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The CEO in the New Millennium

22

23 From [Management, Revised Edition](#) by [Peter Drucker](#)

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

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

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

27 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.

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

29 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.**

30 Inside, there are only costs.

31 **Results are only on the outside.**

32 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**

economy.

33 The Tasks Of The CEO

34 ***To define the meaningful outside of the organization.***

35 To define the meaningful outside of the organization is the CEO's first task.

36 The definition is anything but easy, let alone obvious.

37 For a particular bank, for instance, is the meaningful outside the local market for commercial loans?

38 Is it the national market for mutual funds?

39 Or is it major industrial companies and their short-term *credit* needs?

40 All three of these "outsides" deal with money and *credit*.

41 And one cannot tell from the bank's published accounts, for example, its balance sheet, on which of these "outsides" it concentrates.

42 Each of them is a different *business* and requires a different organization, different people, different competencies, and different definitions of results.

43 Even the very biggest bank is unlikely to be a leader in all of these "outsides."

44 And which of these to concentrate on is a highly risky decision and one very hard to change or reverse.

45 Only the CEO can make it.

46 But also the CEO must make it.

47 It is the first task of the CEO.

48 ***To work on getting information from the 'outside' into usable form.***

49 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.

50 Organized information has grown tremendously in the last hundred years.

51 But the growth has been mainly in "inside" information, for example, accounting.

52 The computer has further accentuated this inside focus.

53 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).

54 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). ¶¶¶

55 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.

56 The data are largely available.

57 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).

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

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

60 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. ¶¶¶

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

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

63 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.

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

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

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

67 ***To decide what results are meaningful for the institution.***

68 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?

69 What should it be?

70 What should it not be?”

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

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

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

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

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

76 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.”

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

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

79 It is not made well by intuition.

80 It is a judgment.

81 Again, only the CEO can make this judgment, but also the CEO must make it. ¶¶¶
82 This definition of desirable results invariably requires a “short-term–long-term” judgment.
83 It is so risky that all premodern economies tried to avoid making it.
84 In fact, the one major institutional innovation of the modern economy was to create in
85 large part the systematic risk-taker and risk-sharer, the public corporation, thereby
86 enabling the individual to strictly limit the personal risk of investing in future
87 expectations. ¶¶¶
88 By thus making possible these time decisions in very large numbers and on an enormous
89 scale, the *enterprise* can be said to be the one invention that created the modern
90 economy—far more so than any other invention, whether material or conceptual.
91 With the invention of the enterprise, the manager came into being as a distinct role and
92 function, with one of his or her major tasks being the making of the decision between
93 short-term yields and deferred expectations.
94 Making this decision requires a good deal of very hard work on the part of the CEO.
95 (Both Machiavelli’s *Prince* and Shakespeare’s *The Merchant of Venice*, two Renaissance
96 masterpieces the background of which is the emergence of the modern economy, are
97 built around the challenge of this decision.)

89 ***To decide the priorities.***

90 In any but a dying organization, there are always far more tasks than there are available
91 resources.
92 But results are obtained only by *concentration of resources*, especially by concentration of
93 the scarcest and most valuable resource, people with proven performance capacity. ¶¶¶
94 There is constant pressure on every CEO to do a little bit of everything.
95 That makes everybody happy but guarantees that there are no results.
96 The CEO’s most critical job—also the CEO’s most difficult job—is to say no.
97 To do so is not just a matter of willpower.
98 It requires an inordinate amount of study and work—work that only the CEO can do, but
99 again work that the CEO must do.

97 ***To place people into key positions.***

98 This, in the last analysis, determines the performance capacity of the institution. ¶¶¶
99 Every organization says, “We have better people.”
100 But this is, of course, impossible.
101 Once an organization grows beyond a handful of people, it is subject to statistics’ most
102 ruthless law:
103 the law of the great number, which dictates that there is only “normal distribution.”
104 What differentiates organizations is whether they can make common people perform
105 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.
106 And nothing requires as much hard work as “people decisions.”
107 The only thing that requires even more time (and even more work) than putting people

into a job is unmaking a wrong people-decision.

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

107 ***To organize top management.***

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

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

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

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

112 The American record suggests not human failure but systems failure.

113 Top management in big organizations needs a new organization concept. ¶¶¶

114 Some elements of such a concept are beginning to emerge.

115 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.

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

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

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

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

120 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.

121 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. ¶¶¶

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

123 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.

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

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

126 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.

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

128 **The CEO: An American Invention And Export**

129 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.

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

131 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. ¶¶¶

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

133 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.

134 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.

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

136 Summary

137 The CEO in the new millennium has six specific tasks.

138 They are

139 1. To define the meaningful outside of the organization

140 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

141 3. To decide what results are meaningful for the institution

142 4. To set priorities for the organization

143 5. To place people into key positions

144 6. To organize top management

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

146

147 The CEO in the New Millennium II

148 From [Managing in the Next Society](#) by [Peter Drucker](#)

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

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

151 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.

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

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

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

155 So instead of discussing the disappearance or the weakening of **top management**, I want

to focus on **the new demands facing it.** ¶¶¶

156 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**.

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

158 **Transforming Governance**

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

160 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. ¶¶¶

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

162 We can look at our aging population as one example.

163 The population of the United States is now growing older.

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

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

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

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

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

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

170 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.**

171 I am not being facetious.

172 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.

173 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.

174 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. ¶¶¶

175 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.

176 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.

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

178 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." ¶¶¶

179 I think we are getting to the end of that.
180 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.
181 Not only governance, but its related concepts and tools, will need to be confronted and
transformed over the next fifteen years.
182 And not only in the United States.
183 There is no country today that can claim current success with corporate governance.
184 It doesn't work anymore in Germany and it doesn't work anymore in Japan.
185 Ownership structure has fundamentally, dramatically, permanently changed everywhere.
186 Many executives have already begun to tackle the governance issue.
187 They have found that it isn't easy, but neither is it impossible.
188 Those executives who haven't yet faced this challenge will find that they have little choice
but to do so over the next decade.

189 **New Approaches to Information**

190 We have heard endlessly that we are living in an Information Revolution, and indeed we
are.
191 Forty years ago when the computer first came out, most people saw it as an extremely
fast adding machine.
192 A few of us, however, took it more seriously and saw it as a new way to process
information.
193 We were convinced that within twenty to thirty years, new information would transform
the job of running the business.
194 But, so far, except perhaps for the military, our new information capacities have had
practically no impact on the way we run businesses.
195 Where we have seen a tremendous impact is on the way we run operations.
196 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.
197 This firm put in a bid to design the heating, lighting, and plumbing for a new prison
building.
198 The software my grandson showed me can, literally in the twinkling of an eye, do work
that once took hundreds of individuals to complete.
199 Meanwhile, in medical schools and teaching hospitals, virtual reality presentations are
providing a new and effective way to train surgeons.
200 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.
201 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.
202 In businesses across the board, information technology has had an obvious impact.

203 But until now that impact has been only on concrete elements—not intangibles like
strategy and innovation.

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

205 That is going to have to change. ¶¶¶

206 Let's take two positions most CEOs are familiar with.

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

208 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.

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

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

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

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

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

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

215 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.

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

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

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

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

220 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.

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

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

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

224 How so?

225 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.

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

227 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.

228 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.

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

230 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.

231 This is the hypothesis on which all the great research labs have been founded, beginning with Siemens in Germany in 1869.

232 That assumption no longer works.

233 Technologies now crisscross each other all the time, and productivity is no guarantee of achievement.

234 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? ¶¶¶

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

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

237 We're only beginning to learn how to quantify this information.

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

239 **Command and Control**

240 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.

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

242 People talk glibly about the disappearance of command and control.

243 Yes, but what is taking its place?

244 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.

245 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. ¶¶¶

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

247 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).

248 I couldn't do it.

249 There is just too much going on.

250 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. ¶¶¶

251 Successful participants in joint ventures understand that one can't "command" one's partner.

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

253 What are the other party's values?

254 Objectives?

255 Expectations?

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

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

258 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.

259 **The Rise of Knowledge Work**

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

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

262 Shortly after the end of the Korean War, I was sent to Korea.

263 The country had experienced far more destruction than either Germany or Japan had in World War II.

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

265 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. ¶¶¶

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

267 Technology travels incredibly fast.

268 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.

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

270 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.

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

272 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.

273 The trouble is that we haven't worked on it. ¶¶¶

274 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.

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

276 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.

277 They spend time filling out papers for which nobody apparently has any need.
278 No one knows what happens to those papers, but they have to be filled out nonetheless
and the task falls to the nurses.
279 In department stores, salespeople spend 70 to 80 percent of their time serving not the
customer but the computer.
280 How to make the knowledge worker more appropriately productive is a challenge we will
need to face seriously over the next twenty years. ¶¶¶
281 With manual work, we start with the question “How do you do the work?”
282 You take this work for granted.
283 In knowledge work, you start with the questions “What do you do and what should you
be doing?”
284 Answering these questions is critical if we want to maintain our competitive advantage.
285 Physical resources no longer provide much of an advantage, nor does skill.
286 Only the productivity of knowledge workers makes a measurable difference—and right
now it is quite poor.

287 **Tying It Together**

288 What does all this really mean?
289 First, it means that the CEO’s job is to set a clear direction of what his or her company
means by “results.”
290 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.
291 Tomorrow’s leader won’t be able to lead by charisma.
292 He or she will need to think through the fundamentals so that other people can work
productively. ¶¶¶
293 This will be quite demanding, especially considering the speed of change, the
expectations of [the new workforce](#), and an increasingly competitive world economy.
294 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.
295 Some companies, such as General Motors, AT&T, and Sears, have had success with long-
term major policies.
296 But they are the exceptions; the truth is that ten years is common.
297 Now the changes are coming so fast that changes every three to four years will likely
become commonplace. ¶¶¶
298 Increasingly, a CEO’s job will be much more like the most complex job I know, which is
running an opera.
299 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.
300 Each group is completely different.
301 But the opera conductor has a score, and everybody has the same score.
302 In a business you have to make sure all the various groups converge to produce the
desired result.

303 This is the key to understanding what's ahead.
304 It's not about being less or more important, but differently important.
305 It's not about refraining from giving orders—but knowing when to give an order and when
to treat someone like a partner.
306 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.
307 But you will have to know how to integrate your financial objectives with the need to
build and maintain a business.
308 (1997)

309 **The New Workforce**

310 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.
311 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.
312 Now, another fifty years later, fewer than a quarter of American workers make their living
from manual jobs.
313 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. ¶¶¶
314 Of all the big developed countries, America now has the smallest proportion of factory
workers in its labor force.
315 Britain is not far behind.
316 In Japan and Germany, their share is still around a quarter, but it is shrinking steadily.
317 To some extent this is a matter of definition.
318 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.
319 However, too much should not be made of this.
320 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. ¶¶¶
321 Before the First World War there was not even a word for people who made their living
other than by manual work.
322 The term service worker was coined around 1920, but it has turned out to be rather
misleading.
323 These days, fewer than half of all nonmanual workers are actually service workers.
324 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.
325 They now account for a full third of the American workforce, outnumbering factory

workers by two to one.

- 326 In another twenty years or so, they are likely to make up close to two-fifths of the workforce of all rich countries. ¶¶¶
- 327 The terms knowledge industries, knowledge work, and knowledge worker are only forty years old.
- 328 They were coined around 1960, simultaneously but independently; the first by a Princeton economist, Fritz Machlup, the second and third by this writer.
- 329 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.
- 330 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. ¶¶¶
- 331 First, the knowledge workers, collectively, are the new capitalists.
- 332 Knowledge has become the key resource, and the only scarce one.
- 333 This means that knowledge workers collectively own the means of production.
- 334 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. ¶¶¶
- 335 Effective knowledge is specialized.
- 336 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.
- 337 The most gifted mathematics teacher in a secondary school is effective only as a member of the faculty.
- 338 The most brilliant consultant on product development is effective only if there is an organized and competent business to convert her advice into action.
- 339 The greatest software designer needs a hardware producer.
- 340 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 programmer.
- 341 Knowledge workers therefore see themselves as equal to those who retain their services, as “professionals” rather than as “employees.”
- 342 The knowledge society is a society of seniors and juniors rather than of bosses and subordinates.

343 **His and Hers**

- 344 All this has important implications for the role of women in the labor force.
- 345 Historically women’s participation in the world of work has always equaled men’s.
- 346 The lady of leisure sitting in her parlor was the rarest of exceptions even in a wealthy nineteenth-century society.
- 347 A farm, a craftsman’s business, or a small shop had to be run by a couple to be viable.
- 348 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. ¶¶¶

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

350 There was men's work and there was women's work.

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

352 There never was a male spinster.

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

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

355 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.

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

357 This was considered as exclusively women's work.

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

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

360 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."

361 The same logic applies to all knowledge work.

362 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. ¶¶¶

363 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.

364 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.

365 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.

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

367 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. ¶¶¶

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

369 Office technologists such as paralegals are also proliferating.

370 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.

371 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. ¶¶¶

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

373 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.

374 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.

375 That makes them full-fledged knowledge workers. ¶¶¶

376 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.

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

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

379 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.

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

381 Schooling traditionally stopped when work began.

382 In the knowledge society it never stops. ¶¶¶

383 Knowledge is unlike traditional skills, which change very slowly.

384 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.

385 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. ¶¶¶

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

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

388 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.

389 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. ¶¶¶

390 Knowledge workers of all kinds tend to identify them selves with their knowledge.

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

392 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.”

393 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

- institution who work in a different knowledge area. ¶¶¶
- 394 Although the emergence of knowledge as an important resource increasingly means specialization, knowledge workers are highly mobile within their specialism.
- 395 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.
- 396 There is a lot of talk about trying to restore knowledge workers' loyalty to their employing organization, but such efforts will get nowhere.
- 397 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. ¶¶¶
- 398 Knowledge is nonhierarchical.
- 399 Either it is relevant in a given situation, or it is not.
- 400 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.
- 401 This is why knowledge workers of all kinds see themselves not as subordinates but as professionals and expect to be treated as such. ¶¶¶
- 402 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.
- 403 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.

404 **Ever Upward**

- 405 The knowledge society is the first human society where upward mobility is potentially unlimited.
- 406 Knowledge differs from all other means of production in that it cannot be inherited or bequeathed.
- 407 It has to be acquired anew by every individual, and everyone starts out with the same total ignorance. ¶¶¶
- 408 Knowledge has to be put in a form in which it can be taught, which means it has to become public.
- 409 It is always universally accessible or quickly becomes so.
- 410 All this makes the knowledge society a highly mobile one.
- 411 Anyone can acquire any knowledge at a school, through a codified learning process, rather than by serving as an apprentice to a master. ¶¶¶
- 412 Until 1850 or perhaps even 1900, there was little mobility in any society.
- 413 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.
- 414 In most other societies, too, if the father was a peasant, the son was a peasant, and the daughters married peasants.
- 415 By and large, the only mobility was downward, caused by war or disease, personal misfortune, or bad habits such as drinking or gambling. ¶¶¶

416 Even in America, the land of unlimited opportunities, there was far less upward mobility than is commonly believed.

417 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.

418 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. ¶¶¶

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

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

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

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

423 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.

424 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.”

425 **The Price of Success**

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

427 There can be winners only if there are losers.

428 This was not true of earlier societies.

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

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

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

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

433 These pressures create hostility to learning.

434 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.

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

436 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. ¶¶¶

437 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.

438 They know they have achieved all they will achieve.

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

440 **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.

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

442 «\$\$\$»

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