

INTEGRATED PROJECT DELIVERY IN NORWAY – THE CLIENTS' PERSPECTIVE ON CHALLENGES

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ABSTRACT

The purpose of the paper is to identify and understand the clients' motives for choosing Integrated Project Delivery (IPD) as a Project Delivery Model (PDM) and their experiences of the challenges in adopting it in Norway. This is an overlooked perspective as most studies focus on general benefits and barriers to IPD. The paper draws upon interviews with client representatives. The study reveals six recurring challenges across the projects: diverse motivations for choosing IPD, the necessity of enthusiasts to drive adoption, the challenge of convincing decision-makers that the public procurement regulations are not a showstopper, that agreeing on target prices can be hard and potentially lead to project collapse and that decision-making within the IPD framework can be challenging. The findings show that the rationale for adopting IPD is based on a complex interplay of factors. We conclude by arguing that while enthusiasm is a powerful catalyst for IPD adoption, it must be balanced with rational decision-making and a clear understanding of project-specific circumstances.

KEYWORDS

Adoption barriers, Challenges, Client perspective, Integrated Project Delivery (IPD), Project Delivery Model (PDM),

INTRODUCTION

Norway is in the process of gaining experience with Integrated Project Delivery (IPD). We have, through the work with this paper, identified a total of seven IPD projects. One of the projects is a private project, and the other six are public. The private project is an office building. The public projects are three hospital projects, one water supply project, one road project, and one university campus project. Two of the projects are completed, four are currently in progress, and one was terminated as an IPD project before the start of construction, see Table 1.

Norway's mixed market capitalist economy, along with its adoption of the values and contractual system of IPD from the US construction industry provide the context for this study. Intrigued by the rather slow adoption of IPD contracts in the Norwegian construction sector despite its claimed benefits, our purpose is to explore the current drivers behind the challenges of IPD adoption in Norway. By focusing on the Norwegian market, this study aims to provide

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valuable takeaways for local and international stakeholders. Readers will better understand the motives behind IPD adoption, their perceived benefits, and the obstacles encountered during implementation. The decision to use IPD (or any other PDM) is at the client's sole discretion. To understand why IPD is or is not used, we must, therefore, take the client's perspective. Why have these Norwegian clients chosen to use IPD? And what have they experienced thus far? Guided by these questions, we have interviewed six client representatives⁴ who have been engaged in one or more of the seven IPD projects. The paper summarizes our main observations from these interviews.

Table 1 Identified IPD projects in Norway - to date

Project Status	Project	Location	Key Characteristics
Have not yet started procurement	Campus building NTNU	Trondheim	The NTNU campus project aims to build a 92,000 m ² new construction and 45,000 m ² of renovations between 2015 and 2028. The budget allocated is USD 1068 million.
Have not yet started procurement	St. Olavs Hospital	Trondheim	The St. Olavs Hospital project aims to build a psychiatric facility of approximately 197,500m ² and a somatic care facility of 6750m ² , scheduled to be finished by 2030, utilizing a budget of USD 260 million.
Have not started procurement	New Water Treatment Plant	Oslo	The new water treatment facility project aims to construct a 19-km pipeline, valued at USD 2477 million, with completion expected by late 2027.
Have not started procurement.	Office building	Oslo	The Lilletorget project aims to transform an existing building in central Oslo into modern office space at a cost of USD 25 million. In progress since 2022 and expected to be completed by 2027.
In the end, a success	Tønsberg Hospital	Tønsberg	The Tønsberg Hospital built a 12,000 m ² psychiatric facility and a 45,000 m ² somatic facility, with a total budget was around USD 335 million. Completion was from 2019 to 2021.
Completed	E6 Road Project	Trondheim	The E6 Kvål-Melhus is a 7-kilometer highway development project, costing around USD 98 million and completed in 2022.
Collapsed. Could not agree on Max price	Møre og Romsdal hospital	Møre og Romsdal	The Møre og Romsdal hospital is a 60,000 m ² new hospital and 5,000 m ² of renovations that were expected to be completed by Autumn 24, with full operations by Spring 25, costing around USD 411 million.

The limited number of IPD projects does not necessarily mean that the level of collaboration in Norwegian construction is low. On the contrary, there is a long tradition of relatively high levels of trust and collaboration in parts of the construction sector. For more than 25 years, directly negotiated design-build contracts at a fixed price have been widely used in the private construction sector in Norway. Being procured without competitive bidding, these contracts are based on a substantial level of trust and collaboration between the client and contractor.

The contractual conditions in these contracts are based on the Norwegian standard design and build contract (NS8407:2011). Also, so-called collaborative contracts (in Norwegian:

⁴ In addition to being client representatives, our interviewees are among the main Norwegian IPD industry experts.

Samspillskontrakter) are used, especially in public projects. These contracts are IPDish, meaning that they contain well-known elements from IPD. They are typically two-party agreements between the client and a design and build contractor, based on NS 8407:2011, and adjusted to comply with the specific PDM. The economic compensation to the contractor can be cost-based (often with a target or maximum price) or fixed.

Part of the explanation for the low adoption of IPD in Norway so far can be, of course, due to the existence of these relatively well-established project delivery models with substantial levels of trust and collaboration. However, we will not go into this wider question that would require a very different methodological approach. Literature does not offer any agreed list of characteristics of a PDM must have in order to be called IPD (Nwajei et al., 2022). Therefore, no exact line can be drawn between IPD and the mentioned collaborative contracts, and we will not attempt to do so in this paper. Instead, we have limited our study to the seven projects that present themselves as IPD (or in Norwegian: *Integrert prosjektleveranse – IPL*). Using this criterium, our sample contains all identified Norwegian IPD projects.

THEORETICAL BASIS

The choice of PDM has been a critical topic in various literature genres, with a significant focus on construction and project management in recent years (Ahmed & El-Sayegh, 2020; Klakegg, 2017a, 2017b; Lloyd-Walker & Walker, 2015; Derek Walker & Steve Rowlinson, 2020). For example (Ahmed & El-Sayegh, 2020; Lloyd-Walker & Walker, 2015) argue that the choice of a PDM is due to the evolving needs of industry and the more nuanced and comprehensive selection methods to navigate the complexity of construction projects. It is, therefore, key to impacting project success and creating the framework for value creation (Klakegg, 2017a; Moradi & Kähkönen, 2022).

IPD emerged as a new form of relational contracting, evolving from partnering and project alliance methods. It emphasized the development of collaborative, integrated, and productive project teams (Lahdenperä, 2012). Toyota's kaizen principle of continuous improvement is reflected in IPD and relational contracting models, which encourage ongoing collaboration and problem-solving throughout the project lifecycle (Shang, 2014). Building on these collaborative principles Frydlinger et al. (2021) in their book “Contracting in the New Economy,” propose that collaborative contract creation emphasizes building a strong foundation for partnership before negotiating specific deal points, aligning with the core tenets of IPD.

Owners of projects are looking to use integrated practices such as IPD because of some perceived benefits, for instance, improved decision-making, improved contracts' documentary, improved pre-construction estimations, better timing and provision, more coordination, cost-effectiveness, and improved documentation of project closing phase (Alinezhad et al., 2020). Consequently, the owner's representative represents the owner, whose focus is on delivery and the business case. However, the success of IPD also hinges on effective strategic planning and risk management. While not specifically discussing IPD, Flyvbjerg and Gardner (2023) emphasize the importance of aligning stakeholder interests and managing project dynamics to achieve optimal outcomes; furthermore, people, culture, and collaboration are key ingredients for a successful IPD (Derek Walker & Steve Rowlinson, 2020).

In the context of procurement utilized in public projects, understanding various procurement types is essential for optimizing project outcomes (Bølviken et al., 2023).

Following on from this is the fundamental basis of classical theory. In the general economics and corporate governance literature, the understanding of agency theory is that relationships and the associated costs are argued, and there is no consensus on the best way to align the interests of principals and agents (Jensen & Meckling, 1976). While agency theory highlights the conflicts of interest and the need for monitoring and incentives, stewardship theory, as proposed by Donaldson and Davis (1991), offers an alternative perspective. Stewardship theory

argues that managers are motivated by intrinsic rewards and a sense of duty, suggesting that a collaborative and trust-based environment can align interests more effectively than traditional control mechanisms.

METHOD

The method used is a qualitative case study approach (Yin, 1994). We conducted semi-structured interviews, which allowed for flexibility and adaptability during conversations, with six project owner representatives to provide context and insights into the projects, the owner's motives for choosing IPD, and their experiences thus far.

DATA COLLECTION

The interviews were conducted over ten months (January 2023 -October 2023), each lasting between one and two hours. Five interviewees were directors or project managers, and one was a lawyer who advised clients on project strategy and choice of project delivery models. All the interviewees had been or were directly involved in one or more of the seven identified IPD projects. While there were seven Norwegian IPD projects, only six interviews were conducted because one project collapsed. Additionally, the location of the PhD study in Norway, and the ease of data accessibility also played a significant role in the choice to focus on Norwegian projects.

Our interview data was collected using open-ended questions from an interview guide and probing interesting responses. In the next chapter, we present what we have found to be the most substantial issues brought up by the interviewees. The issues were identified using a combination of induced-based observations and data coding. In the discussion part of the paper, we supplement this with published articles and publicly available material and news about the projects.

DATA ANALYSIS

All the interviews' data were analysed using the framework analysis method (Gale et al., 2013). This method consisted of 5 steps: 1. Transcribe audio files verbatim (Audio files in Norwegian) and translate data into English. 2. Sort the data and inductively "open code" the data into themes (e.g. "trust") and collate the overlapping comments. 3. Develop a coding framework which systematically applies the framework to all transcripts into thematic matrices and rows, which allows for comparison and contrasting of themes across different projects and perspectives. 4. Identifying recurring patterns from the interviews, we derived first order themes (e.g. "motivation", procurement barriers) which were then organized into broader topics based on and their similarity and relationship. 5. Finally, the broader topics were synthesized and grouped into second order themes (e.g. "need for enthusiasts, adoption drivers") by grouping related dimensions.

MAIN FINDINGS FROM THE INTERVIEWS

IPD ADOPTION AND MOTIVATION

The clients' motivations for choosing to go for IPD can be divided into two groups: general considerations and considerations specific to the project in question. The general considerations are shared by two or more of the clients and are not specifically related to this or that project. The main general considerations we identified through the interviews were:

- *Conflict fatigue.* Three of the interviewees say they are tired of handling the high levels of conflict often found in major construction projects and believe that IPD can

be a game-changer, clearing the ground for collaboration, common understanding, and mutual respect.

- *A wish to innovate and try something new.* The construction industry is seen as “conservative” and in need of change. One of the clients was a publicly owned client organization established by the government with the explicit task of challenging the existing state within the area in question. To do this, the organization has been actively testing different new concepts, including IPD. Some of the interviewees are change-oriented people. These people have earlier been positive also to change initiatives other than IPD.
- *A wish to be a first runner.* Three clients and individuals have taken it upon themselves to be change agents, introducing something new into the Norwegian construction industry.
- *Influence and change the process.* Two clients were driven by IPD's ability to influence the process and enhance design quality through the early involvement of all parties.
- *Risk management.* Two interviewees specifically discussed IPD's potential to manage risks in projects through shared risk and reward mechanisms.

The project-specific considerations are related to single projects. They were identified by first asking the client about the main strategic challenges in the project and then if there was a connection between these challenges and the choice of IPD as the project delivery model. The main specific considerations we identified through the interviews were:

- *To get the project approved by the building authorities.* Due to the height of the building, the client expected the approval process to be challenging. The strategy to handle this challenge was to integrate client, design, and contractor competence.
- *To handle very limited access to the construction site.* The project was one of several sub-projects (of a mega-project) sharing very limited access to be used for both outbound (rock from tunnelling) and inbound (materials and technical equipment) logistics. The reasoning was that having the client, designers, and main contractors around the same table would make finding good ways to handle the challenge easier.
- *To deliver the project at a lower cost compared to similar projects.* The project was a motorway project. These projects are budgeted based on the price per meter from past project experiences. The client was under political pressure to deliver “more road for the money” and was searching for ways to achieve this. Expectations were proposed (by enthusiasts) that this could be achieved through IPD.
- *To handle decision-making.* The project is the design and construction of a part (centre) of a regional hospital. Handling the decision-making process is seen as one of the major challenges. Establishing an integrated organization with shared understanding is seen as a way to handle this.
- *To handle multi-faceted uncertainty and complexity.* The project is a campus development project at one of the major universities in Norway, where two campuses are merged into one. Important uncertainty and complexity factors in the project are related to national politics, university politics, budget restraints, user wishes and needs, and technical challenges. IPD was seen as a way to handle these.

It is important to note that all but one of the interviewees considered IPD to be valuable. One interviewee was critical of the intended purpose and fit of IPD in projects, indicating that the alignment of project goals should fit with the function of IPD.

A NEED FOR ENTHUSIASTS

A limited number of enthusiasts have been the driving forces behind all the Norwegian IPD projects. As described above, the wish to innovate and to be seen as a first runner has been part of the motivation for choosing IPD in the projects. This attitude is typical for these enthusiasts. They appear to be driven by a strong personal conviction that IPD represents a big step in the right direction and want to be part of transforming parts of the construction industry. It is hard to see IPD getting off the ground in Norway without these enthusiasts.

Enthusiasts exhibited key traits, such as their openness to change, their proactive approach and their high-risk, high-reward attitude. This readiness to step into the unknown and a willingness to take calculated risks in pursuit of improved project outcomes gave them their strong belief in the potential of collaborative project delivery approaches.

CONVINCING THE DECISION MAKERS

In all projects, the decision to use IPD as a project delivery model has to be grounded in and approved by a board. The boards typically consist of people with diverse backgrounds and limited detailed insight into construction. Some organizations also have traditional project delivery models as (implicit or explicit) preconditions in their standard project model⁵. Parts of IPD are counter-intuitive and in conflict with widely established principles for cost and risk control and project governance. In any case, trying something new represents a risk.

Four out of six of the interviewees see this as a substantial challenge. They must educate their superiors and make them share or at least accept their enthusiasm. For the board, the project represents means to an end, and their main focus will be on the end, not on the means. Therefore, their attention to the more intricate sides of project organization and management can be limited.

PROCUREMENT PRACTICES AND CHALLENGES IN IPD

Six out of seven projects are public, governed by public procurement rules⁶. Our interviewees see public procurement rules as “challenging, but manageable” and that they are not necessarily bigger when procuring an IPD project compared to projects using other project delivery models. One of the interviewees found that the most challenging part of the public procurement rules is that the client is not allowed to adjust the process and the criteria after the process has started. Once the procurement process has started, the client cannot address any issues or reformulate the requirements, even if new insights are gained. The consequence is that the client is stuck if he, during the process, discovers that he has overlooked something and can end up being forced not to accept the best offer. This is, however, a general problem and is not specifically related to IPD procurement. Best Value Procurement (BVP) was earlier a relevant option in IPD procurement (Bølviken et al., 2023) but is now seen as of less relevance. The reason is that the ban on negotiations was lifted some years ago.

CHALLENGES IN SETTING THE TARGET PRICE

In all seven projects, the approach was to procure the IPD team before the target price was set, work out the price together with the team, and then agree on it. In all three projects that had reached this far, to set the target price had turned into a substantial challenge: one project collapsed due to lack of agreement on the target price, one project was close to collapse, and the last suffered severe hardships but managed to get through in a constructive way.

⁵ An organization's project model is a standard description of how the projects of the organization are to be structured (Klakegg, 2017b), see also Nwajei et al. (2022).

⁶ The Norwegian rules for public procurement are in line with the rules of the European Union.

CHALLENGES IN DECISION MAKING

Two of the interviewees focused on the challenges in common decision-making. As expressed by one of them: “It could be that the decisions are better, but the process of taking them is certainly challenging”.

PROJECT STATUS AND SUCCESS

At the time when the interviews were done, the status of the projects was as follows: Two of the projects had been completed, one was doing preliminary construction works, two were in the planning phase, and one was terminated as an IPD project (due to lack of agreement on the target price and is now continuing with the use of a traditional design-bid-build project delivery model).

Of the two completed projects, one was seen by the client as a success, the other was not. The client of the latter project did not see it as a success because, according to the client, the project's conflict level had been high, and the envisioned cost reductions were not realized. This client decided not to use IPD in forthcoming projects.

DISCUSSION

IPD ADOPTION AND MOTIVATION

In the interviews, it emerged that the strategic reason for adopting IPD in Norway varied based on client perspectives. While several key themes emerged, it is evident that the rationale for IPD implementation varies among stakeholders and projects. While the interviewee's personal attitudes tended to be curious and open to change, their motivation for choosing IPD was not limited to the project in question but was partly grounded in a more general ambition.

What drives the choice of PDM? Senior (2012) suggests that a complex interplay of rational analysis, values, and prior experience influences decision-making in this context. Rather than empirical arguments, a predominant motivation expressed by the majority of interviewees was a strong desire to challenge the status quo and explore more efficient operational methodologies in the construction industry. This aligns with the broader trend in the sector towards more collaborative and integrated project delivery approaches (Nwajei, 2021; Derek Walker & Steve Rowlinson, 2020). There was also a clear intention to be seen as one of the first in Norway to successfully use a collaborative project delivery model. The desire to be first-runners was driven by factors such as reputation and to be seen as forward thinking in an industry which might give them the opportunity to shape future practices.

Senior (2012) introduces the concept of "enriched options" in decision-making, which can be applied to IPD. This leads to stronger reactions of adoption or rejection depending on how it is framed to decision-makers. In other words, the decision is based on rational choice to maximize value, and decision-makers will choose options that offer the highest expected utility (calculating the weight of both the costs and benefits of potential outcomes against their probabilities). However rational choice in theory is a good way to understand decision makers, real-world decisions are often influenced by inclinations and opinions. Senior (2012) further notes that features perceived as not adding value to the current needs can be rejected, even if these features do not carry any cost. This insight suggests the need for a gradual introduction of IPD possibilities will allow decision makers the chance to assess value incrementally, thereby reducing the risk of not recognizing immediate value.

Human rationality is bounded by access to information and cognitive capacity, and is hence, not capable of making perfectly rational decisions in all situations (Simon, 1955). Moreover, it is important to recognize that natural human tendencies can distort rational outcomes, such as intuition, biases and psychological factors as they all play significant roles in how people make

choices (Senior, 2012). This means human decision-making will often be influenced by factors beyond rationality. The literature also emphasizes that implementing IPD successfully requires initial enthusiasm and a commitment to long-term cultural change within organizations (Aslesen et al., 2018). The desire to be a "first mover" could lead to superficial engagement with IPD principles if not supported by a deeper understanding of collaborative practices.

Furthermore, early adopters can encounter significant obstacles or failures. If they receive criticism, this will dampen their initial interest and motivation to be a pioneer in adopting IPD. If the alignment of project goals does not fit with the intended function of IPD, stakeholders may become disillusioned. In other words, enthusiasts may shift to a critical stance if IPD does not function as intended, for example, failing to gain the benefits by fostering true collaboration.

A NEED FOR ENTHUSIASTS

So, what is the actual driving force for adoption? In Lean Construction literature, motivational drivers influence the decision to adopt lean principles and practices. For example, according to the Toyota Production System, a cornerstone of lean literature, Toyota's intrinsic motivation was respect for people and customer satisfaction, which was instrumental in its lean practices (Shang, 2014). However, our study indicates that the key motivational drivers of the IPD enthusiasts were their openness to change their high-risk, high-reward attitude and their ambition to contribute to changing the construction sector in a more collaborative direction.

Our findings suggest a pattern among IPD enthusiasts: they often presented seemingly rational arguments for IPD adoption without substantial evidence. This approach may reflect a common misconception in parts of project management — the assumption is that a successful project delivery model can be universally applied to achieve similar results, regardless of project-specific factors. This observation aligns with Flyvbjerg and Gardner (2023) argument that decision-makers are often unaware that different projects have different success rates. The assumption that IPD can be justified purely through rational argument overlooks a fundamental characteristic: projects are unique and the relationships between the choice of project delivery model and actual project success are complex and challenging to establish.⁷

CHALLENGES IN DECISION-MAKING

One key finding of the study is that enthusiasts, often the owner's representative, have the challenge of selling the idea of IPD to the top decision-maker of the owner (the internal board and top management). This presents an internal conflict for the owner's representative, acting both as an agent and a principal (Eisenhardt, 1989). The critical argument here is that agency theory (Jensen & Meckling, 1976) fails to thoroughly discuss the consequences of contemporary project management, which often involves more nuanced roles. Additional complexities are introduced to the agency relationship, potentially affecting monitoring costs for the principal, conflicting incentive structures, and altering the overall agency costs.

Donaldson and Davis (1991) insight on stewardship theory offers an alternative perspective to agency theory, stating that managers are motivated by their intrinsic values and can act as responsible stewards when they are aligned with organizational interests rather than solely pursuing self-interest.

In practice, this study highlights that enthusiasts have to convince the decision-makers to implement IPD. This requires educating, overcoming resistance, and reshaping the risk perceptions of stakeholders. The boards are often composed of individuals with diverse backgrounds and limited construction expertise, which requires educating decision-makers about IPD benefits and principles. This involves not only conveying technical details but also

⁷ This again raises the questions of what an empirical founding for such a "rational" argument could consist of and if it can even be established, but this lies beyond the topic of this paper.

adopting a mindset that embraces collaboration and innovation. Since organizations are entrenched in traditional project delivery models that conflict with the collaborative nature of IPD (Allison et al., 2018), an effort to educate is required, otherwise scepticism may prevail and hinder the acceptance of IPD. Perception of risk also plays a pivotal role (Cheng & Johnson, 2016). Unfamiliar with the process of IPD the boards may view its adoption as inherently risky. This can lead to a reluctance to embrace new methodologies; in other words, they prioritize being risk-averse over the potential to innovate.

PROCUREMENT PRACTICES AND CHALLENGES IN IPD

The evolution of procurement practices in IPD projects reflects a nuanced shift in approach. While the principles of early risk management and qualification-based vendor selection remain valuable (Narmo et al., 2018), the diminishing prominence of Best Value Procurement (BVP) in the IPD contexts in Norway is noteworthy (Nwajei & Kalsaas, 2020). This change is primarily attributed to the lifting of the negotiation ban in public procurement processes, allowing for more direct discussions with potential contractors (Lov om offentlige anskaffelse, 2017).

It has been claimed by several authors that wide public use of IPD will require a change in the rules for public procurement (Bølviken et al., 2023), but our interviewees do not support this view. However, Frydlinger et al. (2021) argues that in order to establish a framework that encourages healthy competition, effective collaboration should be used during the procurement process as it sets the precedent for future relations. While the selection process in procurement is highly competitive, the chosen team is expected to transition this competitive spirit into a collaborative one during the project execution. The question is to what degree this is realistic.

CONVINCING THE DECISION MAKERS

The difficulty in reaching an agreement on the target price reflects the complexities of collaborative decision-making in IPD projects. While collaborative, consensus-based decision-making is a foundation of IPD, aiming to foster better overall project outcomes, the process of establishing a target price can become a critical point of tension and, in some cases, collapse. This aligns with American Institute of Architects (2007) statement that significant consequences flow from exceeding the target price. The struggles experienced in these projects raise an important question about the implementation of IPD principles as the whole idea of a target price is to align objectives (Mesa et al., 2016).

According to Flyvbjerg and Gardner (2023) the project types represented in our study have a mean cost overrun of between 16% and 62%. After the collaboration process leading up to the target price, we can expect the uncertainty to be less than the average in Flyvbjerg and Gardner's material, but the uncertainty is still substantial. This raises a pressing question about the realism in the cost estimates used by the clients in these negotiations.

If the principal or agent withholds information from the other, neither party will benefit when setting the target price. In Agency theory, this is a problem of information asymmetries (Akerlof, 1970; Eisenhardt, 1989). To reduce information misalignment, full transparency, involvement, and communication are needed when discussing the target price. However, stakeholders have to transition effectively from competitive mindsets to truly collaborative ones in the context of IPD, especially when setting target prices. Our findings indicate that potentially new strategies for aligning stakeholder expectations early in the project and careful management of the target-setting process will help realize the benefits of IPD.

CONCLUSIONS

Is the choice of Project Delivery Model (PDM) based on rational choice, or is it influenced by other factors? In Norway, the motivation for IPD reveals a complex interplay of motivations,

challenges, and the interaction of organizations. The small group of IPD enthusiasts in Norway may be driven by the strong belief in the potential of IPD based on the various success stories from IPD case studies. While there is an assumption that choosing IPD increases the chances of success, data supporting this claim is limited, especially in Norway. Our findings show that the rationale for adopting IPD is based on a complex interplay of factors, including tackling issues in the industry, project-specific challenges, and fulfilling organizational aspirations. Rather, what seems important is that once an IPD approach has been chosen, it requires the engagement of all parties ("spreading the enthusiasm") and that the approach is followed to the fullest extent.

Thus, leadership plays a crucial role in the successful implementation of IPD, and strong advocates of IPD can significantly influence project outcomes through their ability to persuade internal boards and top management. While enthusiasm is a powerful catalyst for IPD adoption, it must be balanced with rational decision-making and a clear understanding of project-specific factors. In other words, IPD should have a strategic fit that aligns with the organization's vision and goals. However, enthusiasm for IPD is not universal, so adoption of IPD will require something more. To convince the decision makers (getting board approval) requires educating them on the benefits and principles, but also on the barriers, regulation and culture resistance of IPD in the construction industry. Without such efforts, scepticism may prevail due to unfamiliarity with IPD processes, leading to risk aversion and reluctance to embrace innovative project delivery methods.

RECOMMENDATIONS FOR FUTURE IPD PROJECTS

This study is limited to the perspective of Norwegian clients and may not fully capture the views and experiences of other stakeholders in the projects. Our findings are also specific to the Norwegian context. To what degree they can be generalized to other countries is an open question.

Building on these findings, we propose several avenues for future research both internationally and within Norway:

Internationally: 1. Further studies could study IPD client's motivations, expectations and experiences. This is because this is the key to IPD adoption. 2. Researchers could focus on studying how practitioners and organisations develop strategies for IPD adoption in different countries, particularly in the context of the challenges observed in establishing target prices post-procurement in IPD projects. 3. Researchers could also examine the legal frameworks, procurement processes, and cultural factors that influence IPD adoption.

In Norway: 1. General follow-up research on ongoing IPD projects; 2. Analyze the process of setting up and determining the target price and the influence of the target price on the parties' behaviour during project execution 3. Investigate case studies of collapsed Norwegian IPD projects, including the factors contributing to the collapse and the performance of the non-IPD project now being executed, compared to what could have been expected from the IPD project. 4. Study Norwegian practitioners and organisations' challenges in IPD adoption in understanding the complexities of target price negotiations.

This research approach aims to enhance our understanding of the complexities surrounding IPD implementation, offering critical lessons for improving future IPD implementation.

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