Introduction

The basic economic resource, the means of production, is no longer capital, natural resources or labour but knowledge. Value is now created by “productivity” and “innovation,” both applications of knowledge to work. The leading social group of the emerging society will be knowledge workers who know how to allocate knowledge to productive use. Most of these knowledge people will be employees of organizations. But, unlike the employees under capitalism, they will own both the “means of production” and the “tools of production”. They will have stakes in pension funds, which are rapidly emerging in all developed countries as the only real owners. They will also own their knowledge and can take it with them wherever they go. The economic challenge of the capitalist society will therefore be the productivity of knowledge worker.

From capitalism to knowledge society

During the period 1750 to 1900, capitalism and technology conquered the globe and created a world civilization. This transformation was driven by a radical change in the meaning of knowledge. In both West and East, knowledge had always been seen applying to being. Then, almost overnight, it came to be applied to doing. Knowledge had always been a private good. Almost overnight it became a public good.

For a hundred years – during the first phase, knowledge was applied to tools, processes, products. This created the Industrial Revolution.

In its second phase, beginning around 1880 and culminating around the end of World War II, knowledge in its new meaning came to be applied to work. This ushered in the productivity revolution, which in 75 years converted the proletarian into a middle-class with high income levels and defeated class war and Communism.

The last phase began after World War II. Today, knowledge is being applied to knowledge itself. Knowledge is now fast becoming the most important factor of production.

There is one critical element, without which capitalism and technical advance could not possibly have turned into a social and worldwide pandemic. That is the radical change in the meaning of knowledge that occurred in Europe around the year 1700, or shortly thereafter.

Socrates, held that the sole function of knowledge was self-knowledge: the intellectual, moral, and spiritual growth of the person. For Protagoras, knowledge was to make the holder effective by enabling him to know what to say and how to say it. For Protagoras, knowledge meant logic, grammar, and rhetoric. In the East, there were pretty much the same two theories of knowledge. Knowledge for the Confucian meant knowing what to say and how to say it as the route to advancement and earthly success. Knowledge for the Taoist and the Zen monk meant self-knowledge, and the road to enlightenment and wisdom. But while the two sides thus sharply disagreed about what knowledge actually meant, they were in total agreement as to what it did not
mean. It did not mean ability to do. It did not mean utility.

But today, the value of knowledge is judged by what it can do. Far too few people realize that the application of knowledge to work created developed economies by setting off the productivity explosion of the last hundred years. Technologists give the credit to machines, economists to capital investment. Yet both were plentiful in the first hundred years of the capitalist age, before 1880, as they have been since. With respect to technology or to capital, the second hundred years differed very little from the first one hundred. But there was absolutely no increase in worker productivity during the first hundred years - and consequently very little increase in workers’ real incomes or any decrease in their working hours. What made the second hundred years so critically different can only be explained as the result of applying knowledge to work.

But by the early 1950s, the definition of a manager had already changed to one who “is responsible for the performance of people.” Today, the right definition of a manager is one who is “is responsible for the application and performance of knowledge.”

Knowledge is now the essential resource. Land, labor, and capital are restraints. With them, even knowledge cannot produce; without them, even management cannot perform. But where there is effective application of knowledge to knowledge, other resources can always be mobilized.

That knowledge has become the resource, rather than a resource, is what makes our society “post-capitalist.” It has changed the structure of society. It has created new social and economic dynamics and new politics.

**Labor, capital and their future**

To maintain and strengthen a country’s manufacturing base and to ensure that it remains competitive surely deserves high priority. But this means accepting that manual labor in making and moving things is rapidly becoming a liability rather than an asset. Knowledge has become the key resource for all work. Creating traditional manufacturing jobs is at best a short-lived expedient. It may actually make things worse. The only long term policy which promises success is for developed countries to convert manufacturing from being labor based into being knowledge based.

Instead of being managed “in the best balanced interests of stakeholders,” corporations are now being managed exclusively to “maximize shareholder’s value”. This forces the corporation to be managed for the shortest term and damaging the wealth-producing capacity of the business. It means decline, and fairly swift decline. Long-term results cannot be achieved by piling short-term results on short-term and long term needs and objectives. Moreover, managing a business exclusively for the shareholders alienates the very people on whose motivation and dedication the modern business depends: the knowledge workers.

In an economy of change and innovation, there is no such thing as “profit.” There are only costs: costs of the past and costs of an uncertain future. And the minimum financial return from the operations of the past that is adequate to the costs of the future is the cost of capital.

An investor can always sell his holdings. But the holdings of large pension funds are so big that they simply cannot be sold. The only market for them is other pension funds. Pension funds, in other
words, can neither manage a business nor walk away from it. They have to make sure that the business is being managed.

**Organizing for higher productivity**

Unless developed countries learn how to increase the productivity of knowledge workers and service workers, they will face economic stagnation and severe social tension. People can only get paid in accordance with their productivity. It is productivity which creates the pool of wealth from which wages and salaries are then paid. If productivity does not go up, higher real incomes cannot be paid.

In the work on productivity in making and moving things, the task is given and determined. In knowledge work, the machine serves the worker. The task is not given; it has to be determined. In knowledge work, we have to decide how the work should be organized. What kind of human team is appropriate for this kind of work and its flow?

Drucker makes his point on teams, with examples from sports. The first kind of team is exemplified by the baseball or cricket team; it is also the kind of team that operates on a patient in the hospital. In this team, players are part of the team but they do not play as a team. But because all players occupy fixed positions, they can be given specific tasks of their own, can be measured by performance scores for each task, can be trained for each task. It is by no means accidental that in both baseball and cricket there are statistics on every player, going back for decades. The surgical team in the hospital functions much the same way. For repetitive tasks and for work in which the rules are well known, the baseball team is the ideal. And it was this model on which modern mass production was organized.

The second type of team is the soccer team. It is also the team concept on which the symphony orchestra is organized, and the model for the hospital team that rallies around the patient who goes into cardiac arrest early morning. This team requires a conductor or a coach. And the word of the conductor or coach is law. It also requires a “score.” And it requires endless rehearsals to work well. But, unlike the baseball team, it has great flexibility, if the score is clear and if the team is well led. And it can move very fast.

Finally, there is the doubles tennis team, which Drucker feels is the strongest team of all. Its total performance is greater than the sum of the individual performances of its members, for this team uses the strength of each member while minimizing the weaknesses of each. But this team requires enormous self-discipline. The members have to work together for a long time before they actually function as a “team.”

These three types of teams cannot be mixed. And to change from one team to another is exceedingly difficult and painful. The change cuts across old, long-established, and cherished human relationships. Yet any major change in the nature of the work, its tools, its flow, and its end product may require changing the team.

In machine-paced work, the worker is servant to the machine. In knowledge work the machine (if any) is a servant to the worker. Productivity requires the elimination of whatever activities do not contribute to performance. They sidetrack and divert from performance. Eliminating such work
may be the single biggest step toward greater productivity in knowledge work.

Knowledge workers should always be asked: “Is this work necessary to your main task? Does it contribute to your performance? Does it help you do your own job?” And if the answer is no, the procedure or operation must either be dropped altogether or engineered into a job of its own.

Defining performance; determining the appropriate work flow; setting up the right team; and concentrating on work and achievement are prerequisites for productivity in knowledge work and service work. Only when they have been done can we begin the work on making the individual job productive.

Productivity in knowledge work demands that we build continuous learning into the job and into the organization. Knowledge demands continuous learning because it is constantly changing. The best way for people to learn how to be more productive is for them to teach. To obtain improvement in productivity, the organization has to become both a learning and a teaching organization.

The structure of the post-capitalist society will be different from either the earlier capitalist or the socialist society. There, organizations tried to handle all activities. Organizations of the post-capitalist society, by contrast, will concentrate on their core tasks. For the rest, they will work with other organizations in a bewildering variety of alliances and partnerships. If capitalist and socialist societies were, “crystalline” in their structure, post-capitalist society is more likely to resemble a liquid.

**An organization’s responsibilities**

Organizations must understand the point at which exercising their function ceases to be legitimate. They have to take “social responsibility.” Yet they must do so responsibly, within the limits of their competence, and without endangering their performance capacity. Organizations can only harm themselves and the society if they tackle tasks that are beyond their specialized competence, their specialized values, their specialized functions.

Economic performance is the first responsibility of a business. A business that does not show a profit at least equal to its cost of capital is socially irresponsible. It wastes society’s resources. Economic performance is the basis. Without it a business cannot be a good employer or a good citizen or a good neighbor.

Power must always be balanced by responsibility; otherwise it becomes tyranny. Without responsibility, power always degenerates into non-performance. And organizations do have power, albeit only social power.

But economic performance is not the sole responsibility of a business. An organization has full social responsibility for its impact on community and society, for the effluents it discharges into a local river, for example, or the traffic jam its work schedules create on the city streets. But these are responsibilities that if not discharged, would seriously impede its capacity to perform its main task and mission. But where an organization has no competence, it has no responsibility. In fact, nothing is as damaging to an organization as an attempt at political power. It always ends in
disaster. A good example is the British East India Company.

No organization must be allowed power unless it is absolutely necessary to the discharge of its function. Anything beyond this must be viewed as usurpation. Also the exercise of the organization’s legitimate power must be safeguarded against the abuse of power. There must be clear and public rules for its exercise, and there must be review and appeal to some person or some tribunal that is impartial and not part of the problem. There must be what lawyers call “due process.”

But the most important answer to the problem of the power of the organization is conversion from a power-based to a responsibility-based organization. It is the only answer, that fits the knowledge organization.

The old-type organization assumed that the superior knew what the subordinate was doing, for the superior, only a few years earlier, had occupied the subordinate’s position. The knowledge-based organization, by contrast, has to assume that superiors do not know the job of their subordinates because they may have never held their subordinates’ jobs.

The knowledge-based organization therefore requires that everyone takes responsibility for the organization’s objectives, contribution, and, indeed, for its behaviour as well.

This implies that all members of the organization must think through their objectives and their contributions, and then take responsibility for both. It implies that there are no “subordinates”; there are only “associates.” In the knowledge-based organization all members have to be able to control their own work by feedback from their results to their objectives. They must ask themselves: “What is the one major contribution to this organization and its mission which I can make at this particular time?” They must act as responsible decision makers.

The task of management in the knowledge-based organization is not to make everybody a boss. It is to make everybody a contributor.

From nation-state to megastate

The nation-state arose as a response to transnational drives. But the nation-state of 1970, a century later, bore little resemblance to earlier nation-states. It had mutated into the Megastate. The nation state was designed to be the guardian of civil society. The Megastate became its master. And in its extreme, totalitarian form, it replaced civil society completely. The nation state was designed to protect both the citizen’s life and liberty and the citizen’s property against arbitrary acts of the sovereign. The Megastate, even in its least extreme, considers a citizen’s property to be held only at the discretion of the tax collector.

Beginning in the 1870s, regulation of business – banking, railways, electric power, telephones – was gradually established in the U S. Such government regulation was clearly seen from the beginning as a “third way” between “unfettered” Capitalism and Socialism, and as a response to the tensions and problems created by the rapid spread of capitalism and technology.

Until World War I, no government in history was ever able - even in wartime – to obtain from its
people more than a very small fraction of the country’s national income, perhaps 5 or 6 percent. But in World War I every belligerent nation, even the poorest, found that there was practically no limit to what government could squeeze out of the population. The Great Depression gave rise to the belief that the national government is - and should be in control of the economic weather.

By 1960, the Megastate had become a political reality in developed countries in all its aspects: as social agency; as master of the economy; as fiscal state; and in many countries as a Cold War State. It had become the accepted doctrine in all developed Western countries that government is the appropriate agent for all social problems and all social tasks. In fact, nongovernmental, private activity in the social sphere became suspect. In the United States, government became the actual doer in the social sphere, especially in the attempt to change human behaviour in a multi-racial society by government action. According to Drucker, the one exception is Japan. The Japanese after World War II did not adopt the Cold War State. Their government did not try to become master of the economy. It did not try to become master of society. Rather, it rebuilt itself after its shattering defeat on what in effect were traditional nineteenth-century lines.

The Megastate has not been successful in bringing about a meaningful redistribution of income. In fact, the past forty years have amply confirmed Pareto’s Law, according to which income distribution between major classes in society is determined only by two factors - the culture of the society, and the level of productivity within the economy. The more productive an economy, the greater the equality of income; the less productive, the greater the inequality of income.

As long as governments have been around, the budget process has begun with an assessment of the available revenues. Expenditures then had to be fitted to these revenues. But since World War I, the budgeting process has meant, in effect, saying yes to everything. If budget making starts with expenditures, there is no fiscal discipline; government spending becomes the means for politicians to buy votes.

Democratic government rests on the belief that the first job of elected representatives is to defend their constituents against rapacious government. The Megastate challenges this belief. The elected representatives fleece their constituents to enrich special-interest groups and thereby to buy their votes.

Joseph Schumpeter warned in 1918 that the fiscal state would in the end undermine the government’s ability to govern. 15 years later, Keynes hailed the fiscal state as the great liberator, Without restraints on spending, Keynes felt government in the fiscal state could govern effectively. Clearly Schumpeter, not Keynes was right.

The Megastate has been somewhat more successful in the social sphere than in the economic one. But even here, it has not even earned a passing grade. It is time to acknowledge that government can set the rules, set the standards and provide. But government must stop being a doer and manager in the social sphere and confine itself to being the policy maker. This means there is a need to contract out.

None of the U.S. programs of the last forty years in which we tried to tackle social problems through government action has produced significant results. But independent non-profit agencies have
shown impressive results.

Citizenship is the willingness to contribute to one’s country. It means the willingness to live – rather than to die – for one’s country. To restore citizenship is a central requirement of the post-capitalist polity. Every developed country needs an autonomous, self-governing social sector of community organizations. Historically, community was fate. In the post-capitalist society and polity, community has to become commitment.

The weapons of modern warfare can no longer be produced in facilities that also produce the goods needed for peacetime. They cannot be produced by converting civilian facilities to wartime production as was done during World War II. The facilities that produce the weapons of modern warfare have to be built long before there is a war or even the threat of one. As a result, the Cold War State has become economically self-destructive. The Soviet Union, as we have seen, succeeded in building an exceedingly powerful military force. But the burden this military force imposed became so intolerably heavy that it played a major part in the collapse of Soviet economy and Soviet society. A nation that spends in peacetime more than 2 or 2.5 percent of its GNP on armaments cannot expect for very long to remain competitive in the world economy. It will be under increasing inflationary pressure. In fact, it should not even be considered creditworthy.

Transnationalism, regionalism, and tribalism

Since the 1970s, the nation-state has begun to come apart. In crucial areas, “sovereignty” has lost all meaning. Many of the new challenges simply cannot be dealt with by national or even international action. They require transnational agencies. Increasingly, regionalism is also sidelining the nation-state. And internally, the nation-state is being undermined by tribalism.

Control over money was at the very centre of what came to be called “sovereignty.” But today money has gone transnational. It cannot be controlled any longer by nation states, not even by their acting together.

No central bank any longer controls money flows. It can try to influence them by raising or lowering interest rates. In the flow of money, political factors are increasingly becoming as important as interest rates. The amount of money traded every day on the transnational markets so greatly exceeds anything needed to finance national and international transactions that the flows escape any attempt to control or limit them, let alone manage them.

When the mass media emerged in this century, control of information was at once seen as essential by the new practitioners of national sovereignty, the totalitarians. Today, information is as much transnational as money. There are no national boundaries any more for information. The decreasing inability of the most absolute regime in history to control access to information was a major factor in the collapse of Communism and the Soviet Empire.

Rethinking the role of government

If one were to rank the policies of the Megastate in order of their futility, military aid would surely be at the top of the things that have never worked, and therefore first on the list of things to abandon. To support a country that is under attack by a powerful enemy is one thing. But military
aid to “friendly” regimes is extortion money. It only increases the extortionist’s appetite. And the oft-invoked need to maintain a “military balance” in a region is pure sham. In no instance during the last forty years has military aid stabilized a region. Military aid has only stepped up the arms race.

The economic performances of Japan and Germany during the past forty years both teach the same lesson. Countries should focus on the economic “climate” rather than the economic “weather.” The aim of economic policies must be to make the patient healthy to keep the patient healthy. It must be to create an economic environment in which the economy can grow; acquire resistance to infection, injury, and disease; acquire the ability to adapt and to change rapidly; and stay competitive.

Creating the right climate is not the same thing as keeping taxes low. The contention of the supply-side economists that low taxes by themselves guarantee economic health and growth has not been proven.

The proper aim of fiscal policy has to be the encouragement of investment in knowledge and in human resources, in productive facilities in business, and in infrastructure.

Understanding the knowledge economy

The industries that have moved into the center of the economy in the last forty years have as their business the production and distribution of knowledge and information, rather than the production and distribution of things. In fact, whichever traditional industries managed to grow during the past forty years did so because they restructured themselves around knowledge and information. It is no longer possible to make huge profits by doing or moving things. Increasingly, there is less and less return on the traditional resources: labor, land and (money) capital. The main producers of wealth have become information and knowledge.

The knowledge-based economy does not behave the way existing theory assumes an economy to behave. One of the economists’ basic assumptions is that “perfect competition” is the model for the allocation of resources but also for the distribution of economic rewards. Imperfect competition is common in the “real world.” But it is assumed to be the result of outside interference with the economy, i.e., of monopoly; of patent protection; of government regulation; and so on. But in the knowledge economy, imperfect competition seems to be inherent in the economy itself. Initial advantages gained through early application and exploitation of knowledge become permanent and irreversible.

Another traditional assumption has been that an economy is determined either by consumption or by investment. In the knowledge economy, neither seems to be in control. There is little evidence that increased consumption or investment in the economy leads to greater production of knowledge.

When it comes to new knowledge, there are three kinds. There is first the continuing improvement of process, product, service; the Japanese, who do it best, call this Kaizen. Then there is exploitation: the continuous exploitation of existing knowledge to develop new and different products, processes, and services. Finally, there is genuine innovation. These three ways of applying
knowledge to produce change in the economy and in society need to be worked at together and at the same time. They are all equally necessary. But their economic characteristics – their costs as well as their economic impacts are qualitatively different.

Knowledge formation is already the largest investment in every developed country. The return which a country or a company gets on knowledge has become increasingly a determining factor in its competitiveness. Increasingly, productivity of knowledge will be decisive in its economic and social success, and in its entire economic performance. And we know that there are tremendous differences in the productivity of knowledge across countries, across industries and across organizations.

Making knowledge productive involves systematic, organized application of knowledge to knowledge. Knowledge has to aim high to produce results. The steps may be small and incremental but the goal must be ambitious. Knowledge is productive only if it is applied to make a difference. Making knowledge productive further requires that it be clearly focused. It has to be highly concentrated. Whether done by an individual or by a team, the knowledge effort requires purpose and organization. It is not a “flash of genius.” It is hard work.

To make knowledge productive also requires the systematic exploitation of opportunities for change. These opportunities have to be matched with the competences and strengths of the knowledge worker and the knowledge team.

To make knowledge productive also requires managing time. High knowledge productivity comes at the end of a long gestation period. Yet productivity of knowledge also requires a constant stream of short-term results. It thus requires balancing the long term with the short term.

Drucker also emphasizes the learning-doing gap. Most of us know many times more than we put to use. The main reason is that we do not mobilize the multiple knowledge we possess. We do not use knowledges as part of one toolbox. Instead of asking: “What do I know, what have I learned, that might apply to this task?” we tend to classify tasks in terms of specialized knowledge areas.

Specialization in knowledge has given us enormous performance potential in each area. But because knowledge has become so specialized, we need also a process to turn this potential into performance. Otherwise, most of the available knowledge will not become productive; it will remain mere information.

The role of educational institutions

In the West, the school underwent an earlier technological revolution several hundred years ago, brought about by the printed book. This earlier revolution holds important lessons for today. Embracing the new technology of learning and teaching is a prerequisite for national and cultural success and equally for economic competitiveness.

The West moved into leadership throughout the world between 1500 and 1650 in large measures because it reorganized its schools around the new technology of the printed book. On the other hand, the refusal of China and Islam to accept the printed book was a major factor in their decline. Both used printing – the Chinese had done so for centuries. But both kept the printed book out of
their schools; both rejected it as a learning and technical tool. The Islamic clergy stuck to rote 
learning. They saw in the printed book a threat to their authority precisely because it enabled 
students to read on their own. In China, too, the Confucian scholars rejected the printed book in 
favor of calligraphy. The printed book was incompatible with a key tenet of Chinese culture: 
mastery of calligraphy was necessary for rulership.

The earlier revolution offers an important lesson: Technology itself matters less than the changes 
which it triggers in substance, content, and focus of schooling and school. These changes in 
substance, content, and focus are what really matter. They are effective even if there is only a 
minimum of change in the technology of learning and teaching.

The achievement that motivates is doing exceptionally well what one is already good at. 
Achievement has to be based on the student’s strengths as has been known for millennia by every 
teacher of artists, every coach of athletes, every mentor. In fact, finding the student’s strengths and 
focusing them on achievement is the best definition of both teacher and teaching.

Continuing education is now a social necessity. Individuals must be able at any stage in their lives to 
continue their formal education and to qualify for knowledge work. Society needs to be willing to 
accept people into whatever work they are qualified for, regardless of their age. School, as has 
been said before, has traditionally been where one learns. The office or factory has been where one 
works. Increasingly, the line will become blurred. The school will be the place where adults 
continue learning even though they are working full time. They will come back to school for part 
time courses. Schools will no longer be monopolists. In many areas, schools will only be only one of 
several available teaching and learning institutions, in competition with other purveyors of teaching 
and learning.

Indeed, no other institution faces challenges as radical as those that will transform the school. The 
school will have to commit itself to results. It will have to establish its “bottom line,” the 
performance for which it should be held responsible and for which it is being paid. The school will 
finally become accountable.

The educated person

In the knowledge society into which we are moving, individuals are central. Knowledge is not 
impersonal, like money. Knowledge does not reside in a book, a databank, a software program. 
Knowledge is always embodied in person; carried by a person; created, augmented, or improved by 
a person; applied by a person; taught and passed on by a person; used or misused by a person. The 
shift to the knowledge society therefore puts the person in the center. In so doing, it raises new 
challenges, new issues, new and quite unprecedented questions about the knowledge society’s 
representative, the educated person.

Post capitalist society needs the educated person even more than any earlier society did. Access to 
the great heritage of the past will have to be an essential element. But this heritage will embrace a 
good deal more than the civilization that is still mainly Western, the Judeo-Christian tradition, for 
which the Humanists are fighting. The educated person we need will have to be able to appreciate 
other cultures and traditions: the great heritage of Chinese, Japanese, Korean paintings and 
ceramics; the philosophers and religious of the Orient; and Islam, both as a religion and as a culture.
The educated person also will have to be far less exclusively “bookish” than the product of the liberal education of the Humanists.

Tomorrow’s educated person will have to be prepared for life in a global world. It will be a “Westernized” world, but also increasingly a tribalized world. He or she must become a “citizen of the world” – in vision, horizon, information. But he or she will also have to appreciate the importance and impact of local culture.

**Concluding notes**

Individuals see organizations as the means for exploiting their knowledge. Managers see knowledge as a means to achieving the organization’s ends. A good many people in the post-capitalist society will actually live and work in these two cultures at the same time. Many more should be exposed to working experience in both cultures, by rotation early in their careers – from a specialist’s job to a managerial one, for instance, rotating the young computer technician into project manager and team leader, or by asking the young college professor to work part time for two years in university administration. And again, working as “unpaid staff” in an agency of the social sector will give the individual the perspective, the balance to respect both worlds, that of the intellectual and that of the manager.

But what we do need is the ability to understand the various fields of knowledge. What is each one about? What is it trying to do? What are its central concerns and theories? What major new insights has it produced? What are its important areas of ignorance, its problems, its challenges?

Without such understanding, the fields of knowledge themselves will become sterile, will indeed cease to be “knowledge.” They will become intellectually arrogant and unproductive. For the major new insights in every one of the specialized knowledges arise out of another, separate specialty, out of another field of the knowledge.

There is no “Queen of the Knowledges” in the knowledge society. All knowledges are equally valuable; all knowledges, in the words of the great medieval saint and philosopher St. Bonaventura, lead equally to the truth. But to make them paths to truth, paths to knowledge, has to be the responsibility of the men and women who own these knowledges. Collectively, they hold knowledge in trust.