

Introduction

INTRODUCING THE FUTURE

Foresight is fundamentally about the study of change. Of course, futurists are not the only ones who study change. Scientists study change in physics (the motion of bodies), astronomy (the formation of stars and planets), chemistry (chemical reactions), biology (the evolution of species), and in a whole host of other disciplines. The social sciences also study change at the personal level (psychology), at the group, organizational and societal levels (sociology), and at the cultural level (anthropology). In fact, two disciplines are particularly concerned with change: history studies change in the past; journalism chronicles change in the present. And that is where foresight fits in. Most people think of time as flowing from the past (history), through the present (journalism), and into the future. Therefore, just as historians study the past and journalists the present, so futurists study the future. It is interesting that history is an ancient discipline and journalism has been around a long time. Why don't we have an academic discipline that studies the future?

Oh yeah! The future hasn't happened yet. Can futurists study something that doesn't exist? On the face of it, that's a big problem. Of course, historians study something that doesn't exist either – the past. It did at one time, but it doesn't exist anymore.

The big difference between history/journalism and foresight, however, is that history and journalism have direct evidence of the changes they are describing. Historians have artifacts (tools, books, buildings) from which they can infer what life was like in the past; journalists have statements, statistics, and their observation of events to describe change in the present. How can a futurist infer what is going to happen

in the future when the people there have not yet created the artifacts and statistics to use as evidence?

Why teach the future?

It is disappointing that so few people teach about the future when, in fact, people will live the rest of their lives there. Almost everything people do is intended to understand or to influence the future. But where is the future in our educational systems? A fair amount is studied about the past – as it should be – but why not study an equal amount about the future?

We should teach as much about the future as we do about the past

There are two answers to that question – one professional and the other epistemological. The professional answer is that teachers do not teach what they do not know. Since they were never taught about the future, how can they be expected to teach their students about the future? The more important and deeper answer, for most people, is that the future is unknowable. You cannot teach things you cannot know. But that is a fallacy. The future is knowable in exactly the same way that next week's weather is knowable or next week's stock market or next week's ball scores. They can be known as a set of possibilities, as plausible alternative futures, any one of which has a significant chance of occurring. Granted, knowing a set of possibilities is not as satisfying as *really knowing* what will happen. But when really knowing is impossible, is it not better to know something about the future (its possibilities) than to ignore it and know little or nothing?

People and organizations change when the world changes and when they aspire to do something significant, if not great. The world is changing and at an accelerating pace. And with this change comes the need to learn new skills. The current model of public education was created to prepare students for the industrial age. Be on time, stay in formation, do the work, accept supervision and, most of all, know the right answer. These skills made the workers of yesterday's factories and bureaucracies successful.

But now, gone is the majority of factory employment and going are offices wedded to rigid procedures and command-and-control processes. The pace of the world has quickened, driven by fast-paced information flows. Flattened organization, networked workers and collaborative technologies facilitate flexibility and quick response to the information age.

Teaching the future to gifted and talented students

Mary Tallent-Runnels (2005) makes the case for teaching the future to gifted and talented students

- Gifted learners have said they love to think about the future, and this love increases as they become older (Torrance, 1978).
- They are more interested in global issues than other students and sometimes feel helpless to do anything about these issues (Galbraith, 1985; Tallent-Runnels & Mullen, 2004).
- They have the potential for intense social, moral, and ethical concerns (Passow, 1988).
- Gifted learners worry about the future, because they are sensitive to world problems (Passow, 1988).
- They also can be more morally sensitive than others – a trait that is essential to the welfare of our society (Silverman, 1994).
- When supported and guided in positive directions, these qualities can empower them to successfully manage change (Carroll, 1991) and to cope with problems in general and change the future (Torrance, 1974).
- Finally, many believe that gifted youth will become our world leaders and ultimately solve our global problems. Therefore, we must help them develop their leadership abilities and learn to think ahead to the world they will lead (Passow, 1988; Roeper, 1988) ... They can become change agents and set realistic goals as they lead others (Carroll, 1991).

As the world environment changes so do the skills for success. The successful will be those who have mastered the basics of change, how to anticipate it, how to manage uncertainty and ambiguity, and ultimately how to proactively create the changes necessary to bend the future to more preferable outcomes. And the time to teach these skills is now (Bishop & Strong, 2010, 105).

The problem of prediction

The problem of making statements about the future is, of course, the problem of prediction. People learn to make predictions when they observe the consequences of change. The baby that repeatedly throws

the cup to the floor is engaged in a primitive form of prediction. What will happen? Will Mommy keep picking it up? How many times? Dan Barry, former astronaut and Head of Faculty at Singularity University, famously described watching his two-month-old son discover his foot – wiggle, wiggle, laugh; wiggle, wiggle, laugh. The capacity to make predictions is formalized in science class with swinging pendulums, rolling balls down inclined planes, melting ice cubes and predicting the outcomes. Each prediction is a statement about what is expected to happen in the future, and then one checks to see whether or not it happens as expected. One is right if one measured the initial variables accurately, put them in the right equations and did the math correctly. If the prediction does not compute, one has to go back and do it again. Professional scientists do the same thing. They keep repeating the experiment until they can predict the outcome.

People also need to predict the future in the world at large so they use the same process. They believe that all they need to do is understand the laws that govern human behavior and predict what will happen. But that the process does not seem to work as well in the world as it did in the lab. Most predictions about human behavior are almost always wrong. What good is this prediction thing if it didn't tell what was going to happen? Bummer!

Prediction does not work very well in the world of human affairs because there is not a good, scientific theory of human behavior. In fact, there are many theories in psychology, anthropology, sociology and the like. All work to some extent, but they fail just as often. So there is *uncertainty* when predicting the outcome of a process involving human beings. Uncertainty is the reason that the predictive process developed in the lab does not work in the world. Uncertainty is not bad in itself. It's just very inconvenient when it comes to predicting behavior. In fact it might even be good because it makes people cautious as they approach something new, whether it is an unfamiliar dog or a new stock tip. What is not generally appreciated is outcomes in the world involving people are and should be less certain than outcomes in "hard" sciences.

One can reduce the uncertainty in the lab to very small quantities over time – first by developing and using more precise measurements and secondly by developing and using better theories. Uncertainty is still there, but it is quite small. It can be reduced to very small quantities with lots of time and money, but it cannot be eliminated. For example, the official mass of the electron is $9.10938188 \times 10^{-31}$ kg. That's just over nine-billionths of a billionth of a billionth of a gram!

But it is still uncertain to about a millionth of a per cent. Plus or minus 0.000001% is good enough for most people! In that case, one can ignore the uncertainty and go ahead with predictions of the future using that number.

Technically, one makes an assumption when doing so. One assumes that the mass of the electron is *exactly* that number. That is a pretty good assumption because it almost is. One doesn't have to worry about the millionth of a per cent uncertainty in most calculations. So one predicts the future with confidence and usually gets pretty good results.

What happens when the same reasoning is used in making predictions in the human world? Is the uncertainty in the human world equivalent to millionths of a per cent? Hardly! Compared to the physics lab, the human world is awash in uncertainty. Just look at today's newspaper. It contains lots of facts about what happened yesterday, but only random speculation about what will happen tomorrow. People are so far from predicting the future state of the world – even by one day – that it is ridiculous to even try.

And that is why most people do not like to think about the future. It is why there are no courses or departments on foresight in our schools. It is why cultures are blind to the future. Ironically and tragically, however, the future is where people are headed and where they will spend the rest of their lives. That is why they come to work or to school every day – to understand and change the future – yet they are ill-equipped for the task. They have never had any explicit training in change or the future, and they are trying to use an inappropriate mechanism of prediction that they learned in science. It doesn't work. People must come to understand and influence the future better than they have. Indeed their very lives depend on it.

The future(s)

Since one cannot predict, does that mean giving up on thinking about the future? Certainly not, but the approach has to be modified. One must first give up the possibility of predicting the future on any consistent basis. Sometimes predictions do turn out to be true either because of a lucky guess or because the world operated according to known rules during some brief period. But one is not lucky very often, and one does not know when these periods will be so most of the time cannot count on being lucky.

However, rather than not thinking about and preparing for the future altogether, futurists reject the basic assumption that the future of human affairs is predictable. Instead, they modify it by saying that

while it is true that people cannot know *the* future – the one that will ultimately become the present – they may be able to know the *futures*, the set of plausible futures that one future is drawn from. In this conception, the future is multiple not singular. One is not looking for the *real* future amidst a bunch of imposters, but describing all the plausible futures as a set. The future is understood by mapping the range of plausible futures and preparing for the whole range.

Admittedly, that solution is not entirely satisfactory. People want to know the one future, they want to be certain, and they want to be right. If they are, they can prepare more precisely for that one future. But that knowledge is impossible for all the reasons given above. Given that, would it not be better to know something about the future rather than to know nothing? When the weather turns bad and one has to keep driving, one does not close one's eyes and refuse to look down the road because one cannot see very far anyway? Of course not. In fact, a driver looks harder, straining to pick up any clue of what lies ahead. They think of the possibilities – a curve, a pothole, a car stalled in the middle of the road – and prepare for all of them. Is one angry or sad that none of those possibilities occurred? That the forecast of possibilities was wrong? Of course not! One is happy to have gotten through that stormy drive without incident. By the same token, one should not try to be "right" about the future. Being prepared for whatever does occur is a lot more important.

So, in the same way, futurists look more carefully at the signs leading to the future, because they can't predict accurately. It's a harder job to deal with multiple possibilities, and the result is less satisfactory, but it is better than closing one's eyes and hurling oneself blindly into the future.

Most people's image of the future is a line, or a road, or a river, or even a rollercoaster (depending on how thrilling they think the ride will be!).

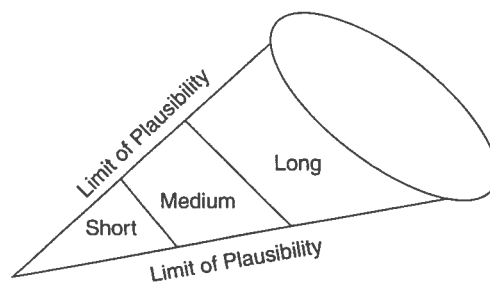


Figure I.1 Plausible options increase in the future
Source: Based on Charles Taylor, Army War College.

It is a continuous strip of time leading from now to then. A better image, given our inability to see the road ahead, is a cone, an expanding set of plausible futures. The cone is relatively narrow in the short-run. One is pretty sure of what will happen next because the number of plausible alternatives is low. But as one moves into the medium and long term, the range expands revealing some interesting, challenging, even exciting futures.

Futurists are those who survey and explore the full range of plausible futures and share what they find. They help people expand their narrow focus on one future to a broader range of other possibilities. The key underlying principle is that the future is actually a set of futures from which a subsequent present will be drawn.

Be prepared

The purpose of forecasting, and even of prediction, is not just to know the future as an abstract description but rather to prepare for it. The objective is not just to know what will happen but to be ready whatever does happen. Almost none of the plausible futures will actually occur. But when one does, one is happy to have made adequate preparations. That's success from a futures point of view. The objective is not to be too right (which is impossible), but rather not to be wrong – not to be surprised. Surprise means inadequate preparation, late response, risk of failure, even chaos or panic. Preparing for the full range of plausible futures is the objective of foresight, reducing the element of surprise.

Foresight is not even that unusual in daily life. Most people buy insurance against catastrophic loss – such as of life, health, or home. They consider a range of plausible futures, albeit negative ones, and prepare for their occurrence. They are not expected to predict which year their house will burn down or which month they will go to the hospital. They realize that predicting those things is impossible. So they carry insurance the whole time. They don't get to the end of the year and kick themselves because they didn't use their medical or auto insurance that year. In fact, they are happy that those bad things did not happen. And they don't try to guess whether they will need the insurance the next year; they pay up and feel comfortable that they are covered no matter what happens.

People in dangerous occupations think this way all the time. It's their way of staying alive. The police officer on the street or the soldier in combat is continuously thinking about what could go wrong, how they might be surprised, because they know they are in danger when they are surprised.

People would be much better prepared for their organizational or work futures if they applied that same logic. They don't have to predict what is going to happen as long as they are covered for all the things that could happen. But is it possible to prepare for everything? Actually, not. The full range of possible futures is infinite. People can't consider them all, much less prepare for them. Therefore, futurists narrow the range to that of plausible futures, ones that have more than a negligible chance of occurring.

If one could assign a minimum probability to a plausible future, they would know for sure which were plausible and which were not, but probabilities here are quite subjective. Rather, futurists say that a plausible future is one that has a *story* that makes sense. One can see how it might actually occur. An alien landing on the lawn of the White House, though great for Hollywood, lacks plausibility. But a coming economic crisis or a serious terrorist attack on the Internet or a breakthrough in cancer research – those all have stories that people can accept. They can see them appearing on the front page of the newspaper. They might even have information that makes those futures more likely.

The line between possible and plausible is subjective, for sure. It comes down to whether reasonable people with open minds will accept the story as plausible, whether they have a foundation for believing that the story could come true. Foundations of stories are used in courtrooms and fiction all the time. Lawyers and writers have to prepare their listeners for the appearance of a character or an event. When they don't, one's natural reaction is "Where did that come from?" They do not have to believe the story is probable, but only that it could actually happen. The sum of all such stories is the range of plausible futures.

Treating the future as a set of plausible outcomes rather than one future to be discovered is one of the two major assumptions on which futurists differ from other forecasters. The other is that people do have some influence over parts of the future that actually occurs. Most forecasters describe the future independent of their actions or the actions of their clients. That is a fine, even necessary, analytical device to be able to construct the forecast in the first place. Otherwise one might find oneself in an infinite recursion of "what if ... and then what if they ... and then what if

Key assumptions of foresight

1. The future is a set of plausible outcomes rather than one future to be discovered
2. People do have some influence over which future actually occurs.

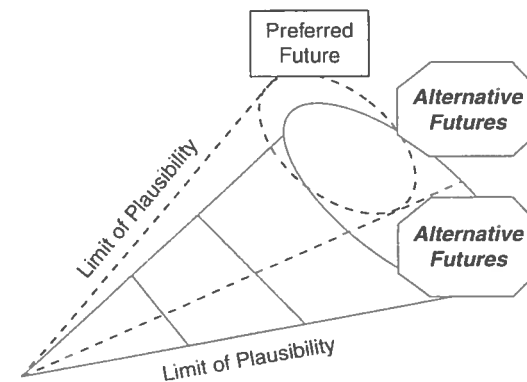


Figure 1.2 Shifting the cone

Source: Based on Charles Taylor, Army War College.

we ..." and on and on. One has to start somewhere, and a world changing without people's intervention is as good a place as any.

But one ought not to stop there because the world, or parts of it, is sensitive to people's actions. Even though people may not be able to control the future, as in selecting the exact future they want, they do have the ability to influence what happens. Influence is like power; it bends the trajectory of the future toward the future one prefers. The more influence one has, the more one gets what one wants. Or to put it in forecasting terms, influence bends the development of the future into areas that are more preferable and away from areas that are less preferable.

Imagine the future

People's degree of influence over the future is the product of two quantities: their inherent ability to influence the future and the effort they choose to expend. The ability to influence the future varies by the domain or topic area. One might have a lot of influence over the future in some domains, like family or workplace, and relatively little in others, such as national or world affairs. Secondly, one can choose to make an effort to influence the future in a particular domain or not. Of course, those who do not make an effort will have no influence over the future at all. They must accept the future that other forces create.

Our years of experience teaching and consulting about the future have persuaded us that most people do not believe they have much influence over the future. They feel powerless, at the mercy of unseen and impersonal forces over which they have no control. Such feelings

are understandable. The world is large and complicated. People are bathed in media that show other people and events that have little relation to their world or their needs. The future seems to be something that will be handed to them, whether they like it or not.

On the other hand, a focus on national and world events obscures the fact that everyone does have a sphere of influence, a part of the world in which they have some influence. While that influence is never absolute, even over one's own behavior sometimes, at least one has some power to create a future that is better than if no effort were expended at all. And that is the reason that people work, save money, take time with their kids, even get up in the morning – to exert their influence on the world.

And that is where futurists come in, as do many other people who work toward a better world. The message from every motivational speaker in the world is that people have more influence over the future than they think. Some will even go so far as to say that one can have whatever future one wants. They may believe that, but futurists don't. There are constraints; no one's influence – even leaders of nations or the world's richest people – is absolute. Everyone must deal with part of the world that is beyond their control. Nevertheless, most people have more influence over the future than they are exercising at the moment.

The power for people to influence their future is related to the quality of their vision. A vision is a concrete image of a preferred future state. It is a picture of how one wants things to be. The more attractive and more concrete the vision, the more it motivates one to expend effort to work toward it.

Visions work the same for groups (organizations, communities and societies) as they do for individuals. They portray an attractive, even compelling future that motivates the members to work together to achieve it. The great visionaries of history (Moses, Jesus Christ, Mohammed, Buddha, Lincoln, Gandhi, King) were able to inspire people with their vision of a better world. Many people, of lesser stature perhaps but no less noble purpose, are trying to do the same thing today.

But one does not have to be a grand historical leader to have a vision, to be a visionary, or to change the part of the world over which they have some influence. Truck drivers can pursue their craft with the same zeal for safety, dependability and customer service that Moses had leading the Hebrews from Egypt. Each is pursuing their vision of a better world; each is creating change in themselves and in the people who know them.

Create the future

The follow-on to vision is the effort it takes to organize and mobilize resources to achieve that vision. In some cases, those actions seem to leap into existence. More ordinary mortals must plan, persuade and scavenge to get the resources to achieve their vision. Preparing to work to achieve a vision is called strategic planning. Unfortunately, most strategic planning isn't strategic; it is incremental, such as some per cent increase over time. True strategic planning is transformational. It identifies the long-term goals and strategies that will move the individual or the organization toward their vision. It also kicks off near-term initiatives that start to implement those strategies. The purpose is to create a long-term transformation that creates a better future.

The final step in creating that future is implementation, often called change management because it is fundamentally the creation of change. The objective is to change the world. In order to do that effectively, most individuals and organizations usually have to begin by changing themselves. Their strategic goals and the implementation of their long-term strategies usually require them to be different than they were in the past. Change management is first of all building the capacity to change and to bring about change – first in oneself, then in others and finally in the world. It is a wrenching process because it involves uprooting old beliefs and habits in order to make way for new attitudes and abilities. But without it, the individual and the organization will simply be unable to move forward toward the vision. As the famous philosopher once said, "If you keep doin' what you been doin', you'll keep gettin' what you been gettin'."

THE TRICKS OF FORESIGHT

Every field – accounting, law, medicine, engineering, and so on – has its tricks. Experienced practitioners learn the tricks and produce better results than those without their experience. Foresight has two tricks that stand out as most useful. The extent to which one practices those tricks and encourages others to do the same, the better prepared one will be and the more the future will match one's aspirations.

Telling stories

Stories are an ancient form of communication. Story-telling might even be hard-wired into people's evolutionary mechanism. The story has meaning and carries a message using details that may not be true. Novels, movies,

even some music contain stories about fictional characters. The events are not true, but the message is. A scenario is a story about the future. The details of the scenario may not be true; in fact, they probably are not. But the message may be true – the essence of a plausible future that should be considered and perhaps prepared for. The extent to which one tells stories every day, the more prepared one will be for a surprising future.

Pursuing visions

A vision is the story of an ideal state which, if one works hard and is lucky, one just might achieve. It's this side of a dream or wish; it's not magic. But it is bold and ambitious. "Could we?" "Might we?" Those are the initial reactions to visions. When the answer is "Yes we can," that's when the race begins. Pursuing a vision is what a full life is about – it motivates, energizes and empowers one to do extraordinary things. Even though the vision itself may be elusive, chasing it sets one off strongly in the right direction.

People and organizations not afraid to consider the future in all its uncertainty and complexity and not afraid to pursue a vision that is almost beyond expectation are the people and organizations that are not only prepared for the future but also those who will be a major force in shaping it. Management guru Peter Drucker once said, "The best way to predict the future is to create it." While that is not entirely true, the more influence one exerts on the future, the better the odds of having a better future.

THE BENEFITS OF FORESIGHT

An analysis of our last book, *Thinking about the Future* (2007), which culled the collective wisdom of three dozen professional futurists globally, identified 316 benefit statements from applying foresight. Table I.1 shows how these are sorted into the Thinking about the Future framework, which comprises six categories: framing, scanning, forecasting,

Elements of a good story [scenario]

<i>Storybook</i>	more than just a description
<i>Specific</i>	facts, events, names, dates
<i>Plausible</i>	it could happen
<i>Relevant</i>	it would change the future
<i>Dramatic</i>	conflict, suspense, unresolved issues
<i>Balanced</i>	bad things have good consequences good things have bad consequences
<i>Personal</i>	putting individual in the future
<i>Integrated</i>	cohesive; plot hangs together

Table I.1 Benefits of foresight

Activity	Benefits
Framing (22%) <i>Scoping the project.</i>	1. Thinking more diverse, open, balanced and non-biased (9%) 2. Focusing on the right questions and problems more clearly (7%) 3. Being aware of, and influencing, assumptions and mental models (6%)
Scanning (16%) <i>Collecting information.</i>	4. Understanding the context, in all its complexity, through establishing frameworks (5%) 5. Anticipating change and avoiding surprise (11%)
Forecasting (22%) <i>Considering a range of future possibilities.</i>	6. Producing more creative, broader, and deeper insights (17%) 7. Identifying a wider range of opportunities and options (5%)
Visioning (10%) <i>Choosing a preferred future.</i>	8. Prioritizing and making better and more robust decisions (10%)
Planning (7%) <i>Organizing to achieve the vision.</i>	9. Constructing pathways from the present to the future that enable rehearsing for the future (7%)
Acting (23%) <i>Implementing the plan.</i>	10. Catalyzing action and change (7%) 11. Building alignment, commitment and confidence (14%) 12. Building a learning organization (2%)

Source: Hines, A. (2007).

visioning, planning and acting (covered in greater detail in Chapter 1). (Note: The number in parenthesis shows each item as a percentage of overall benefits. Thus, 22% of the benefits statements related to framing, 9% of which related to "Thinking more diverse ..." and so on.)

What stands out in Table I.1 is the high percentage of benefits attributed to the "bookends" of the foresight framework: framing and acting. Futurists have recognized the importance of being as clear as possible about what the problem to be studied really is, and that the problem as presented is not always the "real" problem. Also, futurists have recognized the importance of being more action-oriented, of not studying for the sake of studying but being oriented to spurring action.

The table suggests less emphasis on visioning and planning than might have been expected. But, on reflection, these activities were reengineered, or drastically reduced, in the 1980s and early 1990s. So foresight repositioned itself accordingly to meet the needs of today's

organizations. This “repositioning” is amply demonstrated by the single highest scored benefit: “more creative, broader, deeper insights.” Organizations today see foresight as a useful means to stretch their thinking about consumer behavior, new product and service development, or where technology is headed – in short, helping them to identify what they need to do today to thrive tomorrow.

STRUCTURE OF THE BOOK

So, how do you teach people about the futures? At the highest level, one needs to understand how to think about the future conceptually, then one needs to be able to map the future, or craft descriptions of what the future might look like, and finally, one needs to know how to influence the future. These three over-arching categories – understanding, mapping and influencing – are used as organizing principles in forming the three parts in this book.

Part I, Understanding, contains the conceptual backdrop to thinking about the future. In our curriculum, three courses deal primarily with this topic: Introduction to Foresight, Systems Thinking, and Social Change (syllabi appended). The four chapters in this section lay out the theoretical underpinnings and mindset of future studies. They explore how futurists think about the future. “Models,” “Systems,” and “Perspectives” provide frameworks through which to view the future. “Social Change” provides a framework for how change happens on a large scale. It is impossible to cleanly separate theory, method and application in most fields and that is no different in foresight. So there will be some overlap.

- Chapter 1. Models of Change
- Chapter 2. Systems Thinking
- Chapter 3. Perspectives on the Future
- Chapter 4. Social Change

Part II, Mapping, describes how to construct forecasts of potential future outcomes or alternative futures. In our curriculum, two courses deal directly with this topic: Futures Research and World Futures (syllabi appended). The three chapters cover how to forecast baseline and futures: the baseline is the most likely future that emerges *if* present trends continue (they rarely do) and then there are the alternatives to that. The raw material for these alternative futures comes from research and scanning.

Futurists often refer to this as inbound change – the change that happens to people. It comes at people from the “outside” world.

- Chapter 5. Research
- Chapter 6. Scanning
- Chapter 7. Forecasting

Part III, Influencing, explores how to take action to shape the future. In our curriculum two courses cover this topic: Advanced Strategies and Professional Seminar in Foresight (syllabi appended). The four chapters in this section address the “so what” question of foresight. We study the future in order to influence it – to help create a better future. Futurists often refer to the changes here as outbound change: the change that people bring about and effect on the world.

- Chapter 8. Leadership
- Chapter 9. Visioning
- Chapter 10. Planning
- Chapter 11. Change Management

Each chapter has a common structure for reading and reference:

- *Introduction*
- *History*: background of the topic
- *Generalization*: chapters are based on courses, or parts of courses, with descriptions that highlight the key ideas and learnings to be covered
- *Approach*: describes how the topic is taught and applied in practice
- *Conclusion*
- *Resources*: briefly annotated items for digging deeper into the topic.

History

Futurists recognize the value of history in illuminating the present and thus providing important guidance to understanding the future. The relevant background history of each topic is thus highlighted.

Generalization

Each course begins with a course generalization, a single statement that embodies the essential learning in that course. It guides the selection and development of the modules in the course, with each module elaborating and reinforcing the generalization.