The Influence of Middle Management on Information Technology Alignment

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Abstract

Strategy alignment challenges are a longstanding concern of information technology (IT) executives as both business dependence and spending on IT have grown continually. Dominant research shows that the varying degrees of contribution from IT investments are closely tied to alignment. However, limited attention has been given to the examination of middle management, top management’s driving force to operationalize strategic direction. Using top and middle management informants, we investigate the middle management influence on business and IT strategy alignment. Drawing from literature, we identify three factors—middle management IT involvement, middle management IT commitment, and middle management IT strategy awareness—as antecedents to strategy alignment. Our test results suggest that IT commitment and IT strategy awareness have a positive influence on alignment. Hence, our findings reveal that middle management has a significant and direct added value to business and IT strategy alignment.

1. Introduction

More than 40 years ago, information technology (IT) in an organization was isolated to departments that met specialized operational needs [35]. Today, IT is an ubiquitous and critical business resource. Managers depend on IT to address competitive threats, increase operational controls, decrease expenses, and improve customer satisfaction [8]. The 2014 worldwide forecast for IT spending is 3.8 trillion USD [10]. Because both dependence and spending on IT grow continually, organizations need to ensure that their IT investments support or align with business strategy [6]. Business and IT strategies align when IT plans support and are supported by the business’ plans [37]. Prior research shows that the performance of IT investments is closely tied to alignment [34]. However, the challenges of business and IT strategy alignment consistently rank among the top five concerns of IT executives [28]. Consequently, examining the nature of strategic alignment, its antecedents, and its impacts is extremely relevant.

One theme of research receiving widespread focus is the effect of top management and IT management on business and IT strategy alignment. For example, Preston and Karahanna [34] found that a shared understanding and a shared knowledge between top management and IT management are significant factors in alignment. In addition, Rathnam et al.’s [35] study of top management revealed that improving and effectively communicating business strategy and vision are factors for enhancing alignment. In contrast, the role of middle management in business and IT strategy alignment has received little attention [37]. Middle managers are the individuals that head various organizational departments, like marketing and human resources, or sub-organizations, such as divisions and business units. Middle managers are important because they are top management’s driving force for integrating strategy into day-to-day operations [1]. Middle managers act as negotiators, experimenters, and social process builders on an evolutionary path to operationalize an organization’s strategic direction [32].

In addition to strategy implementation, the middle manager’s influence and involvement lead to effective strategy formulation [41]. Henderson and Venkatraman’s [19] study on strategy alignment between business and IT builds on the importance of both formulation and implementation strategies when transforming an organization with IT. Furthermore, they stress that formulation and implementation are linked events, whereas strategy alignment is a continuous adaptive process. Over time, research has shown that the alignment process is complex and intangible because the target for alignment keeps moving [6]. To illustrate, Chan [6] describes alignment as a simultaneous subcomponent of multiple larger components in an organization such as structure, strategy, culture, and IT. Therefore, unlike an event, strategy alignment cannot be forced; it emerges because organizations act more as a network of human partnerships than a system of rigid regulations [6]. Given that middle management’s role is significant in business strategy, when IT strategy is aligned with
business strategy it is likely that middle management influences the process of linking the two strategies.

To improve our understanding of how organizations can better align business and IT strategy and as such improve organization performance, we need to better understand the role middle managers play in alignment. An improved understanding of alignment will help practitioners with efforts to include middle management in the process. Therefore, our primary phenomenon of study is the factors that might influence middle managers’ perceptions of alignment. Toward this end, we draw from three streams of literature to develop an integrated model. First, we investigate involvment, which is conceptualized as personal relevance [3] in IT. Second, we consider the effects of commitment, which is viewed as positive acts [25] toward IT. Third, we study strategy awareness, conceived as understanding, knowledge, and clarity of objectives [18] of IT. We empirically test our model with data from top and middle management informants. In the sections that follow, we present our model, method, analysis, and the implications of the findings for future research.

2. Research Model and Hypotheses

Organizations find business and IT strategy alignment important because IT has increasingly become a part of an organization’s business operation [6]. Consequently, IT plays a vital role in forming and supporting new business strategy [19]. A generally accepted view of strategy alignment is “the degree to which the IT mission, objectives, and plans support and are supported by the business mission, objectives, and plans” [37, p. 56]. Whereas strategy alignment has been shown as a key predictor of IT investment profitability [26], a lack of alignment produces little realized value from an IT investment [36]. Investigations have specifically revealed the importance of the partnerships between top and IT management as a key to facilitating alignment [24]. Alignment problems occur when human partnerships between business and IT are missing [6]. Against this backdrop, it seems feasible that a partnership for facilitating alignment may also rest within the operational role of middle management.

Prior research offers insight into the role of middle management as an overseer of operations and as a participant in business strategy [14]. Researchers describe the role of middle management as managers who supervise managers and who are in turn supervised by others [11]. Even so, the definition of middle management varies significantly across organizations [11] because organizations vary in size and with the industry they serve. Middle management is responsible for implementing the policies, procedures, and plans of top management [29], while top management is the governing body of individuals responsible for setting the organization’s direction [39]. Fundamentally, top management responsibilities influence an entire organization while middle management responsibilities influence a specific area or business unit [12]. We can view top management as strategy designers who involve individuals at many levels in a process to develop the plan [14].

Accordingly, middle management is the genesis of the information flow and social influence that develop into ideas and initiatives for new capabilities [14]. What happens in the middle of the organization profoundly influences organization performance, and middle management acts as a key contributor to the initiatives and implementations of strategy [9]. Hence, the role of middle managers in strategy positions them as influencers of alignment, since middle managers operationalize an organization’s strategic direction [32]. In this study, we do not focus on the work and associated tasks of middle management but rather on the importance of involving and engaging middle management in a strategy alignment process.

We propose that three factors are needed to help explain the influence of middle management on strategy alignment: middle management IT involvement, middle management IT commitment, and middle management IT strategy awareness. For our first factor, Wooldridge et al. [41] indicate that an understanding of middle management involvement in strategy remains an important research issue. They suggest that the impact from a middle management perspective is less apparent than the impact from a top management perspective, and multilevel management research may link an understanding of this group’s relevance. The second factor, middle management IT commitment, surfaced as a recommendation for future research in Reich and Benbasat’s [37] investigation on the link between business and IT objectives. Although commitment was not a part of Reich and Benbasat’s study, they conceptualized it as representing a reciprocal importance between top management and IT management, which signals an alignment in business and IT objectives. Finally, middle management IT strategy awareness is our third factor. Hambrick [18], in his study of strategy awareness within top management, concludes that one cannot assume the existence of strategy awareness in organizations and that the degree of awareness will vary. Hambrick discusses the significant drop-off in strategy awareness at the top management level in organizations, and he explains that a lack of clarity in strategy exists at the top as well.
Our outcome variable is middle management business and IT strategy alignment—specifically, middle management’s agreement that valid business and IT objectives exist. Accordingly, guided by extant research for all the factors presented above, we developed the research model in Figure 1, which places middle management IT involvement, IT commitment, and IT strategy awareness as antecedents to middle management business and IT strategy alignment as described in the hypotheses H1—H3 that follow.

![Research Model](figure1.png)

**Figure 1. Research Model**

### 2.1. Middle Management IT Involvement

Manager IT engagement is involvement as an end-user. Additionally, involvement is making the system’s use possible, and a manager who engages in system development will appreciate the technology [3]. However, Jarvenpaa and Ives [23] prescribe that researchers still need to determine if, when, and how much top management support—as it relates to participation and involvement—is appropriate in IT management. Barki and Hartwick [3] report that often an involvement label is used when the context of the study construct is participation activities. To help address any future misinterpretation, we highlight participation and involvement as two distinct constructs from the disciplines of psychology, organizational behavior, marketing, and IS [3]. The distinction between the two is that participation is an individual’s behavior and activities performed by this individual and involvement is a subjective psychological state when an individual sees importance and personal relevance in an item or incident [3]. Researchers have used these two constructs to study top management, IT management, and middle management. For example, Jarvenpaa and Ives [23] used their IS study to investigate CEO participation and involvement in IT management. In addition, IS research on project outcomes from Ishman et al. [22] used participation and involvement to study a population of current and former managers. Though top management involvement has been found to be important to the support of IT, middle management involvement is needed to support IT as well. In this study, we investigate middle management IT involvement based on the middle managers’ effort toward IT because they see personal relevance in IT.

Middle management involvement in IT is linked to CEO communications through routine business interactions such as verbal statements, planning meetings, written statements, and casual conversations [23]. As directed by the CEO’s communications, a manager may be required to participate by performing IT-related activities. This view follows the belief that participation in IT strategy, for example planning, development, and implementation activities, is largely delegated by the CEO to others [23]. Consequently, involvement may not be a result of a middle manager’s ability to see importance and personal relevance in IT. Instead, it may be the middle manager’s reaction to an expectation of top management. In this investigation, we look at middle management IT involvement to gain an understanding of its influence on strategy alignment. Based on the findings of system success with CEO involvement [23] and system success with user involvement [21], middle management IT involvement is expected to have a significant and positive influence in our study. To understand this association, we examine the following hypothesis.

**H1**: The greater the middle management IT involvement, the greater the middle management business and IT strategy alignment.

### 2.2. Middle Management IT Commitment

Existing literature in applied psychology links the theory of satisfaction and commitment in the study of life situations [40]. Because the link is persistent, we present both satisfaction and commitment, thereby rationalizing our choice of commitment as our factor of influence. Satisfaction is an individual’s degree of positive sentiment toward something [4]. In particular, satisfaction is associated with the specific and tangible characteristics of a work environment and symbolizes quickly formed responses [33], as seen in short-term goals and objectives. Commitment is an overall thought process about a relationship with the organization over a period of time [33], which fits the long-term considerations for forming a strategy alignment. For our investigation then, we consider commitment in lieu of satisfaction as a factor.
IT commitment in our work follows the pragmatic meaning of organizational commitment as an individual’s bond to the organization where he or she works [5]. An organizational commitment attitude has been further defined as “the pledging or binding of the individual to behavioral acts” [25, p. 30]. Bozeman and Perrewé’s [5] research generalized three specific areas of commitment: (1) acceptance of organization goals and values, (2) motivation to put forth effort for the organization, and (3) a desire to maintain organization membership. Thus, the deeper attitude commitment one has toward an organization long-term may be more important in a decision than a person’s commitment toward a particular situation short-term [33]. We consider this attitude of organizational commitment a relevant factor for explaining IT commitment as well. That is, a binding of personal behavioral acts by a middle manager toward IT may have a positive influence on his or her commitment to IT. IT commitment is conceptualized as the acceptance of IT goals and values, the motivation to put forth effort for IT, and a desire to maintain IT membership [5].

A middle manager’s bond with IT through acceptance, effort, and membership could translate into an IT commitment. IT commitment appears to build on a relationship and partnership between middle management and IT management. Alignment exists when the network of human partnerships between business and IT is in place [6]. Middle management IT membership through IT commitment may build on an understanding of middle management’s perception of alignment. Thus, commitment as a relationship over a period of time [33] fits the long-term considerations for forming a business and IT strategy alignment. Hence, to understand the influence of IT commitment on alignment, we investigate the following hypothesis.

H2: The greater the middle management **IT commitment**, the greater the middle management **business and IT strategy alignment**.

### 2.3. Middle Management IT Strategy Awareness

Surprisingly, strategy may lack clarity even within the top management team of the organization, and poor strategy awareness may affect organization performance [18]. Three conditions likely to affect top management business strategic awareness include: (1) the clarity of the strategy, (2) management’s knowledge of the organization’s past and future direction, and (3) management’s ability to make strategic decisions and evaluate them in a competitive context. Strategy awareness declines as the management hierarchy moves downward into the organization [18]. Consequently, we see a paradox around strategy awareness. Though middle management, lower in the hierarchy of an organization, is supposed to operationalize strategy direction [1], some CEOs do not communicate strategy for competitive and motivational reasons or for fear that middle management might move forward ahead of a unified plan [18].

We view IT strategy awareness as the knowledge and understanding middle management has about technology strategy in the middle manager’s organization. Awareness of IT strategy, like business strategy, may weaken with diminished continual visibility of activity from new efforts and change processes [18]. Following Hambrick’s [18] three factors of strategy awareness, middle managers may: (1) not have a clear understanding of IT strategy, (2) be unaware of past and future IT direction, and (3) lack the ability to discern a competitive context for IT strategy. Failure to meet the requirements of any of these factors might be a lack of communication from top or IT management. Awareness can originate from formal or informal communications or events. Specific examples include top management’s select engagement in the business and IT strategy process, the IT management team’s purposeful effort, or social engagement in horizontal networking between middle managers as part of a manager’s organizational role. When middle managers have an awareness of business and IT strategy through knowledge, understanding, and communication, they are in a position to add value to and therefore influence the strategy alignment process. Thus, we examine the following hypothesis.

H3: The greater the **middle management IT strategy awareness**, the greater the middle management **business and IT strategy alignment**.

### 3. Method

We collected data using a field study for a structural equation modeling (SEM). With a research objective of exploratory theoretical development [17], we used a partial least squares (PLS) analysis. Researchers recommend PLS-SEM for the early stage test and validation of exploratory models [20].

### 3.1. Extant Constructs

To find validated constructs that fit the study phenomena in our research, we conducted a literature review. The model’s exogenous variables start with three constructs. The first construct, *Middle Management IT Involvement* measures personal relevance [3] in IT. The involvement view states that IT contributes to an organization’s success [22]. We adapted the construct used for this study from research
Middle Management IT Strategy Alignment is a construct that measures the extent to which business unit managers understand and support IT strategy. The alignment construct is based on the original studies of Reich and Benbasat [37] who investigated the alignment of business units. In this study, we adopted three items from more recent research [34]. The measures follow a congruency and linkage line of questioning on a 5-point Likert response scale from “Strongly disagree” to “Strongly agree.”

3.2. Instrument Pretest and Pilot Test

We developed the survey using a web based tool. For the pretest, six professors and four doctoral students from three universities conducted a critical review of the instrument as judges of the constructs’ face validity. The judges were asked to comment on each constructs’ measurement items. Once we aggregated the comments, we incorporated them into the survey. Then we sent the survey out for a pilot test.

The pilot test consisted of 141 invitations to the business associates of one of the authors. Of those invitations, 38 were completed and each represented a different organization. We conducted a preliminary analysis to test reliability and validity using the same methods as outlined in the final analysis section of this paper. Based on the observed results, we reworded measures to feature more contemporary language and better capture the psychometrics of the construct. Overall, the pilot test revealed acceptable results, so we began to collect data from a larger pool of participants.

3.3. Instrument Distribution

Our respondents were managers with executive master of business administration (EMBA) degrees. Managers are aware of the business units they are assigned, but they may not have detailed knowledge and experience on the rest of the organization. Therefore, we analyzed managers within their assigned reporting structures at the organization or business unit level. A business unit is a sub-organization with its own performance goals and objectives [31]. The informants responded to items that asked for their assessments of middle managers.

We gathered data in October 2013 by administering an electronic survey to EMBA alumni and current students from a university in the southwestern United States. The university’s database consisted of 875 alumni from 1993 to 2013 and students who expected to graduate in 2014 or 2015. In an email to 752 individuals, we explained that the survey was intended to capture their opinion on viewpoints about their organization and that participation was voluntarily.

The EMBA alumni and in-class students were selected because of the years of experience required for admittance into the program. The university’s business school designed the EMBA program for practicing managers who are personally motivated to advance as business leaders. This experience and motivation position an alumnus as a knowledgeable middle manager informant. For example, the business school expects a student to have 12 years of work experience and six years of management experience for admittance into the program.

3.4. Sample Size and Descriptive Statistics

Henseler et al. [20] provided two sample size rules in their guidance on the importance of PLS for analyzing small sample sizes in a study: “(1) ten times the number of indicators of the scale with the largest number of formative indicators, or (2) ten times the largest number of structural paths directed at a particular construct in the inner path model” (p. 292). Since our model had no formative indicators we followed the second rule. The largest number of paths tied to a single construct was three; therefore, a sample size of 30 or greater suited our purpose. We also took into account the recommended sample size needed to obtain statistical power in a PLS-SEM model. To achieve 80 percent statistical power with a 5 percent probability of error for detecting a coefficient of determination of at least .25, we needed 52 cases [17]. Our sample size of 69 was appropriate for this study.

In the retained cases, we found that the calculated average years of work and management experience for
study participants is slightly over 23.5 and 15, respectively. The population was concentrated in two functional areas: (1) production and operations and (2) sales and contract negotiations. These areas represented 44 percent of the total population.

The participants represented three primary industries: (1) manufacturing, (2) finance/banking/insurance, and (3) professional/scientific/technical services with 17.5, 14, and 16 percent, respectively. In total these three groups represented 47.5 percent of the population. For our population, most organizations ranged in size from 1 to 10,000 employees, or the organizations had more than 40,000 employees.

4. Data Analyses and Results

We used the software package SmartPLS [38] to conduct all model testing. The evaluation of the observed results was based on guidelines from Henseler et al. [20] for presenting research using PLS. Based on the PLS formative construct definitions in research, this is a reflective model [20].

In the design of our model, all of the predictive variables originally contained between six and nine items. Having a reflective model allowed us to run and observe multiple factor analyses in an iterative process of reducing by interchanging items until we observed the optimal results from the final measures of our exploratory model. Although researchers validated the constructs in prior research, we reviewed each item’s path and weight for inclusion in this study. We selected the items for the final model based on a series of confirmatory factor analyses. The iteration results were analyzed and, one at a time, starting with the loadings of items that were the furthest below 0.7, we dropped items. Then we analyzed the indicator reliability table to ensure that no cross loadings were closer than 0.2.

Based on our factor analyses, three items remained in the study for each construct. The IT involvement items included questions concerning the participant’s attitude toward value, effectiveness, and good of IT. IT commitment items included actions put forth to support, acknowledge, and engage in IT. The IT strategy awareness items included questions regarding the participant’s knowledge, understanding, and grasp of IT strategy. Additionally, the items for alignment were adopted directly from their operationalized use in prior research [24, 34].

4.1. Measurement Model Assessment

The measurement model includes assessing internal consistency reliability and indicator reliability. Internal consistency is measured in two ways. First, for Cronbach’s Alpha a minimum value of 0.6 is adequate for exploratory research [16]. Second, composite reliability measures the internal consistency and must not be lower than 0.7 for early stage research [30]. The observed values in our testing exceeded the guidelines with a minimum Cronbach’s Alpha of .84 and a minimum composite reliability of .90.

Indicator reliability is the absolute correlation between a construct and each of its manifest variables, which should be higher than 0.7 [20]. The indicators all loaded above 0.7 on their assigned constructs. Validity is measured through convergent validity and discriminant validity. Convergent validity signifies that a set of indicators represents one underlying construct [20]. Measured with average variance extracted (AVE), a value of at least 0.50 indicates that at least 50 percent of the variance is explained by the indicators [16]. All our AVEs are above 76 percent.

We tested discriminant validity in two measurements: Fornell-Larcker Criterion and cross-loadings. The Fornell-Larcker Criterion shows whether the latent variables share more variance with their assigned indicators than with any other latent variable and is defined by the square root of the AVE [15]. For our study, the Fornell-Larcker Criterion for each assigned factor is higher than the correlation observed with all other factors. Second, each indicator’s loading on its assigned construct should be greater than its cross-loadings on other constructs [7]. In all cases, the assigned indicators load higher on their assignment than another factor by a minimum value of 0.32.

4.2. Structural Model Assessment

The structural model includes assessing the reliability and validity tests for the measurement items through the coefficient of determination ($R^2$), the beta weights ($\beta$), and the estimates for path coefficients. The $R^2$ of endogenous latent variables is used to determine values of the inner path model. The $R^2$ is described as substantial at 0.67, moderate at 0.33, or weak at 0.19 [7]. Based on the model in Figure 2, the direct influence was observed as moderate on Middle Management IT Strategy Awareness, which accounts for approximately 40.3 percent of the variance.

The $\beta$ are values of the path coefficient indicating the direct influence of the predictor upon the predicted construct. The inner model values shown in Figure 2 indicate that the relationships between the constructs are all positive. The latent construct IT Strategy Awareness has the greatest influence on Business and IT Strategy Alignment with a weight of 0.35. At the same time, Middle Management IT Involvement has the least amount of influence with a value of 0.04 in its
path to Alignment. This lack of influence from involvement leads us to our next analysis topic.

Estimates for path coefficients show that not all outer model path relationships are significant, which are shown in parentheses in Figure 2. This analysis was based on single direction paths; therefore, we applied a one-tailed test of standard significance. Only two of the three paths are significant. The path that is not significant is that of Middle Management IT Involvement to Business and IT Strategy Alignment. The t-value strength of the relationship in the other paths is significant at the .01 level or greater.

![Figure 2. Base Model](image)

**4.3. Sample Bias**

We designed our instrument with method remedies in mind so that we measured the correlation between constructs without sharing common method biases. Additionally, our inspection of the data revealed a normal data distribution that meets symmetrical distribution guidelines [17].

While the sample is not random, the non-random element is that each respondent was part of the same EMBA program. However, the random element is that the respondents represented different organizations and industries. Given the distribution, it does not appear that a common education influenced the responses. Whereas a random sample is preferred to a non-random one, the data do not provide a concern over bias from surveying only EMBA alumni and students.

**5. Discussion of Results**

We focused on the factors that might influence middle managers' perceptions of strategy alignment. The theory presented through the hypotheses was largely supported, with the exception of the hypothesis Middle Management IT Involvement and its effect on business and IT strategy alignment.

Our investigation began with the factor of middle management IT involvement, which is described as a subjective state during which middle management sees importance and personal relevance [3] in IT. Our factor results provided evidence that middle managers have a personal belief in the importance and relevance of IT—specifically, middle managers find significant value in IT and see IT as a requirement for their effectiveness in the organization. However, our data indicated that IT involvement does not have an influence on alignment. It is conceivable that the lack of involvement influence seen surfaced because middle managers do not see themselves as involved in alignment. Though middle managers believe in the relevance of IT, they do not play a part in the agreement and linkage between business and IT.

Our second factor, middle management IT commitment, is a pledging or binding of middle management’s behavioral acts [25] toward IT. Commitment is seen in middle management’s acceptance of IT goals and values, in the motivation put forth for IT, and in the desire to maintain a relationship with IT. Like prior research, we found that IT commitment is demonstrated through items that measure favorable discussion, acknowledgement, engagement, and use [5] of IT. We found that IT commitment has a high probability of predicting a positive influence (p = .01) on strategy alignment. Porter et al. [33] describe the nature of commitment as a relationship over a period of time. Reich and Benbasat’s [37] study on strategy alignment describes long-term achievements as spanning a number of years and changing how the organization conducts business. As the process of strategy alignment emerges over time [19], organizations rely on commitment through partnerships to complete the process [6]. Our research offered the added insight that middle management’s acts toward IT’s value, motivation, and membership do present a positive and significant influence on middle management IT commitment. This commitment, in turn, positively influences strategy alignment.

Middle management IT strategy awareness is middle management’s clarity of strategy, knowledge of the organization’s past and future direction, and strategic decision-making objectives [18]. Our findings supported the position that middle management IT strategy awareness is a highly significant influence (p = .001) on the alignment of business and IT strategy. This is an interesting finding, since Hambrick’s [18] study describes the weakening of strategy awareness as communication moves down the hierarchy of an organization. Hambrick offers lack of communication on the part of the CEO as a reason for the decline in communication. This stems from CEO beliefs that communicating strategy may create middle management issues ahead of a unified plan. However, middle management is typically charged with the task of operationalizing strategy [1] and is normally
involved in the implementation and formulation of the strategy events [41]. In addition to middle management’s role in operationalizing strategy and participating in strategy events, we reasoned that alignment is a moving target [6] and that awareness is vital to alignment. In our study findings, the process of business and IT strategy alignment was best described by including the influence of IT strategy awareness.

6. Implications

With our research model, we asserted that middle managers have a positive influence on business strategy and IT alignment. We further examined the academic and practice implications of our finding in the following discussion. Academically, we believe our completed investigation supports the above assertion with two contributions. First, using a business and IT strategy alignment model as a theoretical lens, we expounded empirically on IS discipline research concerning the participation of middle-level management. Prior research demonstrates the importance of senior management influence [24] and IT management influence [2] on overall organization performance via alignment. Our work affirms the need to study middle management influence in business and IT strategy alignment as well. Middle managers include department heads with responsibilities that influence a specific functional area or business unit in an organization [12]. Based on our investigation, future studies should include top management, IT management, and middle management roles to avoid a possible research gap in the study of alignment.

As our second contribution, we reintroduced the extant constructs of involvement and commitment into the IS discipline by borrowing theory across the social sciences and within IS. The data analysis results confirm that IT involvement and IT commitment are valuable lenses for examining management, and IT commitment is a valuable predictor of alignment. Additionally, this research highlights the importance of IT strategy awareness as a key factor that can directly impact alignment in an organization. This study shows that IT involvement, IT commitment, and IT strategy awareness expand the IS discipline as factors with face validity and discriminant validity, which suggests opportunities for future research using these factors.

For practice, our study provides implications for ensuring better alignment between business and IT strategy. First, in our results, middle managers believe that IT is personally relevant; however, middle managers become involved in IT because they see the value of IT in completing their own tasks. Perhaps middle managers’ involvement is only focused on IT because it addresses their direct work and they are not focused on the greater work of the business unit or corporation where alignment may lie. Additionally, the lack of middle manager involvement influence on alignment may be the result of a top management expectation and not a middle management belief of relevance. Moreover, an IT involvement influence may not exist because managers are simply not a part of the alignment process. Top management should create opportunities for managers to develop personal relevance in the alignment process and get involved in strategy beyond their own work.

Second, we saw a commitment to IT in the positive behavioral acts that middle managers make toward IT. Middle management actions are demonstrated through positive conversation, acknowledgement of use, and an obligation to engage with IT. These personal actions are seen as relationship builders between middle and IT managers with a focus on commitment over time. These same actions not only develop a positive behavior toward IT but also influence the alignment of strategy. Top and IT management should consider their part in promoting the commitment of middle management toward IT and thereafter be positioned to leverage the positive influence middle managers have on the alignment process.

Third, middle managers often reflect on awareness based on their understanding, knowledge, and engagement in objectives for the organization. Top management is ultimately the communicator of these awareness elements. Above all, managers need to be aware when top management selects them to engage in strategy. Moreover, to provide for the optimal IT strategy awareness of middle managers, top and IT managers should communicate a clear understanding of the organization’s IT strategy, provide managers with an awareness of past and future IT direction, and make clear the competitive context of the organization’s IT strategy. Through these actions, middle management IT strategy awareness has been found to have a significant influence on alignment.

Fourth, concerning alignment, middle managers have a general belief that a link exists between business and IT strategy and that IT’s planning decisions align with business. Still, top management should consider building long-term relationships and targeting communications to increase the middle managers’ commitment and strategy awareness. The focus might start by describing business strategy as a driver for product execution and IT transformation in the marketplace, and IT strategy as an enabler of competitive potential through emerging technology and exceptional service to clients [19]. The overarching implication is that when middle managers are committed and aware, they influence alignment.
7. Limitations and Future Research

Initially, we used more items in our independent variables than we needed to explain the phenomena of middle management and alignment. Now, with a parsimonious design for our constructs, future research might approach the exploratory limitations of this investigation in a manner that meets confirmatory research method guidelines [17]. A confirmatory study may further develop these constructs and contribute to the generalizability of the findings presented herein.

We found that middle management is an important group for explaining the alignment process. Also, prior research found that middle management is important when explaining strategy implementation and formulation events [41]. In consideration of the middle managers’ multiple roles within strategy, future alignment research using IT involvement may warrant the importance of middle manager empowerment [13]. Since our results on IT involvement as a personal relevance antecedent is suspect, future research on IT involvement as an empowerment antecedent may better explain how involvement affects alignment.

Furthermore, a future research contribution may be found by using the success of alignment to measure the deployment of IT projects. Understanding how middle management’s influence on alignment affects IT’s contribution to organizational performance is also an important area for future research.

8. Conclusion

Prior research shows that what happens in the middle management of the organization profoundly influences organization performance [9]. Through our investigation, we observed a positive association between middle management IT commitment and IT strategy awareness and the strategy alignment process. Our research implies a need to consider middle management’s influence on alignment in addition to top management’s influence [35] and IT management’s influence [34] in future research and in practice. All three roles have the potential to influence alignment.

Therefore, we contribute to the IS discipline by adding an understanding of middle management’s role in alignment. In addition, we introduced and validated three antecedents in the study of strategy alignment. Our factors of IT involvement, IT commitment, and IT strategy awareness should be considered when investigating alignment in future studies. In terms of practice, organizations should consider how middle management’s perceptions of alignment might be improved to enhance or better derive value from the ubiquitous and critical business resource of IT.

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