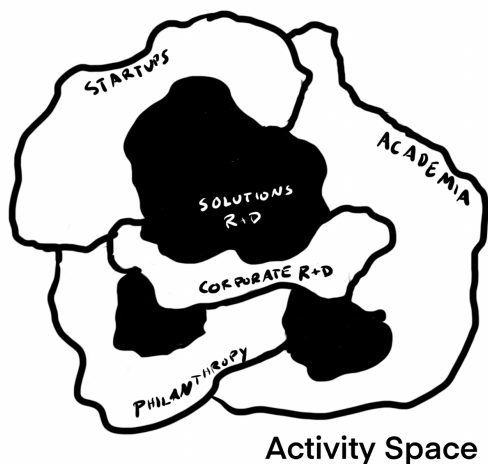


PARPA (Private ARPA) is a new organization that aims to use an unconventional institutional structure to go after potentially impactful work that is too researchy for startups and too engineering-heavy for academia (“solutions R&D”).

There’s a consistent phenomenon where a technology that seems fantastical to all but a few diehards hits a tipping point, after which it just feels like “the future.” Sometimes it’s a clear moment, like The Mother of All Demos for personal computing or The 2006 DARPA Grand Challenge for autonomous



vehicles. Often it’s much more subtle. Almost always, though, the tipping point is upstream of commercialization. DARPA is good at pushing technologies to these tipping points, but they can’t do it for every technology. While they have more flexibility than other agencies, DARPA is still a government organization which imposes additional constraints on the actions they can take. Our goal is to riff on the DARPA model to push more technological possibilities from “impossible” to “inevitable.”

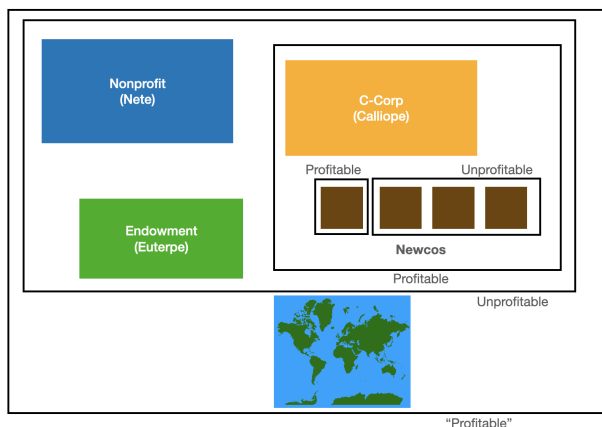
Practically, we plan to accomplish this goal through a hybrid non/for-profit structure that can take on work other organizations won’t or can’t by precisely mapping out blockers to potentially game-changing technology,

creating precise hypotheses about how to mitigate them, and then coordinating programs to execute on those plans. PARPA will also serve more broadly as a serious context of use for desperately needed experiments in research management and planning.

Programs

Like DARPA, PARPA will focus on research programs run by program managers who are empowered to make any decision for the program within reason. These programs will focus on goals like “build a DNA-based molecular 3D printer” or “build a general-purpose experimental platform for telerobotics” that require coordinating several separate research projects that are eventually integrated into a single result.

PARPA programs will start with ~12 month “seedling projects” to test whether it’s even worthwhile to run a program and generally last for ~5 years.

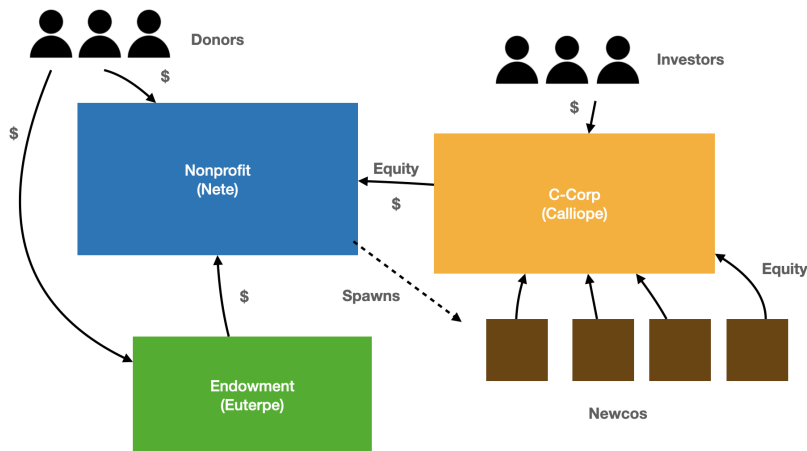


To give you a flavor of the types of programs that we foresee undertaking: would it be possible to unlock ‘precision chemistry’ with a molecular 3D printer? What would happen if there was an experimental platform for general purpose telerobotics? Could robotics, atmospheric control, and other mechanisms cross an efficiency threshold for vertical farming? Could much more flexible simulators unlock new kinds of science? What would it take to create general-purpose humanless factories?

Structure

The nature of PARPA's work means that while it will (hopefully!) create a lot of value, it likely won't be able to capture enough of that value to be net profitable and absolutely would not be able to compete with startups and the stock market on a time-adjusted ROI basis. However, commercialization and startups are powerful dispersion mechanisms for certain technologies. If PARPA does its job right, it could shepherd industry-defining technologies in the same way that PARC or Bell Labs did in the past. It's a reasonable bet that a portfolio of programs that become companies would have an investable return. A purely Nonprofit organization funded by donations

would leave support for these programs on the table.



To that end, PARPA will use a hybrid for-and-non-profit structure. The non-profit will run the programs and 'drive' to make sure that we work on programs based on potential impact, not profit.

Roadmap

PARPA will go through several tranced 'evolutionary stages' to walk the line between expectations and ability. There's a tension between the fact that taking on a lot of capital from donations and investments creates pressure that can stifle the exploration we'll need to do to iron out many many kinks in the plan and the fact that atom-based engineering research takes a good chunk of resources (DARPA programs can range between \$0.75-\$10m/year).

To that end, we plan to start by designing potential programs in as much detail as possible (which is no easy task to do well!) Ideally, we'll be able to convince investors and donors to commit to a tranche that unlocks when a certain number of programs are ready to go

The next stage of the organization would entail running seedling experiments and then spinning off high-potential programs into their own FRO-like organizations that raise their own funding. It will take several years, but ideally PARPA will unlock the next tranche when several of these programs yield successful results.

The final stage of the organization will involve running full multi-year programs internally. This is what you probably imagine when you hear "Private ARPA" but if we were to start here, I suspect we would not succeed.

To learn more and get involved, contact: Ben Reinhardt (ben@benjaminreinhardt.com)