • • • • • • • • •</td>
<td>Worst case</td>
<td>• • • • • • • • • • • • • • • • • • • • • • • • • •</td>
</tr>
</tbody>
</table>

More Reading

  - Very practical guidebook for qualitative scenarios, down to meeting agendas
  - Comprehensive book about qualitative scenarios by a leading consultant
  - Theoretically sophisticated book about corporate scenario planning
Discussion

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For resources, see “Scenario Planning” page
https://sites.google.com/umich.edu/rgoodspe/home
http://www.scenarioplanning.io/
DEGREE PROGRAMS

ARCHITECTURE:
» BACHELOR OF SCIENCE [B.S.]
» MASTER OF ARCHITECTURE [M.Arch.]
» POST-PROFESSIONAL DEGREES
  » MASTER OF URBAN DESIGN [M.U.D.]
  » MASTERS OF SCIENCE IN URBAN DESIGN WITH CONCENTRATIONS IN DIGITAL AND MATERIAL TECHNOLOGIES, AND DESIGN AND HEALTH
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