The State of The University

A Report to the Trustees, January 1973

by Martin Meyerson

This is the third January since taking office over two years ago that I have brought to the Trustees and members of the University a review of the problems, progress and plans of the University. Each review—perhaps like the University itself—has drawn upon the state of health of higher education nationally; upon the recent (and occasionally the distant) history of events at the University of Pennsylvania; and upon the aims and plans of this administration and the University's deliberative bodies.

My review of two years ago concentrated on the important changes which had taken place during my thirteen-year absence from the University and upon our severe financial difficulties. American higher education had been severely tested in the 1960's. Student perturbation had stimulated an often painful—but not always successful—reexamination of many of our assumptions and practices. Financial strains, by 1970, had worsened to an extent which questioned the very viability of quality independent institutions of higher learning.

The agenda of our then four-and-a-half-month-old administration was preoccupied with the necessity to bring our fiscal situation under control. In my report in January 1971 before the Long-Range Planning Committee, the full Board, and the following day at Founder's Day, I described reductions in administrative and athletic budgets, and limitations on new faculty hiring as well as other measures to arrest our growing deficits. I also announced the formation of the Council of Academic Deans as one device to bring our schools and colleges closer together in the formation of programs and establishment of priorities.

One year ago, I expressed hope that a balanced budget was in sight, although not without considerable costs to nearly all parts of the University. In my report of last January *Directions for the University of Pennsylvania in the Mid-Seventies,* I outlined various elements of an agenda for the future including a better correlation of our undergraduate, professional, and graduate studies; the reinvigoration of undergraduate education generally; a clearer recognition of our strengths as well as our limitations in the establishment of academic priorities; and the need for professorships, financial aid, libraries and residential living and educational patterns. I noted our thematic colleges, freshman seminars, and individualized majors for undergraduates. And I emphasized the great importance to our entire University of selective strengthening of our arts and sciences.

At the same time I recommended the establishment of a temporary and independent University Development Commission, to be made up of faculty, some students, and several *ex officio* members including three chairmen of Trustee committees, and charged with the task of reviewing, refining, and expanding upon that very preliminary agenda. In setting up the Commission I called upon it: (1) to encourage all parts of the University to engage in a process of self-evaluation and forward planning; (2) to assess the potential for reallocating resources into new ventures as well as into existing programs of high priority; and (3) to suggest specific programs around which we might organize a series of special funding efforts in the years ahead.

Though formidable challenges remain for the University of Pennsylvania, my report for January, 1973, is an optimistic one. The national mood has improved some. Higher education is emerging from the past decade of turmoil—neither unscathed nor unchanged, but with an "older but wiser" sense of direction and of its own limitations. At the University of Pennsylvania, we have shown that we can, with considerable hurt, achieve a balanced budget. However, we greatly need new sources of income to preserve and enhance our standing among great universities.

We have shown that we can make significant progress in the midst of austerity. A Faculty of Arts and Sciences is in formation in order to provide for the first time a voice internal and external to the University for all the humanities, social and natural sciences. Various outstanding academic appointments have been made. And some of our ventures to improve undergraduate education, such as freshman seminars, thematic colleges, and residential college houses, have started successfully.

Especially encouraging is the just-received report of the Development Commission. Under the very able co-Chairmanship of Professors Robert Dyson and Eliot Stellar, the Commission has drawn on the wisdom, experience, and imagination of a wide range of faculty, students, administrators and other members of the University. Its report provides an appraisal of some of many of our strengths and weaknesses, a range of criteria by which we might order (or reorder) our institutional mission, and a set of ideas and recommendations toward achieving "one university" of the greatest distinction.

Some of the Commission's recommendations reinforce and extend efforts already underway. For example, the budgetary principles in the report build on those prepared by our Associate Provost for Academic Planning John Hobstetter. The recommendation to achieve a "reinvestment fund" out of internal reallocation is now being put into effect on the advice of the Budget Committee. The proposed "University Scholars Program" to move qualified undergraduates into graduate and advanced professional programs is a means of implementing a goal which Provost Curtis Reitz and I advanced in a set of proposals on March 31, 1971 and which has been subsequently supported by Vice Provost Humphrey Tonkin. The emphasis throughout the report on the importance of new endowment—especially for professorships, scholarships, and fellowships—is shared by almost all of us. And the concept of "selective excellence," which the Development Commission extends to the arts and sciences and to the professional areas alike, is basically a recognition of what is both necessary and inevitable within any great university.

The Development Commission has also raised a great many questions which must occupy the attentions of the widest range of deliberative bodies in the period ahead. How, for example, do we assure excellence in our faculty and in our students? How do we acquire the capacity to evaluate, with sensitivity and candor, the current and potential strengths of

programs, departments, graduate groups, and schools? How can we strengthen the presence of women, blacks, and other minorities at the University of Pennsylvania? How can we achieve a more intellectually invigorating atmosphere at our campus?

To help answer some of these questions, the Development Commission has recommended a number of task forces. At least of equal importance will be the responses and suggestions from our existing deliberative bodies. I had asked the Steering Committee of the University Council to organize extended discussions of the Development Commission's work. The Council of Academic Deans has established a committee to organize their consideration of the Commission's report, and I have asked the Deans and through them their faculties to further develop the Commission's proposals in relation to the plans of their own schools. The Faculty Senate has scheduled a special meeting to consider the Commission's findings and the recommendations of its own Committee on Academic Priorities. In addition, I have asked the Senate to take special cognizance of the Commission's proposals with regard to tenure and retirement policies, libraries and audio-visual aids, and continuing education and interuniversity cooperation. The Academic Planning Committee is considering the crucial question of evaluation, and will continue to serve as a principal forum for formulating long range plans and priorities. Finally, we will continue to welcome the suggestions of individual students, faculty, staff and alumni. For the immediate future, since the Commission has asked to be relieved as of January 12, Professor Dyson has agreed to receive and report briefly on these various addenda. From all of these sources—in addition to special task forces—I hope that we can put more and more substance onto the excellent framework provided to us by the Development Commission. At the same time—a task to which I will return later in this report—we must begin shaping from this and related efforts our future funding programs.

Let us turn now to a selective examination of the pattern of recent events and accomplishments of which the work of the Commission is a major component.

FINANCES

The Financial Strains on Higher Education

Last spring, we submitted to the Trustees a projected operating budget for fiscal 1973 which showed a balance between anticipated income and expenditures. Our most recent estimates show that after half a year the budget is still in balance. In ordinary times, this would scarcely be a cause for celebration. But a balanced budget today has become a major achievement in light of the chronic deficits which have been threatening all of American private higher education in recent years.

Deficits in higher education as in any enterprise are an inevitable result of costs outrunning income. The upward pressure upon costs over the past decade may be traced to a number of factors. Chief among them are the following: (1) the increase in faculty salaries needed to reduce some of the disparity between salaries in academia and elsewhere; (2) the labor intensity of higher education which precludes the kinds of measurable productivity advances enjoyed by other sectors of the economy; (3) a persisting inflation; (4) a rapidly expanding physical plant; and (5) "doing more things"—e.g., expanding the range of department offerings, or reaching out to populations hitherto unserved by higher education.

At the same time that costs have continued upward, certain expected sources of income—such as government—have failed to keep pace. Our Commonwealth subventions, for example, declined from 9 per cent to 6.7 per cent of our total operating budget over the past five years. Some of the gap, at Pennsylvania as elsewhere, has been taken up by rapidly rising tuitions. But competition from the much more heavily subsidized public sector plus a small pool of students with both attractive academic credentials and the family incomes to support the full costs of a private higher education limit the rate at which tuitions can rise.

In addition to this cost-revenue squeeze, which is common to all institutions of higher education, we have had to contend with the critical financial problems of the nation's medical schools, clinical facilities, and large urban hospitals. The plight of our medical establishment stems from extraordinarily increasing requirements upon medical schools and their clinical facilities for: (1) more physicians, dentists and paraprofessionals; (2) more and better clinical services; and (3) new techniques and systems for health care delivery. At the same time, government agencies —municipal, state, and federal—have been unwilling or unable or both to pay for these new requirements.

Balancing the Budget

In the decade prior to 1969-70, the University had been able to maintain a modest reserve fund, ranging from a low of $600,000 at the end of fiscal 1967 to a high of $1.6 million as of June 30, 1969. In fiscal 1970, however, rising costs not matched by income wiped out the entire reserve and left the University with an uncovered deficit of $700,000.

Drastic economies in 1970-71 enabled us to hold our annual increase in expenditures to the lowest figure in more than a decade (and indeed less than inflation), and the annual net operating deficit was $1.3 million—a million dollars less than in the previous year. But as Harold Manley, our Business and Financial Vice President, reminded us in his annual report for that year:

> "Any satisfaction in these accomplishments, however, is tempered by two considerations. First, we entered the year with an uncovered deficit of $700,000, and our cumulative uncovered deficit thus is approximately $2 million. Second, some of the measures taken to reduce expenditures were expedients for which we may well pay more in the long run, and others imposed restrictions on programs generally accepted as central to the purpose of the University. It is increasingly clear that economies within the existing range of activities at the University, however drastic, will not produce a permanent solution to our fiscal problems. . . ."

The 1972 fiscal year reinforced Manley's cautions. The Commonwealth's new income tax was struck down by the courts, and in the ensuing flurry of budget trimming some $800,000 was cut from the allocation the Governor had proposed for the University. This cut took place after the Board agreed with my recommendation for substantial and merited salary increases. Therefore, despite major savings, the annual operating deficit edged upward toward the $2 million level.

To achieve a balanced budget for the current fiscal year, we used a number of devices including: (1) increasing tuition, fees and room rents with minimal increases in financial aid; (2) limiting new faculty and staff appointments; (3) reducing operating budgets; (4) reducing deficits in auxiliary services and eliminating some, such as the print shop and a number of the dining halls; and (5) augmenting the return on endowment by application of the newly-enacted legislation permitting limited expenditure of capital gains.

These measures have had their impact on virtually every sector of the University. Some departments are particularly overworked. The Admissions and Financial Aid offices have had to make the available dollars cover more financial need. Libraries and laboratories have had to absorb the impact of inflation through fewer publications and less equipment. And we have all had to contend with a reduction in important amenities, let alone ordinary maintenance. But our budgetary control has held remarkably—well enough, in fact, to allow us to announce starting this month a desperately needed increase in employee benefits at a cost this year of about $800,000.

Fiscal 1974 and Responsibility Center Budgeting

This year, too, we expect to present to the Trustees a balanced budget for the fiscal year 1973-74. Again, the budget will be based on a number of projections and assumptions, some of which (such as the amount and timing of the Commonwealth appropriation; the return on our portfolio; federal wage guidelines; and the income from hospitals and other auxiliary services) are beyond our control. However, the most important aspect of the 1974 budget will be the establishment of a system of decentralized budgetary accountability for income as well as expenditures.

The Budget Committee, under the chairmanship of Associate

Provost John Hobstetter, has recommended that income and expenditures be allocated to 20 "responsibility centers." To each responsibility center (principally the schools) would be credited the tuition income "earned" through teaching, and all other income brought in from restricted endowments, gifts, and research contracts. Each center must then cover its direct costs, such as faculty and staff salaries, plus all "directly attributable" costs, plus some share of indirect costs (central administration, student services, insurance, etc.) from its "own" income plus a subvention from general University income. Within the limits of the University subvention and certain constraints on tuition, aid, and enrollments, schools will be free to propose their own levels of expenditure and income in pursuit of their teaching and research functions. The Provost and the Vice President for Management concur with this recommendation.

Responsibility center budgeting maximizes flexibility and accountability by the schools. We must also, however, begin to add a system of program accountability to show the distribution of costs, incomes, and University subventions by academic and other programs.

In addition to the concept of responsibility center budgeting, we have begun to introduce more of the techniques of sound budget-making and control. Budget administration has been placed in the hands of a new Budget Administrator, John Pyne, freeing Associate Provost Hobstetter for more long-range academic planning. Forward year capital and operating budget outlines are being formulated under the leadership of Vice President for Management Paul Gaddis with the assistance of John Hobstetter, Vice President for Business and Financial Affairs Harold Manley, and Vice President for Facilities Maintenance and Construction John Hetherston. The establishment this past year of a management information system under Assistant Vice President Richard Paumen will increase our ability to measure and allocate costs, and will assist in the introduction of program cost information into the responsibility center budget system.

Austerity by itself can immobilize a university, drying up its capacity to launch new programs or to experiment with new techniques. Regardless of financial strains and reductions elsewhere in the system, we must continue to nourish and to strengthen our most distinguished departments and programs and to fund a few important new ventures. We cannot, in short, simply retrench; we must reallocate our resources and reorder our educational priorities. Last January, I proposed an Educational Opportunities Fund to be generated from internal reallocation and from external sources. The Development Commission has now proposed an Academic Development Fund which should reach between $1.5 and $2.5 million a year by 1976. This concept is being considered by the Administration and the Budget Committee in preparation of the fiscal 1974 budget.

Our Mixed Economy: Public and Private Resources

The University is a "mixed economy," drawing on both public and private resources. Like all of the great private universities, we are heavily dependent on the generosity of alumni, corporations, foundations, and friends. The Development Program in the 1960's helped produce a magnificent physical plant finally equal to our educational mission. This support has continued over the past two years, even in the face of economic uncertainty. Despite the absence of a major development campaign, gifts and bequests in the last fiscal year exceeded $20 million for the seventh straight year. Unrestricted Annual Giving, so critical to our operating educational budgets, topped $2.75 million for the first time—double the amounts we were receiving a decade ago.

These achievements are a tribute to the loyalty of our alumni, the reputation of our schools, and the excellent work of Vice President for Development and Public Relations Craig Sweeten and his staff. We are dependent upon gifts and endowment income. It is important that we increase income from these sources if we are to retain that margin of excellence and creativity which alone can justify a great independent university. Counting dollars liberally, our total endowment is about $200 million, most of which is restricted to particular schools, departments, or programs —about 41 per cent restricted to the health professions schools and the hospitals. Among 58 major independent universities, we rank 16th in total endowment and 24th in endowment per student. Two years ago, I first suggested that we needed perhaps $100 million of additional endowment for our academic programs. In my January report last year, *Directions for the University of Pennsylvania in the Mid-Seventies,* I suggested seeking over the next eight years funds for 100 endowed professorships in addition to endowment funds for fellowships, lectureships, library acquisitions, and other programs. Now the Development Commission has endorsed most of these goals and has urged new efforts in the decade ahead to increase our support from private sources.

But we are dependent as well upon public support, especially from the Commonwealth. Although we remain an independent institution, we have shared (regularly since 1903) in the higher educational appropriations of the Commonwealth. Our appropriations this year total $13.8 million, of which $2.68 million is earmarked for the School of Medicine, $1.76 million for veterinary medicine and $100 thousand for the support of the museum.

This public support reflects the educational, cultural, and economic importance of the University to the Commonwealth. The most direct benefit is the nearly 10,000 Pennsylvanians enrolled this year in some educational program, including 50% of the entering medical students, more than 70% of the entering veterinary students, and one third of the incoming freshmen. We also provide the largest educational and research library in the Commonwealth and a world-renowned archeological museum, as well as extensive health care services to the community and to the Commonwealth. Our research and training programs annually bring in about $50 million in outside funds—most from the federal government. We employ over 15,000 persons on a yearly payroll of more than $108 million. And as an institution of national and even international renown, we attract thousands of students, faculty and visitors, many of whom remain to enrich the Commonwealth and the City.

One of our tasks is to achieve a broader appreciation of these contributions. Another is to work with the Commonwealth to develop a more stable and predictable basis for our yearly appropriation. For the past several years, university officers have worked with the State Board of Education, the Department of Education, and committees of the General Assembly to develop appropriate criteria for Commonwealth aid. We continue to pursue the soundest policy. As with our other sources of support—students and parents, alumni, friends, foundations, and federal agencies—Commonwealth support will generally become more secure as we continue to improve our own financial order and demonstrate wise stewardship of the public's funds.

THE ACADEMIC MISSION

The Arts and Sciences

The fundamental commitment of a university must be to the advancement as well as the dissemination of knowledge. Although scholarly inquiry can be pursued in a variety of settings—including professional schools of the most distinguished scholarly reputations—it must have deep roots within the arts and sciences. Indeed, the strength of a university's contribution to basic scholarship is probably best measured by the strengths of its arts and science departments and graduate programs. When they are strong, the professional and applied fields will gain as well.

An event of major significance to the future of the arts and sciences at the University of Pennsylvania was the inaugural meeting last fall of the Faculty of Arts and Sciences. This Faculty was proposed in 1970 by the Task Force on Governance and approved last year by the Council on recommendation of the Senate's Ad Hoc Committee on the Reorganization of the Faculty. It is comprised initially of faculty from the College, the Graduate School, and the four social science departments of the Wharton School, and includes a representative from each of the Ph.D. graduate groups in Medicine, Veterinary Medicine, Engineering, Social Work, and Communications. The Faculty of Arts and Sciences will bring coherence to our research and teaching—in both undergraduate and graduate programs. Most of all, this Faculty will reinforce the centrality of the basic arts and science disciplines. High on our priorities for 1973 must be the selection of our first Dean of the Faculty of Arts and Sciences.

Unfortunately, the arts and sciences suffer from a precarious financial base. One reason for this is the recent decline in graduate fellowship support from nearly all sources. Federal support for

fellowships, for example, has decreased markedly from $2.7 million in 1970-71 to about $1.4 million for the 1972-73 academic year. The National Defense Education Act Title IV fellowships (146 awards amounting to $891,000 during 1971-72) will be terminated in the 1972-73 academic year. These fellowships support study in the social sciences and humanities. National Science Foundation Fellowship awards will decline from 46 during the 1971-72 academic year to 23 in 1972-73, and will be entirely phased out by the spring of 1975. Meanwhile the Ford Foundation funds for graduate education provided to Pennsylvania and other leading graduate schools over these past years will be expended by the end of the 1974-75 academic year.

An even more basic financial weakness of our arts and sciences is their miniscule share of our existing endowment and the absence of a truly strong base of financial support from alumni and friends. What this implies, I believe, is that the arts and sciences must receive the very special attention of the President and of certain of the Trustees in future development efforts. The new Dean of the Faculty of Arts and Sciences will have to be prepared to aid these efforts greatly.

We must also, however, learn how to use our resources with a greater sense of accountability. We have much to be proud of. According to the last evaluations of graduate arts and sciences programs by the American Council on Education, the Commonwealth of Pennsylvania could boast of thirteen programs which ranked among the top ten in the country. Ten of these programs were at our University. In a number of other fields, including some not ranked by the Council, we have excellent programs by any criteria.

Yet, in only three of these departments, do we rank among the top five nationally. A commitment to the arts and sciences does not have to be—indeed, cannot be—reflected by eminence in every field. But crude as the American Council ratings may be, the institutions which are generally regarded as the truly outstanding graduate schools of the country each have a dozen or more departments rated among the top five. As I have stressed previously we should seek no less than such a critical mass of superlative departments. To do so, as I pointed out in my report last January and as the Development Commission has noted, will require a concentration of resources and attention upon those areas of greatest present and potential strength. "Selective excellence," as the Development Commission has indicated, does not necessarily imply drastic changes in patterns of support. It is a policy of encouraging and accelerating our present and potential fields of excellence.

Furthermore, even an acceleration of emphasis upon our departments and fields of greatest distinction would strengthen most other departments as well. The halo effect for prospective graduate students, faculty and providers of support for all of our arts and sciences would be immense if as many as a dozen departments were of world caliber.

In no part of the University, then, could the investment of additional resources bring so great a return—to the entire University—as in the arts and sciences. We must devise ways to measure the present and potential contributions of graduate programs. And we must concentrate on finding the resources to strengthen that set of a dozen or more fields of most promise to a level of national and international preeminence.

The Professional Schools

The national reputation of the University of Pennsylvania centers on a few academic disciplines, and mostly upon its professional schools. (The School of Medicine at our University was the first professional school in America but for theology.) Our professional schools, both the older and the newer ones are in most cases among the most distinguished in the country, and the range of schools on this campus gives us an asset almost unmatched among private universities.

The Development Commission set forth three basic missions for a professional school within a university such as Pennsylvania. First, such a school should train the highest caliber practitioners for leadership roles in the profession. Second, it should train teachers of the profession. Third, it should advance the bases of knowledge upon which the professions rest.

The third function is perhaps most fundamental to the mission of a professional school within a great national university. Knowledge can be advanced in many ways. In the health area, it may be advanced through laboratory and clinical research. In others, such as management, it may be advanced through field study. In still others, such as architecture, knowledge may be advanced through the creation of new designs and design methods. But in each case, the scholarly work contributes something to the profession beyond the training of practitioners or teachers.

The Development Commission expressed some concern over the capacity of some of our schools to meet high standards of scholarly productivity. This is principally a reflection of the state of scholarship within certain fields, rather than shortcomings within particular schools at our University. In keeping with the Commission's "one university" theme, we must seek ways of strengthening these schools, particularly in their scholarly orientations.

The Development Commission also stressed the need for our professional schools to form stronger links with one another, with the arts and sciences, and with the needs and problems commanding the attention of their professions. Such links can be keys not only to excellence within the schools, but to the vitality of our "one university." The Law School, for example, began last year a joint J.D.-Ph.D. program in law and public policy analysis with the Fels Center of Government in the Wharton School. Also available at the Law School are joint degree programs with city planning and business administration. The Health Law Project in the Law School is developing a curriculum and teaching materials in the areas of health benefit programs, government regulation of hospitals, the consumer role in management and planning of health care facilities, and the rights of patients to equal quality of care in hospitals and nursing homes.

The Fels Institute of Local and State Government formally changed its name in 1970 to the Fels Center of Government in recognition of its broadened mission in the area of public policy analysis. A change in name is also linked with the broadened mission of what used to be the separate schools of engineering. Now combined under the College of Engineering and Applied Science, our engineering faculty conduct research and instruction in such fields as systems, bio-engineering, transportation, and pollution control.

The Wharton School views its profession as "management" in the widest possible sense, with increasing emphasis on problems of management and administration within the public and non-profit sectors. Wharton's Leonard Davis Institute of Health Economics, for example, supports instruction and research in such fields as the benefits and costs of alternative health care delivery systems. Associated with this effort is the Health Care Administration Program begun in 1971-72 within the Wharton School and taught jointly by Wharton and Medical School faculty.

Another example of cross-disciplinary structures is the new National Center for Energy Management and Power, supported in part by the National Science Foundation and opened in 1971. It draws faculty from the College of Engineering, the Institute for Environmental Studies, the Fels Center of Government, the Management Science Center, the Law School, and several other departments to train master's and doctoral degree candidates who will analyze and solve energy production problems in view of the environmental protection necessary to an urban society.

Another institute drawing on the research skills of a broad combination of professional schools as well as the arts and sciences is the Monell Chemical Senses Center, the first major institute in the world devoted to the study of the senses of taste and smell. Established by a gift from the Ambrose Monell Foundation, the Center attracts faculty and students from the schools of Medicine, Dental Medicine, Veterinary Medicine, the College, the Hospital of the University of Pennsylvania, the Veterans Administration Hospital and numerous other academic, medical research and patient-care facilities affiliated with the University.

Also drawing upon the health professions schools as well as other departments of the University is the nation's first Center for Oral Health Research. Supported by the National Institute for Dental Research, COHR draws upon the schools of Medicine, Dental Medicine and Veterinary Medicine, as well as the Arts and Sciences and the College of Engineering and Applied Science.

The professional schools are also reaching out to the communities served by their practitioners and facilities. The Graduate School of Education, for example, is involved with a number of projects in cooperation with the Philadelphia City Schools. The

School of Social Work involves all of its students in field work, turning increasingly to the nontraditional agencies such as legal services, alternative schools, and community self-help organizations. The Department of Psychiatry services The West Philadelphia Mental Health Consortium. The Graduate Hospital with assistance from the Haas Community Fund has recently begun a model community health care plan for residents of the Center City and South Philadelphia neighborhoods in its vicinity. The School of Medicine is also working with the city of Hazleton to develop a comprehensive health care plan for that area.

These are only a few of the ways in which our professional schools have found new structures for meeting new needs. I have not tried to be comprehensive; other examples could be cited for all schools. The Development Commission stressed the theme of "one university," made up of many elements—schools, institutes, programs, and projects—unsurpassed in quality and unsurpassed in their capacity to reinforce each other and to change with their time. This theme will require extensive planning and self examination by all the deans and their faculties as well as by University-wide bodies such as the Academic Planning Committee. From such efforts, I foresee education and research in the professions continuing to provide the main ingredients for unique excellence at the University of Pennsylvania.

The Undergraduate Program

The kind and quality of undergraduates attracted to the University will be determined by the kind and quality of education we offer. We have educational advantages that are difficult to match anywhere, and the momentum provided by our new programs should continue to stimulate fresh ideas and new ventures.

The reawakening of interest in undergraduate education has been evident for the past few years. Probably the most significant step toward change took place in October, 1971, when 600 students and faculty held a weekend Conference on Undergraduate Education. Workshops and discussions reviewed the offerings of undergraduate programs and suggested methods for improving them. (The first campus Forum was held two weeks later to discuss undergraduate education; participants included students, faculty, the Provost, the deans, and myself.) The considerable success of the Undergraduate Education Conference can be measured by the improvements it stimulated and by its wide-ranging influence on the atmosphere for strengthening undergraduate education. The Workshop on Intellectual Life Style Outside the Classroom stimulated a committee to continue part of its work. The Conference also engendered discussion on combined major and minor programs as alternatives to the distributional requirement. Discussion on these and other topics was continued by Vice Provost for Undergraduate Studies Humphrey Tonkin in his April report, *The Advancement of Undergraduate Education.*

The accessibility to the undergraduate of top-ranked professional schools in addition to quality arts and sciences faculty gives us the potential for almost unlimited flexibility. Last summer, Laureine Knight and Robert Fried, both students, worked with the office of the Vice Provost for Undergraduate Studies to prepare a pamphlet, entitled *Topical and Interdisciplinary Studies at the University of Pennsylvania,* which shows the most astonishing range of options available to the imaginative and self-directed student.

Last spring we began a series of programs in "Thematic Studies" combining the flexibility of interdisciplinary study with the structure of a specially constructed, concentrated examination into a single problem area. Nearly 200 freshmen and sophomores enrolled in the three thematic areas: "Science and Social Change," "The Ancient World," and "Some Versions of Utopia." This fall, under a $356,000 grant from the Alfred P. Sloan Foundation, 260 students enrolled in four topics: "Energy Management," "Health and Society," "The Business Culture," and "Systems Study."

Beginning in September of this academic year, nearly all freshmen have had the opportunity to take a seminar under a regular member of the faculty and to experience the close association with a professor which has often been missing from the early undergraduate years. Some enterprising students have reportedly managed to take all of their first year courses as freshmen seminars. Organized through the office of Vice Provost Tonkin, the Freshman Seminar Program this fall offered 75 topics ranging from "Modern American Values" to "The Nature and Mechanism of Biological Evolution" to the "Technological Basis of the U. S. Economy." The Development Commission has strongly endorsed this concept and recommended that the seminar model be extended as well to sophomores.

I am hopeful that we can soon begin to move from these more flexible courses of study to a series of alternative paths to the baccalaureate degree embracing the total undergraduate experience. I first considered a number of these options in my January Report two years ago. In *Proposals for Consideration by the University Community,* which Provost Curtis Reitz and I presented on March 31, 1971, and again in my January Report last year, we proposed consideration of five options for undergraduate education: the standard option leading as now, through a collection of course credits, to a bachelor's degree; the continental option to begin specialized or professional education at an earlier point; the collegiate option for combined residential-academic programs; the self-education and examination options permitting greater use of independent study and tutorials leading to undergraduate degrees in whatever number of years—whether two or six—the student required; and the research option providing for a directed program of scholarly inquiry as the major component of a student's undergraduate program.

The Report of the Development Commission has refined these proposals and given special emphasis to the "continental" options, which takes advantage of the proximity of undergradute, graduate, and professional schools at our University. The Commission has recommended a "University Scholars" program within which qualified sophomores, juniors and seniors seeking advanced training could mingle their undergraduate and graduate or professional education throughout the remainder of their University experience. Such a plan should shorten the time required for the advanced degree. More important, it should blur the traditional distinction between what is thought to be the proper "contents" of undergraduate, graduate, and professional training, and enrich the curricula of all of our schools at all levels. We should begin experimenting with this concept at the earliest possible date, perhaps starting with combined programs between the undergraduate schools and the graduate programs in the health professions. The deans of the health professions schools have already indicated their interest in the concept (most have such options already available on a limited basis) and their willingness to take expanded proposals to their faculties.

Last year the opening of Van Pelt College House added a significant dimension to our already considerable diversity of residential patterns in undergraduate education. Under the direction of Faculty Master Richard Solomon, Van Pelt provides a combined cultural-residential environment including lectures, musical events, and discussions as a major part of its program. Several faculty members and graduate fellows live in College House, making easier a close association between teachers and students.

Stouffer College House, which began in the fall of this year and is similar in concept to Van Pelt, is developing its own living-learning ideas under Faculty Master Joseph Bordogna. Other recent projects based on the collegiate model of residence and education include Hill Hall, the international floor at Harnwell House, and the W. B. DuBois program, open to all University freshmen and sophomores and centered on the theme of black history and culture.

The Development Commission has endorsed the collegiate model of educational living. It has proposed four additional college houses located in renovated Quadrangle space and organized around educational themes such as the pre-health professions, Philadelphia history and culture, foreign language and culture. These six major facilities for residential living could house as many as 900 undergraduates in addition to faculty and guests. The outstanding success of Van Pelt demonstrates that this concept can provide both intimacy among peers and close faculty-student ties for students most interested in small units for living and learning. At the same time, our high-rise undergraduate towers (Harnwell, Harrison, and High-Rise North), our already existing programs in the Quadrangle, the style of living offered through Hill House and in contiguous apartments in West Philadelphia, along with varied University-wide programs of lectures, films, concerts, drama, and sports, suggest the varied resources open to the student and upon which the imaginative individual can impose his own pattern.

University Life

We should not conceive of our educational living patterns exclusively in terms of undergraduates. Each of us needs to draw strength from one another, for a university must be informed by a sense of community and a common commitment to intellectual purposes. Finding ways and means of encouraging more faculty to live within easy access of the University is important to encouraging that sense of community. Making the campus a more esthetically pleasing place to be is a necessary corollary. We have made great progress in closing streets, disciplining the automobile and creating landscaped walks and vistas. But much remains to be done. An imaginative effort in the past gave us Locust Walk. A far greater effort lies in front of us in making the campus we now enjoy a place of visual beauty, with sculpture and natural meeting points.

The number of informal lounges and seminar rooms has increased in the last few years. Yet we still face a great shortage of places where formal and informal seminars may meet, and where faculty, students and administrators may exchange ideas and perspectives. New meeting places for graduate students in the arts and sciences are needed especially.

We must also make our campus a natural center for the national meetings of our learned societies. For instance, the American Society for Eighteenth Century Studies will hold its 1974 annual meeting on our campus, providing a national opportunity for faculty and students in such diverse areas as musicology, literature and the history of science to explore common themes together. With our expanded residential resources, such meetings should become increasingly important within our campus life.

The approaching Bicentennial highlights the unique position of Philadelphia as the nation's birthplace. With that in mind, and with the goal of exploring ways Pennsylvania may make a major contribution to the celebrations of 1976, I have asked our Vice President for Management Paul Gaddis to head a University Committee on the Bicentennial. Professor Vartan Gregorian is Vice Chairman in Charge of Program Development.

Our most immediate task, however, is the enrichment of the cultural life of our community. This fall the New Phoenix Repertory Company premiered their productions of "The Great God Brown" and "Don Juan" at our Zellerbach Theatre. We hope the Phoenix will return often. In the Annenberg Center for the Performing Arts we possess facilities of unrivaled excellence and promise. Now we require a greatly expanded program of theatrical and musical offerings, drawing on our own talents and creative energies as well as those of the world's leading cultural centers. In architecture and the fine arts we possess outstanding individuals and resources, but they need greater recognition and encouragement. Nor should we forget the importance of spontaneous endeavors. In recent years College Green has become a locus for arts shows. The Christian Association's recent craft show is yet another example of the interest and energy the arts, broadly defined, command on our campus. A Council on the Arts will shortly help coordinate our present efforts as well as stimulate new ventures. What we seek is not only to enrich the perspectives and vision of ourselves as members of the University community, but also to contribute in new ways to the cultural life of the great city we are privileged both to serve and draw on.

THE FACULTY

A university is primarily its faculty. We are privileged at the University of Pennsylvania to have a great many faculty with national and international reputations for their excellence in scholarship and teaching. Any listing of honors and distinctions would be far too long for this report. However—and acknowledging the risk of many omissions—I would like to cite just a few of our faculty who have most recently earned major honors.

Foremost, of course, was the naming of J. Robert Schrieffer, Mary Amanda Woods Professor of Physics, as the 1972 Nobel Laureate in Physics. In the past two years, Thomas Cochran in History, Renee Fox in Sociology, Shinya Inoue in Biology, Samuel Noah Kramer in Assyriology, Froelich Rainey, Museum Director and Professor of Anthropology and Eliot Stellar, in Physiological Psychology have been added to our faculty holding membership in the American Academy of Arts and Sciences. George Koelle in Pharmacology, Mildred Cohn in Biophysics and Physiological Biochemistry, Ward Goodenough in Anthropology, and J. Robert Schrieffer have been elected in the past two years to the National Academy of Science.

Ten of our faculty in 1971-72 and six in 1972-73 received Guggenheim Fellowships. Four faculty have received senior fellowships for a year's research from the National Endowment for the Humanities, and many others are currently studying here and elsewhere on major national fellowships.

Pennsylvania faculty recently holding or named to positions in their professional associations include Anthony Wallace, immediate past President of the American Anthropological Association; Thomas Cochran, immediate past President of the American Historical Society; Ruth Dean, Vice President of the Medieval Academy; Ward Goodenough, named to the Board of Directors of the American Association for the Advancement of Science; Mark Dresden, Vice President of the American Oriental Society; Daniel Hoffman to the Board of Chancellors of the Academy of American Poets; and Otto Albrecht, Professor Emeritus of Music, to the Honorable Fellows of the Pierpont Museum Library.

Some other recent prizes and distinctions include Queen's Honors to Dean of the Graduate School of Fine Arts Peter Shepheard, the Lamme Medal of the Institute of Electrical and Electronic Engineering to Yu Hsiu Ku, the Gold Medal of the Royal Institute of British Architects to Emeritus Professor Louis Kahn, the Distinguished Science Award from the American Psychological Association to Dorothea and Leo Hurvich, and the 1972 Strecker Award of the Institute of the Pennsylvania Hospital to John Paul Brody.

Salaries and Benefits

In our March 31, 1971 "Proposals for the University's Consideration," Curtis Reitz and I made the improvement of faculty compensation an initial administration priority. We have, I think, redeemed that pledge temporarily. In 1970-71 we ranked forty-second nationally in average total compensation. In 1971-72 we ranked twenty-fourth nationally. Within the Ivy Group in 1971-72 we ranked second (the highest level ever), where the year before we had ranked seventh. With the addition of new benefit options —including Blue Cross-Blue Shield, Major Medical or group life insurance—along with an increase in direct compensation, we have remedied some of the most glaring weakness in our compensation package. These gains may be short-lived, however, as university facutly incomes generally are falling behind those of other callings.

Professorships and Endowed Chairs

We have had continued success in attracting scholars of exceptional achievement and promise to join our faculty. Six professors have been appointed through the University's Reinvestment Fund: Solomon Asch, Professor of Psychology; Anna Marie Weber, Professor of Biochemistry; George Makdisi, Professor of Arabic; Thomas Hughes, Professor of the History and Sociology of Science; and Patrick Cole and Robert F. Engs, Assistant Professors of History.

Again, our endowed professorships have played crucial roles, helping us both to attract new faculty and retain scholars of national and international prominence. In the past year, for example, we have brought to the University of Pennsylvania Vartan Gregorian, Tarzian Professor of Armenian History and Culture; Lila Gleitman, Carter Professor of Child Development; Edward Banfield, as our first Kenan Professor; and Henry Riecken, Professor of Behavioral Science supported by the Frances Boyer Fund. We have also secured four new chairs reserved for non-tenured scholars of particular promise as either teachers or scholars.

We must expand these efforts, seeking funds for endowed chairs which recognize evolving as well as traditional scholarship, which reward junior as well as senior faculty, and which provide program funds as well as attractive salaries. Such chairs can often supply the competitive edge in attracting outstanding teachers and scholars to our University.

Promotion and Tenure

Still another element to our capacity to attract and retain faculty of the highest caliber is the means and the extent to which we grant tenure and invite colleagues to virtually permanent membership in our community. What sharpens the urgency of reconsidering our appointment and promotion policy is the stabilization of the size of many of our faculties, together with few retirements

among senior faculty, most of whom were appointed when the total faculty size was small. As a result, few places are opening up for young teacher-scholars, for faculty representing new skills and interests, or for women and members of underrepresented minority groups. We need a system of appointments and promotions, then, which is more responsive to such requirements.

The Development Commission has made a number of recommendations regarding appointments and promotions, including: (1) encouraging earlier voluntary retirement, (2) lowering the normal retirement age for future tenured faculty, (3) instituting a more rigorous and broadly-based review of recommendations for tenured positions, and (4) deferring most final decisions on tenure for as long as allowable under existing guidelines. The report of last year's *ad hoc* Council Committee on Faculty Appointments and Promotions, chaired by Professor Dan McGill, is still to be considered by the Council Provost Reitz has also made a series of recommendations to the academic deans regarding revision and clarification of some of our faculty personnel policies, such as the use of the designations "full" and "partial" affiliation. Finally, Associate Provost for Academic Planning John Hobstetter is preparing proposals to better coordinate appointments and promotions with the process of academic planning in the various departments and schools. These deliberations should reach conclusions in the period ahead.

Broadening the Candidate Pools
International Scholars, Women, and Minority Groups

But salaries, benefits, tenure policies, and the accouterments of special chairs are not the only ways to strengthen a faculty. We also need to broaden the pools of candidates sought to fill new positions.

There are three such major pools of teachers and scholars which we have scarcely begun to tap. The first is the enormous pool of international scholars, once a major source of academic excellence for American college and university faculties, and now virtually ignored—to our great loss. We must find new ways of looking to the great universities elsewhere in the world for more of our faculty colleagues.

The other major reservoirs of underutilized talents are women (a large pool in terms of numbers) and members of minority groups. We as nearly all universities have not given sufficient attention to potential scholars and teachers from either of these sources. That this process has generally been quite unconscious and has reflected primarily the limited number of women and minority group members in our traditional hiring pools is no excuse for failing now to take vigorous action. Elemental fairness, law and most of all self-interest compel us to expand the number of women, blacks, and other minorities in our candidate pools and to assure them equal compensation, equal status, and equal opportunities for promotion and tenure.

Affirmative Action

In January, 1971, I outlined some of the beginning steps toward achieving a greater representation of women and minorities throughout the University. Under the leadership of Provost Curtis Reitz and with the assistance of an emerging Affirmative Action Plan and an active organization of women advocates, we have made early but significant progress in increasing the number of women joining our faculty ranks. The proportion of women among faculty appointed or promoted to tenure or to the tenure track increased during the last two years from 12 per cent to almost 26 per cent. Regrettably, we cannot yet report a similar success in increasing the numbers of blacks and other minority groups on the faculty or staff.

Last month, important portions of the University's Affirmative Action Plan were issued dealing with professional appointments, non-faculty grievances, and maternity leaves. Revised grievance procedures for faculty have been proposed by the Provost, and are under consideration by the Faculty Affairs Committee of the Council and the Senate Committee on the Faculty. An Academic Committee on Equal Opportunity is in the process now of being formed. The Equal Opportunity Office, headed by James Robinson, is working with the Office of Personnel and the University Management Information Systems to compile detailed data on the numbers, job titles and ranks, promotions, and salaries of women and minority group members in all academic and non-academic departments of the University.

The next level of Affirmative Action effort may be the most important. This is the effort to produce the kind of university which is so stimulating and so genuinely respectful of the potential contributions to be made by women and minority group scholars and teachers that they will want to come to the University of Pennsylvania—indeed, seek us out. Nothing is more important to this task (and this applies equally to the strengthening of a "black presence" and "women's presence") than the enthusiastic support of the academic deans.

ADMISSIONS

By any criterion—College Board scores, class ranks, breadth of interests and activities, leadership potential, geographical distribution, or socioeconomic or ethnic diversity—we have undergraduates of the highest quality. At the University of Pennsylvania as at most schools, including Princeton, Yale, Harvard, and Johns Hopkins, the average composite College Board score has declined slightly in recent years. But this "decline" most accurately reflects a broadening of the criteria for admissions and a search for qualities such as demonstrated leadership by which to enrich our undergraduate student body. We have, properly, special obligations to residents of the Commonwealth and the City. We must continue to seek applicants from urban and rural areas whose potential contributions may not be sufficiently reflected in Board scores and other quantitative indices. But we should pursue such policies with faith in our judgements and pride in our students.

This is not so say that our admissions policies do not need continuing reexamination. Increasing competition from the public as well as the private sector, coupled with a tightening aid budget and with a continuing decline in the rate of growth of the college-going population, mean that we must look for new measures to preserve and improve the caliber of our students. Dean Peter Seely and his admissions staff are doing so.

We need to turn our energies less toward the analysis of applications and more toward vigorous recruiting of a diverse and able body of students. Faculty, to the degree possible, should play a much larger role in recruitment. The Benjamin Franklin Scholars program, which I placed as a high priority in my Report of January 1971 and which expanded this year to include 175 entering freshmen, should continue to be used as a major recruiting device to attract students of exceptional quality.

Grant aid, which increased by over 70% in the past five years alone, will have to be spread more carefully among our applicants in need of assistance in order to maximize its benefits and minimize the impact of financial need on the admissions decision. Our assistance program next year will be supplemented by lending under the Federal Insured Student Loan Program. The University of Pennsylvania more than matches the grant awards of most of the institutions with which we compete for students. But we rank last among the Ivy institutions in the available grant aid per student from endowed sources. It is clear that a substantial increase in endowment for financial aid is vital, not only to attract quality students, but to lessen the burden on our other income.

Minority group students, particularly urban blacks for whom the City of Philadelphia ought to have special relevance, should be sought aggressively. I believe we should and can increase the number of capable matriculating black freshmen from the 141 freshmen who chose to enter the University this fall. To attract these students, we must convey not only recognition of their potential contributions, but understanding of their possible special needs within a predominantly white, upper-middle class institution. We should, in accord with some of the Development Commission's recommendations, reinforce the offerings under the Afro-American Studies Program. Perhaps most important, we must significantly increase the number of black faculty members (not necessarily within the Afro-American Studies Program) to whom our black students can turn and identify and do so without altering our standards for faculty recruitment. Given the limited number of black candidates, many universities may not be able to achieve such a goal, but we can and should.

Returning to admissions, we have often in the past had a tendency to view undergraduate admissions too much as a process of sorting our applicant pool into mutually exclusive categories. As a result, some of our constituencies (e.g., athletes, blacks,

proven scholars) have looked upon admissions as a zero sum game in which the gain of a scholar (or a black or an alumni daughter) is viewed as the loss of an athlete (or an "all around" student or an artist). Rather, we should seek a class profile with Commonwealth students, alumni children, scholars, artists, athletes, class leaders, blacks, foreign students, and others—a diverse set of quality attributes, rather than class components to be filled according to some preestablished formula. Recommended revisions of the admissions guidelines were proposed at the end of last year by the Council Committee on Undergraduate Admissions and Financial Aid chaired by Tom Wood, and are under continuing study by the Committee this year under chairman Norman Oler.

GOVERNANCE AND ADMINISTRATION

The agenda suggested by this report presents a formidable challenge to our capacity to govern ourselves. The governance of a university calls upon many agents to carry out many functions, bound together in an astonishingly complex system of policy determination, implementation, and stewardship.

One of our greatest challenges at Pennsylvania—summarized by the Development Commission's theme "one university"—has been to better coordinate the educational policy decisions of our many faculties. Such coordination was also one of the chief concerns of the Task Force on Governance, which reported in 1970, and of the Ad Hoc Committee on the Reorganization of the Faculty, which reported to the Senate last spring. Earlier in this report, I have referred to one of the most potentially far-reaching of the recommendations from these studies—the establishment of a Faculty of Arts and Sciences, giving us for the first time a mechanism of governance and eventual budgetary responsibility reflect the essential bonds within the arts and sciences.

Also recommended by the Task Force on Governance were two Vice Provostships to further help coordinate educational policy across schools and faculties. Last spring, Humphrey Tonkin was appointed our first Vice Provost for Undergraduate Studies, and has already dealt with such diverse issues as Thematic Colleges, residence programs, admissions and financial aid, and undergraduate degree requirements. In the very near future, we should be able to announce our Vice Provost for Graduate Studies and Research, who will begin to effect a similar coordination with respect to our graduate groups and university research policies.

Another new coordinating mechanism, which I first announced in my January report two years ago, is the Council of Academic Deans. This forum, which I first chaired, is now chaired by the Provost, and has dealt with such issues as the budgetary system. This body should become increasingly central to the integration of academic plans as developed by the Deans and their faculties.

The Task Force on Governance also recommended a senior Vice President for Management to better coordinate the non-academic offices of the University. I feel extremely fortunate in the appointment of Paul Gaddis to this key position, which oversees such diverse operations as the finances and physical plant.

Other new administrative appointments in the past year include Robert Dripps as Vice President for Health Affairs, and three new deans: Don Carroll for the Wharton School, Walter Cohen for the School of Dental Medicine, and Arthur Humphrey for the College of Engineering and Applied Science. Still to be selected are the Deans of the School of Social Work and the Faculty of Arts and Sciences, as well as the Vice Provost for Graduate Studies and Research.

It was with the greatest regret that I accepted the decision of Curtis Reitz to leave the Provostship. Curtis Reitz brought to that post a rare sensitivity, wisdom, and intelligence which I am delighted to report will not be altogether lost to our Administration. He shall become our Counsellor.

Meanwhile, it is appropriate in this Report to express my great pleasure and pride in the decision of the Executive Board, acting upon my recommendation, to take to the meeting of the full Board of Trustees the name of Eliot Stellar to be next Provost of the University of Pennsylvania. Professor Stellar's enormous contribution as co-chairman of the Development Commission can be continued and furthered in his new role. In addition, he has a brilliant record as a physiological psychologist. He is both an obvious and a superb choice.

THE TASKS AHEAD

The Development Commission has given us a set of proposals which now require action. These proposals will begin to take shape in the months ahead with the advice and assistance of the deans, the Academic Planning Committee, the Senate, the University Council, and other deliberative bodies. But the Commission's Report plus the initial reaction from the University community to its drafts coupled with our presently evolving educational programs indicate now the basic contours of our agenda.

First, our future efforts must exploit the great advantages—to scholars, students, and potential sources of support—of a full array of schools within a single campus. The actualization of the notion of "one university" will demand a greater degree of coordination and cooperation among our major academic units. For example, we should be a leader in providing educational options which blur the traditional distinctions between "undergraduate," "graduate," and "professional" work and in encouraging students to select not only the curriculum, but the timing, which is most appropriate for them.

Second, we must place increasing responsibilities on the deans and their faculties to implement University-wide policy, set academic priorities, and maintain the financial well-being of the University.

Third, we must continue to provide a special customized education which, at least for some students, is decidedly "better" than the education they would receive at a normal public institution—and thereby worth the greater cost. Needless to say, we must first sharpen our understanding of what does (or should) distinguish us from other institutions.

Fourth, we must strengthen those programs and departments in the arts and sciences and certain professions in which we have existing or potential strengths. A university cannot be excellent in every field, but it must be superlative in some. Academic priorities must be recognized and reflected in financial priorities.

Such a direction will take additional resources. We have proven that we can achieve a kind of tenuous financial stability. But to flourish, the University needs new resources from government, corporations, foundations, alumni, and friends. Neither totals nor timetables may be relevant—not at this time. We know that we must pursue new directions and new levels of excellence; and we know that this pursuit will be costly. What the Trustees and especially the Ad Hoc Committee on Resources Evaluation should consider in the months ahead is the proper approach to this challenge at this time and with the potential resources at hand.

One approach, of course, would be to continue to seek funds as we have been doing in recent years. Our fund raising in recent years, as I pointed out earlier, has been most successful.

If we are to flourish as a great university, however, I believe that we will need a major effort to secure additional resources. This might be a "traditional" development campaign, with a dollar goal and a timetable made public after substantial progress has been made toward that figure. This is the approach which has been used with success by a number of major institutions and by our University in the recent past.

For a variety of reasons, however—some peculiar to this University and some to these times—my colleagues and I are not certain that a traditional campaign is our best model. Rather than a single campaign and a single goal, we might consider a series of campaigns and goals. Such campaigns might embrace a series of funds, each directed toward a specific program need of high priority. Each fund might be built upon approaches oriented specifically to that program need and to the sources of funds most appropriate for it. Different funds might well have different timetables (indeed, some would probably have no timetables at all), and might call upon greatly different skills and contributions from the Development Office, the Faculty and Administration, and from the Trustees.

These are some of the issues and questions which our Development Office and the Trustees' *ad hoc* Committee on Resources Evaluation should be considering in the months ahead. At the same time, the substantive recommendations of the Development Commission will continue to receive the closest scrutiny of the deans, their faculties, and all of the University's deliberative bodies. I am hopeful that by May these combined efforts can produce both a clear analysis of our major needs in the coming years and the development strategy to meet them.