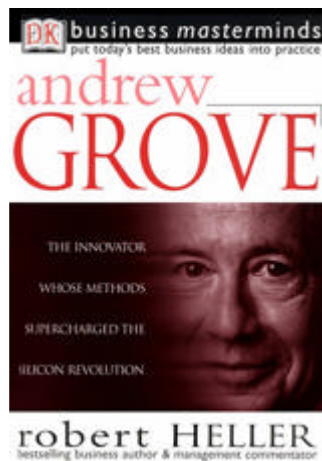


BusinessSummaries

WISDOM IN A NUTSHELL

PRESENTS
INSIDE THE GURU MIND SERIES

Andrew Grove
Silicon Valley Innovator



By
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Andrew Grove's story is the typical tale of the American dream. He was an immigrant from Hungary, fleeing the brutal Soviet repression of the Hungarian uprising and coming to America as a student. He worked his own way through as a waiter and went to the top of his class in college. He graduated from the University of Southern California at Berkely where he also took his Ph. D. in 1963.

Grove is that rare contemporary combination of an academic and business executive. He taught strategic management at Stanford University's business school while serving at Intel and as a lecturer at Berkely while working as a researcher at Fairchild Camera. Grove was hired at the age of 32 by Robert Noyce and Gordon Moore. Noyce was known as the father of the integrated circuit: and was general manager at Fairchild while Moore was head of the Research and Development. Grove was appointed Director of Operations in the company that would be known as Intel,

Intel was able to unleash an astonishing torrent of technological breakthroughs that spearheaded the progress of the growing microprocessor industry, such as the first memory chip, the first DRAM (dynamic random access memory), and the first microprocessor. Intel was able to achieve maximum profitable advantage of its revolutionary products, due largely to Grove's aggressive, combative management style, earning him the nickname, "the best manager in the world" by Fortune Magazine. In 1979, Grove became president of Intel and in 1987 its Chief Executive.

Grove enjoyed a lively writing career as well as an academic one. He wrote his first book, *Physics and Technology of Semiconductor Devices* in 1967. In his second book, *High Output Management* (1983), he likens the speed of getting breakfast in a hotel to the trade-offs between manpower, capacity and inventory. In his third book, *Only the Paranoid Survive*, Grove demonstrated the need for relentless vigilance and success as factors to survival. In his own personal life, Grove showed a shrewdness that earned him \$ 95 million in stock options in 1996, the same year he became chairman and CEO.

Grove's Three Ideas

In the 1980s and 1990s, Intel was faced with two developments that profoundly impacted its stature in the industry: Japanese competition and the digital revolution. Despite these twin challenges to the company, Grove insisted that the three basic ideas he espoused and advocated in his book, *High Output Management*, in 1983, remained valid well into the 1990s. These ideas were:

- The principles and discipline of manufacturing apply to other forms of business enterprise, including most emphatically the work of managers.
- The output of managers is the output of the organizational units under their supervision or influence.

- A team will perform well only if peak performance is obtained from its individual members.

Despite the fundamental simplicity and clarity of these ideas, Grove's success as manager lay in the energy with which he pursued these ideas. Managers at Intel at the middle level failed to grasp though that a key element in the achievement of the desired output is still effective teamwork.

Grove had to point out to them "Business ... is team activity. And always, it takes a team to win." But he carefully taught that the essential element is the commitment of the team to a single output, not merely a flurry of groups working together. He put this concept into practice by influencing groups even if they were not under his direct supervision and by supervising his direct subordinates.

What Managers Do

Grove observed the bulk of his activity at Intel in the course of a ten-hour day boiled down to gathering information, decision-making and "nudging" i.e. Grove's own term for pushing people towards a certain direction. He said, "I talk to people inside and outside the company, managers at other firms or financial analysts or members of the press. Customer complaints, both internal and external, are also a very important source of information."

Grove's point was that managers should devote their focus and energy to that which would most increase output or where "their leverage will be the greatest".

How do you get High Leverage?

For Grove, every activity of the manager should result in an increase in the organization's output. He suggests raising productivity by:

- Increasing the speed at which a manager performs
- Increasing the leverage associated with the various managerial activities
- Shifting the mix of a manager's activities from those with lower leverage to those with higher leverage.

High leverage can be achieved when: 1) many people are affected by one manager; 2) when somebody else's work or behavior is affected by a manager's brief and well-focused set of words or actions over a long period of time; 3) when the work of a large group is affected by an individual who supplies a unique, key piece of knowledge or information.

Grove's leverage concept echoes what seem to be commonly conceived ideas of managers' behavior. They should be fully prepared for plannings and meetings. They should undertake activities that "take only a short time but affect another's performance over a long time."

Included in this over-all concept of the good manager is the ability to choose only those activities that will provide leverage. Grove lists among these the ability to pay close attention to customer complaints. He explains, “Which one out of the ten or twenty complaints to dig into, analyze and follow up is where art comes into the work of a manager. The basis of that art is an intuition that behind this complaint and not the others lurk many deeper problems.”

Grove also teaches that delegators and delegates must operate with a common information base and ideas on how to solve problems. He does concede that this system does not often come about because people often do not wish to let go or delegate that which they continue to enjoy doing themselves.

Monitoring Delegation

Grove says it is not enough to delegate. It is also essential to monitor that delegation to ensure that it goes according to plan. For this reason it is better for a manager to delegate the familiar rather than the unfamiliar. He offers advice on how to monitor delegation:

- Monitor at the stage where least value has been added (reviewing rough drafts of reports instead of waiting for the final version)
- Study only some of the details at random.
- Monitor delegated decisions by concentrating on the process the delegatee has used in thinking them through.

Grove sets much store by time management, advocating such simple strategies as allotting a block of time to read several reports. He also urges managers to utilize the calendar as a productivity tool, passing out such advice as

- Filling the holes between time-critical events with necessary activities that are not time-critical.
- Saying no immediately to work that is beyond your capacity.

Grove reminds managers that time is extremely limited and finite. It is better to say “no” earlier than later. He warns them not to load their schedules beyond their optimum degree, thereby allowing for a “bit of looseness in your scheduling”.

Grove also advises managers to carry a raw material inventory of things they need to do but don't need to finish right away. He even works out a workable ratio of six to eight subordinates for each supervisory manager, even suggesting a time of half a day per week for each subordinate. However, if the manager's time combines both supervision and know-how, the number of subordinates should be reduced accordingly.

Meetings and Interruptions

Interruptions in the managers' time can be handled skillfully. Grove says managers should develop standard responses for standard interruptions, schedule open times when anyone may come in and handle issues in meetings and one-one discussions.

Grove's personal experience as a young executive learning the ropes in the microchip business was the basis for his use of one-on-one meetings. In these meetings, he would ask subordinates to fill in the gaps in his knowledge about the product and process. These one-on-one meetings remain his favorite method for gathering information and for managing his people.

Grove puts a premium on meetings, which allow for peer interaction, exchange of information and views and for decision-making. He says these meetings can be planned around an agenda but may also be "open sessions". He stresses that the supervisor is "a leader, observer, expediter, questioner, decision-maker". He adds, "A supervisor should never use staff meetings to pontificate, which is the surest way to undermine free discussion and hence the meeting's basic purpose."

Grove lists a third category of meeting, the operation review, in which managers describe their work to other managers who are not their immediate supervisors and to peers in other parts of the company. These meetings are opportunities for teaching and learning.

Grove lists three criteria for determining if a meeting should be called. The manager should ask the following questions:

- What am I trying to accomplish?
- Is a meeting necessary?
- Or desirable?
- Or justifiable?

The ad-hoc meeting, Grove thinks, need not be called if all goes smoothly. However, he concedes that 20% of all problems and issues must be dealt within such meetings. However, he warns that it is a sign of malorganization when more than 25% of a manager's time is spent in these meetings.

Three Stages

Grove thinks arriving at a decision involves a three-step process involving free discussion, free decision and full commitment. No opinions are withheld in the free discussion. Clear decision involves clarity of expression. And full commitment involves the group's full support.

Although ideal in an organization, this process did not always work in practice. Views may not be openly expressed. Decisions may not be clearly arrived at.

And managers themselves may find it difficult to support a decision with which they do not agree. At Intel, Grove encouraged the free discussion in which all involved expressed their opinions as equals. He in fact also encouraged outward signs of such equality in order to promote the free flow of ideas.

Peer Group Syndrome

At Intel, Grove noticed that managers needed the leadership of a senior manager. Otherwise, they tended towards group-think. He wrote that the quality and timeliness of a decision could be better if six important questions could be answered:

- What decision needs to be made?
- When does it have to be made?
- Who will decide?
- Who will need to be consulted before making the decision?
- Who will ratify or veto the decision?
- Who will need to be informed of the decision?

For Grove, it is essential that these six questions be answered before the decision-making process. The result of this process is the planning output. He compares it to factory planning:

“Step 1 is to establish a projected need or demand: What will the environment demand from you or your business or organization? Step 2 is to establish your present status. What are you producing now? What will you be producing as your projects in the pipeline are completed? Put another way, where will your business be if you do nothing different from what you are now doing? Step 3 is to compare and reconcile steps 1 and 2. Namely, what more (or less) do you need to do to produce what your environment will demand?”

Another question Grove thinks planners should ask themselves is “What do I have to do today to solve or better avoid tomorrow’s problem?” He firmly believes that planners cannot disassociate themselves from the output, which he thinks, is all that matters.

Ideas Into Action
Concentrate on the output of managers, not on their activity.
Move your activity to the place where your leverage is the greatest.
Pay close attention to customer complaints.
Monitor at the stage where least value has already been added.
Learn to say no to work that is beyond your capacity to handle.
Schedule one-on-one meetings with your staff.
Ask what you must do today to solve or avoid tomorrow’s problem

Team Action

Grove wrote, "Management is a game in which we have to fashion a team of teams." By this he meant not only those in the top echelon of management but the middle managers as well. He sees that managers must work in linkages with other managers and units in order to operate the entire organization.

Organizational Extremes

Grove believes organizations run in two extreme forms, they are either mission-oriented or totally functional, with function referring to corporate-wide activities such as marketing or production. Mission-oriented organizations tend to be decentralized with the individual business units going on its way without much interaction with other units. Conglomerates are examples of this organization.

Functional organizations, on the other hand, are centralized. For example, Merchandising Department handles the merchandising in every location. The Human Resources Department looks after the personnel aspects in every branch. Grove recognizes the tendency of many organizations towards the functional organization in their "legitimate desire to take advantage of the obvious economies of scale and to increase the leverage of the expertise." He also perceives the need for decentralization, which imbues the individual branch manager with the flexibility to respond to local conditions.

The Hybrid Compromise

For Grove, Intel is an excellent example of the "hybrid organization", blending both mission-oriented and functional groups. With functional organizations, the work of specialists can be applied to the rest of the company, imparting them with greater leverage. In Grove's view, functional groups allow the units to concentrate on their fields of expertise without worrying about other aspects of the organization. The disadvantage with functional groups is the distribution of shared resources such as production capacity or computer time.

The mission-oriented organization's main advantage is that it allows individual units to "stay in touch with the needs of their business or product areas and initiate changes rapidly when those need change."

Grove's Law

All large organizations with a common business purpose end up in a hybrid organization form (Grove's Law). Middle managers, in Grove's view, perform a crucial task in helping to allocate a company's resources and resolve conflicts over that allocation. Only middle managers have the sufficient numbers to accomplish this objective.

Grove describes a practice, which he called "dual reporting", which in his observation was the only way through which a hybrid organization could be managed. Under dual reporting, an employee has two bosses: one in the line

role and another in a functional capacity. Hybrid organizations are best organized and coordinated through the dual reporting principle.

Most people, says Grove, not only accomplish given tasks, they also plan at the same time. This is what he calls the “two-plane” concept. Although there may be a clear hierarchy within the organization, on another plane employees operate within another structure depending on the task that needs to be accomplished.

Multi-Plane Management

Grove cites his own case as an argument for multi-plane management. Although then president of Intel, he served under the strategic planning group chairman because he belonged to that group. However, eventually this chairman also ultimately reported to Grove himself. Grove pointed out that this multi-plane management worked since he did not always have the time or the best qualifications to lead the group.

Although the flexible subordinate-leading-superior set-up is put up for a limited period of time and for specific purposes, its use is growing fast. In hybrid organizations, these transitory teams make the hybrid organization work.

Three means can be used to control the behavior of a team: free market forces, cultural values and contractual obligations.

Developing the Culture

Grove sees management as performing a cultural role, which is “to develop and nurture the common set of values, objectives and methods essential for the existence of trust” by articulation and through example. A group culture may reduce the “CUA” factor, the degree of Complexity, Uncertainty and Ambiguity. But Grove also recognizes that a team’s performance depends ultimately on the individuals in it. Teams work because their individual members do their best. It is therefore essential that managers draw the employees’ best performance.

Maslow’s theory of self-actualization is the basis for Grove’s ideas as motivator. Maslow states that people’s highest need is for self-actualization. People are motivated to do their best, driving them to higher levels of performance.

Fear of Failure

Grove tackles the fear of failure, recognizing that it can either egg a person on or simply make him conservative. Like a sports coach, Grove says, the ideal manager enjoys the players’ trust and yet is critical enough of them in order to elicit from them their best performances.

Grove considers it essential that the managers adopt task-relevant maturity (TRM), which he describes as “the degree of their achievement, orientation and readiness to take responsibility as well as their education, training and experience.”

In a situation where TRM is low, a subordinate is told only what, when and how. When the TRM is medium, there is a two-way support and “mutual reasoning”. But when the TRM is high, the manager cuts back on involvement and is limited to the establishment of objectives and monitoring. But whatever the TRM level, Grove warns, “the responsibility for teaching the subordinate must be assumed by his supervisor, and not paid for by the customers of his organization.”

Performance Review

The performance review, in Grove’s opinion, is the single most important form of task-relevant feedback that supervisors can provide. It not only addresses the employee’s performance but also his benefits, salaries, etc. But its main purpose remains the improvement of the subordinate’s performance. He encourages managers to articulate or define what their expectations are of their subordinates. Only then can subordinates be sufficiently motivated to aim for higher performance. Regardless of a subordinate’s performance, the manager should always show that there is room for improvement and that ways can always be found to do things better in the future.

Level, Listen and Leave

A review ‘s effectiveness depends on three Ls, according to Grove. Level, Listen and Leave yourself out. The manager must be totally frank with the subordinate who listens. At this point, the manager exits from the center stage and lets the subordinate perform. The manager also needs to present facts and examples in order to force a subordinate to confront any problems in his performance.

Action

In Grove’s opinion, the excellent performers are responsible for a disproportionately large share of the work in the organization. It should therefore be considered a high-leverage activity to improve their output.

Two methods that ensure a high input from subordinates are the selection process for screening employees and the reward system. Grove is of the opinion that the pay becomes a self-actualizing motivation for the subordinate if what matters is its value in relation to others rather than its actual amount. It is imperative then that managers provide honest performance ratings of their subordinates as well as honest, merit-based compensation.

Managers also play a key high-leverage role as teachers. However, training must be continuous and must be carried out by a believable figure of authority.

Ideas Into Action
Build an organization that is a team of teams.
Leave the effective allocation of resources to middle managers.
Be prepared to serve more than one master – even if that includes a subordinate.
However high the level of performance, expect it to rise higher still.

Foster group culture to reduce the “CUA factor” – the degree of complexity, uncertainty and ambiguity.
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To determine competence, ask “If this person’s life depended on this work, could they do it?”

To get what you want from subordinates, you must first define your requirement?

Putting Paranoia into Practice

Tim Jackson, a reputable journalist, wrote *Inside Intel* in 1997. He described the ways in which Intel would take custody of the documents in the offices of their own executives to check for indiscreet language. He also revealed the company’s excessive concern for keeping files confidential. But Jackson admitted that this corporate paranoia eventually enabled Intel to seize its leadership of the industry. This feature flows largely from Grove’s own personal style of management.

Grove understood that it is necessary to devolve the decision-making process down to the level of people who exercise great discretion as well as freedom of action. This results in a paradoxical combination of intense control and immense delegation. Grove practiced this paradox in his management style when he became CEO in 1987, having only a few people report directly to him while delegating authority to four senior vice presidents in charge of microcomponents, microcomponent operations, systems and manufacturing.

Freedom and Control

At Intel, managers enjoyed considerable independence in handling most issues. Ad hoc groups were created when issues affected the entire company. But all levels adhered to a tough budgeting regime. All employees complied with the Intel Management by Objectives System. Grove was unremitting in his pursuit of better results, improved performance, elimination of faults and proper documentation.

Ranking and Rating

Jackson described in his book the rigorous ranking and rating system applied at Intel. The system had four ratings (“superior”, “exceeds expectations”, “meets expectations” or “does not meet expectations”). Later these ratings were reduced to “outstanding”, “successful”, and “improvement required”. The “improvement required” rating also required a 60- or 90-day programme of “corrective action”. If improvements did not take place following this programme, the subordinate was dismissed.

In the ranking system, employees were compared to each other. It was a method of determining which employees could be dispensed with. Under this system, previous achievements did not count, only one’s latest performance. However, not all poorly performing employees were dismissed. Managers could be demoted but they could at least redeem themselves and return to their former

ranking. Grove however was also known to penalize the entire organization, once ordering all employees to work an additional two hours per day.

Strict Hours

Grove was strict about time, ordering employees to sign a sheet if they arrived after 8:00 a.m. His concern for the quantity of time spent at work reflected his own belief that left to their devices, people tended to perform badly.

How Intel was saved by the Microchip

Intel was originally supposed to produce logic chips for the Japanese company, Nippon Calculating Machine Corporation, for a desktop calculator. An engineer, Ted Hoff, hit upon the idea of placing all the circuitry into one chip that could be programmed like a computer and placed inside any device, not just a calculator.

After the device was introduced, the calculator market slowed down. The Japanese asked for a price cut. Chairman Bob Noyce conceded that they could have a \$ 60,000 refund if they surrendered exclusive rights to the chip. The Japanese agreed as long as Intel did not sell the chip to other calculator makers. The microprocessor became Intel's property completely.

Belligerence

Grove was notorious at Intel for his aggressive, insulting communication style. He seemed to relish staging explosive performances during meetings. He showed a strong disapproval for untidiness. He thrived in confrontation. This approach was institutionalized at Intel in a training module called "constructive confrontation". It is intended to bring issues out for discussion and debate but without arousing personal animosities. Grove's constructive confrontation enabled the company to leave no option or choice unexplored in the discussion of important issues.

Confrontation was also used against other companies. When Intel won the contract for IBM PC, it had to use AMD as a second source for the supplies of Intel designs. Later, Intel dumped AMD and produced the 386 chips on its own.

Using the Confrontation Against Competitors

Grove employed his confrontation strategy in his ferocious drive for Intel to keep as much of the market to itself. Grove employed this approach in his sales campaign against Motorola in 1978 although Motorola had the better product. In 1998, Grove managed to stave off the threats from Sun Microsystems and Hewlett Packard as well as Japanese competitors when Intel launched the 486 and its Pentium successor. Grove frankly told *Business Week* that he hoped that Intel's technology would continue to be "the heart, spine and framework of the entire computer industry." Grove's paranoia was the factor that gave Intel the edge in its technology as well as in its management policy.

Profits for Everyone

Grove's idea of a business model involving sales volume, prices and gross margins enabled Intel to generate higher profits by offering its 486 chips at low prices. In 1999, Intel was able to give its investors 44 per cent annual growth in total return. In this achievement only by 13 out of America's best companies did better. Intel posted an astonishing 32.2 per cent growth in earnings per share per annum, which meant that it doubled every two years.

Intel shared this phenomenal growth with its employees, who were then highly trained technocrats who could easily find other jobs elsewhere. The employees were offered stock options. Shares rose from \$ 23.50 in 1971 to \$ 4,385 in 1993. This enticing offer to grow rich with the company has kept its most talented staff among its ranks.

Ideas Into Action
Devolve decisions to people who get great discretion and freedom of action.
Be relentless in pursuing better results, finding fault and demanding improvements.
Avoid anything that makes it harder for innovators to innovate.
Operate "loose-tight" controls to combine freedom with discipline.
Debate and resolve issues pragmatically, without arousing personal animosities.
Devote as much time and energy as necessary to thrash out a consensus.
Achieve the optimum combination of prices and volume to maximize profits.

Grove showed that Intel not only needed to establish leadership it also had to protect that position against all possible factors that might threaten it from both within and without. Grove had a stupendous capacity for worrying. He worried about products, production, competitors and myriad other concerns. But at the top of the heap of worries was what he calls "strategic inflection points", a time in the life of a business when its fundamentals are about to change. Grove spoke of how technological change could bring about such a fundamental change in such an insidious manner that the change could take place without being foreseen. He firmly believed that one could prepare for them. He points to the six forces impacting on competitive strategy that could increase tenfold ("10X"):

1. Power, vigour and competence of existing competitors
2. Power, vigour and competence of "complementors" (other firms in the same business system, such as software suppliers vis-à-vis hardware firms)
3. Power, vigour and competence of customers
4. Power, vigour and competence of suppliers
5. Possibility that what your business is doing can be done in a different way
6. Power vigour and competence of potential competitors

Although these forces may reveal how the 10X phenomena may start, they cannot help predict when an inflection point crops up, i.e. when conditions

change so drastically that a business either declines or ascends to new heights. This change can creep in so stealthily that clues seem difficult to pick up. Grove points to two signs. There will be a sense of change in customer attitudes, competition from disregarded sources or as he says it, “trade shows seem weird”. Second, he says, there is a “growing dissonance between what your company thinks it is doing and what is actually happening inside the bowels of the organization.”

How Inflection Points Affect Management

The fundamental change can also be reflected in a more divisive way within the organization itself. Grove says this indication is the widespread difference of opinion within the company. This divergence will result in increasing difficulty in everything that senior management is supposed to do, whether it is defining direction or motivating employees.

There is no “right moment” to undertake changes. Grove advises that these changes be undertaken while the company is still healthy and still in a position to save as much of its strength as possible. In navigating in this treacherous environment, Grove thinks the best guides are instinct and personal judgment. It would also do well to study the history of such changes. As an example, Grove draws on the computing industry’s history. IBM led the way with its chips, computers and software. But it developed in a vertical direction. With the development of the microcompressor, which became the core of the personal computer, the entire structure changed and became horizontal.

Missing the Point

Ironically, even in the computing industry, all the industry players including IBM, missed the inflection point. IBM’s long-running success with the PC had lulled it into an established approach that made it unsuited for horizontal competition.

Grove teaches two important lessons drawn from the computing industry:

1. When a strategic inflection point sweeps through an industry, the more successful a player is, the more threatened it is by the change and the more reluctant to adapt.
2. The cost of entry to an industry against well-entrenched competitors can be very high but may become trivially small when the structure breaks.

Grove listed three rules for competing in horizontal industries, which rely on mass production and mass marketing:

1. Do not differentiate without a difference; do not introduce improvements that provide an advantage over the competition but give no advantage to the customer.

2. Act first when a technology break or any other fundamental change occurs. The first mover – and only the first mover – has the true opportunity to gain time over its competitors.
3. Price for what the traffic will bear, then “work like the devil on your costs” to make money at that level.

Grove also foresaw a trend towards horizontal growth. He said, “As an industry becomes more competitive, companies are forced to retreat to their strongholds and specialize in order to become world-class.”

The Horizontal Trend

Grove points out that horizontal companies, unlike vertical companies, which must be the best in everything, need be the best in only one field. He foresaw more and more companies taking this horizontal pathway.

Grove’s view was borne out by historical examples. The 10X forces that he listed led to the introduction of the superstores and the PC and the coming of sound to cinema. The key to a company’s survival and strength in the face of such revolutionary and threatening changes lay in its adaptability.

Grove himself and his CEO, Gordon Moore, were challenged in 1984-85 in the crisis over the memory chips. Intel lost the memory chip market to the Japanese and for a year wasted time and resources casting around for a means to survive. In a bold, desperate strategy, Grove and Moore took the agonizing decision to abandon the memory chip, the very product they had created, and threw all their energies behind the 386 microprocessor, the new product that went on to earn Intel \$ 29 billion in sales.

In this grim chapter of Intel’s history, Grove and Moore decided to adopt “an outsider’s intellectual objectivity”. In the face of such profound changes in the industry, managers who have no emotional stake in a decision are more impartial in rendering the necessary decisions. Managers must resist the confusion and frustration they feel when confronted with the new realities. Grove offers some tips for them:

- The strategic inflection point is not really a point, but a long tortuous struggle.
- The points, however, painful “provide an opportunity to break out of a plateau and catapult to a higher level of achievement”.
- Indecision magnifies the threat.
- What is happening lower down the organization, without direction, from the top, can be crucial.

Grove discovered too that the middle managers had been making the crucial decision that eventually floated up to top management. They had begun to favor microprocessors over memory chips. Grove observed that this facilitated the

decision to abandon the memory business. Middle management's decision had made the change less drastic for Intel than it could have been.

Bottom-Up Strategy

Grove found out that subordinates at the bottom level were more sensitive to customer demands. He realized that there was a need to involve middle management in strategy and to heed its front-line information.

Grove points out that Intel had been confused before by developments. He suggested three ways of distinguishing the "signal" from the "noise".

- Is your key competitor about to change strategy? If people name a key competitor who previously was not key, that may signal a strategic inflection point.
- Is your key "complementor" about to change? If the company that mattered most to the business seems less important, that again may signal fundamental change,
- Do the people around you seem to be "losing it"? Keep a lookout for evidence that very competent people (including yourself) "have suddenly got decoupled from what really matters".

Grove also refers to the "Cassandras" among middle managers. Cassandra was the prophetess who warned the Trojans of their defeat, She was ignored but her prophecies came true. Grove feels that these Cassandras should be taken seriously because they are in a position to feel the danger signs of change. He advises higher managers to listen to them. He also advises listening to information at the periphery and with one's own business. Such a practice will enable one to have "a feel for those whose views are apt to contain gems of information and a sense of who will clutter you with noise."

Appreciating "10X" Forces

Grove admits that the 10X forces may fail to impress in the beginning. He lists among them the Internet, the Apple Macintosh, which had then seemed like a toy and the personal digital assistant (PDA). He urges imagining what a first effort would be like if improved by 10X. If the improvement could make this first effort exciting or threatening then this might just be the strategic inflection point.

Debate as a Management Technique

Grove thinks debate can be used as an important management technique and that it should be a comprehensive one, including the participation of different levels of management. Customers too and business could also participate. Grove's advice to all debaters is:

- Senior managers: Take your time until people begin to repeat themselves and your own condition builds up.

- Middle Managers: Give your most considered opinion clearly and forcefully, and ensure that you are listened to and understood.
- Specialists: Be fully-fledged participants, contributing hands-on experience what you may lack in perspective and breadth.
- All participants: Accept that unanimity is neither the objective nor the likely outcome of the debate, and that the purpose is to enable senior management to come to a more informed and, consequently, correct decision.

Grove cautions that managers should know when to rely on data and when to use their experience and judgment in determining emerging trends. Continuing the culture of paranoia, he says, "Fear plays a major role in creating and maintaining such passion." These four fears he describes are:

- Fear of competition
- Fear of bankruptcy
- Fear of being wrong
- Fear of losing

It is this fear, which enables him to keep an ear attuned to the customers, the competition and the developments in the market. He refers to "a good dose of fear" to help a company hang on to its success.

Living the Culture

Grove differentiates between this kind of fear and the kind that stifles a manager's duty to express his real thoughts. The culture at Intel, he adds, rewards risk-taking, and has enabled Intel to survive strategic inflection points.

Ideas Into Action
Do not hide from major change: focus on getting ready for it.
Embrace change while the existing business is still generating cash and profits.
Regard strategic crisis, not only as a threat, but as powerful opportunity.
Confront major issues by adopting an outsider's intellectual objectivity.
Involve middle management in strategy and closely observe its practical decisions.
Listen to the Cassandras within the organization and take their bad news seriously.
Do not rely on past data when deciding on the shape of the future.

Coping with Change

Grove says that for many managers who have invested so much of themselves in the company, change can be a bereavement process. When an inflection point takes place, there are three major reactions:

- Denial
- Escape or diversion

- Acceptance and pertinent action

Grove says managers should face reality and make front-line priorities and take action. He says this even though he admits that during Intel's memory crisis in 1984-85, he devoted time to writing a book rather than face the storm clouds of that crisis. He points out however that even though good leaders may be trapped in inaction, they should "eventually emerge to the acceptance and action phases". He cites the practice of replacing executives with other people without the same emotional investment in their past and who might be better managers under the circumstances.

Grove warns that executives may fall prey to the "inertia of success". They continue to practice the same strategic and tactical moves that brought them their success in the first place. In clinging to their past skills and success, they become unable to recognize that these same skills may no longer apply to future situations.

He also warns that dissonance can afflict a company, a situation in which there is a discrepancy between its actions and statements. He says employees especially those on the frontline and middle managers may be saying and doing one thing while high-level executives are saying the opposite thing. This dissonance, he says, is a sure sign of a change-taking place without the organization responding to it.

Grove's advice at this point when confusion and uncertainty threaten the organization, is to institute "experimentation":

- Loosen up the organization: relax controls.
- Allow different techniques, products, sales channels and customers to be tried.
- Tolerate the new and different.
- Adopt a new maxim: "Let chaos reign!"

The culture of experimentation is difficult to institute in a fundamentally conservative company, Grove admits. Intel, however, was in the business of experimenting particularly with microprocessors. Grove points out " We spent more time on developing and marketing them than they generated in revenue. But we kept at it ... and when our circumstances changed in a big way, we had a more appealing business to focus our resources on."

Even for Intel, experimentation was uncomfortable. Grove thinks change should be done while the existing business is strong. He says companies should avoid crises by recognizing the signs of change and acting promptly. They should try to overcome the "inertia of success" that inhibits such actions. He lists several excuses managers come up with to avoid taking such actions:

- “We shouldn’t tinker with the golden goose.”
- “How could we possibly take our best people away from the business that pays all our salaries and put them on some speculative new project?”
- “The organization can take just so much change; it’s not ready for more.”

Grove himself confesses, “I have never made a tough change, whether it involved resource shifts or personnel moves, that I haven’t wished I had made a year or so earlier.”

The difficulty is that managers ought to know what they should do otherwise they fall into the trap of “too little, too late”. The company is then in danger of entering the “valley of death” where it must struggle or die. Managers can haul the company through this stage by forming an image of the company that they can communicate to their staff. For Intel in 1986, it had to decide whether it would be a semiconductor company, a memory company or a microprocessor company. This image is the “vision” that the company must have for itself.

Describing the company

Grove says it is important to decide what the company should not be. But, on the other hand, it is necessary to make that simple description “so lofty as to be meaningless”. Being able to come up with a short definition of the company is an act of leadership. Grove says managers should not be hesitant or change course although this needs a great idea of courage and conviction.

Changing the People

Learning is one of the essential duties of people in a changing company. Gordon Moore realized that if Intel would remain in the microprocessor company, half of their executive staff would need to become software types in five years. Grove himself set out to learn the software business from the heads of software companies and asked them to teach him. However, Grove was helped by Intel’s culture of learning. He teaches that companies must have the self-discipline to learn and allocate time for this but executives must lead the way in preparing for changes themselves. Grove thinks that the skills and expertise of a company’s best people are as valuable as its material resources. Whenever these skills and expertise are being shifted to another challenge, they are redeploying them to accomplish a transformation.

Strategic Action

Grove calls this allocation of resources to achieve strategic ends “strategic action” and that this action is far more influential than planning. He emphasizes that strategic actions will reinforce each other if they are consistent with the image of what the company should look like. Timing however is also important in the use of strategic actions. Grove warns, “Your tendency will almost always be to wait long.”

He warns that moving too late may lead to an irreversible decline. He thinks moving too early has the advantage of the company still being in good health thereby allowing one the ability to still alter one's course. He points to the advantage of being one of the early movers. He says, "The early movers are the only companies that have the potential to affect the structure of the industry." Grove says with a single aim it is necessary to focus all your energies on this one aim and to resist the temptation of having other alternate directions.

Direction

Grove teaches that at this point it is necessary to have a strong clear direction to prevent demoralization and confusion among the staff. They need to know where the company is going. To energize your staff, he adds, you must take five steps:

- Stop experimenting
- Issue totally clear "marching orders"
- Commit your organization's resources
- Commit your own resources
- Be a role-model for change

Grove's ideal is an organization that can handle the debate phase (where chaos reigns) and a determined march forward (where chaos is reined in). The end result is a company where vigorous debate is encouraged to explore all issues while being able to make and accept clear decisions. It will also bring about a company where both bottom-up and top-down management are equally strong.

Ideas Into Action
If you get caught in a self-created trap, acknowledge it and strive to escape.
Start experiments with new methods or new business ideas as often as possible.
Make tough changes, involving people or resources, earlier rather than later.
Define what the company means in a short, incisive and convincing statement.
Set a firm and decisive course, even if the results will take time to appear.
Once you have decided to act, make all necessary resources fully available.
Concentrate your energies on a single aim, especially when facing aggressive competition.