

THE DISTORTING EFFECT OF MONEY, AND OTHER LESSONS LEARNED BY A MAKERSPACE FUNDER

by Molly Rubenstein, Benjamin Linder & Kofi Taha

When the [Artisan's Asylum](#), a makerspace in Somerville, MA, started back in 2010, neither the maker movement nor the concept of innovation had yet captured the imagination of educators, policy makers or the general public. Institutional funders looking to use collaborative fabrication spaces to achieve their education or development goals were virtually non-existent — we know because two of us were part of the leadership team beating the bushes for funding in those early days. Most makerspaces were started just as Artisan's Asylum was — by groups of loosely connected people looking to serve their individual needs by pooling their own scant resources. It was “stone soup” for creative people and money was scarce.

As the movement grew, people began to ask how we were able to create, in such a short time and with so little institutional financial support, such a large and vibrant community and space. We always offered the same advice: don't look for a magic pre-designed solution. Don't get distracted by shiny new cutting-edge digital fabrication tools. Stop drafting architectural plans and lists of equipment, and engage with your users instead. Find out what those users want and need the space to accomplish, and what they are excited to bring to it. Engage users in the launching and leadership of the space. Create structures that distribute decision-making power and ownership (along with appropriate boundaries and systems in order to minimize conflict). Make sure that there are opportunities and reasons for the community to interact, collaborate, and have fun

together both inside the center and outside in the community. The rest will follow.

It was a constant challenge for Artisan's Asylum to raise the increasing funding we needed to operate comfortably, however, and other grassroots makerspaces struggled with the same problem. The constant struggle to achieve and maintain financial sustainability made it difficult for us to serve our communities and to have the impacts we dreamed about. After we each moved on from our work with the Asylum, we often wondered, without devaluing the amazing people that made exciting things happen every day, what the organization might have achieved if more financial resources had been available. And we wondered how we might proceed if we had the chance to start over again with a full complement of human and financial capital when launching or supporting a new makerspace. In 2012, we had the opportunity to find out.

That year our teams at [Olin College](#) and [MIT D-Lab](#) joined a consortium of colleges and universities that banded together as the [International Development Innovation Network \(IDIN\)](#). IDIN obtained a grant from [USAID's Global Development Lab](#) to execute a program aimed at training and supporting innovators around the world to develop technological solutions to problems related to poverty. One part of that plan was to fund and support the establishment of collaborative design and fabrication centers based in developing economy countries. These centers became our partners in the [IDIN Innovation Center Program](#).

As the lead implementers of this new program, we were suddenly the ones offering funds rather than

the ones desperately trying to raise them. We thought that our decades of experience in development combined with our grassroots makerspace experience in the US would protect us from some of the failure modes we had observed in other social impact ventures and makerspaces. We were going to ensure that users were effectively engaged, that the right emphasis was placed on tooling, programming and community building, but now we could just take off some of that financial pressure. We were cautious, but this could work, right? Not perfectly.

We started out well enough, working to implement many of the best practices we had learned from experience. We took a number of actions to encourage centers to respond dynamically to the needs of their unique participants and context. We worked with leaders who had experience in design, fabrication, or engineering and were already doing community engagement, co-design, or social impact work in the communities around their centers. We partnered with centers where communities had explicitly expressed interest in the services that an innovation center would provide. We offered no standard model and encouraged local partners and community members to design and evolve their centers in whatever way felt most appropriate and compelling to them.

But we also had money to grant, and this money came from an entity that had specific development goals that it needed to achieve in order to continue to receive its own funding. As the maker movement and innovation itself attracted more and more attention, pressure mounted to quantifiably demonstrate what outcomes could emerge from these creative spaces. With the simultaneous increase in both interest and pressure, the IDIN Innovation Center Partner program doubled its cohort size three years in a row. We found that despite our experience and best intentions, these centers were experiencing familiar challenges generating both user participation and funding. This indicated to us that in certain specific and consistent ways they were still struggling to effectively engage

their community members:

Many center leaders were hesitant to depart from what they understood our model to be.

Even though we didn't believe we were presenting a standard vision or model of what an innovation center was supposed to be, local leaders looked to IDIN examples. They tried to replicate what they saw at fabrication shops at our partner colleges and universities or ones set up for our collaborative design trainings ([International Development Design Summits](#)), without sufficiently adjusting those designs to leverage the inherent strengths or address the unique needs of the communities they worked in. In some cases, they also focused on serving stakeholder groups they had seen IDIN engage when there were other local community members more interested in the services they could provide.

Some in-country leaders were still considered outsiders in the communities they were engaging.

Although they came from the same country as the center's community, many of the leaders we selected had higher levels of formal education and international exposure than the primary community participants they were trying to engage. They often came from different economic strata or spoke a different local language. While some were able to overcome these differences, others could not use their own interests and experiences as relatable models for their users, which made it more challenging for them to find the best ways to engage local leaders and participants.

Centers struggled to find the right mix of stakeholders to engage.

Many makerspaces in advanced economy countries struggle to financially sustain themselves; in contexts where the primary users are earning only a few dollars a day, the challenge is even greater. In these contexts, it is critical that leaders engage a variety of different stakeholders, including some with more resources, as participants, clients, or sponsors. In large part due to requirements from our own funders, some innovation centers felt pressured to serve the

greatest number of users with the highest need rather than engage with a variety of stakeholders in order to develop a locally sustainable set of programs. Others veered too far in the other direction, splitting their attentions between very different stakeholder groups. This divided focus made it more difficult for them to present a coherent picture of their mission to potential funders and to have a meaningful impact.

These are not easy challenges to overcome but, in collaboration with our IDIN Innovation Center Partners, we have been iterating on a variety of strategies to address them.

EXPERIMENTING WITH THE MODEL

Increasingly, centers are working to depart from the examples they have seen in traditional IDIN fabrication shops and events in order to find a better fit, balancing what they are able to provide with the needs and interests of their local community.

- **Adjust the center audience.** The [Centro de Inovação Vila Nova Esperança \(CI-VNE\)](#), our partner center in a *favela* or historically low-income and unplanned urban area in São Paulo, Brazil, initially wanted to focus on engaging the residential community's adults in design education. However, they soon found that with the adults away at work much of the week, it was children under 16 who most often showed up to the workshop space. By embracing their strength as a youth engagement center, they have not only been able to start sharing their successes in that arena with partners and funders, they have built more trust and seen increased involvement from adult community members.
- **Adjust the center offerings.** The [Tet Centre](#) was established to support a cluster of villages around Pader, Uganda, but over time it became clear that, although centrally located, the physical shop was too far from those communities to effectively meet their everyday needs for tools and workspace. The

team decided to outfit each of the individual village cooperative fabrication groups with a communally managed fund, which is now being used to purchase small tools and build simple shelters for their products.

- **Look at a variety of models.** We have shifted our support strategy these past two years from one-on-one calls with each center leader to working group calls with all of the center leaders together. We have also worked to connect them with other maker movement networks through a variety of channels including conferences organized by other networks like the [Global Innovation Gathering](#) and [FabLearn](#). This has increased the variety of models our partners have to learn from and made it easier for them to think about ways to vary their own models based on their unique contexts.

LEADING FROM THE INSIDE

In our experience, the best way to encourage participation by any desired group of users is to have a representative from that group in a leadership position.

- **Support leaders establishing centers in their own communities.** One center leader was a college student at one of our partner universities, the [Kwame Nkrumah University of Science and Technology \(KNUST\)](#) in Kumasi, Ghana, when he joined our network. After founding a [Creativity Group](#) and helping to run two successful Makers Fairs at the university, he launched [Kumasi Hive](#), an education center and incubator for social impact software and hardware startup ventures. Most of these ventures were started by current or former KNUST students and their colleagues from other schools in the area. Kumasi Hive currently incubates thirteen businesses, has fourteen active partnerships, and so far on average has engaged almost 1000 participants each year.
- **Promote participants to leadership**

positions. In some communities where we work, it is unrealistic to rely solely on insiders to spearhead a new center. In communities new to the concept of a community design and fabrication space, for instance, leadership is most likely to start from the outside. But that doesn't mean that it should remain that way. **Project DEFY's** founder was inspired by his own frustrating experiences in the formal education system, but it was together with his neighbors in the village of Banjarapalya, India, that he formed the vision for the Project DEFY Nooks: low-cost self-education centers that inspire passion for discovery and problem-solving skills. The DEFY team is now in the process of opening their fourth Nook, and their outreach team is made up of two community members, a young man and young woman who are former participants and have been running the Nook in Kaggalipura for over a year. Incidentally, having a woman on their leadership team not only increased participation in the Nook from community members in general, but from women and girls in particular.

BALANCING STAKEHOLDERS

Finding the right balance between having a sufficient variety in stakeholders to allow for financial sustainability and maintaining sufficient focus to have meaningful impact has been one of our partners' greatest struggles. As advisors, connectors, and capacity builders, we have used a range of tactics in order to support partners in navigating this terrain, but as a funder, there is one particular strategy that we have found that makes a big difference.

- ***Fund only some of a center's expenses, at the right scale for the team and context.*** We have experimented with offering grants ranging from \$3,000 to \$80,000 in a year. We have learned that while grants that are too small may not be enough to help a center reach its next stage of

development, grants that are too large can lead to a rapid expansion of staff and programming that the center then cannot secure continuous funding to sustain. We have shifted to funding programs that are able to match what we offer with an equivalent amount either from other grants, earned revenue, or gifts and donations. This has helped not only to ensure the financial sustainability of the program but also the investment of key stakeholders from within the ecosystem.

Needing money is an inherent challenge when trying to build and sustain any shared design and fabrication space, particularly one dedicated to having social impact in communities with limited financial resources. But the fact is that simply having the money it needs does not on its own ensure a center's success. Funding introduces pressures that can operate in opposition to the innovative and adaptive thinking that these types of entities are often touted as promoting. And perhaps most importantly, this can be true even if the funder explicitly expects otherwise and advises against these pressures. We offered no model and we taught inclusive innovation methodologies to our grantees. Even so, the gravitational force of the resources at play consistently pulled attention away from the user engagement and other core elements that we have found to be critical in developing the best version of what these collaborative organizations can be.

We hope the strategies for user engagement and responsive program design listed above are helpful for leaders of collaborative design and fabrication initiatives around the world. For

funders, we hope it is clear that the mere pairing of funding with flexible advice is not enough to support center leaders in keeping their orbits appropriately aligned to what will make their programs most impactful and sustainable; funding and other support mechanisms must explicitly incentivize user-oriented, context-responsive programming. As

organizations at many different scales and vantage points continue to explore strategies for achieving specific educational or development outcomes through these type of organized creative communities, first, let's all acknowledge the inherent influence and potentially distorting effect that money can exert, and, second, let's commit ourselves to remaining true to the deep fundamentals around stakeholder engagement that experience shows is essential to organizational health and long-term success.

ABOUT THE AUTHORS

Molly W. Rubenstein manages programming at [MIT D-Lab](#) to promote the development of resilient and inclusive ecosystems for innovation and entrepreneurship around the world. She ran the [International Development Innovation Network \(IDIN\) Innovation Center Program](#), providing funding, mentorship, and peer-learning for local organizations promoting the development of innovative, inclusive solutions improving the lives of people living in poverty in 15 countries. Molly spent four years co-managing the rapid growth and development of the [Artisan's Asylum](#), one of the largest and longest-standing grassroots community makerspaces in the US. She has been training and mentoring collaborative community innovation, fabrication, and entrepreneurship programs since 2013.

Dr. Benjamin Linder is Professor of Design and Mechanical Engineering at [Olin College](#). His teaching and research efforts are directed at developing techniques and approaches that further a more ecologically connected and socially just design practice. He investigates the roles people, products, and firms can play in the realization of sustainable communities with an emphasis on local innovation, collaboration, and collective action. One of the first board members at [Artisan's Asylum](#), he is a co-lead organizer of the [International Development Design Summits \(IDDS\)](#) and co-founder of the [International Development Innovation Network \(IDIN\)](#), and served on the [IDIN Innovation Center Program](#) committee from 2012-2017.

Kofi Taha, as part of [MIT's D-Lab](#), focuses on asset-based approaches to community-driven livelihood and quality-of-life technology design, mostly in communities where people on average earn less than \$3 a day. He has co-facilitated village-level design-thinking trainings in Uganda and Haiti, helped interdisciplinary teams commercialize social impact products in Ghana and Tanzania, provided support to [local innovation centers](#) in Brazil, Colombia, and India, and helped build [IDIN](#), a global community of 1000+ innovators, entrepreneurs, researchers, and educators. Regardless of context or focus, what drives his work is a commitment to improving the use of inclusive practices that lead to practical solutions and equitable opportunity.