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Innovation in Practice

The 2015 Harvard Journal of Real Estate

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   In real estate, 'innovation' can be precarious. The industry typically standardizes the spectrum of the built environment into defined asset classes and product types, often confined by conventional financing and public policy. To many, the prospect of 'innovation' invites undue peril. Why subject the already risk-prone process of building or operating real estate to additional uncertainty?

Others see 'innovation' as the impetus of creating economic value. Beyond real estate, 'innovation' is a cornerstone of the modern economy and holds both cultural and practical implications. Many herald changing trends in the demand for real estate as a new generation takes hold, often pairing the 'innovation economy' with the 'disruptive economy.' Innovation is by its own definition unsettling; it can invoke a fundamental questioning of norms, disruptive of established principle in the pursuit of unique value. Yet not all novel ideas last forever, and only time will distinguish whether an innovative concept is fleeting or substantive.

If real estate follows a basis of standardization, and innovation is naturally disruptive, what is innovation in real estate? What is the conflict between real estate and innovation, and how is it challenged, overcome, or resolved? What is the value of innovation in the design and development of the built environment, and how does one find it?

The 2015 Harvard Journal of Real Estate takes aim at those questions. This year's Journal features 11 authors from programs across Harvard University, each with distinct approaches to the various facets of the real estate industry. The authors investigate a range of subjects under the umbrella of innovative practice, including opportunistic investment strategies, creative financing mechanisms, progressive public policy, and case studies in unique approaches to real estate development. Following each article is a review written by an invited academic or leading practitioner with a background in the same topic.

The real estate industry faces new frontiers, and its evolution will require many voices. Collectively, these authors investigate the value of innovation in practice, inviting both new ideas and opportunities for further discourse.

Brian Vargo
Executive Editor

Wendy W. Fok

Wendy W. Fok is a winner of the inaugural Digital Kluge Fellowship awarded by the Library of Congress (2014/15), the ADC (Art Director's Club) Young Guns 11 Award (2013), AIA (American Institute of Architects) Dallas "Express Yourself" Women in Architecture Award (2013), Hong Kong Young Design Talent Award (2009), and selected designer of the Perspective 40 under 40 Award (2011). Fok has a Master of Architecture and Certification of Urban Policy/Planning from Princeton University and a Bachelor of Arts in Architecture with a Concentration in Economics (Statistics) from Barnard College, Columbia University. She is completing her Doctor of Design at the Harvard University Graduate School of Design, with collaborating department the Harvard Law School. Currently, Fok is contracted as a guest-editor of an upcoming AD (Architectural Design) Journal, published by Wiley, titled "Digital Property: Open-Sourced Architecture," with co-editor Professor Antoine Picon, slated for a 2016 release.

Crowdsourcing the Built Environment

The voice of "the crowd" holds meaning like never before. The advent of network technologies and digital platforms invite the public to participate in the process of collective creation. "Crowdsourcing" is more than an abstract idea. Already it has informed the creation of two signature public projects in New York, and it promises to change the way the public can interact with the design of the built environment. What effect will this new media have on the way cities evolve?

In 2006, Time Magazine named "You" (the crowd) the "Person of the Year."[1] The title acknowledged the infinite potential of the thousands and millions of "you" who now direct media and financing within the new digital democracy. These citizens of the digital innovation age have created new platforms, such as those seen in the early beta developments of Kickstarter, Twitter, Wikipedia, and Facebook. This form of open innovation and new media has proven valuable within the fields of consumer goods. Accepted by most industries, such "crowdsourcing" can also be used to innovate within the built environment, and the real estate industry is primed to benefit from its emergence.

A glimpse into three innovative projects and case studies that explore the avenue of crowdsourcing demonstrates the impact of new media in the production of real estate. A first example is the LowLine, "a plan to use innovative solar technology to illuminate an historic trolley terminal on the Lower East Side of New York City. Our vision is a stunning underground park, providing a beautiful respite and a cultural attraction in one of the world's most dense, exciting urban environments."[2] A second project is

the +Pool,[3] an initiative to bring a floating swimming pool to the East River, on the Manhattan and/or Brooklyn banks of New York City. A third and final example is the Atlantic Yards Project, a public and private mixed-use development. These three case studies break with the traditional model of public participation within the development process through the engagement of new media.

As a whole, this article reveals how new technologies and business strategies are transforming not only business processes, but also the way products and services are created and marketed. For real estate development in particular, this innovation is altering organizational strategies for gathering private and public support and shifting the dynamics of competition for traditional design practices and real estate developments alike. In this context, crowdsourcing can provide awareness and support to a development, shorten the project timeline, and reduce project costs through raising capital.

The Participatory Process

Many observers and authors have noted the role of online platforms in aggregating resources across geographies. Villarroel (2013) notes that online platforms have provoked rapid congregation of distributed resources held by individuals who are geographically dispersed throughout the world.[4] Benkler (2009) emphasizes that peer production is the most significant organizational innovation that has emerged from Internet-mediated social practice.[5] The phenomenon most often associated with peer production, however, is crowdsourcing or crowdfunding (Howe, 2006).[6]

Wired writer Jeff Howe coined the term "crowdsourcing" in 2006. Organizationally, the basis of crowdsourcing combines three core characteristics: decentralization of problem conception and execution of solutions, harnessing of diverse motivations, and separation of governance and management from property and contract (Benkler, 2009). Open innovation, on the other hand, is derived from two forms: a self-organized and self-motivated collaborative activity to achieve a common goal, or an organizational strategy to broaden innovation boundaries while retaining to internal research and development (R&D) agendas (Huff, Möslein, Reichwald, 2013).[7] The word "crowd" is misleading within the term "crowdsourcing," as the success of these projects rarely relies on a general crowd but instead on invited participation from engaged members of the public (Owens, 2013)[8] and at many times, through mediated and precise "communication costs." (Villarroel, 2013).[9]

Crowdfunding is a very broad term that ranges in basis from donation to debt or equity positions in a project. This article considers crowdfunding in relation to platforms such as Kickstarter and Indigogo in the boundary of donation-based endeavors, which remains apart from the realm of real estate investment. The LowLine and +Pool used Kickstarter as a donation-based fund-raising platform to raise awareness of their design projects, exhibiting the crux of peer innovation. These projects embody an entrepreneurial spirit and belief breathing life to unbuilt and unforeseeable design projects for the built environment. They imply that direct input from the public network can inform the built environment. Beyond the smoke and mirrors, the larger question still lingers—what are the implications of this new form of public participation for urban development?

In an interview with Dan Barasch, co-founder and Executive Director of the LowLine, Barasch sees crowd participation within a design project as a form of both monetary and ideation support for a project, as it substantiates the design concept by further establishing a public stake and recognition for a project. His view is that "in essence, crowd funding (and sourcing) does two things for an early stage start up: it financially supports an effort, and it signals support for the idea itself."

Image: The LowLine. Image courtesy of Curbed NY, Vox Media Inc.

The LowLine

The LowLine project highlights several competitive advantages of the peer innovation model. Peer innovation has resulted from the public's natural inclination to open social media distribution about the project, including fan-fare and blog-o-sphere writing about the project digitally. For the LowLine, this is exemplified by the success of the project's Kickstarter campaign and support from established institutions and foundations, such as at the Friends of the Highline:

> *The LowLine has been crowd-funded from the very start of the project. Initially we received our first round of seed funding via over 3,000 individual backers on Kickstarter, leading to a record-setting $150,000. Since that time, we have diversified our funding streams with significant contributions from corporate, foundation, and public sources. But that initial Kickstarter success proved to be an important signal to larger and more institutional funders that our project was gaining in momentum and support."*
>
> *Dan Barasch, Executive Co-Director of the LowLine*

Public interest in the project gained significant momentum by engaging the crowd in the public relations of the underused and abandoned city-owned trolley terminal, set to become the LowLine. Additionally, the process increased funding streams through unconventional methods and direct partnerships with internationally renowned engineering and construction teams. Without peer and open innovation backing, a typical non-profit project such as the LowLine would traditionally confront numerous institutional challenges to access public funding, compromising the speed and time of development. Instead, during the launch of the project in 2008, the LowLine team was able to work on the design, research and development, and funding streams in order to launch their first prototype and install it on-site by 2011-2012.

The +Pool

The +Pool was motivated and ideated around the same time as the Lowline. Located in New York, the +Pool claims to become the "world's first water-filtering, floating pool." Regardless of whether this claim will become a reality or not, peer contribution opportunities have been successful, made possible through the team's creative efforts towards fostering community and online social media awareness of the project. The "tile by tile" option for reserving a name, or "spot" mounted on the "+" feature of pool served as public motivation of over 4,700 backers for the project. The contribution by these backers was threefold, serving to fund the project research and development, provide awareness and support of the project, and most importantly, contribute to a project that has low design cost for the individual contributors. The +Pool provides an excellent example of speed and cost advantage, in which online platforms provided an innovative medium through which to garner the recognition and support of crowdsourced peer production.

Image: +Pool. Image courtesy of Dong-Ping Wong of PlayLab / Family.

"The +Pool was ideated in 2010, with a Kickstarter campaign in 2011. It's still relatively nascent to see what kind of impact crowdsourcing and crowdfunding has on larger projects on actually building a project, such as ours; however, our team feels that by crowdsourcing the project, it has expedited the process of "client education", which usually takes a lot of time, in the traditional project scheme. This project was enabled through the public announcement through new media that allowed a faster inclination of awareness and has the potential of creating value for the public quicker, to shape the life of the project. On a support level, and funding level, it makes sense."

Archie Coates, Co-Founder of +Pool and Family

In the case of the +Pool, the public image of the design project gained a sizeable foundation of public interest. This served to engage companies like Google, who have privately partnered with the +Pool team to partially fund private initiatives such as their online water monitoring system currently active through the +Pool website, powered by open sourced resources. These types of privately funded endeavors are seeds of larger return on investments as open innovation begins to engage the larger and broader public and create further opportunities for private investment.

Atlantic Yards

Crowdsourcing has significant competitive advantage overall, including market advantage, quality advantage, speed advantage, and cost advantage. An additional organizational advantage in the first two case studies is content advantage, described by Villarroel:

"Crowdsourcing is a new way of thinking about work that requires new rules of engagement. This open approach requires that work be accessible to occasional contributors, offering a win-win exchange, therefore, fostering an informal yet durable relationship." [10]

Conventionally, larger urban developments often lack the organizational motivation provided by the private sector, as many larger projects are impacted by bureaucratic ties that tend to limit the success of a collaborative process by the public, unlike the case of crowdfunding. As Arana Hankin, the former director of the Atlantic Yards Project at New York State's economic development agency, Empire State Development, pointedly states, "…unless the public sector attempts to deliver innovative projects or they have the ability to guarantee a high return on investment, which they do not at this point, I do not see government using crowdsourcing to fund public real estate projects." Her viewpoint underscores the challenging nature of public projects within real estate and many public sector urban developments.

Under construction since 2011, the Atlantic Yards Project has progressed slowly and fitfully. Atlantic Yards, rebranded as Pacific Park in Brooklyn, is a project that covers the Atlantic terminal urban renewal area. The project is a mixed-use commercial and residential development project, consisting of seventeen high-rise buildings that are under construction. The most recently completed parcel of the development includes the Barclays Center sports arena, which opened in September 2012. Original talk of the public redevelopment began in the late 1950s and continued into the 1960s, and was published in the June 24, 1968 New York Times' article, "Renewal Raises Brooklyn Hopes." [11]

Image: Atlantic Yards (aka: Pacific Park Brooklyn).
Image courtesy of the Bermingham Equipment Foundation.

According to Arana Hankin, "public private real estate projects are necessarily developed at a large scale, and typically are not driven by community interest, or innovation, but by business interest." The agency of crowdsourcing is limited, therefore, in mediating the relationship between public authorities and citizen participation. However, if financial and business gains could be justified through community contribution and support, crowdsourcing for community interest and input on a project could be an option for expediting the speed of isolated real estate opportunities and further the marketing value.

> *"There are a number of new online platforms that have given a broader segment of the population the ability to impact the built environment, either through small scale investment opportunities, capitalizing on their current assets, or by supporting community planning projects. IOBY (In Our Backyard), was created in Brooklyn in response to residents' frustration with large-scale planning projects. The organization has celebrated success primarily because they are tackling projects that are too small for government to initiate, and the overwhelming feeling shared by many residents is that innovative projects are not being delivered by government.*
>
> *"Public private real estate projects are necessarily developed at a large scale, and typically are not driven by community interest, or innovation, but by business interest. These projects are immensely complex and multilayered, and not easy to execute. Nonetheless, there could be opportunities for government to solicit financial support from residents through crowdsourcing on isolated components of these projects such as public space, public art, or public programming."*
>
> *Arana Hankin, Former Director of The Atlantic Yards Project*

Crowdsourcing the built environment has the potential to create an online platform for collaboration and exchange of knowledge that can help improve organizational performance and advantage, grow a project's bottom line, and open up new opportunities for community participation in public and private development. However, crowdsourcing as a mainstay of civic engagement for public agencies will have its setbacks:

> *"As someone who worked in politics and government for over 10 years, I would find this an extremely hard sell. Government continues to be criticized for too heavily subsidizing public private real estate deals, not to mention the developers who are awarded these projects consistently are the largest grossing real estate firms in the city. Many segments of the population believe that public amenities should be funded by either government and/or the private sector." (Arana Hankin)*

Case Study Conclusion

Innovation and its technologies within our ever-changing means of producing real estate and architectural design have enabled the exploration of crowdsourcing as a form of organizational strategy. Crowdsourcing is quickly outperforming traditional organizations and emerging into the mainstream of the built environment. It is therefore critical for real estate developers to understand how to manage strategies for crowdsourcing.

Projects like the Lowline and the +Pool are just a few examples of localized projects that are diffused and popularized through the support of international communities. This is facilitated through crowdsourcing and enabled by limited communication costs and low design costs. These collaborations reach a global scale to cultivate international recognition of peer-produced resolutions for regional or local challenges and as a result, can create unprecedented value. By employing new media, developers can expedite project delivery by addressing stakeholder concerns earlier in the process and thereby reduce development costs. With increased attention to conflict mitigation, crowdsourcing could facilitate the creation of a better built environment imagined by developers, designers, and the community.

As indicated by Dong-Ping Wong and Archie Coats of +Pool, and Barasch of the LowLine, peer production through social media and online contributions has gained traction in the urban development field. The increased transparency between the public and governmental agencies may sometimes hinder the process of potential project realizations, due to the lack of guidance and quality control of social media distribution. For some projects, the prosperity of new media distribution networks comes with a cost.

Crowdsourcing as a strategic organizational tactic for the use within architecture and real estate is most functionally advantageous through applied instances where cost reduction, rather than distributed exploration of a resource and opportunity space, is the core function of a system (Benkler, 2009).[12] This type of organizational strategy optimizes and gathers independent contractors and the public into a singular forum, within a controlled vacuum and task-based scenario, but does not affect governance or ownership, as their participation is usually in a fixed method, beyond "hedonic gains."[13] These examples include: payments (i.e. Kickstarter for LowLine), novelty (i.e. +Pool tiles), or as public forum (i.e. community public hearings for The Atlantic Yards).

A repeated debate since the early recognition of open innovation is fundamental concern over the relationship between the creator, the contributor, and the creation. The question remains as to how the intellectual property of crowdsourced projects can retain its authority and ownership within the value-generating potential. As much as the crowd participates in supporting a project in digital format, it is valuable to understand that the crowd does not take ownership or authorship in the determined physical property of the designed good—whether it be an underground park, a water-filtration pool in the middle of the Hudson, or potentially a future crowd-voted design of stadium such as the Barclay Center. These variables lie in a spectrum from trading "strong" intellectual property goods (e.g. patented products), to "weak" intellectual property goods (e.g. open source), (Chesbrough, 2003). The public lays no claim to the monetary gains of what the designer generates, even in spite of public contribution in thought and process.

An additional concern for most public relations and marketing teams is to manage the public's role in the phrasing or framing of the project. It can be argued that the "public knows best," and that public community hearings for public or private developments should allow community members to speak their views and be heard by city officials. Many argue that this model developed when the digital age was less technologically networked and connected, functioning out of necessity, lack of alternative media, as well as the desire to engage on a personal level.
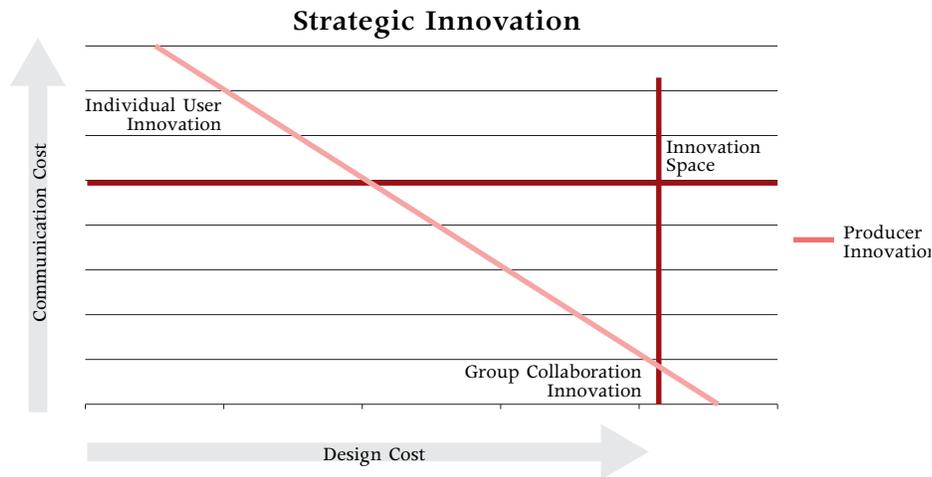
Strategic Innovation

Figure: Strategic Innovation: Base model describing the innovation space of group vs. individual innovation.
Source: Adapted from Baldwin, von Hippel (2009), and Villarroel (2013)

New Age Implications of the Networked Society

Crowdsourced projects are created through cultural motivation, where their basis in "design costs" is balanced by the benefit of "communication costs" given the crowdsourcing medium. These details are reflected in the image above, which diagrams the "producer squeeze problem," meaning that the higher the communication costs, the lower the design costs, based on Moore's Law[14] [10]. For there to be a business opportunity, the product complexity must exceed what the individuals and groups alone must achieve (Villarroel, 2013). There is an interesting phenomenon on the balance of a "design cost" based on a "design product" vs. "communication cost" discussion that emerges out of a crowdsourced project. While the way online self-organization works is fascinating, the various issues of closed firms versus open practices and how it operates are still of high concern to traditional operators.

Open innovation projects allow individual users and the public to become the primary source of value contributors within projects, through monetary or creative support. These types of modular collective problem solving projects, such as the Lowline and the +Pool, demonstrate a new paradigm of large projects, in which new communication methods engage the public in design and development more tangibly and powerfully. Crowdsourcing also opens up opportunities for project funding and enables organizations to take on the problem-solving role themselves (Lakhani, 2013).

Crowdsourcing is an approach that calls for strategic and organizational excellence to embrace new methods and capitalize on new opportunities (Villarroel, Gorbatai, 2011a, b). Traditional firms and real estate developers that work in strong cultures of internalized research and development structures could feel threatened by the high threshold of open innovation disclosure, limited privacy, and the appropriability of intellectual property. However, these same firms have the ability to benefit from various digital media companies that have adapted successfully to crowdsourced, peer production, and open innovation models that reach out to the public domain for information commons licensing. Ultimately, as in all innovation cycles, crowdsourcing is dependent on sharing, openness, and public participation. In the coming years, this sharing has great potential to contribute to a more transparent, effective, and lucrative urban development process overall.

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