In *High Output Management*, Andrew Grove, former CEO of Intel, shares what he's learned about management over his decades-long career. One of his main insights is that **manufacturing principles, which focus on output and productivity, are very applicable to yet rarely used in management.**

In this summary, you’ll learn:
- How to increase your managerial output
- How to increase your managerial productivity
- How to manage on a larger scale

**Managerial Output**

The output of some processes, such as manufacturing, is very obvious—at a factory that makes breakfasts, the output is breakfast. Your own output as a manager, however, is less concrete. It's *not* the output of your own individual work; it's the **output of all the teams you influence.** Their output is determined by the activities you do and how much of an effect—or leverage—these activities have.

Written mathematically:

Your managerial output = team outputs = output of your team + output of teams you influence = (managerial activity #1 × leverage of activity #1) + (managerial activity #2 × leverage of activity #2) + ...

Therefore, you can increase your managerial output by increasing the output of your team or the teams you influence, and/or increasing the value of your activities or your leverage.

**Increasing the Output of Teams**

To improve the output of your team, you need to choose the management style that will best foster each member's high performance. The deciding factor regarding which style to use is **task-relevant maturity (TRM)—how educated, experienced, and mentally ready an employee is to do a particular task in particular circumstances.**

- For example, one Intel sales manager was very successful in the field environment—he had high TRM—and Intel promoted him to a plant environment. However, his TRM in this new environment was low—he didn't know how to do any of the plant-related tasks.

Here's how you should manage employees with the following TRM levels:

**Low:** Provide structure and strong guidance on operational values. Give your team detailed directions about exactly how, when, and what needs to be done.

**Medium:** Provide some structure and guidance but expect the team to provide some of it themselves. Instead of managing prescriptively, exchange ideas and communicate.

**High:** Provide minimal structure—the team will provide the bulk of it themselves. Don't involve yourself with the team's work; just make sure objectives are clear. This style is advantageous because it allows the manager to delegate to their team members and be confident they will successfully complete the task.

Always monitor your team, no matter what the TRM level is. If the TRM changes, adjust your management style, up or down.

**Managerial Activities**

You can also increase your output by choosing to do valuable and/or high-leverage managerial activities:

1. **Information-gathering** involves collecting data about both the interior and exterior workings of your company (for instance, about customer complaints or team priorities). Do this by having conversations with people both inside and outside the company (competitors, customers, and so on), and by reading written information such as memos. Use both sources and check them against each other—verbal information is quicker to access but often incomplete, and written information is more thorough but slower to reach you.

2. **Information dissemination** involves supplying your organization and the people you influence with hard facts and also communicating goals, priorities, and preferred methods of doing things. Being informed allows people to do their jobs more
3. **Decision-making** involves either making a decision yourself or helping others make decisions by sharing your opinion, fostering debate, and approving or vetoing ideas. Keep in mind that whoever’s highest in the organizational chart isn’t necessarily the person who has the most hands-on knowledge about a given issue, so ideally choose the decision-maker from the lowest competent level.

4. **Nudging** is a softer version of decision-making (and a stronger version of information dissemination) in which you influence people but don’t command them.
   - For example, instead of telling someone what decision to make, you might offer an opinion in a meeting about it.

5. **Role modeling** is when you share your values and the kind of behavior you want to see in your subordinates by demonstrating them.

6. **Training** involves personally teaching your employees how to do the tasks they need to be able to perform. You should do this yourself rather than hiring external trainers because it’s an inherently high-leverage activity (you can affect many people at once), and because training works best when it’s tailored to company practices and the instructor is an authoritative role model.

7. **Motivating** involves creating an environment in which people’s need for status, or more ideally, self-actualization, is unmet (attempting to meet these kinds of needs provides longer-term motivation than meeting other kinds of needs, such as survival needs). If an employee is well-trained and capable of doing her job, the only reason she’s not performing is that she lacks motivation.
   - For example, make work mimic competitive sports because competition is highly motivating. Make up a game, rules, and a way to keep score. For instance, when Intel started keeping track of how many square feet each janitorial team cleaned, everyone’s performance rose because they started competing with each other to win (winning provided a status boost).

8. **Giving performance reviews** involves improving the performance of your subordinates (not just assessing it). To do this:
   - Determine your expectations.
   - Assess employees’ work to determine if they met expectations.
   - Distill your assessment into broad themes and suggestions for improvement.
   - Honestly...

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Here’s a preview of the rest of Shortform’s *High Output Management* summary:guide:

**High Output Management Summary**

**High Output Management Guide Part 1:**

**Managerial Output | Chapter 1: Managerial Activities**

In *High Output Management*, Andrew Grove, former CEO of Intel and 1997 *Time* Man of the Year, shares what he’s learned about management over his decades-long career. One of his main insights is that manufacturing principles—which have been honed over hundreds of years and focus on output and productivity—are very applicable to yet rarely used in management.

In this summary, you’ll learn:
How to increase your managerial output
How to increase your managerial productivity
How to manage on a larger scale

The book is relevant to all managers but may be particularly useful to middle managers because there are fewer resources available for them (there are many courses for front-line managers, and most business schools focus on training CEOs). Middle managers are all managers in between front-line managers and the people at the top of the organizational chart. The term also includes “know-how” managers who don’t formally have reports but influence the work of others by sharing their knowledge and skills.

(Shortform note: We've reorganized the book's material for concision and clarity.)

Publication History
The original edition of _High Output Management_

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High Output Management Summary High Output Management Guide
Chapter 2: Training and Motivation

In the last chapter, you learned about five of the 11 managerial activities. In this chapter, you'll learn about another two: training, and creating a motivational atmosphere.

There are only two reasons an employee doesn't do her job: Either she's untrained and therefore incapable, or she's not motivated. To figure out which it is, ask yourself if she could do the job if her life depended on it. If she couldn't, the problem is capability; if she could, the problem is motivation.

Activity #6: Training
Employees who aren't trained properly, no matter how good their intentions, can cause all sorts of problems for a company ranging from bad performance to excess costs to life-threatening situations.

You, as a manager, should train your subordinates (and possibly their subordinates) yourself rather than hiring outside training specialists because training works best when:

- It's consistent...

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High Output Management Summary High Output Management Guide
Chapter 3: Performance Reviewing

You've now learned about seven of the 11 important managerial activities. In this chapter, we'll look at the eighth: giving performance reviews.

Activity #8: Performance Reviewing
The primary goal of a performance review is to improve performance (not just assess it). Giving performance reviews is a high-leverage activity because it affects the recipient's performance for a long time—she often recalls the feedback. Performance reviews should be used in all organizations regardless of size because performance matters to every organization.

Managers don't naturally write good reviews for three reasons:
1. Delivering and receiving feedback can be unfamiliar and emotionally awkward. Most of us don't have much practice at performance review-like work because American society discourages conflict (which negative reviews can generate). Recall good reviews you've been given for guidance.

2. Assessing performance, especially of knowledge workers and managers (whose output depends on others' output), is challenging.

3. Performance is tied to compensation and rewards, two complicated and touchy subjects.

First, we'll look at a four-step process for how to handle the first...

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**Shortform Exercise: Assess Performance**

There's a step by step process to assessing performance.

Choose an employee to evaluate. Where could you find data on her performance? Consider looking at progress reports, meeting notes, and so on.

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Jerr McPhee

**High Output Management Summary High Output Management Guide Chapter 4: Hiring and Retaining**

In this chapter, we'll look at the next two managerial activities: hiring new employees and retaining existing employees who have decided to quit.

**Activity #9: Hiring**

First, **acknowledge that hiring is hard**. In activity #8, you learned how hard it is to assess the performance of people who already work closely with you even when you have output measures, specific examples of their work, and a confirmed environment. Evaluating the potential performance of a stranger is even more difficult. There's no foolproof way to hire—even if you follow all of Grove's recommendations below, you might still end up with a bad hire.

When hiring for a position, your goals should be to:

- Choose a top performer
- Teach her about yourself and the organization
- Figure out if you're a good fit
- Get her excited about the job

You have two resources with which to do this:

**Resource #1: The Interview**

The goal of interviewing is to predict how an applicant would do at your company based on her self-assessment of her own abilities. There's no way to avoid using self-assessment at the interview stage because you don't have access to objective
Chapter 5: Planning and Delegating

In this chapter, we'll first look at the 11th and final managerial activity, planning—coming up with actions that need to be done now to affect something in the future. Then, we'll look at delegating, which will help you make time to complete the 11 activities we've explored.

Activity #11: Planning

There are four steps to effective planning:

Step #1: Determine Demand and Conduct Difference Analysis

In management, demand comes from your environment, which is the other groups in your organization that closely interact with you.

To determine your demand, consider:

- What other people in the company currently expect from you. For example, manufacturing process engineer Cindy is in charge of the method for making microchips. Her environment consists of new methods and tools and people who work with her, such as development, production, and product engineers. All of these people want something different from Cindy—less required experimentation, more documentation, or finished microchips, respectively.
- Technological developments. (Shortform example: After the invention of email, people no longer needed physical memos.)
- The performance of the groups...

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Chapter 6: Leverage

In the previous chapters, we looked at the activity term of the managerial output equation. In this chapter, we'll look at the leverage term. Because an activity value is multiplied by leverage, if you increase the leverage of an activity, you can increase your output by a large factor.

- For example, in the first equation, imagine activity #1 had a value of 10, activity #2 had a value of 20, and the leverage of both was 1, so your output was 30 (10 × 1 + 20 × 1). If you can increase the leverage of activity #1 to 5, your output becomes 70 (10 × 5 + 20 × 1).

There are three techniques to increase output when it comes to leverage:

Technique #1: Adjust the Number of Subordinates Who Report to You

For maximum leverage as a supervisory manager, you should have 6-8 subordinates so you can give them each half a day of your time per week. (Half a day is ideal because it gives you enough time to effectively monitor but not enough time to micromanage.)

Though know-how managers don't have official subordinates, they should also aim to influence 6-8 people or 6-8 coordinating or planning groups.

If your organization's hierarchy doesn't provide you with the right...
Productivity | Chapter 7: Production, Assembly, and Testing

In the previous part, we learned an equation to describe output and how to influence the various factors in that equation to increase output. In this part, we'll look at managerial productivity and methods to improve it, thus increasing your effectiveness as a manager even further.

Like output, there's a formula for managerial productivity:

Managerial productivity = managerial output ÷ time = activity ÷ time required for the activity

You can improve your productivity using the strategies to improve output (because activity and leverage are part of both equations) and one additional strategy: Speed up how long it takes you to do your activities. Your own time is the only limited resource—unlike manpower or capital equipment, you can't get more of it no matter how much you might be willing to pay. As a result, Grove thinks that time management is the most important part of leadership.

To learn how to speed up productivity, we'll take inspiration from production manufacturing because it uses excellent time management techniques and they're all applicable to managing people (even though they're rarely used in this sphere, possibly because assessing the output of knowledge...)

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Other Productivity-Increasing Strategies

In the previous chapter, you learned how to increase your productivity by taking inspiration from manufacturing's production process. In this chapter, we'll look at some other manufacturing strategies that can aid productivity, as well as strategies for efficient and productive meetings.

Other Productive Manufacturing Strategies

Strategy #1: Use Indicators

Indicators, or measurements, tell manufacturers (or managers) about what's going in the production process (or administrative process) and provide information about output.
There is a myriad of possible indicators ranging from equipment downtime to profit to customer satisfaction. To determine what your indicators should be, ask yourself what information you want to know first-thing every day to head off potential problems. Effective indicators must:

- **Measure output rather than activity.** For example, it's more important to know how many orders a salesperson received than how many calls she made.
- **Be physical and countable.** For example, a janitorial indicator might be the number of square feet cleaned.
- **Tell you if you're going to meet your operational goals.** (Shortform example: The...

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**Shortform Exercise: Use Manufacturing Strategies**

Manufacturing strategies work well in a business environment too.

All tasks involve set-up time, so it's most efficient to do similar tasks all at once than to set-up multiple times. What activities do you do that you could batch?

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**High Output Management Summary**

High Output Management Guide Part 3: Running a Company | Chapter 9: How to Organize a Company

In the previous two parts, you learned how to improve your managerial output and productivity by adjusting your activities, leverage, and time management to improve the performance of your team. Now, we'll look at how to improve the performance and output of an entire organization by effectively structuring and wielding control.

As organizations grow, they have more to keep track of and they often benefit from restructuring. There are three organizational structures that you can use to structure your company:

**Structure #1: Functional**

In this centralized structure, **individual business units are only responsible for their unit-specific tasks.** Any function that they share with another unit (for example, human resources), is handled by a group that handles the shared function for all units.

There are advantages to this structure:

- **Economies of scale.** It's cheaper to share resources or buy in bulk. For example, Intel requires expensive computer equipment. It's more economical to buy one machine that all the business units share rather than each unit buying their own equipment and only using it occasionally.
- **Shared expertise.** Knowledge managers can...

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**High Output Management Summary**

High Output Management Guide Chapter 10: Control Methods

In the previous two chapters, you learned about the planning and organizational parts of running a company. In the final chapter of this part, you'll learn about control modes. **There's no universally optimal way to control people's behavior—the most effective approach always depends on the circumstances.**
There are three ways to control your behavior and the behavior of others. We encounter all three modes throughout our lives, including in the workplace:

**Method #1: Free-Market Forces**
In this mode, people's behavior is controlled by price and self-interest. Whoever is buying wants to pay the lowest price, and whoever is selling wants to sell at the highest price possible. None of the parties care about the other—they're concerned only with their own wants. Therefore, you should use this control method when the parties are mainly motivated by self-interest and the complexity, uncertainty, and ambiguity (CUA) of the circumstances are low (for example, what's bought and sold has a value in dollars).

- (Shortform example #1: Buying a car is managed by free-market forces—the salesperson wants to make as much money as possible, and the buyer wants to spend as...)

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**Shortform Exercise: Chose a Control Mode**
The appropriate behavioral control method depends on your circumstances.

Choose an employee you manage and reflect on one of her tasks. Is she motivated to complete this task by self-interest or group interest? How do you know?

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**High Output Management Summary High Output Management Guide Appendix: Points Exercise**
Throughout this summary, you've learned a variety of techniques that will help you become a high output manager. In this appendix, Grove provides a list of activities that are each worth a certain amount of points. Do enough of the activities to earn at least 100 points and you'll improve your managing game significantly.

**Production Exercises**
For 10 points:
- Figure out what parts of your work are most similar to the production and assembly parts of manufacturing.
- Figure out what the equivalents of manufacturing’s testing (receiving, in-process, and final inspections) are in your work. Determine if your tests should be monitoring or gate-like, and determine the ideal schedule for testing.
- Think of an in-progress project, determine the limiting step, and create a workflow to accommodate it.
- Think of six indicators, both quantitative and qualitative, that will predict output.

For 20 points:
- Start using your indicators and discuss them in staff meetings.
- Reflect on the most important strategy you’re executing right now. Consider the demand that prompted the strategy, your current status, and whether your strategy will change your future status...

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**Table of Contents**
• 1-Page Summary
• Part 1: Managerial Output | Chapter 1: Managerial Activities
• Chapter 2: Training and Motivation
• Chapter 3: Performance Reviewing
• Exercise: Assess Performance
• Chapter 4: Hiring and Retaining
• Chapter 5: Planning and Delegating
• Chapter 6: Leverage
• Part 2: Productivity | Chapter 7: Production, Assembly, and Testing
• Chapter 8: Other Productivity-Increasing Strategies
• Exercise: Use Manufacturing Strategies
• Part 3: Running a Company | Chapter 9: How to Organize a Company
• Chapter 10: Control Methods
• Exercise: Chose a Control Mode
• Appendix: Points Exercise