

Red Business, Blue Business

If architects do not take the leadership role on integrated practice, they will cede this turf.

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Abstract

If architects do not take the leadership role on integrated practice, they will cede this turf to another entity. It is incumbent upon architects to develop a succinct business case for their service, infusing some “red” values into their typically “blue” business model.

Introduction

As the elections approach, political commentary is laced with references to red and blue states and the differences those distinctions represent with regard to cultural values and attitudes. Certainly an oversimplification in many respects, the red/blue division is nevertheless useful shorthand for core philosophies that can be applied in additional contexts, including the business world.

Dividing human endeavor into red and blue camps is imprecise, but it fairly describes real differences in business process and approach. Red business success is defined by profit margins, revenue growth, productivity, stock valuation, and other financial metrics. Blue businesses have a service imperative that dominates their activities, and they tend to measure success by human, social, and cultural accomplishments in addition to money.

Banks, university administrations, health maintenance organizations, real estate developers, software vendors, agribusiness, and televangelists skew toward red. Teachers, doctors, building contractors, farmers, police, military civil servants, and clergy tend to be blue. Architects, who emphasize livable communities, sustainability, and design excellence, are blue. Their institutional and commercial owners are red. It is not clear whether red or blue values will prevail as the paradigm for integrated practice is developed.

In 2006, the United States spent \$1.2 trillion on building construction, accounting for approximately 9 percent of the gross domestic product. By comparison, the automotive industry accounts for roughly 3 percent of GDP. Although it is one of the largest sectors of the economy, the construction industry is essentially an immense aggregation of cottage industries. Authority and oversight are local. There is no centralized management of the process. The disparate entities involved in design and construction rarely engage in meaningful analysis of their joint endeavors. Post-occupancy evaluations to determine the success of projects are rare. This makes the blue construction sector very different from the red corporate sector, which relies heavily on analytic tools to evaluate process, customer support needs, market strategy, and financial goals on an enterprise level.

As integrated project delivery creates an opportunity to improve process, red owners are eager to impose their standards on the design and construction industry.

When Inefficiency is the Norm

As currently practiced, architecture and construction are distinctly out of sync with the red business world that pays their fees. The lengthy process of defining, designing, bidding, awarding, procuring, constructing, and managing a facility is fraught with inefficiency and waste. Siloed disciplines exchange

data ineffectively and generate redundant, uncoordinated work. The standard work process would be recognizable to a medieval guildsman. Activities upstream and downstream of design and construction, such as programming, needs assessment, and asset management, are left to the user to define and implement. The process is not normalized, and few best practices are defined.

Consider the typical procurement process, the point at which a contractor places a purchase order for material. The construction documents and specs contain some information about material appearance, size, and properties, but specific grade, weight, class, and detail are usually not articulated. It falls to the cost estimator, supplier, subcontractor, or contractor to infer which product is most suitable. Product selection is then documented in shop drawings or product data sheets that are sent to the architect for approval. The architect may approve but commonly refuses, preferring the more enigmatic term “reviewed.” In any case, no single entity has specific responsibility and oversight for building material purchases, and no one unequivocally affirms that appropriate products were procured for the project.

Once material is purchased and installed, product data is organized in an ad hoc fashion that is not directly connected with any other documentation or with the building plans. The data may appear in loose-leaf operations and maintenance manuals but is more commonly archived or lost at the end of the project. Information about components that are significant to building performance and maintenance — such as roofing, insulation, sealant, waterproofing, and hardware — are often unavailable for reference by the property manager. This is no way to run a railroad, an automotive corporation, or a \$1.2 trillion industry, a fact that is not lost on building owners.

Technology Favors the Efficient

As technology permits more entities to participate directly in design and construction projects and creates a more integrated work process, red/blue cultural differences forebode friction between professional and client.

Architects usually assume that their design will be the controlling factor in integrated project delivery; owners want technology to facilitate their control over the project and its process. Owners who focus on cost-saving efficiencies and expedited schedules may not be managing a project in a way that is congruent with the expectations of designers and engineers. If large owners focus as aggressively on economics through technological capabilities as they are currently doing with project delivery methods such as design-build, architects are threatened with lost autonomy. If architecture is to thrive in the new world of technology aided integrated project delivery, architects must clearly communicate the human value of design in the context of cost-driven business incentives.

In other words, a blue profession must convince its red business counterpart that the cost of design, both in time and money, has a value consistent with red culture needs.

To communicate the value of design services, a new paradigm for project delivery must include a plan for revenues, profits, and other stakeholder benefits. Historically, this red business analysis is unnatural to the architectural profession. A great deal of thought and creative energy will be required to devise a new, successful, and integrated process for the construction industry. This is so because an integrated process will require continuity of leadership throughout the process, which is itself an innovation: The current business model for building design and construction has existed for generations without centralized leadership or management on an enterprise scale.

The Integrated Practice Paradigm

Although the prospect of integrated practice and its accompanying efficiencies have generated much excitement, proposals from various stakeholders for a new integrated business model are muddled at best. Architects, whose salient characteristic is their creativity, have been unable to transcend their current modus operandi and imagine a significantly different role for themselves in the world of integrated technology. The American Institute of Architect's "Integrated Project Delivery: A Guide" assumes that the existing business structure will remain intact and that integrated practice will succeed if attitudes change. Stephen Kieran and James Timberlake's seminal book *Refabricating Architecture* envisions aircraft behemoth Boeing re-purposing part of its enterprise to form a new vertically integrated division dedicated to construction fabrication. In this vision, the new industrial entity will rely on architectural design firms, that legacy of 19th-century Beaux Arts culture, as its source of business.

It seems unlikely that the business model for the architect of the future will be identical to the business model of the past and present.

Anyone attending a seminar on integrated practice/project delivery is exposed to a diagram showing a building information model (BIM) in the center of a circle of transactions. The diagram is emblematic of a new business process, and the model is a repository for all the data produced for or required to operate the building. The model receives and distributes information to a huge cohort that includes professionals, tenants, maintenance workers, emergency responders, and others. The diagram describes a hypothetical place with characteristics of an integrated manufacturing process superimposed on construction industry activities. The design tool, BIM, replaces the project life cycle management software that lies at the heart of an integrated manufacturing process.

The challenge for architects is to define their role before integrated project delivery is adopted by another business sector and follows a business model more similar to that of manufacturing, in which design is subordinate to other considerations. Who is better suited to reinvent the design and construction business process than a designer?

Manufacturing and Construction Align

Historically, manufacturing and construction had little in common. Assembly line mass production techniques did not lend themselves to the labor intensive, idiosyncratic construction process. More recently, manufacturing and construction processes have become more closely aligned. Large manufactured assemblies that have many options make use of modular design and assembly processes. Using modular design and fabrication, an automotive company can design and produce a basic vehicle with sufficient flexibility to accommodate options in the engine, suspension, interior, and accessories. Digital prototypes used to plan and design these modules have allowed product manufacturers to reduce dramatically the time required to get their products to market.

At the same time, some significant building owners are demanding modular designs for their facilities. Container stores, franchises, prisons, hotel chains, U.S. embassies, and the Herman Miller Co. are among those that have introduced modular design templates into their construction program. The motivation for these changes in project delivery stem from owners' desire to reduce design and construction costs and time. The manufacturing business model has established a beachhead in the construction sector.

Interest in Integrated Project Delivery

Unsurprisingly, some of the largest early successes with BIM and integrated project delivery come from projects owned by manufacturing interests or large corporations that use integrated management strategies in their core business and have no emotional resistance to applying those tools to construction projects. General Motors makes a compelling presentation about the use of BIM in its Lansing Delta Township Assembly plant, which was completed 10 percent to 15 percent below budget and 25 percent ahead of schedule from original estimates. Sutter Health is constructing a \$1 billion hospital in San Francisco and demanded that its team design and document the project using BIM. McGraw-Hill conducted an extensive survey of BIM users for its 2007 SmartMarket report. The primary reason for using BIM, cited by 68 percent of respondents, was "Less time drafting, more time designing." The secondary reason, cited by 49 percent, was "Owners demanding it on their projects." This suggests that a significant percentage of current BIM users would not be using BIM if it were exclusively their decision. The hand of the owner is becoming more influential.

Owners Become Assertive

Building owners are becoming increasingly assertive in their demands for process efficiency and cost control. In the red corporate sector, organizational effectiveness requires defining metrics for quantity, quality, cost, and timeliness of the work process. If architecture and engineering firms don't apply business analysis tools to their organizations, it's an obvious omission in the eyes of owners. They believe that more efficient performance is possible and are starting to demand it.

The desire of building owners to make the blue design and construction business process more similar to the red corporate process can be seen in the aggressive adoption rate of the design-build project delivery method that is now used on approximately 40 percent of projects. The success of design-build has spawned some vertically integrated firms that provide a full spectrum of services, but most design-build teams are a federation of unrelated businesses that are contractually bound on a specific project to act as a single entity to simulate an integrated process. Owners apparently believe that even a simulation of integration is preferable to the traditional stovepipes, and the data suggest they are correct: Design-build projects have fewer claims, fewer failures, and more efficient communication between project entities.

The design profession has thus far remained largely unresponsive to these changes in process. In the blue world of architectural practice, normalization or standardization is anathema. Efficiency, while desirable, is not essential, nor is it measured. Each firm has a different cross section of personnel, a unique culture, and its own design philosophy. Every project has a different development cycle because the design process is highly variable. This messy situation is coming under increased scrutiny, particularly from owners who run their own businesses in an integrated fashion. These owners want to apply project management strategies used in the corporate sector to the design and construction process. They want to stop subsidizing inefficiency.

Nature Abhors a Vacuum

An endeavor as significant as the construction of a building requires diligent leadership, and in the existing business model, there is a leadership vacuum. A compelling opportunity exists for expanding architectural services and making architectural practice more lucrative through managing the business processes of design and construction. Architects could craft a new role for themselves as leaders of a collaborative and integrated environment on their projects. Change to the work process requires leadership and direction — an orchestra conductor who is willing to take both credit and blame for the quality of the symphony. Architects and engineers, the most highly educated and credentialed members of the construction team, would seem a good choice as leaders. Will they rise to the challenge?

It is not clear that architects are willing to take leadership on integrated practice. Effective data exchange is a result of effective project management across an enterprise. Architects have resisted this role, contributing to a general impression that they are not project leaders. Additionally, there are behavioral and tactical practices adopted by many architects that suggest they will not lead the enterprise. The succinct negative messaging that many architects channel directly from their professional liability carriers about services they won't perform (no detailed cost estimates, no hazardous material removal specifications, no site inspections) are not helpful to the owner, who wants to accomplish the most with the least resources necessary.

Architects cannot remain content to delegate serious business and management functions to other groups; if they provide services called project management and construction administration they must include responsibility for budget, schedule, and other performance metrics.

A Lesson from Medicine

If architects decide not to become advocates for change, the profession may be ripe for a takeover because the economic opportunity will tempt others. A large corporate entity, presumably one with sufficient resources to self-insure, may emerge to form a facsimile of Kieran and Timblerlake's vertically integrated construction corporation. Such corporations could follow the lead of health maintenance organizations that saw opportunity in the decentralized medical services industry of the 1980s. The rise of HMOs and their success in dominating the health care industry is an instructive story for architects.

In the 1980s, the disruption created by rising medical malpractice insurance costs for doctors combined with rising health insurance costs for consumers and documented regional inconsistencies in medical care to create a point of entry for HMOs. Whether insurance rate increases of that time were justified or whether HMOs have succeeded in normalizing medical care is debatable. What is not in dispute is that doctors lacked an authoritative collective vehicle to manage their insurance costs and business practice. They became captive to business entities that assumed the risk as well as a management role.

Since 1998, managed care organizations have roughly 90 percent of physicians under contract. HMOs may or may not provide better medical care at a lower cost for the consumer, but their effect on doctors has been unarguably negative: A 2002 Kaiser Family Foundation survey reported that six of 10 physicians felt their enthusiasm for practicing medicated had declined in the previous five years.

Architects are confronted with different practice issues than doctors, but the foundation is being laid for a new business process that requires assertive leadership. If architects don't stake out this turf, it will be ceded to another entity that will make it more like a business. They may change architectural practice in the same way that HMOs have changed the medical profession and corporate agribusiness has changed the family farm.

The value of good design is much higher than its price. It is incumbent upon architects to develop a succinct business case for their service. Architects must infuse some red values into their blue business model if they are to succeed in the new world of integrated practice. If they remain politically fragmented and ambivalent, the historic values and mission of the profession are in jeopardy.

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