

INTEGRATED MANAGEMENT IN THE BUILDING INDUSTRY
An Interpretative Perspective of Integrated Project Delivery

2016 ANTSHE CONFERENCE PRESENTATION

University of Michigan

DEARBORN, MI

BY

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8 April 2016

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THE JOURNEY

His Story

- Dr. Johnson encountered a number of roadblocks during his early adult life that did not allow him to finish college initially on his scheduled track. Just like most people, life got in his way and sidetracked his educational plans for a while. Conversely, when the opportunity presented itself for him to return to school, he did so with great motivation. Dr. Johnson now holds three college degrees with the last being the Doctor of Management (D.M.)
- This short bio is shared because it paints the picture that Dr. Johnson lived the life of a nontraditional learner for most of his adult life thus far. He feels that this experience is what led him to better understanding the realm of academia and industry. In fact, Dr. Johnson also teaches at the college level and having professional education and professional industry experience gives him a personal balance on how to be flexible where expected but rigid when necessary. Although this presentation is focused on his specialty topical research, his educational journey was founded on the principles of the nontraditional learner and it allowed his doctoral education to successfully conclude from student, to candidate, to doctor....



What is Integrated Management (IM)?

- There are various public definitions: In combination, they focus on a collective undertaking where diverse processes link as one comprehensive management system garnering a deliverable more effective with greater optimization and results

What is Integrated Project Delivery (IPD)?

- As defined by the American Institute of Architects (2007b): “Integrated Project Delivery (IPD) is a project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction.”

What is Interpretative Phenomenological Analysis (IPA)?

- As a type of qualitative research methodology (Smith & Osborn, 2007), this approach explores and details how participants are making sense of their personal and social world. “The main currency for an IPA study is the meanings particular experiences, events, and states hold for participants.” (Smith & Osborn, 2007, p. 1). It takes a further step in phenomenology by giving the researcher a more dynamic role with an ‘insider’s perspective’ on the personal world of the research participant. It involves the philosophies of hermeneutics and idiographic psychology (Smith & Osborn, 2007)

OPPORTUNITY *AND* PROBLEM AND GAP IN THE BODY OF KNOWLEDGE

Opportunity

- The development of IPD is a significant opportunity for project teams to interact and provide integrated project approaches with the involvement of all stakeholders of a project (American Institute of Architects, 2007a)

Problem

- In most practice situations, specific technical management and technical design are two different disciplines. The combination of the two sometimes create an overall management conflict due to designers managing certain parts of their own work and project managers managing all sides of a project. With the advent of IPD, and the need for multidiscipline team members to operate under one contract, an advanced way of managing traditional projects can be more complex (Krippendorff, 2007; Jackson, 2003)

Gap in knowledge

- Due to the expanded processes in integrated project delivery, there is an inherent management gap in the body of knowledge. In order to monitor and control these processes successfully, a more innovative degree of program management and project management seems to be suggested (American Institute of Architects, 2007a; 2013a, 2013b; Project Management Institute, 2007). The literature has yet to sufficiently define this level of management, or strategy as it relates to IPD managerial issues

PURPOSE *AND* RESEARCH QUESTION

Purpose of the Study

- This study's main purpose was to identify the independent and collective experiences of select practitioners within the building industry. These research participants shared their personal opinions, perceptions, and concerns relevant to the utility of integrated project delivery within their respective practice areas. Secondly; it was to develop a better understanding of how this evolving practice approach impacts the technical management and technical design areas of the industry. The rationale is that these issues apply to practice today, which required this research to expand beyond theoretical dimensions

Research Question

- What are the lived experiences of project managers and design professionals in architecture, engineering, or construction firms who practice integrated project delivery (IPD), and is there a need for new or advanced management strategies due to IPD?

RESEARCH PROPOSITION

Qualitative Proposition

- The proposition of this study was that project management practitioners may require advanced knowledge of integrated management strategies related to IPD. This advanced knowledge may be necessary due to changes in AEC practice as a result of the implementation of integrated project delivery demands



THEORETICAL PERSPECTIVE

Theoretical Perspective

There is synergy between program and project management, integrated project delivery, and management cybernetics, but it goes beyond theory.

- Program and Project Management Theory (PPM): The conceptions of project management involves tools, techniques, and discipline practices emerging from socially constructed conversations and deliberate efforts of interdisciplinary practitioners (Crawford, 2006)
- Management Cybernetics Theory (MC): A theory that includes the varied aspects of systems science where systems thinking and systems psychology are incorporated (Jackson, 2003; Krippendorff, 2007). As defined by Anthony Stafford Beer, it is “the science of effective organization” (American Society for Cybernetics, n.d.). Management is about optimizing resources and minimizing waste as much as possible. IPD seeks to optimize operations and value (Kryzhanovskyy & Popov, 2009), which is part of the traditional function of management



FINDINGS: DEMOGRAPHICS, POPULATION, AND SAMPLING

Demographics of Participants

- 4 architects, 2 engineers, 1 contractor, and 1 executive
- 5 Males (62.5%) and 3 Females (37.5%) were selected
- Average age of participants was 44 (8 participants between 21 to 62 years)
- Average years of AEC experience was 21.5 (8 participants between 12 to 38 years)
- Average level of IPD experience was 3 (on scale of 1 to 5)
- 5 of the 8 (62.5%) participants also practice as project managers within their respective specialty disciplines

Target Population and Locale

- Total practice population is 17,500 within the U.S. architectural discipline (*firms*)
- There were 55 potential prospects identified in the metropolitan Detroit, Michigan U.S.A. area with IPD exposure. 20 select participants were short-listed as suitable for this study

Sampling (Pietkiewicz & Pietkiewicz, 2014; Smith & Osborn, 2007)

- 8 total participants [from the 20 prospects and target population above] were chosen as representatives in this IPA study. As suggested by Pietkiewicz & Pietkiewicz (2014) and Smith & Osborn (2007), this sampling is a sufficient representation for an IPA focused study

FINDINGS: DATA COLLECTION AND ANALYSIS AND THEME DEVELOPMENT

Data Collection Procedure

- 10 interview questions were developed for the study and subsequently posed to the 8 qualified participants mentioned on the previous slide

Data Analysis

- Interview data were analyzed in search of patterns of words or phrases by allowing unaltered information to emerge as portrayed by participants
- 4 construct themes arose as the overarching major theme categories

Thematic Development: (Bryman & Bell, 2011; Creswell, 2014)

- 8 sub-themes emerged and were further categorized within the 4 major construct themes (*shown on the next slide*)
- Each theme resulted from the answers provided by the research participants based on the 10 interview questions. Two public documents (IPD Awareness Survey and IPD Case Studies) were analyzed as supplemental data in support of participant insights. It served as a complementary level of triangulation during data collection and analysis

FINDINGS: INTERVIEW DATA THEMATIC

Construct Theme and Sub-theme Emergence (*Summary*)

- **Construct Theme 1:** The benefit and potential for change
 - Sub-themes include
 1. Leadership and Management Practice
 2. Universal Language in Project Integration
- **Construct Theme 2:** The benefit and potential for second-order project integration management
 - Sub-themes include
 1. The Project Management of Integration
 2. Integrated Design Technology Impacts
- **Construct Theme 3:** The benefit and potential for sustainable organizational responsibility
 - Sub-themes include
 1. Trust and Responsibility Factors
 2. IPD Consequences
- **Construct Theme 4:** The benefit and potential for collaborative metrics
 - Sub-themes include
 1. Project Collaboration Forces
 2. IPD Measurement



FINDINGS: INTERVIEW DATA

INTERVIEW QUESTIONS

Select Interview Question Findings

- *Interview Question IQ1:* As it relates to your current understanding of integrated project delivery (IPD), please recount your experience of the benefits of integrating multiple firms, and or, teams of professionals on contemporary design and construction projects?
 - RP07 states that “team work is the best way to complete a construction project”
 - RP08 mentions that “there is an improvement of the quality of the project.” whereas RP06 says “there appears to be less chance of having to redo parts or entire areas of the project.”
- *Interview Question IQ2:* What are your personal beliefs on the disadvantages of executing an IPD project?
 - RP04 talks about “a tendency not to embrace the project with the same sense of ownership as would have been found in a traditional comprehensive project award.”
 - In contrast to RP07’s response to question number one, RP05 mentioned that “if a strong party such as a General Contractor, for instance, dominates the team, a potential outcome could be low first-cost to the detriment of best life-cycle cost.”
 - RP06 made reference to dealing with resistance...especially when smaller organizations are involved

FINDINGS: INTERVIEW DATA

INTERVIEW QUESTIONS

Select Interview Question Findings

- *Interview Question IQ3:* Based on your lived experience, what factors do you feel may deter senior management from agreeing to execute IPD contracts for projects that may otherwise be beneficial to accept? a. Are there risks or liability concerns involved in those factors? b. Are there dilemmas with roles, responsibilities, or scope of services?
 - RP01 stated that “people are reluctant to take on the risks” in terms of senior management’s adoption of IPD: regardless of its positive claims
 - RP03 comments on the difficulty of trusting others as they become part of the project
- *Interview Question IQ6:* What type of standards, processes, or procedures would you recommend to merge better BIM; project management; and traditional practice phasing and execution from a systems perspective? Please think of this within the context of the overall IPD approach as a collective process [in a firm or industry].
 - RP07 and RP08 made comments that denote an edict from upper-management to require the effective implementation of integration
 - RP04 suggests that most firms allow traditional practice approaches to remain in place if the organization feels there is no real need for the change

FINDINGS: INTERVIEW DATA

INTERVIEW QUESTIONS

Select Interview Question Findings

- *Interview Question IQ8:* What types of project management issues have you experienced that infiltrate the organizational or project levels when elements of IPD exists within regular practice?
 - Participants' feel that a number of things infiltrate as project management issues. It seems that communication is one that appears often. Second to this is scope, followed by time management issues and getting all stakeholders to accept and trust the potential of the IPD system
 - RP06 feels that “resistance to try new things is the biggest problem”
 - In support of the literature, this researcher interprets this as an issue stemming from performance, quality, and turnkey expectations by clients' and the unrealistic deliverables projected at times. Clients seem to require very fast deliverables once they make the decision to move forward on a project, and it seems to be a universal issue in many cases
- *Interview Question IQ9:* What are your feelings as to whether practice requires a new type of management approach or leadership structure to be efficient at executing IPD projects more successfully?
 - RP02 feels that the construction manager should be in a leading role
 - This feeling may not be very mutual amongst other design professionals. In industry, the architect is traditionally trained to take the lead role on building projects

FINDINGS: **APPLICABILITY OF FINDINGS**

RESEARCH QUESTION

As declared a few slides back, the research question asked:

What are the lived experiences of project managers and design professionals in architecture, engineering, or construction firms who practice integrated project delivery (IPD), and is there a need for new or advanced management strategies due to IPD?

Representative Data

- While comparing and contrasting various components of the literature, interview data, and document data, synergy is formed through linkages of representative data within the overall study and condensed within the emerged themes
- All eight participants provided highly relevant responses associated with the research question's purpose. These responses [along with passages of data within the public documents] apply to the research question cooperatively
- Results found over the life-cycle of the analysis stage came through deep thought and critical perceptions on the part of study participants as well as associated data found in the two public documents used during data analysis

CONCLUSIONS: IMPLICATIONS OF THE STUDY

Study Implications

- The findings have mostly indicated that IPD is a well-respected change in practice
- Participants have shared many experiences that point to greater possibilities for the delivery approach to grow in the future
- IPD has more work ahead when it comes to identifying the full benefits predicted in practice (American Institute of Architects, 2007a, 2007b)
- The separation of design consulting from construction contracting must be further analyzed if true integration is merged as one (Taylor, 2000)
- The use of a newer type of design technology, such as building information modeling, has created a disruption in practice requiring more integration of teams and services, even without a fully implemented IPD contract (American Institute of Architects, 2003; American Institute of Architects, 2007a; Design-Build Institute of America, n.d.)
- This research denotes the significance of how these types of issues impact the quality of individual and group thinking. If culture, leadership, communication, and management are not in harmony with IPD processes, negative worker mentality and unspoken expectations could result in problematic outcomes (Northouse, 2013)

CONCLUSIONS: **IMPLICATIONS OF THE FIELD**

Field Implications

- Leadership, management, and the expectations of architects, designers, engineers, and builders are rapidly changing—especially from a social perspective (Northouse, 2013)
- As mentioned in the literature, most current day professional workers do not perform well under the old ways of management: i.e., Fredrick Taylor’s scientific management theory (Taylor, 2000)
- Many younger practitioners are becoming more social [mostly due to technology]. This appears to welcome a more collaborative environment. In this type of environment, there is a cultural shift where workers thrive more when given the opportunity to make professional judgments on work tasks (Taylor, 2000). IPD can offer this type of shift
- Workplace socialism, especially when it comes to millennials and their placement of certain work values, is vital for management to understand (Myers & Sadaghiani, 2010)
- Firm leadership will do well to pay attention to these mindsets because with IPD, team environments and mentalities must be managed with a clear understanding of what is expected by subordinates (Mintzberg, 2011)
- This research has both academia and industry application in complexity management

CONCLUSIONS: **IMPLICATIONS FOR PRACTICE**

Practice Implications

- For practice purposes, this study may help firm executives better understand the depth of the business, social and individual necessities that may prevent successful conclusion of IPD projects
- This research impacts practice in areas where executive management may use its findings for assistance in business decision-making processes as well as program and project management concerns on current day projects
- Current practitioners can use this research as a building block for continued investigation and phenomenological scientific approaches that may produce other ideas about future integrated managerial needs. This may also help when using other basic research findings and applying theoretical concepts to industry realities
- Grounded data of IPD, through prior evidence, facilitates future empiricism for practitioners and scholars. This study can act as a starting point for practice cases experiencing road blocks during IPD planning and execution

PRESENTER QUESTIONS

Potential Questions for Audience Participants

- I. Aside from what I mentioned in this presentation, why do you think individual practitioner interpretations are important in IPD or integrated management in general?
- II. What other impacts do you think integrated projects place on management?
- III. Do you think that applied research has a strong place in industry when it comes to organizations working on fast-paced complex projects?
- IV. What are your thoughts on how advanced management practice may elevate the AEC profession, or even the management consulting profession?
- V. Does anyone in this audience feel that professional management should be a regulated profession?

THANK YOU

To ANTSHE and the University of Michigan: I appreciate the opportunity to share my current research related to integrated management and look forward to a long-lasting relationship in sharing our combined body of knowledge in academia and industry practice

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