

Other operating income and expenses	-143.3
Research and development	-608.2
Patent and license revenues	97.7
Investment result	23.5
Amortization of goodwill	-120.6
Operating result	616.0

**GARY FIELDS**

# Bottom Line Management

 Springer

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Gary Fields

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With thanks to the managers and students  
who helped me sharpen  
the Bottom Line Management message.

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## Chapter One

# Bottom Line Management: An Introduction

### Why You Should Read This Book

You are reading this book because you want to do well for yourself and you want to do well in your organization. In this book, I will help you do both.

I will help you if you are (or aim to be) a senior manager in an organization and have a seat at the table where key decisions are made. I will also help you if you are (or aim to be) one of the valued employees doing well the good work of the organization in your individual office, cubicle, laboratory, or sales territory.

What makes you valuable to your organization? You're valuable if the organization would lose out if it *weren't* paying you for your input. The head of the organization would have significantly more to do if you were not there. Without you, less would be produced. In your absence, poorer decisions would be made.

But in order for you to be valuable, your input must *truly* be valuable. Your input cannot be valuable if you do not know what the organization is trying to achieve. It cannot be valuable if you do not know what strategy the head of the organization and the other leaders have adopted to try to achieve it. And it cannot be valuable if you cannot contribute to making good, sound, purposeful decisions.

Those are the things that this book will help you do: understand the organization's bottom line and help you contribute to it.

### Helping the Person in Charge Improve the Bottom Line

All organizations have a person, or occasionally a small number of persons, who are in charge. These leaders are accountable for the success of the organization. These leaders are the people who have the ultimate responsibility for managing the people in the organization. And these leaders are the people for whom you work, directly or indirectly.

In most companies, the leader is the CEO. For sports teams, the leader is the head coach (football, basketball) or manager (baseball). For a university, the leader is the president. In other not-for-profits organizations, the president may be called director-general, secretary-general, or executive director, but he or she is still the leader. The head of a government agency is the secretary (U.S.) or minister (most other countries).

Running a company, a sports team, a university, a not-for-profit organization, or a government agency is an enormously difficult and time-consuming job – great responsibility, high stress, ultimate accountability. A chief executive can make literally billions of dollars worth of difference. No wonder that these people are paid so much when they get it right! (Alas, some of them have arranged to be paid just as much in the event that they get it wrong.)

Heads of organizations need all the help they can get. They would love to be able to delegate major chunks of their responsibilities to others in the confidence that those responsibilities will be carried out in a way that will help the organization achieve its aims.

Here is the first key. Unless you are the head of the organization, your job is to help the head do his or her job. Because the head's job is to improve the bottom line, your job is to help the head improve the bottom line. You will earn a seat at the table when and only when your input is helpful. If it is not, the best thing that can happen to you is that you will be ignored and left to quietly go about your business in organizational obscurity. At worst, the organization will decide that it does not need you and you will be let go. Aim to be part of the solution, not part of the problem.

Make no mistake about it: any manager who is managing well will hold you accountable for helping him or her achieve the central objective of the organization. You're not simply putting in the hours or trying for results. You have to achieve them.

To do that you must be absolutely, 100%, unambiguously clear on what the bottom line objective of the organization is.

## **What the Bottom Line Is**

Most organizations have an overriding objective – what in this book I am calling the bottom line. For a company, the bottom line is literally the bottom line of a profit and loss statement. For a sports team, it is

winning the championship (I think, but see Chap. 3). For a labor union, it is improving the wages and working conditions of its members. For a research university, it is outstanding teaching and research. For a not-for-profit, it may be something like “a world free of poverty” (the World Bank) or “improve the lives of vulnerable people by mobilizing the power of humanity” (the Red Cross).

Organizations pursue such bottom line objectives in ways consistent with their own cultures and codes of conduct subject to constraints imposed by competition in the marketplace. Everyone in the organization needs to know what it means to do things “our way,” be it acting with high integrity, maintaining academic freedom, assuming personal accountability, or delivering a great customer experience.

The head of the organization has ultimate responsibility for increasing the bottom line objective(s) to the maximum extent possible in ways consistent with the organization’s culture and codes of conduct. In a well-aligned organization (and believe me, many organizations are *not* well-aligned), the head is held accountable for the organization’s bottom line and is judged accordingly.

For you to be able to help the head of the organization achieve that bottom line, you must know with certainty what the organization’s bottom line is. This is more difficult than it seems.

Organizations are often shockingly unsuccessful at communicating to their employees what their bottom line objectives are. How can you possibly help your organization do better if you are not 100% clear about what “doing better” means in your workplace?

Here’s a simple test you can perform for yourself. Write down in one sentence the bottom line objective or objectives of your organization. Are you having trouble? Now ask a colleague to do the same thing. How close are your answers? In a well-led organization headed by a bottom line president, your answers should be identical or very nearly so.

The first part of this book (Chaps. 2–4) is about what the bottom line is. If you have the good fortune to work for an organization that is crystal-clear about what its bottom line is, you can quickly skim the first part of the book. Most of us are not so lucky. If that is the case for you, you will have to work at gaining clarity of organizational objectives. Do it – it will reward you many times over.

## **It's Costly *Not* to Know What the Bottom Line Is**

For the most part, employees simply do not understand what their organizations are trying to achieve, or if they do understand, they do not spend enough time on work that helps achieve those objectives. A FranklinCovey study of 11,045 employees in the United States found that only 44% said they clearly understand their organizations' most important goals, and only 19% have clearly defined job goals. When there are organizational objectives, many employees do not see much of a link between their work and those objectives: only 9% believe their work has a strong link to their organizations' top priorities, and just 19% feel a strong level of commitment to their organizations' top priorities. Employees say they spend only 49% of their time doing work that relates to their organizations' top priorities.

Understanding the organizational bottom line and working towards it makes a huge difference to organizational outcomes. Research in the U.S. corporate sector by the consulting company Watson Wyatt has shown that total returns to shareholders are three times higher at companies where employees understand what the corporate objectives are and the ways in which their jobs contribute to achieving them. A study in the Netherlands by Kees Cools and Mirjam van Praag related total return to shareholders to the number of goals stated in the corporate annual reports and the number of internal targets. After controlling for other influences on shareholder returns, they found that the companies that had just one single target exhibited 9% higher returns, other things being equal. Imagine being able to do that much better for your shareholders simply by being more focused!

The legendary former Chairman and CEO of Honeywell International, Larry Bossidy, and the famed management consultant Ram Charan put the need for setting clear goals and priorities this way: "Leaders who execute focus on a very few clear priorities that everyone can grasp..... A leader who says 'I've got ten priorities' doesn't know what he's talking about – he doesn't know himself what the most important things are. You've got to have these few, clearly realistic goals and priorities, which will influence the overall performance of the company." It is this drive to improve the overall performance of the company that separates the Bottom Line Manager from others.

The retired CEO of IBM, Louis V. Gerstner, Jr., got into an illuminating exchange with Associate Editor Ira Sager of *Business Week* on this

very issue. Gerstner stated, “I went into IBM believing that its problems were primarily strategy and execution. When I got there, I found out that the direction the company needed to go was pretty clear. This was not a question of picking a direction and saying: ‘Charge!’ You would do that and turn around and nobody was following behind you.” Sager then asked Gerstner, “Why do you believe Wall Street is too preoccupied with revenue growth as the measure of corporate success?” Gerstner replied, “The value that some analysts put on revenue vs. what they put on profit is totally out of whack. If you can grow real cash earnings, that’s 80% of what you ought to do, and the revenue component is 20% .... I was not going to get distracted because somebody said: ‘Gee, we’d like to see your revenue a little higher this year.’” Gerstner leaves no doubt about which were his two priorities: at Gerstner’s IBM, it was 80% profit and 20% revenue growth. Why not all profit? Because, holding costs constant, revenue growth leads to profit.

Such clear-minded focus is equally important in the non-profit sector. Deloitte and Touche, a global consultancy, wrote this in their report to a client: “In a non-profit environment, a corporation’s ‘profit’ is, in essence, the achievement of its mission and vision. Therefore, a non-profit corporation must operate its business in a manner that strives to achieve these goals. When it does not attain the predetermined standards, it clearly is experiencing business issues.”

Another example appeared in a survey article on “The Business of Giving” in *The Economist* magazine. The article stressed the pluses of thinking like a business: be more businesslike, raise productivity, be more strategic, maximize the leverage of the donor’s money. Surprisingly, it also highlighted some negatives about businesses – in the words of management guru Jim Collins, “Most businesses are mediocre.”

A clear-minded focus matters in the government sector too. The U.S. Government Accountability Office, the management arm of the Federal Government, had this to say about a study of a number of government agencies including the Bureau of Land Management, the Veterans Benefits Administration, and the Internal Revenue Service: “GAO found that these agencies are in the early stages of using a set of balanced expectations to appraise senior executive performance and there are significant opportunities to strengthen their efforts as they move forward in holding executives accountable for results. Specifically, more progress is needed in

explicitly linking executive expectations for performance to organizational goals.”

It doesn't matter whether yours is a for-profit or not-for-profit organization. If your organization were run in a more businesslike fashion, you could probably do more of the good work for which your organization exists.

## One Company's Story

Recently, I worked with a New York City-based professional services company that leads its industry segment. The CEO asked employees to write down how they make the company profitable. The replies were strikingly uneven. They range from excellent to vague to petty.

The best statements were well-focused. A particularly good response comes from a senior vice president: “I make the company profitable by:

1. Making sure my group understands that ‘success’ must be *quantified* – focus on dollars, percentages, margins (vs. good or bad).
2. Teaching/monitoring/mentoring time management issues to facilitate *smart, efficient* thinking.
3. Articulating and prioritizing *clear* goals and objectives.”

In a well-focused organization, *all* employees would be thinking in such focused, bottom line ways. Unfortunately for this client, many of the responses were vague and unfocused. A vice president answered that he makes the company profitable by teaching his team to “think strategically.” Does “strategic” mean “purposeful”? What is the purpose? One director said, “I make smart business decisions on behalf of my agency and client.” What makes a decision “smart”? Another director said, “I always try to keep the ‘big picture’ in mind when staffing to keep us as efficient as possible.” What is the “big picture”? A third director said, “I try to maximize each deal that I do.” Maximize what? Those giving these responses have made a good start, because they're thinking about the business. However, they are not yet focusing directly on the company's bottom line, namely, profits.

Some of the replies were mistaken, because they brought up the trivial. One manager said, “I save my emails on my computer – instead of printing every e-mail out and adding copy costs and usage to the printers.”

Another said, “I reuse paper cups for my tea throughout the day.” Those who answered like this would benefit from the wisdom of the famous bank-robber, Willie Sutton. When Sutton was asked why he robs banks, he answered, “Because that’s where the money is.”

I reported to the CEO my conclusion that many of his people, including some very senior ones, seemed not to understand with absolute clarity where the money is. I told him that if they do not understand where the money is, they cannot act on it. I relayed my suspicion that many key employees would have difficulty giving a precise definition of “profit,” which would make it very hard for them to be able to work towards higher profits on an hour-by-hour basis. Finally, I recommended that the company improve its profit potential by: i) giving training on the organizational bottom line and business model to everyone in the organization, ii) ingraining a drive for higher profits at every level of the organization, and iii) developing bottom line decision-making skills for employees at *all* levels of the organization.

Let us talk more about bottom line decision-making now.

## **Bottom Line Decision-Making**

Bottom line decision-making is the subject of the second part of this book (Chaps. 5–8). It involves a mix of setting the right objectives, maximizing some things, optimizing others, using sound decision rules, and avoiding unsound ones.

I am an economist, having completed thirty-six years as an Ivy League professor teaching students, writing for professionals, consulting for organizations, and advising managers on how to achieve their objectives. I know full well that bottom line decision-making is difficult to do unless you have been trained to do it. This is where I want to help you.

Bottom line decision-making has four essential steps. The first step is setting the right objective. As I have already explained, and as the first part of the book develops in detail, setting the right objective is about knowing what the organizational bottom line is and pursuing it incessantly. “Winning decisions” cannot be made unless the organization has made clear to everyone in it what “winning” means.

The second step in bottom line decision-making is to know when to maximize and when to optimize. “Maximize” means to make something as large as you can. “Optimize” is to achieve the best possible level.

My message is straightforward: maximize the bottom line and optimize everything else.

The third step is to estimate fully the most important aspects of the decision you are making. For example, suppose you are considering a new IT system in your organization. What benefits would you expect if the new system is put into place? How valuable are these benefits? What are the costs? Have you included not only the purchase price but also the training and maintenance costs? How sure are you that the total benefits outweigh the total costs? Such decisions involve estimating the net present value of benefits less costs; they are discussed at length in Chaps. 4 and 7.

The fourth step in bottom line decision-making is to use a sound decision rule and avoid unsound ones. Suppose you have to decide which of two or more options will have the greatest impact on the organizational bottom line. What is a sound decision rule? One that produces a demonstrably superior result. What is an unsound decision rule? One that produces a demonstrably inferior result.

Bottom line decision-making is not easy. In Chap. 5, I will ask you to make a decision about which type of worker to hire. I have tried this exercise on students at my university (Cornell) at all levels - undergraduates who have already had several economics courses; M.B.A.'s and other professional masters students, most of whom have had several years of business experience; and Ph.D. candidates in economics, who have had years of formal disciplinary training - as well as with businesspeople in training seminars and executive education courses. Only five percent - *five percent!* - of the respondents made the right decision. Why did they get it wrong? In some cases, because they did not know how to get started. In other cases, because they used a wrong decision rule.

Experience has taught me that many of you will have to unlearn what you may already "know" in order to be able to learn what *really* must be done in making decisions like these. Bottom line decision-making is about setting the right objective, maximizing and optimizing appropriately, estimating the benefits and costs of possible courses of action, and using correct decision rules. In this book, I will teach you these decision tools.

## **In Summary**

The messages presented in this book deal with two major issues. The first message is about what to maximize - in other words, what the



organization's bottom line really is. The second message is about how to maximize – in particular, how to make sound decisions when you, those who lead you, and those whom you lead are all clear about what your organization is trying to achieve.

Needless to say, if you help the organization achieve that bottom line, you will be a valuable and valued member of the organization. You will probably find the work intrinsically rewarding and be well-rewarded for it.

You will be a bottom line manager, of yourself and of others, when you:

- Know what type of organization you are working for.
- Are clear about what your organization's bottom line is.
- Maximize the true bottom line and optimize everything else.
- Use sound decision rules and avoid unsound ones.

This book will help you become that kind of manager.

## Notes

The FranklinCovey study is reported in *Workforce Magazine*, May 2003, p. 80.

The Watson Wyatt study is *WorkUSA<sup>TM</sup> 2002 Survey*, available online at <http://watsonwyatt.com/news/press.asp?ID=10390>.

For the Dutch data, see Kees Cools and C. Mirjam van Praag, "The Value Relevance of Disclosing a Single Corporate Target," Tinbergen Institute Discussion Paper TI2003-049/3.

The Bossidy-Charan quotation comes from Larry Bossidy and Ram Charan, *Execution: The Discipline of Getting Things Done*. (New York: Crown Business, 2002).

The Gerstner interview was published in the 18 November 2002 issue of *Business Week*, pp. 64 and 68.

"The Business of Giving" was published in *The Economist*, 25 February 2006.

The Collins quotation comes from Jim Collins, *Good to Great and the Social Sectors* (Boulder, CO: jimcollins.com, 2005).

The GAO quotation comes from *Results-Oriented Cultures: Using Balanced Expectations to Manage Senior Executive Performance*, GAO-02-966, available online at <http://www.gao.gov/cgi-bin/getrpt?GAO-02-966>.

"Winning Decisions" is the title of a book by my Cornell colleague Jay Russo and Paul Schoemaker of the University of Pennsylvania.

## Chapter Two

# Purposeful Behavior: What Are We Working Toward?

The essence of Bottom Line Management is that organizations are engaged in purposeful behavior aimed at achieving a true organizational bottom line. It is crucial that everyone in the organization be clear about this overarching organizational purpose. In Chap. 3, I will tell you about five types of organizational bottom lines.

Before we get there, though, it is important that we understand how organizational bottom lines tie in with such other features of organizations as mission, values, visions, and constraints. In this chapter, we will look at these in turn.

## Mission

Some organizations have highly effective and truly motivating mission statements. Here are some of my favorites. Charles Schwab, the discount investment broker, sees itself as “the guardians of our customers’ financial dreams.” Oticon, a hearing aid manufacturer, has as its mission “helping millions of hard-of-hearing people lead better lives.” The pharmaceutical giant, Bristol-Myers-Squibb, proclaims that its mission is to “extend and enhance human life.” Scientists at Amersham, a British company taken over by General Electric, “are moved more by the science of the human genome than the corporate bottom line.” These sorts of mission statements truly engender a sense of mission. They *are* very important. As a manager in an organization or as an ordinary employee, you want to have a good idea of the organization’s mission and you should feel good about it.

At the part of Cornell where I work, our Dean states our mission as “Advancing the World of Work.” Five words. I understand them and am motivated by them. As I head for my office in the morning, I envision ways in which I will advance the world of work that day: Teaching a class that will convey to students a useful way of thinking. Conducting

research on labor markets in the U.S. and overseas. Doing policy work for international organizations that may help working people earn their way out of poverty. I identify with the mission of “Advancing the World of Work.” That is really and truly what I believe my part of Cornell is about, and I am really and truly glad to be a part of it. I can understand this mission.

I know what I am supposed to do each day. I am supposed to teach and do research that helps advance the world of work. I also know what I am *not* supposed to do – raising money to fund my teaching and research is the job of the Dean and the development officers, not mine. In my job, I have the option of conducting or participating in executive education programs for managers or extension programs for worker groups, but as a professor that is not my main job – it *is* the day-to-day job of our extension associates. I know that I am not supposed to substitute faculty governance for teaching and research aimed at advancing the world of work. There are lots of things that I *do not* do because not doing them is implied by what I *am* supposed to do.

And so I think these mission statements genuinely mean something. They *can* be helpful *if* the people in the organization can understand them, if they can really get it, and if they can orient themselves accordingly.

## **How the Bottom Line is Different from Mission, Vision, and Values**

But – and this is a very big “but” – an organization’s mission is not the same as its bottom line. My colleagues Pat Wright and Lee Dyer proposed a model for organizational capability. At its core are “shared vision” and “shared values.” They then went on to develop six management principles, one of which was “achieving contextual clarity.” As they explained, “Abiding by other principles, while failing on this one, can result in highly energized, but rudderless, employees – all thrust and no vector.” That is such beautiful language – I wish I had written it myself.

We economists have a model that we use for most companies. The model we use is built around the pursuit of profit – specifically, a higher net present value of profit, now and in the future – about which much will be said in the rest of this book.. Is profit a vision? Granted, there are

some organizations that say something like, “Our vision is to make as much money as we can,” and that is what gets the employees up in the morning – the dollar signs at the end of the day – but there are not too many like that. What about shared values? Is this what we think is important? Profit is not necessarily what people think is most important and most compelling. We hear a lot of talk about “making this a compelling place to work” and that sort of thing. Saying “you can make a lot of money here” is, for a lot of people, simply not sufficiently motivational.

Abundant references are made in the business literature to the importance of profit. Here is one example from the head of Fortune Inc., Steven Brown: “When you get to heart of the matter, you find that managing a successful company is like being a juggler trying to keep five balls in the air. Four of these balls are white. On one is written *PRODUCT*. On another it says *SALES*. The third is labelled *CORPORATE AND PUBLIC RELATIONS*, and the fourth says *PEOPLE*. In addition to the four white balls, there’s one red one. On it is the word *PROFIT*. At all times, the juggler must remember: No matter what happens, never drop the red ball!” [Emphasis in the original].

So what is profit? Is it the mission? A shared vision? A shared value? My answer is that it is *none* of these. What it is, is a shared *objective* and a core one at that. Put differently, profit is the true bottom line of a typical business.

The reason I draw the distinction between mission, vision, values, and bottom line has to do with management itself. When you manage, you and your people must understand what the business is trying to do. So let us suppose you are working for the hearing aid company I mentioned earlier. If you take seriously “helping millions of hard of hearing people lead better lives” and you do not take any account of business objectives like profits, you may say: “I know what I’m supposed to do. I should requisition cases of these hearing aids and go out and find people who need hearing aids and hand them out.” If you do that, you would not be helping your company achieve its business objective. You would be helping it achieve its mission statement but not its bottom line.

If the organization is a for-profit type of organization, then we’ll talk about its “business objective.” If the organization has some other objective, such as “excellence in teaching and research” or “advancing the world of work,” or other kinds of things, which would typically be found in not-for-profit kinds of organizations, we have some other objective.

Good managers will be trying to achieve *that* objective, whatever it may be. We will talk more about those other objectives in Chap. 3.

## **How a Clearly-Defined Bottom Line Helps You Manage Yourself and Others**

What I am trying to say is that *if* the organization has a clearly-defined objective, then there are decisions that people can make along the way, if they understand the objectives. They can ask themselves over and over again, “What should I be doing?” and they can manage themselves accordingly.

Cornell University expects its professorial faculty to be excellent in teaching and excellent in research. (Teaching and research are two of Cornell’s bottom lines. The third is public service, which traditionally has been the responsibility of extension associates). What I picture, literally, is the President of the university walking into my classroom or into my office and asking, “What are you doing to advance the mission of the university right now?” I can picture him walking into my classroom and listening to me teach, and I would hope that he would leave thinking, “Yes, this man is teaching the students worthwhile material.” Or I can picture him walking into my office, looking at my computer screen and saying, “What is that on this funny black and yellow screen? It looks some statistical program. What are these statistics about?” And after I explain what I am studying, I would hope that he would walk out satisfied that I am conducting sound research on a worthy subject.

I wish I could tell you that Cornell University is always a focused organizational setting, but that would not be true. I once headed a small institute at Cornell, which I thought was doing the good work of the organization. After three years, senior management surprised us by announcing that the institute would be shut down, but we were not told why. Only later did I learn that it was because we had not brought in enough money. Why was this a surprise? Because we had never been told that the institute was supposed to bring in money! It would have been much better if the criterion for success had been communicated to us from the very outset.

## Lack of Clarity is Endemic

I am continually dismayed by some organizations' apparent lack of focus. A leading global agribusiness company came to Cornell and gave a presentation on developing leaders. A Senior Vice President gave a speech on "the importance of aligning 15,000 people around the world with the organization's corporate vision, mission, and strategy." The company states: "Our vision: abundant food and healthy environment." It continues: "Our mission: For the world's food producers, we work to deliver products and solutions to help them reach their goals in ways that:

- Meet the world's growing food and fiber needs
- Conserve natural resources
- Improve the environment.

By serving our customers, we serve our shareholders."

And then it ends.

I was so puzzled by this – I thought, there has got to be more to it – that I went to their website and I looked up "Business Purpose and Mission." Indeed, there was a lot more. Under "Our Vision" and "Our Mission," the company had posted five principles with many subpoints under each. They were:

- Taking ownership of our company's success
- Delivering highest-quality products and technology
- Building strong relationships
- Creating a great place to work
- Conducting ourselves with integrity.

And then the website went on and listed operating principles in many pages of small print:

Corporate operating principles: We are the stewards of [X's] success. As such we are accountable to a broad range of groups that give us license to operate: our shareholders, our customers, our communities, consumers, society and each other. We are committed to these principles:

Taking ownership of our company's success by being accountable for:

- Achieving results
- Working with our customers to create value
- Making wise decisions
- Stewardship of company resources

- Focus on our top priorities
- Discipline in our process.

Delivering the highest quality products and technology through:

- Sound and innovative science
- Excellent product and environmental stewardship
- Embracing safety and health in everything we do
- Customer-driven solutions.

Building strong relationships through:

- Customer involvement
- Consultation with stakeholders
- Collaboration and partnering
- Sharing our research and knowledge
- Listening to diverse views.

Creating a great place to work by:

- Clarity of direction, roles, and accountabilities
- Fostering innovation, creativity, and learning
- Rewarding and recognizing our people
- Ensuring diversity of people and thought-inclusive teamwork
- Respecting and trusting each other.

Conducting ourselves with integrity based on:

- Courage
- Respect
- Candor
- Honesty
- Humility
- Consistency
- Keeping our promises

Tell me honestly: did you read through to the end?

This company lists twenty-seven operating principles. Bossidy and Charan would say that this is about twenty-four too many. Think of it this way. If you were working for this company, would you know what you're supposed to align your behavior with? Would you know what you should do (and what you should not do)? Imagine yourself being one of those 15,000 employees asked to align your activities with the

organization's vision and mission. You walk into work in the morning. What do you do? What do you try to achieve?

I am truly baffled by companies that do things like this. What is the point of having such a mushy mission statement? Does this company not have a bottom line? Or is it afraid to mention it? Cutting from twenty-seven objectives to three, or even to one, may be very hard. Still, it would be worth doing. This company and many others would benefit from a healthy dose of bottom line management.

The consultancy Watson Wyatt says that lack of focus is pervasive. Their *WorkUSA<sup>TM</sup>* survey analyzed the responses of 13,000 workers. The study found that fewer than half of employees (49%) understand the steps their companies are taking to reach new business goals. The study's author concluded, "Companies cannot develop effective teams and working relationships unless everyone involved understands the connections between their jobs and [corporate] objectives."

The academic management literature is also replete with unfocused statements of purpose. Charles Hill and Gareth Jones are the authors of a leading text on strategic management theory. They state: "Typically, strategic managers select financial goals they wish their company to achieve, such as growth, profitability, and return to shareholder goals, and then they measure whether or not these goals have been achieved." Hill and Jones go on to narrate the following story. "Stock price, for example, is a useful measure of a company's performance, primarily because the price of the stock is determined competitively by the number of buyers and sellers in the market.... When Ford Motor's stock price failed to increase in 1996, for example, CEO Alex Trotman took heed of the shareholders' complaint that Ford's product development costs and cars' prices were too high. In response, he took steps to reduce costs and boost the company's ROI and stock price." I am not sure what Hill and Jones would have wanted Trotman to do, but I know that *I* would have preferred for him to have taken steps to make the company more profitable this quarter, this year, and in the years ahead. (Trotman is long since gone from Ford.)

Whatever the organization's bottom line is, some employees do not know how their jobs contribute to the bottom line. If you have the misfortune of being in a job where you do not know how it contributes to the bottom line, then it is probably a good idea to find out or else find a different job, because you are not necessary to the organization. Few



organizations in today's highly competitive, globalized world follow the traditional path of keeping people on simply because they have been there a long time; "emergent employers," who focus more on performance than seniority, are gaining market share, in large part because they have produced superior bottom line results.

## Cultural and Ethical Constraints

When I have spoken to audiences about bottom lines, profits, and other single-minded objectives, I have sometimes been asked about the role played by ethics, values, and cultural constraints. Do they enter in, and if so, how?

I *do not* want you to think that by pursuing an organizational bottom line, you do so at the expense of *all* else. You should not think that the way to maximize profits is to assassinate your competitors or otherwise do them bodily harm. Drug lords, Mafiosi, and other such unsavory characters do that, but that is not what ordinary profit-seeking firms do: they operate within self-imposed constraints. I *do* want you to think about maximizing the organizational bottom line *within the constraints* imposed by shared ethics, values, and culture in your organization.

The constraints are often ones that organizations choose for themselves – for example, “we aim to operate in an ethical way” by not doing illegal activities in the pursuit of higher profits. Or “our cultural ethic is one where we donate part of our profits to the larger society.” Or, “we aim to develop certain products that may be good for humanity but may not be good for the bottom line.” Organizations constrain themselves in ways like this. If they do, then they are not in a literal sense *maximizing* profit, because they are knowingly relinquishing some profits along the way.

A better description of the aims of such companies is that they are *profit-seeking*. They may be presumed to be seeking to have higher profits within the ethical and other constraints that they place upon themselves. And once they have these higher profits, they of course are in a position to decide what they are going to do with them. They may, at that point, decide to contribute more to humanitarian causes. Or they might decide before they earn the profits to engage in less-than-profit-maximizing activities in order to be achieving something else.

Few organizations pursue a single-minded objective unconstrained by such social fundamentals as legality, decency, and respectability. I prefer to think of it as organizations that maximize by choice of *some* instruments *taking others as given*.

These wide-ranging decisions – whether to pursue profits to the exclusion of all else, whether to threaten bodily harm to competitors, and that sort of thing – will typically be made by the senior executive team. The rest of the employees then have the responsibility to work on behalf of those leaders in order to achieve what *they* are trying to achieve.

Here is my advice to you. If you are working for a company, what you should aim for, unless you are told otherwise, is higher profits for the company. Here is your job description: “My job is to make money for the company in ways that are consistent with my personal values and ideals and those of the company.” If you are working for a not-for-profit, your job description would be slightly different: “My job is to contribute to the organization’s bottom line in ways that are consistent with my personal values and ideals and those of the organization.”

A group of 700 leading British companies have formed an organization called Business in the Community. BITC has established four principles for “Winning with Integrity”: to treat employees fairly and equitably, to operate ethically and with integrity, to respect basic human rights, and to sustain the environment for future generations. What “winning” means is not spelled out, though.

Returning to the case of a for-profit company, you might be able to make money for the company by harming your competitors physically, but you probably do not want to. You may make money for the company by engaging in unethical activities like publishing fraudulent financial statements, backdating options, or forcing your employees to work off the clock, but it is not likely. And so on. You have to ask yourself how far you will be willing to go to help your company be more profitable. Again, “making money for the company” is going to be subject to constraints. These are constraints that you impose on yourself and constraints that are imposed from the outside, including by the company itself. You need to be aware of those. And once you know what the constraints are and what you are comfortable with, your job is to do the most you can to increase company profits, now and in the future.

## In Summary

Bottom line management is about purposeful behavior. The purpose, very simply, is to contribute continuously to improving the organization's bottom line. It may be difficult to discern what the organization's bottom line is. Chapter 3 will tell you about the different kinds of organizational bottom lines.

Organizations' mission statements often state one thing, but the true bottom line may be something quite different. When they are different, be sure to believe in the mission but aim to improve the bottom line.

Once you know what the bottom line is, manage yourself and those around you with that bottom line clearly in mind. If it is helpful, post it on your wall so that all who enter your workspace know what you are trying to achieve.

Your bottom line is being maximized subject to constraints, both internal ones imposed by the organization and external ones imposed by the marketplace. Be aware of the limitations imposed by your organization's ethics, values, and culture. Honor them. And do the best you can within them. If you cannot abide the constraints in your present organization, find yourself another one. You will be happier if you do.

## Notes

The Amersham quote is from "GE Breaks the Mold to Spur Innovation," *Business Week*, 26 April 2004.

The Wright and Dyer work comes from Patrick M. Wright and Lee Dyer, "People in the E-Business: New Challenges, New Solutions." (New York: Human Resource Planning Society, 2000)

The Brown quotation is from W. Steven Brown, *13 Fatal Errors Managers Make and How You Can Avoid Them*, Berkley, 1987.

The Towers Perrin Study is *2003 Rewards and Performance Management Challenges*.

The results of the Watson Wyatt survey are available at <http://watsonwyatt.com/news/press.asp?ID=10390>.

The story of Ford's Trotman is from Charles W. Hill and Gareth R. Jones, *Strategic Management Theory*, Fourth Edition, Houghton-Mifflin, 1998, pp. 387–389.

On the contrast between traditional employers and emerging employers, see Spherion, *Emerging Workforce Study*, 2005.

"Making this a compelling place to work" is from Edward L. Gubman, *The Talent Solution*, McGraw Hill, 1998.

The BITC principles on “Winning with Integrity” are taken from BITC, *Indicators that Count*, available online at <http://www.bitc.org.uk/resources/publications/indicators.html>.

Unethical workplace practices are detailed in Steven Greenhouse, *The Big Squeeze: Tough Times for the American Worker*, 2008.

My favorite example of maximizing *without* constraints (at least, the same constraints that most of us impose upon ourselves) is Mario Puzo’s *The Godfather*.

## Chapter Three

### Five Types of Organizational Bottom Lines

“Would you tell me, please, which way I ought to go from here?” asked Alice. That depends a good deal on where you want to get to, said the Cat. I don’t much care, said Alice. Then it doesn’t matter which way you go, said the Cat.”

Lewis Carroll, *Alice’s Adventures in Wonderland*.

Much of the literature on managing in organizations talks as though all organizations are the same. In this literature, it does not really matter whether the organization is a company, a government agency, a not-for-profit organization, a sports team, a university, or a labor union. The same principles are meant to apply everywhere: results-based leadership, servant leadership, principle-centered leadership, situational leadership, leading for momentum, and the like.

Bottom line management takes a different tack. It starts with the premise that most organizations have a true bottom line, or if not one, several of them. The organizations that we analyze in this book are not doing things randomly (or if they are, they ought not to be). Rather, they are doing things purposefully. They may not be getting it right all the time. Still, they are trying to achieve something in particular.

A basic principle of bottom line management is that in order to manage effectively, you need to be absolutely clear on what in particular your organization is trying to achieve. To help you with this, in this chapter, I describe the five types of organizations that are there.. The five categories are profit-seeking companies, single-purpose not-for-profit organizations, dominant-objective organizations, double (or multiple) bottom line organizations, and a fifth that I will tell you about later. Is it apparent to you which type of organization you work for? If not, please read on.

#### Category 1: Profit-Seeking Companies

The guiding model of contemporary economics analyzes companies like General Electric, General Mills, and General Motors. According to this

model, companies like these have a single objective. This single objective is *profit*. These companies aim to earn the highest profits they can. The job of those who work in such companies is to contribute to the organization's profits. Profits are truly a normal company's bottom line.

I just used the word "profit" four times in the previous paragraph. You will find it very difficult to work in, let alone lead in or manage in, a profit-seeking company if you don't know what profit is. Are you 100% comfortable writing down the formula for what profit is? Try it now:

Profit = \_\_\_\_\_

When you've finished, please read on.

Here is the definition:

*Profit = Revenue – Cost.*

Revenue is what the company takes in when it sells its goods or services. Cost is what the company pays out to its employees, suppliers, and lenders when it produces those goods and services. Profit is revenue minus cost.

Note well what profit is *not*. "Profit" is *not* a shorthand for "financial outcomes," "revenue," "productivity," "cash flow," "top line," "return on investment," "fiscal responsibility," or "shareholder value." "Profit" means exactly what the preceding formula says it is: revenue minus cost.

I have heard four kinds of objections to the profit maximization model and management based on it. I do not think these are serious, but I do want to tell you about them.

The first objection concerns clarity itself. Some people do not like precision and actively work against it. If you are one of them, I cannot help you.

A second objection is that some organizations have a different bottom line from profit. That is absolutely right, and indeed that is why profit-seeking is only one category of several. If your organization has a different bottom line from profit, it is *that other bottom line* that you want to manage towards. However, before you can manage effectively towards something other than profit, you need to know precisely what that alternative objective is. Even if you are not concerned about profit exclusively in your company, your competitors probably are, so you had better give serious attention to it.

A third objection is that reported profits are manipulable, as scandals at Enron, Tyco, WorldCom, and others have made much too apparent.

This objection, though true, does not mean that you should abandon a concern with profit. Even if you are managing in an organization that manipulates its profit to look better to Wall Street, you should be building real profits, and you should not be worrying about such manipulations.

The fourth objection is that what matters to the organization is more than just current profit. Future profit matters too. That is quite right, which is why every time you see words like profit, revenue, and cost, you should understand these as shorthand for present discounted value of expected profit, revenue, and cost respectively. Specifically:

$$\begin{aligned} & \text{Present Value of Profit} \\ &= \text{Present Value of Revenue} \\ & \quad - \text{Present Value of Cost.} \end{aligned}$$

Present values are explained in detail in Chap. 7.

I have told you what you need to know to distinguish profit-seeking companies from other types of organizations. I'll explain more about profit in Chap. 4.

## Category 2: Highly Focused Not-for-Profits

Some organizations exist for a very clear purpose but that purpose is not profit. I will discuss three of them in this section: sports teams, development banks, and labor organizations.

### Sports Teams

A special kind of company is one that has a very different purpose in mind from maximizing profits. An example of a special company is a sports team, which is a company but apparently is not trying to maximize profit – it is probably trying to do something else such as win the championship.

My current hometown baseball team (to the extent that upstate New York has a hometown team at all) is the New York Yankees. There can be no doubt about the Yankees' goal: it is to win baseball's championship (the World Series) year after year.

If you are managing in the Yankees' organization, the organizational bottom line is easily understood: "Win the World Series." You need to understand that *that* is the goal, and everything that I said before about

bottom line management applies to *that* objective instead of the objective of maximizing profit.

So the questions that you would be asking if you worked for the Yankee organization are: If we are trying to win the World Series, what should we be doing? Should we hire a lot of cheap inexpensive players – people like me who would love to play second base for the Yankees or any other team unwise enough to hire me for a few hundred thousand dollars a year – or people who are actually good at it and a lot more expensive? It is pretty clear that my contribution would not help the team win the World Series even though I hereby declare myself available. In the pursuit of winning the World Series, sports teams need to spend a lot of money on players. We will talk more about that when we come to the third category of organizations.

## Development Banks

There are other organizations that are not-for-profit, and they are endeavoring to do something entirely different. The World Bank is a development bank. (Other development banks are the Asian Development Bank, the African Development Bank, the Inter-American Development Bank, and the European Bank for Reconstruction and Development.) Unlike commercial banks and investment banks, development banks are *not* driven by profit. What development banks *are* driven by is the desire to support those projects, programs, and policies that will promote social and economic development in client countries.

For many years, the World Bank and the other development banks promoted social and economic development without making clear to their staff what exactly development meant. But under its past president, James Wolfensohn, the World Bank proclaimed its mission to be “A World Free of Poverty.” When the World Bank aims to give loans to poor countries, it does so in the hope of achieving *this* objective. Somebody who works for such an organization would have a very different organizational objective in mind (namely, to make decisions wisely in the hope of achieving less poverty in the world) from what he or she might strive to achieve in a commercial bank.

Before “A World Free of Poverty” became the operative bottom line at the World Bank, staffers there pursued presumed goods such as large infrastructure projects, productive sector programs, and balanced budget policies. Now, though, with “A World Free of Poverty” as its focus, top



officials ask, “How will this loan reduce poverty?” and staff know that they will have to make a convincing case to the senior management in anti-poverty terms.

In today’s World Bank, the mission statement and the true bottom line are identical. The organization is a much more focused one as a result of Mr. Wolfensohn’s leadership.

### **Labor Unions and Federations**

The third example I want to share with you is the new focus of the organized labor movement in the United States. Since 1955, individual labor unions such as the teachers’ union or the automobile workers’ union have been affiliated into a federation called the AFL-CIO (American Federation of Labor – Congress of Industrial Organizations). The AFL-CIO is, in turn, the major organization speaking on behalf of organized labor’s social and political concerns.

In a sharp rebuke to current President John Sweeney, dissident union leaders sought to focus the AFL-CIO’s activities. As one of them, Andy Stern of the service employees’ union put it, “The AFL-CIO can’t afford to be everything to every union anymore; it needs to focus more on a growth strategy.” Indeed, at its Winter 2003 meeting, the AFL-CIO executive council decided to concentrate on two major goals: expanding union membership and electing supportive politicians.

This proved not to be enough for the dissident unions. In September, 2005, seven unions broke off from the AFL-CIO and formed a new Change to Win (CTW) coalition. Despite the division of the labor movement between the AFL-CIO and CTW, the labor movement in the United States is now more focused on organizing new members than it has been in a long time.

### **Category 3: Dominant-Objective Organizations**

Up to now, we have talked about single-purpose organizations, distinguishing those that seek profit from those that have other singular objectives. The third group of organizations, to be discussed now, consists of those that have more than one objective, but one among these objectives is dominant.

## **Ben & Jerry's**

The first organization I want to discuss is Ben & Jerry's, the premium ice cream manufacturer based in Vermont. Until 2000, Ben & Jerry's was an independent company. That year, the company was sold to Unilever. Before and since, Ben & Jerry's has been deeply concerned with social issues, an image it has carefully cultivated since its founding in 1977.

Ben & Jerry's has a three-part mission: Its product mission is "to make, distribute and sell the finest quality all natural ice cream and euphoric concoctions with a continued commitment to incorporating wholesome, natural ingredients and promoting business practices that respect the Earth and the Environment." Its economic mission is "to operate the company on a sustainable financial basis of profitable growth, increasing value for our stakeholders and expanding opportunities for development and career growth for our employees." Its social mission is "to operate the company in a way that actively recognizes the central role that business plays in society by initiating innovative ways to improve the quality of life locally, nationally and internationally."

This mission statement has led Ben & Jerry's to work towards a self-proclaimed double bottom line. In the words of one of its founders, Ben Cohen, "It is our objective to run Ben & Jerry's for long-term financial and social gain. We are becoming more comfortable and adept at functioning with a two-part bottom line, where our company's success is measured by both our financial and our social performance." Although Ben & Jerry's social mission may help its financial one, it appears to me that the social mission stands on its own as a genuine corporate objective.

At Ben & Jerry's, how important is the social mission compared to profits? One way of thinking of Ben & Jerry's is that it is trying to maximize its contribution to social concerns provided that it does not lose money. I used to think this was accurate, but now I know differently. In fact, Ben & Jerry's operates by contributing 7% of its after-tax profits to social causes. In other words, Ben & Jerry's is 93% about profits and 7% about social concerns.

Suppose, then, that you're working at Ben & Jerry's. Do you try to make the company more profitable? Absolutely – and this is regardless of whether your primary personal concern is the financial bottom line or the social bottom line of the company. Why? Because higher profits

means more for the owners of Ben & Jerry's *and* more for the social causes to which Ben & Jerry's contributes.

Ben & Jerry's succeeded brilliantly in creating an image, both within the company and on the outside, of a socially-concerned organization. It attracted socially-concerned employees who worked hard because they believed in the social contribution for which the company stood. And yet, the balance is tilted overwhelmingly toward profits: 93%, to be precise. It is this that makes Ben & Jerry's a multi-purpose organization with a single dominant objective: profit.

### **Whole Foods**

Whole Foods also labels itself a socially conscious company. Like Ben and Jerry's, they also devote a percentage of their profits to philanthropy. In their case, the percentage is even smaller: 5%. Whole Foods also is a multi-purpose organization with profit as the dominant objective.

### **Bridgeway Capital Management**

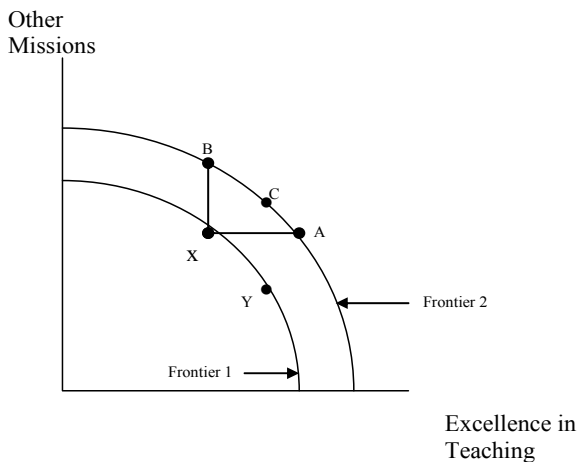
Lest you think that profit drives every company exclusively or primarily, let me give you an example of one in which it does not. The Bridgeway Capital Management fund, founded by John Montgomery, donates half of its profits to charity. *Half!* Bridgeway Capital Management is not a single dominant purpose organization. It falls into the next category.

## **Category 4: Double (or Multiple) Bottom Line Organizations**

For the last thirty years, I have been a professor at Cornell University. Cornell's motto comes from our founder, Ezra Cornell: "I would found an institution where any person can find instruction in any study." And indeed, this motto has guided some major decisions at Cornell. From its inception in 1865, Cornell admitted both men and women. Harvard, Yale, and Princeton, on the other hand, existed for more than 200 years before admitting women to their undergraduate colleges. Cornell also has a remarkable range of instruction. We are the only university in the nation to have Federally-funded area study centers covering every region of the world. We teach 41 languages, ranging from Spanish, French, and German to Tagalog, Quechua, and Swahili. "Any person" and "any instruction" have always had special meaning at Cornell.

And yet, our motto is not our bottom line. In fact, we do not have a single bottom line. We have three: excellence in teaching, excellence in research, and excellence in public service.

Cornell is a trade-off organization. Because we have three bottom lines, we do not maximize any one of them. Rather, we seek to maximize *the frontier*. You can picture it as in Fig. 3.1.



**Fig. 3.1.** Trade-off between teaching and other missions

The teaching mission is on one axis of the graph and the other missions are on the other. Each frontier is downward-sloping. Why? Because for any given faculty member, time spent to achieve one goal cannot be spent on the other. And for management, resources used to hire someone who is an excellent teacher come at the expense of not being able to hire someone who is an excellent researcher or public servant. (If it were possible to hire someone who is better than another in *all* of these dimensions at the same cost, that person should have been hired to begin with).

Comparing frontiers, Frontier 2 is preferable to Frontier 1. Why? Because on Frontier 1, starting from a point like X, the only way to have more excellence in teaching is to have less excellence in other dimensions – at Y, for example. But if we can shift to Frontier 2, we can have more excellent teaching (at A), more excellent research and public service (at B), or some of each (at C).

Where on the frontier a multiple bottom line organization is (whether at A, B, C, or someplace else) reflects the preferences of the governing authorities. Moving the frontier outward is what the management of a tradeoff organization should aim to do.

## **Category 5: “Can’t Tell” Organizations**

There is also a fifth type of organization: ones where it is hard to discern what the organization’s true bottom line is. I call these “can’t tell” kinds of organizations.

In the last chapter, I talked about a company whose vision is “abundant food and healthy environment” and I showed you its mission statement. I cannot tell what that company’s true bottom line is.

Another interesting case is Merck and Co. The company’s website proudly proclaims its five values: preserving and improving human life, the highest standards of ethics and integrity, the highest level of scientific excellence, profits but only from work that satisfies customer needs and benefits humanity, and the integrity, knowledge, imagination, skill, diversity and teamwork of our employees. Profits are part of the mission statement – in there but not up front. The website also notes: “Our commitments as a Company have long been guided by the vision of our modern-day founder, George W. Merck, who said, ‘We try never to forget that medicine is for the people. It is not for the profits. The profits follow, and if we have remembered that, they have never failed to appear. The better we have remembered that, the larger they have been.’” Is Merck about profits or not? It is hard to tell.

Next, let me mention Johnson & Johnson. The company is famous for its credo, which it highlights prominently near the top of its homepage. The credo begins, “Our first responsibility is to the doctors, nurses and patients, to mothers and fathers and all others who use our products and services.” And then it continues for one page, just as it has for the last sixty years.

What about “profit?” The credo mentions the word “profit” twice: first, the opportunity for J&J’s suppliers and distributors to make a “fair” profit, and second J&J’s goal of earning a “sound” profit.

I suspect that companies like Merck and J&J are profit-seeking and would truly like to have higher profits than lower ones. Why, then, do they conceal the profit motive behind mushy or misdirected mission

statements? They'd do much better to issue clear statements about what their true bottom lines are so that the people who work for them can direct themselves toward improving them. (Of course, maybe they are doing this internally but we on the outside cannot see that they are doing that. But then again, maybe they are not.)

Finally, I want to talk about an organization in which I have a personal interest: the Chicago Cubs. Until I left for college, I lived in Chicago's northern suburbs, where the local baseball team was the Chicago Cubs. Cubs fans are a sad lot; we keep rooting for the Cubs to win the World Series but keep on being disappointed. In fact, the Cubs have won the World Series only twice, the last time being in 1908, eleven years before *my father* was born!

Now that I am older and wiser, I understand the Cubs much better. I wish I could say that the Chicago Cubs, like the New York Yankees, are single-minded about winning the World Series. I fear, though, that it may not be so. Could it be that management is trying to field a cheap team to play in beautiful Wrigley Field? Truly, the Cubs would *like* to win the championship in baseball. Really, I hope they do, sometime before my children's children are eleven years old.

## In Summary

In this chapter, I have told you about five kinds of organizations:

- Category 1: Profit-seeking companies
- Category 2: Single-purpose not-for-profit organizations
- Category 3: Dominant-objective organizations
- Category 4: Double (or multiple) bottom line organizations
- Category 5: "Can't tell" organizations.

If you are managing or working in a profit-seeking company (Category 1), you can assume that profit is the objective that you are trying to achieve and act accordingly. If you are managing or working in one of the other kinds of organizations where the objective is some other single purpose (Category 2), two or more purposes with a single dominant objective (Category 3), or a multiplicity of objectives with no dominant one (Category 4), you want to understand that *that* is the goal, and everything that I say in this book about bottom line applies to *that* objective instead of the objective of maximizing profit. Finally, if you are working in an

organization where it's hard to discern what the bottom line is (Category 5), all I can do is wish you well.

## Notes

Some of the different approaches to leadership can be found in: Samuel Bacharach *Keep Them on Your Side* (Boston: Adams Publishing, 2006); David Ulrich, Jack Zenger, and Norman Smallwood, *Results-Based Leadership*. (Boston: Harvard Business School Press, 1999); Robert K. Greenleaf, *Servant Leadership*. (New York: Paulist Press, 1991); Stephen R. Covey, *Principle-Centered Leadership*. (New York: Simon and Schuster, 1992); and Kenneth Blanchard, Patricia Zigarmi, and Drea Zigarmi, *Leadership and the One Minute Manager: Increasing Effectiveness through Situational Leadership*. (New York: Morrow, 1985).

The basic economic model of profit-maximization is described in any microeconomics textbook. Two good ones are Paul A. Samuelson and William D. Nordhaus, *Economics: An Introductory Analysis* (Boston: Irwin/McGraw Hill, 2004) and Joseph E. Stiglitz and Carl E. Walsh, *Economics* (New York: Norton, 2006).

Profits are at the core of strategy guru Michael Porter's work. See, for example, Michael Porter, *Competitive Advantage* (New York: The Free Press), "What Is Strategy?," *Harvard Business Review*, November–December 1996, pp. 61–77, and Nicholas Argyres and Anita M. McGahan, "An Interview with Michael Porter," *Academy of Management Executive*, 16: 243–253, 2002.

Information on conflict between the AFL-CIO and rival unionists appears in "Palace Coup at the AFL-CIO," *Business Week*, 17 March 2003 and "Labor's New Organization Man," *Business Week*, 7 April 2003. For more on the Change to Win coalition, visit [www.changetowin.org](http://www.changetowin.org).

Ben & Jerry's is analyzed in *Ben & Jerry's Homemade Ice Cream Inc.: Keeping the Mission(s) Alive*, Harvard Business School Case 9-392-025, 1993.

Whole Foods is described in John Tierney, "Capitalism with a Heart," *The New York Times*, 16 September 2006.

Bridgeway Capital Management is covered in "Who Says Nice Guys Finish Last?" *Business Week*, 16 June 2003.

## **Chapter Four**

# **Benefits, Costs, Profits, and the Good Work of the Organization**

You learned in Chap. 2 that Bottom Line Management is about understanding that organizations are engaged in purposeful behavior. Chapter 3 taught you about five different types of organizations.

This chapter is about benefits, costs, profits, and the bottom line. First, you have to understand the basic structure and the rules of the game.

### **Understanding the Organization's Scorecard**

To get us started, let us draw a parallel between business and baseball. This parallel is a useful one to explore, both for those of you who understand the game of baseball and, more importantly, for those of you who do not.

Baseball is a sport that prides itself on being America's "national pastime." Although that label is now obsolete, the game is still enough a part of American life, and not of life elsewhere, to serve as a useful reference point for us now. Only in America could a book entitled *Management by Baseball* be featured on the shelves of major bookstore chains.

In baseball and other sports, each individual game is recorded a step at a time on a scorecard. At each stadium, a large scoreboard displays the details of the game being played there as well as the highlights of other games being played elsewhere, all in real time.

Exhibit 4.1 displays the scorecard for a recent championship game between the Florida Marlins and the New York Yankees. I regularly ask the people in my audiences to classify themselves as being knowledgeable or clueless about the game of baseball. After they have done this, I ask those who labeled themselves as clueless to look at this news account and tell me, who won the game?

Of course, those who are clueless should not be able to get it right, any more than I would be able to if I were asked a comparable question about cricket. Still, to those of us who do understand the rules of baseball, the



answers can sound pretty funny. Here is one: “New York won, because the bottom line is E, and New York had one E while Florida had none.” “Why,” I asked, “do you think the bottom line is E?” Answer: “Because the most important statistic always comes first or last, never in the middle.”

If you understand the game of baseball, you know that this is not right. To be able to look at the scorecard and be able to understand who won the game, we have to understand what it is that is being reported. Looking at an entire page of data, what tells you who won the game? The relevant statistic is what we see under R: Florida, 2; New York, 0. R stands for runs. The team that has the most runs at the end of the game wins. So because Florida ended up with more runs than New York, Florida won the game.

Now let us talk about winning the championship in baseball. Do you know what determines the championship? If you do not know the rules of baseball, you cannot possibly answer my question. If you do know the game of baseball, you would be able to say right away that a team qualifies to play in the championship tournament by winning more games out of 162 in a year than any other team in its division. Does it matter how much it wins each game by? No. What matters is how many games one team has won compared to others. Major League Baseball is divided into two leagues, which in turn are divided into divisions, and teams compete to win enough games to win places in the championship tournament. Then the teams in the championship tournament play against each other. The competitors play in a series of five or seven games (depending on which round of the championship series it is), and the team that wins the most games in one round progresses to the next round. Then, once we have winners in the two halves of Major League Baseball (the National League and the American League), they play against each other in a seven game series. The champion is the first team to win four games in the World Series (even though the world for this purpose consists only of the United States and Canada).

Now that, in a nutshell, summarizes what it takes to win the championship in baseball. Let us assume that every baseball team is trying each year to win the World Series. Now, if you were managing in the game of baseball and you said, “I know what we’re maximizing – we want to have the nicest stadium – or we want to have the cleanest uniforms – or we want to spend the most money – or we want to spend the least money,” you would get it wrong. You would get it so wrong that anybody watching

the game – and there are tens of thousands of people in each stadium every day and hundreds of thousands if not millions more watching on television– would know that is not what you should do and you would be thrown right out.

If you do not understand the game of baseball but want to get into it, you had better acquire this fundamental knowledge. The point is that when you look at data, the only way in which you can make sense of what is happening is to understand the game.

The same is true of business. Let's talk now about how it is scored and what matters there.

## **Profit and Loss, Revenue and Cost**

The companies discussed in this book are not doing things randomly (or if they are, they ought not to be). Rather, the companies are doing things purposefully. They may not be getting it right all the time. Still, they are trying to achieve something in particular. As discussed in Chap. 2, according to the core model of economics, ordinary firms are engaged in purposeful behavior aimed at achieving the highest possible *profits* they can.

Before I asked you before to write down the formula for profit. Please do it again now:

Profit = \_\_\_\_\_

Unless you can do this instantly, you will have difficulty managing in an organization that is seeking higher profits or understanding why profit-seeking organizations are doing what they are doing.

Please look now at Exhibit 4.2. General Electric is one of the most successful companies in the world. Now, we will examine this scorecard to see what is going on. Can you read this statement and tell whether General Electric made money or lost money?

General Electric made money. How much money did General Electric make in 2005? The statement says, more than sixteen thousand million dollars. How big is sixteen thousand million dollars? Sixteen billion dollars. That's a lot of money. A highly-paid university professor makes about 0.001% of that.

Now look at the statement for General Motors in Exhibit 4.3. How much money did General Motors make in 2005? They *lost* more than \$10 thousand million.

Who won? General Electric or General Motors? General Electric won, not only relative to General Motors but relative to zero. General Electric is making money big time while General Motors is losing money big time.

If you have the proper financial acumen, you already know what I mean by “making money” and already know where to look to see how much money General Electric and General Motors made or lost. If you do not, please read on.

“Making money” means “earning profits.” I’ve already told you in Chap. 2 that profit is the difference between revenue and cost:

$$\textit{Profit} = \textit{Revenue} - \textit{Cost}.$$

When we say that an ordinary firm is engaged in purposeful actions aimed at increasing its profit, what we are saying is that it is trying to increase the *difference – not the ratio – between revenue and cost*.

What are revenue and cost? Very simply, revenue is what comes into the company and cost is what is paid out. The lighting division of General Electric sells light bulbs, among other things. When they sell those light bulbs, each one sells for a certain price. The total number of light bulbs they sell multiplied by the price of each light bulb gives total revenue, the amount of money coming into that part of the company:

$$\textit{Revenue} = \textit{Price} \times \textit{Quantity}.$$

And when they produce those light bulbs, they have costs: the cost of the factory, the salaries of the managers, the wages of the workers, the cost of the glass used in the manufacturing process, and a lot of other things.

What General Electric is interested in is if it is trying to achieve higher profits is the difference between revenue and cost. It is not interested in revenue per dollar of cost. It is not interested just in revenue. It is not interested just in cost.

Turn to the General Electric financial statement once again. You see there that the statement is in fact divided into sections matching what I just described. The top part is revenue – revenue from the sales of goods such as light bulbs, revenue from services such as the financial services of GE Capital, other income – that is, what they have to sell and how much they receive for it. And then the next block of the financial statement presents costs: costs of goods sold (the glass that goes into the light bulbs), costs of services sold (those services that are hired from other service companies such as auditors), interest, and so on and so forth. At the bottom you come to earnings. “Net earnings” is another name for “profit.” (Accountants use “net earnings,” economists use “profit.”)

Economists reserve “earnings” for how much people earn in the labor market from wages or salaries when they work). To repeat, profit is the difference between revenue and cost: you see that in the case of General Electric, \$149.7 billion in revenues and \$127.6 billion in costs and expenses result in \$22.1 billion in pre-tax profits. After taxes and accounting changes, General Electric ended up with \$16.4 billion in profits.

In General Electric, “net earnings” – another name for “profit” – is literally the bottom line of the main part of the profit and loss statement. (The statement goes on to present supplemental information on net earnings per share, per diluted share, and so on). General Electric, like every other publicly-held company, is required to produce such statements and make them public.

Look again at the exhibit for General Motors. It is structured essentially the same way. At the top is “net sales,” another name for revenue. After that, the cost of sales is subtracted out. You then have what is called the “gross margin.” And then there are all other expenses – the cost of headquarters, the cost of salespeople, etc. After subtracting these costs off, you end up with an operating *loss* of \$16.9 billion. Below that you see some additional supplementary figures that reduce the net loss to “only” \$10.6 billion. In other words, General Motors earned a *negative profit* of \$10.6 billion dollars. That is its corporate bottom line for 2005. (Below this is supplementary information where these losses are reported on a per-share basis).

Information like this is regularly collated and published in the business press. As I am writing these words, *Business Week*'s online edition is running a “corporate scoreboard” containing current data for the largest five hundred U.S. companies. (What is also nice about this particular source is that as part of the scoreboard itself, *Business Week* conveniently tells us what each of these terms means: total return, sales growth, profit growth, net margin, return on equity, and profits). In terms of profits, General Electric is the third most profitable company in the United States, while General Motors is the most *unprofitable* U.S. company.

## **Profit-Focused Decision-Making in Companies**

The CEO of General Electric during twenty years of phenomenal success was a man named Jack Welch. His autobiography *Jack: Straight from the Gut* was at the top of the business best-seller list for months. *Jack* is the most articulate statement that I've seen from any corporate

executive on how a CEO's mind works. What is Jack trying to maximize? Profit. You read *Jack* and profit comes up over and over again. (Sometimes he uses the word "profit," sometimes he uses the word "earnings," but he is always talking about making money for the company, by which he means the difference between revenue and cost).

If you were working for Jack Welch or his successor, Jeff Immelt, what would he expect of you? What would be your job? Your job is to help Jack or Jeff with his job, and his job is to earn higher profits for General Electric. So if you were working for Jack Welch or Jeff Immelt, your job too would be to earn higher profits for General Electric.

The profit-maximization objective is a meaningful and precise one. It is not just simply rhetoric, where "profit" is whatever I say it is. "Profit" means something specific. And profit-maximization is a very strong model of what it is that organizations are aiming to achieve.

For example, the idea of maximizing profit is that you hire people *if and only if* they contribute to profit. If I can hire you for \$25 and you can contribute \$60 to revenue, then I *make* \$35. If I hire you for \$25 and you contribute \$2 to revenue, I *lose* \$23. So should I hire the worker who contributes \$60 to revenue if it costs me \$25 to hire the worker? If I am maximizing profits, yes. Should I hire the worker who contributes \$2 to revenue if hiring that worker costs me \$25? If I am maximizing profits, no.

It follows too that when you maximize profit, you are not maximizing revenue and you are not minimizing cost. Profit, as I've said repeatedly, is the *difference* between revenue and cost. Immediately, this says that if our concern is to raise profit, we are *not necessarily* trying to cut costs. We may want to *increase* costs if doing so generates enough extra revenue to drive up profit. And similarly, we are *not necessarily* trying to maximize revenue, because by maximizing revenue, we may get *too* big in the sense that the costs of being so large will outweigh the benefits. Getting too big is not profitable either.

There is always a comparison – always a balance between the benefits and the costs – when we are maximizing. The essence is to weigh the benefits and the costs, see which is larger, and decide accordingly.

## **Benefits and Costs in Not-for-Profits**

What I just told you about comparing the benefits with the costs and deciding accordingly is equally applicable to other organizations besides companies. Think now of a not-for-profit organization that you know, be

it the World Bank, the Red Cross, or your favorite charity. Please write down its bottom line now:

The organizational bottom line = \_\_\_\_\_

Like me, you may have found this harder to do than when you were thinking about a company. Still, many of the principles concerning the weighing of benefits and costs are the same.

Let us call the organizational bottom line the “good work of the organization.” The good work of the organization consists of the *benefits* that the organization generates and would like to do more of: worthwhile projects in the case of a governmental or international agency; more and better job opportunities for its members in the case of a labor union; outstanding teaching, research, and public service in the case of a university; and so on. The *costs* that the organization incurs leave less money available for generating benefits: operating expenses for all organizations; strikes for labor unions; et cetera.

Here is an example of how explicitly defining the good work of the organization made a difference in a particular not-for-profit setting. The head of a large not-for-profit veterinary hospital reported to me a serious difference of opinion between the doctors and staff on the one hand and senior management on the other. The doctors and staff were objecting to the charges assessed by the hospital, contending that many animals in need were not being treated because of the difficulty their owners had in paying the fees. For its part, management noted that the hospital needed to be self-supporting financially. How could this dilemma be resolved? I pointed out that if the good work of the organization were defined as treating as many animals in need as possible, then by charging those owners who could afford to pay for the treatments, then more doctors and staff could be hired to treat animals whose owners could *not* afford to pay for the treatments. Once this rationale for the fee structure was explained, the opposition to charges evaporated.

When deciding what projects a not-for-profit should undertake, one comparison is straightforward: if it costs more to do something than what it produces in benefits, it is better for the organization *not* to do it. Let us say, that I have \$1,000 uncommitted in my budget and that a proposal comes forth for an activity that will produce \$600 in benefits for my clientele. One well-known rule used in bureaucracies is, spend whatever is in your budget (and more if you can get away with it) so you can

get a larger budget next time. If you follow this rule, you will spend the \$1,000 on a project with a \$600 benefit. You will thereby incur a \$400 loss for your organization. A bottom line manager would not do that. He or she would make a different decision: keep the \$1,000 in reserve until a better project presents itself. The benefits must be at least \$1,000 to justify an expenditure of \$1,000.

A bottom line manager would not stop there, though. He or she would ask, if I use the available money in this way, what am I giving up? Is this *the best possible* use of the available resources?

As an illustration of making decisions about the good work of the organization with this question in mind, consider the practice of triage. Hospitals have triage nurses who assess the severity of the patient's illness and then guide the patient to the appropriate level of care. Triage is also used in time of war in the following way. Picture a field hospital that has a limited supply of doctors, nurses, medicines, and bandages – much less than is needed to treat all of the sick and wounded. Who should receive treatment? The answer, as harsh as it may seem, is this:

1. Do not treat those who stand a reasonable chance of getting better on their own, precisely because they do stand a reasonable chance of getting better on their own.
2. Do not treat those who will probably die anyhow, because such treatments come at the expense of the third category:
3. Do treat those who would probably not get better on their own, but for whom the treatments will make the biggest difference.

As another illustration, publishing houses must decide how much money to spend on which book projects. Some marketing officials seem to have adopted the rule of thumb that the more important a book is, the more should be spent on its marketing. But this is definitely *not* the bottom line approach. Rather, to maximize profits, more should be spent on marketing one title over another if the *change* in sales is bigger for the first title than for the second. It is hard for some marketers to understand that there are some very good book projects where marketing efforts should *not* be made as well as some not-so-good book projects where there should be no marketing either. (Although I have no control over the outcome, I hope that by the time you are reading this book, my publisher will have decided that this book will have merited extensive marketing efforts).

The triage principle illustrates the fundamental economic notion of opportunity cost: whenever resources are used for one purpose, they cannot be used for another. A bottom line manager would never decide to do something simply because it produces *some* benefit. What is required is that the proposed way of using resources *does more for the good work of the organization* than any other possible way of using those same resources.

Comparisons of benefits and costs are as important in making decisions about doing the good work of a not-for-profit as they are in making decisions in a profit-seeking setting.

### **What if Benefits and Costs are Hard to Quantify?**

There are some who say that if something cannot be quantified, it does not exist. I wholeheartedly disagree.

In some situations, the decision-maker has a great deal of information. In others, though, the available information may be quite limited. What should you do when you have only partial information? I will give you examples from my own experience.

On several occasions, I have been a department chair and have gone to the Dean and tried to make a case for something that I believed would benefit our department but that was beyond my authority. First, I will give you an example of a situation where we knew the costs and could not quantify the benefits. Our department now has two wonderful administrative assistants. Unfortunately for us, it has not always been this way. The way we got one of the excellent ones we now have is that as department chair, I said to the Dean, “Our workgroup consists of a number of senior professors, and we would really, *really* value a high-powered capable assistant at a higher job grade than the current person. Upgrading the position would cost \$3,000–\$4,000 more per year. We can’t think of a better way for the School to spend \$3,000–\$4,000 of its money to support us in doing our work, so we would happily accept \$3,000–\$4,000 less of books in the library ....” I continued to list a number of other things that we would take less of, because we thought a top-notch administrative assistant would be the most beneficial resource to help us carry out our responsibilities. We could quantify the cost – we could not quantify the benefit – but my colleagues and I knew that it was worth it to us. The Dean did allow us to upgrade the position and hire a first-rate assistant, and she has performed brilliantly for us.



The reverse situation arises when the benefits are known (or approximated) and the costs are not. When I returned from sabbatical in 1999, I was appalled by our lack of web presence. Zero web presence is bad. If you were lucky and went to our website, you found it was “under construction.” Worse than that was that you could have gone to our website and encountered misinformation. So I went to the Dean and said, “This isn’t really serving the School. We know that today we must have a web presence. The benefits of a web presence are so high that we really have to do it.” He agreed. We did not know what the cost of a highly-qualified web design team was; we just knew that the way we were using a poorly-qualified part-timer was not getting the job done properly. We had to go out and recruit a good team. In the end, whatever the cost turned out to be – and I do not know to this day precisely how much the web design team gets paid (though the Dean does) – I do know that they are worth it. We now have an excellent website, the kind that an organization like Cornell must have to be competitive with our peers.

Once again, we made the decision to go for the better person. This time, we had an idea of the benefit; we did not know the cost.

I will give you one more example. Our part of Cornell has been undergoing construction for almost a decade. My office is right next to the construction site. Apart from the horrible noise and vibrations that keep coming in, so too does horrible dust. I could go to the Dean and argue for a high-powered cleaning service, but I do not. Why not? Because I know the Dean does not have the money and I would much rather have a first-rate administrative assistant than a super cleaning crew. As a result, we employ lower-paid, less-productive people who are very nice individuals, but there are not many of them, so my office is always filthy. I have decided that I would rather live that way than either clean it myself or ask the Dean for more cleaning services. (I am talking about dirt, not mess – my office is neat – it is just filthy).

So, those are the kinds of decisions that a good manager needs to make and can make. A Bottom Line Manager would listen to your plea, in which you say, “Here, according to the best available information, is what I think the benefits would be and what the costs would be, and why we think it’s better to do it like this than like that.” The manager would then decide on the basis of non-quantifiables as well as quantifiables whether to accept your recommendation or not.

## In Summary

Companies are presumed to be maximizing profits. Profits are the difference between revenues and costs. Other organizations are presumed to be pursuing a similarly well-defined objective, such as a sports team trying to win the championship, a labor union trying to attain the best possible job opportunities and rewards for its members, and a not-for-profit organization trying to deliver the greatest net benefit to the clients it serves.

As in baseball, where you cannot make good decisions unless you understand the rules of the game, you cannot make good managerial decisions in a business or other kind of organization unless you understand profits and losses, revenues and costs.

Good bottom line decision-making always compares the two sides – benefits and costs. The comparison is made by taking benefits and subtracting costs, not by taking their ratio. Never maximize benefits or minimize costs. Maximize their difference. Include non-quantifiables as well as quantifiables. And do remember about opportunity cost: that when you use resources for one purpose, they are not available to be used for another.

## Notes

*Management by Baseball* is the title of a book by Jeff Angus (New York: Collins, 2006).

General Electric's financial information is available at [http://www.ge.com/ar2005/cfs\\_e.htm](http://www.ge.com/ar2005/cfs_e.htm)

General Motors' financial information is available at [http://www.gm.com/company/investor\\_information/stockholder\\_info/](http://www.gm.com/company/investor_information/stockholder_info/)

Business Week's corporate scoreboard is updated regularly. The current one is available at <http://research.businessweek.com/scoreboard.asp?page=1 &order=ProfitsTTM&type=2>

Jack Welch's autobiography is *Jack: Straight from the Gut* (New York: Warner Business Books, 2001).

The practice of triage is described in an article by Matthew R. Streger in *Emergency Medical Services* magazine, available online at <http://www.emsmagazine.com/articles/emsarts/triage.html>

### Exhibit 4.1 Boxscore: Florida Marlins vs. New York Yankees



Final	1	2	3	4	5	6	7	8	9	R	H	E
Florida <	0	0	0	0	1	1	0	0	0	2	7	0
NY Yankees	0	0	0	0	0	0	0	0	0	0	5	1
W: J.Beckett(1-1) HR: FLA- None NYY- None	L:A.Pettitte(1-1)											

Florida	AB	R	H	2B	3B	HR	RBI	W	K	AVG
Juan Pierre CF	4	0	1	0	0	0	0	1	2	.333
Luis Castillo 2B	5	0	1	0	0	0	1	0	1	.154
Ivan Rodriguez C	3	0	1	0	0	0	0	1	0	.273
Miguel Cabrera LF	4	0	0	0	0	0	0	0	2	.167
Jeff Conine DH	4	1	0	0	0	0	0	0	0	.333
Mike Lowell 3B	3	0	2	1	0	0	0	1	0	.217
Derrek Lee 1B	4	0	0	0	0	0	0	0	3	.208
Juan Encarnacion RF	3	0	0	0	0	0	1	0	1	.182
Alex Gonzalez SS	4	1	2	0	0	0	0	0	0	.273
<b>Totals</b>	<b>34</b>	<b>2</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>9</b>	

NY Yankees	AB	R	H	2B	3B	HR	RBI	W	K	AVG
Derek Jeter SS	4	0	0	0	0	0	0	0	2	.346
Nick Johnson 1B	3	0	0	0	0	0	0	1	0	.294
Bernie Williams CF	4	0	1	1	0	0	0	0	1	.400
Hideki Matsui LF	4	0	0	0	0	0	0	0	1	.261
Jorge Posada C	4	0	1	1	0	0	0	0	2	.158
Jason Giambi DH	2	0	0	0	0	0	0	1	0	.235
Karim Garcia RF	3	0	1	0	0	0	0	0	1	.286
Enrique Wilson 3B	0	0	0	0	0	0	0	0	0	.500
Aaron Boone 3B	1	0	0	0	0	0	0	0	1	.143
Ruben Sierra PH-RF	1	0	0	0	0	0	0	0	1	.250
Alfonso Soriano 2B	3	0	2	0	0	0	0	0	0	.227
<b>Totals</b>	<b>29</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>9</b>	

E\_D.Jeter. LOB\_Florida 9, NY Yankees 5. 2B\_M.Lowell, B.Williams, J.Posada. SF\_J.Encarnacion. S\_A.Boone. GDP\_N.Johnson, B.Williams. DP\_Florida 2 (L.Castillo, A.Gonzalez, and D.Lee 2)

Florida	IP	H	R	ER	BB	SO	HR	PC-ST	ERA
Josh Beckett (W 1-1)	9.0	5	0	0	2	9	0	107-71	1.10
NY Yankees	IP	H	R	ER	BB	SO	HR	PC-ST	ERA
Andy Pettitte (L 1-1)	7.0	6	2	1	3	7	0	106-71	0.57
Mariano Rivera	2.0	1	0	0	0	2	0	28-19	0.00

IBB\_off A.Pettitte (I.Rodriguez). T\_2. A\_55773. Umpires\_Home,Tim Welke; First, Randy Marsh; Second, Larry Young; Third, Gary Darling; Left, Jeff Kellogg; Right, Ed Rapuano.

**Exhibit 4.2** General electric company condensed statement of earnings for the year ended 31 December 2005 (in millions of dollars, except for per share amounts)

<b>Revenues</b>	
Sales of goods	\$59,837
Sales of services	32,752
Other income	1,683
GECS revenues from services	55,430
<b>Total revenues</b>	<b>149,702</b>
<b>Costs and Expenses</b>	
Cost of goods sold	46,169
Cost of services sold	20,645
Interest and other financial charges	15,187
Investment contracts, insurance losses and insurance annuity benefits	5,474
Provision for losses on financing receivables	3,841
Other costs and expenses	35,271
Minority interest in net earnings of consolidated affiliates	986
<b>Total cost and expenses</b>	<b>127,573</b>
<b>Earnings from Continuing Operations Before Incomes Taxes and Accounting Charges</b>	<b>22,129</b>
Provision for income taxes	(3,854)
<b>Earnings from Continuing Operations Before Accounting Changes</b>	<b>18,275</b>
Earnings (loss) from discontinued operations, net of taxes	(1,922)
<b>Earnings Before Accounting Changes</b>	<b>16,353</b>
<b>Net Earnings – Per Share Amounts</b>	<b>\$16,353</b>
Per-share amounts – earnings from continuing operations before accounting changes	
Diluted earnings per share	\$1.72
Basic earnings per share	1.73
Per-share amounts – earnings before accounting changes	
Diluted earnings per share	1.54
Basic earnings per share	1.55
Per-share amounts – net earnings	
Diluted earnings per share	1.54
Basic earnings per share	1.55
Dividends Declared Per Share	0.91

**Exhibit 4.3** General Motors corporation and subsidiaries consolidated statement of income for the year ended 31 December 2005 (in millions of dollars, except per share amounts)

<b>Total net sales and revenues</b>	\$192,604
Cost of sales and other expenses	171,033
Selling, general, and administrative expenses	22,734
Interest expenses	15,768
<b>Total costs and expenses</b>	209,535
Income (loss) from continuing operations before income taxes, equity income, and minority interests	(16,931)
Income tax (benefit) expense	(5,878)
Equity income and minority interests	595
<b>Income (loss) from continuing operations before cumulative effect of accounting change</b>	(10,458)
(Loss) from discontinued Operations	0
Gain on sale of discontinued Operations	0
Cumulative effect of accounting change	(109)
<b>Net income (loss)</b>	(10,567)
Basic earnings (loss) per share attributable to common stock Earning (loss) per share attributable to \$1-2/3 per value	(18.69)

## Chapter Five

# Making Decisions to Maximize the Bottom Line

By this point in the book, you have learned that the essence of Bottom Line Management is that most organizations have true bottom line objectives that they try to maximize subject to the constraints they face or impose upon themselves. Often, an organization has a single objective: increasing profits, winning the championship, gaining as many members as they can, reducing world poverty to the maximum extent possible, discovering a cure for cancer. Sometimes, an organization has two or more bottom line objectives: an example is my university, and others like it, which seek a mix of excellence in teaching, research, and public service. Occasionally, organizations have confused objectives, so that it is unclear to the organization itself and the people in it what it is that the organization is trying to maximize.

In this and the next three chapters, we take up Bottom Line Decision-Making. The material in this part of the book cannot be used effectively until the bottom line is first clearly established, effectively communicated, widely shared, and fully internalized throughout the organization. Let us suppose that such clarity of purpose has in fact been achieved. What I will show you in this part of the book is how to make decisions to improve the bottom line. (From now on, I will talk about a singular bottom line and will not consider multiple objectives further).

The quality of decision-making is often judged on the basis of the results produced. The view I take in this book is different: decision-making is best judged by looking at the rules followed in making the decision. As former U.S. Secretary of the Treasury Robert Rubin said, "Good decision-making is the key to good outcomes. Reject absolute answers and recognize uncertainty. Weight the probabilities. Don't let uncertainty paralyze you. And evaluate decisions not just on the results, but on how they are made."

As we go along, I will give you a few small cases in which you are asked to make business decisions. What makes these cases distinctive is that they have right answers that can be found using sound decision rules and wrong answers that would be found using incorrect decision

rules. What do I mean by “sound” and “incorrect” decision rules? Simply this: some decision rules are sound in the sense that using them will lead to good outcomes more consistently than if incorrect decision rules are used. We will use these five cases to learn which are the good decision rules and which are not.

In my experience, very few business executives and students have been able to get the answers right and give valid explanations for why the decisions they have made are the right ones. It will be worthwhile for you to work through these five cases yourself and see how you do on them. I will tell you now: if you can get these four cases correct, you are well on the way toward being a Bottom Line Manager.

## **When Do You Maximize and When Do You Optimize?**

In some management books and articles, the words “maximize” and “optimize” are used as though they mean the same thing. That assuredly is *not* the case here. The distinction between “maximizing” and “optimizing” is crucial for bottom line decision-making. The distinction is this:

*You “maximize” something when you make it as large as possible subject to existing constraints. When you “optimize” something, you don’t make it as large as possible. You optimize something when you set its value so that something else is as large as possible.*

Here are some examples:

Sears has found that happier employees are associated with happier customers and better store outcomes. Sears should not do everything it can *without limit* to make its employees as happy as possible. Why? Because it would cost so much to *maximize* employee happiness (by raising salaries, improving benefits, having numerous office parties, and the like) that beyond some point, the costs to Sears’ bottom line would almost surely outweigh the benefits. Sears should *optimize employee happiness* in order to *maximize store profits*.

Southwest Airlines is the only major airline in America to have been consistently profitable. It is famed too as a great place to work in and a fun airline to ride. Does Southwest *maximize* the passenger experience? No. If it did, it would distribute delicious meals, have a free open bar, and lower its prices even further. Southwest has *optimized* the passenger

experience, and indeed has hit on a happy optimum for the company, the employees, and the customers alike.

Many college students want to maximize their course grades. Some of them *optimize* study time, party time, and sleep time. Only rarely do they *maximize* study time.

The criterion for bottom line decision-making is this:

- *Maximize your bottom line and optimize everything else.*

## **A First Case: The Advertising Agency Problem**

The following case raises many important issues:

*Case One.*

*You are an account executive for an advertising agency that has signed a contract with a client to produce 70 newspaper advertisements at \$1,000 per ad for each month over the next year. The agency employs new college graduates, who each earn a salary and receive benefits. If master's degree holders are hired, each must be paid \$4,800 a month in salary; each master's degree holder can write seven ads a month. If bachelor's degree holders are hired, each must be paid \$3,200 a month in salary; each bachelor's degree holder can write five ads a month. The ads produced by the two types of workers are of equal quality. The agency offers the same health insurance and pension contributions to each employee regardless of degree level; these benefits cost the company an additional \$700 a month per employee.*

*It is your responsibility to decide which type of employee to hire.*

*Write a memo to the CEO stating and justifying your decision.*

I strongly recommend that you try this exercise yourself and write down your explanation before proceeding further.

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## The Most Common Decision

I have tried variants of this case on literally hundreds of Cornell students and businesspeople. What most of them did – and I am very glad they did this – was to begin by trying to understand what the goals of the organization are. This appears on the face of it to be an ordinary company, so they're trying to make as much money as they can from the advertising contract. In other words, the profit-maximization model would be a good starting point in this case.

Many respondents figured that each bachelor's degree holder would write five ads per month, each ad would bring in \$1,000 in revenue from the client, and so the monthly revenue per bachelor's degree holder would be \$5,000. They then subtracted the costs. The salary is \$3,200 per month and the benefits are another \$700 per month. Overall, the profit per employee equals revenues minus salary minus cost of benefits =  $\$5,000 - \$3,200 - \$700 = \$1,100$ . And that is correct.

For the master's degree holders, we can make parallel calculations. Because they write seven ads per month instead of five, the monthly revenue each one generates is \$7,000. The salary cost is \$4,800. Benefits are another \$700. The profit per employee for these people is then  $\$7,000 - \$4,800 - \$700 = \$1,500$ . And that is correct too.

Many respondents then concluded that because profit per employee is higher for the master's degree holders (\$1,500) than for the bachelor's degree holders (\$1,100), the correct decision is to hire master's degree holders. Was that your decision too?

Unfortunately, that is the *wrong* decision. Only 5% of Cornell students and businesspeople to whom I have given this problem have been able to show straight off that it is better to hire *bachelor's degree holders*. Let us understand now why this is the optimal decision.

## The Right Decision

In the advertising agency case, we calculated that the company will make more profit per employee if it employs master's degree holders. Yet, I claim that it is more profitable to produce using bachelor's degree holders. The key to reaching the correct decision in this case is to understand that *maximizing profit per employee does not necessarily maximize total profit*. When I said that the purpose of a normal company is to

achieve the highest profit, it is the profit that is reported on the bottom line of the company's profit and loss statement, which you learned about in Chap. 4. That is *total* profit per year or quarter, and that is what the company is (or should be) trying to maximize. It is not profit per employee, profit per machine, profit per unit of output, or profit per anything else. Nor is it revenue, cost, return on investment, or return on assets. It is total profit.

We have not yet figured total profit for the ad agency, so how do we know whether what we have calculated so far maximizes total profit? Let us figure total profit now.

First, we should review the formulas that were given in Chap. 4 and add some new ones:

- Profit is revenue minus cost.
- Revenue is price times quantity.
- Cost in this case is salary cost plus the cost of benefits.
- Salary cost is salary per employee of a certain type times the number of employees of that type.
- Benefit cost is benefit per employee times the number of employees.

These formulas provide the essential inputs for calculating how much profit the firm will earn in a month if it hires master's degree holders as compared with the profit it would earn if it hires bachelor's degree holders.

We know almost everything we need to calculate profit, but we do not yet know everything. The crucial missing piece is the number of employees required to fulfill the contract. Let's figure it now. *If master's degree holders are hired*, each writes seven ads per month. The contract calls for 70 ads. We therefore would need ten master's degree holders if that is the type of employee we hire. Similarly, *if bachelor's degree holders are hired*, each writes five ads per month. The contract still calls for 70 ads. We therefore would need 14 bachelor's degree holders if we hire that type of employee.

Now that we know how many employees would be hired under each of the two options – hiring master's degree holders or hiring bachelor's degree holders – we can now take these formulas and make all of the needed calculations. *If master's degree holders are hired*, we have:

$$\text{Revenue} = \$1,000 \times 70 = \$70,000$$

$$\text{Employment} = 70/7 = 10 \text{ employees}$$

$$\begin{aligned}\text{Salary cost} &= \$4,800 \times 10 = \$48,000 \\ \text{Benefits cost} &= \$700 \times 10 = \$7,000 \\ \text{Profit} &= \$70,000 - \$48,000 - \$7,000 = \$15,000\end{aligned}$$

Similarly, if bachelor's degree holders are hired:

$$\begin{aligned}\text{Revenue} &= \$1,000 \times 70 = \$70,000 \\ \text{Employment} &= 70/5 = 14 \text{ employees} \\ \text{Salary cost} &= \$3,200 \times 14 = \$44,800 \\ \text{Benefits cost} &= \$700 \times 14 = \$9,800 \\ \text{Profit} &= \$70,000 - \$44,800 - \$9,800 = \$15,400\end{aligned}$$

*Profits are higher if the firm produces with bachelor's degree holders than with master's degree holders!*

Why is the decision to produce with bachelor's degree holders rather than with master's degree holders right? Because that is the decision that generates the highest *total* profit. Is it because producing with bachelor's degree holders generates more profit per employee? No, because it does not – profit per employee is higher if master's degree holders are used. Is it because producing with bachelor's degree holders generates more profit per ad? No – although that is the right answer, that is not the right reason for the answer. It happens that in the case presented here, the agency has a contract for a fixed number of ads. But in other circumstances, the number of ads may itself be variable. You therefore do not necessarily want to maximize the profit per ad. What you do want to maximize is the total profit, which may involve selling more ads or fewer ads in order to get the maximum total profit.

Total profit is what appears on the bottom line of the profit and loss statement (though it may be called “earnings” or “net income”). The bottom line is *not* profit per ad or profit per anything else. Always thinking in terms of *total* profit will get you well on your way toward maximizing the right thing.

## Using Spreadsheets to Help You Maximize

It will help you a lot to build these definitions into spreadsheets that you use systematically. Here the spreadsheets display all the relevant data for making a decision about what type of worker to hire in the ad agency problem, with all calculations being made on a monthly basis:

## Revenue Spreadsheet

Type of employee	Total revenue per month	
	Price per ad	Number of ads
Master's degree holders	\$1,000	70
	$\$1,000 \times 70 = \$70,000$	
Bachelor's degree holders	\$1,000	70
	$\$1,000 \times 70 = \$70,000$	

## Cost Spreadsheet

Type of employee	Total cost per month				
	Salary cost		Benefits cost		Total cost
	Salary per employee	Number of employees	Benefits per employee	Number of employees	
Master's degree holders	\$4,800	$70/7 = 10$	\$700	$70/7 = 10$	
	$\$4,800 \times 10 = \$48,000$		$\$700 \times 10 = \$7,000$		$\$48,000 + \$7,000 = \$55,000$
Bachelor's degree holders	\$3,200	$70/5 = 14$	\$700	$70/5 = 14$	
	$\$3,200 \times 14 = \$44,800$		$\$700 \times 14 = \$9,800$		$\$44,800 + \$9,800 = \$54,600$

## Profit Spreadsheet

Type of Employee	Revenue per month	Total cost per month	Total profit per month = Revenue – cost
Master's degree holders	\$70,000	\$55,000	\$15,000
Bachelor's degree holders	\$70,000	\$54,600	\$15,400

The profit spreadsheet displays clearly what the calculations of profit per worker did not: that total profit is higher if bachelor's degree holders are employed than if master's degree holders are employed.

In this case, I have given you the spreadsheets. When you stop reading this book and return to your job, it will be your responsibility to set up a relevant spreadsheets for your specific situation. Note what the essential relationships are here: we made use of the fact that profit is revenue minus cost, that revenue is price times quantity, that total cost is salary cost plus benefits cost, that salary cost is salary per person-month times number of employees, and that benefits cost is benefits per person-month times number of employees. Also, we had to solve, and did solve, for the required number of employees under each of the two scenarios.

So what all of this is about then is to figure out what are the formulas you need in order to make the decision you want to make. Clarity concerning the bottom line tells you what it is that you are trying to achieve. The spreadsheets give you a tool showing you what it is that you need to calculate.

## Other Incorrect Answers

Let me also tell you about some other incorrect answers. This is actually important, because it is often useful to know why others might make incorrect decisions.

One respondent came very close to being correct but did not quite get it right. Profit here, as throughout this book and throughout business in general, is the *difference* between revenue and cost. What this person did

was to look at the *ratio* of revenue to cost. The calculation had gone beautifully – revenue and cost were calculated correctly - but the calculation of  $R \div C$  produced the opposite answer: maximizing the ratio of revenue to cost would have the firm hire master’s degree holders, not bachelor’s degree holders. So that decision rule did not work.

What other respondents did was to calculate some numbers, look to see which is bigger, and then say, “the one that’s bigger is better.” However, a number of times, the one that was bigger was the *cost*, not the *profit*; in which case you do not want to make the cost bigger, you want to make it *smaller*. So that is to emphasize that you should be sure to label what you calculate when you calculate it. That was problematic too.

The wrong answers shared a common flaw: they were not based on a clear specification of the bottom line objective (here, profit) and the components of it. For myself, I have found that there is only one method that *always* points me in the right direction: to write down the formulas for total profit, total revenue, and total cost and then calculate how much profit would result for alternative decisions that I might make.

## Thinking Inside and Outside the Box

You’ve probably been urged often to think outside the box. Thinking outside the box means that you should be thinking about fresh, new, creative topics and approaches. New ideas are great, but that is not what bottom line management is about. What I’ve been trying to help you do is think better *inside* the box – that is, to consider profits or the organization’s bottom line(s) in a more focused way using sound decision rules. At this point, thinking inside the box is far more important than thinking outside the box.

However, there have been some interesting answers to Case One in terms of thinking outside the box, and I want to share them with you. One of these gave me a laugh but then I realized that it really was a good and clever answer, which was to say that the best thing that this company could do to make profits was to outsource to another country where labor costs are lower. If you move to one of these lower-wage countries, you might possibly make more money. Then again, you might not – it depends not just on salary differentials but also on productivity differentials. That possibility was worth noting.

I also tried this question out on a friend who had been an anthropology major and had never taken economics. My friend's answer was, "Hire some of both. Hire some of the better-qualified people, hire a lot of the less-qualified people, and have the better-qualified ones teach the less-qualified ones how to do it." I thought that was pretty clever. Again, it was not part of the problem but it was an insightful way of thinking outside the box.

## Using Shorthand Rules Can Get You in Trouble

Let us go back to thinking inside the box. Why did the great majority of respondents get the wrong answer in this case? The simple reason that they got it wrong is that they used shorthands rather than setting up the total profit problem. Only a few got it wrong because they set up the total profit problem and made a mistake along the way. The fundamental decision rule is, maximize the bottom line, in this case, total profit – that always works.

In this particular problem, the revenue is a constant. That's because the quantity is always 70 and the price is always \$1,000, so the revenue is always \$70,000 regardless of whether you use all skilled workers or all professional workers or some of each. (The revenue would also be \$70,000 if you took my friend's idea of using some of one type of worker and some of the other.) So if the revenue is the same, then you can minimize cost. I'll caution you, though: minimizing cost is a shortcut that works if you are sure that you are in a fixed revenue situation. It does *not* work if revenue can be changed.

A shorthand rule is one such as "maximize profit per employee" or "minimize cost." Rules like these make use of some metric other than a direct measure of total profit. Shortcuts may work if you use them right. But it is much too easy to use them incorrectly. That is why I caution against using them.

For now, let me tell you that you need to make sure that when you are using shorthand rules, the shortcut is a way of maximizing the total. Unless you are very experienced at using shortcuts, you can easily misuse them. Sadly, even very bright people often do use them wrong.

"Maximize total profit" always works in a profit-maximizing company. It is better to calculate a direct measure of profit and make your decision accordingly.

## A Variant in a Not-for-Profit Setting

The decision-making tools developed in this chapter are equally applicable to a not-for-profit organization. Consider the following case:

*A Variant on Case One.*

*You are the director of an occupational therapy unit that provides treatments to physically-impaired children in the local school district. You are obligated to treat 70 children each month for the next year. The school district has agreed to pay your agency \$1,000 apiece for serving each of the 70 children.*

*The treatments can be provided either by senior occupational therapists or by novice therapists. Because the senior therapists have more experience in determining individual children's treatment needs and carrying them out, they are able to service seven children each month. The novice therapists take longer to learn what to do and carry it out, so they can service only five children each month. Each child is treated as well by the novices as by the seniors; what differs is the number of children that can be served, not the quality of the service.*

*Senior therapists, being more experienced and more productive, command a higher monthly salary (\$4,800) than the novice therapists (\$3,200). The agency offers the same benefits, worth \$700 a month, to each therapist hired.*

*Finally, any money left with the agency after paying the salaries and benefits of the therapists can be used to do more of the good work of the organization.*

*It is your responsibility to decide which type of therapist to hire. Write a memo to the head of the agency stating and justifying your decision.*

As you were reading through the case, I am sure you noticed that although the setting is entirely different, the numbers are identical to the ad agency case. The “profit” in this case is the money left over to do other good works. The correct decision is therefore the same for the occupational therapy unit as it was for the ad agency: hire the less-productive, less-expensive people. All of the incorrect decision rules are equally incorrect here.



## In Summary

Assuming that you are clear on what is the bottom line objective of your organization and have this objective clearly in mind, you should set out to maximize your bottom line and optimize everything else. In doing this, do not let yourself be misled or bullied by those who look only at benefits or only at costs.

Also, do not let yourself be taken in by ratios. Although ratios are easy to calculate, only rarely are they the right metrics for bottom line decision-making.

If there is one tough lesson that I have learned from decades of experience, it is this: the best way to assure that you make the right decision is to write down the equations for profit or for the good work of the organization and then calculate how large the total would be depending on which decision you make. Doing this will help you think well *inside* the box and make good decisions. Shorthands do not work well for me and will probably not work well for you either.

Also, do spend a bit of time thinking *outside* the box. You and your organization might be pleasantly surprised by what you come up with.

Finally, if you have not already done so, please work through the ad agency case in this chapter and the other cases that follow in later chapters. Once you have mastered them, if you want to have a bit of fun, try them on a friend or colleague (but **not** on a touchy, insecure boss).

## Notes

The Rubin quotation is from the University of Pennsylvania's *Almanac Supplement*, 18/25 May 1999.

The Sears case is presented in Anthony J. Rucci, Steven P. Kirn, and Richard T. Quinn, "The Employee-Customer-Profit Chain at Sears," *Harvard Business Review*, January–February 1998, 83–98.

Case One and also Case Five in Chapter Eight are adapted from Edward P. Lazear, *Personnel Economics for Managers*. (New York: John Wiley and Sons, 1998), pp. 23–24.

Profit per employee is advocated in "The New Metrics of Corporate performance: Profit per Employee," available at [http://www.mckinseyquarterly.com/the\\_new\\_metrics\\_of\\_corporate\\_performance\\_profit\\_per\\_employee\\_1924](http://www.mckinseyquarterly.com/the_new_metrics_of_corporate_performance_profit_per_employee_1924)

## Chapter Six

# Three Good Decision Rules and Many, Many Bad Ones

In a wide variety of settings, managers are called upon to make decisions about how much of something to do. This chapter shows you the three good decision rules for making such decisions and alerts you to some of the bad decision rules that can produce demonstrably inferior outcomes.

The central guiding principle of bottom line management is that regardless of the setting, decisions should be made in order to maximize the organization's true bottom line objective. Chapter 5 showed how this maximization could be carried out in the context of a profit-seeking company and a social service agency, and also highlighted some of the pitfalls that decision-makers might encounter.

The ad agency and social service cases that we dealt with in the previous chapter took place in a setting of *constant benefits and costs*. In that case, many variables remained unchanged regardless of how much or how little activity was carried out. In the ad agency case, these constants were the contract price for each ad written, the productivity of a master's degree holder, the productivity of a bachelor's degree holder, the salaries of each, and the benefits offered to each. In the social services case, these constants were the payment per client served, the productivity of senior therapists, the productivity of novice therapists, the salaries of each, and the benefits offered to each.

Constant returns are a plausible model in some situations. Much more common are situations of *variable benefits and costs*, which is what this chapter deals with. Economists classify situations of variable benefits and costs into several groups:

- *Increasing benefits* arise when it is beneficial to do more of something and the extra benefits *rise* as more is done. Early on, Microsoft realized that the more other people use Windows the greater the value to any one user of Windows.. They succeeded brilliantly in exploiting increasing benefits to all but drive out Apple, despite

the fact that Apple, at least in my view, offered a far superior operating system.

- *Decreasing benefits* arise when doing more of something produces extra benefits but the extra benefits *fall* as more is done. This is the usual case among consumers. When you are hungry, eating the first helping of food may make you very happy, eating the second helping may make you happier but not as much as eating the first helping did, etc. If you eat so much that the last helping makes you sick, you have gone too far. Astute business people recognize how pervasive decreasing benefits are and price their products accordingly.
- *Increasing costs* arise when the unit cost of an action *rises* as more of it is done. When the state of California faced an energy shortage a few years ago, it sought out distant energy suppliers to fulfill the demand. The unit cost of the last kilowatt hours of electricity purchased on the grid were many times higher than the unit cost of the first hours.
- Finally, *decreasing costs* arise when the unit cost of an action *falls* as more of it is done. WalMart's business model is to be a low-cost seller of a wide range of products. WalMart insists upon quantity discounts from its suppliers, with the result that WalMart pays less per unit the more it buys wholesale. Consumers benefit from this decreasing cost structure; competitors are hurt by it.

When the benefits and/or costs you face are not constant, as in the examples just given, you need to make decisions in a different way than you would if they were constant. The rest of this chapter shows you how to do that.

## **A Second Case: The Store Detectives' Case**

Here is a case we have used for many years at Cornell:

### *Case Two.*

*You graduate from Cornell and are employed by a company that is very concerned about thefts and wants to hire detectives to lessen the problem. After experimenting with different numbers of detectives on different days, you estimate the benefits of store*

*detectives in terms of thefts prevented according to the schedule shown in columns (1) and (2) below:*

(1)	(2)	(3)	(4)	(5)
Number of store detectives per shift	Value of thefts prevented per shift			
0	0			
1	\$50			
2	\$90			
3	\$110			
4	\$115			
5	\$117			

*You also look into local labor market conditions and discover that the company can hire as many detectives as it wants in the local labor market at a labor cost of \$25 per shift.*

*Question: How many detectives should this firm hire and why? Use the worksheet above to help you answer this question.*

Please write out your answer to this case now, taking a few minutes to put your calculations in the spreadsheet provided above and your explanation for the optimal number of detectives to hire in the space below.

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## Correct and Incorrect Answers in the Store Detectives' Case

Many Cornell students and businesspeople have gotten the answer to this case right but many have not. The correct answer is, hire two detectives. How did you do?

It is instructive to look at some of the incorrect answers before analyzing the correct answer.

One oft-repeated answer is precise but wrong: "The company should hire four detectives. The cost of four detectives (\$100) is less than the value they would gain (keep?) by preventing thefts (\$115). If they hired five, the cost to hire the detectives (\$125) is more than the value of thefts prevented (\$117), so five detectives would not be worth their money, but four would."

Another oft-repeated answer is right as far as it goes but is wrong because it does not go far enough: "The firm should hire at least one detective, but no more than four detectives. If the firm were to hire five detectives, the labor costs (\$125) would outweigh the value of thefts prevented (\$117), and thus defeat the purpose of having detectives." This answer tells you what not to do (don't hire five) but it doesn't tell you what to do (whether to hire zero, one, two, three, or four).

So what is the correct answer? Here is how one respondent put it: "The firm should hire two detectives. This will cost them \$50 and the value of thefts prevented is \$90, and they therefore save the largest amount, \$40. When you compare cost and value of thefts prevented for all other scenarios, the amount the firm saves is lower than \$40."

Note what the components of this answer are. The benefit is the value of thefts prevented, the cost is the cost of preventing thefts, and the net benefit (which is to be maximized) is the difference between benefits and costs. The following spreadsheet displays these calculations:

Table 6.1 illustrates *one* way of getting the correct answer. It is not, however, the *only* way of getting the correct answer. In the rest of this chapter, I'll show you three correct (and equivalent) decision rules and many, many bad ones.

**Table 6.1.** Benefits and costs in the store detectives' case

(1) Number of store detectives	(2) Benefit = value of thefts prevented	(3) Cost of detectives	(4) Net Benefit = (2) – (3)
0	\$0	\$0	\$0
1	\$50	\$25	\$25
2	\$90	\$50	\$40
3	\$110	\$75	\$35
4	\$115	\$100	\$15
5	\$117	\$125	–\$8

## Two Serious Mistakes: Considering Only Benefits or Only Costs

If you were concerned with minimizing the cost of store detectives – that is, if you wanted to pay as little money as possible – how many store detectives would you hire? The answer is zero. Why? Because you spend the least money by not spending *any* money. And if you hired nobody, how many thefts would you prevent? None. So the decision rule “minimize cost” would, in this case, produce the decision, “hire zero.”

Suppose instead that you were to think, “Thefts are reprehensible, and so we want to minimize them.” If you want to maximize the dollar value of thefts prevented, how many store detectives would you hire? The answer in this case is, five.

Earlier, I told you that the answer is not zero and the answer is not five. The answer is two. So if that’s true, it must be that the decision rules used to reach these decisions are flawed. Indeed, that’s right: these decision rules *are* flawed.

The problem with these decision rules is that those who use them have lost sight of the true bottom line. Presumably, the firm is *not* trying to maximize revenue (which is being reduced by thefts) *nor* is it trying to minimize cost (which is increased by hiring detectives). What the firm

is trying to do is to maximize *profits*, which depend on *both* revenue *and* cost. Benefits and costs must be compared.

Let us now consider other common, and flawed, ways of comparing benefits and costs.

### **Other Serious Mistakes: Using the Wrong Ratios**

Suppose you try to take account of both the benefits and costs of hiring detectives by maximizing the ratio of benefits to costs. You observe that the context is one of diminishing benefits and constant costs.

Why diminishing benefits? As the store hires more detectives, it prevents more thefts. However, the value of thefts prevented is greatest for the first detective, smaller for the second detective than the first (but still positive), smaller for the third detective than the second (but still positive), and so on. This is not necessarily because of reduced quality of the individuals hired as more detectives are added. It is, rather, in the nature of the production process: the first detective stands at the door to make sure nobody walks out without paying for the merchandise, the second stands at the dressing room to count the number of garments customers walk in and out with, and so on.

Why constant costs? Because the store can hire as many or as few detectives as it wants at a cost of \$25 per shift for each detective.

When you have diminishing benefits and constant costs, the ratio of benefits to costs is always maximized when you hire the first person. The calculations in column (4) of Table 6.2 indeed show that the benefit/cost ratio is higher when one detective is hired than for any other number. Suppose you decide on this basis that maximizing the benefit/cost ratio is a good thing to do, then you hire one detective.

By now, all this talk about bad decision rules may have made you a little uneasy, so you decide to check on yourself. You recognize that in this situation, the cost of hiring an extra detective is constant while extra benefits are falling. You reason that with constant costs and falling benefits, the optimal number of detectives to hire is that which maximizes the value of thefts prevented per employee. You therefore make the calculations shown in column (5) of Table 6.2, and these show you that the value of thefts prevented per employee is also maximized when one detective is hired. You are now thoroughly convinced that hiring one detective is the right thing to do.

**Table 6.2** More benefits and costs in the store detectives' case

(1)	(2)	(3)	(4)	(5)
Number of store detectives	Benefit = value of thefts prevented	Cost of detectives	Benefit/cost ratio = (2) ÷ (3)	Thefts prevented per employee = (2) ÷ (1)
0	\$0	\$0	–	–
1	\$50	\$25	$\$50/\$25 = 2.00$	$\$50/1 = \$50$
2	\$90	\$50	$\$90/\$50 = 1.80$	$\$90/2 = \$45$
3	\$110	\$75	$\$110/\$75 = 1.47$	$\$110/3 = \$36.67$
4	\$115	\$100	$\$115/\$100 = 1.15$	$\$115/4 = \$28.75$
5	\$117	\$125	$\$117/\$125 = 0.94$	$\$117/5 = \$23.40$

Sadly, despite your double-checking, you are still making the wrong decision. Why? Because if you have reasoned in the ways I just described, you have lost sight of what profit is. Profit is not the ratio of benefits to costs. Nor is the profit to be maximized profit per employee. Profit is the difference between benefits and costs. What the firm wants to maximize is total profit, not average profit.

*Ratios can get you in trouble. Use them at your peril.*

## Comparing the Decision Rules

Bottom line decision-making— in this case, increasing profits by preventing thefts – leads to a different decision than managing using other decision rules. The following chart pulls together the different decision rules that we have discussed and the decisions that would be made using each:



**Table 6.3** Decisions you would make using different decision rules in the store detectives' case

Decision rule	Number of detectives you would hire
Maximize profit	Hire 2
Hire as long as the value of thefts prevented exceeds the cost of hiring detectives	Hire 4
Minimize thefts	Hire 5
Minimize the cost of preventing thefts	Hire 0
Maximize the benefit/cost ratio	Hire 1
Maximize thefts prevented per employee	Hire 1

For a long time, I was not able to come up with a rule that would have you hiring three detectives, but finally I did: “Hire 3, because we now have three and we don’t want to let anyone go.”

The supporting calculations are collected up in Table 6.4, with the maximum or minimum using these various decision rules highlighted for easy identification:

The mistakes made using flawed decision rules are of two types. In some calculations, only the benefits or only the costs have been taken account of but not both. In other calculations, both benefits and costs have been taken into account but they have been taken into account incorrectly.

It is important for you to understand that these are not just differences of opinion or different, equally valid metrics showing different things. These are *mistakes*. Why? Because if our objective is to maximize profit, we have gotten the wrong answer. The profit-maximizing decision is to hire two. Any decision rule that produces the wrong answer is surely an invalid decision rule. (Be careful, though: a decision rule that gives the right answer *in a particular case* may still be an invalid decision rule *in general*.)

**Table 6.4.** Still more data in the store detectives' case

(1)	(2)	(3)	(4)	(5)	(6)
Number of store detectives	Benefit = value of thefts prevented	Cost of detectives	Net benefit = (2) - (3)	Benefit/cost ratio = (2) ÷ (3)	Thefts prevented per employee = (2) ÷ (1)
0	\$0	\$0	\$0	-	-
1	\$50	\$25	\$25	$\$50/\$25 = 2.00$	$\$50/1 = \$50$
2	\$90	\$50	\$40	$\$90/\$50 = 1.80$	$\$90/2 = \$45$
3	\$110	\$75	\$35	$\$110/\$75 = 1.47$	$\$110/3 = \$36.67$
4	\$115	\$100	\$15	$\$115/\$100 = 1.15$	$\$115/4 = \$28.75$
5	\$117	\$125	-\$8	$\$117/\$125 = 0.94$	$\$117/5 = \$23.40$

A good bottom line manager knows (1) *that* both the benefits and costs need to be taken into account and (2) *how* the benefits and costs should be taken into account to produce a correct answer.

## Distinguishing the Good Decision Rules from the Bad Ones

I've said that when an organization has a bottom line objective, this objective can be achieved by maximizing the *difference* between benefits and costs (but *not* by maximizing the *ratio* of benefits to costs, maximizing

benefits, or minimizing costs). Maximizing the difference between benefits and costs is one valid way of attaining your bottom line objective. This is so important that I will highlight it for you:

**Good Decision Rule 1.  
Maximize the Difference Between Benefits And Costs**

In the case of a profit-maximizing firm, the benefits are revenues, the costs are costs, and profit is the difference between revenues and costs.

The calculations needed to apply this rule to the store detectives' case have already been presented. They are repeated in the following table (Table 6.5) for comparison with the other two rules that follow. Two other decision rules are equally good. Let me show them to you now.

Another good decision rule involves a comparison of the extra benefits of an action with the extra costs. Economists call these *marginal benefits* and *marginal costs* respectively. (They are not called "marginal" because they are unimportant; they are called "marginal" because they involve moving beyond the margin of where you already were.) A second good decision rule is to do something if the marginal benefits are greater than the marginal costs and stop when this is no longer the case. We therefore have:

**Good Decision Rule 2.  
Continue As Long As Marginal Benefit Exceeds Marginal Cost; Stop at the Point Where Marginal Benefit Becomes Less than Marginal Cost**

Table 6.5 displays the calculations needed to apply this decision rule to the store detectives' case. Column (5) presents the marginal benefit from hiring an additional store detective while column (6) presents the marginal cost. The marginal benefit of hiring the first detective is \$50; the marginal cost is \$25. According to Good Decision Rule 2, the company should hire the first detective. Now, let's consider hiring the second one. The marginal benefit of the second detective is \$40; the marginal cost is \$25. The second one should be hired as well. What about hiring a third? The marginal benefit is \$20; the marginal cost is \$25. The marginal benefit is \$5 less than the marginal cost - in other words, the company would lose \$5 if it hired a third detective. This is what we would get if

we apply the second part of Good Decision Rule 2: because marginal benefit is less than marginal cost for the third detective, the company should stop hiring before it reaches that point.

There is one last good decision rule. This rule involves the *net marginal benefit*. Net marginal benefit is defined as the marginal benefit the firm would receive by doing more of something minus the marginal cost of doing it. The third good decision rule is to continue with the action as long as the net marginal benefit is positive and to stop at the point where the net marginal benefit becomes negative. We then have:

**Good Decision Rule 3.**  
**Continue As Long As Net Marginal Benefit is Positive; Stop at the Point Where Net Marginal Benefit Turns Negative**

In the case of a profit-seeking firm, the marginal benefit is the firm's marginal revenue, the marginal cost is its marginal cost, and the net marginal benefit is the marginal profit. The third good decision rule is then to stop when marginal profit turns negative.

In our store detectives' case, column (7) of Table 6.5 shows that marginal profit is \$25 for the first detective, \$15 for the second detective, minus \$5 for the third detective, and negative for all detectives hired thereafter. Following Good Decision Rule 3, the company should hire the first and second detectives but not hire the third, fourth, or fifth.

How do these three good decision rules compare? Actually, they are *equally good*. More than that, they are *equivalent*. That is, provided they have been applied correctly, *the answer given by any one of the three good decision rules is the same as the answer given by either of the other two*.

In the store detectives' case, the answer given by any of the three good decision rules is, "Hire two." Two detectives is where:

1. The net benefit is maximized.
2. The marginal benefit is still greater than the marginal cost, after which the marginal benefit becomes less than the marginal cost.
3. The net marginal benefit is still positive, after which the net marginal benefit turns negative.

so which rule should you use? Because they are equivalent, you can use *whichever one is most convenient in any given circumstance*. Just be sure that you use them correctly.

**Table 6.5** Three good decision rules in the store detectives' case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number of store detectives	Benefit = value of thefts prevented	Cost of detectives	Net benefit = (2) - (3)	Marginal benefit	Marginal cost	Net marginal benefit	Net benefit maxi-mized?	Marginal benefit > marginal cost?	Net marginal benefit > 0
0	\$0	\$0	\$0	-	-	-	No	-	-
1	\$50	\$25	\$25	\$50	\$25	\$25	No	Yes	Yes
2	\$90	\$50	\$40	\$40	\$25	\$15	Yes	Yes	Yes
3	\$110	\$75	\$35	\$20	\$25	-\$5	No	No	No
4	\$115	\$100	\$15	\$5	\$25	-\$20	No	No	No
5	\$117	\$125	-\$8	\$2	\$25	-\$23	No	No	No

### A Third Case: Developing a New Product

Consider the following situation:

#### *Case Three.*

*Your department is developing new flat screen TV sets with LCD technology. The project was quite promising but took much more time and money than expected. So far, you have invested \$30 million in the project, but the screens are not yet ready to take to market. You estimate that it would take an additional \$10 million to complete the development of the new screens. The new screens, once developed, are expected to generate net sales (that is, sales net of manufacturing costs) of \$35 million. If you stop, you cannot produce the new screens and so you will lose all of your investment. Do you go on with the project or not?*

Try it yourself and then read on:

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Having learned about the three good decision rules, you know that you want to use one of them in this case. The question, therefore, is *how* to use them. Suppose you apply Rule 1 to Case Three in the following way:

*If the project is continued, the total benefits will be \$35 million. The total costs will be \$40 million (\$30 million already incurred + \$10 million additional). Therefore, the project should not be continued.*

Would you have been right?

It may surprise you to know that the answer is no. Reread what decision you are being asked to make: Do you go on with the project or not? True, the benefits of going on with the project are expected to amount to \$35 million. However, the costs of going on with the project are not \$40 million but \$10 million. If you go on, the difference between benefits and costs is \$35 million – \$10 million = \$25 million. You *should* go on with the project.

Rule 2 would have led you to this decision right away. *Given where you are now*, the marginal benefit of continuing is \$35 million and the marginal cost of continuing is \$10 million. The project *should* be continued. Rule 3 would have also led you to decide to continue the project: the marginal profit is \$35 million – \$10 million = \$25 million, which is greater than zero.

What about Rule 1? To reach the correct bottom line answer, you must correctly formulate the decision. The decision you are asked to

make is whether to *continue* the project. Relative to discontinuing the project, which has produced a \$30 million loss *which you can do nothing about*, continuing the project is expected to produce a profit of \$35 million – \$10 million = \$25 million. The *overall* project would result in a \$5 million loss. Losing \$5 million is better than losing \$30 million, which is why it is better to continue the project. Of course, knowing what you know now, it would have been better never to have started the project, but it is too late for that.

Case Three illustrates a general point to bear in mind always: Once you have incurred a cost, that cost is sunk. Sunk costs (also called “fixed costs”) cannot be recovered. You cannot get them back. All you can do is move on from where you are now. Sometimes the right thing to do is go no further – cut your losses and move on.

In Case Three, though, the right decision is the exact opposite. Compare what would happen if you *do not* go on with what would happen if you *do* go on. In this case, you can mitigate your losses by *going on*; you would lose more if you stopped.

What is the right decision in Case Three? Go on with the project.

## In Summary

You need to assess whether, in the setting in which you are making your decision, the benefits and costs are increasing, decreasing, or constant.

When benefits and/or costs are not constant, you need to employ a good decision rule that takes account of this variability and avoid flawed ones.

Decision rules are flawed for two basic reasons. Some consider only benefits or only costs but not both. Others consider benefits and costs but do so in the wrong way.

Three good decision rules are available for considering variable benefits and costs. These three rules are equivalent to one another. Use whichever one is easiest in a particular context.

## Notes

The store detectives’ case comes from Ronald G. Ehrenberg and Robert S. Smith, *Modern Labor Economics*, Boston, Pearson, 2009.

The equivalence of the three good decision rules presented in this chapter is not at all coincidental. Here is a one-sentence explanation for those of you who know calculus: Formally, the three rules are equivalent because maximizing a total is equivalent to driving its marginal to zero, which in turn is equivalent to continuing as long as the marginal gain outweighs the marginal loss and stopping once marginal gain is below marginal loss. If you do not know calculus, do not worry about it – you can ignore what I just said in this paragraph.



## Chapter Seven

# Making Investment Decisions: Rate of Return and Net Present Value

Investments are those outlays made in the present in the hope of realizing greater future returns. Companies, not-for-profits, government agencies, and other organizations routinely assess the effects of investments on profits or other bottom line outcomes. An important skill for a bottom line manager is the ability to analyze return on investment (ROI). It is essential that you have this knowledge if you have any hope of persuading those who regularly think in terms of benefits, costs, bottom lines, and ROI's – which includes, at minimum the CEO and CFO and many other top decision-makers as well – that something you want to do is worth doing.

We will talk in this chapter about two kinds of investments. First, in the body of the chapter, we will consider those for which all of the essential features are captured by comparing the total benefits and total costs without regard to their timing. For many investments, though, the costs are incurred first and the benefits are not realized until much later, and so the effects on the bottom line take place over the course of real time. For this second kind of investment, we will need to consider how to take into account streams of costs and streams of benefits. That discussion is found in the appendix to this chapter.

Many managers do not now possess the ability to calculate returns on investments. I presented the following case to a group of experienced business people:

*You can make an investment in an aggressive pay-for-performance system that would cost you \$9 million up front and is expected to add \$21 million in productivity. It is also expected to reduce hiring and turnover costs by \$3 million. What is the rate of return on this investment?*

The result: No two respondents gave the same answer. We had some work to do.

## Two Methods for Calculating ROI: Rate of Return and Net Present Value

In a setting like the one in the previous paragraph, the *return on investment (ROI)* involves a comparison of total benefits and total costs without regard to their timing. The benefits are the difference in outcome (in this case, for the organization) if the investment is made compared with the outcome if the investment is not made. The cost is the amount of the investment.

Two types of calculations can be made when assessing the return on an investment: rate of return and net present value. I have to caution you that these two types of calculations do not always lead to the same decision, so pay careful attention, both to their similarities and to their differences.

When time does not matter, the *rate of return* (also called *internal rate of return*) involves comparing the benefits and costs according to the following formula:

$$RofR = \frac{Benefit - Cost}{Cost}.$$

Two points about the rate of return should be mentioned at this point. First, the rate of return is a ratio, which I have warned you to be careful about using. Indeed, as I explain further later, the rate of return can be problematical, so be careful. Second, note what ratio the rate of return is. It *is* the net gain expressed as a percentage of the cost of the investment. The rate of return *is not* the ratio of one cost to another, one benefit to another, or benefit to cost.

In this exercise, the \$21M in productivity gain is a clear benefit. The \$9M investment is a clear cost. If these were the only benefits and costs, the rate of return on this program would be

$$RofR_0 = \frac{\$21M - \$9M}{\$9M} = \frac{\$12M}{\$9M} = 1.33 = 133\%.$$

There is, however, another effect of the program: hiring and turnover costs are expected to be reduced by \$3M. You can think of these cost reductions in either of two ways. I prefer to think of the reduced hiring and training costs as another benefit. Adding the \$3M cost savings to the

\$21M in productivity gains gives total benefits of \$24M. The cost of the investment remains at \$9M. The complete rate of return is therefore

$$RofR_1 = \frac{(\$21M + \$3M) - \$9M}{\$9M} = \frac{\$15M}{\$9M} = 1.67 = 167\%.$$

You can think of it in another way which, frankly, seems unnatural to me, but some people do it like this. The \$3M cost savings can be viewed as a negative cost. Looking at it in this second way, the cost of the program is the \$9M invested minus the \$3M in cost savings, or \$6M; the benefit of the program is \$21M in productivity gains; and the rate of return is therefore

$$RofR_2 = \frac{\$21M - (\$9M - \$3M)}{\$6M} = \frac{\$15M}{\$6M} = 2.50 = 250\%.$$

The fact that  $RofR_1$  can be so different from  $RofR_2$  can pose serious problems for decision-making, although in this particular case, whether the rate of return is 167% or 250% is not likely to matter: the program appears to be very worthwhile regardless of which rate of return calculation is used.

There is an alternative way of evaluating the costs and benefits of an investment, which is to calculate the *net present value*. “Present value” means that all costs and benefits are expressed in terms of their value *at present*. If you don’t already know how to deal with costs and benefits that occur in the future, I will show you in the appendix. For now, though, the costs and benefits of this program are presented without regard to their timing – that is, if anything happens in the future rather than at present, it makes no difference for the purposes at hand. *Net present value* means that you subtract the present value of costs from the present value of benefits to get the net present value:

$$\text{Net Present Value} = \\ \text{Present Value of Benefits} - \text{Present Value of Costs}.$$

Net present value is the difference between the present value of benefits and the present value of costs. In the case of investing in the pay-for-performance program, if we think of it in the first way, the net present value is \$15M:

$$\begin{aligned} & \text{Net PV}_1 \\ & = (\text{productivity gain} + \text{savings in hiring and training costs}) \\ & \quad - \text{cost of the program} = (\$21\text{M} + \$3\text{M}) - \$9\text{M} = \$15\text{M}. \end{aligned}$$

If we think of it in the second way, the net PV is also \$15M:

$$\begin{aligned} & \text{Net PV}_2 \\ & = \text{productivity gain} \\ & \quad - (\text{cost of the program} - \text{savings in hiring and training costs}) \\ & \quad = \$21\text{M} - (\$9\text{M} - \$3\text{M}) = \$15\text{M}. \end{aligned}$$

It is actually quite useful that the net PV formula gives the same result regardless of how we look at the cost savings. What these calculations tell us is that if this organization invests in the proposed pay-for-performance system, it is expected to come out \$15M ahead (less any costs of borrowing the money needed to make the investment).

## Using Rate of Return and Net Present Value to Make Up/Down Decisions

The case we dealt with in the last section involved deciding whether to invest \$9M in a program that was expected to produce \$24M in benefits. Should such a program be undertaken? This is an example of an up/down decision.

Consider first how you would use the rate of return method. Making a decision using rate of return analysis is done by calculating the rate of return and comparing it to a reference rate. This reference rate is commonly called the *hurdle rate* in business; it is the rate of return that management requires before approving an investment. For up/down decisions, the hurdle rate would be what the money invested would bring if it were not invested in your project but rather were kept in cash. (“Cash” means making a risk-free loan for as short a duration as overnight. For example, money can be loaned at the London Interbank Offered Rate, LIBOR; at the time of this writing, the twelve-month LIBOR was 5.29% in U.S. dollars and 4.30% in euros.)

In the case of a \$9M investment that was expected to produce \$24M in benefits, we assumed that the benefits occurred quickly enough that

the difference in timing between benefits and costs could effectively be ignored. The decision rule in such cases is then this:

**Rate of Return Decision Rule for Up/Down Decisions:  
Make the Investment If and Only If the Rate of Return  
Exceeds the R**

In the case of an investment of \$9M and an expected benefit of \$24M, the rate of return is  $(\$24M - \$9M)/\$9M = \$15M/\$9M = 1.67 = 167\%$ . This 167% rate of return far exceeds a typical hurdle rate. The rate of return decision rule for up/down decisions would then lead the manager to decide that it is better to make the investment than not make it.

Up/down decisions may also be made using a net present value decision rule. This involves seeing whether the present value of benefits exceeds the present value of costs, or equivalently, whether the net present value of benefits is positive or negative:

**Net Present Value Decision Rule for Up/Down Decisions:  
Make the Investment If and Only If the Net Present Value  
Exceeds the Return on Cash**

In the case of an investment of \$9M and an expected benefit of \$24M in which time is not a factor, the net present value is  $\$24M - \$9M = \$15M$ . This net present value of \$15M is greater than what could be earned on cash. (If \$9 million is invested at the LIBOR, it would yield a twelve-month return of \$476,100.) The net present value decision rule for up/down decisions would then lead the manager to decide that it is better to make the investment than not make it.

In this example, the rate of return decision rule and the net present value decision rule lead to the same conclusion: make the investment. Getting the same answers happens often with up/down decisions, but not always.

Let's look now at the rate of return and net present value rules to choose among multiple options.

## **Using Rate of Return and Net Present Value to Choose Among Projects**

Suppose we are deciding among two or more projects. The decision is of the form, do project A, do project B, or do neither. We will suppose that doing both projects is not an option, for example, because your director thinks you have the staff to be able to manage one project, not two.

We may draw on the following rate of return and net present value decision rules for making such choices. First, we have the rate of return decision rule:

**Rate of Return Decision Rule for Choosing Among Projects: Choose the Project with the Higher Rate of Return. Make the Investment If and Only If the Rate of Return on that Project Exceeds the Rate of Return on Cash**

Now, consider the net present value decision rule:

**Net Present Value Decision Rule for Choosing Among Projects: Choose the Project with the Higher Net Present Value. Make the Investment If and Only If the Net Present Value of that Project Exceeds the Return on Cash**

Now is a good time to remind you that these two decision rules can lead to opposite decisions, and in fact they often do. When choosing between projects, the bottom line manager must consider which is the better decision rule – net present value or rate of return – and decide accordingly.

Let us turn to an example where we reach opposite conclusions of what would be best for the organization.

### **A Fourth Case: Basic Training or Deluxe Training?**

*Case Four – Small Organization Variant.*

*You are the manager of a training department in a small organization employing ten people. The CEO has told you that you can do*

*one training program as long as the program you choose is economically justified.*

*A vendor offers your organization two training programs that would cover all ten of your organization's people. The "basic, ordinary, plain vanilla" training program would cost your organization \$100,000 and would produce a benefit of \$150,000. Alternatively, the "deluxe, special, tailor-made for you" training program would produce a benefit of \$1,200,000 at a cost of \$1,000,000 today.*

*In this organization, which training program, if any, should you do?*

I'll give you the answer below, but before reading it, please take some time to answer the question yourself.

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## **Decisions Based on Rate of Return and Net Present Value**

If we use the rate of return decision rule for choosing between projects, we calculate the rates of return for the two projects, choose the one with the higher rate, and compare it with the rate of return on cash. Here is

what we find when we do this. We can invest \$100,000 in basic training and get back \$150,000 in benefits. This investment in basic training produces a 50% rate of return. Alternatively, we can invest \$1,000,000 now in deluxe training and get back \$1,200,000 in benefits. This investment in deluxe training produces a 20% rate of return. Comparing the two rates of return, the first project (basic training) produces a higher rate of return than the second (deluxe training). Assuming that 50% exceeds the organization's rate of return on cash, the rate of return decision rule for choosing among projects leads to the decision to do basic training in preference to deluxe training.

Let us use instead the net present value decision rule for choosing among projects. This rule directs us to choose the project with the higher net present value provided it exceeds the return on cash. We make these calculations and find that the net present value of the basic training project is \$50,000 and the net present value of the deluxe training project is \$200,000. By that decision rule, we should choose deluxe training over basic training.

Note well: the rate of return rule favored basic training, the net present value rule favored deluxe training, and the two rules have produced *opposite* decisions in this case! What decision *should* be made?

### **Rate of Return, Net Present Value, and the Bottom Line**

We have calculated that the basic training project produces a 50% rate of return and a \$50,000 net present value, while the deluxe training project produces a 20% rate of return and a \$200,000 net present value. It is so common to frame business decisions in terms of rates of return that you may well be thinking that the project with the higher rate of return is obviously the better one to choose. If you think this way, you are using a shorthand decision rule rather than a bottom line decision rule. I have cautioned you throughout this book that using shorthand decision rules may produce less-than-optimal outcomes, and indeed it does so in this case. Let me now show you why.

The projects we are considering here involve different amounts of investment: \$100,000 in one case, \$1,000,000 in the other. They also are expected to produce different rates of return: 50% in one case, 20% in the other. We have to decide which is better. What can we do to put together the benefits and the costs for projects of different sizes?



Comparisons of rates of return consider only the benefit per dollar invested, not the total number of dollars invested. How would we also include the amount invested in our decision? The answer: compare present values.

The basic principle of bottom line management is that most organizations have an overriding objective which, in the case of a company, is to maximize profit and, in the case of not-for-profits and government agencies, is to do the good work of the organization. If you are interested in choosing the training project that contributes to your bottom line the most, you should choose the one that adds the most dollars. Our net present value calculations in this case tell us that the deluxe training project has a net benefit of \$200,000 while the basic training project has a net benefit of only \$50,000. Deluxe training would add \$150,000 more to profits than basic training would.

This result generalizes as follows:

**Used Properly, the Net Present Value Decision Rule Always Gives the Answer that Maximizes the Bottom Line. On the Other Hand, Even If Used Properly, the Rate of Return Decision Rule May or May Not Give the Answer that Maximizes the Bottom Line**

So what should you be thinking in terms of? If you're trying to maximize profit or the good work of the organization, should you use rate of return or net present value? The answer is net present value.

## **A Variant of the Fourth Case: A Fixed Training Budget**

*Case Four – Large Organization Variant.*

*You are the manager of a training department in a large organization employing one thousand people. Your CEO has given you a training budget of \$10,000,000. You are allowed to spend up to that amount on training but no more.*

*A vendor offers your organization two kinds of training programs. As in the case of the small organization, the “basic, ordinary, plain vanilla” training program would cost your organization \$100,000 for each group of ten trainees and would produce a return of*

*\$150,000. Alternatively, the “deluxe, special, tailor-made for you” training program would produce a return of \$1,200,000 at a cost of \$1,000,000 for each ten trainees.*

*In the large organization, which training program, if any, should you do?*

Try it yourself and then I’ll give you the answer:

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The calculations for this variant run as follows. A \$10,000,000 investment would allow all 1,000 people in the organization to receive basic training or 100 people in the organization to receive deluxe training. The rate of return is 50% on basic training, 20% on deluxe training. The net present value of investing \$10,000,000 in basic training is \$5,000,000. The net present value of investing \$10,000,000 in deluxe training is \$2,000,000. Given the choices presented in this case, you would do better to use your training budget to provide all of your people with basic training than some of your people with deluxe training.

Please note that before, in the small organization variant, the net present value rule told you that *deluxe training* was the better choice. Now, in the large organization variant, the net present value rule tells you that *basic training* is the better choice – this, despite the fact that in both the

small organization variant and the large organization variant, the rates of return are 50% for the basic training and 20% for the deluxe training.

The point here is that investment decisions must be framed not only in terms of returns per dollar spent but also in terms of the constraints on the decision – in this case, a fixed number of trainees in the first variant, a fixed dollar budget in the second. This is actually a more general point: *all* decisions require careful consideration of the context in which they are being made.

## In Summary

Rates of return and net present values are two ways of assessing the returns on an investment. They both involve comparing streams of benefits with streams of costs, but they make these comparisons in different ways.

When making up/down decisions, the net present value and rate of return rules usually produce the same decisions. However, when choosing between projects of different sizes, the net present value and rate of return rules often produce opposite decisions.

If you are a bottom line manager responsible for choosing between two or more projects, the one producing the highest net present value is best. Why? Because given that the goal of the organization is to maximize profit or the good work of the organization, the project that has the highest net present value is the one that adds more. This is so regardless of which one has the higher rate of return.

## Appendix to Chapter Seven: Rate of Return and Net Present Value in Real Time

For many investments, the costs come first and the benefits come quite a bit later, often many years later. In such cases, the passage of real time should be factored into the calculations. Do not worry: numerous online tools and statistical packages are available for you to make these calculations. Here, I want to explain what calculations to make.

First, let us define the *present discounted value* (or, for ease of expression, simply *present value*) of a stream of benefits or costs. *Discounting* means that benefits received or costs incurred in the future are discounted relative to ones that occur at present. Future benefits (and costs) are

discounted precisely because they occur in the future; the farther in the future they occur, the more they are discounted. Why discount? Discounting is done because of inflation, uncertainty, or impatience.

Suppose we discount at an annual rate of 10%. (I will tell you where this discount rate might come from in just a minute.) A 10% discount rate implies that a benefit or cost one year from now counts for only 90% of what it would count for if it took place today. It implies too that a benefit or cost two years from now counts for only 81% ( $=90\% \times 90\%$ ) of what today's benefits or costs would count for.

Denoting our discount rate by  $r$ , the present discounted value of a stream consisting of  $D_0$  dollars at present (i.e., zero years from now),  $D_1$  dollars one year from now,  $D_2$  dollars two years from now, etc. is given by the formula

$$PV = D_0 + \frac{D_1}{(1+r)} + \frac{D_2}{(1+r)^2} + \dots$$

The returns on investments that take place in real time may be assessed in either of two ways: the net present value method and the rate of return method.

*The net present value method* defines the net present value of an investment as the present value of benefits minus the present value of costs:

$$\text{Net PV} = PV_{\text{benefits}} - PV_{\text{costs}},$$

where the present values of benefits  $B_0, B_1, B_2, \dots$  and costs  $C_0, C_1, C_2, \dots$  in turn are given by

$$PV_{\text{benefits}} = B_0 + \frac{B_1}{(1+r)} + \frac{B_2}{(1+r)^2} + \dots$$

and

$$PV_{\text{costs}} = C_0 + \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \dots$$

In the case of the net present value method, the discount rate  $r$  is first specified by the analyst. Common benchmarks are the interest rate paid by the government on Treasury bonds or bills, the prime rate charged by major banks to their best customers, and companies' internal cost of

funds. We do not need to get deeply into this here; if you need to know what rate to use, your organization's finance department can help you.

Once you have estimates of all of the benefits  $B_0, B_1, B_2, \dots$  and all of the costs  $C_0, C_1, C_2, \dots$  and once you know what  $r$  to use, you bring them all together for the net present value method by calculating:

$$\text{Net PV} = \text{PV}_{\text{benefits}} - \text{PV}_{\text{costs}} =$$

$$\left[ B_0 + \frac{B_1}{(1+r)} + \frac{B_2}{(1+r)^2} + \dots \right] - \left[ C_0 + \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \dots \right]$$

The result will be a number in dollars: for example, \$15M. This means that the present value of benefits from the investment exceeds the present value of costs of the investment by \$15M.

Turning now to the *rate of return method*, the rate of return is obtained by equating the present value of benefits to the present value of costs and finding the value of  $r$  that makes the two sides equal:

$$\text{PV}_{\text{benefits}} = \text{PV}_{\text{costs}}$$

or

$$B_0 + \frac{B_1}{(1+r)} + \frac{B_2}{(1+r)^2} + \dots = C_0 + \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \dots$$

Call the value of  $r$  that solves this equation  $r^*$ . This value  $r^*$  is called, alternatively and equivalently, the rate of return, the internal rate of return, and (sometimes) the return on investment (ROI). (This last term is confusing, because ROI is used both to mean the general idea of comparing benefits of an investment with costs and to mean comparing benefits with costs using the precise rate of return formula I have just shown you.) The rate of return  $r^*$  will be a percentage rate: for example, 167%. This means that each dollar invested produces an annual return of \$1.67 over and above the amount invested.

As explained in the text, the net present value and rate of return calculations can lead you to different decisions about what to do, so be very careful in using these formulas to be sure that you are in fact getting what you want.

## **Chapter Eight**

### **Making Interdependent Decisions: People, Process, and Technology**

In this chapter, you will learn to make interdependent bottom line decisions. Interdependent decisions are those in which the optimal decision in one dimension depends on what is chosen in other dimensions.

Our particular application will be to managerial decisions on people, process, and technology. We will work with a case in which the optimal technology depends on the type of people employed, and the optimal type of people to employ depends on the technology used. We will see that it is optimal to minimize *neither* the cost of labor *nor* the cost of machinery.

#### **The Interdependence of Product Market, Capital Market, and Labor Market Decisions**

Let us begin by distinguishing between product markets and factor markets. Product markets are the markets in which firms sell their products, and consumers or other firms buy them. Factor markets are the markets in which the factors of production (specifically, capital and labor) are hired. (Land markets could be distinguished as well, but we will not need them for this book.)

In the great majority of circumstances, product market decisions are linked to factor market decisions in three ways:

1. Optimal product market decisions reflect not only product market conditions but also labor market conditions and capital market conditions.
2. Optimal labor market decisions reflect not only labor market conditions but also product market conditions and capital market conditions.
3. Optimal capital market decisions reflect not only capital market conditions but also product market conditions and labor market conditions.

In unusual circumstances, the decision of how much to produce can be separated from how many people to hire, how much capital to utilize, or what technology to employ. In the case below, we will deal with such a circumstance, one in which the company has calculated that it can profitably fulfill an order for an agreed-upon quantity of output.

Because of interdependencies, making decisions in any one market requires a thorough understanding of conditions in the other market or markets. A great deal is written about the need for human resource managers to understand the business. Much less is written about the need for business economists to understand the labor market. The point is equally important for both types of managers: except in unusual circumstances, good decisions in one area require good decisions in all of them.

The next case demonstrates this kind of interdependence.

## **A Fifth Case: People, Process, and Technology In Custom Apparel Production**

*Case Five.*

*You are the manager of a Taiwanese factory. The factory has signed a multi-year contract with an American retailer to produce 70 custom-made dresses each day at \$10 per dress; this is the factory's only output. At present, the factory employs workers who each use a standard sewing machine. The current sewing machines can be rented for \$7 per day. If "skilled" workers are hired, each can produce five dresses per 8-hour day. These workers are paid \$32 per day. If "professional" workers are used, each of whom is paid \$48 per day, seven dresses per day per worker can be produced.*

*New, computerized sewing machines have just become available. These machines double output for both kinds of workers – a 100% increase in labor productivity. However, the new machines cost 143% more to rent than the standard sewing machines (\$17 per machine per day for the computerized machines as opposed to \$7 for the standard machines).*

*Make the following decisions:*

*a) Should you switch over to using these new machines?*

*b) Should you switch over to hiring a different type of worker?*

As for the earlier cases, I strongly recommend that you try this exercise yourself and write down your explanation before proceeding further.

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## **Some Possible Answers**

Here is one answer commonly given: “The new computerized machines increase productivity by 100% but increase cost by 143%. Therefore, they should *not* be used. The factory should stick with the standard machines, which are best used with skilled workers.” Let us call this Response A.

Here is another answer I have heard (Response B): “Computerized machines enable the company to produce the same output with fewer workers. Workers cost more per day than machines do. So the company *should* adopt the new technology.”



Response C: “The new machines cost workers jobs. They should not be used.”

Response D: “In order to compete in today’s global marketplace, companies need to use the best technologies available. This company should switch to computerized sewing machines and switch to the best possible workers (professional) if they’re not already using them.”

Was your answer like any of these?

One of these responses contains the right answer. However, it does not contain the right reasoning in support of that answer. Can you tell which one it is? Give it a try before reading on.

## Getting the Correct Answer

The first step is to be clear on what it is we are aiming to do. We have every reason to think that this company is trying to be as profitable as it can, and we therefore presume that its goal is to maximize profit, specifically, profit per day. Not profit per worker. Not profit per machine. Nor is it minimizing the cost of workers or minimizing the cost of machines. The goal is profit-maximization.

Logically, how do we go about finding out what the profit per day would be under each of the alternative scenarios? In Case One in Chap. 5, where we had a decision to make about which type of worker to hire but no decision about capital equipment, we made two calculations: what profit per day would be if the company employed one type of worker versus another. Now, here in Case Five, we need to choose among four options: (1) employing skilled workers with the standard machines; (2) employing professional workers with the standard machines; (3) employing skilled workers with the computerized machines; and (4) employing professional workers with the computerized machines.

Once we have figured out which of these four combinations produces the highest profit per day, then our decision rule is: “Choose that combination of people and technology that would produce the highest profit per day.” And then, once we know what the answer is when only the standard machines are available, and once we know what the answer is

given the availability of the new, more expensive, more productive computerized machines, then we can answer the questions, “Should they switch the kind of worker they’re using? Should they switch the kind of machine they’re using?”

I wish I could tell you that there is a way to short-circuit this process and make fewer calculations. Unfortunately, there is not – to get the right answer, you have to work out what total profit would be under *each* possible scenario. That is what Bottom Line Management requires when decisions are interdependent. So let us get started.

To calculate the profit under each scenario, we need to know sales, product price, number of workers employed, daily labor cost, number of machines hired, and daily machine cost, and we then need to use this information appropriately. The data are best organized into a spreadsheet. Let me get you started by showing you what some of it would look like and give you a chance to set it up yourself before I show you the rest of it:

Production process	Profit per day
Skilled workers, standard machines,	
Professional workers, standard machines	
Skilled workers, computerized machines,	
Professional workers, computerized machines	

When you are ready to move on, please continue.

Following what we learned in Chap. 4 about revenues, costs, and profits, we know that for each production process scenario, we need to determine what the company's revenue would be, subtract all the costs, and calculate profit as the difference between revenue and costs. We can organize the information into a spreadsheet like this:

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Production process	Revenue per day	Labor used per day	Labor cost per day	Sewing machine cost per day	Total cost per day = (4) + (5)	Profit per day = (2) - (6)
Skilled workers, standard machines,						
Professional workers, standard machines						
Skilled workers, computerized machines,						
Professional workers, computerized machines						

(Note: this is a more compact spreadsheet than the one used in Chap. 5, because not all of the steps are shown). Make the calculations and you should get something like this:

(1) Production process	(2) Revenue per day	(3) Labor used per day	(4) Labor cost per day	(5) Sewing machine cost per day	(6) Total cost per day = (4) + (5)	(7) Profit per day = (2) - (6)
Skilled workers, standard machines	$\$10 \times 70 = \$700$	$70/5 = 14$	$14 \times 8 \times \$4 = \$448$	$14 \times \$7 = \$98$	$\$448 + \$98 = \$546$	$\$700 - \$546 = \$154$
Professional workers, standard machines	$\$10 \times 70 = \$700$	$70/7 = 10$	$10 \times 8 \times \$6 = \$480$	$10 \times \$7 = \$70$	$\$480 + \$70 = \$550$	$\$700 - \$550 = \$150$
Skilled workers, computerized machines	$\$10 \times 70 = \$700$	$70/10 = 7$	$7 \times 8 \times \$4 = \$224$	$7 \times \$17 = \$119$	$\$224 + \$119 = \$343$	$\$700 - \$343 = \$357$
Professional workers, computerized machines	$\$10 \times 70 = \$700$	$70/14 = 5$	$5 \times 8 \times \$6 = \$240$	$5 \times \$17 = \$85$	$\$240 + \$85 = \$325$	$\$700 - \$325 = \$375$

This spreadsheet displays clearly that total profit is highest if the firm produces using *professional workers working with computerized machines*. When only standard machines were available, total profit was highest when the firm used skilled workers.

Returning to the questions asked, we have determined that:

1. The firm should switch to computerized machines.
2. The firm should switch to professional workers.

Is that the conclusion that you reached? Did you justify it in this way?

## What is Wrong with Some of the Answers Given

In making the decision to upgrade to the computerized machines and switch to professional workers, we had to begin with a clear understanding of what the company's bottom line is. We took it to be profit. As I have told you many times, and will say again now, when helping a company make decisions, you should assume its goal is to maximize profit unless someone in authority tells you otherwise (and even then, you should be sure that what you have been told actually is correct).

What we have done is used our spreadsheet to calculate directly how much profit the company would be expected to earn using each of the four production processes. When the decision rule “Maximize total profit” is deployed correctly, it always produces the right decisions. Another decision rule may produce a wrong decision. Let us look back at some of the answers that were given earlier in this chapter to see where they went wrong.

Response A was this: “The new computerized machines raise productivity by 100% but raise cost by 143%. Therefore, they should not be used. The factory should stick with the standard machines, which are best used with skilled workers.” Yet, we have figured that the computerized machines *should* be used despite the 100% increase in productivity being less than the 143% increase in cost. What’s going on here? We have to think carefully about what these percentages are: 100% is the increase in the productivity of each *machine*, while 143% is the increase in cost *per machine*. Neither of these is *total* productivity or *total* cost. Response A recognizes that machine cost goes up by 143% *per machine*, but it does not take account of the increase in labor productivity, which a) lowers labor requirements, which in turn b) lowers *labor* costs and c) lowers *machine* requirements, which ultimately d) lowers *machine* costs.

Response B stated: “Computerized machines enable the company to produce the same output with fewer workers. Workers cost more per day than machines do. So the company should adopt the new technology.” The good part of this answer is that it is looking at the dollar cost of machines compared with workers. The problems with this answer, though, are that it has not figured a) *how many fewer workers* would be needed and how expensive a worker is, and therefore how much labor costs would be reduced, relative to b) *how much more expensive* the new machines are than the old ones and how many of them are needed, and therefore how much machine costs would be increased.

Here is Response C: “The new machines cost workers jobs. They should not be used.” This response is missing the company’s bottom line. The company’s bottom line is presumably profits, not jobs. As another respondent put it to me: “This is a business, not a social welfare agency.”

Finally, as a last incorrect answer, we have Response D: “In order to compete in today’s global marketplace, companies need to use the best technologies available. This company should switch to computerized

sewing machines and switch to the best possible workers (professional) if they're not already using them." This response has the right answer – produce using computerized machines and professional workers – but the wrong rationale. The production process with the highest productivity is not necessarily the most profitable. Indeed, throughout the developing world, companies find it most profitable to use very labor-intensive technologies, combining *low*-productivity labor with very *small* amounts of capital. The “best” technology may not be best for the firm.

## Analyzing the Correct Decision

So let us look carefully at why it *is* beneficial for the company to adopt the computerized machines and switch to professional workers. First, let us suppose that they were to keep producing with skilled workers but equip them with computerized machines. The company would come out ahead. Why is this? Because for a relatively modest additional number of dollars spent on machines, they can save many more dollars in labor costs. The analysis, in terms of dollar *differences*, goes like this.

If they adopt the computerized machines, labor productivity doubles, so they can cut their labor requirements in half. Before, they were using 14 skilled workers; with the computerized machines, they need only seven. Switching to the computerized machines will cost an extra \$10 a day per machine (each computerized machine costs \$17, while the standard machines cost \$7). However, machine cost does *not* increase by 143%. It increases by just 21.4%:

Original machine cost:	$14 \times \$7 = \$98$
New machine cost:	$7 \times \$17 = \$119$
Machine cost increase:	$\$119 - \$98 = \$21$
Percentage increase:	$\$21/\$98 = 21.4\%$

What's relevant here, though, as always is *not* the percentage increase; it is the *dollar* increase. And assuming the firm sticks with skilled workers, what it gets if it spends \$21 more on machines is a *saving* of \$214 in labor costs:

Original labor cost:	$14 \times \$32 = \$448$
New labor cost:	$7 \times \$32 = \$214$
Labor cost decrease:	$\$448 - \$214 = \$214$



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If you are not sure of the answer, you can e-mail me and I will comment on it for you.

## In Summary

Many decisions are interdependent. This chapter has analyzed the interdependence between choices concerning people, process, and technology.

When making independent decisions, it will generally be that what is optimal in one dimension depends on what is optimal in all other dimensions. So what is optimal in the product market reflects what is optimal in capital and labor markets, what is optimal in the capital market reflects what is optimal in product and labor markets, and what is optimal in the labor market reflects what is optimal in product and capital markets.

When decisions are interdependent, it may be optimal to minimize *no single component* – in this case, it has proved optimal to minimize *neither* the cost of people *nor* the cost of machinery.

Shorthand decision rules are even more apt to lead to the wrong answer in the context of interdependent decisions than they are in the context of single decisions. Avoid them whenever possible.

## Notes

Examples of works talking about how essential it is for human resource managers to understand the business are Thomas A. Stewart, “Taking on the Last Bureaucracy,” *Fortune*, 15 January 1996 and Paul Kearns, *The Bottom Line HR Function* (London: Spiro Press, 2002).

Case Five and also Case One in Chapter Five are adapted from Edward P. Lazear, *Personnel Economics for Managers*. (New York: John Wiley and Sons, 1998), pp. 23–24.



To learn more about the highly labor-intensive technologies used in developing countries and the low earnings of literally hundreds of millions of workers around the world, see ILO, *Report of the Director-General: Reducing the Decent Work Deficit – A Global Challenge*. Report presented at the 89th Session of the International Labour Conference, Geneva, Switzerland, June, 2001 and Theodore H. Moran, *Beyond Sweatshops*. (Washington, DC: Brookings Institution, 2002).

## Chapter Nine

### Bottom Line Management: An Executive Summary

In this final part, I offer you an executive summary of the book's highlights. The central messages are highlighted in twenty takeaways.

Having read this book and become a Bottom Line Manager, you are prepared to apply your new knowledge. Remember that many of the people out there are not as knowledgeable about Bottom Line Management as you now are. They will need to have good decisions explained to them.

Communicating bottom line decisions is actually quite difficult. Here is a suggestion for you, one that I often follow myself. Think of your earlier self. Before you figured out the answer systematically, what would you have thought? In explaining something to somebody else, prepare an oral presentation or written memorandum explaining *to your earlier self* what the answer to the problem is. Equally importantly, explain to your earlier self why you *should not* have done one thing and why you *should* do another.

Believe me, it is not easy. But think of what doing it gets you: You show your awareness of the organization's bottom line, you demonstrate knowledge of the complexity of the problem at hand, you make good calculations, and you offer good explanations. Many managers cannot do it. Why should not you be the one to present this information and analysis? If you do, you really and truly will earn a seat at the table. Here, then, are the twenty takeaways:

**Bottom Line Manager Takeaway #1:** Bottom line management is about purposeful behavior. It deals with two major issues. The first is what to maximize. The second is how to maximize.

**Bottom Line Manager Takeaway #2:** Many organizations have a true bottom line. Many bottom lines consist of a single overarching purpose. Your job is to help the head of the organization do his or her job, which is to attain or improve upon that overarching purpose.

**Bottom Line Manager Takeaway #3:** Nearly always, the objective *is* to maximize the bottom line *total*. The objective is *not* to maximize the bottom line per unit of output, per employee, per dollar of capital invested, or anything else.

**Bottom Line Manager Takeaway #4:** Organizations' bottom lines can be classified into five types:

- Category 1: Profit-seeking companies
- Category 2: Single-purpose not-for-profit organizations
- Category 3: Dominant-objective organizations
- Category 4: Double (or multiple) bottom line organizations
- Category 5: "Can't tell" organizations.

Which type of organization is yours?

**Bottom Line Manager Takeaway #5:** If you work in a company, you should assume that its bottom line is profit and act accordingly. Profit *is not* revenue, productivity, cash flow, return on investment, fiscal responsibility, value, or anything else. Profit *is* revenue minus cost, now and in the future. If the bottom line is not profit, someone will almost surely tell you. You should then act according to *that* (assuming that the person who has told you is correct in articulating what the true bottom line is).

**Bottom Line Manager Takeaway #6:** In a well-managed organization, everybody is completely clear about what the organization's bottom line is, and they work at all times to try to achieve it. Once you know what your organization's bottom line is, manage yourself and those around you with that bottom line clearly in mind. If it is helpful, post the bottom line on your wall so that all who enter your workspace – most importantly, yourself – will know at all times what you are trying to achieve.

**Bottom Line Manager Takeaway #7:** Organizations often conceal their true bottom lines behind mission statements, some of which are truly motivational, while others are just plain mushy. Do not confuse the bottom line with the stated mission.

**Bottom Line Manager Takeaway #8:** When your organization's bottom line is not clear, there is a good chance that people in the organization will do what they *think* is good for the organization rather than what is *in fact* good for the organization.

**Bottom Line Manager Takeaway #9:** If you are working in an organization that lacks a clear bottom line, you and your people are probably working toward a presumed good. Understand that these presumed goods are probably not your organization's true bottom line. Be prepared to explain why a presumed good actually contributes to the true bottom line.

**Bottom Line Manager Takeaway #10:** Any organization's bottom line is being maximized subject to constraints, both those imposed internally by the organization and those imposed externally by the marketplace. Be aware of the limitations imposed by your organization's ethics, values, and culture and honor them. If you cannot honor them, find yourself another organization.

**Bottom Line Manager Takeaway #11:** When you make a bottom line decision, you maximize the bottom line and optimize everything else.

**Bottom Line Manager Takeaway #12:** When you make a bottom line decision, you do not maximize a ratio; you maximize a difference.

**Bottom Line Manager Takeaway #13:** When you make a bottom line decision, you do not maximize benefits or minimize costs. You maximize the difference between the two.

**Bottom Line Manager Takeaway #14:** When you make a bottom line decision, non-quantifiable benefits and costs are every bit as real as quantifiable ones, and so too are opportunity costs. Full account needs to be taken of all of these.

**Bottom Line Manager Takeaway #15:** Whenever benefits and costs are not constant, which is most of the time, you should ask, what are the *extra* benefits and what are the *extra* costs if I do more (or less) of something? Then utilize a good decision rule that takes adequate account of the margins, being especially careful to treat sunk costs as invariable.

**Bottom Line Manager Takeaway #16:** There are three good decision rules and many, many bad ones. Use one of the good ones.

**Bottom Line Manager Takeaway #17:** Returns on investments can be gauged using net present value or rate of return. The net present value rule *always* tells you what contributes the most to profit. The rate of

return rule *sometimes works and sometimes doesn't*. So try whenever possible to use the net present value rule.

**Bottom Line Manager Takeaway #18:** Product market, capital market, and labor market decisions are interdependent. To maximize the bottom line, you must consider all these markets together.

**Bottom Line Manager Takeaway #19:** The bottom line-maximizing solution is not necessarily one in which *any* component cost is minimized or any component benefit is maximized.

**Bottom Line Manager Takeaway #20:** Bottom line decision-making is primarily about thinking well *inside* the box. However, it's worth spending a bit of time thinking *outside* the box. You and your organization might be pleasantly surprised by what you come up with.

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I am confident that your new skills as a Bottom Line Manager will serve you and your organization well. I'd be delighted to hear how you have been helped. Best of luck.