activities to the levels needed and to shape trade policies according to the needs of
d世界发展。

The second general lesson to be learned from the endeavours to solve the social
problem is that many of the things needed were easier to attain at a higher level of
general productivity than at low levels. This means that the world at large is in need
of further development, albeit especially in the poor countries.

The third general lesson is that everything becomes easier if we can restrict the
growth of population. Just as the most advanced workers have understood this, the
developing countries should understand this; and they already begin to do so.

Thus the main features of a development policy as nowadays advocated by many
seem to be supported by the lessons we tried to draw from the experience with the
social problem at the national level. All these features should be given expression in
what has been called by the Dutch minister in charge of development problems a
"Charter of Development Policies" in which a "framework of international develop­
ment strategy" for the 1970's should be formulated — the latter phrase having been
taken over in General Assembly Resolution 2218 (XXI). Such a Charter is indeed
needed and should be the basis for a policy of world unity which we also need
so urgently for the general purpose of organizing peace. Though this problem
is not under discussion in this essay, it is so intimately connected with the problem
of the development of developing countries that we cannot avoid mentioning the
link.

The strategy will have to sum up the targets and means of development policies, set
out before, but to be given quantitative expression, and the obligations involved for
developed as well as for developing countries. The Charter will not make sense,
however, if it is not being accompanied by the creation of supranational agencies with
real power, just as social policy could only be enforced by the power of the state. This,
after all, is the greatest lesson to be drawn from a comparison of the two problems.

On introducing innovations in an urban setting

Paul Neurath  Queen College, City University of New York

The process of introducing innovations in developing countries has been described
most often in an agricultural and only seldom in an urban setting, where problems
are usually quite different. In rural areas one usually has to think primarily in terms
of individual peasants among which some will have to be persuaded to be the first to
try out the new, e.g. a new strain of wheat, a new fertilizer, etc. Then ways have to be
found to spread adoption from the first users to a wider group. That is a slow process
based very largely on example, imitation, demonstration, convincing talk and patience.
It can get more complicated when in addition permission or help or at least acquiescence of administrators is required; or when, before individual peasants can be persuaded to try, a favorable climate must first be created among the leaders or even in a whole village so that they may let the first ones try without interfering too much with doubt, dire predictions, or ridicule if not outright ostracism. (Albert Mayer, in one of the most carefully documented cases in the literature — “Pilot Project India”, California University Press, 1958 — describes how it took six to eight years until the peasants in one large block of villages around Etawah in the State of Uttar Pradesh adopted a new strain of wheat as the prevailing strain for the whole area.

Innovations that outsiders or administrators are planning to introduce in cities are far less often of the kind that is spread primarily through person-to-person persuasion, although there are certainly enough examples of that too — one need only think of the great efforts at persuading individuals in the matter of family planning. Still planned innovation in cities in developing countries is more often of the kind that requires that a number of administrators be persuaded that an innovation is worth trying and that they should issue appropriate orders to those under their jurisdiction. The transition from traditional street cleaning brooms without handles (that force the sweeper to move forward in a crouching position, a method as unhygienic as it is inefficient) to brooms with long handles (that allow the man to stand upright and to move forward in bigger strides) is a case in point: in the City of Delhi it was accomplished as soon as the appropriate officials had ordered that from now on only brooms with long handles were to be issued to street cleaners (although legend has it that it took an irate intervention from Prime Minister Nehru before the order was given). In the villages however, where there is no central issue of brooms and every sweeper has to supply his own, street cleaning is still done in the old fashion.

Actually of course most planned innovations in cities involve objects less primitive than brooms and forms of organization more complex than a simple order that from now on only brooms with long handles are to be issued. Yet over these obvious differences the prime similarity gets too often overlooked that in most cases it is not enough to issue new orders or to order the application of new methods, be they simple or complex — it is also utterly necessary to persuade the ultimate users to do so willingly and efficiently. Otherwise the new tools or methods, no matter how much better or more sophisticated, will in the end appear as worse than the old ones that everybody knew how to handle. The visible inefficiency in handling the new will then easily become proof that the innovation was not worth having in the first place. Over the greater ease with which innovations can be introduced in cities by administrative fiat this point gets too often lost to the detriment of an otherwise highly commendable project.

The present chapter deals with some of the problems connected with the introduction of school television in Delhi — obviously one of those innovations that could be ordered by administrative fiat and, if need be, be enforced through appropriate inspection and disciplinary measures; and one that represents the very height of technological sophistication. Thus any ever so faint connection with the problems of introducing longhandled brooms for street cleaning would certainly appear as rather farfetched if not outright ridiculous. Nevertheless the parallels are there and it would
be belaboring the obvious were one to point them out one by one at every turn of the road.

School television was introduced in Delhi (into the Higher Secondary Schools, 9th to 11th grade, 14 to 17 year olds) in late 1961. All the television in Delhi (and with that in India) prior to that time consisted of one ½ KW transmitter, a somewhat limited amount of studio equipment, and 60 receiver sets, located mostly in community centers and schools. These sets belonged to “Tele-clubs” for whom two programs of “Social Education” were telecast twice each week, one of 40, the other of 70 minutes duration. There were no other programs. (The equipment stemmed essentially from three sources: some of it, including the transmitter, had been used by Philips Radio for demonstration at the International Industries Fair in Delhi in December/January 1955/56 and then been sold at a nominal price to All India Radio; some was on nominal “loan” from USIS (United States Information Service); some, notably the 60 receiver sets, had been contributed by UNESCO for the establishing of these “teleclubs” as a pilot project towards future development.

The introduction of school television in India thus differed from that in most industrialized countries in one important aspect: there the general public, including teachers, parents and school children, was in most cases already well acquainted with television as a means of entertainment and information. That provided a sufficiently favorable climate for experimentation with television in the schools. In Delhi, on the other hand, with television as yet practically non-existent, school television had to bear the brunt of two innovations all at once: that of a new medium of communication (minus its entertainment aspects that had helped in making television generally acceptable in other countries) and that of a new teaching medium that went contrary to many time-honored traditions in the teaching field.

The beginnings of school television in Delhi can variously be placed at a date late in 1959 when All India Radio first contacted Ford Foundation about it, or early in 1960, when the Director of Education was appraised of the possibility and declared himself interested or, still early in 1960, when Ford Foundation brought the first team of experts to India to make a feasibility study, or later that year, when the final arrangements for financing the project had been completed.

The team of experts suggested that a beginning could perhaps best be made in the Higher Secondary Schools where television might do the most of good in alleviating some of the difficulties arising from a severe shortage of laboratory space and equipment and of well trained teachers too in Science; it would also be very useful in the teaching of languages. Later on television could easily be expanded into other subject fields and other levels of schools.

It was suggested that rather than beginning with a small pilot project in a few selected schools all schools on the same level should be included as rapidly as feasible. (A pilot project was deemed unnecessary in view of the quite successful operation of school television projects in many other, including several developing, countries).

On the educational side it was suggested that television be utilized in the form of regular sequential curricular teaching, interlocked and intertwined with regular classroom teaching, rather than as so-called “enrichment”, i.e. extra additions to the
regular curriculum. On the technical side it was suggested that transmission be carried out with the help of video tape recorders rather than in the form of either live or film transmission. That would facilitate the necessary double-telecasting of each individual lesson (once for the morning, once for the afternoon shift); by 1964/65 181 out of a total of 367 Higher Secondary Schools in Delhi were still on double shift) and the temporary storing of some lessons for re-use until they became obsolete, when they could be erased and the tape be used again, without the necessity of adding a film unit which would have complicated operations considerably.

Eventually Ford Foundation made a grant of about $600,000 to cover an experimental phase of four years, 1961 to 1965. Most of this grant went towards increasing existing production and transmission facilities, including boosting the existing ½ KW transmitter to 5 KW, buying first one and later a second video tape recorder and 600 receiver sets (400 during the first, the remainder during the next three years), but also for sending some personnel abroad for training and bringing experts to India for advice. There also was provision for evaluation of the project.

Evaluation took place in two steps: a relatively short preliminary survey during the summer of 1962 (lasting 2½ months, of which school was in session during 1½ months) and a fullfledged evaluation survey during the school year 1964/65 (September to May). Both surveys were conducted by Dr. Paul Neurath of Queens College, City University of New York; the preliminary one of 1962 only in cooperation with his Research Associate, Miss Mandakini Khandekar, the full survey of 1964/65 again with Miss Khandekar and a staff of 9 interviewers to whom later six tabulators were added.

The 1962 survey consisted primarily of over 30 surprise visits to schools, each lasting usually one to three hours with observation of classes with and without television and long interviews, discussions and conferences with teachers and principals, individually or in groups. The 1964/65 survey consisted primarily of two parts (a) systematic observation in 24 television and 24 non-television schools, with interviewers stationed in each of these schools daily throughout the whole school day (one shift) for a period of two weeks. In addition to detailed class room observation they had numerous formal and informal interviews with teachers and principals. (b) Four rounds (November, December, January, February) of comparative tests (in Physics and in Chemistry, in 9th, 10th and 11th grade), each round again taking place in about 15 television and 15 non-television schools. In addition there were again considerable numbers of surprise visits to schools. There were also a series of conferences and interviews with leading officers of the Delhi Directorate of Education.

Most relevant for the discussion of problems connected with the introduction of innovations in an urban setting are the attitudes and reactions of teachers and principals as they were found during the 1962 survey, when the project was only a little over a year old. By 1964/65 attitudes had either changed or solidified. Some of the initial problems had either been solved or bypassed. The remaining ones were no longer those connected with the process of introducing an innovation but simply the problems of an ongoing complex operation.

While it might appear more systematic and also easier in the telling if the description followed the development step by step from the beginning, the teachers' attitude
and reactions will actually be better understood if they are described first and the
background is filled in later. That was the sequence in which the evaluator experienc-
ed the situation and in which he came to his own understanding and interpretation.
Upon arrival in Delhi he was given an ever so brief over-all introduction to the
project as it stood then (which had been preceded by a brief meeting with its chief
consultant in America a few months earlier) after which he plunged immediately
into interviews with teachers and principals and then, as soon as school began — after
the summer vacations — into an intensive visiting program to schools. After this
followed a series of conferences with administrators and higher officials. It was the
unexpected and at times baffling set of contradictory attitudes and reactions and the
over-all impression of a project not well received by many of its supposed benefici-
aries, the class room teachers of Delhi, that eventually led him back to a study of the
beginnings of the project in order to find out what might have gone wrong or what
might be the cause of a good deal of this antagonism. It took some time before he felt
that the could begin to sort out “Dichtung und Wahrheit”, truth and fancy, and to
arrive at a somewhat ordered picture of claims and counter-claims that could then be
linked up with the actual sequence of events so that eventually a well meaning and
neutral observer might be able to say: this seems to be the way it happened, and these
seem to be the reasons for it.
As was just indicated: the first and overwhelming impression was that of a project
not well received by a surprisingly large number of those teachers who were sup­
posedly to be aided by it in their class room teaching. Of course there were numerous
others who praised television as very useful to the students and as a great help to
themselves and who made the most of it — and quoted chapter and verse on it so that
what they said could not be taken as mere lip service. But there was that disturbingly
large number of those who criticized the project up and down, in many cases not only
in justifiable objective terms — there certainly was enough to criticize with a gigantic
project (by 1962 already 40,000 students in 190 schools received some television
lessons each week) still struggling through its infancy — but also with a certain
amount of animosity and hostility that was surprising to a neutral observer.
Criticism was loud and clear, sometimes also loud and not so clear, but at any rare
almost invariably mixing up the well known and unavoidable shortcomings of teaching
by television (which after a while we learned to summarize as “yes we know: it has
only two dimensions, one color and no smell (relevant for Chemistry) and you can’t
talk back to it”) with the ordinary initial adjustment difficulties of a complex
project. Every minor accident, every lapse of the tongue by a television teacher, and
of course even more so every real shortcoming in the preparation of a lecture or in
the execution of an experiment (especially in its safety aspects) was blown up out of
all proportion and became immediately a basis for more criticism. What good televi­s­

could do to students and teachers alike in spite of its shortcomings and even in
spite of the initial adjustment difficulties was ever so often lost in the shuffle.
Perhaps even more impressive was the negative attitude of some of the principals,
best epitomized perhaps by the one who in front of his teachers told the evaluator:
“Do you want to have my honest opinion? Take it away!” or by those who offered a
kind of passive resistance through simply not working out an adequate time or room

131
schedule or through not reporting or not following up unanswered reports of the breakdown of a receiver set. There was e.g. the principal who had indeed reported the breakdown of a set to All India Radio — several weeks ago. When no reply was forthcoming he simply let the matter rest. Have you tried telephoning? No, we have no telephone. (Actually there was a public telephone 200 yards up the road). The worst of course were those who tried to pull the wool over the visitor’s eyes. One principal e.g. calmly led the visitor into a classroom to let him observe a 9th grade class watching its Chemistry lesson (according to the printed syllabus). There was indeed a class sitting there, there was indeed a teacher, fumbling with the knobs until suddenly the television teacher appeared on the screen in mid-sentence. Only, as the visitor found out fast enough: this was a 10th grade Physics class, waiting to be dismissed because its teacher was absent; the man fumbling with the knobs was a biology teacher, hastily summoned behind the visitor’s back from his own classroom next door. Upon the visitor’s calm question: “when will the 9th grade be here?” the principal answered with equal calm: “they will be coming”. And indeed: halfway through the period the 9th graders came, also hastily summoned from their classroom some place else, squeezing in with the 10th graders in the already crowded room, to hear the remainder of their television lesson.

The important thing about it was not the individual case but rather the fact that out of over 30 schools visited at television time over a period of six weeks during that summer about one half did not receive their television lessons. In about half of these cases the schools could not help it: they were victims of the annual electrical power shortage that plagues Delhi every summer. But in most of the other cases the schools could have done something but didn’t. Among the 30 visits there were five of the type just described: with a whole comedy being acted out in an attempt to dupe the visitor.

While fairness might require that these stories be balanced by some rather touching other ones in the opposite direction (e.g. the teacher who met with his students in an otherwise empty school — they had some local holiday — so that they would not lose one precious television lesson; or the principal who, after two written (and mailed) reports of a broken down set had remained unanswered, had sent a personal messenger from his location at the far outskirts of Old Delhi to the offices of All India Radio in New Delhi), not much could be gained from telling them: what troubled the evaluator at this point was not the question: “what makes a teacher or a principal appreciate television as an aid to classroom teaching?” but rather: “what, if anything, had gone wrong in the preparation of a project as obviously useful as this one, that prevented it from being well received by an overwhelming majority of the teachers and principals involved?” True enough, in every project there are always some who will criticize and object to an innovation long after the great majority has already accepted it as beneficial. But these here were not “some”, they were not just “exceptions” or perhaps “cranks” (although one or another among them seemed to be just that) — these were for the most part a substantial number of ordinary well meaning teachers who rebelled in word and deed against a project that was meant to be (and most likely could be) of great help to them and their students. It really seemed necessary to go back to the beginnings and to find out what had gone wrong.
At this point a few of the earlier steps need to be filled in: Some time in December 1959 the then Director General of All India Radio, Mr. J. C. Mathur and the then Minister of Information and Broadcasting, Dr. B. V. Keskar ventilated with the Representative of Ford Foundation in India, Dr. Douglas Ensminger, the possibility of Ford Foundation aiding the development of television in India through providing a substantial number of receiver sets. It seems that Dr. Ensminger countered this with a suggestion that perhaps a more seminal form could be found for Ford Foundation's contribution, one that might help in the development or improvement of a field that had not yet received substantial help, rather than simply enlarging an already existing operation. That would be more in keeping with Ford Foundation's objective of aiding in a constructive manner in the development of India. One area that one could think of almost immediately, that might benefit from providing a substantial number of television sets, were perhaps the schools of Delhi that suffered from severe shortages of space and equipment and well trained teachers too. Television lessons could at once provide the students with experiments and demonstrations that they could not be shown in their own class rooms and laboratories for lack of equipment, while the teachers, observing daily well prepared lessons by carefully selected outstanding teachers might get ideas on how to improve their own teaching.

The suggestion appeared reasonable and was soon discussed with the Director of Schools in Delhi, Mr. B. D. Bhatt, who also found this an interesting and potentially fruitful suggestion well worth of further study. Thus the first team of experts was brought to Delhi in early 1960 to make the feasibility study (see above, p. 4).

Later that year, after negotiations had been concluded between the appropriate governmental authorities and Ford Foundation, the Director of Education, Mr. Bhatt and the designated Producer of School Television, Mr. N. Kumar went on a study tour through Italy, France, England and the United States (where they were joined by Mr. P. V. Krishnamoorty who headed the program through its first three months of actual school telecasting) in order to gain some first hand experience of the working of school television and its administration. Mr. Kumar stayed a few weeks longer to receive some training in production at the University of Florida under Dr. Kenneth Christiansen, Chief Consultant to Ford Foundation on the project.

After his return from abroad in January 1961 Mr. Bhatt, after a suitable number of informal talks, appointed an Advisory Committee consisting of some senior Education Officers and some Higher Secondary School principals. That committee decided upon the subjects to be taught on television during the initial period (Physics, Chemistry, English, Hindi, but with the main emphasis on Physics and Chemistry) and drew up a tentative list of main topics to be covered in each subject. It also decided that during the first year only the 9th grade should be included. The 10th and 11th grade should be added during the next two years as the ones who had begun with television in the 9th grade moved up.

A Science Consultant in the Directorate of Education was assigned the task to develop a new teaching program in Physics and Chemistry. Subject committees were appointed for each of the four subjects to draw up the first draft of the syllabus. These committees included in each field the subject supervisor (himself a Higher Secondary School principal with the particular subject as his former teaching field) who later
on supervised the television teachers in the preparation of their lessons. A good deal of continuity in thinking and action was achieved through considerable overlap in the membership of all of these initial groups, from Advisory Committee to Subject committee. The two most active members were later appointed as the first two Liaison Officers (see below) whose assignment it was to keep close contact with All India Radio and with the schools. The beginning of actual television lessons was then still planned for the beginning of the school year in July 1961. (For technical reasons it was later actually postponed till October). In preparation of this so soon impending date a series of teachers' workshops was conducted in May and June (i.e. summer vacation in Delhi), with several hundred teachers participating. There was one workshop for each subject. A separate workshop for principals dealt with administrative problems connected with the introduction of television in the schools. A new team of experts was brought to India by Ford Foundation (including among its members some from the earlier team) who participated in these workshops and discussed with the assembled teachers and principals for weeks on end the ins and outs of school television and its best utilization by the class room teacher in his own teaching. Teamwork between class room teacher and television teacher was stressed throughout. Model lessons were given by members of the team and by regular class room teachers. Committees of teachers at these workshops worked out the format of the television period, the syllabi and the rhythm of alternation between Class room teacher (C) and Television teacher (T). The format of the television period was to be as follows: there was to be a 5-minute preparatory talk by the class room teacher, then a 20-minute lesson on television, and finally a 15-minute follow-up discussion (for short the “follow-up”) by the class room teacher. During the preparatory talk the class room teacher would establish continuity between his own preceding and the oncoming television lecture. With that he would also introduce new technical terms that the television teacher would use (and that were listed in “guidance notes”, prepared by the television teacher and sent out a few days ahead of time to the class room teachers). During the “follow-up” he would answer questions and clear up points, but primarily it was meant to restore the two-way contact between teacher and student that gets lost in television teaching (With two of these 40-minute television periods in each shiftmorning and afternoon — in a school day that had before consisted of eight 35-minute periods, a good deal of re-setting and re-cutting of time schedules, including the shortening of two of the other six periods to 30-minutes each was required). The rhythm of alternation between Television teacher (T) and Class room teacher (C) was set for Physics and Chemistry classes that usually meet six days per week as T-C-T-C-T-C, i.e. alternating day by day. (The virtual straight jacket that this produced for the class room teachers who never had time enough to make up for lost lessons, television or their own, or for any diversion through students' questions or anything else became a major source of discontent within a matter of days after television lessons had actually started. That this could not be changed before the school year was out was perhaps most unfortunate. At the request of the teachers during the 1962 workshops this was changed for 1962/63 to T-C-C-T-C-C which gave some relief to
the classroom teachers. Some still protested that even two television lessons per week were too much. It turned out, however, that most of these were in schools, that allocated fewer than four classroom lessons (in addition to the two television lessons) per week and subject — the schools have considerable autonomy in the matter. The workshops also worked out detailed syllabi that listed for both classroom and television teacher what topics to discuss, what experiments to show, etc. on every day of the year. This too created an almost impossible situation in most cases and had to be changed drastically after the first year.

The recommendations of the workshops were gone over once more by the subject committees and the Advisory Committees at the Directorate of Education after which they were promulgated as the rules by which for better or for worse all concerned would have to abide until experience had been gained to judge and if need be to change them. In reality that meant that practically all of them had to remain in force throughout the first year of operation, 1961/62.

It was against this over-all background, augmented by a good deal of more detailed information, that the evaluator began to sort out some of the complaints that a great number of the teachers voiced in the summer of 1962 in order to arrive at an understanding of the reasons of some of the animosity that many of them showed towards the project and that in many cases went well beyond the limits of justifiable criticism.

(1) Many of the teachers felt that they should have been consulted beforehand about the introduction of television into the schools since they were the ones who would have to use it and who would have to live with it. The workshops in May and June did not, in their opinion, constitute such consultation, because their main function was to teach the teachers how to use television after the decision to introduce it had long since been made. Although committees of teachers at the workshops had done a good deal of work to put the program into shape, many teachers felt that this amounted essentially to straightening out minor odds and ends after committees at the Directorate had in fact made all the basis decisions. These sentiments were heavily underscored by the fact that those of the teachers who could not or did not participate in these workshops for various reasons (many were away on summer vacation) found quite literally one day a television set in their classroom or laboratory with nary any more instruction in its use than somebody telling them how to turn the knobs.

It would appear that here lay indeed one of the main sources of trouble. It would seem that not enough attention had been paid to the necessity of preparing the ultimate users — at least the teachers and principals, not to speak of the students — psychologically for the impending innovation. It seems that everybody in authority took it more or less for granted that all that was required was to instruct the teachers, or at least as many of them as could be assembled for the workshops, in the proper use of the television lessons (and the receiver sets) and to discuss with them some of the problems that were likely to arise. The workshops were admirably designed for that purpose. Beyond that it was apparently assumed that the contribution of the workshops to the straightening out of the syllabus, the designing of the format of
the lessons, etc. was sufficient to make the teachers feel that television had become their own instrument.

In retrospect it appeared that even such contribution as the workshops could have made towards preparing the teachers psychologically for the acceptance of the innovation itself was considerably weakened when, under the great pressure of time and the burden of heavy work, the workshops were conducted perhaps more with an eye towards greater efficiency and in a spirit of getting on with the work as rapidly as possible, than with the thought that they might also serve certain psychological needs of the teachers.

(2) Although the notion of teamwork between classroom and television teacher had been stressed in the workshops little effort was made afterwards to sustain it. Particularly during the first year with its daily alternation between classroom and television lessons the classroom teachers had all their hands full trying to keep up with the television teacher (who in turn followed the syllabus exactly as prescribed). Small wonder then that they saw themselves more in the role of supporting cast of the television teacher than as his team mates. This was underscored by the rather subordinate role that they were in fact assigned during preparatory talk and follow-up, and even more so by the unavoidable fact that during the television lesson itself they were relegated to the sidelines or to simply supervising discipline over their own students while they listened to somebody else. As one of them once put it succinctly while in answering a question in a questionnaire: How do you see your role on television days how on others? “On television days: police man; on other days: teacher”.

It was one of the weaknesses of the project at least in its beginning stage that “team work” had been treated in the planning more as a technical problem dealing with the efficiency of the television lessons, than as a socio-psychological problem with the image that the classroom teachers have of their own role in the scheme of things. Just as the planners had apparently not paid enough attention to the psychological preparation of the ultimate users for the over-all acceptance of the innovation, so they had also neglected to prepare the classroom teachers sufficiently for the role that they themselves would have to play. What the workshops offered in this respect by emphasizing the notion of “teamwork” was again more in the nature of instruction about the best use of the innovation than in the nature of psychological preparation and persuasion of the ultimate users of an innovation.

(3) Many teachers looked upon television as an unwarranted intrusion by an outside agency (All India Radio) into their classroom. While this was of course a misconception since television could never have been introduced without the permission and closest cooperation of the Directorate of Education, there were a disturbing number of quite visible, even though rather superficial symbols to strengthen that point of view with those who held it.

The division of labor between All India Radio and the Delhi Directorate of Education followed the most natural lines possible: the one partner took over the educational, the other the technical side of the project (see below). Yet the outwardly
visible symbols in terms of which the ultimate users tend to judge who is really running a project were almost uniformly associated with All India Radio. The Directorate of Education supplied the teachers (and the syllabi too), the supervisors, the subject committees and the two Liaison Officers — one an Assistant Director of Education, to keep contact between All India Radio and the Directorate of Education: the other and Inspector of Schools in charge of Television to keep contact with the schools. All India Radio supplied the production (including provision of a Physics and Chemistry laboratory where the television teachers could prepare their experiments, and a small reference library and reading room where they could prepare their lessons), the transmission of lessons and the maintenance of sets the schools. It also supplied the operating cost, including the salaries of all educational personnel connected with the project (television teachers, subject supervisors, Liaison Officers) who were “deputed” (“seconded”) to, i.e. temporarily stationed at and paid by All India Radio which also undertook and paid for the printing of the syllabus and its distribution to the schools, television and non-television alike, with one copy for each of the participating teachers.

Now the most clearly visible symbols of the project, as far as teachers and principals in the schools were concerned, were:

(a) the imprint of the syllabus, which read “All India Radio, Television Center”, rather than “Delhi Directorate of Education”. Although the syllabus had originally been drafted by subject committees at the Directorate, then been worked over by the workshops of teachers and finally promulgated by the Directorate of Education, and All India Radio was only in a technical sense its publisher (by printing and distributing it), this imprint caused most of the teachers to consider it as the “A.I.R. syllabus”;

(b) the second point was perhaps less superficial: with the Liaison Officers not only stationed at but formally deputed to (and paid by) All India Radio, any circulars that they sent out to the schools went out on the stationary of with the imprint of All India Radio over their (the Liaison Officer’s) signature, rather than on the familiar stationery or with the imprint of the Directorate of Education and over the well known and highly respected signature of the Director of Education, the highest symbol of authority throughout the Delhi school system. The outside observer could only record the fact that circulars signed by the Liaison Officers, themselves high ranking officers of the Directorate of Education, were treated in the schools with considerably less respect than they would have been treated had these same officers signed them with their own rank designations with in the Directorate of Education (Assistant Director of Education; Inspector of Schools) on the stationery of the Directorate;

(c) to all that came the sheer physical isolation of the television teachers and their subject supervisors at All India Radio. They had to be located there in order to be near their laboratory and the studio (with equipment for their experiments and demonstrations being carried to and from between them almost daily). That however placed them at a great distance from the Directorate of Education which happens to be located on the far end of Old Delhi. The fact that even the subject committees held their meetings at All India Radio (because they in turn needed
to be near the teachers and subject supervisors who had to participate in their discussions of individual lessons) more or less completed this isolation. (In later years the Directorate of Education, quite aware of this undesirable condition, contemplated ways and means of relocating some or all of these people in places closer to home, e.g. to locate the television teachers in its own new Science Training Center which has good laboratory facilities).

In conclusion the following more general points concerning the planned introduction of innovations in an urban setting might be made:

(1) The psychological preparation of the ultimate users of the innovation has to be an integral part of the planning of any urban project just as much as this is already the case with rural projects. Time and effort spent on this preparation will be just as likely to pay off in more enthusiastic acceptance and thereby more efficient use of the innovation; while the lack of it is likely to lead to serious dissatisfaction and opposition particularly where an innovation carries besides its visible advantages also some clearly recognizable disadvantages. In the present case one could well imagine that the introduction of school television in other cities (in India Bombay is contemplated next) could profit from a year’s advance notice to teachers and principals with discussion of the pros and cons while the administrative preparations are still in progress. Whereby the relevant point is less the fact of an early pre-announcement than the realization that the psychological preparation of the ultimate users for the acceptance of an innovation is a slow process that can not be accomplished by ever so well meant brief announcements or by ever so careful instructions in its use.

(2) Wherever two or more agencies are involved in a single project, the question will (and in the above case did) arise: “whose project is this — ‘ours’ or ‘theirs’” which in many instances will be fairly identical with: “whose bosses carry the highest authority — ‘ours’ or ‘theirs’?” To some extent this will determine the attitude of the ultimate users. Where full cooperation is planned between two or more agencies, this must be made clearly visible to all concerned through whatever words, deeds or symbols are appropriate in the context. Since an urban setting usually provides more occasion for the joint operation of projects it also calls for more planning in this direction: not only in the allocation of actual authority, which is of course part of the planning for the project itself, but also in that of the symbols of authority, which is part of the psychological preparation of the project. That in the case above the symbols of authority over the project were mostly attached to All India Radio, while authority and jurisdiction over its ultimate users lay with the Directorate of Education produced a conflict situation: those who happened to dislike the innovation and therefore wanted to make light of the instructions that went with its use took refuge in the fact that these instructions came from a different agency than the one that was the generally recognized source of authority in the situation.

(3) To sustain an innovation in an urban setting requires just as much of a
continued two-way contact between introducing authority and ultimate users as it does (and is well recognized to do so) in a rural setting. Through it new information about the innovation and its best use can be brought continually to the ultimate users while at the same time prevailing misconceptions can be dispelled and sources of discontent be counteracted before they lead to outright opposition. In the present case it may serve as but one small illustration that a year after the project had been launched the evaluator could still encounter many teachers who were jealous of the television teachers and suspected gross unfairness in their selection (which actually was as open and fair as could possibly be) simply because they mistakenly believed that these people received "huge compensations and emoluments" — when actually they received a mere pittance of extra pay for many hours of extra work. Following a suggestion in the 1962 report All India Radio began publishing a monthly newsletter for teachers with informative articles about school television, answers to teachers' queries and occasionally contributions by teachers. In view of what was said above about the symbols of authority is was perhaps unfortunate that this was again prepared, produced and distributed by All India Radio with its own imprint rather than in closest cooperation with and over the imprint of the Directorate of Education.

Another means of two-way contact was instituted in subsequent years by the Directorate of Education — and was thus perhaps a more fruitful means of setting things right with the teachers. When the big workshops had become unwieldy they were replaced by two different sets of meetings: first a set of smaller group meetings, each chaired by the Liaison Officer, in which teachers of a given subject, all from schools in the same locality, discussed their experiences with television and made suggestions about revising the syllabus, etc.; then one Delhi-wide meeting (at the Directorate of Education) of teachers of this subject, one from each school, chaired by the same Liaison Officer, who presented a summary of the suggestions and revisions that he had collected in the small group meetings. This larger meeting then either adopted or did not adopt some of these suggestions, usually after but brief, occasionally after a longer discussion. Personal participation in many of these group meetings demonstrated to the evaluator of the project that here a true means for two-way contact had been found. What appeared to make it work was not so much the exchange of experience among the teachers and the opportunity to voice criticism and to make suggestions, although both were in themselves extremely valuable; the most important aspect of it was that a high ranking official (in 1965 it happened to be an Assistant Director of Education) discussed these matters with them on a give-and-take basis which served to remedy much of the impression that television had been foisted on the teachers from above without proper consultation.