COPING WITH THE COMPLEX IMPLEMENTATION OF LARGE-SCALE DEVELOPMENT PROJECTS: CRITICAL QUESTIONS ON THE INTEGRATED PROJECT DELIVERY METHOD

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Abstract

Our cities and societies are getting larger and complex more than ever before. As a result, urban professionals are seeking new tools and methods to cope with the contemporary urban issues from planning to the implementation process. The challenges are becoming more intense when discussion goes into large-scale development projects. These are often measured with high risks of implementation, extreme cost of construction and a large number of actors involvement. Nowadays, the use of the Integrated Project Delivery (IPD) method in large-scale projects has been deployed internationally as an efficient model among architecture, engineering and construction firms. This model is not only esteemed to enhance collaboration, sharing the project s risks and rew its stakeholders, but to serve as a successful tool for decision making and planning process. Drawing on research of this method, the paper examines the use of IPD in implementation process, not specifically pointing out on the efficiency of this model in technical terms, but instead questioning the effectiveness of IPD within different urban contexts. The paper considers the longstanding planning literature regarding implementation research and strategic spatial planning countering the typical collaborative project such as IPD practice. Furthermore, the case of the city of Abu Dhabi vision 2030 and Masdar City as an extreme case of using IPD method is examined. At the end the paper suggests that the use of IPD in various contexts has to give special attention to the actual development of place and involve the knowledge of local actors.

1. Introduction

Recently, the involvement of multi- actors in planning and implementation of projects is increasing due to the rapid growth of cities and likewise in the complexity of societies. Moreover, need to consider the environmental, social, political and economic concerns are becoming increasingly influential in policy and decision makers agendas. In favor of boosting the economic crisis or exposing the political-economic power among cold-war global politics, cities governments and relevant entities have initiated in participation to urban global competitions. Year by year, cities around the world, regardless of their government system, try to be the winner of this worldwide large development war by using these large scale projects as an urban growth machine. According to Molotch (1976), most city governments can be seen as growth machines. This puts localities in competition with each other in ways that affect the vast majority of their citizens and environments. Certainly his point of view is more applicable in the social science realm, but the idea of using the term *growth machine* in built environment and urban land-use is significant in urban planning discourse. Hence, this paper applies the term of urban growth machine also with reference to large-scale development projects as the main generator of cities transformation. It is important to that this study does not intend to argue the necessity of large-scale projects in contemporary cities, neither to discuss the opportunities or risks of the role of mega projects in the development. Instead,

the main concern of this paper is on the complexity of the implementation in urban projects by oversimplifying the urban issues by using a fixed project delivery method, namely IPD. This method is being applied world-wide by urban professionals to manage complexities of projects implementation, especially in large infrastructure projects. The birthplace of IPD is the U.S., a federal republic government system where the decision making power is divided between the federal government and the government of the individual states. Its practice has been done by an elite group of international architecture, engineering and planning firms based in North America and Europe sometimes referred to as the global intelligence corps (GIC). Given that hypothetically this method might work well in the American cities context, a quick research and sample studies verify other aspects[1].

The main argument of this paper will be supported by the planning literature on implementation research mostly discussed by Wildavsky (1973), using the partisan mutual adjustment concept of Lindblom (1959), and also having a quick review of Patsy Healey s analysis on the transnational of planning ideas and practices (Healey, 2013). Considering this theoretical background, the discussion is focused concisely on the spatial strategic planning of Abu Dhabi and the future vision provided by the city government. The author believes that having the knowledge of the original stories of the strategic planning of the city, how it travels and is translated from the exogenous planning, in the way Healey (2013) describes, is one of the fundamental features of implementation studies, especially for large urban development projects. This study also highlights the importance of the government system of the city since it is one of the main key deciding factors for plan implementation. The final part of the paper discusses briefly the strategic planning of Abu Dhabi Vision 2030 as a federal monarchy and the extensive use of IPD through many GIC firms for their large development projects.

2. Urban Strategic Planning: Convention to Invention

In recent years, creating a strategic plan has become the mainstream among cities in order to increase their visibility in national and global milieus. Specifically developing a long-term vision with a strategic approach and introducing innovative technologies are becoming the key feat considerations. According to Albrechts (2004) only some of these strategies are strategic and it is impossible to do everything that needs to be done. Moreover he emphasizes that being strategic requires prioritizing decisions and actions as well as having a selective focus. However, the judgment process and being selective among the wicked problems as discussed by Rittel and Weber (1973) seems a crucial task in which to frame the strategic plan.

As discussed by Healy (2006) and Balducci et al (2011) the literature on strategic planning is expanding and different strategic spatial planning methods have been introduced depending on the political system, economic development, and social context of the nations. However, the question that Alberchts and Balducci (2013) address in their recent article on practicing strategic planning is still pending: *to what extent are the strategic plans different from traditional planning?* This question is becoming more noticeable as new technologies and innovative approaches such as IPD are introduced to the implementation phase of a plan, and the plan becomes the flagship and model to follow, whether it is strategic or not. In both strategic planning and project management literatures, the outline of IPD as a decision making method is delineated in a linear model. In project management, specifically in project development, linear thinking is a predictive approach as IPD. This project delivery method is

[1] The case of Caltrans District 7 HQ in Los Angeles designed by architect Pavel Getov used IPD reveals the limitation of this method in the U.S. in terms of lack of the involvement of non-experts, final users, and citizens in the planning and implementation process (Archdaily, 2011).

an approach to facilitate and optimize this predictability in the most efficient way. Besides linear thinking, IPD is also recognized as a traditional-waterfall-method. In other words, it is a sequential design and implementation process that flows steadily downward like a waterfall (figure 1).

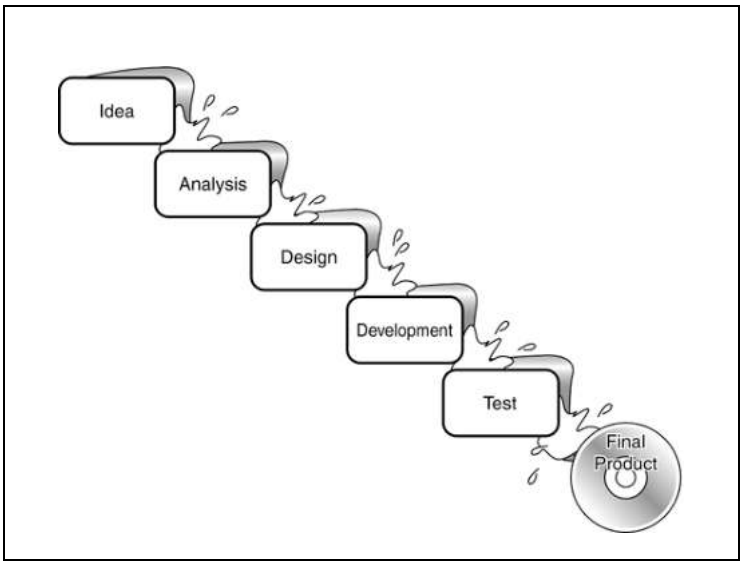

Figure1- Traditional waterfall method (Inqbation, 2013)

While this study moves forward into the use of IPD, it recognizes that this method has common features of rational linear models in planning literature: the process of realizing an issue to making logical decisions in an orderly path in a predictable and stable situation. However as Schon (1971) has argued, based on the rapid change of our society, traditional planning instruments seem to be ineffective as they are designed for situation of stability, not for cities constantly in processes of transformation. The other criticism on IPD is related to the famous discourse of uncertainty in planning issues as discussed by Christensen (1985) three decades ago. Thus, how does this new method (IPD), within its defined instruction and its inherent traditional planning structure, navigate the unpredictable urban issues? And to what extent can cities develop new innovative strategic plans since the new emerging development method is still far from being a strategic one?

In the process of analyzing a phenomenon, system or even a tool, it is crucial to clarify the point of view of the observer. The discourse mentioned above regarding the framework of IPD and its position in planning model, can be seen with another perspective, one primarily cherished by engineers, architects and project managers. Their analysis of IPD is referring to the internal framework in a way to be actually measured as a successful communicative interactive model. In project management literature, IPD would be considered as an adaptive project system[2], which helps perfectly to achieve an efficient result in terms of time and cost of projects with the minimum risks. In this manner IPD holds a strategic attitude managing the project and system, rapidly respond to changes by adopting its initial stable configurations. It is true that with this point of view, IPD is very flexible, responsible, innovative and adaptable but all of them fit within the framework of traditional planning models already proved to be ineffective as discussed in urban planning literature by the scholars mentioned above.

[2] Adaptive project system also known as adaptive resource management (ARM), is a structured, iterative process of robust decision making in the face of uncertainty, with an aim to reducing uncertainty over time via system monitoring (Holling, 1978).

According to Healey (2013), historically, the concept of the creation of strategic planning and the idea of transnational flow of planning was examined in three fields: actor-network theory, institutional versions of policy, and circulation of knowledge. This paper is using the concept of circulate the Knowledge in terms of traveling a new technology and method (IPD) into different destinations and its translation into different urban contexts. Later she mentions the best example of current urban policy modification that can found in cities like Barcelona, Freiburg and Vancouver (Healey 2010, 2013). Such concepts of circulation, especially in large-scale urban projects, raise critical questions of the adaption of the plan considering the new urban context.

3. Plan to Implementation: Long Adventure

As mentioned earlier, our cities are becoming more complex and the process of making a meaningful place is neither to build the single artefact nor to use strategic spatial planning, which merely makes it possible to follow if it is not under conditions of complete information as Lindblom (1959) emphasizes on it. Moreover, having a really well written and great plan doesn t guarante chance of success of the plan on the ground (Pressman & Wildavsky, 1973). Indeed, the process of implementing is the significant stage of a project and certainly lots of external actors are involved in the process of the built environment (Werner, 2004). Pressman and Wildavsky (1973) express that even if each step in the implementation of a policy seems like a fixed-task of series, certain to succeed, it can be almost certain to fail as well. According to Albert Hirschman s essay (1975), The Principle o the Hiding hand, the ignorance of future obstacles pushed society to innovate and overcome the obstacles. Through his study based on number of development projects financed by World Bank, he describes how the hiding hand would lead us to unforeseen opportunities. Once setting problems and creating plans, we engage in problem solving by creating the issues that haven t happened yet and we try to solve them through some expectations. Eventually we provide some actors to help navigate and move forward to implement the project. Even so, Hirschman emphasizes that in the process of implementation, unexpected difficulties can rise up and all the targeted calculations and expectations can fail. This stage is considered as a critical moment in Hirshman s discourse and in this stage he believes that success clearly requires creativity (Hirshman, 1975).

In the discourse of planning policy, Presmann and Wildavsky s point on policy implementation describes how the best of intentions, and even great methods and plans, fall apart when it is time to implement them on the ground (Presmann & Wildavsky, 1973). Implementation of the planning policy has always been a critical concern for scholars as well as practitioners. Of course the process of implementation is varied and dependent on the strategic planning of the city and the actors involved in the creation of plan. This process of finalizing the plan on the ground is becoming more complex when our attention shifts to large-scale development projects with the involvement of multi-actors. This complexity of implementation could turn into disasters once we simplify the projects (Hall, 1982), particularly by applying some tools and methods such as IPD. These sort of fixed - technical approaches ignore the hiding hands principles of Hirshman as well as the intell and the partisan mutual adjustment concept of Lindblom (1965). And of course the result will be those examples that Peter Hall in 1982 mentions on to uncertainty, an unavoidable feature of urban planning. In addition, often the time it happens in planning policy, the implementation part moves into more symbolic and conceptual phase rather than practicable and feasible, especially in large development projects as according to Flyvbjerg discussing in his recent overview of megaprojects (Flyvbjerg, 2014). Based on this Danish economic geographer, Flyvbjerg, most of the time the misinformation and mis-providing of data about large development project is on purpose and city governments use this technique to promote their visibility world-widely to become the winner of an urban global war of branding and commerciality (Flyvbjerg et al, 2009). How far IPD as a mainstream approach can help cities to be seen as modern and global city is a question in need of investigation.

4. Integrated Project Delivery: The Mainstream Approach

The Integrated Project Delivery (IPD) is one of the most recent popular project delivery methods among architects, contractors, and engineers as well as many international masterplanners (GIC). In this method, the client, the architect and the main construction contractor all sign one contract. This contract ensures that all parties share the risks and awards of the project. In comparison to other project delivery methods such as the design-bid-build, design-build, or construction management at risk, IPD is considered the best model to maximize the collaboration between the primary parties: owner, designer, and builder ensure of delivered the project to the client on time, within cost (Ashcraft, 2014). The IPD term is common in the U.S. since it was developed in the 90 s and trademarked in 2000 by the American Institute of Architects (AIA) (AIA, 2014). Recently, other countries around the world extensively use this type of collaborative project arrangements under other terms such as project partnering in the UK and project alliancing in Australia (Lahdenperä, 2012).

To understand the main aim of this research, a clear definition of such collaborative project delivery and the relevant tools must be given. It is important to mention that the main intention of this research is not to question the technical aspects and efficiency of IPD; instead the research goes one step further and explores the idea of traveling and implementing this method in different urban context. IPD as a conceptual framework for project delivery is distinguished via its standard tool known as BIM (Building Information Modeling). BIM by itself is a process of creating and using digital models for design, construction and the implementation of projects principally under the umbrella of IPD (Hill, 2009). In this paper, to avoid exerting the technical term of BIM and misleading the analysis, the author uses the key word of IPD for the rest of the project with the knowledge that in some projects BIM can be defined slightly different from IPD; however the concept of both used in this paper is slightly the same. According to the current IPD literature, this method seems very efficient in terms of providing highest collaboration between its parties, transparency during the process and sharing the risk and award of final output. As mentioned earlier, IPD is promoted and commercialized as one of the suitable method for large-scale urban projects. Significantly the use of this method is increasing among GIC as well as multinational architectural firms who are moving from designing buildings to designing decisions (Pou, 2012).

We are entering a world which problems are visualized... visualizing virtual model such BIM (IPD) enables improved decision-making and being more aware of the scope of a problem (Pou, 163). This quote is from architect Eduard Pou who believes that designing strategy is a priority step for architecture activity. In his quote, he emphasizes and applauds the ease of using BIM (IPD) and the efficiency of this model that eventually ends up developing a powerful marketing strategy and improves the brand of the architect in selling his services for the highest price. Pou is not the only one who describes IPD as the best solution for coping with complexity in large projects. A general observation shows that in different disciplines, from the business management to construction engineering, BIM is one the successful process in delivering a project. Currently in the urban planning realm, mainly architects, construction engineers and real estate developers use this method as a way to facilitate the development process and get the maximum financial benefit of their projects. Therefore it is important to know the answer of how far IPD considers the final urban context? One might answer that the practice of IPD is not meant to consider the urban scale.

4.1 Operationalization and implementation of IPD

IPD looks at the planning process is an operationalized way with its own operational definition[3]. This means that since the process of defining a fuzzy concept is not directly measurable it is therefore through other indicators that IPD can define the existence of problems and move forward to solve them. In some theories this concept might works well, for example in the engineering discipline where the process of defining the complexity usually is a procedure agreed upon for translation of a concept into measurement (Deming, 2000). However, in urban planning processes and large development projects, as discussed earlier, nothing is 100% secure, particularly in the implementation process which is commonly a latent procedure. By using the IPD method for the phenomenon of large-scale project, we transfer the process of implementation to an operationalized system. The system requires some familiar indicators to outline the issue. This point can be the inflection point of the IPD process; the way it continues and operates. If we assume that these familiar indicators are related directly to the final urban context and include the local knowledge in the calculation, the next step of IPD might work well and the final result is acceptable for larger systems (the city). But it seems IPD operates in the contrary way; from the stage of defining the indicators to delivery of the project, the indicators are not very relevant to the final develop place, because those indicators are already set and fixed from the first phase of the plan, which may have been developed somewhere else. In the case of Masdar city, this issue is more recognizable in the sense of implementation of the project with insufficient primary local knowledge.

The importance of this study for IPD in the planning discipline is tangible practically after the recent announcement of several nations such as the UK, UAE and Singapore making IPD (BIM) method compulsory for all government projects (Arabianindustry, 2014.). Among these nations, some go even further and mention the advantage of BIM in their strategic plan such as the UK Government Construction Strategy in 2011, which announced the government s intention to require collaborative 3D BIM on its projects by 2016. The key object for this movement is reducing capital cost and capital burden from the construction and operation of the built environment by 20% (BIM Task Group, 2015). It can be true that BIM may be a successful approach in business and management sectors, but we should also consider that by simplifying the complexity of large development projects, they can turn into disasters from a planning perspective as Peter Hall argues in *Great planning disasters* (Hall, 1982).

5. Large-scale Development Projects: Urban Growth Machine

Large-scale development projects can be defined in various ways depending on their scales, costs, and functions and so on. But there is a common slogan for most of them as Flyvbjerg (2003) emphasizes: over time, over budget, over and over again . A political-economic explanation of this sl according to Flyvbjerg.et al (2009) is the strategic misrepresentation, basically lying and deception in implementation from the starting point of the development of plan. This misconduct can be applied to the use (or misuse) of new tools and technologies such as IPD. In this paper the concept of growth machine from Molotch (1976) applies to describe the importance of large development projects in city. The main discussion on Molotch s urban growth machine is situated on the the commodification of place, where the place is understood to be socially and economically valued land (Rodgers, 2009).According to Molotch, in order to grow the urban machine, collaboration of actors and organizations at the local scale is crucial. However, in large-scale projects the roles of local actors are usually limited. This little involvement is more noticeable when IPD as a new project delivery

[3] Operational definition is the process of defining a fuzzy concept or measurement of a phenomenon that is not directly measurable (Bridgman, 1927).

model with defined stakeholders enters into the equation. Paradoxically, it means the engine of the city growth machine by using IPD method in the large projects doesn t work well from the starting point. Furthermore, Logan and Moloch (1987) look at the place as a concept, which becomes a commodity in future development where the emphasis on place is not just a basis for carrying on life but an object to derive wealth from. This raises the question: are large-scale urban projects considered meaningful places or just a tool to attract visitors to enter an exhibition rather than to live in a real place?

It is true that the level of megaprojects is completely different from conventional and smaller projects due to their level of aspirations, complexity and stakeholder involvements. Hirschman (1995) calls them trait making, meaning that ambitiously they have the power to change the structure of society. Besides their complexities and admirations, megaprojects or large infrastructure projects are highly costly area of business and government. Of course the downturn from 2008 has helped the megaproject business grow further (Flyvbjerg et al, 2009). According to the economist magazine in 2008, infrastructure spending for large development project was the largest it has ever been as a share of world GDP (Economist, 2008) and still after seven years it is considered as the biggest investment boom in history. Typically the cost is declared in the proposal plan and increases dramatically through the implementation process and most performance promises are modified in the process of project delivery. Flyvjerg believes that the majority of projects are started by the misinformation about costs and risks and often the final cost of the projects become at least doubled.

Cost overrun is also very common in large infrastructure projects. For example, according to Flyvjerg s study of 20 countries, nine out of ten projects had cost overruns. He emphasizes that to solve the appropriate slogan of large development project over budget, over tim again we need to minimize the gap between expectations and performance for project such a large share of the private and especially public purse (Flyvjerg et al, 2009). As discussed earlier in architecture and project monument literature, IPD is consider as a method with maximum efficiency during the process and transparency between actors, and in some cases extends to solve cost overruns and over time. In the sense of narrowing the gap between planning expectations and implementing the projects, IPD still has a long path to achieve this aim. The case of Masdar City in Abu Dhabi is a good example for this dispute.

6. The case of Abu Dhabi: Vision 2030 and Masdar city

Abu Dhabi is the federal capital of the United Arab Emirates (UAE) as well as the capital of Abu Dhabi emirate, the largest emirate among the other seven which form the UAE. The city is the house of federal government offices, president of the UAE who is the ruler of Abu Dhabi and member of the Abu Dhabi Emiri family (Ponzini, 2011). Abu Dhabi is also the home of important financial center such as central bank of UAE, corporate headquarters of many companies including numerous multinational corporations. Due to its discovery of oil in 1960, the city has experienced significant urban transformation from a small fishing and pearling village to a city (Elsheshtawy, 2008).Recently Abu Dhabi tries to create a diversified, globally-integrated and knowledge-based economy. In 2008, the new generation of ruler, Sheik Khalifa who has strong tendency towards western approaches decreed to create a long-term vison plan for the city of Abu Dhabi for economic progress through the establishment a common framework. With this ambition the city of Abu Dhabi developed the vision 2030 including two different documents provided by two separate government organizations with one person as the leader, Crown Price of Abu Dhabi. The first organization is the Abu Dhabi Council for Economic Development (ADCED) formulated the economic vision 2030 and one year later in 2007, the second organization; Abu Dhabi Urban Planning Council (UPC) provided the plan vison 2030. The main framework of these two visions was based on a sustainable economy (ADCED, 2008).

Due to the monocracy government system of Abu Dhabi, the prince crown of Abu Dhabi, Sheik Mohamed, served as the chairman of both organizations. In this context it might also not be a big deal to see that all urban development projects in Emirates need to be approved by the government and Executive Council over the direct mandate of Sheikh Mohamead. This means that basically any proposed master plans require the approval of its creator (Figure 2). One important observation of the Abu Dhabi plan vision 2030 is the conceptual characteristic and abstract framework of the plans, which can be modified and re-defined at any time. Reading the maps legends provided in the plan clarifies this concept of abstractions and ambiguity.

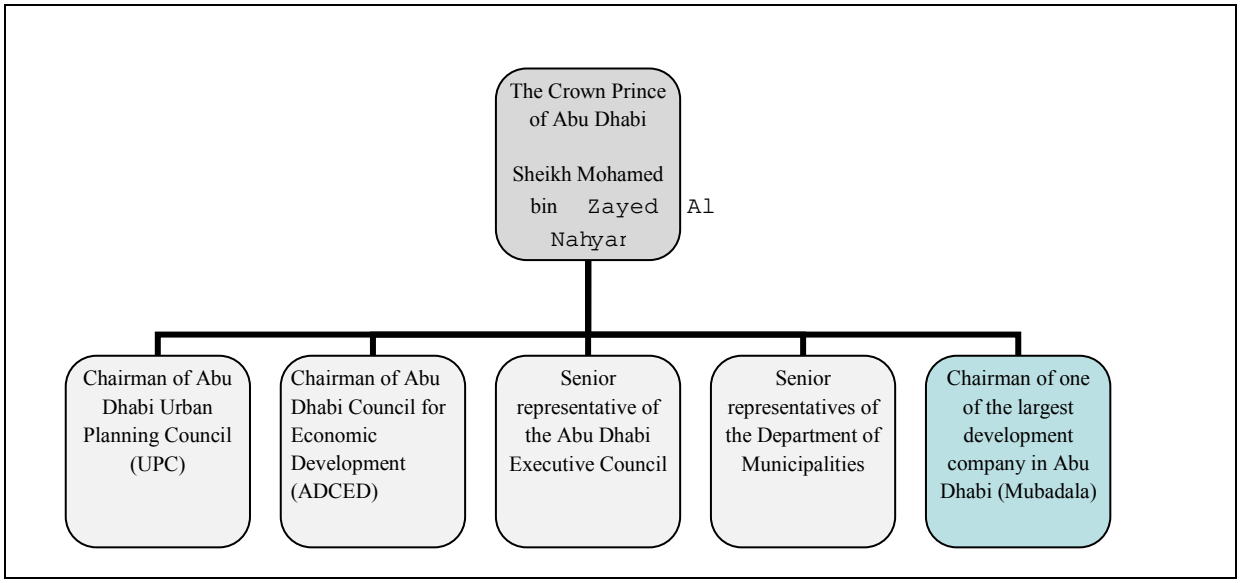

Figure 2: The table shows the power in planning system of Abu Dhabi is in the hand of one person, the Crown Prince of Abu Dhabi. All urban development projects in Abu Dhabi need to be approved by government over the direct mandate of Sheik Mohamed, the Crown Prince of Abu Dhabi.

It might also be notable to mention that the chairman of one the most dominated development company in Abu Dhabi, Mubadala, that works on many large urban infrastructure projects, is the same chairman as ADCED, UPC and Executive Council (Mubadala, 2015). As a result, the actors in decision-making process are limited and the distance of relevant actors from plan to implementation is very short. In environmental policy, Walker (1988) and Barry (1999) might look at this authoritarian manner as a more efficient one to tackle environmental problem rather than an obstacle. Also the 40 year history of monocratic regime in Abu Dhabi shields this oligarchic system within its top-down approach in planning. However, the result of planning shows that the idea of circulating knowledge, translating and modifying the policy based on the urban context do not apply in non-democratic societies such as the UAE. Moreover, the use of the new innovative project delivery model, which originally promoted transparency and sharing of knowledge among its stakeholder (even the fixed actors), is no longer applicable due to the small circle of decision makers.

The main issue arises when a project in this system introduces itself as the number one approach in the world and other cities start following its structure for future urban development. The case of Masdar City, master-planned by the British architecture firm Foster and Partners (Economist, 2012) and subsidiary of Mubadala, is a proper example of this argument. The case of Masdar City is selected primary because of its self-description as a model for what can be achieved in other cou (Nader, 2009), and secondly because of dealing extremely with IPD (BIM) in their ongoing constructions. In both economic and planning terms, the 2030 vision Masdar City is introduced as the

world s first zero-carbon, zero-waste and car-free city with the slogan One day all cities will be built like this (ADEFC, 2010). On the other side, the Abu Dhabi economic vison 2030 introduces the Mubadala Development Company as the main source to provide sustainable financial return (Mubadala, 2015). This company was established in 2002 by the government of Abu Dhabi as a public joint stock company. According to the Mubadala website the company s main mission is to stre Abu Dhabi s economic growth by investing in sustainable profit over the long term plan and act as a catalyst in diversification of the economy. In order to achieve this vision, Mubadala invests enormously in large infrastructure developments including urban projects in cooperation with world-class architectural and construction international firms. One of the active sectors of Mubadala is Masdar, also known as the Abu Dhabi Future Energy Company (ADFEC). Masdar (ADEFC) was established in 2006 as a way to develop and commercialize renewable energy solutions and clean technology in Abu Dhabi and around the world. ADEFC initiated Masdar City as one the worldwide sustainable projects that will host the headquarters of the International Renewable Energy Agency (IRENA). Looking at the plan 2030 vision discloses that the use of IPD (BIM) to visualize the masterplan of Masdar City was very successful in terms of branding and promoting the city globally. Regardless of all these promotions and advertising of the city, Masdar City is carrying out several issues relate to the implementation of projects.

Masdar City project was initiated in 2006, with a US $18-22 billion estimated cost and the city was planned to be constructed over seven phases and to be completed by 2016. This initial plan was calculated by an integrated project delivery method and applied BIM for the final 3D visualization. Over two years of starting the project only six buildings of the city were completed and occupied in 2010. The plan is already very behind on its schedule due to several unexpected and unplanned issues. The first phase supposed to be done in 2009, due to the global financial crises, was postponed until 2015 with final completion scheduled to occur between 2020 and 2035 (Khaleej times, 2010). From the initial master plan, the project has been altered in several ways, which is not very surprising from a planning perspective and literature. However, these changes massively affect the projects from the time of completion to the cost. Due to the environmental miscalculation and miss-conception, the construction of solar panels will be less effective than anticipated because of ignoring the impact of local dust storms (Crot, 2013). As a result, the main slogan of Masdar City is changed from zero carbon to low carbon and the promise of becoming the number one project in energy saving and production is no longer secure. The estimated cost also has declined due to the changing plan of not implementing solar panels on the site. Additionally, the initial design was to reach 100% sustainability and to become an eco-city by banning automobiles, but this initiative has been modified due to the overall cost and also neglecting the culture and social background in the sense of driving personal car. The issues mentioned above are just a couple of visible planning problems affected by using a complete planning method for creating cities. As discussed in implementation policy literature, there is no plan that can be implemented with 100% unpredictability and uncertainty in the process.

7. Conclusion

Success in large-scale urban development is typically defined as projects that are delivered within budget, on time, and with the promised benefits. To reach this level of success, the IPD method is considered the proper choice among architects, engineers, and project managers. However success can be defined in different ways and it totally depends on the actors and scale of projects. We should accept that by increasing the megaprojects the need of model delivery projects that consider managing time, cost, and benefit are increased. IPD may be a useful approach for overcoming the shortages of large projects, yet it needs to go one step further beyond efficiency and become more flexible for dealing with uncertainties. This research tried to open a new way of looking at the IPD method, from the perspective of implementation policy rather than just a technical and managerial vision. Primarily the well-defined actors and structure delivery method of the plan is oversimplified to be operational in

different contexts. This simplification of operational system doesn t share any space for local knowledge and eventually this causes the future issues in urban projects.

Until now, the idea and technology behind IPD (BIM) was able to travel from the U.S. to all around the world, but the question of its translation into different physical, social, economic and political context is yet to be answered. A city like Abu Dhabi with an absolute monocracy government system with a desert ecology needs to apply IPD in a different approach from that of California or London. Of course the decision-making process varies based on the nation and on the strategic planning of the cities; however, the planning issues occur when this project delivery method is considered as the one that is the best method to build the environment (AIA, 2014) and becomes one of the main players of the transformation of contemporary cities through large-scale development projects. According to Rapoport (2014), Masdar City project in Abu Dhabi may attract significant attention and inviting visitors, but it also may not be considered as a replicable project. The result of this project will obviously be a product of a particular set of conditions such as a large source of oil and continued economic growth. Such project as Masdar City risk becoming model towns, exhibits rather than real places (Rapopor, 2014; Keeton, 2011)

Finally, collaborative project delivery such as IPD raises radical questions of democracy in the transformation of contemporary cities through large-scale development projects and the responsibility of planners risks being limited to the mere technical aspects taken care of by architects or engineers. The domination of GIC, as the big clients of this method, also needs to be considered due to their large influence on shaping cities globally. Furthermore, in the use of IPD, not only is having knowledge of the government system of the city crucial, it is essential for there to also be a thorough assessment of the local urban, economic and political context. The extreme case of strategic planning and implementation of IPD in Masdar city in Abu Dhabi reveals this deficiency of IPD. In conclusion, the author wants to finish this paper by proposing a final question: while governments start to mandate the use of BIM (IPD) as a common standardized method for large scale projects, how do the final projects include local variables related to the urban, political, economic and social context as well as the knowledge of non-involved actors? This question requires further research in both urban planning and urban science disciplines to fill the gap between longstanding literatures from urban theory to urban practice.

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