Settlement Houses and the Urban Information Infrastructure

Maxine L. Rockoff

UNITED Neighborhood Houses of New York has launched an ambitious project to "wire up" New York City's settlement houses, even as the societal commitment that supports settlement houses is undergoing radical change. The project, called the Information Technology Initiative (ITI), is designed to help settlement houses do more with less in a time of diminishing resources by helping them become both more efficient and more effective in performing their mission—providing a wide range of social, educational, and recreational programs in urban communities. A secondary goal of the project is to provide residents of the settlements' inner-city neighborhoods with access to the national information infrastructure (the "information superhighway").

Designers hope the ITI project will demonstrate that the benefits of information technology to settlement houses are great enough to warrant incorporating the associated costs, in terms of personnel, hardware, and software, into the houses' ongoing operational budgets. Uniformly positive results cannot, of course, be assured. To achieve such benefits requires that the settlement houses become effective adopters of information technology—a daunting and long-term challenge even for well-funded, for-profit enterprises. Achieving the envisioned administrative and managerial payoffs also requires that those government agencies which are the primary funders of settlement houses cooperate in simplifying their complex funding and reporting requirements and in creating mechanisms for electronic linkages between themselves and the non-profit organizations with which they

contract. Naturally, there are problems on both of these fronts, though significant progress is being made.

Although the ITI was initially devised for managerial and administrative purposes, it quickly became clear to the designers of the telecommunications network that was to connect the houses' multiple program sites that the same infrastructure would readily allow settlements to offer residents of their communities access to the national information infrastructure (NII) at relatively small additional cost. The project included this secondary goal in responding to the guidelines of the Telecommunications and Information Infrastructure Assistance Program of the National Telecommunications and Information Administration. For their part, the participating settlement houses committed themselves to setting up "neighborhood-based family rooms" that would have multimedia computers connected to the Internet for use by community residents. When the initial objective of the ITI was broadened to connect inner-city residents to the NII, its goals were also expanded. The designers now hoped to demonstrate sufficient payoffs from introducing information technology into the operation of the houses, as measured by increased productivity and performance both in settlement houses and in the agencies that fund them, to cover at least part of the costs of community residents' connections to the Internet. The early experience of one settlement house that offered free Internet training and access to community residents and staff has been encouraging, though it is clear that issues relating to the motivation and readiness of potential users will have to be explored further.

Finally, it must be acknowledged that a very understandable tension suffuses any such project launched by people who believe that the results of installing information technology will be positive, yet who must remain sufficiently impartial so that the results—negative as well as positive—will be useful from a national policy perspective. Sustaining a productive balance between advocacy and objectivity is itself a challenging task.

Rationale For An Information Technology Initiative

Background

Settlement houses—bright spots on the urban horizon—have evolved continuously and creatively for more than a century to meet the changing needs of their communities throughout the United States. As non-profit, community-based organizations, they provide social services to ameliorate the conditions of poverty that surround many of the people who participate in their programs, while simultaneously offering enriching recreational, cultural, and educational activities to all residents of settlement house neighborhoods.

Throughout the United States, there are nearly 1,000 settlement houses, sometimes called neighborhood or community centers. The term "settlement" derived from the choice frequently made by affluent volunteers to "settle" among the poor to whom they were ministering. The first settlement house was founded in 1884 by Samuel Barnett, a parish priest in London's East End slum, as a residence for students, a location for social service, and a place through which the poor workers of London became visible to the public. The Americans Stanton Coit and Jane Addams, having lived and learned there, returned to their respective cities to found University Settlement on the Lower East Side of New York in 1886 and Hull House on the Near West Side of Chicago in 1889.

Husock

Standish

Carson

United Neighborhood Houses of New York, Inc. (UNH), the umbrella organization for New York City settlements, was founded in 1919 to mobilize the entire settlement movement around issues of social reform. Collectively, the 37 settlement houses in New York today that are members of UNH operate more than 430 social, educational, and recreational programs, such as day care, Head Start, after-school programs, teen centers, job training, tutoring, college counseling, youth outreach, General Equivalency Degree, and English as a Second Language classes, recreational activities, meals for the elderly, senior centers, home care, mental health counseling, and art, music, and drama programs. These activities take place at 239 sites throughout New York's five boroughs (See Figure 1.), affecting the lives of a half million city residents of all ages, religions, and ethnic backgrounds. The settlements' total annual budgets exceed $200 million, with 85 percent coming from government sources and the rest from participant fees, foundation grants, and individual gifts. About half of the nine thousand staff members are themselves residents of low-income neighborhoods.

Settlement Houses are Information Intensive

United Neighborhood Houses

A 1991 UNH study funded by the Ford Foundation revealed that settlements deliver programmatically effective and cost-efficient services, with cost-efficiency evidenced by a low ratio of general management expense to program expense. Yet, since settlement-house activities are extremely information intensive, there are many opportunities for improving the quality and efficiency of the settlements' programs even further, as suggested by just two of many possible examples:
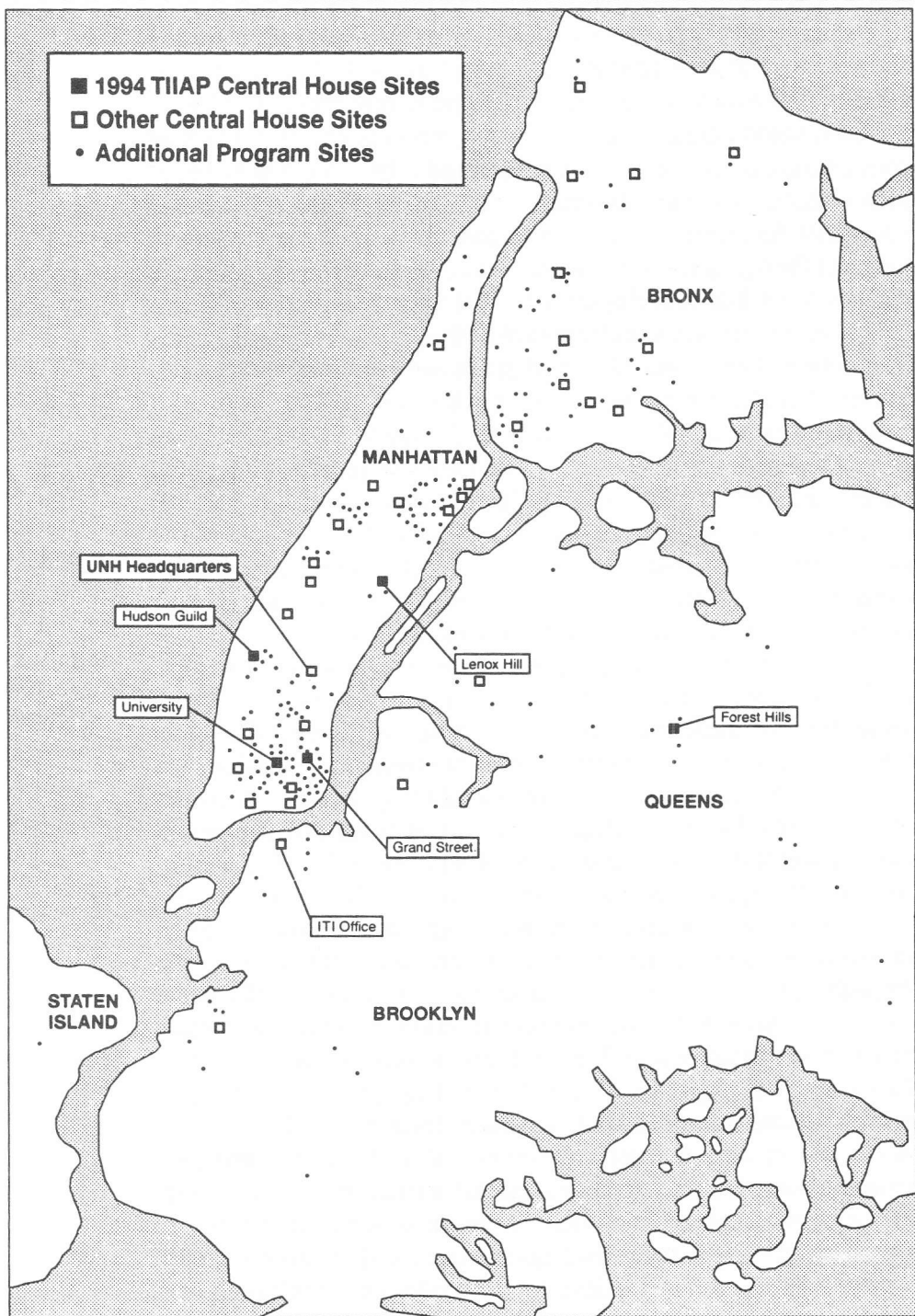
- With respect to quality, the UNH report identified the fragmentation in service delivery caused by categorical funding as a major barrier to the settlements' goals of working with families in a holistic, coordinated way. For example, to support and raise her

child with confidence and independence, a teenage mother who is a high school dropout may need drug counseling, child care, remedial education, employment training, and parenting classes. Even though a settlement house may offer all of these programs, its staff, lacking the information they need to respond properly to a family's interrelated complex of problems, find themselves organized around *programs* rather than around *people*.

- With respect to efficiency, multiple reports are onerous and wasteful. One medium-sized settlement house operating with sixteen different program contracts funded by New York City agencies[1] counted the number of fiscal reports it was required to submit each year. The number was an astonishing 1,007! Moreover, each contract required that the settlement house submit multiple copies of a complete set of supporting documentation, such as incorporation papers, list of board of directors, agency audit, staff resumes, sources of funding, etc., *even when two or more contracts were with the same agency*.

On the national scale, any finding of inefficiency or ineffectiveness from the point of view of a single settlement house is magnified when viewed from the perspective of the entire human services sector. A single settlement house is one of hundreds of community-based voluntary agencies in New York City at the bottom of a funding and reporting hierarchy that extends upward to as many as 17 agencies in the city of New York, then in turn upward to as many as 16 New York State agencies in Albany, which in turn connect upward with many separate federal agencies in Washington. Viewed from the top of the hierarchy, i.e., from the perspective of a single federal agency, funds flow through 50 states through hundreds of local governments to thousands of independent community-based voluntary agencies throughout the country. UNH, working with settlement houses in Cleveland and St. Louis, has identified 16 different Washington agencies in nine federal departments—most importantly Health and Human Services, Labor, Housing and Urban Development, Agriculture, and Education—from which funds flow both directly and indirectly to settlement houses in all three cities. Of course, tax levies from state and local governments also flow into the system, as do funds from foundations and private donors. Each source of funding involves the settlement house in the preparation of proposals (often just slightly different from one funding source to another but not close enough to use very much of the same primary material without laborious reworking), program administration, and reporting processes. All this requires skilled program staff to spend hours of their time on administrative paperwork, and suggests that the

FIGURE 1
New York City's Settlement House Sites

■ 1994 TIIAP Central House Sites
□ Other Central House Sites
• Additional Program Sites

BRONX

MANHATTAN

UNH Headquarters

Hudson Guild

Lenox Hill

University

Forest Hills

Grand Street

QUEENS

ITI Office

STATEN
ISLAND

BROOKLYN

appropriate introduction of information technology could have an enormous positive effect on the human services sector throughout the country.

Uncoordinated Automation Efforts Miss the Mark

Not surprisingly, given the complexity of funding and reporting streams, several government agencies in New York City have undertaken their own automation efforts. Unfortunately, these efforts have not been coordinated. An unanticipated consequence of this lack of coordination is that settlement houses and other community-based organizations now must shoulder an unwelcome burden: a settlement house that, for example, has separate contracts with the city's Department for the Aging (DFTA), Department of Employment (DOE), and Agency for Child Development (ACD) must respond to different computerization mandates from each of these agencies, requiring the installation of computer systems that not only do not share data with one another but that are also based on differing definitions of such important terms as "ethnicity," "income," "family," and so on. From the settlement house's perspective, this inefficient profusion imposes significant costs, for its staff must learn and support three different systems. These systems are doubly inefficient because it is nearly impossible to aggregate data and get a unified picture of what is happening in the settlement house overall, information that is badly needed by program managers and the executive director.

The inability to share data among systems means that frontline staff miss opportunities to improve the quality of services. A grandmother may be registered in the DFTA database while a grandchild, for whom she is responsible, is registered in the Head Start database. The settlement staff in the senior and early childhood programs (which may be located in different buildings) interacting with the two members of the family do not know of the family relationship and, therefore, cannot, for example, suggest important family aid that might be available to them.

Government investment in technology can be expected to increase, if only for the reason that federal agencies must begin to follow through on their responsibilities under the Government Performance and Results Act of 1993, which requires them to gather outcome-based program performance data. But another reason is that cities throughout the nation are facing an unprecedented challenge: to continue to make available a broad array of activities and services that offer a helping hand to citizens in their poorest neighborhoods while at the same time reducing both tax-based expenditures and the size of government itself. Public-sector managers know that private-sector service organizations have demonstrated that downsizing (or "rightsizing") can only happen if there is an accompanying investment in information infrastructure. Indeed, it is because of the problems experienced in settlement houses

U.S. Congress, General
Accounting Office

for which information technology seemed the right solution, and because the uncoordinated government investment in information technology threatened to make things worse, that UNH undertook the Information Technology Initiative.

The UNH Information Technology Initiative

Improved Organizational Performance

Responding to the issues in its 1991 report, UNH launched its Information Technology Initiative in 1993. The ITI has seven specific objectives:

1. to increase the efficiency with which programs are administered, and to free the skilled program staff to work on more productive projects than the onerous, administrative tasks that consume large portions of their days

2. to enhance the quality of the settlements' programs by developing better integration and coordination of services across multiple categorical programs for individuals and families

3. to equip settlements with the tools they need for planning and evaluating their programs and services so as to make the best use of available funds and resources

4. to "reinvent government" through electronic communication, data sharing, and reporting between the human services delivery system's "front line" and government funding agencies

5. to provide settlement program participants with an entrée into the information economy through experience in technology-based work environments and through "neighborhood-based family rooms" that have multimedia equipment with Internet access for educational and recreational uses

6. to improve the settlements' ability to respond to changing community needs by capturing "early warning" information about neighborhood conditions from networked staff and neighborhood residents

7. to encourage involvement and participation of individuals from non-poverty neighborhoods (including settlements' board members), thus continuing settlement houses' long tradition of building bridges among social classes in the larger community.

The ITI project addresses the need for settlement-wide information sharing through an information infrastructure targeted at frontline workers and seeks to provide them with the tools they need to do their jobs better. Administrative uses of the data for program funding, management, outcome tracking, evaluation, and reporting are to be by-products of improved service delivery; that is, instead of investing first in an information infrastructure to respond primarily to managerial and reporting task requirements, the project's plans focus on developing automated systems for use by program staff who interact on a daily basis with neighborhood participants.

Because the settlements are closely tied administratively to the agencies that contract with them to provide services, UNH has been developing the ITI as a collaborative effort with New York City's human services agencies. UNH, the settlements, and the city began collaborating in 1992 and created a Task Force on Settlement House Issues. The first issue tackled by the Ford Foundation-funded task force was the issue of consolidating early childhood services in three settlement houses on a trial basis. One result has been a unified contract to replace separate contracts for Day Care and Head Start programs. Not only have better services for families resulted, but this streamlining also promises to reduce what had been 109 reports (out of the 1,007 annual fiscal reports mentioned earlier) to 17—a very encouraging start.

Marks

Connecting Inner-City Residents to the National Information Infrastructure (NII)

Although the ITI began as a project designed for the program and administrative staff of settlement houses, it was soon apparent that the same infrastructure—requiring investments in computers, cabling, routers, a high-speed Internet connection, databases, training, and skills development—could simultaneously be extended to community members. Accordingly, each settlement house participating in the ITI project is committed to developing safe, supported, friendly telecommunications-based resources for community use, dubbed "neighborhood-based family rooms." These rooms will provide, on a group basis, a resource that more affluent people increasingly have in their own homes. These family rooms have networked, multimedia computers, a 56 kb Internet connection, and sundry educational and recreational software intended for a wide spectrum of uses targeted at people of diverse ages, ethnicities, races, and interests. The following examples illustrate some of the possibilities that are envisioned:

• Community residents could use the information technologies of a settlement house for adult literacy training, after-school activities, creative writing instruction, pre-school child care, senior citizen programs, or college preparation assistance.

- Residents who came to the settlement for help in solving a problem (e.g., homelessness, drug abuse, mental health crisis, AIDS) could have skilled personnel, either staff or specially trained community residents, available to help them navigate telecommunications-based information resources—which are likely to become an increasingly important pathway for accessing assistance as government agencies seek ways to become more efficient under the National Performance Review guidelines. This is a natural extension of the settlements' century-old role as the first point of contact in times of difficulty.

Gore

- Neighborhood-building activities such as community organizing and group decision-making could be supported through new telecommunications-based mechanisms for democratic processes including local electronic bulletin boards and electronic mail—today's analog of yesterday's "commons." This example responds to an analysis of the community-building activities of UNH's member settlement houses that has been conducted over the past year by the Chapin Hall Center for Children at the University of Chicago. The report finds that settlement houses today are indeed continuing their historical tradition as community-building institutions. Nevertheless, the report also identifies a number of barriers that settlement houses must overcome in order to increase their centrality in the community and their community-building effectiveness. The hope is that the new *interactive* telecommunications technologies that will be available in the settlement houses will result in broader and more meaningful resident participation in the settlements' community-building activities.

Brown

Members of the settlement houses' boards of directors could also participate in some of the interactions. To the extent that these board members come from the corporate or other sectors, "community" extends beyond the boundaries of the immediate neighborhood. This broadening is important since many of the decisions that may be facilitated by the technology—for example, how best to spend block grant funds—involve the resources of the larger community.

One settlement house, Union Settlement in East Harlem, already has a specific plan for employing information technology to connect a group that includes Head Start mothers, educational professionals, settlement house staff, and settlement house board members. The group is charged with overseeing an early child-

hood program and with developing a uniform program design, applicable in each of five sites spread out over several city blocks, that deals with questions of staffing, hours of operation, standard and specialized equipment, attendance rules, and so forth. Because the group members are dispersed both geographically and with respect to their individual schedules, it is difficult to bring them together for face-to-face meetings. Once the ITI is fully operational, such standard Internet-based communication tools as electronic mail, list servers, and bulletin boards will help the group to be more effective in achieving its goals, by making it possible for group members to contribute separately and at different times to draft documents that are circulated electronically. These preliminary electronic discussions will have everyone better prepared to move efficiently through the agenda of the formal, face-to-face meetings.

Measuring the Effects of Information Technology

From the outset, the ITI project has been conceived as a multi-year demonstration in which an integrated information technology system would be developed and installed, and the resulting effects on service quality and efficiency would be measured. Demonstrating that the payoffs from information technology are greater than the costs, however, presents two problems. First, the personnel working on the project in UNH and, for the most part those in the settlement houses, are enthusiastic advocates of the technology, and this makes it difficult for them to be completely objective. Yet favorable anecdotal reports will not suffice. If the project is to achieve its objectives as a demonstration that will change funding policies so that information technology costs can be incorporated into operational budgets, hard evidence will be required.

The second problem is even more difficult. Service-sector productivity is generally very hard to measure even in profit-making companies, as concluded in a recent state-of-the-art review by the National Research Council on the effects of IT on service-sector productivity. Committee to Study... The problem is compounded in the human services sector, where there is no single measure such as profit to determine unambiguously how well an organization is performing; social policy analyst Howard Husock crystallizes this issue with his question, "Do Settlements Work?" Since no agreed-upon measures currently exist, UNH needs to Husock work with its member settlement houses and their government and foundation funders to develop measurement techniques so that baseline and later measurements can be made to assess information technology's impact. This problem is compounded by the fact that the project itself will make possible entirely new measurements, such as those which will

be available from a settlement-wide Participant Record Management System. Comparable "before" measurements corresponding to these "after" measurements will simply not be available.

In response to the need for objective evaluation, UNH has contracted with the Center for Research on Information Systems at New York University to carry out both formative and summative evaluations. Two of the researchers presented a paper on their formative evaluation of the project at a conference in August 1995.

Fish and Turner

Current Status of the UNH Information Technology Initiative

Sparrow and Vedantham

UNH was awarded a grant in 1994 from the Telecommunications and Information Infrastructure Assistance Program (TIIAP) of the Department of Commerce. UNH has designed and has, as of the end of September 1995, almost completed the installation of a wide-area digital network using frame relay technology (See Figure 2.) linking two UNH offices and the administrative and program sites of the five houses participating in the project. The resulting network includes ten frame-relay and fourteen dial-in sites totaling approximately 245 workstations. All workstations will be capable of accessing the Internet, sending and receiving electronic mail, and accessing customized applications, such as databases for Participant Record Management and Information and Referral, when they become available. Most of the workstations will also be capable of sharing documents and data files.

In preparing to develop the settlement house-specific applications that will use this infrastructure, the first step was to conduct a requirements survey of key staff at each of the houses. The next was to construct a preliminary data architecture, which graphically underscored just how information-intensive settlement houses are. (See Figure 3.) The paper forms used for gathering and reporting information in settlement house programs have also been collected as part of the survey. In one of the houses, a count covering seven of its nine programs identified 45 forms with 160 pages and 8,651 data elements! We are now undertaking the laborious work of tabulating the data items across all of the forms in all of the houses, in preparation for the design of a unified, settlement-wide Participant Record Management System.

We are aware that the work of defining data elements for automated human services systems is being repeated in other projects in New York City as well as around the country, and UNH seeks collaborations in order to both minimize duplicate efforts and maximize the prospects for data interchange among various agencies. UNH has participated in a series of meetings concerning human services information technology issues in New York City, culminating in a forum in June

1995 that brought together the city's voluntary and public human services agencies. We hope that a joint public/private project for the creation of a human services data dictionary will result so that terminology standards can be set early. This effort deserves to be expanded upward to include the relevant state and federal agencies as well.

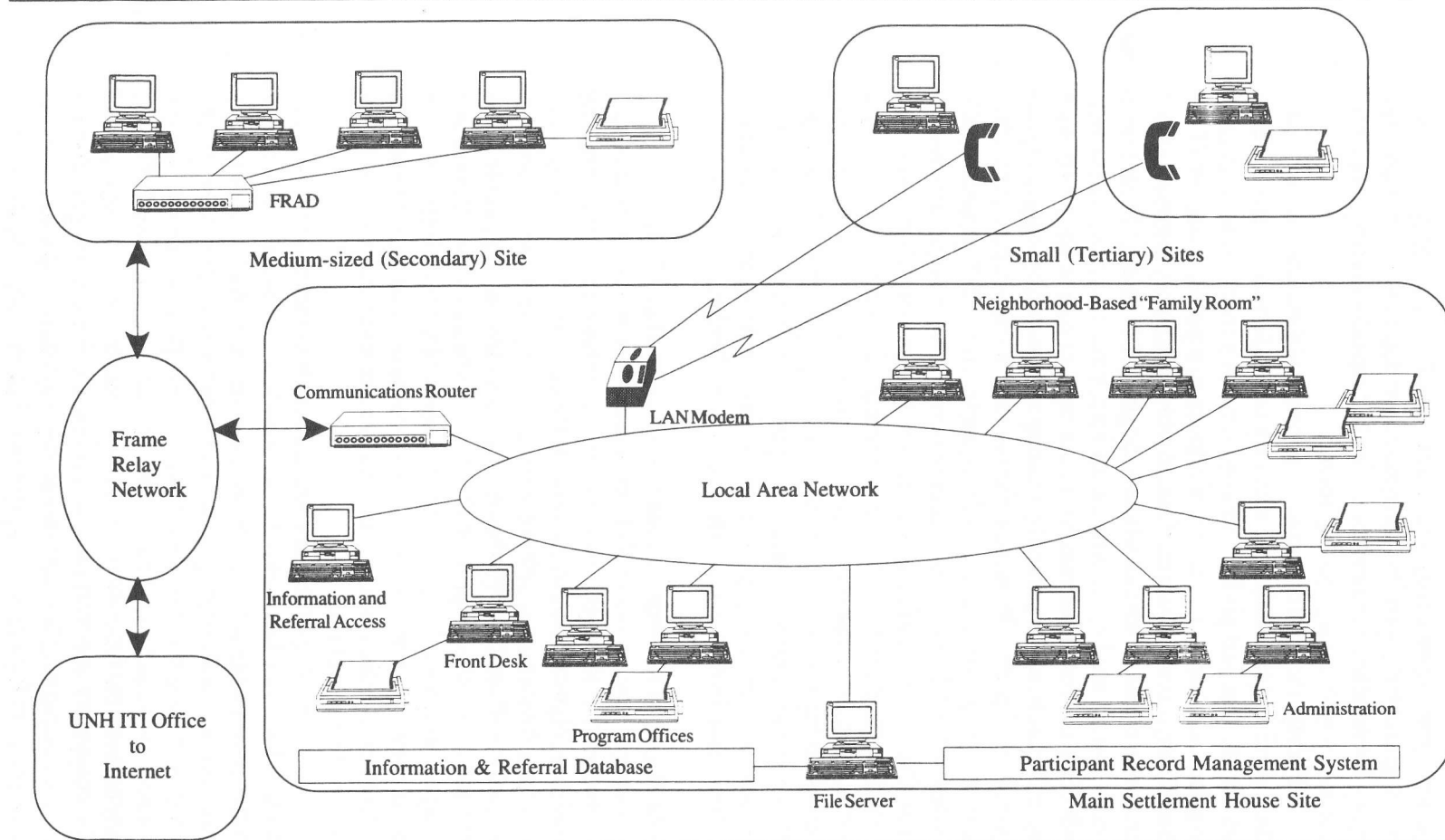### Early Experience with Universal Internet Access

Lenox Hill Neighborhood House in Manhattan was planned to be the first settlement house to be connected to the wide-area network. A team consisting of Lenox Hill ITI project staff and a Master of Science candidate from New York University's Stern School of Business conducted a pre-pilot study to help guide UNH and the settlements as to the Internet areas that might be of interest to neighborhood residents and the amount and nature of the support that would be required in the family rooms. To recruit subjects for the study, an announcement was circulated to the staff at Lenox Hill and posted on numerous bulletin boards to alert members of the community to the opportunity to learn how to use the Internet. Free Internet training began in February 1995, and within two months, 34 community residents and settlement house staff had been trained in Internet basics on three computers, using 14,400 baud dial-up connections from Pipeline, a commercial Internet provider. (It was necessary to use an outside vendor because NYNEX had not yet installed the frame-relay circuits ordered for the UNH network.) The participants began "surfing" the Internet in March, using the three computers without charge.

The Lenox Hill team's early assessments are: (1) that the most important result of the pre-pilot so far is an awareness on the part of Lenox Hill staff of the potential of electronic communication ("seeing is believing"); (2) that applying the Internet or other technology to the front-line delivery of human services will require time and extensive settlement house staff effort to meld technology and human services; (3) that process integration and redesign, applications, and databases appear to be more critical than access to the Internet, which will have a limited effect on meeting the broad goals of the ITI project; and (4) that three hours of classroom training, suggested information sources, and direct personal assistance proved valuable in getting people to start using the Internet and in sustaining enthusiasm.   Tidd

Another finding of the pre-pilot trial was that the people who took advantage of the offer of free Internet training tended to be well-educated and not disadvantaged. In an effort to engage the disadvantaged members of the settlements' communities, our next attempt will be to see if we can usefully incorporate Internet access into specific settlement house programs, starting with Adult Literacy. We are also exploring the possibility of charging fees on a sliding scale. The pre-

FIGURE 2
Settlement House Hardware Schematic

FRAD

Medium-sized (Secondary) Site

Small (Tertiary) Sites

Neighborhood-Based "Family Room"

Communications Router

LAN Modem

Local Area Network

Frame Relay Network

Information and Referral Access

Front Desk

Program Offices

UNH ITI Office to Internet

Information & Referral Database

File Server

Participant Record Management System

Administration

Main Settlement House Site

pilot program's popularity spread by word-of-mouth, and many partici-
pants grumbled when the Internet-connected computers were shut
down for relocation to new space that had recently been renovated for
use as a neighborhood "family room."

Perhaps the most important implication of these early results is that
they confirm the prediction, made by one Information and Referral
specialist, that just giving someone time at a terminal with Internet
capabilities—or by extension, at a kiosk in a public space—will not
benefit anyone who feels confronted with a seemingly insurmountable
problem, or has no idea of where to begin. If this finding holds true in
more formal studies, it will be an important result for those who
advocate universal Internet access. It appears that to be useful, such
access must be accompanied by training and assistance, suggesting that
group settings may be more effective than home settings even when
home settings are economically feasible. In the ITI project, public
access to the NII in low-income communities is to be made available at
marginal incremental costs in settlement houses in which an investment
in information infrastructure to increase productivity is already being
made. We believe that this venue will not only enhance the telecommu-
nications-based services available to community residents, but will also
show that community access can be "paid for" by achieving productivity
increases in the delivery of services, thus enabling an investment in
information infrastructure to have dual social utility.

The Biggest Challenge: From Low-Tech to High-Tech

Although there are pockets of automation in many settlement houses
(notably in fiscal and development offices), these institutions are not, by
tradition, high-tech organizations. On the contrary, they are, above all,
concerned with human relationships, and many staff fear that comput-
erization will conflict with their primary concern, serving people. Thus
the most daunting aspect of the project relates to the training and
adaptation that will be necessary if the new technological infrastructure
is to result in improved settlement operations and effective use of
whatever relevant resources are available through the National Infor-
mation Infrastructure.

Yet even when there has been a desire to computerize, settlement
houses have not had funds for information technology investment.
Since governmental funding of settlement houses usually supports only
categorically defined programs, any funds for computers are typically
restricted for use in the specific categorical program channeling the
money. The broad-based TIIAP funds are unique in this regard. Finally,
any unrestricted funds available from private sources that might be used
for computers and telecommunications are fiercely sought after for
other pressing programmatic needs, ranging from hiring a multi-lingual
staff member for a new immigrant population to painting the gym.

FIGURE 3
Overview of Proposed System Components
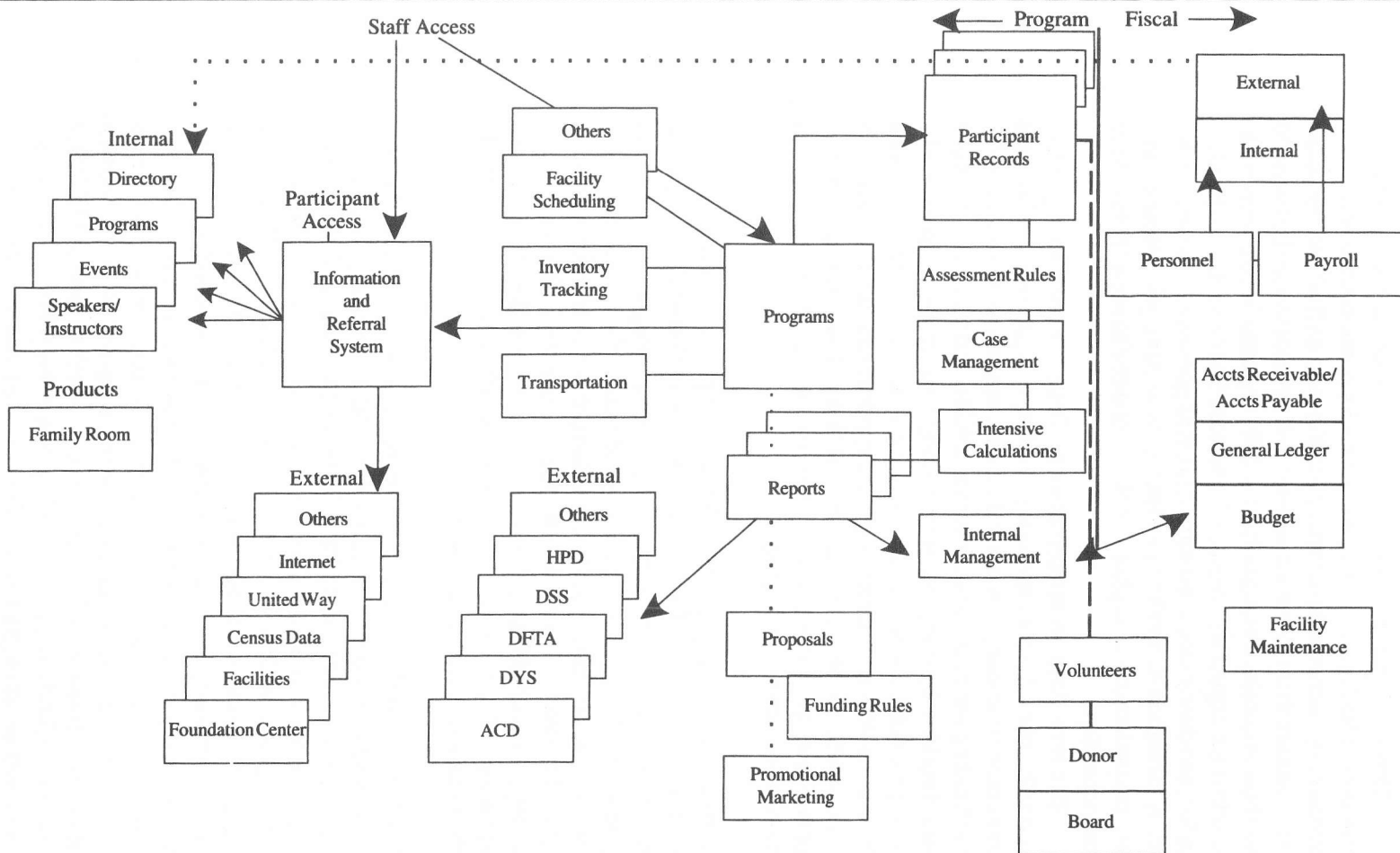
Many staff are in entry-level jobs, employed, for example, as classroom aides or as home care attendants for home-bound elderly, and have no computer experience whatever. Yet even staff whose jobs today do not require them to use a computer will eventually need, at least, to learn how to use electronic mail for the daily organizational communications that we expect will replace the notices that currently are printed, copied, and distributed to all staff. And, if all goes as envisioned, up-to-date information on health benefits, vacation days, job openings, and even the settlement-wide phone book will one day be in electronic rather than paper form.

But how does an organization go from low-tech to high-tech, especially when it is committed to providing a supportive employment environment for many low-skilled people, has no assurance that multi-year funding for automation will be available, and is not the object of a marketing blitz by computer and telecommunications companies who see a profitable niche market for which they are willing to invest resources in developing niche-specific applications? It is far too early in the experiment to be able to demonstrate that we have the right answers, but we have taken steps that we hope will prove effective. Principal among these are the following.

Focus Groups. In Spring 1993 when the ITI project was in formation, UNH set up a series of focus groups on how settlement houses handle information now and how they might use an integrated information system in the future. The focus groups identified the areas of electronic communication, Participant Record Management, and Information and Referral as needs of frontline settlement house staff. The focus group participants learned from one another, and as a group they developed the beginnings of a common vision about how information systems might affect settlement house operations.

Pilot Settlement Houses. For the initial pilot we selected five settlement houses that we thought were prime candidates—Forest Hills Community House in Queens, Grand Street Settlement and University Settlement Society on the Lower East Side, Hudson Guild in Chelsea, and Lenox Hill Neighborhood House on the East Side. Each was medium-sized, had already started to use computers, had at least one local-area network, had many staff members already comfortable with computers, and was led by an executive director who was not only eager to increase his or her house's degree of automation but was also willing to commit the substantial personnel time that has been required for project participation. Each house was financially strong enough to commit $25,000 of non-federal funds to the project. Four of the five pilot settlements had developed or attempted to develop at least one database to track program participants, and two of the five had participated in UNH's

Task Force on Settlement House Issues to streamline contracting with New York City's Human Resources Administration.

Demonstrations of Operational Systems. UNH arranged for a number of demonstrations of operational systems in critical application areas, such as Lotus Notes (a system for supporting group work electronically which was demonstrated in a special workshop for UNH by Chemical Bank's technical training team), *Youthline* (a program in New York City's Department of Youth Services that developed a geo-coded online database of neighborhood-based social services resources), and several Participant Record Management systems. These demonstrations helped to elaborate a shared vision of how technology would be useful in the settlement house environment.

Implementation Teams. Each of the five settlement houses has created an internal team to guide the project's implementation, many of whose members had also participated in the 1993 focus groups and had attended the demonstrations. The implementation teams have proven important in sustaining enthusiasm for the project over its first nine months, during which there was much planning, site surveying, and interviewing but no visible results in terms of new computers or networking.

Evaluation. UNH has contracted with the Center for Research on Information Systems at New York University to carry out a formative as well as a summative evaluation of the project. One researcher, using an action research approach, has joined the UNH implementation team as a consultant, requirements analyst, and observer. An early recommendation of the research team has led to bi-weekly project meetings for the project coordinators from each house, thus giving the houses a useful opportunity to exchange information with one another on a regular basis.

Training. We have engaged an experienced professional to help the settlement houses develop appropriate training programs at each house. Training requirements at all levels have been specified, from basic computer skills—how to turn on a computer, use Windows with a mouse, and use a word-processing package—to how to operate in a networked environment with a network login, passwords, file structures, security controls, and electronic mail.

Pilot Experiments. Finally, we are carrying out small pilot experiments within the project, such as the experiment described above in which we offered universal Internet access to all members of the settlement's community. We will also be the subject of a special training program in

Fish and Turner

the use of our electronic mail package as part of the research being carried out by a psychology doctoral student at New York University.

We recognize, however, that the challenge inherent in introducing new technology and helping the settlement houses adopt the technology effectively goes beyond installing a wide-area network that operates as designed and then teaching staff how to use its basic features, such as sending and receiving electronic messages. Rather, experience in the private sector suggests that it will be necessary to help the houses restructure their operations and then be prepared to support the restructured processes with technology and other interventions as needed.

<div style="text-align: right">Sproull and Kiesler
Hammer</div>

Next Steps

One of UNH's longer-range tasks is to move the ITI project toward the critical mass necessary for system operation to be self-sustaining; the costs associated with the installation and maintenance of the sophisticated frame-relay infrastructure, plus the expertise of the systems analysts and applications developers only make sense if they are shared among a large number of settlement houses. The first five medium-sized settlement houses in the project have an average annual budget of $5.5 million. The ten houses that have asked to join the project in its next phase have an average budget of $9 million and great budget dispersion: the largest is $20 million and the smallest is $.9 million. In choosing the houses for further expansion of the network, UNH will try to select ones with both high and low levels of technological sophistication as well as total budget, so that project results can be extrapolated to a broad range of houses and thus increase the project's potential value as a national model.

An immediate task is to begin the design and prototyping of high-payoff applications. Databases for Participant Record Management and Information & Referral (I&R) have, along with communications, been consistently singled out by settlement-house staff and managers as the applications that would have the greatest benefit in terms of better services for families and children as well as the greatest managerial impact. Attention will, therefore, be focused in these areas. As a general principle, UNH would prefer to acquire, adapt, and integrate existing systems, rather than build its own on behalf of its member settlement houses. However, we want to assure that settlement house systems will interface smoothly with other systems, particularly those being developed by government agencies, and still provide the settlement-wide tools that will foster holistic, family-oriented services and support efficient funding and management functions.

The development of settlement-specific applications will be tightly coupled with efforts to begin the redesign process ("reengineering")— essential in the private sector's achieving the benefits of investing in technology. The plan is for each settlement house to expand the membership of its implementation team and broaden the team's responsibilities to include visualizing and describing how technology could not merely automate the settlement's current ways of doing work but also create new and better work processes. We expect that the teams will include neighborhood residents who participate in the settlements' activities, as well as creative members of the New York City agencies that fund settlement house programs.

Finally, the component of the project focusing on how the NII can serve the needs of residents of settlements' communities will seek ways to integrate the Internet into ongoing settlement house programs, such as Adult Literacy and AIDS Support Groups, so that community residents who use the technology in the "family room" settings will not be cast adrift on an uncharted sea. Additionally, we hope to create alliances with other groups around the country that are using the Internet in similar programs.

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Project Vulnerabilities

In spite of UNH's enthusiasm for undertaking this project and our optimism about its potential for major long-term benefits to the settlement houses and their communities, we recognize that it faces formidable risks in three broad categories: implementation, adoption, and impact. With respect to implementation, the overriding concern is that funding for the ITI, a multi-year project, is dependent on government and foundation sources that are not assured. Beyond this, the central ITI staff may have underbudgeted by underestimating the time and effort required to install the wide-area network, or to keep it functioning, or to respond to calls for help; we may not be able to pay sufficiently competitive salaries to attract the skilled technical personnel required; the frame-relay technology may not work as well as projected; the available database technology may be inadequate; or UNH's technical choices regarding database and equipment standards may turn out to be wrong in the sense that the industry goes too aggressively in a different direction, leaving the settlements with no support for their equipment and networks.

With respect to adoption, the settlement house staffs may become so overworked as a result of programmatic budget cuts that they are unable to commit the time required to learn how to work with new tools or envision new work processes, or too many of them may find the inertial barriers insurmountable; theft and vandalism may plague the

"neighborhood-based family rooms"; the data entry and recall techniques may be too complex or cumbersome for staff to use; or the participation of government agencies—whose commitment is required if plans to redesign work flows are to succeed—may not be forthcoming in this period of political turmoil and budget cuts.

As to impact, measurements may simply not discern sufficient benefits to justify large, integrated efforts of the kind envisioned; or the burdens of technology or even the desire of users to surf the Internet may end up *reducing* the productivity of settlement house staff.

Recognizing these possibilities, UNH is committed to the open evaluation being carried out by New York University, which will make public any disappointing results together with the successes so that others may be helped to avoid our mistakes, yet find encouragement in whatever advances we are able to achieve.

Conclusion

United Neighborhood Houses of New York has undertaken an ambitious Information Technology Initiative to bring an advanced information infrastructure to settlement houses and to the residents of their urban communities. Conceived as a limited-life project to test—and, we hope, to establish—the value of information technology in improving the productivity and performance of settlement houses as organizations that operate publicly funded programs, the project is not yet at its midpoint. It is clearly too early to know whether we will attain our objectives, but it seems particularly fitting that settlement houses, so prominent in addressing the challenges of the industrial revolution at the turn of the last century, are taking the lead in adapting urban neighborhoods to the opportunities of the information revolution at the turn of this century.

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