

# CHAPTER 1

## Survey of the Main Challenges Facing Higher Education at the Millennium

*Luc E. Weber*

**T**o make sure that the discussion would cover all the relevant issues for the future of higher education, the participants in the Glion Colloquium were invited to submit in advance what they considered to be the five main challenges facing higher education at the millennium, in particular for research universities. This introductory chapter to the collected papers of the Glion Colloquium is a short commented survey of the participants' input, including my own.

Most of the issues raised in this summary are at the core of the following chapters and are therefore developed at length there. But it is interesting to note here that if nearly all the following contributions mention globalization, new technologies, and the necessity to improve governance as the most burning challenges, some issues considered as central in the replies to our inquiry, such as the responsibility of universities towards society, the academic profession, or student expectations, get relatively little attention in the main contributions.

This result demonstrates that higher education policy and university management are extremely complex undertakings characterized by lots of variables and by sophisticated, and even diverse, relationships among the variables. Universities are certainly the most complex institutions humans have ever conceived. They developed extremely slowly through the centuries, in Europe mainly, to become by the golden 1960s in most countries of the world (certainly in North America and generally in Europe) respected building blocks of society, whatever their status, public or private. Although today,

universities educate a proportion of a class age up to 10 times larger than it was a century ago, their reputation is diminishing. They are increasingly criticized, mainly by politicians and private employers, and invited to change. Well-known management guru Peter Drucker (1997) goes so far as to say that “Thirty years from now the big university campuses will be relics. Universities won’t survive.”

In comparison with industries, and even with the state, universities have remained extremely conservative institutions. It is therefore not surprising that all participants in the Glion Colloquium are convinced that universities have to change. Some believe that an incremental change process will do; others assert that change must be revolutionary; but no one believes in simplistic solutions drawn from the experience of industry management, as is often proposed during public discussion.

The key issues raised in response to our inquiry among the participants in the colloquium, and often developed in their own contributions, are rather diverse. The majority of them can be considered as traditional, aiming at improving the way research universities are fulfilling their different missions and governing themselves. However, some are clearly of a more revolutionary nature, announcing the end of traditional research universities if they do not adapt rapidly to the globalization of the world and do not take sufficiently into account the impact new technologies will have on the dissemination of knowledge. All admit that the future of research universities is less bright than their past, and even bleak, if universities do not reengineer themselves internally as well as rapidly reposition themselves within society.

The main challenges as perceived by the participants in the colloquium can be summarized under the seven following headings, the last one focusing on the main similarities and differences between the United States and Western Europe:

1. The changing environment
2. Missions
3. Students and teaching
4. The academic profession
5. Higher education finance
6. Governance
7. Comparison between the United States and Western Europe

## THE CHANGING ENVIRONMENT

It is at least implicit in each contribution to this volume that accelerating geopolitical, economic, and technological changes, which affect the whole world, do not spare the university. Even if in their secular history, in particular in the Old World, the universities had to face difficult periods, now, for the first time

ever, the way in which they fulfil their missions or even their existence is challenged not only by political threats, but also by technological and economic changes and pressures. First, the corporate world has had to change; now it is the turn of higher education. In particular, two strong forces are at work—globalization (or internationalization) and the information technology revolution.

### **Globalization**

Globalization and, in particular, the rapid growth and development of the “knowledge industry”—the quantity of knowledge seems to double every five years—will profoundly change the educational system as the ability to move information more quickly and economically becomes greater and more widespread. These developments will require a repositioning of the university. Because universities have traditionally dispensed courses only regionally to their students, they have benefited from a regional monopoly. However, as we know from experience, monopolies based on regional proximity cannot survive the globalization movement. Therefore, universities will experience competition, worldwide and regionally. For some, it is a threat, but for others, it is a new opportunity offering universities the possibility to go beyond their regional role.

To act globally and in a competitive environment, the university, whether it likes it or not, must consider students to be clients by adapting programs to students’ needs and wishes. Teaching, and even research, can no longer be decided essentially by the teachers and researchers, but should take much more into account the specific wishes of the students, as well as the needs of different types of students. In particular, most participants believe that universities should aggressively enter the field of lifelong learning because the accelerating obsolescence of knowledge and the changing needs of the labor market are increasing demand in this area. Moreover, one European participant, who is not a native English speaker, believes that English should become the predominant language in higher education, as it already is for research, a change that does not preclude the necessity to preserve a cultural heritage, of which the native language is a key element.

### **The Influence of Technology**

Most participants note that the exploding information and telecommunication technologies offer new potential for producing and distributing knowledge. Teleteaching, in one way or another, is gaining ground. Part of a course can be imported via networks and combined with local content, which brings in international expertise. On the other hand, networks offer the chance to export courses and to amortize their costs on a large number of students.

Distance learning is also made possible at a high level because courses can be delivered directly to the student's desk through the Internet or on cheap CDs and DVDs. However, these digital courses are expensive to develop; therefore, universities must decide in which fields they want to build or keep up their international visibility and in which they can rely on imported contributions. Moreover, they will have more than ever to constitute networks to develop such programs.

## MISSIONS

### **Responsive and Responsible Universities**

Most participants seem to accept, without saying it explicitly, that the three fundamental missions of universities—teaching, research, and community service—are fundamentally correct, but argue that these should be taken more seriously. On one hand, universities should listen more carefully to society to learn and understand its changing needs and expectations, as well as its perception of higher education, especially in light of the forces driving change. Universities should be more responsive to needs when offering new study programs or starting new research. They should also show a greater willingness, or even take the lead in cooperating with industry, the state, and other higher education institutions. Universities and their units should be reliable partners for companies, institutions, and all other partners in society.

On the other hand, universities should sharpen their sense of responsibility towards society. More than ever, they are the only independent tenants of collective values and culture and the best placed to express constructive criticism and to suggest new ideas. They have been able to play this role more or less freely for centuries. This responsibility is as important in the present globalized world dominated by the power of the market and shortsighted politicians, as it was in periods of obscurantism or totalitarian regimes. The greatest threat is that knowledge, which is traditionally a public good available to all those seeking it, might become a private good reserved only for those who can pay for it.

The corollary of that search for more responsiveness and a greater sense of responsibility is greater transparency and accountability. The high cost of higher education and research is a heavy burden on society at large, whoever pays most, whether the state or individuals. Therefore, universities should not, as they were too long inclined to do, pretend that they are above the crowd and not accountable to anyone. Universities, public or private, belong to society and therefore have to be both transparent and accountable. This need implies more humility and internal democracy, as well as a greater effort at communication.

Among the concrete proposals made by the colloquium participants to improve the ways in which universities fulfil their missions, the following actions are the most relevant:

- Open up to the new public knocking at the door by responding to the sophisticated needs of adults in the workplace while providing broader lifetime learning opportunities for all in society.
- Participate with industry in the improvement of technology transfer from basic research to the marketing of new products.
- Develop among the student community greater sensitivity towards sustainable development.
- Educate students to be not only good “technicians” in their disciplines, but also good citizens, able to understand and criticize the development of society in a constructive way.

### **The Changing Shape of Research Universities**

The second main issue raised about the missions of universities is their shape and fundamental culture. In particular, some participants in the colloquium believe that the two main characteristics of the research university are at risk. First, the increasing sophistication of advanced research, as well as the need to improve the quality of teaching programs, are creating a deepening gap between research activities and teaching activities, at least at the graduate level. Research will more and more be done in specialized institutions, publicly or privately funded, and undergraduate teaching will be offered by establishments that develop a superior pedagogical culture. Research universities may limit themselves to educating young researchers. For the Europeans attached to the Humboltian model, which pleads for the full integration of teaching and research under the same roof, this would mean the end of the university.

Increasing competition and transparency, as well as the resulting search for quality, will also threaten the model of the comprehensive university. Acting in a more competitive and transparent market for innovation and knowledge transfer, the universities will lose their best potential customers if they cannot assure high quality standards. This trend will force the most ambitious institutions to concentrate their resources in the disciplines where they are good, or where they would like to be good, and possibly to create networks or even to merge with other complementary institutions. Traditionally realized at the level of a region, such concentrations will be increasingly done across national borders or even on a worldwide scale, all the more so since new communication technologies can be integrated into the teaching and research processes.

## Emergence of Competitors to Traditional Universities

Many participants see that the new world is bringing with it the emergence of new educational providers (e.g., for-profit institutions, mega-universities, and information “brokers” of distance learning such as the Western Governors University (WGU) in the U.S. or Ariane in Europe), as well as a tendency to commercialize research results to increase the income stream for research. This tendency has certain positive aspects. Apart from diverting additional money to teaching and research and broadening the output capacity of the higher education sector, it can introduce in the system establishments that may be more efficient and in particular more capable of responding to current needs.

However, it does introduce an important element of insecurity into the higher education system. The best education institutions run along with the worst. This situation requires quality assessment for the sake of protecting consumers, but also assessment of the quality of teaching and learning for those organizations using new pedagogical means.

Regarding the commercialization of research, the pertinent issue is the well-known problem of safeguarding the independence of the researcher, with respect to the choice of the research subject, the honesty of his or her findings, and the publication and exploitation of the results.

Finally, the emergence of a greater separation between teaching and research will slowly blur the distinction between universities and colleges, or more generally between undergraduate education within research universities and professional vocational training offered in higher education non-university organizations like technical higher schools or *Fachhochschulen* in the German-speaking part of Europe.

## STUDENTS AND TEACHING

Nearly all participants state that the teaching mission of the university, as well as the response to student expectations of higher education, will have to gain in importance in the university of the future.

### Students

When looking specifically at students, access to higher education is the dominating theme. Higher education in North America and in Western Europe is in a more or less advanced process of massification. The growing demand for higher education has its origins not only in social aspiration but is justified by the increased requirements of the labor market, being caused by the application of increased knowledge. Apart from the capacity of absorption of higher education institutions, which is mainly a financial and possibly a

political issue, the main problem is access to higher education. In this respect, our societies have not yet succeeded in promoting equal access independent of social origin. They have still to promote that social requirement. This objective, although broadly accepted, appears more difficult to reach as the new financial developments, in particular increased student fees, substitution of loans for grants, and diminishing subsidies to student facilities, increase the problem. This situation seems to be more serious in the United States where even the middle class is beginning to feel the pressure.

### **Teaching**

The other side of the coin, teaching, raises questions that are even more crucial. First, the knowledge society requires people who are well educated more than people who are specifically trained; to satisfy demand, universities should organize their teaching programs on a broader scale. The consequence should be to consider education as a continuing process, which will not stop after university. The knowledge society, which exposes young people to more new information in a year than their grandparents encountered in a lifetime, makes illusory the ability to transmit enough knowledge through the process of teaching. Participants believe that the capacity to learn has become crucial. Therefore, the whole traditional process of teaching has to be transformed. This implies the use of all adequate pedagogical supports and that the role of the teacher is becoming that of an animator. This is a great change that many teachers will have difficulty making. This change of paradigm will also make it more difficult to assess quality because it will be necessary to assess not only the quality of teaching, but also the quality of learning, which means assessing the performance of graduates in the world of work! Is this feasible?

The other key word when discussing teaching is "internationalization." In a global world, the possibility for a student to study part of the curriculum at another university is not only beneficial in terms of general culture, but may also allow a broadening of the field of specialization. However, to make mobility feasible, it is essential to assure mutual recognition of degrees and credit points, while at the same time allowing for individuality and diversity.

## **THE ACADEMIC PROFESSION**

The faculty and all other teachers and researchers are by far the greatest resource of a university. They are those who know best the discipline, even broadly defined. The best-organized university is worth nothing if it cannot count on a qualified teaching staff; an unqualified staff means poor teaching and unimaginative research. This is why university departments and university leaders should pay great attention not only to the selection of people but also to the management of this rare human resource. Our inquiry about key

challenges has shown that three difficult questions must be answered—the changing role of teachers, the position of tenure, and the provision of a new generation of staff to fill vacant positions.

### **The Changing Role of Teachers**

Teachers will have to accept that their role is changing; they will be decreasingly information providers and increasingly animators and commentators in charge of giving context and in-depth understanding of an area. Moreover, as is already the case for research, they will be confronted with growing competition in their teaching assignments thanks to increasing transparency on the type and quality of courses available elsewhere and through multimedia.

University leaders complain regularly that faculty are more faithful to their discipline than to their university. Faculty are also criticized for not being sensitive to the needs and perceptions of the community that they are supposed to serve, as well as for having a shortsighted vision about the changing needs and expectations of society. This is a sensitive point because the support of a community for its university depends greatly on the conviction that the institution cares. As one participant phrased it, “teachers should not only be responsible for themselves, but also co-responsible for their institution as a whole.”

Finally, the conflict between high specialization in one discipline and multi-disciplinarity should receive more attention. Traditionally, a researcher gets academic recognition for publishing specialized papers in one discipline, whereas participating in multi-disciplinary research groups requires patience, and the visibility of output is low because results are shared and are not at the frontier of knowledge in one specific discipline. Considering that multi-disciplinarity is crucial to better serve the community, faculty and researchers should be induced, or even compelled, to participate in multi-disciplinary projects.

The different issues mentioned above raise the question of the employment contract and even of the limits to academic freedom. It appears to many participants that to improve the coherence and therefore the quality of the teaching programs and to make the institution more helpful to the community, the employment contract and individual academic freedom should be redefined. Faculty should perhaps be statutorily obliged to give part of their time to serve community or societal needs and should enjoy total academic freedom only if it is consistent with the objectives of the department or institution.

### **Tenure**

Tenure is another crucial and difficult issue. The rapidly changing world, the unprecedented speed at which knowledge is created, and economic pressures are causing university institutions to place greater emphasis on flexibility.



They must concentrate resources on some selected fields at the expense of others, a need that implies closing departments or hiring more non-tenured track faculty. Moreover, some senior faculty are perceived as no longer productive. Given these and other considerations, a few participants believe that tenure should be redefined. More precisely, tenure should be subordinated to some more restrictive conditions than those prevailing today; it should be easier to cancel tenure when a department is shut down or if the quality evaluation of teaching and research is insufficient. However, at the same time, measures should be taken to offer alternative solutions for those losing tenure, like offering alternative occupation within or outside the institution or introducing a flexible age-of-retirement scheme. However, limitation to tenure should be handled carefully to prevent discouraging young researchers from investing the necessary time in research to pursue an academic career.

### **Developing a New Generation of Staff**

The extraordinary development of the university sector in the 1960s and 1970s brought an equivalent increase in the number of teaching staff. Twenty to thirty years later, those appointed at that time have to be replaced. This need for replacements poses not only a quantitative problem of finding quality successors, but the situation also creates an extraordinary opportunity to adapt the university supply to the changing social demand and to enhance university responsibility towards society. This is also an occasion to weight selection criteria differently, to take into account the changing role of teachers in a world of lifelong learning and quasi unlimited access to information, and to stress more the pedagogical quality and the entrepreneurial aptitude of the candidates. Postgraduate education should also be adapted to new requirements.

## **HIGHER EDUCATION FINANCE**

The financing of universities is becoming increasingly difficult for the following three reasons:

- The public sector is hard pressed with tasks mainly on the transfer side of the budget (e.g., attending to an aging population, health care, poverty, and foreign aid), as well as with security issues and the maintenance of public infrastructure. Consequently, the percentage share of the revenues being devoted to higher education is bound to diminish.

- The private sector is less and less ready to transfer money to universities without getting a service in return or without being able to influence their activities.
- The cost of providing university education and of doing research continues to grow significantly more than increases in the cost of living.

Therefore, institutions are seriously challenged to take measures on both sides of the budget, that is, to secure or even increase their revenues as well as to decrease their unit costs of creating new knowledge and transmitting it. Any institution missing these points will inevitably decrease in scope and quality.

### **Securing Revenue**

One of the most important issues, because its consequences are socially far-reaching, is to determine to what extent education and research are a public or a private good. The response to this question is partly factual (in general terms, basic research is essentially public, education of traditional students is partly private and partly public, and lifelong learning and applied research are predominantly private), but there is a high margin for political interpretation. Moreover, it would be important to know more about the distributional effects of different financing schemes and the exact burden borne by each generation.

In any case, there is a clear tendency towards a greater diversification (differentiation) of income sources within the state (different departments or levels of government) and within the private sector (student fees, capital endowment, commercialization of services, loans at a privileged interest rate, or grants from charity organizations). However, again, a necessary condition for a successful income campaign—aimed at either the public or the private sector—is more transparency and more accountability on the part of the institution.

### **Reducing Costs**

On the expenditure side, two types of measures should be used more intensively. First, higher education institutions have been, in general, very bad at fixing clear priorities. Now, one cheap but extremely difficult way to finance new priority projects is to save money in sectors whose value to the university and to society has greatly diminished; in other words, universities should not necessarily always try to expand, but should more seriously consider renewing themselves through reallocating resources. However, such a more dynamic policy requires not only vision and courage, but also an organizational structure and a process for taking and implementing unpopular decisions.

Secondly, higher education institutions should much more energetically embrace their production or cost function. Teaching and research are labor

intensive and therefore their unit costs tend to increase more rapidly than the cost of living, with the consequence that they permanently need more money to produce a given level of service. However, it seems presently possible to stabilize this tendency or even to reverse it. The new technologies, even if they require huge initial investments, allow universities to spread part of the cost of teaching over a large number of students all over the world so that the unit cost of teaching many courses could be decreased. Regarding research, there is also potential for saving in using, for example, simulation methods instead of full laboratory experiences. However, we have to be aware that the use of new technology to decrease costs implies a much closer cooperation between different institutions, which requires networking or merging of operations.

Moreover, many participants expect that private corporations strongly involved in computer, publishing, or entertainment businesses will take an increasing part of the share of this market for teaching and research tools. Opinions differ as to what extent this foreseeable development is a threat or a chance for traditional universities. Experience has shown that the publication of books has been a strong support to teaching and that members of the university community have been by far the main providers of content. Although the same can happen with the production of any sort of digitized courseware, there is one great difference—the production of new courseware requires a collective effort on the part of many teachers and the participation of specialists in the use of sophisticated equipment. This requires universities to network and form alliances with private firms.

## GOVERNANCE

The governance of higher education institutions and particularly of research universities is probably the most important as well as the most complex issue in higher education policy. In a world of rapid change and stagnant or diminishing resources, a university cannot simply be administered, but must be governed so that it continually adapts to the new scientific and societal environment without neglecting its responsibility. The current practice of shared governance, which is deeply embedded in North American and Western European universities, worked well in a phase of stable circumstances or in a time of increasing resources, but has visible shortcomings in times of stress or constraint, as well as in times of rapid change. Overcoming these shortcomings is the main challenge facing higher education nowadays.

### Main Shortcomings

The decision structure of traditional universities is slow and cumbersome. It is based on a faculty/department structure, and decisions are taken via many internal committees. Decisions typically require consensus among the faculty

members. This structure hinders the decision process and leads to extremely slow reaction. The very nature of the process inhibits and impairs the ability of leadership to lead, therefore contributing to the perpetuation of an obsolete past.

### **Ways to Improve University Governance**

The participants unanimously believe that if universities want to remain essential players in tomorrow's world of knowledge, they can hardly camp on traditional positions and hope for better days. They are expected to change, and they have to do it by themselves. Therefore, they have to restructure themselves to be able to do more with less.

Strong leadership is needed. However, what is leadership in a university where the wealth of knowledge and creative potential is, as in no other human organization, at the base of the pyramid (faculty, postgraduate, and advanced graduate students)? Does leadership mean that there should be one strong person who should decide on budgets, on infrastructure, and on cost, and who should be able to reposition and redeploy staff according to requirements or who would even decide on each unit's strategic positioning? Such leadership would mean that the "boss" knows better than the other actors what is good for the development of each unit and is able to impose decisions onto the university community. Applicable for a small and specialized institution, this "single" manager model is hardly feasible in a university.

Better leadership in such an organization has to combine the traditions of academic freedom and collective decision making with the new requirements outlined above, that is, the necessity to make and implement important and often unpopular decisions in a timely manner. Leadership in a university will still rely on shared governance, but, the balance of power between the university administration and the faculty must be shifted in favor of leaders so that the dominant conservative process of present systems makes room for a more progressive process.

The conception of this broad-based leadership model is particularly challenging and should therefore receive first priority in the agenda of university leaders. The study of the vast and diverse experience accumulated in the universities of different countries can be helpful. Most of the main ways to improve university leadership will address the following points:

- Organize the university as a federation or as a holding company and apply the principle of subsidiarity; in other words, give as much autonomy as possible to the different units to allocate human and financial resources as they wish.
- Eliminate multi-layered decision processes; only one level has to be competent, and the level above is responsible for controlling.

- Give real competence for final decisions to the president/rector for such crucial questions as budget and strategic plan, infrastructure, and allocation of human resources (faculty); the community must become accustomed to stronger management.
- Set aside a special budget to allow the management of the institution to promote new programs through financial incentives and to cover the costs of closing an activity that is no longer a priority.
- Develop university policy by elaborating a strategic plan that involves the whole community; the final decision has to be taken by the president/rector, and the plan has to be implemented according to competencies at different levels.
- Increase the level of management skills of the leaders at the different organizational levels, including board members, if any.

The reengineering of the decision process will also mean adapting the structure of the organization. However, because structure varies enormously from country to country and even from institution to institution in a single country, we cannot comment on that here.

Finally, and this is particularly true for higher education institutions funded mainly by the state, wide and real autonomy should be granted to them. To run a university is an extremely complex task; shortsighted political intervention can only do harm. The institution as a whole should have a clear mission that defines what is expected from it, should be free to act, and should be accountable. In addition, this autonomy should not only be enshrined in a general law, but also respected in all fields of legislation.

## COMPARING THE UNITED STATES AND WESTERN EUROPE

We have identified and described the main challenges facing higher education without mentioning any differences between the United States and Western Europe. Is there really such similarity in the development of the two regions? The answer to this question is mixed and made difficult because Europe itself is much diversified. In brief, we observe that the main differences lie more in the original institutional setting or historical heritage and stage of development than in different challenges facing the two regions.

This is not the place to examine in detail institutional differences. The most important one is that private universities are common in the U.S. and an exception in Europe. To some extent, the same is true for boards of trustees or regents. The search for sponsors to finance the construction of university buildings or to fund research and study programs is part of daily life in the U.S. but is just beginning in Europe. For that reason, the role of the president/rector is somehow different, with the American president spending a greater part of his or her time in lobbying potential sponsors than the European one.

If the level of recognition of the intellectual autonomy of universities is high—although not absolute—in both regions, the administration of American universities is apparently less constrained by public rules or direct political intervention. Moreover, tuition fees cover a much greater share of the budget in the United States than in Europe. Finally, the organization of the higher education sector is different. In the United States, one huge sector integrates top-quality research universities as well as a great number of teaching colleges and even of two-year colleges. The American system offers top-level academic education, as well as focused vocational training or even general education as provided in the last years of high school in Europe. The European higher education system, although partly different from one country to another, is in general stratified in two different sets of institutions pursuing similar missions and aims: on one side, the universities, which have not been qualified as “research universities” because they promote research by definition and, on the other side, high vocational training institutions.

Although these institutional differences are important, we believe that the challenges facing universities on both sides of the Atlantic are similar. The most visible differences, if any, are in how these challenges are met. Clearly, the most striking changes in their environment are the same: the explosion of knowledge and the revolution in information technology; the emergence of new players; the new public, in particular for lifelong learning; tight budgets; the need for greater transparency and accountability; and the threat of increasing intervention from the state, the sponsors, or the governing boards.

The crucial question for universities on either side of the Atlantic is therefore their capacity to be responsive to this new environment without abandoning their responsibility towards society. This question is mainly one of organizational structure and governance to adapt the institution to new realities, as well as a question of ability to convince the main sponsors—public or private—that universities are worth supporting in the long run.

## CONCLUSION

This survey of the most burning issues facing higher education, and in particular research universities, as identified by the participants in the Glion Colloquium, demonstrates clearly that universities are facing great challenges at the millennium. Even if the issues raised by participants vary, opinion is converging with respect to the main trends and challenges. Each participant has at least implicitly mentioned that globalization and internationalization, as well as the information technology revolution are pushing universities into a competitive market for higher education and research, and that the combination of decreasing support on the part of the state or sponsors and increasing costs will force universities to take unpopular measures to do more for less.

Clearly, universities will have to adapt more rapidly to this changing environment to keep the unique position they have been able to build through the ages and to assume their responsibility as guarantor of societal value and inherited culture.

As to solutions, three main areas of action are proposed: adapt the academic profession, improve the financial situation by making an effort on the income as well as on the expenditure side of the budget, and reform governance. The main divergence of opinion lies not in the differences between the American and the Western European situation, but in the evaluation of the importance of the threats to traditional universities and therefore in the scope of the measures to be taken to maintain or even improve the high profile universities once had. Some believe radical measures are an obligation to help universities from falling into mediocrity and being replaced by well-organized profit-seeking institutions. Others, also convinced of the necessity for change, believe that a well-designed adaptation process will be adequate. The reality will depend mainly on the still unknown speed at which new technologies will penetrate large layers of the population.

Although this survey does not pretend to be exhaustive, the most relevant issues have certainly been mentioned. Most of these issues are more extensively developed in the individual contributions that follow.

## REFERENCE

Drucker, P. F. (1997). Interview: "Seeing Things as They Really Are," *Forbes*, 159, pp. 122–28.