

Stanford SOCIAL INNOVATION^{Review}

Next Generation Nonprofits Supplement

Sponsored by AWS

Accelerating Mission Impact

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consensus across teams, and only 20 percent of the time designing and implementing the actual infrastructure.

One of the first areas of cultural reengineering was to make the IT department a better partner to the fundraising department. Prior to when I joined Share Our Strength as its CIO in 2017, the IT department focused almost exclusively on server maintenance and desktop support, and—although we had technical skills to offer—we were never part of the conversation of how to better manage data. Therefore, my first step was to expand the services the IT department offered to include building and maintaining the organization’s data lake. In doing so, my department offered a new source of creativity, capability, and perspective to our business units’ efforts to use data and technology wisely.

A second aspect of our cultural reengineering was building trust between the IT and fundraising departments. This effort took time and patience for people coming from different disciplines to learn each other’s language and to trust each other’s expertise. For example, when the IT department demonstrated the data lake’s capabilities, we were met with some skepticism because the analyses looked different from the Excel spreadsheets the fundraisers were familiar with. At the same time, we in the IT department also needed to guarantee that we were demonstrating capabilities germane to the fundraisers’ current priorities, such as automating data-cleaning tasks that occupied an outsize part of their day, instead of demonstrating capabilities that would only be potentially useful in the future, such as finding unique trends in donor behavior. It took several iterations and rounds of clarifying questions before we began to understand each other’s perspectives and were then able to establish a prioritized list of problems to solve.

Finally, our organization embarked on a third area of cultural reengineering: developing a shared understanding of how our data was captured and structured. Often, the rules for storing and structuring data made sense for one fundraising team, but those same rules did not easily translate and apply to the work of other teams. This led to irrelevant data being stored in some structured fields, a lot of important data being stored in comment fields that did not easily lend themselves to analysis, and a realization that sometimes our analyses were incomplete because they did not fully take into consideration the nuances of how or where our data were stored. Data cataloging, which is a central feature of data lakes, gave us the tools and opportunity to identify and resolve these irregularities and ultimately improve our analyses.

Share Our Strength is only a year into using a data lake to improve our fundraising, but we are already seeing tremendous gains. We are beginning to measure returns on various investments with greater specificity because we are including more and better data streams, which in turn allows us to make smarter decisions. We are also working to automate complicated yet repetitive data transformations and data pulls—saving our donor operations team time as they support major- and mid-tier fundraising officers in multiple markets. Finally, our more consistent data standards are helping us to better understand donor behaviors, which has allowed us to have more meaningful communications with them.

The data lake contributed to each of these successes, yet the lake itself was only possible thanks to our nonprofit’s cultural transformation. For organizations looking to take a similar journey to improve their fundraising capabilities, our advice is to build trust within the organization and then *iterate, iterate, iterate*, as there are likely several unknown opportunities for innovation within your own data sets. ♦

Accelerating Mission Impact

Cloud technology has fueled Moneythink’s ability to better serve students in real time.

BY JOSHUA LACHS

A few years ago, my nonprofit organization, Moneythink, went through a digital metamorphosis. Since 2008, we have worked to increase the number of historically marginalized students graduating with college degrees while carrying little to no financial burden. Early on, we identified college matriculation and affordability as critical inflection points that were prime for innovation. In 2016, we committed to finding the most strategic intervention for the largest number of students who could benefit from our services.

In partnership with the behavioral science firms Ideo.org and Ideas42, we embedded a human-centered design approach into our product development. Meeting with students, their families, and student-advisors helped us to understand and think through what successful digital experiences could look like for our primary beneficiaries—current and future generations of education consumers.

Cloud technology proved to be the right solution for translating confusing financial aid letters, thus allowing users to compare their college affordability options.

Between 2016 and 2019, we ran a virtual college financial-coaching program with one-on-one college and financial guidance for Pell Grant-eligible high school seniors in Chicago and the San Francisco Bay Area. Our students were supported throughout the college application and matriculation processes, including FAFSA completion, college fit and matching, financial aid award letter comparison, and personal financial planning. Our coaches used an in-house prototype to have more effective advising conversations, which led our students to make more informed

decision about which college to attend. We tested several tools within our program that expedited previously laborious tasks such as collecting financial award letters and translating their information by hand. And we discovered that our technology enabled students to quickly understand the affordability of college options, so that our advisors could then focus on the conversations that really matter.

Despite our successful virtual coaching program, we still faced barriers to large-scale growth and impact. Our in-person student

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recruitment and acquisition strategy was personal but time consuming and resource intensive. Our service model was hamstrung by the reality that our students truly benefited from our services when they were able to access a Moneythink coach in real time—but we weren't available 24/7. In addition, our then-current model required significant finances to expand.

In 2019, we wondered how we might reduce obstacles to accessing our virtual coaching model to develop an automated, yet personal, experience that would enable students to receive real-time support without individual coaches. We knew we needed to become even more innovative, agile, and, frankly, more digitally centric to bring our vision to life. After considering our options, cloud technology proved to be the right solution for translating and demystifying confusing financial aid letters, thus allowing users to compare their college affordability options.

Once we identified AWS, we started building DecidED in the fall of 2019, which has become our core product strategy. DecidED is a web app that uses cloud technology to provide students and their families with guidance and support to understand financial aid options and budgeting for college costs. Not only is DecidED designed to engage and guide more students, but it is also used by student counselors so that they can have access to straightforward, effective, and precise data to more meaningfully support their students' college decision-making process.

BECOMING PRODUCT-CENTRIC

The decision to pursue an open-access college affordability tool built on a cloud server presented us with a series of "risk and reward" questions and conversations about our business model, staffing structure, funding opportunities, as well as possible long-term strategic directions.

The results of those considerations led us down a clear path of next steps. First, we recruited experienced product-centric individuals to serve on our board of directors who could guide our strategic activities. Next, we purposefully included our long-time funding partners more closely in our impending organizational shift by explaining our intentions, asking for honest feedback, and inviting them to support our direction. We then added the necessary engineering capacity and technical expertise to our product team to facilitate long-term growth. Our final step was to assess the kind of organization we needed to be in order to deliver on our vision.

This work resulted in a big culture shift to becoming a "product-centric" organization. In practical terms, this enabled us to reimagine the kinds of structure, systems,

and talent needed to propel our work forward. As the leader of our organization, it was important that I consistently communicated our refined "what" and "why" to our team, stakeholders, and community partners to continue creating buy-in and goodwill.

From a product standpoint, serverless technology helped us launch DecidED quickly and prepared us to scale with no wasted computing capacity. DecidED relies on a machine-learning (ML) service that automatically extracts text, handwriting, and data from scanned documents. When a student uploads a digital version of their college financial award letter into the DecidED app, the file uses ML to extract text, tables, and other data points. Moneythink categorizes these outputs and then inputs them into a standardized award-letter feedback dashboard the user can access to make visual comparisons between college costs.

DecidED was also designed for student counselors to maximize the assistance they give high school students to make financially informed



college decisions. Before utilizing cloud technology, a college advisor would need to either manually interpret each financial aid document or ask their students to do so. DecidED's award-letter processing gives practitioners cloud-based, verified college affordability information. Besides controlling for human error, it saves organizations hundreds of hours of administrative time.

Building DecidED on cloud technology has accelerated our overall growth. Already, we have thousands of students and advisors across 41 states. To stay ahead, we've increased our product team by 50 percent. We also doubled our organizational budget from \$1.5 million to \$3 million, while securing new philanthropic support to fuel DecidED's expansion and potential influence on systems change, including major grants from The Bill & Melinda Gates Foundation, the Michael & Susan Dell Foundation, Capital One Foundation, and other major supporters.

In 2021, Moneythink launched the DecidED API, which expands our database of college financial-aid data and provides public access in a bid for greater transparency around college costs. Because DecidED solves for an acute need in the marketplace, we've been able to serve our beneficiaries in ways that we never before could have imagined.

THREE TAKEAWAYS

From our experience, we offer three takeaways for nonprofits considering building a digital programmatic component, developing an app, or pursuing a digital strategy:

Digital is not the endgame. | Rather, it is a powerful vehicle that can fuel your mission. Human relationships matter the most. Leading with empathy and compassion are what will give you a competitive advantage.

Determine the right intervention. | Allocate time to figuring out the parts of your program or organization that could be automated—without compromising your programmatic aims and your equity-centric mission.

Conduct lean, rapid testing. | Iterating helps mitigate early, unnecessary spending on what could be costly endeavors designing in-house technology. For Moneythink, this meant operationalizing a human-centered design approach so that we could find ways to build lightweight prototypes and use design sprints to test new tools and features. We also routinely tested our ideas with and for our end users. This has resulted in an accelerated and oftentimes cheaper development process.

Data-driven transformation can lead to and sustain greater mission impact. For Moneythink, this means systematically empowering students by giving them clear and correct information and ownership of their choices. It means holistically transforming the college success ecosystem by shifting the role that college advisors play using our automated solutions that allow practitioners more freedom to provide the support students really need. And it means informing college affordability practices and policies by leveraging our automated tools and predictive data sets that could influence efforts toward greater student financial and academic equity, research, and advocacy.

Digital shifts to cloud technology demand enormous energy, vulnerability, and high-risk tolerance. However, this effort was essential to better serve our beneficiaries and our team members. ♦

Beyond the Gallery Walls

The Barnes Foundation is using digital tools to grow its educational mission and reach new audiences.

BY MARTHA LUCY

The Barnes Foundation is a world-class art collection with a progressive educational mission. Our founder, the Philadelphia scientist-turned-collector Albert C. Barnes, believed that art had the capacity to transform lives, and that everyone—not just the elite—should have the opportunity to learn about it.

He chartered the Barnes Foundation as a place where such learning could happen, filling the galleries with his own collection and admitting his first cohort of students, many of them factory workers, in 1925. Art education classes were conducted in the galleries, with students seated in wooden folding chairs. On the walls hung a mixture of objects from all over the world arranged by Barnes himself into densely packed, ahistorical groupings, including modern French paintings, African sculpture, medieval triptychs, and ordinary household objects like spatulas and door hinges. Lessons focused on rigorous visual analysis that required no background in art or world history. Before his death in 1951, Barnes created the foundation's bylaws to ensure that his method of installation could never be changed: The groupings must be kept exactly as he designed them, and no explanatory text could ever be added to the walls.

A hundred years later, we have vastly expanded our founder's mission of accessible art education. The Barnes still offers classes in the galleries, but we have grown the number and diversity of offerings. We've introduced free programs for underserved communities and for K-12 students from Philadelphia public schools, and we've established a research department that produces new knowledge about the collection. Yet, we often find ourselves stymied by the limitations of physical space. The Barnes galleries are small compared to other city museums, making it a challenge to welcome school groups during public hours and to meet the growing demand for seats in our adult classes. Many of the rooms can fit only a handful of people, which means that parts of the collection, like African sculpture, cannot easily be incorporated into lessons. And given Barnes's no-wall-label policy, how were we supposed to share new research about items in our collection with our visitors?

EMBRACING TECHNOLOGY

Cloud technology helped us maneuver around some of these challenges, first on-site and then in virtual spaces. In 2017, we launched Barnes Focus, a cloud-based mobile app built using AWS that lets us share historical information about the collection while keeping the gallery walls free of labels and text. The visitor simply positions their phone in front of a painting or object and the app immediately pulls up the name of the artist, title and date of the work, and a brief contextual description. The

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