Inter-institutional Communications and Process Innovation: Inter-institutional System and Collaborative Work Process

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The purpose of this research is to provide a contextual analysis of the introduction of an inter-institutional system (IIS). An exploratory case study was conducted to assess the consequences of implementing a videoconferencing system in three public institutions. Respondents reported radically different experiences with the IIS-videoconference system. Activity theory is used as a framework for analyzing the organizational context at the three settings and exploring consequences of use of the innovation. Using activity theory, I could explain a range of human activity and innovation underlying the inter-organizational work process. My research suggests that deficiencies in actors' activity of the process limit the value of IIS process. This study concludes that IIS design and use are an innovation process that involves context trying to include human activity into IIS system.

Keywords: inter-organizational systems, collaborative work systems, user behavior, computer-based communication systems.

1. Introduction

I analyze outcomes from and user reactions to an inter-institutional system (IIS) in three public institutions – hospital and nursing homes (facilities) and a county unit for Medicaid/Chronic Care benefits certification (the unit). The IIS was implemented as a trial and linked the facilities to the unit. I attend closely to the use context. Context is a dynamic activity system with a describable structure and multiple levels – human work (activity level) and macro-level concerns that frame inter-organizational relations. The use of IIS has had dramatic consequences for work process, work relations and work division within and between partner-organizations and has raised fundamental macro-level questions. Some unanticipated outcomes emerged during use.

Findings are discussed from two theoretic perspectives: organizational interdependence and the resource view of organizations. Relationships in this case resemble reciprocal interdependence (Kumar & van Dissel, 1996). The unit depended on the facilities for applicants, and Medicaid reimbursement to the facilities was dependent on the unit, which had sole authority over eligibility decisions. The use of IIS changed work division so that facilities were doing more and the unit was doing less. Facilities' caseworkers spent more time with the applicant on the application process. The hospital's fiscal officer would not augment his staff to handle the increased workload. He argued that the use of IIS could not expedite eligibility decisions (and reimbursements), because the unit, as the sole deciding authority, was the bottleneck. He sought authority under state law to make eligibility decisions by the hospital, independent of the unit. His power issue with the unit pre-dated the trial, but the use of IIS made it more complicated when work division changed, raising resource-related concerns. Whether the IIS will be adopted (beyond the trial) by the hospital or not, this may depend on how the power issue is negotiated with the unit and state authorities.

The system resource view sees inter-organizational relations as a political economy concerned

with acquisition of two key resource types – power and money (Benson, 1975). Benson argues "interactions at the level of service delivery are ultimately dependent upon resource acquisition", (p. 231). As mentioned above, power and resource concerns emerged as a dominant macro-level frame in our analysis. IIS can exacerbate such concerns and challenge what Benson calls domain and ideological consensus: mutual agreement on partners' roles and task approaches.

I summarize activity theory, a method of context analysis. Section 3 outlines Medicaid/Chronic Care benefits certification (M/CC process). Data collection/analysis are discussed in section 4. Outcomes are presented in section 5. Section 6 discusses domain and ideological conflict arising from the use of VI. Section 7 concludes the paper with a look at theoretic implications.

2. Activity Theory

Activity theory (AT) is a theory of method with a growing literature (Nardi, 1996). AT is only outlined here. It is an approach to the situated analysis of work contexts (Lave, 1993). *Activity* refers to a socially organized work process involving a subject who contributes to an object to effect some outcome. "Context" refers to an *activity system* which features a set of subjects who contribute to a shared object.

An activity system is a social world (Lave, 1993) of *relations* – between actors in organizational roles, actors and work processes and the tools used, and actors and the organizational location of activity. Actions are simultaneously instrumental and social-relational in nature. Relations are transformative – they may change the subject, the tools, the object, the setting (Nardi, 1996). Contexts are also historically mediated, persistent structures: prior relations constrain present and inform future activities. A historical view helps the analyst trace system change and growth.

An activity system has its structure and comprises the *subject*, the *object*, *outcomes*, *tools*, the *community*, *division of labor*, and *rules* that govern actions. Subject refers to the actor whose viewpoint is used to analyze the activity system. Object refers to the problem space at which the activity is directed and which is transformed with tools. Community includes all subjects that share a common object. Rules regulate activity within the system, and division of labor refers to division of responsibilities among the subjects.

Comparing AT to situated action and distributed cognition as method, Nardi (1996) concludes: "AT seems the richest framework for studies of context in its comprehensiveness and engagement with difficult issues of consciousness, intentionality, and history" (p. 96). The analyst using AT collects data over time to discern system changes, uses multiple methods for increased validity, adopts the user's view, and attends to broad activity patterns spanning the entire activity system (Nardi, 1996). I have attempted to follow these guidelines.

3. The M/CC Process

The unit is linked to many facilities – hospitals and nursing homes – through the M/CC process. This research is focused on the unit and two facilities – the hospital and the nursing home. These were the first sites to be linked by the IIS – a videoconferencing system for videointerviewing (VI).

M/CC applicants' eligibility is certified through the process. A patient checks into a facility. Self-pay patients (no insurance) apply for benefits if they cannot pay for care. The facility caseworker pre-screens the applicant and schedules an interview with the M/CC specialist (the specialist). The interview (45–60 minutes long) is the critical step in certification. Before making a decision the specialist evaluates the applicant's financial need.

Interviews are conducted face-to-face (FTF), at the unit. The applicant is usually present; a representative may substitute for the applicant. The M/CC supervisor (the supervisor) observed:

> "We need to get a good interview up front. Typically, what happens is this: the applicant has an incomplete form. We ask them for supplementary information so we can reduce the delay in certifying applicants. When benefits are approved, we only go back up to

> a point to reimburse the facility. The facility loses if process drags out or if the application is denied".

Delays affect the applicant (uncertainty about the care situation) and the unit as well. Staff spin their wheels following-up with the applicant and/or caseworker to complete the application. The supervisor likened this to "playing chess by mail".

The unit was established in 1998 as part of M/CC process reform. Before that, M/CC and regular Medicaid applicants (M/CC-ineligible) were lumped together, resulting in delays and poor service. M/CC applicants were especially affected due to the convoluted process. Reforms sought to make the process more direct, improve unit-facilities communication and obtain higher quality information through the interview. A 1999 report by the unit reported progress on these goals. In 1998 a supervisor caught a videoconferencing demo and wanted to offer VI as an option to applicants. He got permission from state health authorities to use VI and secured participation from the two facilities (both high-volume M/CC process feeders) in the trial.

IIS are "technologies designed and implemented to operationalize the relationships between partners in an alliance" (Kumar & van Dissel, 1996, p. 8). The IIS linked the facilities to the unit using point-to-point links; the M/CC process did not require links between the facilities themselves. The technologies deployed were identical at all three sites.

4. Data Collection and Analysis

An exploratory case study is appropriate in the early stages of research (Yin, 1984). Our interest in a contextual understanding of the use of IIS *in situ* also pointed to the case approach. Data collection spanned 13 months (2/2000 — 3/2001), starting pre-trial with M/CC process baseline. Baselining documented the activity-level and partners' macro-level concerns, allowing us to trace changes from the use of VI.

The facilities used the identical process (the M/CC process) and technology but were different "demographically", allowing both within- and cross-case analyses for increased internal validity (Eisenhardt, 1989). While showing support for the theories used, our findings also underlined the value of contextualized understanding of IIS in particular environments to explain exceptions.

The unit-hospital trial spanned five months; the unit-nursing home (the home) trial spanned three. Twenty-four VI sessions with real applicants were completed – eight at the hospital and 16 at the home. Seven test sessions were conducted on IIS and VI procedures with the facilities. Test data were used to supplement research data.

Face-to-face research interviews were the primary data-gathering tool. Forty-six interviews were conducted with twenty-two individuals over the trial's course, using structured and unstructured items. Interviews lasted 30-90 minutes each. Informal face-to-face, telephone and email interactions with respondents yielded valuable additional data. I analyzed archival documentation myself.

Also, I interviewed primary and secondary IIS-users before, during and after the trial. Primary users comprised specialists and facility caseworkers. Secondary users comprised supervisory staff who worked with primary users. I also interviewed top management with administrative/financial oversight over M/CC. Two technical trial implementors were also interviewed. With applicant's permission, I observed one VI session.

Respondents had significant certification experience and were able to compare VI and FTF interviews. For confidentiality reasons I could not interview the applicants; however, I obtained information on the applicants' reactions to VI from primary users.

Two broad concerns frame this research: user interpretations of IIS and role of the context in shaping these interpretations. I used a grounded, interpretive approach to analysis: themes and patterns in the data were identified as they emerged and framed subsequent data collection and analysis. Philosophically, this research reflects our belief that complex technology is socially constructed by organizational users. Owing to space restrictions only an outline of the resulting study can be provided.

5. Outcomes

"Activity system" in this case spans the entire activity – conducted by the caseworker and the specialist, supervisory staff, and top managers. The M/CC process is the *object* as it motivates and links individual actions to collective activity. VI is the *tool*. *Community* comprises primary and secondary users (*subjects*). The *division of labor* is clear-cut: a unit runs the process, facilities feed it. Once the interview is scheduled, the specialist takes over. With no-shows, the caseworker follows up to schedule a reappointment. If an applicant is delinquent with payment, she turns over the case to facility financial department for recovery. *Rules* flowed from state law: interviews had to be pre-scheduled (no walk-ins) and could only be conducted by the specialist. Only the specialist could make eligibility decisions.

With VI, the interview lasted 25 minutes on average, and 19 out of 24 applications were approved (five applicants expired before decision) more expeditiously, relative to FTF. VI altered subject-subject and subject-object relations in the activity system, and the changed relations, in turn, helped effect observed outcomes. "It's not magic", the supervisor said, explaining the VI's role.

5.1. Anticipated Outcomes

5.1.1. Applicant Interface

With VI, the applicant could be interviewed at the facility. VI facilitated specialist-caseworker work coordination during the interview.

The interview is centered on the benefits application form; the aim is to complete it during the interview. In the session I observed, the visual focus stayed on the applicant all the time. The specialist went through the application with the applicant, item-by-item. Questions were addressed to the applicant, who responded herself or asked the caseworker to respond. The caseworker, who was co-present with the applicant at the facility, participated fully but unobtrusively via the audio channel. VI's visual focus on the applicant made the experience direct and personal; the applicant was in charge. VI improved telephone interviewing (resorted to when the applicant could not do an FTF) by affording visual contact. The audio channel enabled the specialist and the caseworker to coordinate actions at the item level during the interview. The combination of visual and audio affordances made for a productive interview. Work efficiency was gained without jeopardizing the human face of the experience for the applicant. Direct interface with the specialist and caseworker's at-hand assistance helped "de-demonize" the M/CC process.

With the FTF interview, the applicant was on her own. The caseworker was usually not co-present; she would have to take off from work to attend the session at the unit, and this was infeasible. She was unable to work with the applicant or the specialist during the session.

VI also permitted the applicant's family to participate in the process, noted the home caseworker. Involving relatives was a key to personalizing the experience for the applicant. Relatives could contribute financial information to complete the application, provide moral/emotional support during the interview, which can be stressful for the applicant, and help lessen the "stigma from Medicaid".

The supervisor feared applicants might reject VI, but they responded very favorably. Those who picked VI liked its convenience. They also viewed the M/CC process as user-friendly on account of VI-enabled social support: the co-presence of the caseworker and relatives with the applicant during the interview. One family member commented: "This was so easy, it was nothing like what I heard it would be".

5.1.2. Process Control

With VI, respondents have more control over M/CC process. The applicant is interviewed at the facility, leaving no room for no-shows (I found no voluntary no-shows with VI). She is a "captive audience". With no no-shows, the hospital caseworker said: "Now it is up to the unit to follow through. The applicant is there to be interviewed".

VI helped to tightly couple specialist and caseworker with the applicant. The facility could be certain that the scheduled interview did occur. The specialist and the caseworker knew

exactly what was needed to complete the application. The applicant was reassured that the specialist's needs were communicated directly to the caseworker.

Direct communication cut out the attorney. Many applicants retained an attorney to help them through the M/CC process (the process had gotten "demonized" and applicants were fearful of losing everything). The caseworker would hand all documentation to the attorney, who then worked with the specialist. The attorney relayed specialist's requests to the facility. The supervisor referred to this as a "three-ring circus":

> "The facility most of the time heard from the family representatives or attorney regarding how the process was going. . . Sometimes the attorney or the family would tell the facility that all was well. . . and that they had provided the information we needed. This all the while not following through on what we had asked for. After several months, the facility would hear the application was denied. . .".

VI's support for direct communication between applicant, caseworker and specialist made the attorney superfluous in most cases. Applicants now relied on the caseworker, not the attorney. Previously, one in two applicants brought their attorney to the interview. In contrast, an attorney was present at only two of the 24 VI sessions.

5.2. Unanticipated Outcomes

5.2.1. "I am the face of Medicaid"

The hospital caseworker was scheduling before VI session meeting with the applicant – in addition to pre-screening – to review documentation. She now spent more time with the applicant before the interview. She had never done this before. With VI sessions now occurring at the facility, applicants counted on her for help. She felt an "increased sense of obligation to help them out as much as I could". She became "the face of Medicaid" for the applicants; many mistook her for the specialist. Being an interview co-participant increased her responsibility for the case. Before VI, her responsibility ended with interview scheduling. A specialist said: "The applicant is nervous about applying for benefits. Relatives may not know of their financials, and the interview is the first occasion when all the details tend to come out. Her presence seemed to help a lot. She made them comfortable".

Facilities outside the trial were filing indifferently documented applications. Caseworkers' vetting of the applications was not thorough enough, and specialists attributed it to their reduced sense of responsibility for the case.

5.2.2. Specialist-caseworker Interface

Specialists-in-training observed the interviews. VI hastened socialization: trainees got acquainted with caseworker early via the interview. "I could put a name to a face from my very first case", a specialist said. VI provided a rich channel for sustained professional/social relationship building. The 1998 reforms enjoined periodic specialist-caseworker meetings to catalyze a community of practice, with collaborating actors sharing work-related information and learning. Such meetings were convened but were formal affairs where the unit updated facilities on policy. VI facilitated activity-driven, one-on-one virtual conferences through interviews and follow-up consultations centered on the application. VI enabled facilities to be "integral players" in the M/CC process. This strengthened relationships to promote ongoing learning on the M/CC process, which was complex, specialized, and information-intensive.

As a result, the supervisor's role changed. Previously, the caseworker dealt with the applicant, not directly with the specialist. This resulted in miscommunication. The caseworker would call up the supervisor seeking clarification on some information the applicant had said the specialist needed. With VI-enabled specialist-caseworker communication, the supervisor was no longer caught in the middle, acting as interpreter.

5.2.3. Job Enrichment

VI enabled caseworker to acquire specialized knowledge by working directly with the specialist on the application. The unit's trial evaluation report notes:

> "Being exposed to the process, the caseworker . . . builds on their knowledge. This knowledge can be used to inform potential applicants about documentation requirements long before they apply for benefits. By being informed early, a potential applicant can begin to collect this information and have it ready. Benefits to the unit and the facility are a reduction in application processing time and the ability to bill for services sooner".

The caseworker's job is clerical and is limited to pre-screening and interview scheduling. With VI, she was interacting with the specialist on specialized tasks. The hospital caseworker had been opposed to VI but became a proponent because VI enriched her job and made her more effective in it. With a few more sessions under her belt, she "could go to work for the county as a specialist". VI refreshed and augmented the twice-yearly in-service training provided by the unit.

Following-up with interview no-shows was a frustrating and unproductive part of a caseworker's job. Such applicants were elusive and unresponsive once they left the facility. With VI, no-shows were eliminated. So in place of unproductive follow-up work, the caseworker now was working with the specialist and the applicant on the application, and this change in the nature of work was viewed as personally rewarding.

5.2.4. Change in the Work Division

Before VI, workload distribution between partners was symmetric with that of authority. The unit had more authority and did more. The specialist conducted the interview, followed up with the applicant/caseworker/attorney and decided on the application, and photocopied the voluminous documentation for the applicant's case file. With VI, facilities were doing more than they had done before, while the unit was doing less. With the interview now occurring at the facility, it fell to the caseworker to photocopy documents and fax/courier copies to the unit. The caseworker also participated in the interview. This was not required under the trial protocols developed by the unit, but applicants needed help with the IIS and the process and the caseworker had to help out. Besides the pre-screening (a pre-VI holdover), now the caseworker did more – photocopying and faxing/couriering copies, pre-application vetting, and interview participation, and, in case of hospital caseworker, these added an extra two hours of work *per applicant*. It was a little less in the case of the home aide, as pre-interview vetting had been a part of her services pre-trial.

6. Domain and Ideological Conflict

Per Benson (1975), role/scope issues pertain to domain consensus between inter-organizational network partners, while issues of task and task approaches used pertain to ideological consensus. The use of VI challenged these agreements between one set of partners (unit/hospital) and not the other (unit/home).

Domain conflict: The hospital's fiscal officer (fiscal officer) was concerned over the workload. VI had increased M/CC-work from 50 to 65 per cent of his caseworker's role, short-changing her non-M/CC responsibilities. Her manager asked for an assistant to assist with application filing; the expedited Medicaid reimbursements would easily justify the position (the supervisor argued similarly).

The fiscal officer argued that the unit, not the facilities, was the bottleneck. Only the unit could decide on the eligibility and this was the bottleneck. Facilities could speed up the filing, but cases would only accumulate at the unit, waiting for a decision. VI had cut interview duration substantially. Decision time had been cut, but not as dramatically. An applicant could request a bank statement but had no control of the time when it was received. VI enabled the staff to coordinate case file assembly and start the documentation process early, but had no control over the institutions external to the activity system. Decisions could not be made without complete documentation.

Real efficiencies could only result from expedited decisions, and this was possible only if the hospital could make them itself. He had pressed for such powers (long before the trial) but had been unsuccessful. It was a question of power, not facilities' competence to decide, he felt. The unit did not want to "deputize"

facilities. Workload shift from the use of VI accentuated an already contentious issue between the hospital and the unit. In 1998, for financial reasons, the unit eliminated specialist positions it had funded at the facilities. Since then, facilities had to support their own staff (caseworkers) in those positions. The fiscal officer wanted an expanded role and more power for the hospital to justify increased expense from VI. Independence to decide on the eligibility was the key solution.

The fiscal officer's concerns were a consistent theme in his reactions. He was not convinced VI could expedite reimbursement without radical change to the authority structure. He had invited a representative of the state attorney general's office to a research interview to appraise her on VI's implications for his hospital. He endorsed the use of VI (for the PR, he added). But he fully intended to revisit the power issue with the attorney general, seeking fundamental change in law governing facilities' role, and the outcome of that discussion was likely to influence his long-term outlook on VI in his hospital.

Ideological conflict: As an interim step within the current unit-dominated authority structure, the fiscal officer wanted two changes in the way VI was currently used: on-demand M/CC interviews, and VI for regular Medicaid, which contributed more to his bottom-line than M/CC did.

He wanted on-demand M/CC interviews. Currently, there was one schedule for both FTF and VI. The applicant had to be given a choice of interview format per state law. If she picked VI, she was scheduled in two weeks (same as FTF). Meanwhile, the facility was spending money on patient care, not knowing what the decision would be. He had expected VI would speed-up scheduling. As it was, the wait was too long.

His vision was this: a patient walks into the facility with no insurance coverage. She is directed to a near-by room for a VI session to evaluate her eligibility. On-demand interviews would help facilities cut costs by evaluating an applicant before services were provided and by starting the certification process at the earliest possible point, expediting reimbursements. The hospital lost $1.5m annually from unrecovered M/CC costs; on-demand interviews could cut this substantially.

In the unit's view, on-demand VI was infeasible. The application had to be documented, and this was time-consuming: "If an application comes in with inadequate documentation, we cannot make a decision and the pending process will grow. Documentation takes time, so the bottleneck is there, not with us", the M/CC supervisor noted. With on-demand interviews the number of unsubstantiated applications would explode. More specialists would have to be recruited to handle the increased volume, and this was extremely unlikely in a climate of cost-cutting. Specialists' time would have to be scheduled differently. Furthermore, state law prohibited walk-in Medicaid eligibility interviews.

The fiscal officer's second proposal was as radical as his first. He was more interested in using VI with regular Medicaid. The hospital was losing $4.5m annually under regular Medicaid (far more than under M/CC), so his motivation was clear. Given their long-term care needs, M/CC applicants could be billed at the facility; they were more accessible for revenue recovery. Regular Medicaid applicants might check in on Friday evening and leave on Sunday, complicating recovery. "Catching them as they walked in the door" with on-demand interviews was the answer. The trail did not cover regular Medicaid because applicants had to be fingerprinted and the county was not ready to consider electronic fingerprinting.

Workload shift from the use of VI negatively affected the home as well but provoked no questions on domain and ideological consensus with the unit. Unlike the hospital, the home handled M/CC cases exclusively, and M/CC reimbursement was critical to it. The home was the first to appoint a caseworker in 1998 when the unit eliminated positions at the facilities. Because their revenues were dependent on M/CC, the administrator felt it was their responsibility to ensure they filed valid applications. He believed *facilities* were the bottleneck, not the unit. To the extent VI helped in process improvement (he was convinced it did) he was an enthusiastic proponent of it. He had no issue with the unit's control over eligibility decisions. The unit's authority over eligibility was sanctioned under state law, and he was not prepared to challenge it. Furthermore, he believed he could justify additional expense from VI (if necessary) against anticipated reimbursements. The fiscal officer

saw VI as a cost item; for the administrator, its benefits outweighed the costs.

Non-economic reasons also played a part. The supervisor extolled the home as a model of "how to do M/CC right". The home's service orientation seemed stronger than the hospital's; neither the caseworker nor the administrator saw the increased workload from VI as a burden as it helped applicants file valid applications in a socially supportive environment. The administrator saw the home as a service delivery innovator; VI was one of many innovations he had sponsored at the home. He was a veteran and an M/CC insider: he had worked on the reforms with the supervisor. Concurring with the supervisor in spirit, he viewed VI as a relationship-building tool to further reform goals. To the fiscal officer it was a decontextualized tool, an interview modality option.

7. Conclusion

Per Benson (1975), sentiments such as domain and ideological consensus between partners are, fundamentally, controlled by money and authority. Our findings strongly support the importance of the former (resources) at both sites. The fiscal officer's issue of power with the unit predated the trial, but VI accentuated it by demanding more resources. Medicaid reimbursement was key to the home, and the administrator's favorable view of VI was undoubtedly colored by economics – he believed with the supervisor that VI-use could expedite reimbursement.

A cross-case analysis also shows other factors influencing sentiments. Despite negative workload shift from VI for the home, the administrator did not share the fiscal officer's view on power. The personal rapport between the supervisor and the administrator was a factor. Specialists had high regard for the home caseworker's competence and vice versa. Given the home's strong customer service orientation and predominant clientele (elderly/disabled), VI's convenience overwhelmed other considerations. Such non-Bensonian factors (see Kumar & van Dissel, 1996) are critical and can deflect conflict and promote cooperation and consensus around the IIS.

Within- and cross-case analysis at multiple levels adds more detail. With VI, the caseworker, specialist and applicant were tightly coupled and better coordinated than before. Caseworker's actions (assembling the case, locating documents) fit with the specialist's (interpretation of M/CC rules, gap identification) with less slippage. This cut ambiguity and raised predictability: with VI, facilities knew exactly what was required under M/CC process. The applicant's attorney and M/CC supervisor were disintermediated, facilitating direct, ongoing interaction between the parties directly involved in the process. VI helped socialize specialists and promoted a community of practice with caseworkers. These results are broadly resonant with predictions from research (see Kumar & van Dissel, 1996) on conflict-management and IIS.

However, with the hospital, I also found out that tight coupling at the activity level did not inhibit conflict at the macro level between partners. The hospital caseworker embraced VI and worked more effectively with the unit than before, while, for the fiscal officer, VI accentuated contentious issues with the unit. In this sense, activity level and macro level were imbalanced in the hospital, more balanced in the home. Intra-organizational imbalance can affect the way an innovation is used. I speculate that, when the use of VI is mandated by the unit (as seems likely now), the home will appropriate VI more imaginatively and more sensitively to improve process effectiveness and service, while the hospital will more likely emphasize achieving cost savings through VI. Imbalance can also affect the way in which an innovation is introduced into the use context. The fiscal officer saw VI as a non-core process enabler. The trial was not publicized even with the hospital's top management. Minimal resources were allocated to the caseworker to participate in the trial. The home saw VI as a core process enabler and "clamored" to be in the trial with the administrator's enthusiastic backing. How an innovation is introduced can profoundly affect its use (Robey & Sahay, 1996). Activity systems are not harmonious or stable. Subjects' interpretations stem from contextual social positions with inherent differences in interests and perspectives on conflict (Lave, 1993). Multi-level contextual analysis entrains multiple subjective viewpoints, as recommended by AT. Heterogeneity

stemming from contextualized cognitions and socially embedded interpretations suggests that intra-organizational imbalance may be unavoidable and has to be managed. Current theory (Benson, 1975; Kumar & Van Dissel, 1996) is in need of extension to include a multi-level view of inter-organizational networks, IIS, and organizational transformation.

The trial is now concluded and the unit fully intends to productionize VI. "In my 20 years at the county, I have not seen a technology promise fundamental process improvement as VI", said the county's top Medicaid official at the trial's conclusion. All major area hospitals and nursing homes are expected to participate in an extended trial-to-production initiative recently proposed by the unit. As VI diffuses I will continue to build on the present research.

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