An empirical examination of the role of social integration in system development projects

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Abstract. *In spite of the apparent importance of social integration for work collectives within organizations, information systems researchers have so far paid little, if any, attention to evaluating its role in system development projects. The present study tries to contribute to the literature by proposing and testing a model that examines some of the antecedents and consequences of social integration in system development projects. Data collected from system development project leaders working in 84 US organizations were used to test the model. The findings suggest that higher social integration and, consequently, higher system development project performance is best attained when management provides basic support for the work of the project. The results also reveal that the nature of the relationship between social integration and project performance may be contingent upon some other factors. The implications of the findings of this research are discussed.*

Keywords: information systems evaluation, system development project performance, social integration, integration-oriented training, integration-oriented rewards, system complexity

INTRODUCTION

The shift in information systems evaluation focus from static *ex ante* and *ex post* perspectives to a more continuous process view (Farbey *et al*., 1999) has created a genuine need for understanding key organizational and human issues relevant to the development of information systems, such as the issue of managing intraproject processes during systems development. Evidence of the importance of evaluating intraproject processes may be reflected by the central role that these processes play in shaping system development projects' efficiency of operation and quality of product, which have profound effects on overall organizational performance. Some of the intraproject processes that are believed to shape the outcomes of system development projects and have been at the centre of information systems researchers' attention in recent years include conflict (e.g. Sawyer, 2001), participation (e.g. Aladwani *et al*.,

2000), power and control (e.g. Henderson & Lee, 1992) and co-ordination (e.g. Nidumolu, 1996) to name a few.

An intraproject process that has recently attracted much attention from reference disciplines contributing to the area of system development is social integration. According to social psychology literature, social integration, or members sense of being bound together (Shaw, 1981), is a significant determinant of the outcomes of working units as it leads, among other things, to higher member involvement, lower work absenteeism, lower intraproject conflict, higher co-ordination, adherence to group norms and higher job satisfaction (Shaw, 1981; McGrath, 1984; Hogg, 1992; Hogg & Terry, 2000). Given the overall evidence from previous research (Summers *et al*., 1988) highlighting the critical role of social integration, one expects that social integration must be an important topic to be addressed if the full potential of working entities, such as system development projects, is to be realized.

Despite its importance and despite the core premise underlying many studies that the system development project is a social entity with a number of factors interacting to reach a common goal, social integration did not attract enough attention from information systems scholars interested in systems development. In particular, information systems researchers have been surprisingly silent on investigating the motivators of social integration as well as its potential effect on system development project outcomes. The common features between system development projects and other working units within the organization do not suggest that a system development project is not a distinctive structural form on its own. Therefore, the findings of past social integration research may not be entirely applicable to system development projects. Given this fact, more research may be needed to explore the role of social integration in the context of system development.

In the present study, I will try to fill this gap in existing systems development research by examining the relationship between social integration and certain of its antecedents, e.g. management support for integration, and consequences, e.g. system development project performance. For the sake of parsimony, I select to study two management support strategies: integration-oriented training and integration-oriented rewards. The reason for selecting these two among the many potential variables is that, although the two strategies have been examined by many information systems and non-information systems researchers, the impact of the same two on social integration has not been examined in the context of system development. This provides the author with an opportunity to contribute to the information systems literature. Furthermore, I will analyse the nature of the relationship between social integration and system development project performance given the existence of certain conditions, i.e. system complexity. This research design should enhance our understanding of the contingency factors influencing the social integration–performance relationship.

INTRAPROJECT PROCESSES IN SYSTEMS DEVELOPMENT

Several studies have shown that intraproject processes represent the principal predictors of system development outcomes (for a summary, see Table 1). For example, Sawyer (2001)

Table 1. Examples of system development research focusing on intraproject processes

Study	Sample intraproject processes examined
Salaway (1987)	Communication; learning
Tait & Vessey (1988)	Involvement
Henderson & Lee (1992)	Managerial control; team member control
Janson *et al*. (1993)	Communication
Robey *et al*. (1993)	Participation; conflict; conflict resolution; influence
Kraut & Streeter (1995)	Co-ordination; formal communication; informal communication
Nidumolu (1995)	Co-ordination
Koh & Heng (1996)	Participation
Saleem (1996)	Participation
Aladwani *et al*. (2000)	Participation
Ravichandran & Rai (2000)	Participation
Barki & Hartwick (2001)	Conflict; conflict management
Sawyer (2001)	Conflict; conflict management

developed a path model of the antecedents and consequences of intragroup conflict and tested the model using data from 40 packaged software development teams. The findings highlight the complexity of intragroup conflict and underline the importance of conflict management for packaged software development team performance. Aladwani *et al*. (2000) highlighted the significance of participation for the performance of system development projects. Kraut & Streeter (1995) and Nidumolu (1996) emphasized the importance of co-ordination within system development projects and the way in which the appropriate utilization of co-ordination mechanisms can determine the outcome of these projects. Robey *et al*. (1993) examined the negative effects of conflict on the success of information system projects within three organizations. Henderson & Lee (1992) investigated the relationship between control behaviours and systems design project performance. The authors reported that both managerial and self-control mechanisms can play a significant role in shaping project performance. The two analyses reported by Janson *et al*. (1993) and Salaway (1987) showed that lack of appropriate communication during the development efforts could result in system failure. These are just a few examples describing the crucial effects that intraproject process may have on the outcome of system development projects.

However, intraproject processes determining system development outcomes are not limited to the above-mentioned list of variables. There are some other processes that are equally important for project performance. One particular intraproject process that relates intuitively to the interaction within the system development project and, consequently, its outcomes is social integration. Social integration, or members' sense of being bound together (Shaw, 1981), suggests several favourable implications for collectivities such as system development projects. Socially integrated projects usually show higher involvement in project activities, less tendency towards absenteeism, less conflict, higher co-ordination and higher job satisfaction (Shaw, 1981; McGrath, 1984; Hogg, 1992). Although there are some detractors (Stogdill, 1972), over-

all empirical results support the theory that social integration relates to improved project performance (Summers *et al*., 1988; Evans & Dion, 1991). My review of the system development literature (see Table 1) failed to identify any study that explicitly discusses social integration. Although social integration is a widely investigated phenomenon in certain reference disciplines, the findings of this stream of research may not be as helpful for understanding the role of social integration in system development projects as one may expect. System development projects are more heterogeneous in nature (Aladwani *et al*., 2000) than working units studied by past research coming from reference disciplines and, hence, it is not clear whether the findings of this research would be as useful in this context. Understanding social integration is therefore important for increasing our understanding of system development evaluation efforts within organizations.

DEVELOPMENT OF RESEARCH MODEL AND RELATIONSHIPS

In this paper, I distinguish between three sets of variables: management support for social integration, social integration and system development project performance. Management support refers to the extent to which management encourages social integration among project members through the use of such managerial strategies as training and rewards. Management support has the potential of not only determining what the project can or cannot do but also inducing and reinforcing social integration among project members. Social integration, as I mentioned earlier, refers to members' sense of being bound together (Shaw, 1981). System development project performance refers to the extent to which the system development project is efficient in its process and effective in its outcome.

A major premise of this paper is that management can create a socially integrated project by carefully establishing the proper environment for its operations. Management can provide cues as to how members of the project should interact and how the project should perform. When project members receive certain signals from management to behave in a certain way, they usually have no other choice but to conform. If project members act in a way different from what is expected, then it is quite possible that management will stop short on providing the necessary support for their work. Based on this rationale, the research model (Figure 1) hypothesizes that management support for social integration (i.e. integration-oriented training and integration-oriented rewards) influences system development project performance and so does social integration, but social integration is induced by management support for social integration. Furthermore, based on the suggestions of the recent research on social integration (Mullen & Copper, 1994; Hogg & Terry, 2000) and on system development (Tait & Vessey, 1988; Kraut & Streeter, 1995), the model hypothesizes that system complexity moderates the relationship between social integration and performance. I will discuss these relationships in more detail next.

Management appreciation of the importance of system development projects as centres for gain to the organization should result in support for these projects. Management support for

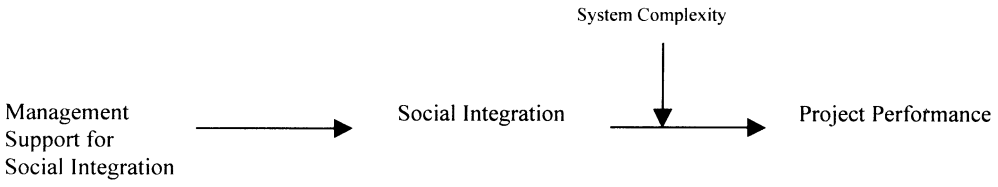

Figure 1. Research model.

the work of the system development project plays a significant role in shaping the behaviour within and outcomes of the project (Aladwani, 2000; Irani *et al*., 2001). Training on social interaction is one important support strategy that management can use to influence social integration among project members. The work of the system development project involves several activities that dictate interaction among project members and influence social integration among them. Thus, a successful system development effort may be dependent on providing training for project members on these intraproject processes. A well-trained system development project on co-operation skills is more likely to use resources more effectively (Abdel-Hamid *et al*., 1994), and a system development project skilful in using conflict resolution strategies is more likely to end up successful (Sawyer, 2001). Moreover, appropriate communication skills facilitate the smooth flow of information back and forth among the involved members and between the project and other organizational parties (Kraut & Streeter, 1995). Warkentin & Beranek (1999) found that work units that were given appropriate training on interpersonal communication showed improved interaction outcomes. Therefore, integration-oriented training is expected to have a fundamental effect on social integration among members of the system development project and system development project performance.

H1: Integration-oriented training will influence social integration among project members

An integration-oriented rewards system is another important management support strategy that may play a significant role in facilitating (or inhibiting) social integration among members of the system development project and ultimately the effectiveness of their interaction. In the present paper, I define integration-oriented rewards system as the extent to which the rewards are given based on the performance of the whole project. When project members realize that their income is contingent upon the overall performance of the project, they will adjust their effort to maximize their earnings (Hackman 1987). According to Aladwani *et al*. (2000) and Abdel-Hamid *et al*. (1994), co-operative rewards can lead to greater interaction and to more effective strategies for using the shared staff resource. Consequently, when rewards systems are based on whether the project as a whole performs well or not, higher social integration and performance from members in the systems development may be anticipated.

H2: Integration-oriented rewards will influence social integration among project members

A project member feeling of being socially akin to other project members can have many positive consequences for the outcome of the project (Hogg & Terry, 2000). In a study of 32 projects in a large R & D organization, Keller (1986) found that social integration related positively to all four R & D project effectiveness criteria, members and management perceptions of project quality and budget/schedule adherence. These findings may be attributed to the fact that socially integrated projects have a higher propensity to learn faster (Shin & Reinig, 1998) and participate actively in project discussions (Shaw, 1981). Members' attractions to the project also have a clear influence on the stability of project membership (Evans & Dion, 1991). In projects where there is a friendly work environment, individuals not only tend to stay members in the present but are also encouraged to continue to be part of the project in the future. Furthermore, within socially integrated projects, there is a better chance of smoothing the demanding effort of managing project co-ordination. Socially integrated projects are more likely to show an improved quantity and quality of communication among members (Shaw, 1981).

H3: Social integration will influence the performance of the system development project

As mentioned earlier, the overall evidence suggests that social integration influences performance in a positive manner. However, some researchers interested in the social integration phenomenon suggest that the nature of the relationship between social integration and the performance of a working unit may be contingent upon some other factors (Hogg & Terry, 2000). Mullen & Copper (1994; p. 210), for example, stated that 'Although the association between cohesiveness [social integration] and performance may be both reasonable and consistent with anecdotal evidence drawn from history and the popular media, this seemingly straightforward phenomenon has generated a considerable amount of theoretical controversy'. Following the suggestions of Mullen and Copper (1994), in this study I will examine the contingency effect of some conditions – system complexity – on the social integration–performance link. System complexity arises from the ambiguity associated with the difficulty of the development process. According to information processing theory (Tushman & Nadler, 1978), those mechanisms that increase the information processing capacity of the working unit will be more predictive of its performance. A highly complex system will require an increase in the information processing capacity of the system development project and, consequently, an increase in the level of interaction among project members. Past system development research gives some support for this line of reasoning, as it shows that system complexity has an effect on the relationship between project performance and a number of intraproject processes including involvement (Tait & Vessey, 1988) and co-ordination (Kraut & Streeter, 1995). As the moderating effect of system complexity on the social integration–performance link has not been examined by past research, this study will contribute to the social integration literature by exploring this relationship in detail.

H4: The higher the complexity of the system, the greater the relationship between social integration and system development project performance

RESEARCH METHODS

Sample

A letter was sent to the senior information systems executive in 500 manufacturing organizations (randomly selected from the *Directory of Top Computer Executives*) requesting him (her) to forward the questionnaire to the leader of the most recently completed information systems project. A reminder letter along with a follow-up questionnaire was sent 3 weeks after the initial mailing. Of the 500 contacted organizations, I received usable questionnaires from 84 information systems project leaders or approximately a 17.3% response rate, which is comparable with most other information systems surveys. Most of the information systems project leaders in the sample, or close to 86% of the respondents, were between 30 and 55 years of age. Close to 14% of the respondents were either <30 years or >55 years old. The majority, or 70%, of the project leaders had a bachelor's degree; those holding a master's degree rank next representing approximately 25% of the respondents. Only a few (close to 5%) of the leaders just had high school education. None, however, had a doctoral degree. Males led approximately 73% of the projects, and females led 27% of the projects.

Approximately 14% of the projects were completed within 3 months, 20% were completed within 4–6 months, 30% were completed within 7–12 months, 25% were completed within 13–24 months, 8% were completed within 25–36 months, and 2% were completed after >36 months. These findings show that the sample is well distributed along the different durations. Moreover, approximately 10% of the sample belonged to organizations that have <300 employees, and 2% of the projects in the sample belonged to organizations that employ >20 000 employees. The majority of the information systems projects in the sample (or close to 88%) belonged to organizations that were in between in terms of organizational size. The data reveal that the projects in the sample came from organizations that varied widely in terms of size.

Because non-response bias is a serious threat to the validity of survey research, I tested for this problem by comparing early vs. late respondents. The results indicate that there are no significant differences between these two groups of responses in key sample characteristics, i.e. demographics of the respondents, project duration and organizational size (alpha = 0.05).

Study instruments

To enhance the method rigour of the present investigation, the author used previously developed and validated scales whenever possible. The question items of the adapted scales were reworded to suit the context of this study. The author asked an information systems project leader and an information systems researcher to review the scales and share their concerns

with him. After incorporating their observations, the questionnaire was pilot tested by three information systems project leaders. The comments provided by the three project leaders improved the readability and face validity of the scales. The items in the social integration, integration-oriented training and integration-oriented rewards instruments were measured using a seven-point scale that ranges from 1 (strongly disagree) to 7 (strongly agree). The questions in the system complexity instrument were measured using a scale ranging from 1 (very difficult) to 7 (very easy). I reverse-coded the items so that a high score indicates high system complexity. The items in the performance instrument were measured using a scale that ranges from 1 (extremely low) to 7 (extremely high).

I operationalized system development project performance using the two measures described by Henderson & Lee (1992). The first scale measures efficiency and has four items (reported Cronbach's alpha is 0.75), one each to measure the amount of work produced, adherence to schedules, adherence to budgets and overall efficiency of operations. The second scale measures a project's effectiveness. The three items in this instrument (reported Cronbach's alpha is 0.72) tap the quality of work, the effectiveness of interaction with non-members and the ability of the project to meet its goals.

Social integration was operationalized using a scale that was adopted from Seashore (1954). Many researchers have used this reliable scale, e.g. Keller (1986), who reported a reliability level of 0.77. The four items are: members' feelings of being part of the project; feelings of getting together as a project; intentions to quit; and perceptions of the existence of a helpful and supportive environment within the project.

Integration-oriented training was measured using a three-item scale. The items reflected the availability of training on key intraproject processes such as co-operation, conflict resolution and communication (Robey *et al.*, 1993; Kraut & Streeter, 1995).

System complexity was also measured using a three-item scale. The project leader was asked to rate the level of difficulty in determining information requirements, level of processing complexity and overall level of complexity of the design process (Tait & Vessey, 1988). Tait & Vessey (1988) reported a Cronbach's alpha reliability level of 0.70 for this scale.

A single-item scale was used to measure integration-oriented rewards. The leader of the systems development project was requested to indicate the extent to which the rewards were based on overall project performance.

DATA ANALYSIS AND RESULTS

Reliability and validity results

Table 2 summarizes reliability and convergent and discriminant validity results. Integration-oriented rewards, a single-item measure, is by definition unidimensional; its reliability was not measured as repeated measurement was not possible. I tested for convergent and discriminant validity by subjecting all the items to principal component factor analysis, and then rotating the resultant factor structures using the varimax criterion. The cut-offs of eigenvalue equal to

Table 2. Reliability and validity results

	Components			
	Factor 1	Factor 2	Factor 3	Reliability
Quality of produced work	0.88			0.94
Effectiveness of interaction with non-members	0.77			
Ability to meet the goals	0.90			
Efficiency of operations	0.86			
Adherence to schedules	0.78			
Adherence to budget	0.71			
Amount of produced work	0.86			
Members got along together		0.91		0.86
Members stayed together		0.91		
Each member felt part of the team		0.76		
Intentions to quit (reverse coded)		0.61		
Members helped one another		0.79		
Training on co-operation			0.89	0.91
Training on conflict resolution			0.93	
Training on communication			0.85	
Eigenvalue	6.32	2.92	1.79	
Cumulative percentage of variance explained	42.11	61.55	73.48	

1 and item loading of 0.50 were chosen as criteria for interpreting the factor structure. The well-known and widely used Cronbach's alpha was used to determine the reliability of the measures. The values suggested by Nunnally (1978) for behavioural research were used to judge the acceptability of Cronbach's alpha. Table 2 shows that study instruments exhibit sound psychometric properties.

Model testing

One objective of this study was to examine which of the two management support strategy variables studied explain the variation in social integration and whether social integration mediates the relationship between these strategies and the performance of the system development project. Given the nature of the proposed model, I used path analysis to test the non-interaction hypotheses. Standardized betas are usually used to determine the strength and direction of relationships in such a model.

Possible threats to path analysis are multicollinearity and non-linearity. I examined the correlation matrix (Table 3) and found that all correlation coefficients among exogenous variables were reasonably low ($r < 0.40$). I next examined the residuals looking for signs of non-linearity among exogenous and endogenous variables. The plots revealed no non-linear patterns, indicating that the linearity assumption was also met.

The author developed two models to test the validity of the proposed path analytic model. In model one, I regressed social integration on integration-oriented training and integration-

Table 3. Summary statistics

	Mean	SD	1	2	3	4
System development project performance	4.96	1.26	–			
Social integration	4.95	1.04	0.33**	–		
Integration-oriented training	3.21	1.77	0.14	0.34**	–	
Integration-oriented rewards	3.51	1.95	0.15	0.31**	0.34**	–

*$P < 0.05$; **$P < 0.01$ (one-tailed).

Table 4. Antecedents and consequences of social integration

	Social integration			Project performance				
	Direct	Spurious	*r*	Direct	Indirect	Total	Spurious	*r*
Integration-oriented training	0.26*	0.08	0.34**	0.03	0.09	0.12	0.02	0.14
Integration-oriented rewards	0.22*	0.09	0.31**	0.05	0.07	0.12	0.03	0.15
Social integration				0.33**	–	0.33**	–	0.33**
	Adjusted $R^2 = 0.13$**			Adjusted $R^2 = 0.10$**				

*$P < 0.05$; **$P < 0.01$.

oriented rewards. In model two, I regressed system development project performance on social integration, integration-oriented training and integration-oriented rewards. As shown in Table 4, the findings reveal that integration-oriented training (beta = 0.26, $P < 0.05$) and integration-oriented rewards (beta = 0.22, $P < 0.05$) are significant predictors of social integration. The antecedent variables in this model explain approximately 13% of the variance in social integration. Table 4 also shows that the analysis of the second model reveals that only social integration (beta = 0.33, $P < 0.01$) has a significant direct effect on system development project performance. The predictor variables in the performance model explain approximately 10% of its variance. Moreover, the findings indicate that integration-oriented training and integration-oriented rewards did not show any significant direct effect on system development performance. Taken together, these results demonstrate that integration-oriented training and integration-oriented rewards influence project performance only indirectly through social integration.

According to the suggestions of Duncan (1985), the author examined the fit between the tested models and the observed data by comparing reconstructed correlations (the total of the direct and indirect effects of an exogenous variable on an endogenous variable) with original correlations. Table 4 shows that reconstructed correlations duplicate the original correlations with no discrepancies, suggesting an adequate fit between the two hypothesized models and the observed data.

Based on the discussion provided in the background section, I also analysed the nature of the relationship between social integration and system development project performance. The contingency factor (system complexity) was dichotomized at the median, and social integration and system development project performance were correlated under conditions of low and high project complexity. Table 5 summarizes the findings of this analysis. This shows that there

Table 5. Correlation coefficients for split samples† – low vs. high system complexity

	Low system complexity	High system complexity
Pearson *r* correlation between social integration and system development project performance	0.21	0.42*

†Sample was split into two groups – high (above the median) and low (below the median) – at the median of the contingency factor.
*The correlation coefficient is significant at $P < 0.05$.

Table 6. System development performance and social integration by complexity

	Low system complexity*	High system complexity
Low social integration*	Mean performance = 4.62 $N = 17$	Mean performance = 4.41 $N = 20$
High social integration	Mean performance = 5.00 $N = 16$	Mean performance = 5.43 $N = 28$

*Sample was split into two groups – high (above the median) and low (below the median) – at the median of the factor.

is no significant relationship between social integration and project performance for the low system complexity group. On the contrary, the findings reveal that there is a significant positive relationship between social integration and performance for the high system complexity group. Moreover, Table 6 shows that, when both the system is highly complex and project members are socially integrated, the performance of the system development project is best and that, when the system is highly complex and social integration is low, project performance is worst. A comparison of the performance mean in the two groups resulted in an absolute *t*-test value of 2.78 ($P < 0.001$).

DISCUSSION AND CONCLUDING COMMENTS

How can social integration be promoted and can performance be improved in a system development task? This investigation tried to answer this important information systems evaluation question by examining certain of the antecedents and consequences of social integration in the context of system development projects. It also tried to examine the nature of the relationship between social integration and system development project performance given the existence of contingency factors. The findings reveal that social integration has a significant positive impact on system development project performance, and that management support strategies designed to promote social integration in the form of integration-oriented training and rewards are positively related to social integration. The results also show that the nature of the social integration–project performance relationship is contingent upon the complexity level of the system under development. Overall, the findings of this study provide support for the proposed research model.

Social integration among project members is found to play an important role in differentiating between high- and low-performing system development projects. This implies that the existence of management support for social integration within system development projects is a critical success factor for better project functioning. Therefore, top management has to find ways to stimulate higher levels of social integration among members of system development projects. In the present paper, the author has considered the role of two management support strategies in motivating social integration: integration-oriented training and integration-oriented rewards. The findings indicate that both variables are important predictors of social integration among project members in system development initiatives. Further, integration-oriented training and integration-oriented rewards are found to influence system development project performance indirectly through social integration. The two variables stimulate social integration, which in turn determines project performance. Integration-oriented training is more likely to encourage intraproject interaction, whereas integration-oriented rewards are more likely to create a sense of collective responsibility towards the work. Hence, both training and rewards motivate members to work together and, more importantly, to work hard to achieve the goals of the project.

The nature of the relationship between social integration and system development project performance is found to be contingent upon the level of system complexity. The data set demonstrates that the more complex the system under development, the stronger the relationship between social integration and system development project performance may become. Moreover, the analysis shows that, when the system is complex and social integration is low, the performance of the system development project is worst. This may be explained by the fact that, in highly complex system development projects, closer interaction among project members may be needed (Tait & Vessey, 1988; Kraut & Streeter, 1995). Hence, complexity may play a useful role in system development projects, inasmuch as it is system complexity that may cause members of the project to feel that they need to work together and feel akin to one another to finish the demanding task. This finding indicates that social integration, albeit important, may not be as useful for the different contingencies surrounding the system development project.

The findings provide several hints for practising managers on how to manage and evaluate system development projects effectively. The results point to the fact that social integration represents a significant component for the success formula of system development projects. Consequently, management must develop strategies to motivate this important intraproject process. However, management should receive this recommendation with some caution. The data set indicates that high social integration among members of the system development project may be much more helpful when the project undertakes a task to develop a highly complex system. When the complexity of the system to be developed is low, the value of social integration for project performance becomes less critical, and management should be cautious not to overinduce social integration among project members. The level of system complexity, then, should qualify my recommendation for managers with regard to social integration. Moreover, within the system development project context, learning becomes a more critical issue, as members deal with one of the very causes of uncertainty and ambiguity, information technol-

ogy. Management should view integration-oriented training as an important investment, not as an administrative cost, and should build capabilities at both the individual as well as the project level. Integration-oriented rewards showed a positive influence on social integration in system development because such a reward scheme does not promote the achievement of a particular project member at the expense of the whole project. The theory suggests that, when the rewards system emphasizes collective performance, greater co-operation among members of the working unit is expected (Hackman, 1987). The results support this premise and strongly suggest that management should consider integration-oriented rewards to be instrumental in cultivating social integration within and performance of system development projects.

Despite its contributions, the present paper raises several issues that represent possible avenues for future research. First, every research model can benefit from refinement and fine tuning, and mine is no exception. The model in this paper has considered only two antecedents of social integration among project members (integration-oriented training and integration-oriented rewards) and one contingency factor (system complexity). Although these represent important variables, other relationships may need to be conceptualized and tested to understand better what motivates social integration and to explore the role of some other contingencies of the social integration–performance link. Secondly, the integration-oriented rewards scale may need to be elaborated upon. As suggested by some researchers (Aladwani *et al*., 2000), integration-oriented rewards might be conceptualized as a multidimensional construct consisting of process- and outcome-related rewards. Future research endeavours may need to develop a multi-item scale that takes this proposition into account. Finally, the research model proposed in this field study was tested using cross-sectional data. As system development is an evolving phenomenon spanning many work phases, our understanding of the precise nature and outcomes of the system development process may be enhanced if longitudinal designs are used by future research attempts.

In conclusion, I hope that I have presented a convincing case for the need to consider social integration within a systems development evaluation context and that the suggested and empirically tested model will serve as a foundation for further research efforts focusing on this important topic.

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