Participation, Influence, Importance And Consideration: Management And Staff Perspectives Of A System Implementation At A National Accounting Firm

Ingrid B. Spletstoesser, (ingr10s@yorku.ca), York University, Canada

Abstract

Participation constructs from the budgeting, information systems, decision analysis and leadership research streams are summarized. The author proposes that users and managers will use participation to further implementation outcome objectives that are relevant to themselves, requiring separate tracking of multiple implementation outcomes. The proposed relationships were consistent with the case data, suggesting that future researchers should separate participation constructs into activities, influence, importance and consideration, which could help explain past mixed research results. Suggestions for future research are provided.

Introduction

Researchers in multiple disciplines have studied the relationship between ‘participation’ and the success or failure of implementations. Those implementations could be capital budgeting decisions, budget amounts, or new information systems. Alavi and Joachimsthaler (1992) conducted a meta-analysis of 33 decision support system implementation articles. They found that user involvement as defined lead to improved chances of successful implementation of decision support systems. Cavaye (1995) reviewed 19 empirical studies concerning the participation - information systems success relationship. Seven found a positive relationship, three had negative results, and nine were inconclusive. She believed that some of the limitations of this research included excessive use of quantitative research methods, and too much reliance upon user satisfaction as the main indicator of success. Doll and Torckzadeh (1990) found that involvement in systems analysis activities for end-user software appeared to be the critical factor for explaining end-user satisfaction. Chenhall and Brownell (1991) found that participation
in the budget determination process was significantly related to job satisfaction. Magner et al. (1995) assessed how budget participation could reduce negative attitudes towards unfavourable budgets. They found that employee attitudes improved, since employees then felt that "the unfavourable outcome [was] the best that [could] be expected" (p. 617). Nutt (1992) studied 163 projects that included services, construction, marketing and data processing. He found that where participation of some kind took place, the lowest failure rates of implementations occurred. Each of these authors indicated that previous research findings on participation - outcome relationships were mixed. Research continues, though.

There is an intuitive appeal to participation - should not individuals be more satisfied with outcomes when they can talk about or influence them? There is also the challenge to researchers to find explanations for these continued inconsistencies. This exploratory paper builds upon past research, broadening the scope by considering multiple participation types and multiple outcome measures. A field study is used to assess the participation - outcome relationship for an information systems implementation at eight Canadian offices of a national accounting firm. This assessment is unusual because it tracks management and staff activities and perceptions against a broad spectrum of outcome measures.

Not only has 'participation' been used to represent several distinct constructs, but those constructs are often vaguely defined. For example, Chenhall and Brownell (1991) and Gist et al. (1987) did not define participation, describing its benefits instead. This paper contributes by summarizing categories of participation used by researchers in budgeting, information systems, decision analysis and leadership.

Outcome measurement also differed among researchers. The dependent variable when assessing computerized information systems was frequently a form of outcome (eg. user satisfaction, user acceptance, use, achievement of management objectives). DeLone and McLean (1992) found that there were "nearly as many measures as ... studies" and that very few researchers "thoroughly" examined outcome measures in more than three areas (p. 61). Nutt (1992) used decision adoption rates. Chenhall and Brownell (1991) used job satisfaction, while Magner et al. (1995) used attitude towards the budget. This study uses elements from each of these fields to obtain outcome measures.

Data was gathered using case study research at an accounting firm. Studies of new technologies in accounting firms have focussed primarily on audit efficiency, on auditor judgement (as described by Fischer, 1996), or upon specific technology (Trewin, 1996) not upon the effective use or installation of that technology. Fischer thus conducted a field study that concentrated on partners' and managers' adoption of new technology. He found that technology that was 'required' rather than voluntarily adopted may not be effectively used. Rather, auditors developed parallel work strategies that added to the work load. Examination of multiple examples of the system adoption process at this accounting firm could help provide insights about how such management objectives such as efficiency could be achieved.

Managers and users bring different perspectives to a system implementation, having differing objectives (Belasco and Stayer, 1994; DeLone and McLean, 1992). Yet studies have combined manager and employee opinions together to assess results (eg. Bikson and Eveland, 1991; Campion et al., 1994). This aggregation of management and user outcomes and activities could be one of the causes of past mixed research results. This study examines separately management and employee participation and perception of outcomes.

The next section first catalogues and defines participation constructs and implementation outcome measures, then proposes relationships between them. The methodology section describes how the case method was used, including the data collection and analysis methods. Results are portrayed using narrative description, tables,
and graphic figures. The final section provides a summary and conclusions as well as possible implications for management and further research.

**Theoretical basis**

To assist with the categorization of participation and outcome constructs, both survey articles and individual articles were reviewed. Unfortunately, even survey articles and meta-analysis studies do not use the same categories. The first three participation groupings (activities, influence, affective component/importance) are based on predominant usage in the information systems literature, with the last, ‘consideration,’ coming from the leadership literature. Implementation outcomes are discussed based upon their scope: management/organizational or user specific.

**Participation constructs**

1. Participation activities:

Participation as a set of activities is the oldest information systems participation construct. Swanson (1974) asserted that the popular wisdom indicated that management should be ‘involved’ in MIS development. However, he found that the term was not clear nor rigorously measured. He went on to define that involvement in terms of the nature of activities conducted by a manager. Such activities, in his view, were either use of the system, or those that made use of the system possible (eg. activities during the system development, implementation, or ongoing operations of a system). Ives and Olson (1984) narrowed the view of participation to activities during “the system development process by representatives of the target user group” (p. 587). There were two constructs in their revised view of participation: the activities themselves (termed ‘type’ of participation) and the extent of user influence over the system being developed (termed ‘degree’ of participation, discussed in the next section as ‘perceived influence’). Notice the shift in job positions: from manager, to representative of users. Should not manager, representatives, and the users all be considered?

Recent information systems and decision analysis studies have included a broad range of activities during all process phases: initiation, development, and implementation. Nutt (1986, 1992) used a transactional model that tracked participation during all phases of decisions, noting that varying success rates were associated with different types and levels of participation. Jewett and Kling (1990) found in their study of two systems that the more successful system had managers involve their subordinates in the design of their work as well as the design of systems. Alavi and Joachimsthaler (1992) did not distinguish between development stages when meta-analysing others, but grouped ‘involvement’ (which they defined as activities) as a situational variable that affected decision support outcomes favourably. Parsons et al. (1991) found an association between level of planning activities and system satisfaction. Barki and Harwick (1989, 1994) and Doll and Torkzadeh (1990) split the activities to identify several constructs as they studied relationships with system use or user satisfaction. The activities were split based upon decision making capabilities, phase of system, or communication with information systems personnel. Doll and Torkzadeh found systems analysis activities to be more important, while Barki and Hartwick found overall responsibility to be more important.

Yet decision making responsibility seems more akin to influence or control, since the activity embodies the notion of being able to change outcomes. Thus, in this study, both the actual completion of an activity and the respondent’s perception of the influence of such activities were tracked. Participation activities were considered any action undertaken by a respondent that was intended to further the development or implementation process of the system.

2. Perceived influence:

Examples of influence include changing the appearance or functions of a system during the design stage of a development, or affecting
during implementation the nature of training programs or how jobs are restructured to put into place new systems. Thus ‘influence’ can be considered either by the systems development phase, or by the nature of the effect: to what degree did others respond to suggestions or change their behaviours? Ives and Olson (1984) used the phrase ‘degree of participation’ to describe a range of effects from ‘no influence’ to ‘strong control’ over the design of a system -- they did not consider other phases of the project. They suggested that participation during design of information systems was important where there were unstructured problems or where user acceptance was important. In the literature, ‘control’ and ‘influence’ continue to be used synonymously.

Control during the implementation stage was examined by Baronas and Louis (1988), who conducted a field experiment where they compared groups of workers implementing systems. The treatment groups were subjected to differing training methods, provided opportunities for discussion and feedback, and given some flexibility on implementation dates and methods. The authors found that the treatment group had a higher level of satisfaction with the new system than the control group.

Korsgaard et al. (1995) described influence as an ability to affect or be reflected in a final decision when they were studying the role of procedural justice in strategic decision-making. They found that consideration (discussed in section 4, below) held a greater role when building commitment, attachment, and trust during such decision making. Wagner (1994) defined participation as ‘influence sharing’ (p. 312) when examining effects upon employee performance and satisfaction. His meta-analytic review described varying measures of participation, performance, and satisfaction. He also concluded that although statistically significant, average effects were very small, raising questions about the practical significance of such participation.

This research has shown that influence should be considered when assessing such outcomes as satisfaction with a system or with work. Influence is defined here as an ability to affect final decisions or outcomes. It could range from a perception of having an influence, to having direct control over outcomes.

3. Affective component/importance:

Barki and Hartwick (1989) felt that there was a need to distinguish between the psychological state of user involvement described as “the importance and personal relevance that users attach[ed] to a particular system,” (p. 60), and the actual activities undertaken by users. They derived the involvement construct from definitions they found in the psychology and marketing literature, which referred to intrinsic importance, relevance, and potential consequences to individuals. This separation was proposed as a potential solution to the mixed information systems research results. Subsequently, Hartwick and Barki(1994) concluded that participation activities lead to user involvement for voluntary system users (they found no relationships between participation of any kind and use for mandatory users).

Other authors have not combined a study of this affective component with multiple aspects of participation. Perhaps this is caused by the continued use of the term ‘user involvement’ to mean participation activities (eg. Doll and Torkzadeh, 1991; Parsons et al., 1991; Alavi and Joachimsthaler, 1992; Hugman and Hadley, 1993). A parallel is an item from the budgeting participation scale developed by Milani (1975) which asks for perceived importance of contribution towards decision making. Thus, this study uses ‘affective component’ to mean the perceived importance of the system being implemented.

4. Consideration:

Korsgaard et al. (1995) used ‘consideration of input’ to refer to the extent to which a team leader showed consideration of feedback provided by team members into the decision making process. They found consideration to be important both when team members had influence over decisions and when they did not.
Thus, the effect of consideration was relatively unconditional on judgments of procedural fairness. They felt that leaders did not need to relinquish control over their decisions, but should treat their people ‘fairly and with respect.’

Both the studies of Chenhall and Brownell (1988) and Brownell and Dunk (1991) used the term consideration to describe participation during the budget setting process. Benefits attributed by Chenhall and Brownell include ‘bringing specialized knowledge’ to the decision making process, ‘permitting open discussion,’ and ‘clarifying the basis of evaluation’ (p. 227). Similar to other disciplines, these authors noted during their literature search that effects of this form of participation on job satisfaction or performance were found to be mixed. In their own study, they found that participation was significantly related to job satisfaction. When Magner et al. (1995) looked at ‘fairness’ during the budget development process, they used ‘voice’ rather than consideration to embody the concept of feedback during the budget setting process. They included in their concept both influence over the budget and participation during the decision making process. This is evident by studying the scale they used (Milani, 1975). This scale was referred to and used by all three of these budgeting studies and consisted of six questions. The questions identify the portion of the budget, the nature and frequency of reasoning provided, amount of influence, perceived importance of contribution and origin of the discussions. Thus, the budgeting ‘participation’ construct actually includes actions, an affective component, influence, and consideration — constructs that have been separated in information systems and decision making literature. Although this study focuses on an information systems implementation, perhaps a cause for the mixed findings in the budgeting literature is due to this amalgam of potentially different constructs by Milani and subsequent researchers.

In this study considerate managers allow users the opportunity to provide feedback so that users may feel that the feedback has been taken into consideration during the decision making process. Changes may or may not occur in the management decision.

Implementation outcomes

The preceding four sections have shown that each of the different forms of participation had some effects on outcomes, although with inconsistent results. It seems necessary to document as broad a perspective of participation as possible during a study, with multiple outcome measures, since different types of participation may be associated with different outcomes. Outcomes referred to above included: successful implementation, user [system] satisfaction, job satisfaction, attitudes, effective use, use.

DeLone and McLean (1992) analysed 180 studies between 1981 and 1987 which lead them to the conclusion that information systems success should itself be considered a process consisting of six taxonomies: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. They recommended that each of these six categories of measures should be either controlled for or measured. Both earlier (eg. Kwon and Zmud, 1987) and later reviews (eg. Cavaye, 1995) pointed out similar diversity in outcome measures. Since DeLone and McLean’s categories were comprehensive and could be used to include constructs from other disciplines, it was used as a framework for operationalizing specific measures.

Potential relationships

Key to the proposed relationships is the notion that managers and users have different objectives when an information system is implemented. If this were not so, there would not be such extensive literature describing the importance of different levels of management activities and involvement (eg. Leavitt, 1987; Cook, 1988; Beatty and Gordon, 1991; Beatty, 1993; Howell and Avolio, 1993) during the implementation of decisions, systems, or organizational change. These authors discussed executive management, champions, and middle management. Participa-
tion and support were required to varying degrees by these managers for successful outcomes. Since executive level support was found to be necessary (eg. Howard and Mendelow, 1991; Jarvenpaa and Ives, 1991; Day, 1994) it was held constant for this study.

An example of management objectives could be increased efficiency, achieved by reducing employee salary costs. Such an objective may not be consistent with employee objectives, which could include improving quality of work life. Separating objectives by management and individual users is consistent with the work that has been done in outcome measurement. Just as DeLone and McLean (1992) separated measures using the system, the organization, and individual users, so have other authors (eg. Ein-Dor and Segev, 1981; Gutek et al., 1984; Ives and Olson, 1984; Conrath and Mignen, 1990; Howard and Mendelow, 1991; Yammarino and Naughton, 1992). Thus, it is reasonable that user participation would be directed at satisfying user objectives, while management participation would be directed towards satisfying management objectives, leading to the following hypotheses:

Hypothesis 1 As user participation activities increase, so does the level of satisfaction of user objectives.

Hypothesis 2 As management participation activities increase, so does the level of satisfaction of management objectives.

Since both user objectives and management objectives contribute to the overall success level of a project, the final hypothesis is:

Hypothesis 3 As the aggregate participation level increases, so does the level of overall implementation success.

Although the relationships proposed by these hypotheses are simple, there are other questions that could be asked when considering multiple forms of participation against multiple forms of outcomes. Is the quality of the prediction likely to be better when separating user and management than aggregating them together? Satisfaction of the first two hypotheses would suggest this to be likely. Are all types of participation equally important, or do some forms of participation seem to be more influential? Given the variety of forms of participation studied, and the extent of mixed outcomes of the past, this can not easily be answered. Is there a difference between the type of participation that should be undertaken between end users and managers? Again, not readily answered. This curiosity of ‘why’ and ‘what’ might be happening with the different forms of participation made the case approach, as described in the next section, suitable for this study.

Methodology

The case method is a rich method of data gathering and analysis, that is suited to ‘real-life’ situations where the researcher has little control over events (Yin, 1989). Yin (1989) indicated that the appropriate unit of analysis in a case study is framed around the research question. Since the research questions here relate to participation activities with respect to an information systems implementation, with both management and user representation, the lowest level of analysis is the unit where both managers and users are present, the work group. Where the implementation approach or software differed, this was considered a separate case. Groups of individuals were considered to be an embedded unit within the case. This multi-layered case design is considered the most robust of the case designs, since cross-case analysis allows for reasoning in support of alternative arguments to be diminished (Yin 1989). This study was part of a larger study that examined management behaviours and individual attitudes/behaviours during system implementations.

Site selection

The nature of the system, the task, and the organizational characteristics were held constant by studying a single organization. The organization was selected based on responses to pre-screening, physical location and willingness
to participate. Thus, results can be generalized to theoretical propositions, not to a particular population or universe (Yin, 1989).

Models of participation have considered not only direct relationships with participation, but also moderating or intervening variables (e.g. Chenhall and Brownell, 1988; Doll and Torkzadeh, 1991; Guimaraes et al., 1992; Cavaye, 1995). These were variables such as task characteristics, user roles, decision characteristics, system characteristics, training, extent of management support, and management characteristics. Such variables can be used to define the system, the job, or the organization under study. All of these variables were documented as part of background information, with several held constant by studying a single system at a single organization or by means of prescreening questions. For example, previous researchers have found that top management support is considered necessary for information systems success (e.g. Jarvenpaa and Ives, 1991; Saleh and Wang, 1993; Clement; 1994). Prescreening questions included questions used to confirm the existence of top management support. They also asked about continued existence of the group (so that before and after questions could be raised), whether the system had been implemented within the last two years, and the nature of the management structure.

Data gathering

Yin (1989) and others (e.g. Leonard-Barton, 1990; Colbert and Spicer, 1995) have described the variety of data sources used in the case method including surveys, interviews, search of archival data and observation. Prescreening was conducted by telephone, which gathered some background information. Then a pilot study was used to finalize the two instruments, a semi-structured interview guide, and a user questionnaire. The categories of data gathered with these instruments were background information, participation details, and outcome details.

Background information included the nature of the system, selection/development and implementation methods, the nature of the organization, work methods and work group characteristics. This was gathered by means of semi-structured interviews with management, consultants and staff, by review of archival data (minutes of meetings, correspondence, working papers), and portions of individual user surveys. Montezami (1988) was used as a source, since he provided lists of descriptive factors for organizations. Management objectives for the system implementation and evaluations of each group were also compiled. Since each work group was a unit, this data was gathered for each work group.

Documentation regarding participation and outcome levels was gathered the same way. Although interview data cannot be readily provided, full survey instruments and survey data will be sent on request. For participation, questions were drawn from several scales: the level and type of participation activities during development and implementation from Doll and Torkzadeh’s (1990) 8-item scale and Barki and Hartwick’s (1989) 20-item multi-phase participation scale; influence by asking users to what extent they could affect outcomes, similar to Milani’s (1975) fourth question; perceived importance using Barki and Hartwick’s (1994) modified relevance/importance questions; consideration using a variation of Stogdill and Coons (1957) leadership questions.

Questions for outcome measurement were drawn from several studies. Using DeLone and McLean’s (1992) categories, the first is organizational impact (management objectives), a common success measure (e.g. Schulz et al., 1984; Mankin et al., 1985; Nutt, 1986; Ein-Dor and Segev, 1991). For such objectives, although others have identified general categories such as employee efficiencies, questions had to be tailored to the organization’s procedures and specific opportunities for savings. User information satisfaction assessed whether users found reports and screens to be useful (Glorfeld and Cronan, 1993; Iivari and Ervasti, 1994). Use included time used as well as type of use (Ein-Dor and
Segev, 1991; Howard and Mendelow, 1991). Use was documented, even though Guimaraes et al. (1992) argued that system use is not an appropriate measure when systems are mandatory. Of the measures they found had been used for explaining success or failure of decision support systems, they believed that user satisfaction toward a new system and users’ perceived benefits were the most appropriate for mandatory systems. Yet mandatory systems can have some discretionary features, making the usage variable. This was argued by Hartwick and Barki (1994) when they assessed the effects of participation and user involvement against one outcome measure, use. However, they found no relationship for mandatory users. The system implemented, an integrated automated working paper system, would have variable use components (for example, whether all capabilities were used), meaning that use might be a valid outcome measure. By having use as only one of several measures, potential validity problems can be counteracted.

Questions for user satisfaction with the system were modified based on Rivard and Huff (1988), Kraut et al. (1989) and Conrath and Miggen (1990). The final category, individual impact, was interpreted as an effect on job satisfaction (Kraut et al., 1989): how had the system implementation affected the nature of the job? System quality, described as the characteristics of the system itself, was held constant, since the same system was in use at all sites.

To increase explanatory power, all relevant personnel that the organization permitted were interviewed. Interviews were taped, transcribed and analysed. When a representative selection of interviews had been completed, surveys were tailored to the organization, and circulated to all users, with telephone follow up for stragglers. This resulted in an 83% average response rate for staff, and 96% for management. After completion of case data analysis, a report was circulated to the organization for review, comment and revision.

Data analysis

As described in the next section, eight offices at a national accounting firm were studied, separated into three cases. Several levels of analysis occurred. First, the types of data were cross-referenced and analysed for inconsistencies. Where possible, inconsistencies were cleared by means of further interviews, either in person or by telephone.

Second, groups were analysed within a particular case for patterns consistent with the proposed model, and explanations for variations considered. Then, patterns across the three cases were considered, by comparing all groups. This cross case comparison provides for replication of findings and for greater generalizability (Yin, 1989; Leonard-Barton, 1990). Techniques used were based on Miles and Huberman (1994), who provided examples of many methods that could be used to analyse nonquantitative data: data arrays, category matrices with evidence summarized by category, data displays such as flowcharts or event listings, tabulation of frequencies, calculation of second order numbers such as means, and placing of information into chronological or logical order.

Description of cases

The organization, the system implemented, and the implementation process followed at each of the three cases is briefly described. The extent of participation observed is included. The purpose of these descriptions is to provide a sense of the differences in approaches and participation levels that occurred.

The national accounting firm studied ranked within the top ten accounting firms in Canada. Individual groups in the study ranged in size from four to 17 employees, although some of the largest offices have over 100 personnel. Individual offices pay a national levy to the national firm, which provides technical support, training, as well as monitoring quality control and the budgeting process. The offices thus operate relatively independently, either on their
own or grouped together within local geographic areas.

The system implemented was an automated working paper package (AWP) with two integrated modules. The first allowed for entry of general ledger accounts, and printing of reports organized by account, or grouped into categories called lead sheets. Calculations could be performed, such as comparisons to previous years, analytical ratios, or customized forms or checklists prepared. The second module was a line driven word processor that allowed the user to link the individual accounts (or lead sheet groupings) for the production of financial statements or schedules. The system had elements of data base and spreadsheet products, since data was centrally stored, could be manipulated, and could be transferred from other products, such as accounting systems. This packaged system had been selected by a national committee, and was gradually being implemented into all of the offices.

The first case is described as 'Rural,' since it was located in a rural area in small towns that were primarily farming or fishing communities, with some local manufacturing and businesses. The four offices had an administrative Managing Partner, and shared specialized personnel, such as the information systems consultant and tax experts. Staff were told that effective a specified date they could no longer use the old products, but had to implement both modules of the AWP. The partners had a 'unified front' across the four offices, although one office provided some flexibility on the date. The consultant was responsible for the training, implementation, and support of the new software. Case 2, 'Suburban,' consisted of three offices located within an hour's drive of a major urban centre. These three offices were run by a management team of partners from all offices. One of the senior partners, the specialist in information technology, managed the implementation at her office and assigned staff in each of the other offices to do so. Case 3, 'Urban,' was the technician group of a single large urban office. Both an audit manager and a personnel partner were actively involved in the implementation at this location. For both Suburban and Urban, the AWP was implemented in stages: the account level system was implemented one year, and the word processing module in the following year. The focus of this study was the implementation of the second phase of the AWP for these latter two cases. Table 1 shows the size of the offices and the nature of each office's predecessor system.

The numeric values in Tables 2 and 3 show conclusions reached for participation at each office. Management includes managers and partners. Users include professional staff, which could be Chartered Accountants, students in accounts, or other qualified accountants. For each category of participation a numeric value was assigned as follows (for multiple measures, an average was taken): '0' no participation, or low levels. With multiple individuals, less than 1/3 of the individuals participated; '"1" mixed, with multiple individuals between 1/3 and 2/3 participating, or respondents indicated that they participated 'somewhat,' or '"2" clear, more than 2/3 of respondents participated, or individuals indicated that they had a high level of participation.

At R1 there was one partner, two managers, and two shared professional staff. The partner generally ran the office 'with a firm hand' and personnel did not seem to find excessive discomfort with this. Only one person other than the partner indicated that he had influence on the process. Although the partner retained the right to make decisions, all personnel were able to comment directly and talk about activities in the office. They viewed the AWP as a necessary element of progress -- this office was the innovator of the group, trying out new products first to find out the most appropriate method of implementation and use.

R2 was the largest office, with a diverse group of employees. Staff did not have any empathy with the management group: four of six survey respondents disagreed with the statement that partners and managers discussed matters with their staff before proceeding. Staff viewed
Table 1
Office characteristics

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>U1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>26</td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Users</td>
<td>35</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>5</td>
<td>17</td>
<td>10</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Predecessor system</td>
<td></td>
<td>Other AWP</td>
<td>Manual</td>
<td>Spreadsheet</td>
<td>Other AWP</td>
<td>Other AWP</td>
<td>Other AWP</td>
<td>Other AWP</td>
<td>Other AWP</td>
</tr>
</tbody>
</table>

Notes: 1. Other AWP was a predecessor product with fewer capabilities.  
2. Groups are located in R=Rural, S= Suburban, U= Urban.

Table 2
Participation levels observed among management (partners and managers)

<table>
<thead>
<tr>
<th></th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>U1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1.5</td>
<td>0.5</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Influence</td>
<td>1</td>
<td>1</td>
<td>0.5</td>
<td>1.5</td>
<td>1</td>
<td>0.5</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Importance</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Consideration</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total (/8)</td>
<td>6</td>
<td>5</td>
<td>3.5</td>
<td>7</td>
<td>4.5</td>
<td>2.5</td>
<td>8</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Table 3
Participation levels observed among users

<table>
<thead>
<tr>
<th></th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>U1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities</td>
<td>0.5</td>
<td>0.5</td>
<td>0</td>
<td>1</td>
<td>0.5</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Influence</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0.5</td>
</tr>
<tr>
<td>Importance</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Consideration</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total (/8)</td>
<td>5</td>
<td>3.5</td>
<td>2</td>
<td>7</td>
<td>4.5</td>
<td>5</td>
<td>6</td>
<td>5.5</td>
</tr>
</tbody>
</table>

Table 4
Management, user and average outcomes observed

<table>
<thead>
<tr>
<th></th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>U1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>2</td>
<td>1.7</td>
<td>0.7</td>
<td>2</td>
<td>0.7</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Users</td>
<td>1.7</td>
<td>1.7</td>
<td>0.7</td>
<td>2</td>
<td>1.7</td>
<td>1.7</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Average</td>
<td>1.8</td>
<td>1.7</td>
<td>0.7</td>
<td>2</td>
<td>1.2</td>
<td>0.8</td>
<td>2</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Notes: 1.3 or higher = success; 0.7 or lower = failure; others 'mixed'
the system as having been pushed upon them, even as they viewed it as necessary to providing improved client services. The managing partner of the office spearheaded the implementation. Some partners subverted the mandated deadline initially, by trying to 'sneak under the wire' and not have some of their clients converted onto the new system. Partners and managers had some ability to schedule staff and client conversions within the mandated deadline. They also had feedback into decisions on equipment acquisition and time lines.

R3, the second largest office, was under severe financial pressures, and was considered 'over partnered.' Although there was a designated administrative partner in this office, partners worked independently, setting standards and time lines for their own clients, thus they felt they had limited influence or effects on other partners or on the office as a whole. All responses by staff to questions associated with involvement in the process or in decision making were answered negatively: staff did not feel that they had any impact, but only that they had to respond to directives made. R4 was the smallest office, and the single partner had an informal management style. He gave staff general guidance only, and let them implement the system at their own pace. This is the location where staff had powerful new microcomputers, while the partner had an old machine in his office -- stating that staff should have the horsepower since they used it more. Staff still viewed the partner as making final decisions, but believed that they had some influence on the implementation process of the AWP.

S1 had three partners, each with a functional specialty. Each had his own style, and staff needed to vary their methods, depending upon the partner they were working for. A designated computer consultant assisted with training and implementation activities, and both he and one of the experienced personnel (trained in the software by a previous employer) believed that they had some influence on the process. Others had limited involvement and did not believe that they had any effects on the process, or even opportunities for feedback. Management (partners) essentially ignored the second phase of the implementation, leaving it to the computer consultant, accounting for the lower ranking on importance, while staff could see the potential benefits to their own 'time crunch.'

S2 was another single partner office, where all personnel interacted both socially and professionally. This was the only office where the implementation of the AWP was considered optional by staff -- they had influence because they had the choice to implement or not, and they chose not. S3, also single partnered, gave staff more specific directions. Four personnel indicated that they were involved with partner discussions before decisions were made, but comments on influence were generally neutral.

U1 was the group in a large office that completed non-audit work (called compilations or reviews) for the entire office. They had two allocated partners, a manager, and four staff. Three of the staff were accountants, and one an administrative assistant who helped with the set up of schedules in the AWP product. A different partner and manager assisted with the implementation. Some staff provided high levels of feedback, participating on several internal committees, assisting in the design of training programs, adjusting their work methods, and helping to set standard formats. The group acted as a resource to other personnel learning how to use the AWP. However, they still felt that they had limited effects on management decisions.

Results

Cases were individually analysed resulting in case reports of about 60 pages in length plus appendices. These reports included detailed narratives, analysis of survey results, and conclusions for a variety of measures, arrayed in tabular form. Cross case analysis used flowcharts, line diagrams and scatter diagrams to assist with the pattern recognition process.

Due to space limitations, this section jumps directly into cross case analysis, and uses
only three of the analysis methods, narrative, tables and scatter diagrams. Table 4 summarizes the outcomes that were observed at each of the office groups. Each objective was documented, measured, assessed, and then an average taken to derive the numbers shown. The numerical values were assigned in a similar method as the participation values: where 1/3 or less of the objectives were met, the implementation was considered a failure; between 1/3 and 2/3 was considered mixed, and over 2/3 was considered successful. Prior to this three point scale, other scales were considered and attempted. A five point scale (highly successful, partially successful, mixed, partial failure, clear failure) proved unworkable since it was difficult to separate the ‘mixed’ from the ‘partial’ assessments.

Management level objectives included: on time completion, extent of usage, extent of financial statement standardization, efficiency of financial statement preparation, efficiency of the file review process, achievement of a ‘paperless’ file, enhancing or maintaining client image, and use. User level objectives included user system satisfaction, user job satisfaction and system acceptance. The decision was made to take a simple average when aggregating these measures, since one was not given more weight than others. To reach the conclusions, survey data, interview data, and archival data were synthesized. Where the data was in agreement, ie. survey data supported interview data, conclusions were readily reached. Where survey data was ‘neutral’ interview data provided valuable insights. For example, at R3, survey respondents generally responded ‘neutral’ to queries regarding the system. It was only in interviews that extreme employee resentment towards the system and its implementation methods were displayed, with comments like “... partners don’t understand how long it takes to set something up ...” [Chartered Accountant] and “I said I’m not your secretary, I don’t want to do this, this is stupid!” by a Chartered Accountancy student asked to prepare client transmittal letters. Due to the use of these multiple data types, statistical analysis of the results is not appropriate.

Table 4 shows that for all but three of the offices (S1, S2, U1) management outcome assessments were identical or in the same outcome category as user assessments. Three of eight offices is a large enough difference to warrant examining patterns separately. Thus, scatter diagrams were plotted in several ways to look for patterns: user participation levels against user outcomes, management participation levels against management outcomes, total participation levels against average outcomes and user and management participation levels against average outcomes. User participation was plotted against management outcomes and management participation against user outcomes, but there was no pattern observed for these two sets of figures.

The three patterns observed were a curve (as X increases, so does Y), bimodal (low levels of X occur with low levels of Y; past a threshold, higher levels of X occur with high levels of Y), or necessary (X must be present for high levels of Y to occur, but low levels of X are observed with high levels of Y), as shown in Figures 1 through 3. A pattern was not used if there was more than one outlier, due to the small size of the sample.

Table 5 shows the scatter diagram patterns observed by type of participation activity against type of outcome observed, with any outlier in brackets. For example, the last row of Table 5 shows that total participation by both management and users individually or combined resulted in a curve when plotted against outcomes. Thus, case data is consistent with Hypothesis 3: as participation levels increase overall, so do outcome levels. This supports the research of those authors that considered participation as a multi-faceted construct (eg. Chenhall and Brownell, 1991; Nutt, 1992; Magner et al., 1995). The right most (or last) column of the Table provides a possible explanation for past mixed results. For this implementation at this organization, total participation increased as outcomes increased, but this was not the case for participation activities or influence, where there was no pattern. Importance and voice in the aggregate were found to be only necessary, not suf-
ficient for success. Perhaps if past researchers had broadened their view of participation beyond one construct, they would have found similar differences for each of the constructs.

The high number of patterns observed between forms of management participation and both management and average outcomes is consistent with past research indicating the importance of management participation in implementations (e.g., Beauty and Lee, 1992; Saleh and Wang, 1993). For management, participation activities and influence were found be bimodal with respect to management outcomes: excessively low levels resulted in failure, while higher levels resulted in success. Importance was necessary, while there was no relationship for consideration. This makes sense, since management would want more than just an ability to provide feedback -- they need influence on outcomes, as shown by the bimodal relationship against management outcomes and the curve against overall outcomes. This is consistent with Hypothesis 2, and also the indirect relationship of Hypothesis 3.

For user participation, there were patterns against user outcomes only for activities, consideration and total, not for influence and importance. This may explain Hartwick and Barki’s (1994) results where they found that for mandatory systems, participation did not lead to either user involvement (importance) or use. This case had mandatory implementations, where all sites resulted in high levels of use. Thus there was no relationship with participation of any kind and use. Had Hartwick and Barki documented multiple outcome measures, perhaps relationships would have been observed. These patterns seem to
### Table 5
Scatter diagram patterns observed when plotting participation against outcomes

<table>
<thead>
<tr>
<th>Participation category</th>
<th>Management participation against management outcomes</th>
<th>Management participation against average outcomes</th>
<th>User participation against user outcomes</th>
<th>Total participation against average outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities</td>
<td>bimodal (S2)</td>
<td></td>
<td>bimodal (U1)</td>
<td></td>
</tr>
<tr>
<td>Influence</td>
<td>bimodal (S1)</td>
<td>curve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Importance</td>
<td>necessary</td>
<td>necessary</td>
<td></td>
<td>necessary</td>
</tr>
<tr>
<td>Consideration</td>
<td>bimodal (U1)</td>
<td></td>
<td></td>
<td>necessary (R2)</td>
</tr>
<tr>
<td>Total</td>
<td>curve (S1)</td>
<td>curve (U1)</td>
<td>curve (U1)</td>
<td>curve</td>
</tr>
</tbody>
</table>

Notes: Where there was no pattern, the cell was left blank. Outliers are shown in brackets.

say that users need only an ability to participate by activities or by having consideration from management. As found by Korsgaard et al. (1995) influence is not necessary, nor, it seems, is agreement on system importance. There were no patterns between user participation and average outcomes, consistent with the notion that user participation is directed only at user objectives, not those of management or the organization as a whole, as proposed by Hypothesis 1. However, the absence of patterns between user participation and average outcomes is surprising -- it would seem to indicate that users do not care about management objectives at all.

Plotting the four levels of management participation against user outcomes and user participation levels against management outcomes resulted in no patterns, as mentioned earlier. This lends plausibility to Hypotheses 1 and 2, that as participation levels increase, so do the corresponding outcomes.

When management participation was plotted against management outcomes, there were two different outliers, S1 and S2. S2 was an outlier in a bimodal relationship on participation activities. Recall, this was the location where influence was delegated to staff, who chose not to implement the second module of the AWP. The partner indicated that he advised his staff frequently, thus giving him a 'some' rating for participation activities, but the overall outcome was assessed as 0.8/2, one of the lowest outcomes -- because the system was not used. The same partner assessed the importance of the system as 'none,' and stated that he had marginal influence over the implementation. This group implementation did not go well because both the partner and staff considered the system as unimportant. This is consistent with the patterns observed for management and average outcomes -- attitudes of importance were considered necessary, with no exceptions. A similar situation existed at S1. There, partners ignored the system, assigning implementation responsibilities to a designated consultant, who was a qualified Chartered Accountant. This person could not motivate staff sufficiently to convert data when partners were constantly interrupting to have 'more important' things done first. Thus, by having only 'some' importance for the system implementation, management did not achieve its objectives of high levels of use or cost savings.

There was a common outlier for all of the user patterns, U1. This was the technician group within the larger office. Talking to these staff in interviews, it seemed that they had too much participation. They didn’t want to do all of these things -- they just wanted to get on with their work. Staff generally considered the new software as 'just another tool' needed to get their work done, and they had learned too many. Although they had high levels of importance and consideration, they believed that their influence had limited effects on actual decision making. This may be part of the job profile -- this was the
only group that did not have Chartered Accountants or Chartered Accountancy students as the staff, but had long term accounting technicians instead. The same outlier was present when plotting management participation against average outcomes, for the same reasons. These users assessed their satisfaction with the system and their job as mixed, bringing the average down.

The remaining outlier, R2, occurred in the ‘consideration’ pattern of total participation against average outcomes. It seems that when management pushes hard enough, they can get successful outcomes, even with relatively low levels of consideration. Consideration at R2 was assessed as ‘some,’ i.e. less than 2/3 of the staff felt their feedback had been considered. Those staff were the Chartered Accountants and Chartered Accountancy students. Accounting technicians did not provide feedback to partners and managers. Thus, the case patterns overall are consistent with the hypotheses.

Discussion and research opportunities

As an empirical study based upon eight groups at a single accounting organization, this study can be used for analytic generalization rather than statistical generalization. The results can be used to build theories and raise questions for further research since the small sample size reduces the external validity of the findings. External validity must be tested through replications of the findings in other settings (Yin, 1989; Magner et al., 1995).

This article has contributed by summarizing current participation constructs from the budgeting, information systems, decision analysis and leadership research streams. It has shown that insights can be gained by tracking separately user and management participation and user and management outcomes. That tracking has resulted in some findings consistent with past research, potential explanations for past mixed results, and some new research questions.

Each of the individual patterns in Table 5 that support relationships between a form of participation and outcomes has been supported by other researchers: management activities (Hartwick and Barki, 1994), management influence (Wagner, 1994), management importance (Hartwick and Barki, 1994), management total (Beatty and Lee, 1992), user activities (Ives and Olson, 1984), user consideration (Korsgaard et al., 1995), and user total (Magner et al., 1995).

However, having the additional detail also provides for potential explanations of past mixed research. For example, Hartwick and Barki (1994) found no relationship between either participation activities or the affective component/importance and use for mandatory systems. Table 5 shows that there was a bimodal relationship of user or management participation activities against their respective outcomes. Perhaps if additional outcomes had been measured, these authors would have observed a relationship for mandatory systems. The affective component, operationalized here as importance, was found to have a pattern only with respect to managers, not users. Separation of respondents by job classification or job responsibilities in future research may result in more discernible patterns.

For all research streams studied, obtaining broader measures of participation and of outcomes may help increase the explanatory power of results. For example, in budgetary participation, Milani’s (1975) scale which combined several constructs has been used by researchers to examine relationships with job satisfaction (e.g. Chenhall and Brownell, 1988). Separation into the component constructs might help identify which aspects of participation have the greatest effects on job satisfaction, possibly explaining past mixed research results.

Past research results could be examined to determine whether ‘non-traditional’ patterns exist. The patterns observed on Table 5 are equally split among curve, bimodal and necessary. Bimodal relationships are infrequently discussed in the literature. Leonard-Barton and Sinha (1993) found this type of pattern, which they referred to as temporal, between user involvement (participation activities) and user satis-
faction. The patterns found in this study indicated that low levels of the independent variable occurred with failed or mixed implementation outcomes, while levels over a threshold occurred with successful implementations. Further research could attempt to identify what differentiates these two temporal groups. What are the minimum levels of the different types of participation that are required to result in successful implementation outcomes?

The data patterns observed were consistent with the research hypotheses. The other questions raised were not readily answered. Is the quality of the prediction better when examining multiple constructs? Qualitatively, yes, there seems to be more information due to separating the different constructs and assessing against multiple outcomes. This question can only be properly answered, though, with a larger number of observations from multiple organizations that can be statistically analysed. Are all types of participation equally important? No. Is there a difference between the types of participation undertaken between managers and end users? Yes. According to Table 5, management may emphasize participation activities, influence, and a perception of system importance, while users seem to need participation activities and consideration from management. Research among different job types and different organizations are needed to confirm these patterns.

The absent patterns raise research questions. Why was there no relationship between user participation and overall outcomes? Is the user perspective really that narrow, focussing only on job satisfaction, system satisfaction and acceptance? This may be due to the professional nature of the organization studied, where users accept that they need to provide high quality service to their clients, and that whatever system is chosen, it must deliver this service. This would also account for the absence of a pattern under system importance for users. Further research is required to determine whether these types of participation patterns apply to other professionals, and how the patterns occur with other types of employees. Alternatively, this absence of patterns would seem to indicate that user participation is unnecessary for the achievement of management objectives, or at least that management participation so outweighs user participation that the effects are minimal, which goes counter to the intuitive appeal of participation. Such an unusual finding would require considerable further research.

There was no pattern for user participation against management outcomes or management participation against user outcomes. These absent patterns lend strength to the suggestions in Hypotheses 1 and 2 -- that participation by users and managers would be directed to the outcomes of those individuals. It also lends support to the notion that, where possible, data should be gathered retaining the source of the data. Participation should be linked to the type of respondent, and patterns or relationships examined against outcomes of relevance to that respondent, not only to outcomes of relevance to the organization as a whole.

Outliers U1 and R2 show that technicians may need different levels of participation than Chartered Accountants and Chartered Accountancy students. This research may be applicable to only the professional accounting staff of accounting firms. Further research is needed that examines these multiple constructs for different types of personnel at different organizations, to see whether these patterns hold. Broadening the research would need an increase in the complexity of the proposed relationships, since the task, organization, and other variables would no longer be held constant, and influences found by other researchers would need to be taken into account.

There are several questions that this research did not address, that perhaps could be addressed by other researchers interested in participation. What actions of management are required to enable each of these different categories of user participation? Is this another aspect that needs to be considered -- what is the relationship between actual user participation activities and enabling activities?
Further case research of other types of organizations and implementations is needed, as is more targeted research into the individual constructs and the relationships among them, so that these many research questions can be addressed. The aim of this paper was to help provide explanations for possible past mixed results on the study of participation, and this has been accomplished. Suggestions for use of multiple participation constructs and implementation outcomes have been provided.

For managers of implementation projects, this study confirms that the participation of group managers are important for the satisfaction of management objectives. Such managers should allow users to provide feedback into the implementation process, yet can retain control of the actual decisions made to help achieve higher levels of implementation success.

Bibliography

23. Fischer, M., "Realizing" the benefits of new technologies as a source of audit evidence: an interpretive field study, Accounting, Organizations and Society, Vol. 21, No. 2/3, pp. 219-242, 1996
38. Kwon, T. H. and R. W. Zmud, Unifying the fragmented models of information systems implementation, in R. J. Boland,