Crowdsourcing the Obama Presidential Center

An Alternative Design Delivery Model: Democratizing Architectural Design

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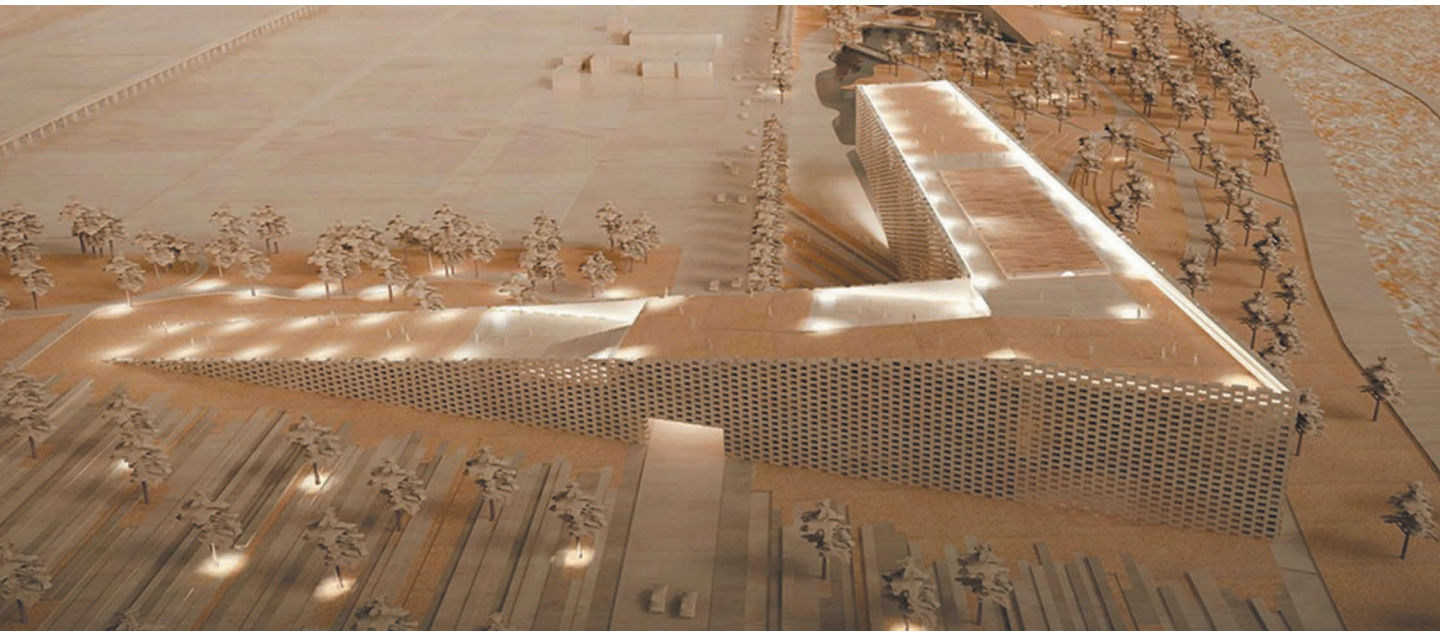

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ABSTRACT

In this article, we present crowdsourcing as a design delivery method for publicly funded buildings, and compare it to the traditional Request for Proposals (RFP). We explore the potential of crowdsourcing through the use of an online design competition for the Obama Presidential Center in Chicago, IL, which the authors administered at Arcbazar.com, a crowdsourcing platform.

Competition procedures have been applied in architectural practice since antiquity, from the Parthenon and the Hagia Sophia to thousands of seminal buildings around the globe. However, with the advent of digital technologies and outreach to a more interconnected world, crowdsourcing allows even the most mundane design challenges to go through the fair competition protocol. We argue that crowdsourcing can help democratize architectural design acquisition by giving a level playing field to designers, and produce a more just, competitive, and creative design product.

1 Cover image of the 3rd Prize entry for the Obama Presidential Center by Arc# 820: Raynaldo Theodore, Kalvin Widjaja, and Ryan Ridge, Indonesia

INTRODUCTION

In 2016, the Barack Obama Foundation announced the winners of the commission for the Obama Presidential Center in Chicago. The foundation selected the husband-wife team of Todd Williams and Billie Tsien. The other finalists that qualified for the last round were: David Adjaye, Renzo Piano Building Workshop, Diller Scofidio + Renfro, John Ronan Architects, ShoP Architects, and Snohetta. These were selected among 140 firms that responded to a Request for Proposals (RFP) issued by the foundation.

The RFP is a traditional design acquisition method often used by organizations to obtain credentials and first responses from interested parties. The Obama Foundation reviewed and interviewed applicants, and evaluated their experience with similar scale buildings. RFPs allow clients to evaluate a multitude of qualified designers and thereby lessens the risk of failure. However, while it may be a more secure system, it often suffocates creativity by eliminating the immense talent pool of thousands of designers who may not have had the chance to build up a pantheon of buildings, and thus were not allowed to respond to the RFP. Therefore, it often results in known, contemporary, and average designs that deter creative surprises and forward-looking architecture.

In this article, we want to present crowdsourcing as an alternative method to the RFP model. It is different in two significant ways: a) in selecting the designer, and b) in evaluating the work. Crowdsourcing models are not about credentials of bidders, but about their ideas and concepts for the design challenge. As a matter of fact, the entire process is strictly anonymous to ensure a merit-based outcome. The evaluation of projects happens through an outside body of reviewers, who on behalf of the organizer evaluate all proposals. Reviewers can consist of domain experts, building users, neighbors, and other relevant parties.

One of the goals of the Obama Foundation was to project democracy, equality, progressivism, and citizen participation in their new edifice. The Center would house a museum, archives, and community gathering spaces that create a "center for citizenship" (Kamin 2017). Therefore, it is perplexing that the acquisition for its design went through the traditional RFP model despite its inherent economic, institutional, and political backwardness. RFPs often rotate candidates among an exclusive club of well-known or larger-scale architectural firms, thereby innately alienating the rest of the architectural community, which in the United States alone amounts to about 250,000 professionals. Crowdsourcing could have been a more inclusive alternative for the larger architectural profession.

Crowdsourcing takes its roots in traditional competitions that can be traced back to antiquity; from the Parthenon to the Hagia Sophia, many seminal buildings around the world were sourced through competitions. However, with the advent of digital technologies and access to a global talent pool, crowdsourcing allows even the most mundane design challenges, such as your bathroom, go through the fair competition protocol. Crowdsourcing could thus dramatically increase design penetration into the millions of projects each year around the world that are executed without design professionals (As and Nagakura 2016).

In this paper, we explore the potential of crowdsourcing through the case of the Obama Presidential Center, and look deeper into the model to evaluate whether it facilitates a more just and democratic procedure, and yields a better overall design. We summarize the principal issues and premises related to the protocol, address several questions connected to the effectiveness of the method, and examine the variables that impact the final product.

RFP VS CROWDSOURCING

Publicly funded buildings in many European countries are required to acquire design through competitions (European Forum for Architectural Practices 2012). In the United States, public organizations are also becoming more inclined to use competitions, instead of selecting firms through RFPs. Competitions are open, civic minded, and have an inherently public spirit. The process gets the interest of citizens, the media, and is a great public relations tool for the organizer, it can draw attention from potential donors, and can stimulate designers to devote their time to generate innovative design ideas.

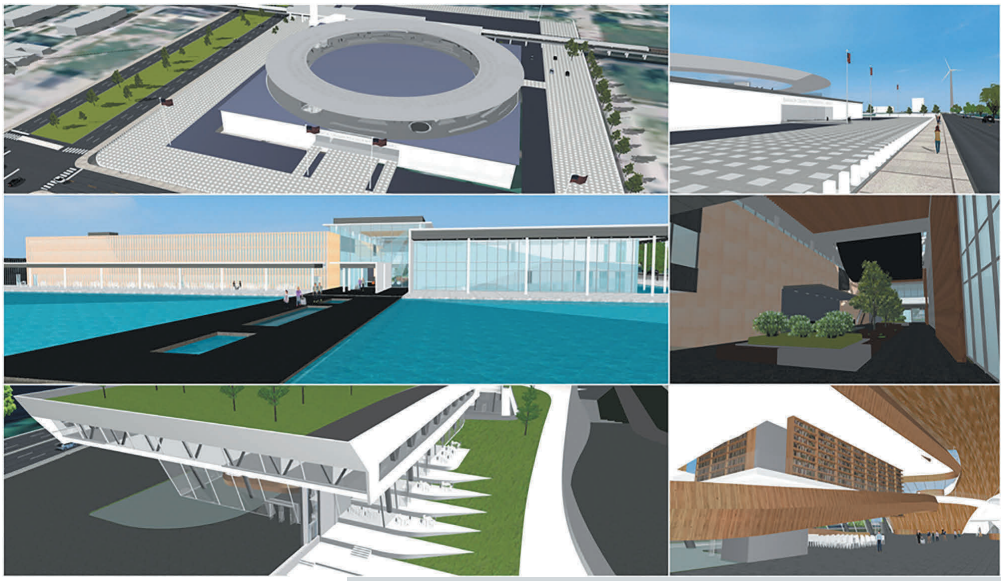
In this article, we aim to address the following questions:

- Can crowdsourcing produce a better model to the Obama Foundation's needs than the RFP delivery method?
- Can crowdsourcing generate more creative and innovative design solutions?
- Is the process at the end more democratic? Can crowdsourcing projects guarantee a just and fair evaluation protocol?

We will certainly not be able to answer all these questions in this case study alone, however, these points frame our discussion.

METHODS AND TECHNIQUES

We used Arcbazar.com, an online crowdsourcing platform to administer the Obama Presidential Center competition (Arcbazar 2016a). The platform allowed us to increase the pool of designers, and facilitate the participation of a wide spectrum of users in the evaluation process. Participation in the project was



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2 VR-Cloud as an interactive evaluation tool by Forum8

3 The physical jury at the awards ceremony in Chicago, from left to right: Francisco Gonzalez-Pulido, President at JAHN; Dawn Schuette, FAIA, 2016 AIA Chicago Board President; Tim Swanson, Cannon Design Office Practice Leader; Kees Kaan, Founding Principal at KAAN Architekten; and, Andrew Balster, Executive Director of Archeworks.

free, in order to allow designers from any part of the world to join the challenge without any cost barriers. We also developed technologies around designer interface and evaluation protocol to increase efficiency and transparency.

Designer Interface

The project brief was disseminated to architectural designers through e-mail, social media outreach, and listings on relevant architectural web portals. Designers could visit Arcbazar.com and sign up for the project. They could participate individually or in teams, communicate among themselves and/or organizers, and use virtual reality (VR) technologies to test their designs in 3D.

The team feature allowed designers to collaborate (e.g., a designer in Boston could work with a designer in Berlin). The system would proportionally distribute points or monetary awards to each team member. Teams could consist of architects, landscape designers, urban planners, and other domain experts. The system provided an open and transparent communication channel between organizers and designers. Participants could ask questions during the competition. Posts were shared on a public forum in real time. And, unlike traditional competitions, designers could respond to other designer questions, and comment on any issues related to the project. Designers were also given access to VR-Cloud, an interactive VR platform developed by Forum8, a Japanese technology company. Moreover, Autodesk provided novel collaboration tools within their Revit software.

Evaluation Procedure

Crowdsourcing protocols resemble games. The competitors are the players, the rules are the written building programs, and both have a final reward. Therefore, unlike RFP procedures, crowdsourcing inherently contains a lot of ambiguity. As in games, competitors need to out-do other participants in order to win. One could argue that this fact leads to greater overall effort by designers. It forces participants to think outside the box, develop distinctive solutions, explore and experiment with new ideas, and challenge the status quo. However, also as in games, ambiguity can cause competitors to speculate and gamble. This relates directly to the evaluation protocol. Once participants know the jury in traditional competitions, they may directly or indirectly be inclined to shape their design accordingly. In other words, they may limit themselves to the solutions they think might be acceptable to the jury, or use accepted norms since experimentation may appear too risky. We thus question the effectiveness of the traditional jury system. Can we expand on the body of reviewers? With online platforms, we do not have to be limited to a small number of expert jurors, but can instead tap into the broader crowd of citizens and fellow designers around the world. We created three categories of reviewers (regular users, designers, and academics), and explored various ways of calculating their input to see the impact on project rankings. We then compared this evaluation method to the outcome of a physical jury.

All reviewers were asked to evaluate submissions quantitatively on five criteria: 1. Idea (concept of the design), 2. Aesthetics, 3. Function, 4. Buildability, and 5. Graphics (quality of graphic representation). Each topic was evaluated on a 1–10 point system, 1 being the weakest and 10 the strongest. Qualitatively, jurors were able to comment on each submission. Jurors were also encouraged to explore the designs through a VR interface within virtual Chicago. They could walk through, drive through, fly-over the site, etc., in order to evaluate the entries at the contextual and spatial level (Figure 2).

THE CASE STUDY

The Obama Presidential Center competition was launched in partnership with BuiltWorlds, AIA Chicago, Autodesk, Forum8, GreenApple Campus, Dwell on Design, Cannon Design and Archeworks. It was publicized through various digital media channels, including architectural publications, industry blogs, social media, and partner networks.

The Brief

The program of the project was outlined by the Obama Foundation, and it totaled roughly 115,000 ft^2 gross area with 42,000 ft^2 parking. The deliverables were plans, sections, elevations, site plans, a larger master plan, and the project narrative. In addition, finalists were asked to produce short team videos describing their projects, and to submit a 3D model to be integrated into the VR cloud software.

The total award for the project was set to $10,000: $4,200 for 1st Prize, $2,100 for the 2nd, and $700 for the 3rd Prize, plus $3,000 for the Voters' Choice Award. In addition, Autodesk presented a non-monetary award to the best student entry. The award money for this competition was sponsored by the project partners. However, cities, municipalities, public entities, or communities themselves could potentially fund or crowdfund such projects. The online platform has payment features that allow for crowdfunding scenarios.

The Jury

The digital jurors consisted of regular website users, fellow designers, and academics. At the awards ceremony in Chicago, Andrew Balster, Executive Director of Archeworks, moderated and lead a physical jury that constisted of Dawn Schuette, FAIA, 2016 AIA Chicago Board President; Francisco Gonzalez-Pulido, President at JAHN; Kees Kaan, Founding Principal at KAAN Architekten; and, Tim Swanson, Cannon Design Office Practice Leader (Figure 3). All reviewers had to take into account: a) sensitivity of scale, massing, and design elements to neighborhood context; b) wider urban design of South Chicago; c) quality of publicly accessible open spaces and other amenities solicited in the program; and, d) impact of the design on the neighborhood multimodal circulation system.

The Results

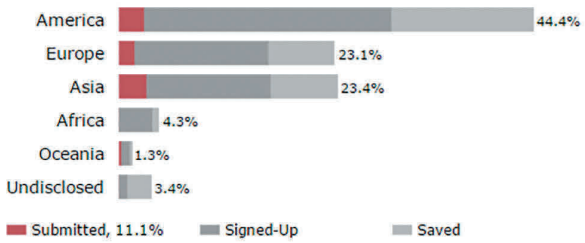
During the course of the competition 296 designers signed up from 87 countries. The top five countries by the number of participants were the United States (151), India (35), Italy (23), Canada (18), and Iran (15). Of these, 44.4% of designers were based in the Americas, 23.4% in Asia, 23.1% in Europe, 4.3% in Africa, and 1.3% in Australia; meanwhile, 67.8% of participants self-reported as male and 23.3% as female (Figure 4).

The participants were given three months to submit their designs, and the organizers selected 33 semi-finalists. These were published on the platform and were opened-up for public voting. Of the total, 62,994 votes came from the public, 216 votes from designers, and 685 votes from academics, who shortlisted the 12 finalists.

Following deliberations, the jurors selected the design submitted by Zhu Wenyi Atelier of Beijing, China, as the winning scheme. (Figure 5). Wenyi's design received an average score of 5.4 public voting. Tim Swanson commented: "My initial, gut reaction was that this was too formal... But then it becomes a circus in

LOCATION OF DESIGNERS

By Continent

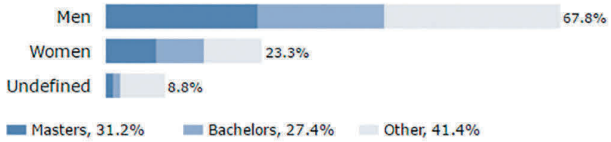


By Country (Top 5)

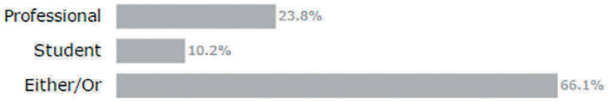
Rank	Participants	Flag	Country
1	151		United States
2	35		India
3	23		Italy
4	18		Canada
5	15		Undefined

PARTICIPANTS

Gender/Degree

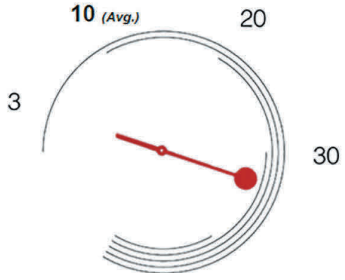


Occupation



SUBMISSIONS

Number of Entries (33)



Top Designers

Rank	Flag	Designer	
1		Zhu Wenyi Atelier	see project>
2		Austin Scott	see project>
3		Raynaldo Theodore + Kalvin Widjaja + Ryan Ridge	see project>
Honorable		Anonymous	see project>
Honorable		Raffaele Semonella	see project>

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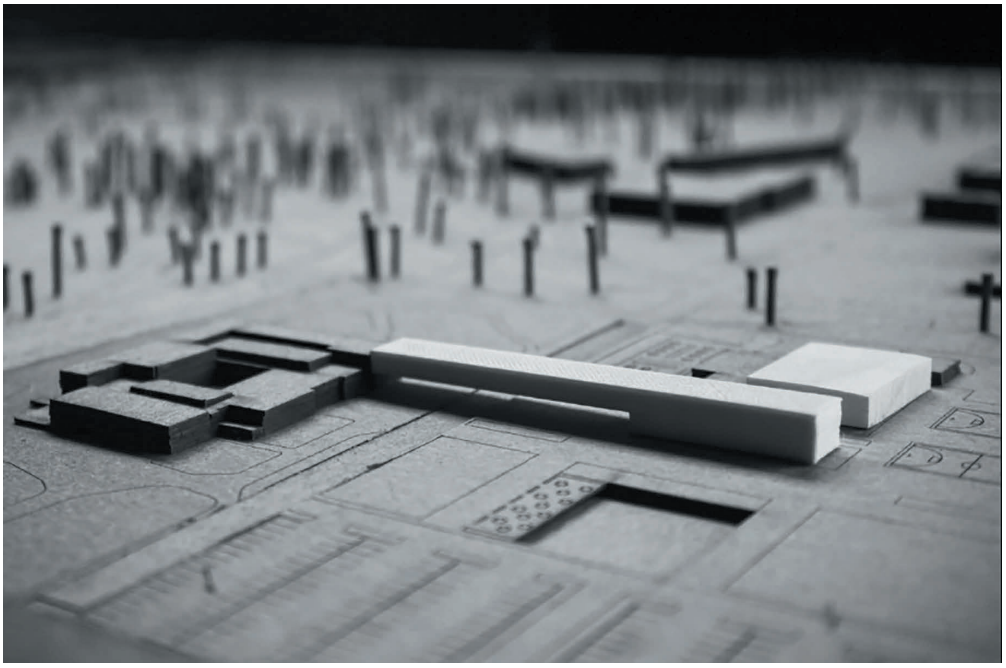

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4 Analytics page of the Obama Presidential Center competition on Arcbazar.com

5 Cover image of the 1st Prize entry for the Obama Presidential Center by Arc# 614: Zhu Wenyi Atelier, China

6 Cover image of the 2nd Prize entry for the Obama Presidential Center by Arc# 615: Austin Scott, United States

some of the most delightful ways... Not just a building, but a place for engagement and collaboration" (BuiltWorlds 2016). The second place went to Austin Scott from the United States (Figure 6). It received a score of 4.7 during public voting, and was critiqued by Karen Nelson as follows: "Connecting the library to the infrastructure and transit is an inspired idea" (Arcbazar 2016a). The third place was awarded to the team of Raynaldo Theodore, Kalvin Widjaja, and Ryan Ridge from Indonesia (Figure 1). Their submission scored 5.0 in public voting. Mahesh Daas commented: "Great blurring of landscape and building to make it accessible, part of the 'ground,'" and yet reach out to the sky. Powerful gesture, well resolved urban placement, beautiful delineation make this one of the most compelling ideas" (Arcbazar 2016a).

Our study shows that the following benefits can be derived from crowdsourcing:

- Public participation: High degree of involvement by the public, e.g., local communities, fellow designers, and other

domain experts.

- Fair protocol: every stage of the evaluation process is clearly outlined and presented to all participants.
- Enforced anonymity: at all stages the anonymity of designers is protected to ensure a merit-based outcome.
- Design opportunity: the competition focused solely on the designs, their aesthetics, functionality, and creativity. Such factors as past experience, international accolades, or perceived prestige were not factors in the decision-making process. Thus, crowdsourcing gives architects a fair chance to put their mark on the stage.

In crowdsourced projects, designers analyze the brief and act as free consultants for the organizers. It is similar to having hundreds of people studying and discovering any potential flaws in the program, and informing the organizers of previously unseen weaknesses and/or opportunities. In addition, organizers are able to compare a larger number of design solutions, yielding to a higher chance of success. In contrast, RFPs are usually run by only one or two specialists with few design options at hand.

Weighted Democracy

The notion of democracy is as complex as it is highly debated. What constitutes democracy when it comes to voting? Many, if not most, would count the "one person, one vote" model as the most representative of a democratic process. While this is a solid assumption, we find much value in a system that allocates a certain weight to a vote depending on the reviewer's qualifications. We soon realized that open systems do not always work if there are no checks and balances. Initially, we gave equal weight to all reviewers. The problem of this approach was that participating designers got incentivized to engage their family/friends to register and vote favorably on their projects. We were certainly able to track such voting irregularities through monitoring IP addresses, and corrected them before they had any impact on the outcome. However, it exposed some significant flaws in the system.

We ended up assigning different weights on votes for different types of users. Regular users that recently registered on the system received the lowest weight. Designers with a history on Arcbazar.com received voting weights according to their performance, i.e., the higher their ranking in the designer charts, the higher their votes were calculated. Academics were also given a higher-weighted voting multiplier (Figure 7).

Digital vs. Physical Jury

We compared digital voting to physical jury deliberations. On June 16, 2016, BuiltWorlds hosted an awards ceremony in Chicago, where a panel of six physical judges evaluated the top

Voting Multipliers

	Rank	Multiplier
Regular Users	N/A	1x
Designers	Top 10	100x
	Top 50	50x
	Top 100	20x
	Top 1000	10x
	> 1000	1x
Academics	N/A	100x

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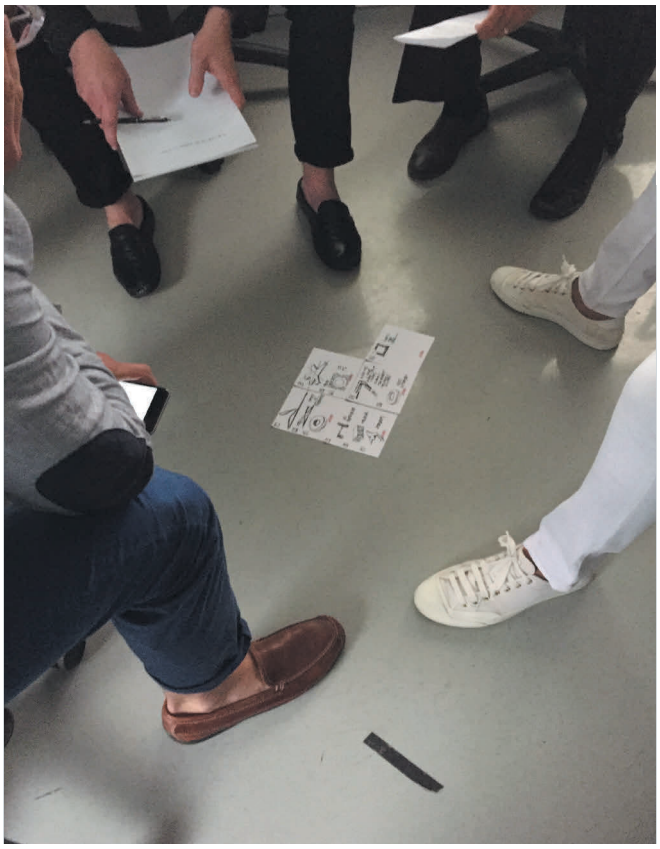

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12 entries (Figure 8). The discussions among jurors showcased some important shortcomings of the traditional jury model. What happens when the jury cannot agree on a clear winner—when, for example, one group of the jury supports one entry, and the other another one? In our case, such a situation emerged, and at the end, the jury compromised on a third project.

The physical jury outcome did not overlap with the choices of the digital jury groups, who voted in the following manner: regular users voted for the entry Arc# 32 as their first choice, fellow

Rank	Regular Users		Designers		Academics	
	Points	Arc#	Points	Arc#	Points	Arc#
1	5.2	32	9.8	859	8.3	820
2	3.8	412	9.4	554	7.9	614
3	3.4	859	9.3	614	6.8	615
4	3.3	554	9.3	615	6.5	765
5	3.3	820	9.2	412	6.1	859
6	3.2	614	9.2	571	6.0	600
7	3.1	571	9.1	820	6.0	554
8	3.1	765	8.9	645	5.7	412
9	3.0	615	8.6	600	5.7	958
10	2.7	600	7.6	765	5.5	571
11	2.5	958	7.0	958	5.0	32
12	2.4	645	2.6	32	4.7	645

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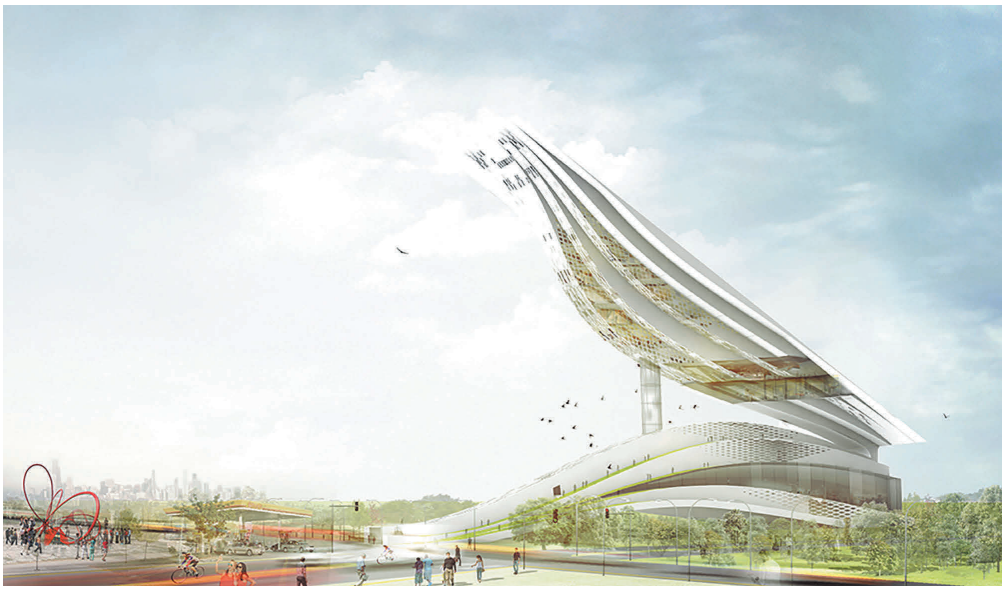

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7 Voting multipliers according to user groups

8 Physical jury deliberating at the awards ceremony in Chicago

9 Top 12 projects evaluated by different user groups, 1) regular users, 2) experts, and 3) academics; compared to the final ranking (in red)

10 Cover image of entry for the Obama Presidential Center by Arc# 32: Fatemeh Yazdandoust, Iran

designers went for Arc# 859, and the academic body voted overwhelmingly for Arc# 820. Once digital votes were weighted according to user groups, Arc# 820 became the first choice of digital jurors overall (Figure 9).

The discrepancy between physical and digital juries needs further analysis. The physical jury may have gone through a "design by committee" syndrome, where the result perhaps became a consensus solution as a consequence of compromising preferences and viewpoints of a limited number of jurors. Individual decisions and preferences of jury members in such cases can make a substantial difference. One group of the physical jury advocated for Arc# 615, and the other group for Arc# 820. In the end, both groups compromised on Arc# 614, which was neither one's first choice (Figure 10). In contrast, if we took only the 63,885 digital votes into account, the winning scheme may have been the entry of Arc# 820.

CONCLUSION

The Obama Presidential Center project was unique in terms of exploring the engagement of a global community of designers with a tiered evaluation protocol. The goal was to use this project as a laboratory to explore the potential of crowdsourcing as a prototype to be applied in other contexts and design challenges around the world. When it comes to architecture of the people for the people, regardless of its scale—be it a redesign of a local park or an important landmark as the Obama Presidential Center—the RFP process of a small group of people selecting designs from a few established firms without involving the larger community in the process is no longer justified by the technologies available. As we live in a highly connected world and continuously redefine the notions of work, shifting it towards collaboration, entrepreneurship, and innovation, it is paramount to adjust the way we incorporate communities in the architectural process.

Rank Order	Arc#	Preview	Points	Idea	Beautiful	Functional	Buildable	Criteria	Graphics
1	614		**242**	40	38	39	40	41	44
2	615		**199**	34	25	34	39	31	36
3	820		**198**	32	33	30	35	31	37
4	600		**170**	21	23	35	39	25	27
5	859		**160**	25	24	23	30	31	27
6	412		**147**	23	25	20	22	28	29
7	32		**140**	21	20	19	22	28	30
8	958		**140**	18	16	29	38	22	17
9	571		**138**	21	16	26	29	26	20
10	554		**136**	22	21	20	25	24	24
11	765		**125**	21	23	17	22	20	22
12	645		**110**	18	14	17	30	17	14

11 List of the top 12 finalists in the Obama Presidential Center competition

Michael Graves, who participated in many competitions himself, once argued that at a minimum, competitions provide a "safety net against incompetent or mediocre design," and most often increase the likelihood of good design to emerge (Banerjee and Loukaitou-Sideris 1990). Arguably, many buildings and structures around the globe would have not been conceived without competitions. On the other hand, Frank Lloyd Wright argued that competitions produce mediocre design "...any architectural competition will be an average upon an average by averages in behalf of the averages." In his opinion, competitions can be viewed as democratic, "if mediocrity is the democratic ideal in architecture" (Wright 2005, 152). This argument perhaps relates

to the compromises traditional juries, consisting of a smaller set of jurors, have to undertake in their deliberations.

Professional organizations have often argued that competitions exploit design professionals by not rewarding all, but only a few entrants. Furthermore, they claim that projects become a game, where designers try to outmaneuver the system with graphic excellence and craftsmanship rather than creativity and design potential. Yet upcoming architects often welcome the opportunity to participate in competitions. As one designer puts it: "… being part of this generation, we do not like the routine. We like to try different things, work on various projects and get involved in all sorts of competitions, not all architecture related. As we see it, this helps us break the habit and boosts our creativity" (Arcbazar 2016b). Crowdsourcing projects can act as design catalysts that allow young and upcoming architects to realize their creative potential.

The Obama Presidential Center competition has been an important laboratory for us to explore the potential of levelling the playing field for designers around the globe, and to experiment with the inclusion of a larger set of reviewers in the evaluation process. We tested different evaluation protocols to derive the most optimal outcome. An ever-increasing number of projects will inevitably be delivered through new and innovative practices, and undoubtedly more applied research needs to be done to harness the full potential of novel design acquisition models.

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IMAGE CREDITS

Figure 1: Raynaldo Theodore, Kalvin Widjaja, Ryan Ridge, Februrary 10, 2016, © Arcbazar.com

Figure 2: Forum8, February 10, 2016

Figure 3: Builtworlds.com, June 26, 2016

Figure 5: Zhu Whenyi Atelier, February 10, 2016, © Arcbazar.com

Figure 6: Austin Scott, February 10, 2016, © Arcbazar.com

Figure 10: Fatemeh Yazdandoust, February 10, 2016, © Arcbazar.com

All other drawings and images by the authors.

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