Chapter Seven – Hop Backwards

Introduction

It is now time for the second step in Fast Forward—The Dance of Strategic Planning. The first step was the jump. The next step is the hop. With the jump, the goal was to leap from the current strategic curve to the Next Big Thing. Such a jump may require a company to move into areas that are far removed from the current strategic initiative. For example, jumping from slide rules was electronic calculators involves far different skills. The jump from carbon paper to Xeroxgraphy also required a significant change in skills. The same can be said for the jump from overnight air freight of letters to fax or e-mail.

When jumping into new and vastly different territory, a successful leap often requires a firm to make significant changes. These could be technology changes, operational changes, distribution changes, and so on. In order make these major changes, it is often useful to break the task into smaller, more manageable pieces. These smaller steps are called ***hops***.

As it was described earlier, you can think of hopping as being like trying to cross a deep river where there is no bridge. The river is too wide to jump all at once. However, there are boulders in the river. Through careful calculation, you can find a route where hopping from boulder to boulder will get you to the other side. In Fast Forward—The Dance of Strategic Planning, the hopping step is designed to help a company find the right boulders for hopping to a more successful future.

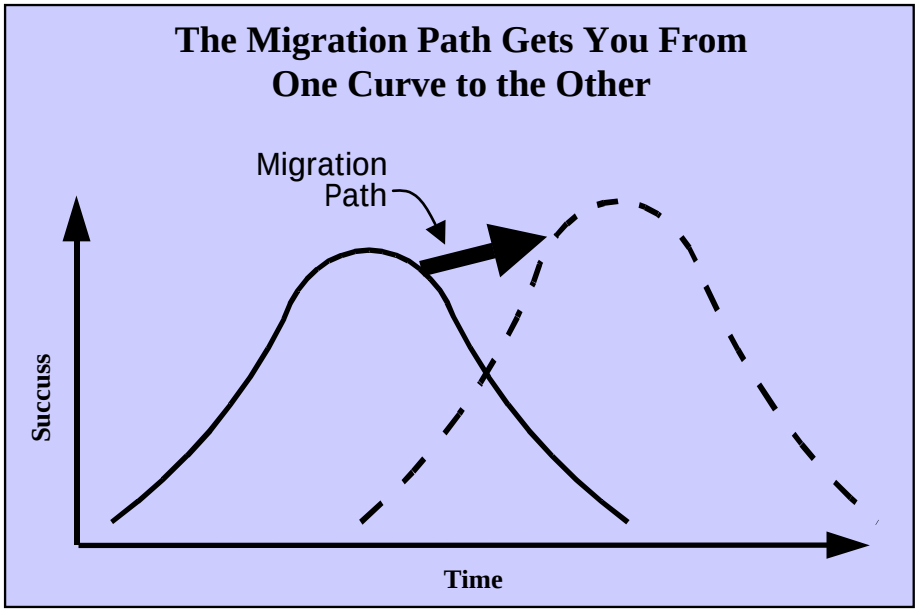
This chapter will describe the process of hopping in detail. Then this chapter will discuss the benefits of beginning the hopping process by hopping backwards.

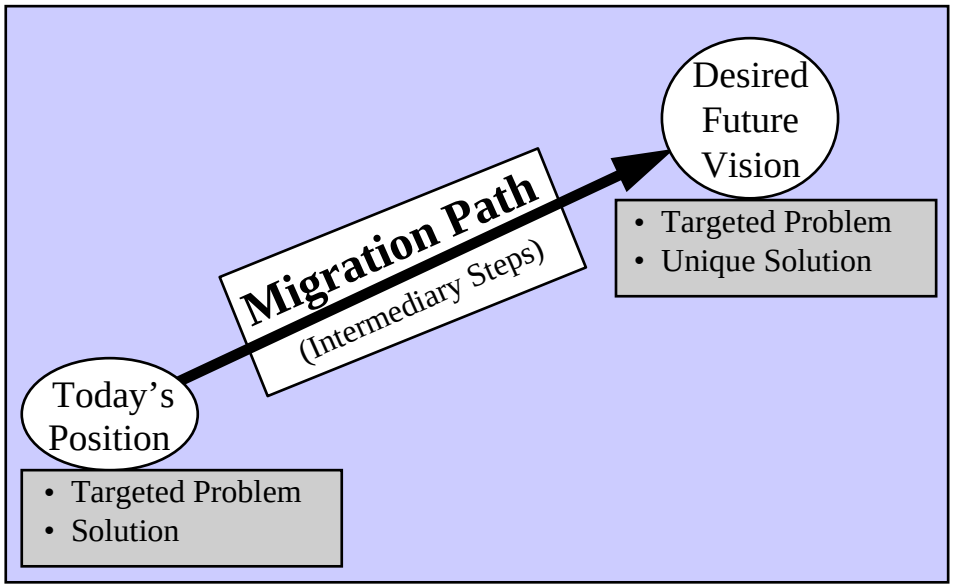
The Migration Path

Strategic planning is the management of change. Change management involves finding the best path for getting from where a company is today to where it wants to be in the future. This path is referred to as the ***migration path,*** a planned process to migrate from today to tomorrow. It is the path you take to get from one curve to the next (see figures on next page). The better one manages this process, the more likely the future will be favorable to your firm.

The migration path is made up of intermediate steps. These are the boulders you have to hop on. Sometimes the intermediate steps include building new sets of skills and capabilities. Sometimes it involves building a new type of organization better suited to the future. Sometimes it requires a change in marketing to reposition your image. Sometimes it includes all three of these plus other changes. Whatever the necessary

changes are, they will not occur at a fast enough pace unless you plan a migration path in advance that ensures that these intermediate steps occur at the right time.



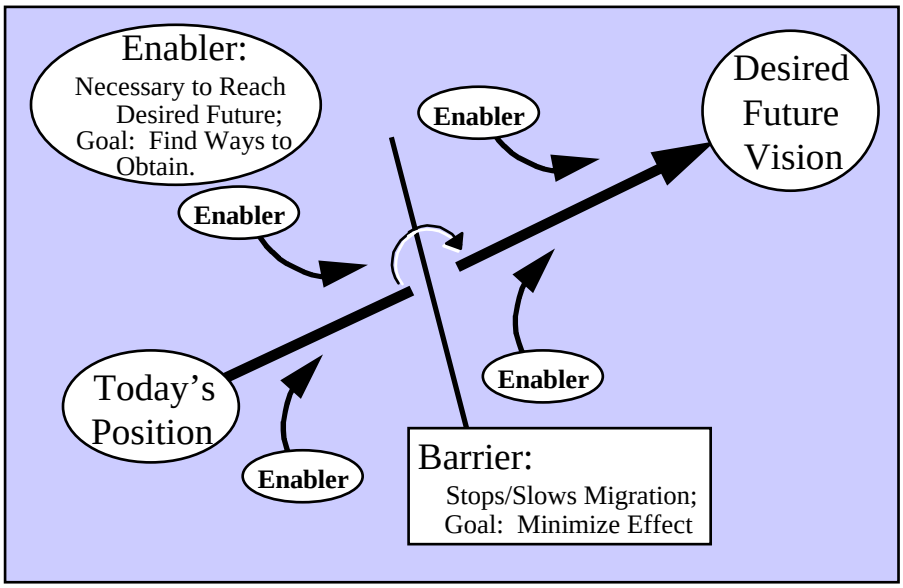


As the old saying goes, "if you don't know where you are going, any path will take you there." Unfortunately, you may not like where you end up. It is better to pick a destination and a path to get there, than to wander aimlessly into the future. We all get to the future eventually. If you do not manage the process, the future you get to may be bankruptcy.

Barriers, Enablers, and Milestones

Successful planning of the hop across the migration path considers two concepts—barriers and enablers (see figure below). Barriers are elements that could prevent your strategy from being a success. They are road blocks on your migration path. Examples of barriers could be:

- Lack of Skills;
- Internal Company Politics;
- Competitor's Strategy;
- Resistance by Customers;
- Lack of Knowledge.



The other migration path concern is the ***enablers***. Enablers are the activities or resources necessary for your company to provide the future solution. Examples of enablers include:

- Knowledge of specific technology or access to patents;
- Knowledge of specific manufacturing processes or service procedures;
- Special skills
- Financial Resources;
- A business organization and human resources capable of managing the process;
- Distribution capabilities;

Some enablers will already exist in your organization. However, the firm may not be currently applying these enablers towards getting to the future. For example, there may be some technological expertise in your organization that is will be needed in the future (e.g., miniaturization), but is currently being used in a process that is being replaced by

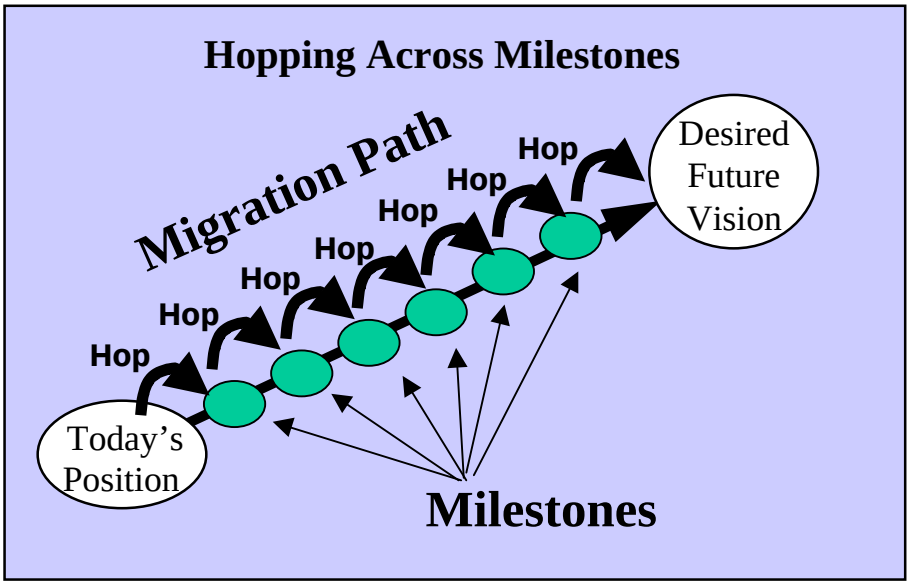
the next big thing. In this case, one of the goals of the organization is to reapply its current enablers in the new forward direction.

Often times, enablers will be necessary that do not currently exist in your organization. As we saw in the earlier, the Swiss watchmakers had numerous skills to enable them to excel in making mechanical watches. These were not the skills needed for electronic watches. To enable the watchmakers to switch to the next big thing in timekeeping, they needed to obtain new skills, new enablers, in the area of electronics. Without these new enablers, the Swiss would not be able to overcome the barriers on the migration path. When the situation occurs that you require enablers that are not currently in your organization, the objective is obvious—find a way to obtain these new enablers. Methods to obtain new enablers include:

- Internal Development
- Acquisition (of person or company or technology)
- Strategic Alliances
- Benchmarking firms with the enabler

The key barriers and the key enablers on your migration path are known as ***milestones***. Originally, milestones were rocks by the side of the road. They were either painted on or carved with words to let you know where you were and how far it was to the next marker. The markers helped travelers from getting lost and let them know how far they had traveled.

In a similar fashion, strategic milestones are markers to let you know if you are moving your organization forward to your destination. You cannot get to your destination unless you deal with each milestone—your key enablers and barriers. It is by hopping from milestone to milestone that you will reach your destination (see figure below). The objective is to sequence your milestones in the proper order, to make the process as efficient as possible.

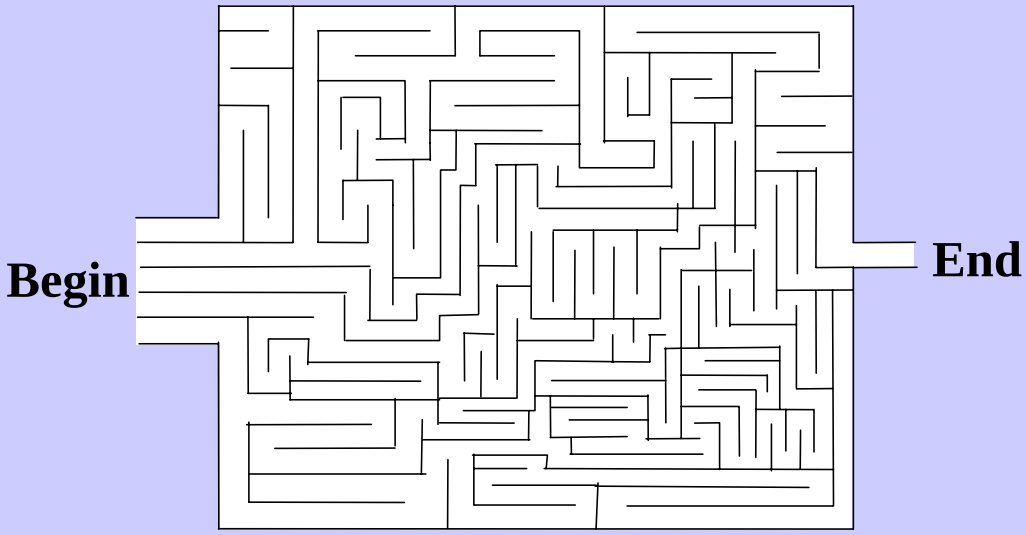


More will be mentioned on dealing with enablers, barriers, and milestones in the remainder of the book. However, before one can work on obtaining enablers, eliminating barriers, and sequencing milestones, the first task is to determine exactly what are the enablers, barriers, and milestones on your migration path. To do this, one needs to first ***hop backwards***.

Working Backwards

When I was younger, I loved to do mazes. When I ran out of mazes, I would draw my own. The goal of a maze is to find the path that gets you through the maze without hitting "dead ends." One thing I learned while doing mazes was that it is much easier to find the correct path if you start at the end than if you start at the beginning. At the starting point of a maze, there are usually many options, all of which look viable. Unfortunately, most of the options at the beginning end up as dead ends somewhere in the middle. However, at the end of the maze, there is usually only one obvious path. By starting at the end, it is easier to determine which option was correct at the beginning (try it with the maze below).

It is Usually Easier to Work a Maze From End to Beginning, Rather than From Beginning to End

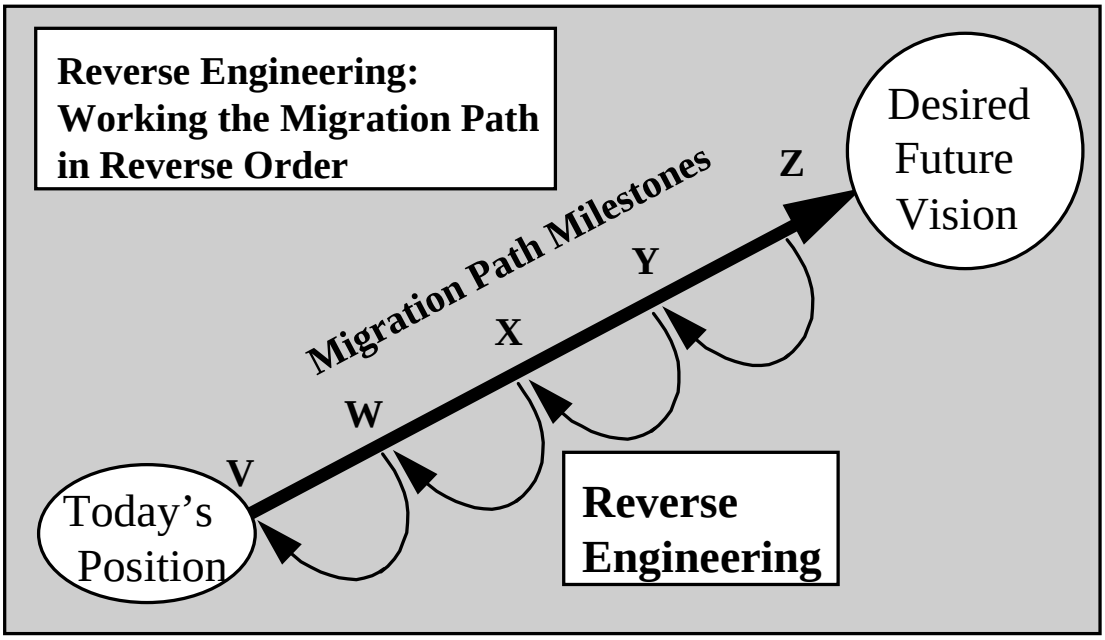


This same process is usually true with migration paths as well. If you start looking where you are today, the proper strategic choice may not appear to be obvious. However, if you start with the end point—the vision you have chosen for yourself in the futureview—the proper migration path can become quite clear. This act of working backwards is called ***reverse engineering***.

Reverse engineering is the process of determining the key milestones necessary to get from today to the future by starting in the future and working backwards. It is the process of answering the following questions:

- What do I need to do in order to get to endpoint "z"? (We'll call it "y")
- What do I need to do in order to get to "y"? (We'll call that "x")
- What do I need to do in order to get to "x"? (We'll call that "w")
- And so on...

This process goes on until the answer to the question is that you do not need to do anything, because you are already there. At this point, you have successfully figured out all of the key steps needed to get from today to the desired future. This is illustrated in the figure below.



Reverse engineering is an iterative process. The first time you work backwards, you may not get back to the present very quickly. Unlike mazes, there may be more than one viable path. By attempting many possibilities one may find a better migration path.

As stated many times in this book, the journey to the future is a race. The one who moves the fastest has the best opportunity to succeed, provided the movement is focused forward. Finding the shortest migration path is one way of creating speed.

Henry Ford's Genius Was Not The Assembly Line

I grew up in Dearborn, Michigan, the home town of the Ford Motor Company. Dearborn had almost a reverence for Henry Ford. We had Ford Road, Ford Woods, Ford Field,

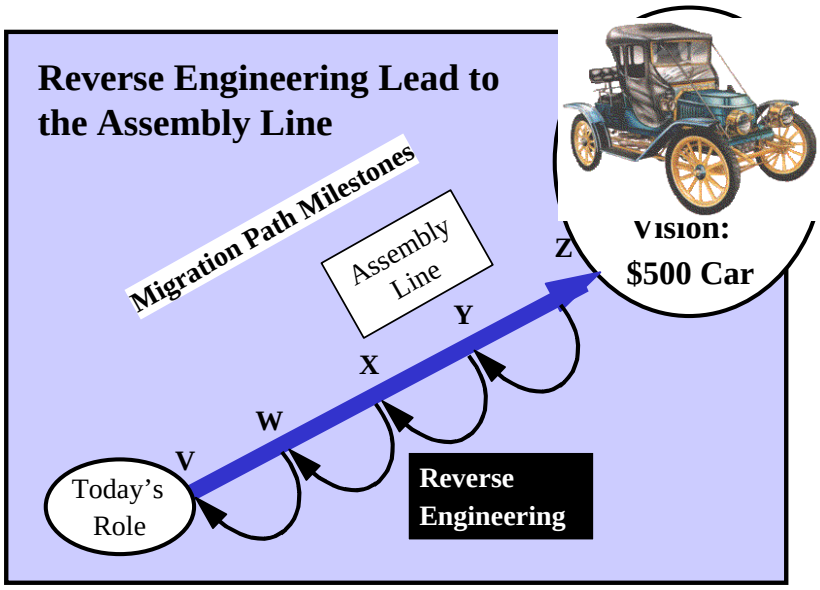
Henry Ford elementary school, Henry Ford community college, and the Henry Ford Memorial Library, complete with a large statue of the man.

Henry Ford was an important individual in the history of business. Many people say that his greatest contribution was the popularization of the concept of the assembly line. This is incorrect. Henry Ford's genius did not lie in the assembly line, but in his understanding of reverse engineering.

Theodore Levitt, in his famous article Marketing Myopia,[1] put it this way:

> "We habitually celebrate [Henry Ford] for the wrong reason, his production genius. His real genius was marketing. We think he was able to cut his selling price and therefore sell millions of $500 cars because his invention of the assembly line had reduced the costs. Actually, he invented the assembly line because he had concluded that at $500 he could sell millions of cars. Mass production was the ***result***, not the cause of his low prices."

Henry Ford used reverse engineering. His end point was a $500 car. He had no idea how to build a $500 car at first, but he knew that such a vision would be very powerful if he could achieve it. He tried to work backwards to find a way to make a car for $500. That reverse process led to the assembly line (see figure below). Had he not set such an ambitious goal, he might never have found himself forced to discover such an efficient manufacturing process.



In Henry Ford's words, "We make more discoveries concerning manufacturing and selling under this forced method than by any method of leisurely investigation."[2] We

[1] *Harvard Business Review*, July-August 1960, p. 129
[2] Henry Ford, *My Life and Work*, 1923, p. 147.

should not be afraid of ambitious visions, for they can lead us to dramatic advances we might not otherwise see.

Why Reverse Engineering is Superior to Forward Planning

Reverse engineering is superior to forward planning for several reasons:

1. It is less likely to be incremental;
2. It is more likely to be revolutionary;
3. It encourages speed.

These points are discussed below.

1. Reverse Engineering is Less Likely to Be Incremental

Incremental planning is flawed, because it assumes that minor improvements on what is being done today is all that is needed for tomorrow. In reality, it is often major changes that are needed. Making an 8-track tape player sound a little better will not help it compete against CD players. It is obsolete technology. Incremental benefits will not help it. As we earlier, the next big thing is rarely an incremental change, but rather a major departure from the old way, as calculators were to slide rules.

If we were to start with slide rules, it would be hard to envision minor steps forward that would have eventually lead to getting into calculators without knowing in advance that calculators were your goal. However, if we started with calculators as our goal and worked backwards, we could see that many steps would need to be taken. We would need to gain expertise in electronics. We would need new manufacturing skills in soldering. We would need to develop relationships with vendors who sell electronic components, and so on.

Assembly lines were a radical departure from the way the first cars were made. Minor improvements in the old method may have never lead to the assembly line. It was only after the goal of a $500 price was put on the vision, that Henry Ford used reverse thinking to discover the assembly line.

It is only by working backwards from the next big thing that one can break the spell of incrementalism and move into the new world of the future. By contrast, working forward usually leads to just making a more superior obsolete product. As the figure below illustrates, incremental forward movement may create a series of small steps leading to nowhere. Reverse engineering helps one see the big picture, making incorrect incremental steps less likely.

2. Reverse Engineering is More Likely to be Revolutionary

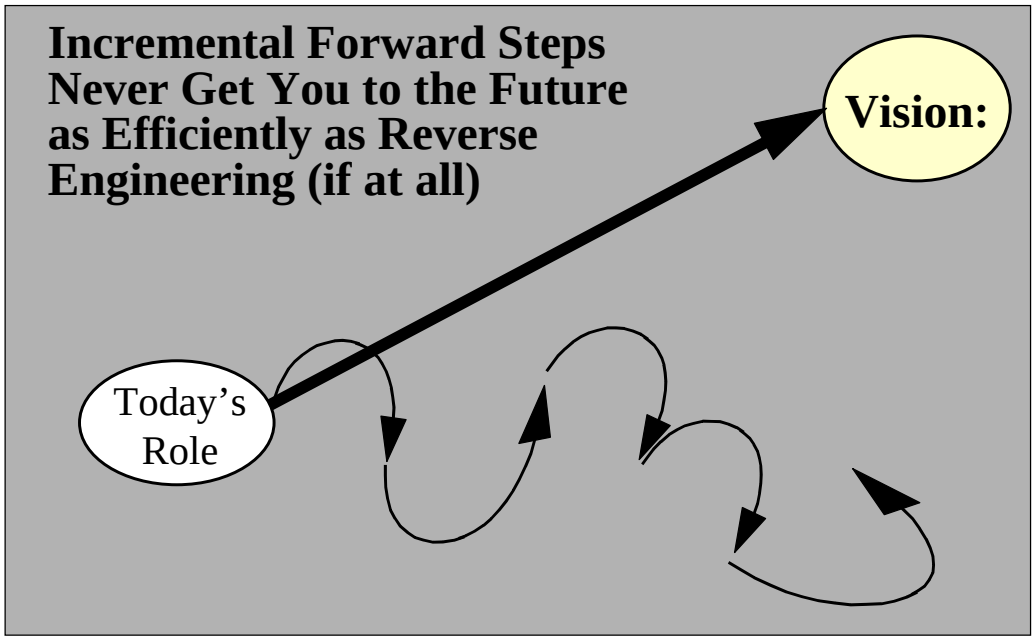
Necessity is the mother of invention. If no need for change is seen, no solution for change will be invented. If we try incremental forward planning, we may never see the great change that creates the necessity for invention. However, if we view the present as becoming obsolete, and if we see an end point that is radically different, we will then be forced to come face to face with the necessity to change. This reverse process creates the intellectual pressure necessary to invent the revolutionary new migration path to the future.

According to Bruce Henderson of the Boston Consulting Group, "For too many companies, life consists of working very hard to make small differences in performance produce small differences in profitability. But the really significant alteration in corporate fortunes depend on those few and basic decisions that enable a company to fight wars with its best weapons." To find these revolutionary new weapons, like the assembly line, the pressure of reverse engineering is required.

3. Reverse Engineering Encourages Speed

It is a race to the future. Getting to the future with the right resources faster than anyone else has its advantages. Therefore, the shorter your migration path, the better.

By starting at the end point and moving backwards, one is more likely to find the shortest migration path. This is because reverse engineering is more purposeful. You see a problem and then find a means to solve it. By contrast, forward planning doesn't always see the problems down the road, so it may take more time to get around to solving them, if it gets there at all.



As was stated at the very beginning, strategy is all about ***fast*** forward. Reverse engineering is one of the best ways to move forward quickly.

Suggested Tools for Reverse Engineering

There are three approaches that might make your reverse engineering more productive:

1. Keep it Simple
2. Try Reverse Decision Trees
3. Think About Contingency Plans

1. Keep it Simple

As stated earlier, Fast Forward is interested in direction, not precision. This also applies to the migration path. It is to provide direction rather than precision. Take the slide rule to calculator migration path mentioned above. One of the milestones in that migration path was to gain the ability to manufacture electronic components. When setting up the migration path, it is not necessary to know exactly how you will get that ability. It could come from hiring an expert; it could come from bringing in consultants; it could come from acquiring a small electronics manufacturing company; it could come from a strategic partnership; it could come from outsourcing. The important thing is the direction—moving forward towards getting that manufacturing ability.

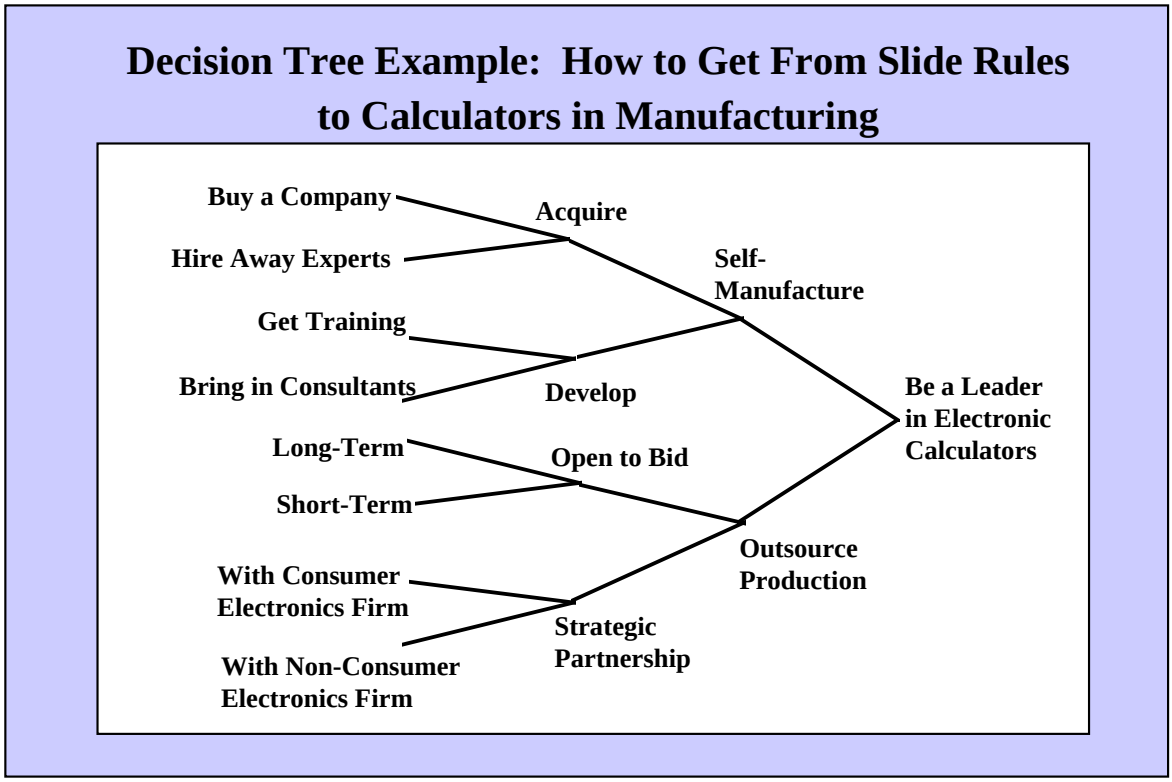
If you try to have all of the answers precisely known before you start the execution, you may never get around to starting, since you can never have all the answers about the future. Worse yet, you might pick the wrong "how," because you are too early in the process.

Fast Forward means knowing the general direction of what has to be done and then letting the employee responsible hustle to work out the specifics. The empowered employee at the point of execution will find the right answer more efficiently than a bunch of executives sitting in a boardroom on the top floor.

Therefore, the migration path should be kept simple. It should point out what the milestones are, and perhaps some general guidelines on the type of solution (e.g., acquisition versus strategic partnership), but not explain in detail how it will all be accomplished.

2. Try Reverse Decision Trees

Another way to get at reverse engineering is to use a reverse decision tree. Pictured below is a reverse decision tree for the example mentioned earlier--getting from slide rules to calculators.



As this figure illustrates, the decision tree is backwards to the traditional decision tree, since the future is a single point which branches backwards towards the present. In this example, the endpoint is a leadership position in electronic calculators. For a slide rule company to get to this point, it must change from manufacturing slide rules to manufacturing calculators. This is a different manufacturing process. To get the new skills, one can make the various decision tree branches, such as self-manufacturing versus outsourcing, until a good solution is found.

Similar reverse decision trees could also be made for the other migration path milestones, such as marketing or procurement.

4. Think About Contingency Plans

When dealing with the future, one is dealing with the unknown. Therefore, do not be surprised if your migration path does not turn out exactly as planned. When the surprises come, it is wise to be prepared with contingency plans. The more contingencies that are planned in advance, the less likely your hustle for the future will be needlessly delayed when surprises occur.

Summary

If you want to find all of the clues in a murder mystery novel, sometimes it helps to read the last chapter of the book first. By reading the last chapter first, you know from the beginning who the murderer is. This insight helps you to know where to look to find the clues in the remainder of the mystery novel.

The same is true of planning. By first understanding the endpoint, it is easier to know where to look for clues on how to hop to the destination. That is why the first part of hopping involves hopping backwards, otherwise known as reverse engineering.

Reverse engineering helps one to find the milestones necessary for hopping over the barriers to success. Once the milestones are ***identified***, the next step is to design a strategy to ***achieve*** them. That is the topic of the next chapter.