



Fundamentals of Foresight: Preparing for a Changing World

Timothy C. Mack

Abstract: This report provides an overview the 10 basic techniques of forecasting that can help individuals and organizations make better decisions and produce a positive impact on the future.

FUNDAMENTALS OF FORESIGHT: PREPARING FOR A CHANGING WORLD

By *Timothy C. Mack*

Introduction

The principles of foresight are useful not only when you make decisions as an individual or organization, but also when you work toward creating a better future and making a positive impact on the world around you. The following report is adapted from work we previously produced for World Future Society members.

In his book *Futuring: The Exploration of the Future*, WFS founder Edward Cornish wrote, “The goal of futuring is not to predict the future, but to improve it.” It is with this in mind that we now introduce you to the basic concepts of foresight.

1. Scanning Trends

Scanning is the ongoing and systematic examination of current newspapers, magazines, websites, and other media resources in order to spot significant trends occurring over a period of time and changes that are likely to take place. It’s a great way to stay one step ahead of the curve. There are three steps: scan, clip, and review.

While you (or your scanning team) are unlikely to read everything, you can skim

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through your source materials and keep an eye out for specific key words. This approach was used extensively during World War II, and continues to be used in business and government today. Saving and sharing significant trend stories among a group of analysts has become easier in the electronic age than when military futurists developed the technique. Online file-sharing services include Google Drive, Dropbox, and Microsoft OneDrive.

The news media focuses on reporting individual events. However, instead of focusing exclusively on one isolated news story, we're going to concentrate on the bigger picture, tracking many different events over time—events that relate, however tangentially, to our personal and professional lives. This will help us spot the long-term trends.

Often we don't realize that we're part of an emerging trend until it has already fully emerged, so it's important to recognize trends at an early stage in their development. This ensures that we have enough time to respond to emerging risks and opportunities. Constant scanning updates our knowledge of the world and acts as a radar system for business and government.

The digital age has not only generated an incredible increase in the volume of data available for assessment, but it has also stimulated growth in the capabilities of artificial intelligence, machine learning, etc., to analyze that data for patterns and meaning. The search for early signals or the subtleties of change can be teased out without much of the ideological and policy filters that have increasingly shaped visions of what the "best" futures look like.

In another context, the growing cooperative and collegial nature of foresight analysis allows a broad section of potential stakeholders to participate in the search, with designated oversight functions narrowed to the scanning of which trends show up in multiple reports—what might be termed *robust* results.

Once we have successfully identified several emerging trends, we must begin to organize that information. One way to classify, analyze, and evaluate the trends and their impacts is the DEGEST method.

2. *The DEGEST Method*

Most of the significant trends futurists analyze typically fall into six distinct categories:

- **Demographics** (e.g., population, health, migration, youth/aging, gender, race)

- **Economics** (business, trade, work, finance, currency, management)
- **Governance** (policy making, diplomacy, leadership, hierarchies)
- **Environment** (energy, resources, climate change, species, pollution)
- **Society** (values, lifestyles, beliefs, attitudes, leisure, families, communities)
- **Technology** (science, innovation, medicine, agriculture, space)

This simple classification scheme provides us with a powerful tool to improve our understanding of the world around us. The DEGEST method helps us analyze both the causes and potential effects of trends.

Note that many trends and developments could easily be classified in two or more categories. Technology trends, for example, not only shape our personal lives but can also have major impacts on the economy, the government, and the environment.

The next step is to make connections across the categories. We then begin to see how everything—all of the pieces of the puzzle—fit together to form the big picture. But fitting together is only part of the dynamic. More complicated is the actual *cross impact* of that range of elements. That complication arises from the fact that cross impacts are dynamic and change conditions in other trend lines. And those changes in turn change the trends that impacted them.

3. Trend Analysis and Scenarios

Trend analysis addresses the nature, causes, speed, and potential impacts of a developing trend.

Knowledge of significant world, national, and religious trends provides an invaluable background for making practical judgments about your goals and strategies. Being unaware of the trends means risking the possibility of having a business, career, or investment crushed by a wave of unrecognized change.

By utilizing trend analysis, individuals and organizations can hope to ride the waves of change toward their goals.

Scenarios may be thought of as “very serious fiction.” Scenarios aren’t forecasts, but they aren’t science fiction either. By putting our thoughts and ideas into story form, we can identify things that might happen, describe how they might actually occur, and figure out what the consequences would be. Well-thought-out scenarios allow us to weigh the pros and cons of various decisions.

The multiple-scenario approach forces us to think about the future in terms of alternative possibilities, rather than a fixed, predetermined outcome. It's useful to create a minimum of three basic alternative scenarios:

1. **The Surprise-Free Scenario.** This storyline assumes that current trends will continue without much change. (This is often called the "business-as-usual scenario.")
2. **The Optimistic Scenario.** This storyline is based on the assumption that things will only get better.
3. **The Pessimistic Scenario.** This storyline is based on the assumption that things will only get worse.

4. *Delphi Polling and Modeling/Simulations/Games*

Delphi polling is a polling process developed to generate more accurate results than traditional opinion-gathering approaches. Begin by gathering together a group of experts in a given field, and then ask the same questions to each member of the group. Afterwards, we analyze the responses to learn where the experts agreed and disagreed. The next step is to present the experts with a summary of the results, and then poll them again to see if any of them chose to revise their initial responses.

Models and *simulations* are practical and sometimes necessary ways of thinking things through in advance. They are dynamic descriptions of the behavior of complex systems in "what-if" situations. The interplay of variables is driven by the rules of the model, and the biggest challenge is getting the rules drafted accurately.

Computer modeling has been used to study industrial processes, urban planning, and countless other topics since the 1970s, when MIT professor Jay W. Forrester developed a world model that dealt with population change, economic growth, and other factors.

Computer simulations have the advantage of being able to process large amounts of data incredibly rapidly, but there are drawbacks. Analyses may not take all of the variables into account, and computers generally lack their programmers' intuitive knowledge about human behavior.

5. Brainstorming and Visioning

A *brainstorming* session has four basic rules for generating ideas:

1. Defer judgment on any of the ideas.
2. Try to develop a lot of ideas and not worry about their quality.
3. Strive for unusual ideas.
4. Build on other people's ideas.

A close relative of thought experimentation, brainstorming is a great way to identify different possibilities, opportunities, and risks, and to develop innovative long-term strategies.

Visioning means simply thinking in the future tense. Envisioning a desirable future is essential for an organization or an individual. Visioning prepares the way for goal setting. It involves the consideration of past and present trends as well as tactical discussions of how to most effectively move toward that desired future.

As well, scenario visioning offers ways both to think about the future and to talk about it to others. Foresight specialists can sometimes get caught up in technical jargon and forget that not everyone thinks in the same terms. Relevance and accessibility are important guidelines in crafting stories that will make sense to and inspire audiences, especially if they are made up of critical stakeholders and policy makers. But at the other end of the spectrum, those parties without political power and voice who may be significantly impacted by the possible outcomes of probable change should have a chance to respond as well. In other words, futures should belong to those who have to live in them.

6. Strategic Foresight

Strategic foresight is an exercise that's used by many forward-thinking businesses and organizations, incorporating several of the above methods. Futurist Andy Hines has outlined the following six steps of strategic foresight:

- 1 **Framing.** Clearly frame your objective. Carefully define your purposes and goals.
- 2 **Scanning.** Systematically examine different media and other resources in order to identify significant trends and changes occurring over time.

3. **Forecasting.** Create alternative futures based on what you just learned from scanning.
4. **Visioning.** Outline a path from where you are to where you want to go.
5. **Planning.** Develop strategic options and multiple contingency plans.
6. **Acting.** Create an agenda and clearly communicate it to the members of your organization for what you need to do, who will do it, how, and (if not now) when.

7. Wild Cards

The term *wild cards* refers to highly unexpected events that would have enormous consequences if they actually occurred. Fortunately, it's extremely unlikely that they will ever happen. (In a probability/impact matrix, they would be in the Low Probability, High Impact cell.) Yet, there's always a chance—and if something so unexpected actually did take place, it's almost guaranteed that it will catch everyone off-guard.

1. Learn as much as you can about a wild card ahead of time.
2. Identify early warning signs and develop potential responses.

8. Anticipation Through Wide-Angle Vision

Developing our *wide-angle vision* is another powerful tool for recognizing signs of change and elements of surprise, and preparing for multiple futures. As described by business futurist Wayne Burkan, the steps are:

1. **Scanning** on the edges of the big picture rather than focusing on details in front of you.
2. **Creating a mental model** of an event with consistent assumptions that can be adjusted as the situation changes.
3. **Reading the warning signs** of trends or events that deviate from the expected.
4. **Developing early-warning systems** through consistent vigilance.

9. Productive Thinking—The Value of Creativity

Productive thinking is the opposite of *reproductive thinking* (i.e., sticking with a familiar, supposedly “safe” way of doing things).

Productive thinking asks us to produce many ideas and then choose the best one. A good idea may stop you from going on to discover a great one—and a great idea may stop you from discovering the right one.

That said, coming up with new ideas is easier said than done. How can you motivate yourself to generate more original ideas or creative solutions for your business and personal problems?

One suggestion is to give yourself an idea quota. For example, set a time limit, say 10 minutes, and task yourself (or your brainstorming team) to imagine 10 new ways to get to work. Don't evaluate the ideas yet; put your internal critic on hold for a moment, and just write everything down. Regardless of their viability, your ideas will gradually become more interesting and more creative, and they'll show more insight, curiosity, and complexity.

10. Anticipatory Leadership

Buckminster Fuller described *anticipatory leadership* as the ability to identify critical issues before they emerge and to take action in advance. This powerful problem-solving toolkit consists of the following 10 skills that will help prepare you to bridge the gap between the present and the future.

1. **Think comprehensively.** Look at the big picture. Frame the problem within a larger context.
2. **Spot future trends.** Anticipating trends is critical if you're going to accurately pinpoint upcoming problems and find the best possible solutions.
3. **Understand the rules of gestation.** If your invention, solution, or idea arrives too early in the marketplace (or in the marketplace of ideas), it runs the risk of being stillborn. If you are late to market, you'll be stuck playing a catch-up game.
4. **Do more with less.** Any technology that can create more output with less input will rapidly gain influence in today's hyperlinked global economy.
5. **Seek to change the environment, not human nature.** Instead of trying to force or even simply convince people to change destructive behaviors, change the environment to which those behaviors were a logical response.
6. **Take individual initiative.** To make a difference in life, you don't need an official blessing or sanction. You just need to be self-motivated.
7. **Ask naïve questions.** Revisit and challenge basic assumptions using your own

- insights and viewpoints, especially when critical issues are at stake.
8. **Solve problems through action.** Theories are not enough; they must be converted to projects that work.
 9. **Work toward the best possible future.** The big questions are: How do we accomplish this goal, how long will it take, and what's holding us back from achieving this?
 10. **Remember that small efforts can produce big results.** Sometimes small, strategic actions can cause large-scale change.

Conclusion

It should be obvious that this is a very brief discussion of a very complex subject. For example, the matter of future AI involvement in foresight is worth another 50 pages. The intention here is to hit some high spots and stimulate interest in the possibility of increasing the foresight capabilities into your organization, professional work, or personal thinking. The challenges are not small, but neither are the benefits. Good futuring!

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Selected Futurist Connections

Here are a few futurist and foresight groups offering training, networking, publications, and other resources for futurists working in academia, business, government, or civil society or as individuals.

- Association of Professional Futurists <https://www.apf.org/>
- Association for Strategic Planners <https://www.strategyassociation.org/default.aspx/>
- Club of Amsterdam <http://www.clubofamsterdam.com/>
- Club of Rome <https://www.clubofrome.org/>
- Copenhagen Institute for Futures Studies <https://cifs.dk/>
- Federal Foresight Community of Interest <https://www.ffcoi.org/>
- Finland Futures Research Center <https://www.utu.fi/en/university/turku-school-of-economics/finland-futures-research-centre>
- Futuribles <https://www.futuribles.com/en/>
- Institute For the Future <http://www.iftf.org/foresightessentials/>
- International Institute of Forecasters <https://forecasters.org/>
- The Millennium Project <http://www.millennium-project.org/>
- Teach the Future <https://www.teachthefuture.org/>
- World Academy of Art & Science <http://www.worldacademy.org/>
- World Future Society <https://www.worldfuture.org/>
- World Futures Studies Federation <https://wfsf.org/>

For an overview of academic programs in foresight, visit Acceleration Studies Foundation at <https://www.accelerating.org/gradprograms>.

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