The Work of the CEO: The Link Between The Inside And Outside

CEOs have ultimate responsibility for the work of everybody else in their institution.

But they also have work of their own—and the study of management has so far paid little attention to it.

It is the same work regardless of whether the organization is a business enterprise, a nonprofit, a church, a school or university, or a government agency, or whether it is large or small, worldwide or purely local.

And it is work only CEOs can do, but also work that CEOs must do. ¶¶

In any organization, regardless of its mission, the CEO is the link between the inside, that is, the organization, and the outside, that is, society, the economy, technology, markets, customers, the media, public opinion.

Inside, there are only costs.

Results are only on the outside.

Indeed, the modern organization (beginning with the Jesuit Order in 1536) was expressly created to have results on the outside, that is, to make a difference in its society or its
The Tasks Of The CEO

To define the meaningful outside of the organization.

To define the meaningful outside of the organization is the CEO’s first task. The definition is anything but easy, let alone obvious. For a particular bank, for instance, is the meaningful outside the local market for commercial loans? Is it the national market for mutual funds? Or is it major industrial companies and their short-term credit needs? All three of these “outsides” deal with money and credit. And one cannot tell from the bank’s published accounts, for example, its balance sheet, on which of these “outsides” it concentrates.

Each of them is a different business and requires a different organization, different people, different competencies, and different definitions of results. Even the very biggest bank is unlikely to be a leader in all of these “outsides.” And which of these to concentrate on is a highly risky decision and one very hard to change or reverse. Only the CEO can make it. But also the CEO must make it. It is the first task of the CEO.

To work on getting information from the ‘outside’ into usable form.

The second specific task of the CEO is to think through what information regarding the outside is meaningful and needed for the organization and then to work on getting it into usable form. Organized information has grown tremendously in the last hundred years. But the growth has been mainly in “inside” information, for example, accounting. The computer has further accentuated this inside focus. As regards the outside, there has been an enormous growth in data—beginning with Herbert Hoover in the 1920s (to whose work as secretary of commerce we largely owe the data on GNP, on productivity, and on standard of living).

But few CEOs, whether in business, in nonprofits, or in government agencies, have yet organized these data into systematic information for their own work (on the methodology for doing this, see chapter 33).

To give one example, every major maker of branded consumer goods knows that few things are as important as the values and the behavior of that great majority of consumers who are not buyers of the company’s products, and especially information on major changes in the noncustomers’ values and habits. The data are largely available. But so far few consumer-goods manufacturers have converted them into organized
information on which to base their decisions (one well-publicized exception is the Shell Petroleum group of companies).

Again it is primarily the CEO who needs this information and whose work it is to organize getting it.

Thinking through what is meaningful information on the outside is also a high-risk decision.

That U.S. business executives, for instance in the 1950s and 1960s, decided (in many cases quite deliberately) that what was going on in Japan was not particularly meaningful information for them and their companies explains in large part why the Japanese export push caught them so unawares and unprepared.

It is information about the outside that needs the most work.

For far too many institutions—and not only businesses—define “outside” in large part as their direct competitors.

Toy makers tend to define the “outside” as their toy-maker competitors; a hospital, as the other two competing hospitals in the same suburb; and so on.

But the most meaningful competitors for the toy maker are not other toy makers but other claimants on potential customers’ disposable dollars.

The most meaningful information about the toy maker’s outside is therefore what value the toy presents to the potential buyer.

(Customer research, in other words, may be more important than market research—but also far more difficult.)

To decide what results are meaningful for the institution.

The definition of the institution’s meaningful outside and of the information the institution needs makes it possible to answer the key questions, “What is our business?”

What should it be?

What should it not be?”

The answers to these questions establish the boundaries within which an institution operates.

And they are the foundation for the specific work of the CEO.

Particularly, they enable the CEO to decide what results are meaningful for the institution.

Defining results is important, critical, and risky above all for institutions that lack the discipline of the “bottom line,” that is, for nonbusinesses.

And nonbusinesses constitute a significant number of organizations in every developed society.

But even for businesses, the bottom line is not by itself adequate as a definition of results—the same bottom line may have very differing meanings according to how an institution defines “meaningful results.”

To decide what results a given bottom line represents is a major job of the executive.

It is not based on “facts”—there are no facts about the future.

It is not made well by intuition.

It is a judgment.
Again, only the CEO can make this judgment, but also the CEO must make it. ¶¶¶

This definition of desirable results invariably requires a “short-term–long-term” judgment.

It is so risky that all premodern economies tried to avoid making it.

In fact, the one major institutional innovation of the modern economy was to create in large part the systematic risk-taker and risk-sharer, the public corporation, thereby enabling the individual to strictly limit the personal risk of investing in future expectations. ¶¶¶

By thus making possible these time decisions in very large numbers and on an enormous scale, the enterprise can be said to be the one invention that created the modern economy—far more so than any other invention, whether material or conceptual.

With the invention of the enterprise, the manager came into being as a distinct role and function, with one of his or her major tasks being the making of the decision between short-term yields and deferred expectations.

Making this decision requires a good deal of very hard work on the part of the CEO.

(Both Machiavelli’s *Prince* and Shakespeare’s *The Merchant of Venice*, two Renaissance masterpieces the background of which is the emergence of the modern economy, are built around the challenge of this decision.)

**To decide the priorities.**

In any but a dying organization, there are always far more tasks than there are available resources.

But results are obtained only by *concentration of resources*, especially by concentration of the scarcest and most valuable resource, people with proven performance capacity. ¶¶¶

There is constant pressure on every CEO to do a little bit of everything.

That makes everybody happy but guarantees that there are no results.

The CEO’s most critical job—also the CEO’s most difficult job—is to say no.

To do so is not just a matter of willpower.

It requires an inordinate amount of study and work—work that only the CEO can do, but again work that the CEO must do.

**To place people into key positions.**

This, in the last analysis, determines the performance capacity of the institution. ¶¶¶

Every organization says, “We have better people.”

But this is, of course, impossible.

Once an organization grows beyond a handful of people, it is subject to statistics’ most ruthless law:

the law of the great number, which dictates that there is only “normal distribution.”

What differentiates organizations is whether they can make common people perform uncommon things—and that depends primarily on whether people are being placed *where their strengths can perform* or whether, as is only too common, they are being placed for the absence of weakness.

And nothing requires as much hard work as “people decisions.”

The only thing that requires even more time (and even more work) than putting people
into a job is unmaking a wrong people-decision.

And again, critical people-decisions only the CEO can make.

**To organize top management.**

The recent failure rate of chief executives in big American companies points in the same direction.

A large proportion of CEOs of such companies appointed in the past fifteen years were fired as failures within a year or two.

But each of these people had been picked for his proven competence, and each had been highly successful in his or her previous jobs.

This suggests that the jobs they took on had become undoable.

The American record suggests not human failure but systems failure.

Top management in big organizations needs a new organization concept.

Some elements of such a concept are beginning to emerge.

For instance, Jack Welch at GE built a top-management team in which the company's chief financial officer and its chief human-resources officer were near equals to the chief executive, and both were excluded from the succession to the top job.

He also gave himself and his team a clear and publicly announced priority task on which to concentrate.

During his twenty-one years in the top job, Mr. Welch had three such priorities, each occupying him for five years or more.

Each time he delegated everything else to the top managements of the operating businesses within the GE confederation.

A different approach was taken by Asea Brown Boveri (ABB), a huge Swedish-Swiss engineering multinational.

Goran Lindahl, who retired as chief executive in December 2000, went even further than GE in making the individual units within the company into separate worldwide businesses and building up a strong top-management team of a few nonoperating people.

But he also defined for himself a new role as a one-man information system for the company, traveling incessantly to get to know all the senior managers personally, listening to them, and telling them what went on within the organization.

A large financial-services company tried another idea: appointing not one CEO but six.

The head of each of the five operating businesses is also CEO for the whole company in one top-management area, such as corporate planning and strategy or human resources.

The company's chairman represents the company to the outside world and is also directly concerned with obtaining, allocating, and managing capital.

All six people meet twice a week as the top-management committee.

This seemed to work well, but only because none of the five operating CEOs wanted the chairman's job; each preferred to stay in operations.

Even the man who designed the system, and then took the chairman's job, doubted that the system would survive his tenure.

The CEO: An American Invention And Export
The CEO is an American invention—designed first by Alexander Hamilton in the Constitution in the earliest years of the Republic, and then transferred into the private sector in the form of Hamilton’s own Bank of New York and of the Second Bank of the United States, in Philadelphia.

There is no real counterpart to the CEO in the management and organization of any other country.

The German “Sprecher des Vorstands,” the French “administrateur délégué,” the British “chairman,” or the Japanese “president” are all quite different in their powers and in the limitations thereon.

The American CEO is, however, fast becoming a major U.S. export.

Tony Blair, as Britain’s prime minister, and Gerhard Schroeder, as Germany’s chancellor, tried to make over their countries’ top political job in the image of the U.S. president.

In business, the CEO model is being adopted even faster all over the world, for example, in the recent restructuring of Europe’s largest industrial complex, the German Siemens Group.

And what makes the American CEO unique is that he or she has distinct and specific work.

Summary

The CEO in the new millennium has six specific tasks.

They are

1. To define the meaningful outside of the organization
2. To think through what information regarding the outside is meaningful and needed for the organization, and then to work on getting it into usable form
3. To decide what results are meaningful for the institution
4. To set priorities for the organization
5. To place people into key positions
6. To organize top management

The concept of the CEO is an American invention and export.

The CEO in the New Millennium II

From Managing in the Next Society by Peter Drucker

A few years ago, as we all remember, there was a great deal of talk about the “end of hierarchy.”

We would all be one big happy crew, sailing together on the same ship.

Well, it hasn’t happened and it isn’t about to happen, for one simple reason: When the ship is going down, you don’t call a caucus—you give a command.

There has to be somebody who says, “Enough dithering—this is it.”

Without a decision maker, you’ll never make a decision.

Moreover, as our corporate institutions become increasingly complex–technologically, economically, and socially–the more we need to know just who the ultimate authority is.

So instead of discussing the disappearance or the weakening of top management, I want
to focus on the new demands facing it.

If we take a look at the position of the CEO over the next fifteen years or so, there are five key points that I think stand out—all interrelated but also quite separate.

What are these points, and precisely how will they affect an executive’s career?

Transforming Governance

I am absolutely certain that fifteen years from now the governance of corporations will be substantially different from the present.

The reason I can be so sure is that we are seeing a fundamental change in the corporate ownership structure, and this invariably goes hand in hand with changes in governance.

Today, particularly in developed countries, financial considerations are ultimately driving ownership interests.

We can look at our aging population as one example.

The population of the United States is now growing older.

As a result, more people are worrying about their future financial resources.

This boosts the importance of pension funds—how and where they are invested.

Issues such as these influence the makeup and concerns of corporate owners.

It’s reasonable, I think, to say that the institutional investor as the decisive owner is here to stay.

What does that mean for the governance of the corporation—and for the CEO?

There’s an enormous challenge ahead to educate the new owners, many of whom, as I’ve noted, are financial people.

I once was a securities analyst, so that gives me license to say that it is virtually impossible to make a financial person understand business.

I am not being facetious.

Financial people don’t deal with the issue of balance between often conflicting elements—short versus long term, continuity versus change, improving today versus creating tomorrow.

Corporate leaders who wrestle with these issues every day know the amount of struggle involved, but it’s difficult for financial people to understand this.

Of course, these new owners have their own issues and pressures to deal with, not the least of which include the American pension system and how to increase corporate profits.

One of the most critical jobs ahead for CEOs will be to think this all through in relation to their particular business and come up with ways to strike reasonable balances.

Executives who have experience in attaining corporate balance usually find that they have a pretty good feel for what needs to be done, even when it isn’t easy to do and even though they may make mistakes.

But the worst mistake is trying to avoid the issue of governance.

Many people I know try to duck the issue, hiding behind the misguided mantra of “We are running this place for the short-term interest of the shareholder.”
I think we are getting to the end of that.

Today's leaders have to accept the fact that the interest of the shareholder as expressed in yesterday's Dow Jones Industrial Average is not what they are running the company by.

Not only governance, but its related concepts and tools, will need to be confronted and transformed over the next fifteen years.

And not only in the United States.

There is no country today that can claim current success with corporate governance.

It doesn't work anymore in Germany and it doesn't work anymore in Japan.

Ownership structure has fundamentally, dramatically, permanently changed everywhere.

Many executives have already begun to tackle the governance issue.

They have found that it isn't easy, but neither is it impossible.

Those executives who haven't yet faced this challenge will find that they have little choice but to do so over the next decade.

New Approaches to Information

We have heard endlessly that we are living in an Information Revolution, and indeed we are.

Forty years ago when the computer first came out, most people saw it as an extremely fast adding machine.

A few of us, however, took it more seriously and saw it as a new way to process information.

We were convinced that within twenty to thirty years, new information would transform the job of running the business.

But, so far, except perhaps for the military, our new information capacities have had practically no impact on the way we run businesses.

Where we have seen a tremendous impact is on the way we run operations.

Two examples: My grandson, who is completing his internship in architecture, recently showed me the software he is using to complete his final thesis—a project for a large architecture firm.

This firm put in a bid to design the heating, lighting, and plumbing for a new prison building.

The software my grandson showed me can, literally in the twinkling of an eye, do work that once took hundreds of individuals to complete.

Meanwhile, in medical schools and teaching hospitals, virtual reality presentations are providing a new and effective way to train surgeons.

Up until now, surgeons would not actually see surgical operations until their final year of residency—before then, they would see only the back of the surgeon who was performing the operation.

Today, young surgeons can actually do what is essential to learning surgical techniques—practice—and with virtual reality they can do this without endangering the well-being of patients.

In businesses across the board, information technology has had an obvious impact.
But until now that impact has been only on concrete elements—not intangibles like strategy and innovation.

Thus, for the CEO, new information has had little impact on how he or she makes decisions.

That is going to have to change.

Let’s take two positions most CEOs are familiar with.

Today, practically every corporation has a chief financial officer, to whom the accounting department reports.

This is our oldest information system; in many ways it’s obsolete, but companies cling to accounting because it’s what they understand—it’s familiar.

Likewise many companies have a management information systems officer, or chief information officer, who presides over a computer system that is generally enormously expensive.

But neither of these officers knows one blessed thing about information.

They understand data, and within fifteen years, the two will be under one manager and both will be different.

The changes currently under way in accounting are the most substantive since the 1920s.

They include activity-based accounting and economic chain accounting and so on.

Essentially, we are changing basic record-keeping to accommodate present economic reality something accounting was never designed to do.

At the same time, we are merging this with our data-producing capacity, so you will have an information system that will look very different.

And yet it will not give the CEO the information he or she needs most: what goes on outside the enterprise.

One of the biggest mistakes I have made during my career was coining the term profit center, around 1945.

The truth is that inside the business, there are only cost centers.

The only profit center is a customer whose check hasn’t bounced.

We know literally nothing about the outside, and yet, even if you are the leading business in an industry, the great majority of the people who buy your kind of product or services are not your customers.

If you have 30 percent of the market, you are the giant.

But that means that 70 percent of the customers do not buy your product or your services, and we know nothing about them.

These “noncustomers” are particularly important because they represent a source of information that can help you gauge the changes that will affect your industry.

How so?

If you look at the changes in major industries over the last forty years, you’ll see that practically all of them occurred outside the existing market, or product, or technology.

Whatever the business, senior people need to spend more time outside their own shop.

There is no question that getting to know your noncustomers is far from easy, but it really is the only way to expand your knowledge.
The people I know, for example, who have been successful building their business in Japan made a point of studying Japanese history before making contact.

We are fortunate in the United States because of our cultural diversity—and we should use that asset to our advantage.

In the nineteenth century, you could take for granted that each major industry spawned a specific technology, and that technologies from separate industries would never meet. This is the hypothesis on which all the great research labs have been founded, beginning with Siemens in Germany in 1869.

That assumption no longer works. Technologies now crisscross each other all the time, and productivity is no guarantee of achievement.

In the last thirty years, Bell Laboratories has been more productive than at any other time in its history—but what is its track record during this period for major technological breakthroughs?

There is no question that businesses need to understand what goes on outside their spheres.

But so far there is almost no information—and what little exists is at best anecdotal.

We’re only beginning to learn how to quantify this information.

So far, whenever anyone claims to have done so, I know that somebody has put a thumb on the scale.

**Command and Control**

Closely allied to this is another factor—less and less work is being done in the traditional way, in which companies (especially large ones) try to control everything they need and do within a defined power sphere.

I am not necessarily happy about how this is coming about.

People talk glibly about the disappearance of command and control.

Yes, but what is taking its place?

We see a growing number of companies working with contractors and temps, a rise in the number of joint ventures, a growth in outsourcing all kinds of liaisons.

Many of the people who work for a company are probably not its employees, and one prediction I’ve heard is that in a few years the people who are not employees of the organization for which they work, including government, will greatly exceed the number who are.

One sign that this is happening is the explosive growth of the experts, the management consultants.

I once promised Harvard Business Review an article on the management consultant, a sort of user’s guide (something CEOs are sorely in need of).

I couldn’t do it.

There is just too much going on.

In my view, this is a sign that more and more of the input we need will not be from people or organizations that we control, but from people and organizations with which we have a relationship, a partnership people whom we cannot command.
Successful participants in joint ventures understand that one can’t “command” one’s partner.

Working with a partner is essentially a marketing job, and that means asking questions:

What are the other party’s values?
Objectives?
Expectations?

But of course there are times when command is critical to getting things done.

The CEO of tomorrow will have to be able to understand when to command and when to partner.

This is not without precedent—J. P. Morgan built a partnership of twelve people, yet he still knew when to assume the role of leader—but it won’t be effortless.

**The Rise of Knowledge Work**

What is going to be the one and only comparative advantage a developed country will have tomorrow?

One lesson we have all learned, in part from our experience during the two World Wars, is how to train people almost overnight.

Shortly after the end of the Korean War, I was sent to Korea. The country had experienced far more destruction than either Germany or Japan had in World War II.

Moreover, for fifty years preceding the war, the Japanese had not allowed any higher education in Korea.

Yet, with the proper support and training, it took less than ten years to convert a purely rural (and primitively so, at that) labor force into a highly productive one.

You can no longer depend on the competitive advantage of knowledge.

Technology travels incredibly fast.

The only real advantage the United States has—perhaps for the next thirty or forty years—is a substantial supply of something that is not easily created overnight: knowledge workers.

In the United States, there are 12 million college students.

In China, the top students are extremely well trained, but there are only 1.5 million college students out of a population of 1.2 billion.

If we had the same ratio in the United States, we would have just 250,000 college students.

Now, we can argue that we may have a few too many, especially in the law schools, but still, the productivity of knowledge work and knowledge workers is visible.

The trouble is that we haven’t worked on it.

Today’s knowledge workers are probably less productive than in the past because their schedules are filled with activities that don’t reflect their training or talent.

The best-trained people in the world are American nurses.

Yet whenever we make a study on nurses, we find that 80 percent of their time is spent on things they aren’t trained for.
They spend time filling out papers for which nobody apparently has any need. No one knows what happens to those papers, but they have to be filled out nonetheless and the task falls to the nurses. In department stores, salespeople spend 70 to 80 percent of their time serving not the customer but the computer.

How to make the knowledge worker more appropriately productive is a challenge we will need to face seriously over the next twenty years. With manual work, we start with the question “How do you do the work?” You take this work for granted. In knowledge work, you start with the questions “What do you do and what should you be doing?” Answering these questions is critical if we want to maintain our competitive advantage.

Physical resources no longer provide much of an advantage, nor does skill. Only the productivity of knowledge workers makes a measurable difference—and right now it is quite poor.

**Tying It Together**

What does all this really mean?

First, it means that the CEO’s job is to set a clear direction of what his or her company means by “results.” It means that the CEO needs to provide a clear understanding of when it is time to push here and pull back there—and when it’s time to abandon something.

Tomorrow’s leader won’t be able to lead by charisma. He or she will need to think through the fundamentals so that other people can work productively.

This will be quite demanding, especially considering the speed of change, the expectations of the new workforce, and an increasingly competitive world economy. But it will also be demanding because it is no longer adequate to have a policy and expect it to carry you through the years.

Some companies, such as General Motors, AT&T, and Sears, have had success with long-term major policies. But they are the exceptions; the truth is that ten years is common.

Now the changes are coming so fast that changes every three to four years will likely become commonplace.

Increasingly, a CEO’s job will be much more like the most complex job I know, which is running an opera. You have your stars and you can’t give them orders; you have the supporting cast and the orchestra; you have the people who work behind the scenes; and you have your audience.

Each group is completely different.

But the opera conductor has a score, and everybody has the same score.

In a business you have to make sure all the various groups converge to produce the desired result.
This is the key to understanding what’s ahead.

It’s not about being less or more important, but differently important.

It’s not about refraining from giving orders—but knowing when to give an order and when to treat someone like a partner.

And it is not, I assure you, about playing down financial objectives; on the contrary, our demographics tell us that this will become more important.

But you will have to know how to integrate your financial objectives with the need to build and maintain a business.

(1997)

The New Workforce

A century ago, the overwhelming majority of people in developed countries worked with their hands: on farms, in domestic service, in small craft shops, and (at that time still a small minority) in factories.

Fifty years later, the proportion of manual workers in the American labor force had dropped to around half, but factory workers had become the largest single section of the workforce, making up 35 percent of the total.

Now, another fifty years later, fewer than a quarter of American workers make their living from manual jobs.

Factory workers still account for the majority of the manual workers, but their share of the total workforce is down to around 15 percent—more or less back to what it had been one hundred years earlier.

Of all the big developed countries, America now has the smallest proportion of factory workers in its labor force.

Britain is not far behind.

In Japan and Germany, their share is still around a quarter, but it is shrinking steadily.

To some extent this is a matter of definition.

Data-processing employees of a manufacturing firm, such as the Ford Motor Company, are counted as employed in manufacturing, but when Ford outsources its data processing, the same people doing exactly the same work are instantly redefined as service workers.

However, too much should not be made of this.

Many studies in manufacturing businesses have shown that the decline in the number of people who actually work in the plant is roughly the same as the shrinkage reported in the national figures.

Before the First World War there was not even a word for people who made their living other than by manual work.

The term service worker was coined around 1920, but it has turned out to be rather misleading.

These days, fewer than half of all nonmanual workers are actually service workers.

The only fast-growing group in the workforce, in America and in every other developed country, is “knowledge workers”—people whose jobs require formal and advanced schooling.

They now account for a full third of the American workforce, outnumbering factory
In another twenty years or so, they are likely to make up close to two-fifths of the workforce of all rich countries.

The terms knowledge industries, knowledge work, and knowledge worker are only forty years old.

They were coined around 1960, simultaneously but independently; the first by a Princeton economist, Fritz Machlup, the second and third by this writer.

Now everyone uses them, but as yet hardly anyone understands their implications for human values and human behavior, for managing people and making them productive, for economics and for politics.

What is already clear, however, is that the emerging knowledge society and knowledge economy will be radically different from the society and economy of the late twentieth century, in the following ways.

First, the knowledge workers, collectively, are the new capitalists.

Knowledge has become the key resource, and the only scarce one.

This means that knowledge workers collectively own the means of production.

But as a group, they are also capitalists in the old sense: Through their stakes in pension funds and mutual funds, they have become majority shareholders and owners of many large businesses in the knowledge society.

Effective knowledge is specialized.

That means knowledge workers need access to an organization—a collective that brings together an array of knowledge workers and applies their specialisms to a common end product.

The most gifted mathematics teacher in a secondary school is effective only as a member of the faculty.

The most brilliant consultant on product development is effective only if there is an organized and competent business to convert her advice into action.

The greatest software designer needs a hardware producer.

But in turn the high school needs the mathematics teacher, the business needs the expert on product development, and the PC manufacturer needs the software programer.

Knowledge workers therefore see themselves as equal to those who retain their services, as “professionals” rather than as “employees.”

The knowledge society is a society of seniors and juniors rather than of bosses and subordinates.

His and Hers

All this has important implications for the role of women in the labor force.

Historically women’s participation in the world of work has always equaled men’s.

The lady of leisure sitting in her parlor was the rarest of exceptions even in a wealthy nineteenth-century society.

A farm, a craftsman’s business, or a small shop had to be run by a couple to be viable.

As late as the beginning of the twentieth century, a doctor could not start a practice until he had got married; he needed a wife to make appointments, open the door, take
patients’ histories, and send out the bills. ¶¶

But although women have always worked, since time immemorial the jobs they have done have been different from men’s.

There was men’s work and there was women’s work.

Countless women in the Bible go to the well to fetch water, but not one man.

There never was a male spinster.

Knowledge work, on the other hand, is “unisex,” not because of feminist pressure but because it can be done equally well by both sexes.

Still, the first modern knowledge jobs were designed for only one or the other sex.

Teaching as a profession was invented in 1794, the year the École Normale was founded in Paris, and was seen strictly as a man’s job.

Sixty years later, during the Crimean War of 1853-56, Florence Nightingale founded the second new knowledge profession, nursing.

This was considered as exclusively women’s work.

But by 1850 teaching everywhere had become unisex, and in 2000 two-fifths of America’s students at nursing schools were men. ¶¶

There were no women doctors in Europe until the 1890s.

But one of the earliest European women to get a medical doctorate, the great Italian educator Maria Montessori, reportedly said: “I am not a woman doctor; I am a doctor who happens to be a woman.”

The same logic applies to all knowledge work.

Knowledge workers, whatever their sex, are professionals, applying the same knowledge, doing the same work, governed by the same standards, and judged by the same results. ¶¶

High-knowledge workers such as doctors, lawyers, scientists, clerics, and teachers have been around for a long time, although their number has increased exponentially in the past hundred years.

The largest group of knowledge workers, however, barely existed until the start of the twentieth century and took off only after the Second World War.

They are knowledge technologists—people who do much of their work with their hands (and to that extent are the successors to skilled workers), but whose pay is determined by the knowledge between their ears, acquired in formal education rather than through apprenticeship.

They include X-ray technicians, physiotherapists, ultrasound specialists, psychiatric caseworkers, dental technicians, and scores of others.

In the past thirty years, medical technologists have been the fastest-growing segment of the labor force in America, and probably in Britain as well. ¶¶

In the next twenty or thirty years the number of knowledge technologists in computers, manufacturing, and education is likely to grow even faster.

Office technologists such as paralegals are also proliferating.

And it is no accident that yesterday’s “secretary” is rapidly turning into an “assistant,” having become the manager of the boss’s office and of his work.

Within two or three decades, knowledge technologists will become the dominant group in the workforce in all developed countries, occupying the same position that unionized
factory workers held at the peak of their power in the 1950s and 1960s.

The most important thing about these knowledge workers is that they do not identify themselves as “workers” but as “professionals.”

Many of them spend a good deal of their time doing largely unskilled work, e.g., straightening out patients’ beds, answering the telephone, or filing.

However, what identifies them in their own and in the public’s mind is the part of their job that involves putting their formal knowledge to work.

That makes them full-fledged knowledge workers.

Such workers have two main needs: formal education that enables them to enter knowledge work in the first place, and continuing education throughout their working lives to keep their knowledge up-to-date.

For the old high-knowledge professionals such as doctors, clerics, and lawyers, formal education has been available for many centuries.

But for knowledge technologists, only a few countries so far provide systematic and organized preparation.

Over the next few decades, educational institutions to prepare knowledge technologists will grow rapidly in all developed and emerging countries, just as new institutions to meet new requirements have always appeared in the past.

What is different this time is the need for the continuing education of already well-trained and highly knowledgeable adults.

Schooling traditionally stopped when work began.

In the knowledge society it never stops.

Knowledge is unlike traditional skills, which change very slowly.

A museum near Barcelona in Spain contains a vast number of the hand tools used by the skilled craftsmen of the late Roman empire that any craftsman today would instantly recognize, because they are very similar to the tools still in use.

For the purposes of skill training, therefore, it was reasonable to assume that whatever had been learned by age seventeen or eighteen would last for a lifetime.

Conversely, knowledge rapidly becomes obsolete, and knowledge workers regularly have to go back to school.

Continuing education of already highly educated adults will therefore become a big growth area in the Next Society.

But most of it will be delivered in nontraditional ways, ranging from weekend seminars to on-line training programs, and in any number of places, from a traditional university to the student’s home.

The Information Revolution, which is expected to have an enormous impact on education and on traditional schools and universities, will probably have an even greater effect on the continuing education of knowledge workers.

Knowledge workers of all kinds tend to identify themselves with their knowledge.

They introduce themselves by saying “I am an anthropologist” or “I am a physiotherapist.”

They may be proud of the organization they work for, be it a company, a university, or a government agency, but they “work at the organization”; they do not “belong to it.”

Most of them probably feel that they have more in common with someone who practices the same specialism in another institution than with their colleagues at their own
Although the emergence of knowledge as an important resource increasingly means specialization, knowledge workers are highly mobile within their specialism. They think nothing of moving from one university, one company, or one country to another, as long as they stay within the same field of knowledge. There is a lot of talk about trying to restore knowledge workers' loyalty to their employing organization, but such efforts will get nowhere. Knowledge workers may have an attachment to an organization and feel comfortable with it, but their primary allegiance is likely to be to their specialized branch of knowledge.

Knowledge is nonhierarchical. Either it is relevant in a given situation, or it is not. An open-heart surgeon may be much better paid than, say, a speech therapist and enjoy a much higher social status, yet if a particular situation requires the rehabilitation of a stroke victim, then in that instance the speech therapist's knowledge is greatly superior to that of the surgeon.

This is why knowledge workers of all kinds see themselves not as subordinates but as professionals and expect to be treated as such. Money is as important to knowledge workers as to anybody else, but they do not accept it as the ultimate yardstick, nor do they consider money as a substitute for professional performance and achievement. In sharp contrast to yesterday's workers, to whom a job was first of all a living, most knowledge workers see their job as a life.

**Ever Upward**

The knowledge society is the first human society where upward mobility is potentially unlimited. Knowledge differs from all other means of production in that it cannot be inherited or bequeathed. It has to be acquired anew by every individual, and everyone starts out with the same total ignorance. Knowledge has to be put in a form in which it can be taught, which means it has to become public. It is always universally accessible or quickly becomes so. All this makes the knowledge society a highly mobile one.

Anyone can acquire any knowledge at a school, through a codified learning process, rather than by serving as an apprentice to a master. Until 1850 or perhaps even 1900, there was little mobility in any society. The Indian caste system, in which birth determines not only an individual's status in society but his occupation as well, was only an extreme case. In most other societies, too, if the father was a peasant, the son was a peasant, and the daughters married peasants. By and large, the only mobility was downward, caused by war or disease, personal misfortune, or bad habits such as drinking or gambling.
Even in America, the land of unlimited opportunities, there was far less upward mobility than is commonly believed.

The great majority of professionals and managers in America in the first half of the twentieth century were still the children of professionals and managers rather than the children of farmers, small shopkeepers, or factory workers.

What distinguished America was not the amount of upward mobility but, in sharp contrast to most European countries, the way it was welcomed, encouraged, and cherished.

The knowledge society takes this approval of upward mobility much further: it considers every impediment to such mobility a form of discrimination.

This implies that everybody is now expected to be a “success”—an idea that would have seemed ludicrous to earlier generations.

Naturally, only a tiny number of people can be outstanding successes; but a very large number are expected to be adequately successful.

In 1958 John Kenneth Galbraith first wrote about “the affluent society.”

This was not a society with many more rich people, or in which the rich were richer, but one in which the majority could feel financially secure.

In the knowledge society, a large number of people, perhaps even a majority, have something even more important than financial security: social standing or “social affluence.”

The Price of Success

The upward mobility of the knowledge society, however, comes at a high price: the psychological pressures and emotional traumas of the rat race.

There can be winners only if there are losers.

This was not true of earlier societies.

The son of the landless laborer who became a landless laborer himself was not a failure.

In the knowledge society, however, he is not only a personal failure but a failure of society as well.

Japanese youngsters suffer sleep deprivation because they spend their evenings at a crammer to help them pass their exams.

Otherwise they will not get into the prestige university of their choice, and thus into a good job.

These pressures create hostility to learning.

They also threaten to undermine Japan’s prized economic equality and turn the country into a plutocracy, because only well-off parents can afford the prohibitive cost of preparing their youngsters for university.

Other countries, such as America, Britain, and France, are also allowing their schools to become viciously competitive.

That this has happened over such a short time—no more than thirty or forty years—indicates how much the fear of failure has already permeated the knowledge society.

Given this competitive struggle, a growing number of highly successful knowledge workers of both sexes—business managers, university teachers, museum directors, doctors—“plateau” in their forties.
They know they have achieved all they will achieve.

If their work is all they have, they are in trouble.

**Knowledge workers** therefore need to develop, preferably while they are still young, a noncompetitive life and community of their own, and some serious outside interest—be it working as a volunteer in the community, playing in a local orchestra, or taking an active part in a small town’s local government.

This **outside interest** will give them the opportunity for personal contribution and achievement.

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