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Automated welfare client-tracking and service integration : the case of Riverville

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Automated Welfare Client-Tracking

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Service Integration:

The Case of Riverville

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Abstract

This report describes the impacts of an automated client-tracking system on the clients, case-workers, administrators, and operations of the welfare agencies that use it. It illustrates how these impacts are joint products of both the technical features of the computer-based system and of the organizational demands placed upon different agencies, administrators, and case-workers. In addition, it shows that the major impacts of this system were to enhance the administrative attractiveness of the using agencies in the eyes of funders rather than to simply increase their internal administrative efficiencies. It is based on a case study of such a system that is currently operating in a medium sized American city.

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I. Introduction

During the last decade, computer-based information systems have spread rapidly and been applied to a wide variety of applications in complex organizations, public and private. Despite the large number of computer-based systems in use, few good systematic descriptions of the operations of such systems have been reported [6,12, 14]. Theories for predicting the impacts of computer-based systems on the activities of their users should be based upon and testable by good systematic data. Thus it should be of little surprise that our theories for predicting computer impacts are also quite weak.

In particular, the ways that automated systems operate in actual organizations usually deviates from the expectations we can develop from primarily attending to technical specifications and idealized organizational behavior [6,10]. Our predictions can become even more uncertain when we consider information systems that cross organizational boundaries. This paper illustrates how the the actual impacts of a computer-based information system (JMIS) are influenced both by the technical features of its design and by the social setting in which it is used.

I would like to express especial appreciation to James Danziger, William Dutton, Kenneth Kraemer, and the former and present directors of the UMIS project in Riverville for their helpful comments on earlier drafts.

This case study is based on the operations of an automated health and welfare information and referral system in Riverville. The system has received considerable attention in professional journals and the press* since 1970 as an example of how an automated information system may help increase the efficiency and improve the quality of service of a highly decentralized urban welfare system. It is one of the very few automated systems that was designed and implemented to keep track of the kinds of service suggested for and received by individual clients.

Similar automated systems are reported to be under development in over a dozen other cities, counties and states. The Riverville system, the most completely implemented system in the country, serves as a prototype for these other systems. Thus, the impacts of the Riverville system on its welfare agencies and the issues that arise in understanding its role in agency operations provide an empirical basis for predicting the likely impacts of these other systems on the operations of welfare agencies.

In addition, the Riverville case may help highlight the ways in which local government agencies use computer systems to support direct services to citizens. Most local government computing supports indirect services such as accounting,

This system was the focus of articles in Nation's Cities, The Christian Science Monitor, Computerworld, and Business Week. In addition, its design and operation were presented at several national conferences for public administrators.

equipment inventories, or planning analyses. They directly benefit the citizenry only insofar as they render government operations cheaper, smoother, or "more effective." On those relatively few occasions that citizens come into contact with a computer system, it is often to pay a bill or to be located for an arrest warrant. Computing is rarely proclaimed to serve citizens directly.

Lastly, the case of Riverville may help inform us more carefully of the role distributed computing may play in helping integrate similar functions across organizational boundaries. Such concerns have been the focus of three contemporary groups. First, some organizational theorists [5,15] argue that organizational activity follows the flow of information and inso facto the movement of information across organizational boundaries helps integrate administratively distinct units. Secondly, a bevy of administration theorists and computer-specialists have begun to implement shared data bases that cross agency boundaries in several American cities [11]. Finally, integrating social service agencies in particular has been the concern of certain professionals who work in such settings [1, 14]. Members of each of these groups view the problems of coordinating organizational units as a major practical and theoretical issue. Each of these groups views the use of technologies that enhance the sharing of information as a strategy that would enhance coordination. Thus, each group would expect the automated information system described here to enhance the

coordination and thus the quality of welfare services provided in Riverville.

This study was initiated to answer the following questions:

1. How do automated information systems help "integrate" decentralized organizations ?
2. What impacts would such a system have upon the major actors -clients, case-workers and administrators- who use it ?
3. What relationship would there be between the publicized and actual characteristics of such a system ?

This paper provides a sketch of the Riverville welfare system and describes how the automated information and referral system operates in that context. Then the official design goals of the automated information system are contrasted with its actual performance.

II. The Social Service "System" in Riverville

Riverville is an industrial town of 170,000 which serves as a regional center for several rural counties. Approximately 20% of the families live below poverty level. The median family income is \$7200 and 36% of the population is Black: The needy, black and white are served by approximately 150 private, city, county, state and federal agencies. These agencies cover a variety of geographical areas within and

around Riverville. Some agencies focus on a neighborhood, others on a sector of the city, and still others accept clients who reside anywhere in the city. These agencies provide a variety of health and welfare services such as emergency rent, unemployment monies, medical and dental care, day care for children, job counselling and training, and foster homes. These agencies serve a number of groups: anybody (foster homes); the poor (e.g., Riverville Bureau of Relief); members of a particular religious or ethnic group (Jewish welfare Federation); or groups with other specially defined characteristics.

As late as 1966 there was little administrative coordination among these various agencies. The Community Action Agency supported three neighborhood service centers which housed both information and referral offices and some service agencies which were partially funded by the city. The city government partly or wholly subsidized thirty five agencies which were clustered under several administrative umbrellas including Model Cities and Community Action Agency. Each agency maintained its own intake forms, reporting conventions, and record-keeping systems. This pattern of multiple agencies serving similar groups of people with related needs prevails in most American cities.

An organization called Riverville Progress served as a forum for the staff of various agencies to foster coordination among their activities. The staff of the neighborhood service

centers advocated an automated information system as a common management tool. They wanted up-to-date information on services they were rendering and the needs of the people they served. They also wanted to increase their capacity to plan and schedule additional services where there was a demonstrated need. They wanted to coordinate their efforts with other agencies providing similar services, and they wanted more hard data about the needs of individual clients. Riverville Progress served as an institutional basis for promoting an automated information system to be used by community supported welfare agencies. In the late 60's a modest "batch" system was initiated and used by some of the agencies in Riverville and in 13 rural counties in the surrounding area.

A new mayor was elected in 1971, and he had a difficult time learning how much city funds were spent for which services and who was being served. For example, the city was spending \$10,000 per year on rat control. The workload for this program was monitored by the automated record-keeping system by treating "rats killed" like "clients served". When the mayor received a "workload report" showing that during the past year, a total of 300 rats had been exterminated, he was stunned and commented dryly, "I thought steak was expensive!". This incident impressed him with the utility of knowing the actual magnitude of services the city's programs were providing.

The new mayor supported and advocated an on-line real-time reporting system. He hoped that frequent and accurate reporting would help his staff manage the diverse and complex array of welfare programs supported by the city. The development of such a system had just begun with seed money from the Community Action Agency. The system was developed over several years by a grant from HEW. It was operational by 1973 and its funding was continued by the city, at \$130,00/year, in 1975 when the federal grants terminated.

However, information alone was insufficient. To further improve the control of social services the mayor consolidated 35 of the 36 city-supported agencies into a new "Human Services Division" in December 1972. These included the programs funded through Model Cities, Community Action Project, and Concentrated Reemployment. These agencies, which were consolidated and moved under the jurisdiction of the mayor's office, became the primary users of the Riverville's automated information and referral system.

Thus, between 1966 and 1974 two different but compatible strategies were employed to integrate social service agencies in Riverville. A "technical strategy" utilized an automated information system (UMIS) which would track the path of particular clients through the maze of public and private agencies. An "administrative strategy" consolidated all but one of the city supported agencies into a common administrative unit.

III. UMIS Design Goals

The UMIS project documents report a set of design goals which are supposed to help increase the "effective delivery of community services". They articulate some of the themes which appear in this report. These goals include:

1. Provide baseline information about the needs of people.
2. Provide for and monitor the sequencing or scheduling of (social) services on an orderly basis.
3. Track individuals and families through the service system to insure they received services as planned.
4. Provide information for management decisions about the amount of services individuals and families have received and their progress in breaking out of the cycle of poverty.
5. Eliminate duplicate records;
6. Increase the control over welfare funds;
7. Automate follow-up to keep people from "getting lost"
8. Evaluate the social service programs;
9. Eliminate duplicate services.

IV. Research Strategy

There are several plausible strategies for studying a project like UMIS. One might study JMIS' use and impacts over a period of time which starts before UMIS' implementation. One may attempt to use regularly kept records as a source of

data for such analyses. A second approach might contrast the municipal welfare system in Riverville with the welfare system in a similar city which has not attempted similar automation [4]. Finally, one may contrast the patterns of welfare administration in Riverville with the expected patterns that are described in the various project documents.

Each approach provides a different kind of understanding. The longitudinal study emphasizes changes in Riverville's welfare administration that might be attributed to UMIS. Of course, such interpretations are tenuous, since other changes have taken place as well. A new mayor was elected, he consolidated the municipally supported welfare agencies, and many of the federally sponsored programs which supported welfare agencies in Riverville have been cut at the Federal level. Some of these problems of analysis could be simplified by contrasting Riverville with a similar city which has undergone similar changes. Such an analysis encounters other problems. For instance, differences between the administration of welfare in Riverville and the other city might not be due simply to UMIS, but to some other uncontrolled factor such as the nature of the local economy or attitudes of key agency staff.

Since we studied only Riverville over a short period of time, we have had to use the project documents and staff attitudes as a basis for comparison.

The most fortuitous aid would have been formal materials or analyses developed by the UMIS staff. Such records would not only provide a source of data, but would also help us understand their interpretations of the design goals listed in the last section. Unfortunately, there are no staff reports which describe the state of affairs in any of these areas prior to UMIS development. Thus, this study, like others in this area [3, 6, 10, 14, 12, 17] relies upon the perceptions of the major actors as a primary source of data. Intensive interviews of UMIS staff, city administrators, and case-workers in both public and private agencies were carried out between 1974 and 1976. Together with project documents, they form our primary source of data.

V. Actual UMIS Operation

A. Client Entry with UMIS

The intake and referral offices within each of the neighborhood service centers form a hub in the municipal welfare system. First, they register each new client in the automated information system (UMIS), and secondly they refer the client to appropriate agencies in Riverville. Most clients that apply at the neighborhood service centers are referred to agencies within the Riverville Human Services Division.

The city of Riverville supports five neighborhood centers located in the poorer districts of the city. In principle, any person seeking social services could apply through an intake center and be referred to the relevant agencies. In fact, the pattern of entries is more complicated. Clients may apply directly to any agency they desire. Most of the applicants to the private agencies, the county health department and a Riverville branch of the State Department of Welfare apply directly to those agencies. On the other hand, most of the clients for the city's Human Services Division apply at the neighborhood centers. In addition, people who apply directly to any of the agencies within the Human Services Division are entered on UMIS.

When a person applies for assistance at one of the neighborhood service centers, she or he is:

1. registered and asked to provide the following data:

1. Address
2. Phone number
3. Monthly housing expense
4. Renting or purchasing home
5. Number of rooms in house
6. Annual household income
7. Main source of income (employment, Social Security, public assistance, etc.)
8. Number of people in household
9. Number of pre-school age children
10. Number of school age children
11. Social Security number (head of household)
12. A list of each household member, including date of birth, sex, race, and highest grade completed. In addition, employment status for each person is coded as "pre-school", "school", "unemployed", or "employed."

2. checked to see which programs she or he is eligible for (e.g. Aid for Dependent Children);
3. advised about which agencies may provide the services she or he needs;
4. given a plan which lists all the agencies and services she or he has been set up for.

The neighborhood service centers emphasize family services(1). Thus, the caseworkers at the neighborhood service centers are disposed to providing assistance to all members of a household rather than only to the person who applies for aid. In principle, this means that when a head of household applies for emergency fuel and rent aid, the health of the dependents would be checked. If they needed a medical examination, that too would be part of the services provided.

Each client is described as receiving services at a particular "level". Service level I describes needs for emergency assistance such as money for fuel, help in finding housing, etc. Service level II indicates that the client is undergoing some professional evaluation such as a medical examination. A "long range plan" which includes such activities as job counselling is labelled as level III.

UMIS currently stores records of 42,000 clients who have applied for welfare-based aid since 1971. Of these, approximately 13,000 are still active.

B. Which agencies use UMIS

Approximately 150 agencies are listed in a printed catalogue of agencies to which clients who approach a Riverville neighborhood service center for assistance may apply. These agencies participate at different levels in UMIS.

Several* agencies are "fully on" UMIS. They use the UMIS intake form for their clients and receive various management reports from UMIS on a regular basis. The agencies within the city Human Services Department are in this class, and they may be viewed as the primary organizational beneficiaries of UMIS. Another 25 agencies are "partially on" UMIS. These agencies do not use the UMIS intake form for all their clients. But they do cooperate with the neighborhood service centers by returning an "outreach form" which the centers send to each agency to which a client is referred. In return the agencies that are partially on UMIS receive some statistical reports describing the clients referred to them by the neighborhood service centers.

Most of the agencies in Riverville are "not on" UMIS. They will not routinely fill out the "outreach form" used by the neighborhood service centers for a variety of reasons which include:

* The official UMIS reports list 35 agencies as "fully participating." However, most of these were bureaus within the Riverville Department of Human Resources which were once independent agencies. Some of the staff in these bureaus resented this record keeping practice which made UMIS look more highly utilized at the expense of a unified denotation of the municipal agencies.

1. The agency uses its own automated system.

For example, the State Department of Public Welfare, which receives approximately 20% of the referrals made by the neighborhood service centers, doesn't participate on UMIS. In addition, the county Department of Health which also receives a substantial number of referrals also refuses to participate in UMIS. Both these agencies have their own automated information systems and apparently gain little or no additional information of special value from the UMIS project.

The UMIS staff believe that the Riverville office of the State Department of Public Welfare won't participate without "a decision in the state capital." The state welfare offices maintain their own automated system, their own reporting conventions, and their own protocols. If the Riverville office to joined UMIS, it would have to duplicate some of its own record-keeping, depart from the conventions accepted by the other state offices, or the entire State Department of Public Welfare would have to adopt UMIS conventions. Without some extraordinary incentives, none of these alternatives appear attractive to the state administrators. Demands for record-keeping efficiency in Riverville propagate demands for compatibly structured data across the state.

2. The agency administrators do not need special descriptions (e.g. demographic breakdowns) of their clientele for accountability.

According to the director of the neighborhood service centers,

"If an agency doesn't need the information to justify what they're doing or perhaps they don't have to justify what they're doing, then they don't have any need for the kind of information I need...The kinds of agencies that have to have some kind of justification are primarily those that are spending the taxpayer's dollar."

Small private agencies seem unattracted to UMIS. One municipal manager commented,

"Many people consider the computer above them, a "brain center" or something...not simply an accounting apparatus. It frightens people. It frightens smaller agencies because they're operated by volunteers. They often don't have a lot of skilled people on their staffs. They don't have the time, they feel, to complete the paperwork."

There are many small agencies which serve only several hundred people a year. For this size of client population, manual record keeping systems may be quite adequate.

3. Some agencies receive or refer few clients to other agencies:

For example, the Jewish Welfare Federation handles social services in a relatively affluent Jewish community of approximately 2000 people. There are three synagogues

in Riverville, and the Jewish community is a rather closely knit group. The Jewish Welfare Federation supports six people in old age homes. It has received no referrals from the neighborhood service centers in the 4 years that it has been listed, and it is unlikely that they'll receive any in the near future. They serve a community which because of its affluence and suburban location is not a target for the neighborhood service centers. Many of the agencies that are listed in the directory receive few or no referrals. Inclusion of the various agencies' services may be helpful to potentially needy clients.

When one assesses the way in which UMIS helps support integration of the social service agencies in Riverville, the actual patterns of client referral and program coordination must be studied. Simply counting the number of "participating agencies" is a poor index.

C. Client followup and recording of services-"grass roots" integration.

After each client is referred to a set of agencies for assistance, an "outreach form" is sent to the receiving agencies. Ideally, the form is filled out by the staff in the receiving agency who take in the client. A courier from UMIS regularly travels to the major agencies and collects these forms for keypunching. Since some agencies, such as the State

Department of Public Welfare, refuse to fill out the outreach form, clients referred to them are followed up by telephone.

Each agency worker who provides a service (e.g. medical exam, counseling, travel...) to a client is supposed to fill out a "worker contact card" which lists the client's name, ID number, date, worker ID number, and a code for the service rendered. This provides the primary data source for tracking the client's subsequent activity through UMIS.

In principle, each client should be tracked from the time he enters one of the agencies "fully on" UMIS through the time he no longer needs publicly supported social services. In that case, UMIS could document skeletal profiles of each client who has continuing contact with the public agencies in Riverville. In fact, the tracking and followup are incomplete.

When a person seeks emergency aid, all members of the household are entered in emergency status. Thus, if a head of household needs emergency medical care which she or he can not afford and is eligible for, all the children are also listed in "emergency level I". After the medical care is provided, the head of household is listed as having consumed the relevant services. But the records of the dependents are not updated.

The UMIS staff is aware of this problem which arises from the recordkeeping conventions and agency follow-up procedures. However, it is important to note that this problem complicates any evaluation of UMIS effectiveness based upon counting individuals in various levels service over various periods of time.

Other people may be "lost" through their own desires or through bureaucratic whimsy. Some people accept emergency aid and don't return for further assistance. They may not need or want further assistance. Again, their files on UMIS aren't updated with their intentions, needs, or wants.

Some people are "lost" because of the followup policies of the neighborhood service centers. An example is illustrated by the following case: a family was referred to the AAA agency for emergency assistance with housing, and day care. This agency is supported by a church and serves a distinct geographic region of about 15 square blocks. At the time the family was referred to AAA, it lived in this well defined area. However, the AAA agency was able to find suitable housing for the needy family outside of this area. After the family was relocated, it returned to the AAA caseworker with whom it had developed some rapport for further assistance. He couldn't provide it since the family was no longer living in the area served by the AAA agency. When he attempted to get another referral for them from the neighborhood service center, he was told that since the family

had been helped by a community agency, they were satisfied that the case was being handled and wouldn't find a new referral. The case was "out of their hands." For several months, this family continually returned to the AAA agency and their plight was unresolved. While such cases may be uncommon, their occurrence confounds the case-tracking utility of UMIS.

D. Utility of UMIS to Managers

"Integration of services" can refer to agencies coordinating which programs to offer. Or it can refer to the staff of different agencies coordinating the set of particular services provided to a specific client. While this distinction is not explicitly made in the literature on services integration [1, 14], it is quite important. In the first interpretation one expects meetings of managers discussing programs; in the second case one expects meetings of caseworkers discussing clients.

UMIS' greatest potential lies in its potential aid to the second, "grass roots" form of integration. However, none of the case-workers, service center supervisors, or managers saw much actual impact of UMIS on such integration. As the case of the "lost family" above illustrates, grass roots coordination is as much a function of agency policies as it is

of the record system which tracks clients. UMIS was developed primarily as an aid in welfare administration and management.

Each agency which participates in UMIS receives a bundle of monthly reports which include:

1. The total number of services provided by the agency that month plus the year-to-date totals;
2. Breakdowns of the client population receiving each service by race, age, sex, employment, source of income, geographic area, and number in household.
3. A breakdown of services provided by each case worker in the agency. It includes the worker's ID number, the total number of clients served that month, the total number of new clients, and the total number of each service provided by the worker.

In this section will look at the ways these reports and the data which they include are or could be used.

1. New reports

Most of these reports provide both new and old data more systematically than was typical prior to UMIS. Many American welfare agencies rely upon hand tallies or spot surveys to account for their monthly caseloads and volume of specific services provided. While it is possible in principle to manually cross-tabulate the kind of data which is available in these reports, it would consume a large amount of clerical time to provide it for each agency on a regular basis. Few agencies can afford to relegate much staff time to such "intelligence gathering" operations. Thus UMIS provides the agency heads that receive these reports with a kind of

information that was defacto unavailable in such a comprehensive form previously.

In addition, some of these reports are formatted so that they can be easily incorporated into the monthly reports that agencies which receive federal funds send their sponsors. Prior to UMIS, several clerks spent three to four days per month simply collating the minimal information for the required reports. On the other hand, since these counts apply only to those persons who are entered on UMIS, they do not provide complete statistics for those agencies which are "partially on" UMIS.

2. Allocating scarce resources

In one special case, a municipal department head UMIS reports to help allocate scarce resources to those most in need:

The Riverville Department of Human Services includes a transportation division which shuttles the poor from home to various agencies (e.g., a hospital). Each trip is recorded as a unit of service provided to the client. One report received by the director of transportation is a crosstab of his minibuses destinations by the number of people in each family income level who travelled there in the previous month. Since transportation resources are limited, he uses that tabulation to identify those destinations most frequently travelled by the poorest clients. Clients call in a day in advance to request a trip, and as the minibuses are committed, the clerks become more selective in allowing new riders. Apparently the listing of destinations by the income group served provides an important criterion for deciding which trips requests the agency will honor.

On the other hand, UMIS does not support billing per unit of service nor does it support any form of cost accounting. A special line item budget is run monthly for the public agencies that are "fully on" JMIS, but this budget does not appear to be linked to service delivery in any special way. Thus, the hope that UMIS would help provide special information to help control welfare costs seems unrealized at this time.

3. Evaluating program performance

In principle, UMIS is supposed to help evaluate the effectiveness of various social service programs in Riverville. At best, evaluating social services is a tricky activity. In practice, the data recorded about various clients and agencies on UMIS may be of limited utility in such evaluations. First, UMIS doesn't record very precise data regarding the outcomes of services provided. Secondly, the way in which clients final status is variously recorded confounds the use of the routinely kept data as well. In addition, there is simply no baseline information about the accuracy of records, amount of duplication, completeness of followup, number of "lost" clients, etc., prior to its implementation. At best, one can study trends in such indicators since UMIS was implemented in 1971. The absence of such baseline data hampers the UMIS staff's evaluation of their own work and contribution.

Secondly, agencies which do not report their workloads for a month or two provide a major systematic source of inaccurate data. In this case, client records are likely to be incomplete. Agencies which are "partially on" UMIS and outside the control of city hall occasionally place filling out the UMIS reports as a low priority activity when they're short of staff*. For municipally supported agencies, the UMIS staff have some clout in getting compliance due to their support from city hall. But relations with other agencies are more delicate since their participation is optional and the commitment of some is problematic. In such situations, the UMIS staff have to encourage goodwill since threatening to withdraw service would undermine the development of a "comprehensive" system. Since different agencies have failed to report their activities on occasion over the last several years, the data has "gaps" which diminish its utility for comparing certain welfare programs in Riverville or in studying certain programs over time.

* The UMIS staff and agency caseworkers work with different incentives and preferences. For the UMIS staff, complete and timely information is the basis of their "production." In contrast, many caseworkers would rather work directly with a client to help solve his immediate problems rather than spend time filling out forms that have a less tangible connection to the clients concerns.

E. Utility of UMIS to Caseworkers

In principle, a case worker in a private agency can access a client's file from UMIS by calling the UMIS office. The clerks who are responsible for entering data also respond to such telephone inquiries. In fact, it seems that such inquiries are infrequent.

Agencies which are "partially on" UMIS maintain their own records, including their own intake forms. And the work done by the staff of various agencies is sufficiently specialized that the skeletal details in the client record are largely worthless for day-to-day use. Each record of a service rendered just names the service, e.g., counselling, senior service group activity, etc. While duplicate application forms are eliminated for agencies "fully on" UMIS, each agency maintains its own case file for each client. While these separate files duplicate some information, few agencies are willing to place such data which they consider "personal and privileged" into a more public setting where they can no longer control access*. A caseworker needs to know the focus

* For example, one counselor told how he recently removed some damaging information from a client's file. There was a third person (hearsay) account that the client's child had maggots in his bed. The report was never followed up and confirmed. The counsellor remarked:

"That was was eight years ago when she was 16; she doesn't need that kind of *** in her file."

Many counselors are protective of their clients and concerned that their own observations and transactions with the client be treated sensitively.

and outcome of the counselling session or the nature of the group activity. This information is best obtained from the client directly or from case-workers who have worked with him elsewhere.

Consequently, while the counsellors and caseworkers feed UMIS with outreach forms and worker contact cards, they get little back. Conversely, the managers harvest the crop of reports with relatively little effort. This places a disproportionate burden on lower level staff who thus tend to view the system less favorably than the managers.

F. Relations with federal auditors and funding agencies

One by-product of UMIS is a set of monthly summaries which is used by the Human Services Department in Riverville for their routine reports to HEW. In addition, it appears that HEW auditors place more credence on "data which comes out of a computer" than in hand tallied counts. The director of the department of transportation described the change:

"Before, when we hand tallied the number of trips we provided the auditors tacitly assumed that we inflated the figures. Now, when I show them my computer-based counts we start our discussions by using my data as a baseline."

Of course, hand tallied data or computer tallied data may be similarly accurate or subject to error. However, it leads managers who deal with the federal auditors to prefer their reporting systems since they apparently gain credence by

simply using computer technology in their work [3].

Administrators in the department of Human Services have been able to capitalize on the enchantment between federal officials and UMIS. One top manager commented,

"This is a rural region and most of the regional representatives are used to seeing very simple administrative aids. When they come here we take them down to the service center run by Mary. She's aggressive and enthusiastic and really sells them the system. They're impressed and it definitely helps our funding."

On a few special occasions, data from UMIS was used to support special grant requests. Usually the city staff has prior contact with the funder and gains some credibility from the "administrative attractiveness" of the city agencies which is supported by UMIS. However, in one case Human Services Department staff funds for adding a medical clinic to one of the neighborhood service centers. According to the director of the Department of Human Services,

"We took our stats to the funder in Regional City. The proposition was really solid and they bought it. When we started there was no money for the clinic; now it's operating on a regular basis. That's one of the few times that we and the funding agency had no prior contact."

In contrast to UMIS marginal utility as an aid for internal management, it has helped some of the agencies that use it increase their credibility and gain support from their funders. This seems to be a major reason for UMIS' support by agency staff.

VI. Perception and Promotion of UMIS

A. Misperception of computing and the concept of "system."

UMIS is a novel system and its implementation was intended to explore the possible support that it could provide to a set of neighborhood I & R centers feeding a disorganized array of social agencies. This study separates the functions of UMIS from the various agency practices.

However in some of the UMIS documents (12,20) and in discussions with the UMIS staff, UMIS and the organizational arrangements for providing social services are confounded. For example, clients are spoken of as being followed up "by the system". The Datawhirl* application brief describes a "human services delivery system"(HSDS) which includes both the automated information system and the organizational arrangements it supports. Implicitly the (DataWhirl) computer is provided with the best attributes of both. HSDS is described in part as:

1. "A system to simplify the delivery of services to the client"
2. "A recordkeeping system that reduces the clerical efforts of participating agencies"

* Datawhirl is a pseudonym for the computer vendor which serves Riverville.

3. "A system that in many cases attacks and systematically eliminates the cause of a person's dependency"
4. "A means of critical self-evaluation provided by management reports, both quantitative and qualitative, to enable agencies to improve their own effectiveness"

This portrait depicts the computer as a "welfare machine:" a record-keeping device which helps raise the expectations of the naive and may even blur the perceptions of the staff who the "system". One agency head seemed utterly disillusioned by the discrepancy between the vision promised by the Datawhirl promoters and the actual information system in use today. Datawhirl flew some city staff to an insurance company outside of Washington to display advanced automation in use. "They painted a real dream world which they said could be ours" she recollected somewhat wistfully.

A second kind of misperception is exemplified by the phrase "all usable management information." The head of one agency that was "fully on" UMIS described the reports he received with that phrase. However, given the gap between the kinds of information routinely produced by UMIS and the kind of cost accounting that might assist financial control, it is at best a misleading slogan.

In another context, this same manager remarked,

"The computer won't show how well a job is being done or how effective a program is except in numbers (of people served)."

B. Promotion of UMIS

When UMIS was first proposed in the early 70's, DataWhirl promoted UMIS among the city staff who were responsible for providing social services. It helped sell an electronic utopia that would diminish the problems of families on welfare in Riverville.

UMIS is the first fully operational automated information and referral system in the U.S. When the project was initiated, none of the actors could be sure exactly what outcomes to expect. Generally, the advocates expected UMIS to help streamline the administration of the diverse array of welfare programs in Riverville.

In addition, the advocates of UMIS had to convince several diverse publics of its potential. The poor (and often Black) were concerned with getting better service and the middle class was concerned with cutting costs through "efficient" operations. These somewhat conflicting concerns were both catered to in the various claims made on behalf of UMIS. In addition, the actively publicized goals stress the ideals rather than the difficulties in administrative and political implementation which are faced by the associated staff.

By alluding to a package of plausible benefits, the UMIS advocates hoped to capture the imagination, enthusiasm, and support of key staff in various agencies. And they were acting in a setting where some prophecies could be

self-fulfilling. The more agencies that fully participated in UMIS, the greater the comprehensiveness and accuracy of the data collected, and the greater the overall utility of the administrative tool.

UMIS seems to provide useful information for some agency heads, and maintain many of the routine records kept by the neighborhood service centers. But this mundane support of recordkeeping was much less than what was promised.

According to the UMIS director,

"We aren't now where DataWhirl said we were in 1970. Every now and then a new article appears which describes UMIS. Some of the figures are updated, but it's the same story. We don't know who initiates them, but the story doesn't change. And we're not there yet."

Unfortunately, "the story" glosses the operational setting of the welfare agencies in Riverville. First, different agencies and caseworkers have different incentives for providing or seeking the kinds of data processed through UMIS. Thus, UMIS is quite attractive to some agency staff; however, it would primarily burden other staff were they forced to use it.

Secondly, many welfare agencies operate under administrative procedures that are influenced by guidelines that are largely outside their control. For example, AFDC applicants have to be re-examined for eligibility every six months. These "re-determinations" absorb clerical staff time which UMIS can hardly effect. After all, a "re-determination"

involves checking whether the current life situation of a client (family) matches the recorded data which were originally used to determine a client's eligibility. Changes in federal guidelines concerning the frequency or detail of such "re-determinations" would have more impact on the clerical workload of those caseworkers who do such work as would any variation in the design of JMIS. "The story" neglects those sources of paperwork or paperwork relief that influence the workload of an agency, but are outside its control [16].

Moreover, "the story" of increased administrative efficiency is unlinked to any specific performance goals. For example, the phrase "eliminate duplicate records" could be equally well satisfied by a 1% reduction as well as by a 98% reduction. None of the UMIS documents, let alone vendor application briefs or magazine articles provide specific indices of improvement. However, their idealistic tone implies a kind of "total efficiency". Who can (or wants to) achieve such a goal? Without specific performance goals, "success" or "failure" is in the eye of the beholder.

Similarly, "eliminating duplicate services" communicates an image of ideal efficiency. Yet it's not clear what such a phrase really implies. For example, many agencies provide "information and referral" services. Superficially, each such agency is duplicating the work of other agencies. Yet many agencies cater to specific clienteles, such as runaway

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children or the elderly. Specialized knowledge pertinent to the needs of such groups is hard to aggregate in one "super-agency". From this point of view, apparently "duplicate services" shouldn't be consolidated without careful analysis of the service, to whom it is provided, and the effectiveness of a "centralized" alternative. In fact, the primary reduction of duplication in Riverville seems to come from impersonal services such as accounting and transportation being shared by the agencies within the city's Department of Human Services. However, that consolidation was part of an administrative strategy rather than a by-product of UMIS.

Until "the story" is changed to include the actual interplay between distributed access to a database of skeletal records and the recordkeeping practices of various welfare agencies, it's hard to see how UMIS could ever live up to its own press.

VII. Summing the Bottom Line

A. UMIS impacts on agency staff

UMIS has been evaluated in terms of the similarities between promise, description, and delivery. Improved welfare administration is a tremendous burden to place on an information system. Currently, the benefits of UMIS include:

1. A single intake form for the 40 agencies which are "fully on";
2. Monthly statistical summaries of client profiles and agency workloads for managers;
3. A client-tracking system that records the agency to which a person has been referred, whether he has been accepted, and the category of service(s) provided.

These features of UMIS provide direct benefits to a majority of Human Service Division clients who need not fill out duplicate application forms, to agency heads who save clerical work in filling out routine reports, and to neighborhood service center caseworkers who are following up clients.

Other impacts of UMIS are less clear. For example, the phrase "eliminating duplicate paperwork," takes on special and limited meanings. Some benefits attributed to UMIS, such as eliminating duplicate services, seem actually to accrue to the administrative strategy of consolidating disparate agencies and centralizing their support functions such as accounting, planning, and personnel.

Like any complicated technical system embedded in a complex organizational framework, UMIS is imperfect. Since some agencies don't wish to participate, the "integration of services" is incomplete. Some data is inaccurate[9]. And clients may still be "lost" through their own desire or the negligence of a caseworker. In fact, the UMIS project has increased the coordination between the agencies that participate. The available data may be more accurate now than

in 1969, and fewer clients may be lost through negligence or confusion. Unfortunately, there is no hard data on which to base such conclusions.

These impacts are a joint product of the technical features of UMIS (particularly the kinds of data it stores) and of the organizational demands placed upon different agencies, administrators, and case-workers.

B. Services integration through data sharing

The UMIS staff encountered several critical problems in developing their automated aid and getting a variety of agencies to adopt it. These issues include:

1. Agencies with their own automation or little need for frequent reporting and demographic analyses were unwilling to participate in UMIS;
2. Confidentiality of detailed case reports on clients lowers the utility of UMIS to caseworkers.

In Riverville, much of the "integration" and "reduction in duplication" in welfare were by-products of administrative strategies of consolidating agencies and centralizing support functions. And the commitment of some of the participants was occasionally reinforced by "leverage" from city hall. In this setting, information uncoupled with administrative authority is a weak integrator indeed. On the other hand, it does support the management of the agencies that were administratively linked.

This aspect of UMIS in Riverville parallels Quinn's findings about an automated welfare client-reording (but not tracking) system, IUIS, in Cincinnati(14). IUIS was initiated by two local funding agencies (such as United Way) which provided grants to a variety of local programs. These two agencies forced the neighborhood agencies which they supported to report the services they rendered through IUIS. Many agencies and their staffs resisted using IUIS. However, those agencies which received substantial aid from one of the two funding agencies which strongly supported IUIS were most willing to "accept" its use.

Quinn reports that the funders forced the neighborhood agencies to "clarify their linkages" and patterns of referral to other agencies. He also reports some increases in coordination between service providing agencies based on prodding from the funders. In that setting, IUIS served as an instrument which the funding agencies could use to force their grantees to co-ordinate their programs and to become more accountable for the services they rendered.

In both Riverville and Cincinnati, the agencies which utilize automated information systems were more driven by the incentives provided by external funders than by clear improvements in service

that they found independently*. Similarly, actual increases in program coordination in both Riverville and Cincinnati were fostered by the administrative influence exerted by the funding sources. In Riverville, the mayor consolidated 34 separate programs and placed them under a common directorship. However, since no other agent exerted influence over all the public programs (city, county and state) or over some mix of public and private programs, the administratively enforced coordination included only city agencies. In Riverville, the programs within the city's Department of Human Services were consolidated under a strong central authority. UMIS was but one incidental component of the (internal) reporting system. In Cincinnati, the (external) funding agencies were seeking greater influence over relatively autonomous neighborhood agencies. IUIS became a mechanism for forcing reports to meet specific standards and for getting distinct agencies to coordinate.

* Quinn reports that the agencies in Cincinnati abandoned IUIS in 1973 after external funding for its support was removed. In contrast, after some internal controversy, the municipal users continued to support UMIS after external support was removed. Both these events are consistent. In Cincinnati, the agencies that were competing for local funding could jointly discontinue IUIS and continue their competition "under a different set of rules." In contrast, if Riverville were to drop its use of UMIS, it would lose a competitive advantage relative to other cities applying for limited federal funds.

C. Administrative efficiency and administrative attractiveness

Consider an organization with a fixed revenue. Furthermore, suppose that organization distributes its revenue over a fixed set of programs and administrative overhead. Increasing administrative efficiency means that the organizational members find ways to provide more service per dollar of revenue. In contrast, an organization may select practices that increase its administrative attractiveness. These would be procedures that symbolize effective administration to potential donors and which encourage them to increase the organization's revenue. The two concepts are logically independent: increases of administrative efficiency indicate that an organization is producing more output for a given input while increases in administrative attractiveness simply alter the amount of organizational inputs. Specific practices may alter either an organization's administrative efficiency, or its administrative attractiveness, or both. Nevertheless, a client of the organization may benefit from either strategy without knowing which was employed.

However, there are limits to the potential effectiveness of administrative efficiency in social programs. After all, ideal administrative practices can channel the maximum available resources to the program clients. If those resources are themselves insufficient or legislated to be unavailable to particular groups in need, the locus of

increasing effectiveness is no longer simply efficient administration. This is not to minimize the importance of skilled administrators. After all, given a particular set of resources, an agency that fails to channel them well can certainly hurt its clientele.

Through the 60's, while the total cost of welfare soared in urban centers, the allocations to individuals or families remained meager[4]. In the 70's, even the total federal funds for direct grants to social service programs decreased substantially. In a time of high unemployment, the most efficient scheme for referring applicants to good job training programs is bound to fail if there are few jobs to be had for the program graduates. While administrators and caseworkers do have some control over the generosity of grants or may inform only selected clients of their eligibility for particular programs, these seem to be "second order" effects[4]. The availability of external resources and guidelines for their distribution strongly influences the kinds and intensity of social programs.

In Riverville, UMIS supported few increases

of administrative efficiency*, but was a major source of administrative attractiveness. Both procedures that enhance administrative efficiency and those that enhance administrative attractiveness serve the staff and clients of the neighborhood agencies in Riverville. Thus while UMIS was oversold as an aid to management efficiencies, its image ironically helped increase the kinds of services made available to the needy.

* Municipal administrators were, of course, sensitive to strategies for administrative efficiency. For example, a creation of a transportation division within the city's Department of Human Services dramatically cut the costs of transporting clients. Under previous arrangements, case-workers would use their own cars for client trips. In addition, an administrator in the mayor's office helped the transportation division gain access to the tax-free municipal gas pump. When this was first initiated, the taxes were 50% of the cost of gas. That alteration saved the division half of its fuel costs.

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