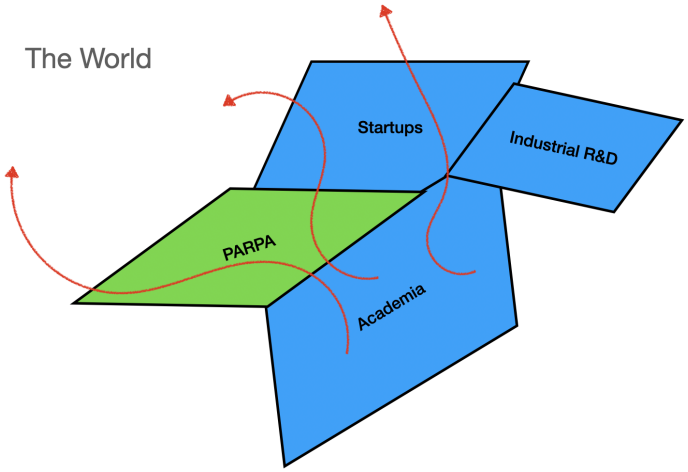
PARPA (Private ARPA) is a new organization that aims to unlock robust technology that can open new frontiers both on earth and beyond. We're riffing on the DARPA model to design, fund, and coordinate ambitious research programs that shift the impossible to the inevitable. These programs focus on new paradigms in manufacturing, near-magical materials, and technologically-empowered human capabilities. This impactful work is often too researchy for startups, too engineering-heavy for academia, and too weird for governments to take on.



Different technologies need to take different paths to get into the world. Current institutions enable some paths but not others. For some technologies, they need significant effort *upstream of commercialization* to hit a tipping point between seeming fantastical to all but a few diehards and feeling 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. PARPA's goal is to enable those tipping points.

Practically, we plan to accomplish this goal through a hybrid structure that can also serve more broadly as a serious context-of-use for desperately needed experiments in research management and planning.

Programs

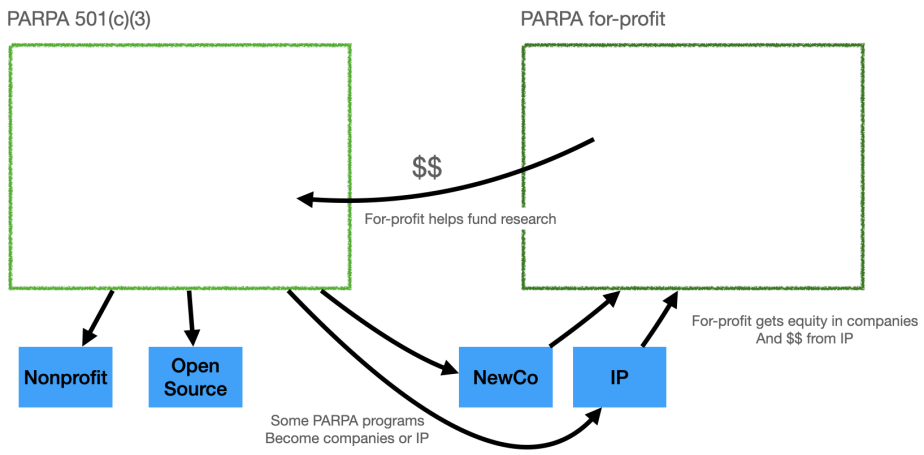
Like DARPA, PARPA will focus on research programs run by program managers who effectively act like CEOs: making all program decisions with little friction. These programs will focus on goals like "build a DNA-based molecular 3D printer" or "build a general-purpose experimental platform for telerobotics" 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 tranched '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.