



Service Delivery Not Procurement—At the State Law Level

A Town+Gown Symposium Event

In conjunction with Modernization of New York's Built Environment Laws: If Not Now, When?

Empire State Plaza (Meeting Room 6), Albany, New York

November 12, 2014 (9:00 a.m. to 3:30 p.m.)

Service Delivery Not Procurement—At the Local

Level. A year-and-a-half before today's event, Town+Gown held a symposium event to explore issues in service delivery methodology at the local level, assuming no changes in governing State law. We started with the premise that *words matter* and that the tendency of referring to project delivery as *procurement* and/or *contracting*, which New York State law requires its public owners to do, can obscure thinking of ways to improve service delivery within the public owner enterprise. It seemed as if the words themselves inhibited innovative thinking because they obscured relations to other large system processes and, in particular, to the underlying functions they facilitate. The premise was that in large organizations, by obscuring the project service delivery function, words with roots in the larger enterprise system can create conceptual impediments that inhibit project management innovation.

In April 2013, we explored the structural dissonance between enterprise-wide management systems and line agency component systems that can create impediments to innovation. We identified impediments that innovations at the lowest unit level—the construction project and the project delivery function—face as owners attempt to translate them to higher enterprise-wide system-wide level processes. Sources of the dissonance at the local public owner level include a structural disconnect between the work of line agencies and the enterprise-wide budget planning and implementation processes arising from differences in planning functions and budgeting functions.¹ This disconnect, still to be resolved on the expense side of the budget, is exacerbated on the capital budget side by the temporal realities of capital programs² as well as the several, but inextricably

related, roles the enterprise government plays in the built environment, often simultaneously.³

Opening the Lens to Focus on State Law.⁴ One significant impediment to innovation that the earlier symposium event consciously deferred to later consideration consisted of the State's built environment laws that absolutely constrain the service delivery options for virtually all public owners across the State, especially local government owners. New York State public construction procurement laws, which are the laws that authorize a single service delivery methodology on public works, constrain the public construction process for the State's own agencies and its subordinate local governmental entities.

The essential elements of New York's public construction procurement statutory ensemble were established by the end of the first half of the last century, and despite "tinkering on the margins, [this ensemble] remains essentially the same reflection of theory and practice, today as when it was enacted."⁵ While the statute itself does not explicitly use the functional service delivery term "design-bid-build", various provisions under the rubric of contracting for public works, result in the design-bid-build methodology as the single authorized service delivery for the vast majority of the State's public owner entities, several decades after alternative delivery service methodologies developed to meet changing project needs.⁶

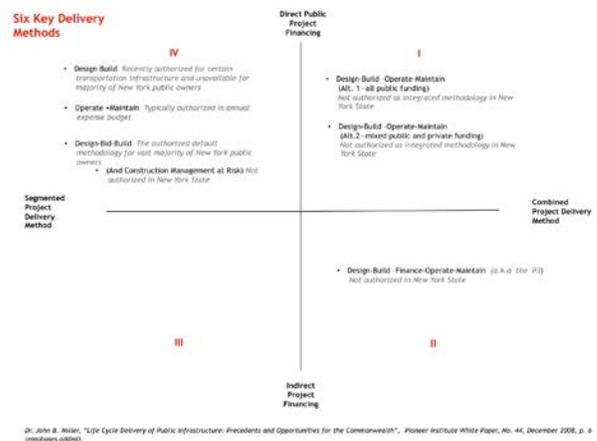
Two defining elements of the design-bid-build methodology, which remains appropriate for some projects, consist of a legally mandated temporal and functional separation of the designer and the constructor entities⁷ and the requirement that the lowest initial cost determines who the constructor entities can be.⁸ The temporal separation of

designer from constructor reduces the opportunities during the design phase to avoid changes and related costs during the construction phase. The mandated use of a single delivery methodology, with such separation, further reduces opportunities to avoid costs arising from the mismatch from the service delivery methodology and projects needs and project team capacities.⁹ The requirement that selection of constructor entities be based on the lowest initial cost may have been an effective criterion when buildings were simpler, aligning more closely with the concept of commodity pricing, and when it was realistic to expect that final plans and specifications were indeed final, which is often no longer the case.¹⁰ Moreover, the lowest initial cost requirement may tend, in a public and political budget environment where what is required to be measured tends to drive attention, to become an impediment for an owner to maintain (assuming it had one) a focus on the total life cycle costs of the project, especially on more complex projects for which incrementally increased initial costs can reduce life cycle costs as compared to the lowest initial cost version.

It is now axiomatic that there is no single optimal project delivery methodology for all types of construction projects. In an environment that prohibits an owner from matching the service delivery methodology with specific project circumstances,¹¹ the mismatch between service delivery and project needs and owner capacity will reduce the chances a project team will be able to remain within parameters established by interrelated “project performance goals of budget, schedule, quality and safety.”¹² This mismatch will thus generate costs that could have been avoided with a more appropriate match of service delivery methodology, project needs and owner capacity.

MIT Framework Paradigm as Lens.¹³ The MIT Framework discussed at the earlier event integrates all necessary aspects of project delivery, regardless of artificial distinctions that may be present in any set of laws. It first describes the delivery methods functionally, stripping them of marketing acronyms, and arranging them on a quadrant grid. From the vertical perspective, segmented delivery methods

(design-build, operate-and-maintain, design-bid-build and construction-management-at-risk) are located on the left-hand side of the quadrant and integrated delivery methods (design-build-operate-maintain and design-build-finance-operate-maintain) are located on the right-hand side. Then the Framework’s quadrant permits the explicit linking of service delivery methods with the source of funds for the project financing, with the top half representing public finance and the bottom representing private finance. All but the design-build-finance-operate-maintain methodology (what the contemporary conversation refers to as public private partnerships, PPPs and P3s) are located in the top half of the public-private funding dividing line, with design-build-operate-maintain susceptible to both public (tax-exempt and taxable) finance alone and mixed public and private finance.¹⁴ Design-build-finance-operate-maintain is the only methodology in the lower right-hand quadrant of integrated delivery where purely privately financed projects are located.



All the integrated service delivery methods on the right-hand side of the Framework quadrant share the ability to integrate the design and build phases so that the design and constructor participants can collaborate throughout process starting with the design phase and the project team can focus *from the beginning* on the project’s post-completion operation and maintenance activities and costs. It is at this point, now that the operation includes a focus on State law, that one can see how a mandated design-bid-build delivery methodology,

with its focus on the lowest initial cost and its stark separation of designer from constructor, also mandates an inability to avoid *avoidable costs during the construction phase*.

The mandatory absence of the constructor during the design phase, when a constructor's professional skill and judgment might otherwise influence design choices to avoid the kinds of changes that inevitably occur during construction in the absence of constructor participation, results in the failure to avoid costs that are avoidable. Moreover, the inability of a public owner to bring the constructor into the design phase limits the ability of project participants to leverage the potential of modern technologies, such as building information modeling (BIM), and relational contracting principles and forms, such as integrated project delivery. These avoidable costs find their way into the debt service component of a public owner's expense budget, often a non-discretionary expenditure, and compete successfully against discretionary expenditures known as public services during cyclical economic downturns.

Once an owner is able to fully expand the use of BIM across a project's life cycle, from project planning to life cycle operations and maintenance, as other industries have already done, it is possible for the owner and project team to use the shared information platform to apply elements of industrial production and related management techniques, such as total quality management, to discrete projects. The construction industry has adapted total quality management as "lean construction" and it permits project teams to increase the efficiency of producing capital projects and reduce waste, by identifying areas amenable to industrial production management techniques.¹⁵

In addition, aggregated project data from the BIM models can then feed back into the enterprise-wide processes, informing and linking to future capital planning and expense budgeting processes more effectively—giving the existing sets of processes established under local and state laws renewed purpose and utility.¹⁶ For example, change order types and costs can inform enterprise-wise

contingency policy and practice, while operation and maintenance expenses from discrete projects can be traced to the agencies responsible for initiating and using the projects, reducing negative operational impacts from the temporal realities of construction.

The expanded use of BIM across the project life cycle and the application of lean construction principles and techniques during construction also permits the project team to reduce information asymmetries that traditionally have been responsible for certain types of adversarial risk-shifting contract provisions that attempt to manage the segmented process. Assessing the impact of innovative service delivery practices that change the arrangements of archetypal project participants—owner, designer, constructor and financier—expressed in the various contracts, to perform the project tasks, from "defining and designing the project" to "operating and maintaining the assets in order to deliver the product/service"¹⁷ more effectively would then make then possible consider revisiting conventional relationships and related provisions in the contracts in the context of maximizing "the economic efficiency of various options to deliver capital projects, which economics views as asset- and relationship-specific investments, at two points in time—before the deal is struck, or *ex ante*, and after the deal is struck, or *ex post*."¹⁸

Issues outside the Lens of the MIT Framework.

While immensely helpful, the MIT Framework nonetheless excludes some issues that will be covered in today's conversations, such as land use. As noted by one of the panelists, while "[c]omprehensive planning is the foundation on which public finance and economic development is applied . . . it often progresses in the absence of financing considerations."¹⁹ Moreover, as some of the panelists will be discussing today, land use planning is, at once, an intensely local concern as well as a statewide concern because the benefits and burdens of projects subject to planning do not stop at any local border. Yet, in these times of increased awareness of the interconnectedness of all environmental aspects, New York State, in

contrast to other states, has historically taken a less active role in articulating planning concerns and priorities across local jurisdictions and exercising the powers it does have to encourage more regional or metropolitan cooperation when necessary and appropriate. At present, the focus of virtually all land use planning analyses and decisions in New York State is at the local government level where the proposed project exists, which has no obligation to consider the effects of the local action on the State's economy, priorities or budget. Yet we are becoming increasingly aware that issues traditionally considered to be completely local, such as transportation, affordable housing, water and wastewater management and economic development, are not completely local, if only because the recent sustainability and resiliency agendas have opened our eyes to the full impact of all actions with impacts on the natural environment.

Although the MIT Framework directly links finance to service delivery, it does not explicitly focus on the details of finance vehicles and techniques that in New York State are also limited by State law. At earlier events held in Albany, public finance practitioners discussed modern public finance mechanisms available elsewhere, but not in New York State, to enhance efficiencies in land use planning, procurement, public project development, and public works development. These include turn-key design/build financing as an alternative to publicly bid contracts for public works; tax increment financing as effective “gap financing” for project development financing; the development of revenue bond financing and revolving loan financing based on cost/benefit analysis in lieu of general obligation financing and PILOT agreements; privatization of public assets to employ conventional financing and equity contributions to develop public projects and public works; and consolidation and coordination among governmental units to implement major public projects and public works—some of which would require statutory changes, at the least, and possibly constitutional changes in order to be used by public owners in New York State.

The Growing List of Related Town+Gown Projects.

From the beginning of Town+Gown, the research questions raised by and developed with the agencies touched upon various aspects of the dissonance discussed earlier as well as impediments created by current State law. Many completed Town+Gown projects exploring various built environment issues came up to this systemic gap and were unable to reach the other side. Projects looking at life cycle costing models for planning purposes ran into limitations with lifecycle cost data limitations, including their absence. Projects looking at the ability of capital planning and/or budgeting processes to inform and manage individual project and *vice versa* ran straight into the complex system and dissonance between planning and budgeting, complicated by the impact of schedule and budget overruns, which appear as change orders, during the construction/contract administration phase that cycles through the annual capital budget process. Town+Gown's first Ph.D. dissertation was able to extrapolate from estimates of avoided costs on discrete projects and suggest enterprise-wide potential from the use of BIM city-wide, across construction agencies, but the potential for system-wide transformation remains just that at the moment. Another project analyzed the many areas of existing State law to explain the question asked by many: why do private construction projects cost so much in New York. And finally, the simulated environment in which a joint architecture and construction management studio that investigated early phase collaboration between the designer and the constructor using a prefab kit-of-parts methodology for a disaster relief scenario, bringing together the two perspectives of design and construction to leverage the feedback loops between them in a continuous fashion in a BIM-enabled environment cannot be replicated on a public works project in New York. The students were able to use constructability information to help set design criteria and keep time and cost parameters in view during the design phase, addressing the coordination issues that usually plague most projects during construction resulting in cost overruns and delays, before any of the pieces were manufactured. Cross disciplinary student teams were able to use information

technology as a catalyst to fuse design intent with means and methods, opening up the possibility for

a higher level of prefabrication. None of this is currently possible under State law.

Endnotes

¹ “The terms ‘financial plan’ and ‘budget’ . . . are often used interchangeably. In fact, they are different products with different purposes even though they are developed at essentially the same time and are often presented together [but are] . . . the result of separate sets of decisions and analytical investigations . . . “. New York State Financial Control Board, *Financial Planning in the Nineties: Building on New York’s Pioneering Efforts in the Seventies*, June 1992, p. 15; for the difference between planning and budgeting, see pp. 15-18; for related operational elements, see pp. 24-28.

² For example, New York City’s budget process has a four-to-five year horizon, considered the gold standard in public budgeting, but even that is not long enough to account for the temporal realities of construction. This inadequacy is exacerbated by the reality that the time from design to construction completion for an individual project, even excluding the time for related capital planning phase, can span across executive administrations and legislatures, creating a hazy screen between one administration’s decision to invest and the budget consequences of such decision felt by a later administration. (Terri Matthews, *Blueprint for Modernizing Built Environment Law: A View from the Budget*, 6 Albany Government Law Review, pp. 170-171.) Moreover, the investment decision methodology, the analytical tool for analyzing capital projects, which accounts for related debt service costs and post-completion life cycle operation and maintenance expenses, far outstrips any budget horizon.

² Government acts simultaneously as a public owner of facilities and infrastructure to implement its provision of services, a financier of both operations and maintenance and expansion or major renovation, and a regulator of the process (land use and zoning), the participants (licensure of trades and businesses) and the products (building codes). Government also acts as an economic catalyst, whether passively as the result of its ongoing investment in public works or more actively as the result of targeting various types of subsidies to lower the cost of construction of certain types of projects. See Danny Myers, *Construction Economics: A New Approach* (London: Spon Press 2004), pp. 15, 39-40, 60, 70-71, 147-159, 184-86, 191.

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⁴ The following text is substantially the same as that found in the précis document for the April 18, 2013 Town+Gown symposium event, entitled *Service Delivery Not Procurement* (http://www.nyc.gov/html/ddc/downloads/pdf/town_and_gown/Symposia/SYMPOSIA_MAY_2013.pdf).

⁵ Matthews, *op. cit.*, p. 155.

⁶ *Idem* There is a third element present in New York State law, mandatory multiple prime contracting to four prime contractors, which is not included in this analysis. Amendments in 2008 to what is known as the “Wicks Law”, providing an exemption from its provisions if an owner enters into a project labor agreement and indexing the threshold amount, has blunted the impact. Multiple prime contracting can be a useful tool in the hands of a superior owner enterprise, but mandating multiple prime contracting on all projects creates dysfunctions on projects similar to those described in this précis.

⁷ The constructor is a term that contains, and obscures, a highly complex set of contractual arrangements that creates a corresponding highly complex set of management issues within the constructor actor and among the three archetypal participants. See Patrick Bajari & Steven Tadelis, “Incentive versus Transaction Costs: A Theory of Procurement Contracts,” 32 *Rand Journal of Economics* 387 (2001), pp. 389–90; see also Iris D. Tommelein, David R. Riley & Greg A. Howell, “Parade Game: Impact of Work Flow Variability on Trade Performance,” 125 *Journal of Construction Engineering and Management* 304 (1999), pp. 304-05.

⁸ Mandatory prime contracting requires four prime contracts that breaking the construction job into general contractor, electric, plumbing and HVAC components, each with direct contract privity with the public owner and not with the general contractor.

⁹ Matthews, *op. cit.* pp. 172-177.

¹⁰ New York City Bar Association, Construction Law Committee, *21st Century Construction, 20th Century Construction Law*, February 2008 (<http://www.nycbar.org/pdf/report/ConstructionLaw.pdf>) (hereafter referred to as “2008 Report”), endnote 4.

¹⁰ For example, the extent of scope definition, the need for schedule speed as well as certainty, the need for flexibility to make changes to the project during construction, the capacity of the owner to participate in the process, and general market conditions. Matthews, *op. cit.*, citing New York City Bar Association, Construction Law Committee, *20th Century Construction, 21st Century Construction Law: Update*, March 2011 (<http://www.nycbar.org/pdf/report/uploads/20072050-21stCentConstruction20thCentConstructionLawUpdated.pdf>) (hereafter referred to as “2011 Update”), p. 9, and quoting C. William Ibbs, Young Hoon Kwak, Tzeyu and A. Murat Odabasi, “Project Delivery Systems and Project Change: Quantitative Analysis,” *Journal of Construction Engineering and Management* (Reston: American Society of Civil Engineers, July/August 2003), p. 382.

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¹² See 2011 Update, p. 9; and for analysis that captured “the interactions among changes, disruptions, productivity losses,” demonstrating the capacity of techniques to manage change, whether owner- or contractor-directed, and related costs, see also, William Ibbs; Long D. Nguyen; and Seulkee Lee, Quantified Impacts of Project Change, *Journal of Professional Issues in Engineering Education and Practice*, American Society of [Civil] Engineers, January 2007, p. 46. See also Love, Peter E. D., Irani, Zahir and Edwards, David J., “A Rework Reduction Model for Construction Projects,” *IBEE Transactions on Engineering Management*, Vol., 51, No. 4, November 2004, pp. 435-37.

¹³ Again much of the following text is substantially the same as that found in the précis document for the April 18, 2013 Town+Gown symposium event, entitled *Service Delivery Not Procurement* (http://www.nyc.gov/html/ddc/downloads/pdf/town_and_gown/Symposia/SYMPOSIA_MAY_2013.pdf).

¹⁴ Dr. John B. Miller, Life Cycle Delivery of Public Infrastructure Precedents and Opportunities for the Commonwealth, A Pioneer Institute White Paper, No. 44, December 2008, p. 6.

¹⁵ Matthews, *op. cit.*, p. 165, citing Glenn Ballard and Greg Howell, “What Kind of Production Function is Construction” (1998) and the American Institution of Aeronautics and Astronautics, “Current State of the Art on Multidisciplinary Design Optimization” 36 (1991).

¹⁶ Financial Control Board, *op. cit.*

¹⁷ Matthews, *op. cit.*, p. 153, citing Jean-Etienne de Bettignies and Thomas W. Ross, “The Economics of Public-Private Partnerships”, 30 *Canadian Public Policy* 135, (2004), p. 140.

¹⁸ Matthews, *op. cit.*, pp. 162-167. Viewed from the lens of recent transaction cost economic theory combined with relational contracting theory, the tendency in construction, especially public construction, for contracts to assume they are complete because they have anticipated all future events and have negotiated price accordingly becomes noticeably untenable (though, in some instances, the public procurement statute requires that position), because empirical observations on the ground reveal project participants actual projects, distinct from what the drafters wrote:

“ . . . (1) negotiate these issues *ex ante* based on *ex ante* information and related information asymmetries; and (2) work within an incomplete contractual framework to negotiate within the *ex post* environment, where a totality of change—on the ground, within the external environment, and between the parties themselves, exacerbated by changing related information asymmetries—requires functional *ex post* negotiation to reflect such modifications.”

See, e.g., Oliver E. Williamson, *The Theory of the Firm as Governance Structure: From Choice to Contract*, 16 *Journal of Economic Perspectives* 171 (2002), p. 174, and Ian R. Macneil, *Contracts: Adjustment of Long-Term Economic Relations Under Classical, Neoclassical, and Relational Contract Law*, 72 *Northwestern University Law Review*, 854 (1978); see also Bajari and Tadelis, *op. cit.* and Ibbs, Nguyen and Lee, *op. cit.*

¹⁹ Kenneth W. Bond, *Public Finance and Land Use in the Shadow of Fiscal Distress*, presentation at American Planning Association conference, Washington, D.C., March, 2012.