GrantSpaces

The Problem

- Federal funding and private funding to colleges and universities are strong drivers of that innovation.
- In 2009, over $40 billion was spent by the federal government on research funding disbursed as grants. (OMB, 2009)
- Grant writing is currently an arduous and disorganized activity which researchers consider a "distraction from 'the science'."

The Vision

- GrantSpaces seeks to solve these problems with an innovative funding discovery and professional collaboration platform, offered as software-as-a-service to research-oriented colleges and universities in the United States.
- The offering is based on a complete open-source software suite deployed at Harvard Medical School.

Project History

The Clinical & Translational Science Center (CTSC) at Harvard Medical School, funded by the NIH CTSA program, aims to increase collaboration on research projects between investigators from every part of the university and its affiliated institutions. The CTSC's Informatics group, led by Dr. Isaac Kohane and Dr. Alexa McCray, commissioned the construction of an application to improve grant-writing collaboration.

In January 2009, the Informatics Solutions Group (ISG) at Children's Hospital Boston initiated a goal-directed research and design process to discover key challenges in grant writing within the research community. ISG discovered that junior researchers lacked resources and experience to build effective research collaborations, find appropriate funding opportunities, and write successful grant applications – tasks that sustain their scientific inquiry and advance their academic careers.

ISG used these findings to design and develop Grant Central. Grant Central helps junior researchers rapidly progress to the higher levels of collaborative proficiency demonstrated by senior colleagues through highly-tailored groupware and search tools. The software was rolled out in August 2009, and is accessible at http://grants.catalyst.harvard.edu/.

As an NIH-funded program, all CTSA software is mandated to be open source. In addition, the NIH states: "The terms of software availability should permit the commercialization of enhanced or customized versions of the software, or incorporation of the software or pieces of it into other software packages. "

Since deployment, five research institutions have expressed interest in the application, but Harvard Medical School does not have the capacity or a direct interest in the distribution and maintenance of the application.

In addition, since deployment, Grant Central has experienced no major issues or bugs on production servers at Harvard Medical School.

Original Product Features

Find Grants: A grant "spider" collects and maintains an index of federal research which are updated daily from grants.gov. Users can save interesting grants and share with colleagues via e-mail and social media.

Find Collaborators: Grant Central integrates the university's staff directories, augmented with scientific publication metadata for each faculty member. Users can search for collaborators based on name, faculty rank, institution, or, most importantly, research interests. Users may also create semi-anonymous want-ads to offer or find critical research expertise.

My Forms: Users can store commonly-reused grant forms, such as NIH biosketches, for easy access in projects.

Find Advice: Grant Central provides an open forum for discussions about grant-writing and the research process, with an index of frequently asked questions, popular web resources, and instructional screencasts and videos.

My Projects: My Projects is a secure collaboration space that is tailored to the grant-writing workflow, but without conflicting with researchers' established practices. In a project, researchers and administrators can manage tasks, deadlines, and documents, as well as initiate intra-team discussions about a grant proposal. Users can start projects based on saved grants, invite collaborators from their contact list, and incorporate existing grant documents from My Forms. At any point in time, grant materials can be exported as one or many zipped folders.

Underlying Technologies

Grant Central is built on standard open source technologies, including Java, Spring MVC, Berkeley DB, MySQL, and Apache Tomcat.

Grant Central is composed of three loosely-coupled modules (grant spider, user interface, secure document store) integrated through RESTful APIs. The secure document store, where proprietary grant materials reside, provides seamless encryption of all data at rest.

The GrantSpaces Offering

- GrantSpaces will be a software-as-a-service offering of Grant Central.
- The application will be marketed initially to colleges and universities with significant funding from federal sources.
- GrantSpaces will augment the features listed above with additional functionality to:
    - Target workflow needs of grant administrators who manage multiple grant applications simultaneously
    - Co-brand the application for subscribing institutions
    - Create a proprietary index of private grant and student research opportunities, a frequent career launch point for young investigators
    - Provide high-power analytics so universities may gain insight into collaborative behavior and grant application success rates
- GrantSpaces will require two integration points per institutional customer: (1) single-sign-on (SSO) user authentication, an increasingly common piece of IT infrastructure at colleges and universities, and (2) staff research profiles, which can be created *denovo* or approximated from existing institutional resources

The Market

- There are 629 public and 1,845 private universities in the US as of 2005.
- Research-oriented colleges and universities derive a majority of their research funding from federal sources.
- In FY 2009, the National Institutes of Health and the National Science Foundation disbursed approximately $32 billion toward research, most of which went to US colleges and universities. The Department of Defense and NASA are also major funders of academic research.
- Colleges and universities collect 20 to 40 percent of grant monies in "indirect costs," a key revenue source to support facilities and infrastructure. Indirect rates are negotiated by each institution on a

periodic basis. The variability of indirect rates seems to be based largely on perceived institutional prestige.

- We estimate that approximately $12 billion was spent as indirect cost for academic research in 2009
- Currently, universities have no unified solution to manage the grant application process.

Existing Competition

Because the originating product was designed from the ground up with a goal-directed process, GrantSpaces has no known direct competitors and is largely competing against non-consumption.

- Science-oriented professional networking applications, such as ResearchGate and Epernicus, are not integrated with universities directly nor are they focused on the grant-writing workflow.
- Targeted grant-writing applications for universities, such as Cayuse, provide deep grant form integration for specialized grants managers, but do not address the needs of researchers who require grant search and collaborative tools.
- Our quantitative research shows that researchers currently do not use free web tools like Google Docs and Google Sites, or low-cost collaboration services like Basecamp. They do not meet institutional security needs and do not capture the contextualized grant-search and collaborator-search functionality.

New Entrant Competition

As an open-source product, GrantSpaces' most direct competition may be other, new services that adopt the Grant Central code base. GrantSpaces will protect itself from this threat with:

- affordable integration services
- implementing a feature backlog collected from the team's experience developing and maintaining Grant Central
- leveraging our first-mover advantage by already having deployed the application for a major research institution

The Business Model

- GrantSpaces will be offered under a software as a service model with revenue generated primarily from yearly subscriptions.
- GrantSpaces' public grant search will be accessible by any web user, serving as a feeder into our paid offerings.
- GrantSpaces will charge a fee of $25,000 to $75,000 for integration services depending on the size of the institution and existing IT infrastructure that can be leveraged. This will be a low-margin activity to deter new market entrants described above.
- Basic service, with a $20,000 yearly subscription fee (prorated based on faculty size), will include co-branding, IT support, and continuous updates through the SaaS model.
- Premium service, offered at $35,000 per year (prorated based on faculty size), will include the basic service plus institutional analytics.

Why This Pricing Structure

The basic and premium rates are comparable to the indirect cost revenue a typical research institution would receive for a single grant ranging from $150,000 to $250,000.

Projected Revenue

GrantSpaces projects an annual $8.9 million mature revenue stream assuming a yearly average subscription rate of $27,000 per institution per year and 25 percent market penetration amongst US colleges and universities. GrantSpaces expects additional revenue streams through offering low cost subscription products to individuals and small businesses in addition to developing international service offerings in the medium term. Secondary markets amongst private research organizations who apply for public and private funding sources will also be explored.

Cost Structure

GrantSpaces will have four primary cost structures: one time integration, product enhancements, and support staff, and sales. As a SaaS offering low hardware cost and a scalable infrastructure and with a mature workforce of approximately 20 members, we estimate 70% of our costs will be variable, making the organization lean and flexible for growth.

Strategy

GrantSpaces will leverage its institutional knowledge, quality Grant Central product, and low cost-of-entry to rapidly capture market share, then will leverage early successes to fill grant-related needs of private life sciences companies, small businesses, and individual researchers.

Exit Opportunities

An IPO is unlikely given the nature of a product offering targeting academics. A more likely exit opportunity is acquisition by a larger company, likely in the publication or social networking industries. GrantSpaces will be an acquisition target due to its sustainable cash flow, knowledge base, and unique relationship with colleges and universities.

Investment Requirements and Return

GrantSpaces is looking for an initial investment of up to $2.5 million over 5 years towards a 20 percent equity stake. This amount will cover the following expenditures that will jumpstart market share capture:

- Incorporation of GrantSpaces as a C-corporation
- Base salaries and material costs
- Subsidies of integration costs for early institutional clients
- Two full-time sales staff with commissioned sales goals
- Three FTE IT support and integration staff
- Architecture upgrades to support SaaS model
- A secure hosting environment suitable for high-volume transactions
- Design and implementation of modest feature upgrades

For this initial investment based on an industry revenue multplier of 6 for SaaS, the 20 percent equity stake will be worth approximately $10.6 million at year 5.

The Team

Jonathan Abbett: Grant Central lead designer and UX engineer
Steven Boscarine: Grant Central lead software engineer and architect of core components and the secure document store
Vineet Manohar: Grant Central software engineer and architect of grant spider component
Nicole Zanetti: Grant Central lead quality assurance engineer
Juan Gonzalez: Attorney with experience working with the Office of Research Issues at Harvard Medical School.
Amon Millner: MIT PhD candidate at the Media Lab, with a research focus on how technology can advance education and innovation, bringing extensive cultural and networking experience to the team.
Vasco Bridges: MBA candidate at the Ross School of Business, University of Michigan. Brings experience in product development and sales.
Evan Pankey: Harvard Medical School graduate and Grant Central principle product manager. Brings an initimate knowledge of potential feature paths for the GrantSpace product.