What Superprojects Teach Us About Corporate Change

APRIL 11, 2023

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READING TIME: 15 MIN

> *We can lick gravity, but sometimes the paperwork is overwhelming.*
> — Wernher von Braun, the "Father of Rocket Science,"
> Director of NASA's Marshall Space Flight Center,
> and Chief Architect of the Saturn V rocket

The business world is evolving at an increasingly rapid pace and in unpredictable ways—driven by technological change and social uncertainty unfolding across multiple timescales. Standing still is not an option for organizations, and constant change must be the new norm.

But organizational change is hard: our research has shown that roughly 75% of corporate transformation programs fail in terms of value generated. This propensity for failure also applies to other types of change efforts. In his recent book *How Big Things Get Done*, coauthor Bent Flyvbjerg studies a database of 16,000 large projects and observes that only 0.5% were on budget, on time, and delivered the desired benefits. "Average practice is disaster, best practice an outlier," he concludes.

There is no single reason for failure, nor any framework, that explains this poor performance. A meta-analysis of the academic literature on large projects identifies as many as 18 major causes of failure and 54 potential remedies, concluding that "no single concept or framework…can account for the multiple and varied causes and cures [of] poor performance."[1]

Yet humanity has demonstrated, on multiple occasions, an aptitude for defying these odds in the face of major, unprecedented challenges. What is the secret of these "superprojects," and what lessons do they offer for corporate decision makers on how to make change work? In this article, we attempt to distill the lessons from two iconic examples: NASA's Apollo program and Pfizer's Lightspeed project.

The Paradox of Ingenuity and Control

The superprojects we focus on are both moonshots, one actual and one metaphorical. The Apollo program put humans on the moon for the first time and brought them safely back to Earth. Lightspeed was Pfizer's initiative to develop a safe and effective COVID-19 vaccine in nine months (one-tenth of the usual time for vaccine development) and subsequently deliver it to billions of people around the globe—a story told by Pfizer's CEO, Dr. Albert Bourla, in his book *Moonshot: Inside Pfizer's Nine-Month Race to Make the Impossible Possible,* which he discussed with us in a Thinkers & Ideas podcast.

TWO MOONSHOTS

These superprojects are now regarded as outstanding accomplishments, but their success was anything but assured.

NASA's Apollo Program

On May 25, 1961, President John F. Kennedy announced before a joint session of the US Congress that "this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the Earth." The goal was achieved in July 1969, when Commander Neil Armstrong and Lunar Module Eagle pilot Buzz Aldrin set foot on the moon—while pilot Michael Collins flew the Command Module in lunar orbit—and the full Apollo 11 crew returned safely back to Earth a few days later.

The scale and scope of Apollo was extreme: The program would, at its peak, employ 300,000 individuals and involve more than 20,000 contractors, as well as about 200 universities and 80 nations.[2] The estimated cost of the program was about $25 billion, equivalent to more than $250 billion today.[3] In 1965 and 1966, NASA received close to 5% of the US federal budget (in contrast, it receives about 0.5% today).

There was also significant uncertainty, not only technically—space was still a largely uncharted territory for science—but also politically. The agency was under special oversight from Congress, which determined NASA's budget on a yearly basis; NASA did not manage to secure the full program funding at once and had to rejustify itself continuously. Additionally, many scientists opposed Apollo, supposing that it pulled government money away from more promising and relevant research.[4]

Many expected the program to fail. Budget estimates from 1963 projected a cost upward of $40 billion, twice the original budget set in 1961. George E. Mueller, associate administrator for the Office of Manned Space Flight, wrote in his diary in September 1963: "Without much improved management…we will not achieve the lunar goal prior to 1972-1975."[5]

Pfizer's Project Lightspeed

On December 31, 2019, Chinese authorities alerted the World Health Organization to an unknown virus causing a pneumonia-like illness in some inhabitants of the city of Wuhan. About two and half months later, the WHO characterized COVID-19 as a pandemic. And less than a year later, on December 8, 2020, the first Pfizer-BioNTech vaccine shot was given to a 90-year-old woman in the UK. By the end of 2021, Pfizer had manufactured more than 3 billion doses and was able to deliver more than 2.6 billion of these to 166 countries and territories in every region of the world.

The race to develop the vaccine started on March 17, 2020, when Pfizer and BioNTech announced a partnership that would use BioNTech's novel mRNA technology. Over the next months, Pfizer successfully conducted the most ambitious vaccine development program in history: the company managed to cut the typical time to launch a vaccine from more than ten years to just under one, using an unproven technology (mRNA), a feat that many of Pfizer's own employees and outside experts considered impossible. In April 2020, Dr. Paul A. Offit, infectious diseases specialist and coinventor of the rotavirus vaccine, told CNN: "When Dr. Fauci said 12 to 18 months, I thought that was ridiculously optimistic. And I'm sure he did, too."

2. Robert C. Seamans Jr. and Frederick I. Ordway, "The Apollo Tradition: An Object Lesson for the Management of Large-Scale Technological Endeavors, Interdisciplinary," Science Reviews *vol. 2 no. 4 (1977).*
3. Casey Dreier, "An Improved Cost Analysis of the Apollo Program," Space Policy *vol. 60 (2022).*
4. Arthur L. Slotkin, Doing the Impossible: George E. Mueller and the Management of NASA's Human Spaceflight Program *(Springer, 2012).*
5. Ibid.

Apollo and Lightspeed are both remarkable success stories. They achieved ambitious goals on schedule—which differentiates them not only from other complex projects, but also from most corporate change efforts. A deeper look at the two superprojects reveals commonalities in the key challenges they had to address to achieve this feat.

Both NASA and Pfizer pursued unprecedented goals, for which there was no known recipe for success. As a result, both projects had to be *ingenious* to find new and creative approaches—whether to design the world's most powerful rocket or to massively accelerate the vaccine testing process. At the same time, both Apollo and Lightspeed were extraordinarily large and complex undertakings, which required the coordination of multidisciplinary teams across multiple organizations. Both projects also posed potential risk to human life—whether to the astronauts manning the spacecraft or to those receiving the vaccine (or those not receiving it). As a result, NASA and Pfizer had to ensure they stayed in *control*, both of the execution and of the safety and reliability of the final product.

On the surface, ingenuity and control are contradictory notions that typically involve very different managerial approaches. On the one hand, organizations usually stimulate ingenuity by allowing a high level of autonomy and using an agile, trial-and-error approach—all of which entail relinquishing some control. On the other hand, firms try to exert control by leveraging well-established project management practices, such as precise timelines, milestones and budgets, tight role descriptions, and clear performance metrics—none of which are necessarily conducive to creativity.

So how could NASA and Pfizer foster ingenuity and achieve control simultaneously? To succeed, they had to resolve several tensions between these seemingly opposed notions. Any project aiming to beat the odds should do the same:

- The project must (re)invent the path to success, breaking with established mental models and processes—but also ensure that all stakeholders are aligned in pursuit of a shared goal.
- The project must allow risk taking and experimentation—but without unduly endangering the success of the plan or the safety of the product.
- The project must foster alignment and coordination—but not allow the administrative machinery to impede agility or ingenuity.
- The project must enable rapid, effective, and streamlined decision making to support quick learning cycles—but ensure that the system for doing so does not become an obstacle through complexity or politicization.

How to Manage the Tensions Between Ingenuity and Control

Here are six practices from superprojects to break the compromise.

Pursue a Heroic Goal

Defining a heroic goal serves a dual function. For one, it is deliberately challenging, existing at or beyond the frontier of current knowledge and capabilities. It must be achievable, but not with current recipes for success. In this way, it serves to force ingenuity by demanding that the status quo be challenged and reinvented—encouraging participants to break out of existing mental models and engage in counterfactual thinking. At the same time, the goal must function as a north star, guiding teams when plans and processes are unclear or rapidly evolving—thereby enhancing control.

A heroic goal must be more than just technically ambitious. It must be framed in a way that inspires employees to be creative and committed and to aim for excellence. This can be achieved by anchoring it in a broader purposeful story that will motivate action. In other words, the “what” of the goal must be linked to the “why.”

The Lightspeed project had the heroic goal of helping humanity in its fight against COVID-19. At Pfizer, Dr. Bourla told his teams that “civilization, the way we knew it, was in danger…this is not about business; this is about saving the world.”

He was aware that the task he set before them appeared impossible. “I didn't ask people to do what they were doing in eight years,” he writes in *Moonshot*. “I asked them to do it in eight months. I didn't ask them to make 300 million doses. I asked them to make 3 billion doses.”

> **“I didn’t ask people to do what they were doing in eight years. I asked them to do it in eight months.” — Dr. Albert Bourla, Pfizer’s CEO**

“We debated for a while why this could not be done from their perspective. Rationally, they were right. It could not be done. But it had to be done.... I asked them to go back and rethink everything from the beginning and make the impossible possible.” This was key to motivating Pfizer’s employees to reinvent the vaccine development and distribution processes.

Additionally, Pfizer’s heroic goal helped galvanize the organization and guide the teams even in the most challenging times—and thus provided a noncoercive and not overly precise means of attaining alignment and control. Patrick McEvoy, a senior director of operations and engineering at Pfizer, explains how the goal helped the teams stay focused. “We knew people were dying every day, and our leadership reminded us of that every day,” he says. “Time was not on our side, and our mission was critical. Every day mattered and every patient mattered, and we knew we needed to focus on that. That never wavered.” [2]

The Apollo program was similarly unprecedented, with the heroic aspects reinforced by President Kennedy’s assassination in 1963 and the space race with the USSR. The ambition to reach the moon was in itself a challenge to the ingenuity of engineers and scientists. In a famous speech at Rice University in 1962, Kennedy explained: “We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard.”

Establish an Evolvable Plan

A preset, unchanging plan describing the path to the destination and resources required is useful only for predictable tasks in a predictable environment. In the face of changing circumstances or evolving knowledge resulting from research and experimentation, a plan must be evolvable, allowing for orderly adaptation by providing a framework for making changes in a structured and controlled manner.

Evolvability can be achieved by following an iterative planning process—with each stage building on knowledge gained from the previous ones. Changes to the plan should be decided in a regular review process, with updates circulated rapidly, allowing the prompt execution of lessons learned. Finally, the plan will be more tolerant to changes if it can be broken into smaller elements or modules that are only loosely interdependent and can therefore be adjusted individually.

An evolvable plan serves the dual function of allowing ingenuity by tolerating changes and providing opportunity for experimentation, feedback, and learning, while creating control by establishing a series of known, current versions of the execution plan.

Project Lightspeed provides insights into how to achieve this. In April 2020, the research team had already developed an aggressive vaccine development plan. Yet Pfizer recognized the need for further adaptation. This was enabled by biweekly meetings involving all relevant internal stakeholders, led by Dr. Bourla. Adjustments were made frequently and to multiple elements of the plan. For example, the manufacturing process and supply chain needed constant recalibration to account for monthly changes in rate-limiting steps. John Ludwig, a pharmacist leading Pfizer's medicinal services, told his teams: "If the plan wasn't changing daily, we probably were not doing all we could to end the pandemic."[7]

> **For the Apollo project, broad program objectives served as a foundation, but detailed planning remained flexible, with each stage building on the previous one.**

Adaptive planning also played a crucial role at NASA. The scope of work was extreme and complex, and the organization highly decentralized, which exacerbated the need to control resources and identify the work to be done. When President Kennedy announced the lunar landing goal, initial plans had already identified 10,000 work packages.[8]

But the agency knew that it could not establish a rigid plan and expect that it would unfold smoothly. "The name of the game at NASA is uncertainty," administrator James Webb often said.[9] To achieve disciplined yet flexible planning, NASA used a phased approach: broad program objectives served as a foundation, but detailed planning remained flexible, with each stage building on the previous one. Apollo's flight-test program evolved through an iterative process to take advantage of knowledge about prior operations and hardware availability. For example, failures in the Apollo 6 uncrewed flight triggered an extensive ground-test program, which resulted in major plan adjustments.[10]

Embrace Optionality

Optionality in project design and execution mitigates project risks, providing a form of insurance against uncertainty by expanding the range of available courses of action. In turn, this reduces the need for exerting excessive control over all activities, enabling teams to experiment more—because the project does not quickly become locked into an irreversible path. Optionality comes at the cost of efficiency, at least in the short term. However, for tough challenges this is more than compensated for by the ingenuity and innovation it unlocks and its impact on the probability of overall success.

Optionality can be enhanced by fostering diversity (of backgrounds or experiences) in the project team, enabling them to generate different perspectives and solutions. Decisions can sometimes be purposefully delayed until more information is available, allowing leaders to avoid making irreversible commitments too early. Additionally, building in redundancy, for example in stocks or manufacturing capabilities, helps to broaden the scope of choices available to the organization.

Optionality was instrumental in the success of the Lightspeed project, which had to cope with extreme uncertainty at all stages of vaccine development and distribution. For example, it was impossible to predict which vaccine candidate would be selected before testing, whether suppliers would have enough raw materials to satisfy production requirements, or how many factories should run. The cost of making a wrong and irreversible decision could be dramatic—for example, if production lines were finely tuned for a specific candidate that was not ultimately selected.

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> **Pfizer pursued different paths that would work in multiple future states, from the choice of vaccine technology to the production and distribution process.**

Pfizer solved this problem by pursuing different paths that would work in multiple future states, from the choice of vaccine technology to the production and distribution process. For example, the firm initially developed four vaccine candidates to maximize the likelihood of success, each representing a unique mRNA format and target antigen combination; different dose ranges were also explored. Pfizer also decided to use mRNA in part because it is more flexible than traditional vaccine technology, inherently providing optionality. “This flexibility includes the ability to alter the RNA sequence in the vaccine to potentially address new strains of the virus, if one were to emerge that is not well covered by the current vaccine,” Dr. Bourla writes in *Moonshot*.

And while the labs were preparing the vaccine candidates for the test studies, the manufacturing team initiated the scaling of the production process even before knowing which vaccine would be selected.

They prepared factories for the four different formulations, according to Dr. Bourla, and each required its own approach. This parallelism between research and manufacturing—typically done sequentially—allowed Pfizer to save considerable time.

Similarly, NASA enhanced optionality to mitigate risk and improve astronauts' safety. The agency duplicated programs, facilities, and tasks; it also embedded redundancy in rocket systems to increase their resilience.

A key principle of NASA spacecraft design was to "build it simple and then double up on many components or systems so that if one fails the other will take over."[11] For example, engineers designed each stage of the Saturn rocket with clusters of engines. Another striking instance of redundancy was Saturn V's control system, which used a voting process: crucial operations were computed and controlled in parallel in three identical circuits; if results differed, the computer would accept the majority vote.

Focus on Simplicity

The intrinsic complexity of a project is more easily managed if the machinery for administering it is kept as simple as possible. This may involve enhancing the clarity of processes and rules, providing incentives for cooperation and reciprocity, and regularly reviewing and pruning complexity in structures or processes.

Project Lightspeed managed complexity by streamlining processes such as the clinical trial process, which usually takes many years to complete. For example, Pfizer's researchers combined second and third stage trials and used digital tools to identify potential study participants quickly, according to *Moonshot*, reducing the need for in-person visits.

Pfizer also worked iteratively with regulators, initially filing incomplete testing plans (completed as data became available), which simplified the vaccine approval process. The firm also notably refused to accept government funding "to liberate our scientists from bureaucracy and protect them from unnecessary slowdowns," as Dr. Bourla wrote in Harvard Business Review.

> **NASA took active steps to avoid bureaucracy getting in the way of innovation and execution.**

While NASA also embraced simplicity, referring to the agency as a simple organization would be misleading. NASA was, after all, a governmental entity operating with a remarkably decentralized structure—the combination of these two elements, coupled with the unparalleled intrinsic complexity of the project, warranted a more complex organization.[12]

Nevertheless, the agency took active steps to avoid bureaucracy getting in the way of innovation and execution. NASA incentivized collaboration and improved communication among centers (and with HQ) by encouraging reciprocity, for example mirroring functions at headquarters, centers, and suppliers, or by using overlapping responsibilities among teams. Many agency practices worked through informal unwritten understandings—tolerated and encouraged by the leadership.[13] NASA also streamlined overly complex processes. For example, it was authorized by Congress and the Bureau of Budget to award major R&D contracts without competitive bidding, significantly reducing complexity.

Mobilize Externally

Organizations need to look beyond their own boundaries and actively manage their stakeholders. By being more active, firms can avoid misalignment and poor communication that could otherwise impede project success. They can also tap into diverse ideas and expertise, helping to innovate and enhancing optionality. Finally, they can reduce internal complexity by outsourcing some activities in a modular manner.

To achieve effective external mobilization, firms should be willing to rely on external partners and foster trust-based cooperation. They should also adopt a proactive approach towards facilitating cooperation, which typically involves creating common standards and platforms for seamless interaction or flexible market-based mechanisms rather than tightly scripted plans. Sometimes, they also need to play the political game in order to remove potential obstacles.

> **Pfizer worked hand in hand with regulators to get the vaccine approved promptly and ensure its speedy deployment.**

Pfizer's Lightspeed project took active steps to mobilize and collaborate with stakeholders. The firm worked hand in hand with regulators (most notably the US Food and Drug Administration and the European Medicines Agency) to get the vaccine approved promptly and ensure its speedy deployment.

Creative solutions were implemented to optimize interactions with health authorities, for example the establishment of rolling submissions, as mentioned above.

But the core of this success story is the firm's collaboration with other corporate players in the pharma ecosystem, particularly BioNTech. The partnership between the two firms was based on trust rather than complex contracts and protocols. A letter of intent and an informal agreement between the CEOs—supported by the firms' experience working together—were sufficient for the work to begin. "Albert, your word is enough for me," said Uğur Şahin, CEO of BioNTech.[14]

Additionally, Pfizer interacted with the public at large, fighting vaccine hesitancy and misinformation. Dr. Bourla wrote a joint memo with other pharma CEOs to highlight their commitment to science and promise to follow safe processes independent of any external pressure. Dr. Bourla writes in *Moonshot* that "being more open, more transparent, was the right decision, and it will continue to be our policy."

The proactive mobilization of stakeholders also played a key role in the success of Project Apollo. Most importantly, NASA had to gain the support of the White House and Congress—all-powerful project sponsors. The agency managed these relationships through program planning and budget hearings, and by special briefings at NASA facilities and at contractor installations.[15] The agency's leadership, particularly Webb, "politicked, coaxed, cajoled, and maneuvered for NASA in Washington."[16]

Furthermore, contractors played a vital role: more than 90% of the budget earmarked for space flight was spent under contract. As a result, aligning with and monitoring contractors was a priority. As deputy administrator Dr. Robert Seamans pointed out, "all possible steps were taken so that…no organizational elements of any kind ever got isolated from the mainstream of events. NASA wanted to ensure that problems or difficulties cropping up anywhere in the NASA-contractor system were not ignored or glossed over."[17] NASA implemented various initiatives to maximize coordination with contractors—for example, by forming the "Apollo Executives Group," composed of associate administrator Mueller and the CEOs of Apollo contractors.

Set a Drumbeat

Finally, a project needs a process that sets the pace of the work and ensures responsive, resolute, and transparent decision making. We call this the drumbeat function, since its regularity and prominence keep the organization moving forward in a synchronized fashion. It allows the project to stay on track, ensuring that necessary decisions are made, and that all relevant parties are coordinated and aligned. Moreover, it fosters ingenuity by initiating and closing fast learning cycles.

In practical terms, a drumbeat function involves regular meetings with all key functions of the organization—to be able to rapidly resolve any issues arising by making decisions on the spot.

In the case of Lightspeed, Dr. Bourla, the CEO, acted as the project manager and had the authority to make key decisions. This helped to "knock down silos, hear everyone out, and quickly move things forward," he writes in *Moonshot*. He suggested that this was crucial "for a project like Lightspeed, [which] faced greater levels of complexity than ever before but still needed to reach decisions even faster than ever." To solve this, he organized biweekly meetings with all relevant internal stakeholders, irrespective of hierarchy. These meetings did not have preset agendas; the purpose was to enable employees to secure the resources and rapid decisions needed and foster fast learning cycles.

All project participants could feel the drumbeat. "From CEO Albert Bourla through the organization, the message was clear, the direction was clear, the priorities were clear, and the decision making was really streamlined," emphasizes Pfizer's McEvoy.[18]

Management requires "fusing at many levels a large number of forces, some countervailing, into a cohesive but essentially unstable whole and keeping it in a desired direction." — James Webb, Apollo Program Administrator

NASA leadership also created a drumbeat for Apollo: Webb, the project's administrator, fostered quick action by relying on the rapid generation of management information, and by bringing as many relevant constituencies as possible into decision making. He suggested that the process of management was that of "fusing at many levels a large number of forces, some countervailing, into a cohesive but essentially unstable whole and keeping it in a desired direction."[19]

Various committees and boards embodied this role. For example, all major hardware changes were managed through a Configuration Control Board. The Board met 90 times between June 1967 and July 1969 and considered more than 1,500 changes. This board was established not only to control changes, but, more importantly, to serve as a decision-making forum, combining the inputs of multidisciplinary teams.

What Change Leaders Can Learn from Superprojects

The six practices described above allowed Pfizer and NASA to resolve the tensions between ingenuity and control and deliver on their unprecedented goals. And although not every project has the dimensions of a superproject, we argue that these lessons are also relevant for more typical change projects—and can help you make corporate change work.

Even in regular change projects, organizations often need to accomplish tasks for which there is no known recipe—for example, implementing novel technologies or navigating unknown environments—with their performance and market position at stake. Moreover, corporate projects will always require the coordination of many stakeholders, the management of inertia and navigation of bureaucracy, and—last, but not least—ensuring that business as usual can proceed in parallel, unhindered. In other words, most change projects need some level of both ingenuity and control.

However, in our experience, organizations tend to neglect or downplay the ingenuity component in change initiatives. Leaders often prefer instead a simpler, mechanistic view of the world, which assumes they can easily specify and control actions using project management techniques. Moreover, organizations are often averse to change. Ideas like "breaking the rules" or "reinventing the organization" are less accepted in typical projects—and a departure from the norm will often be discouraged and deemed risky or inefficient. Finally, it's easy to underestimate organizational complexity and the need for simplification.

As a result, organizations fall under the illusion that well-established and codified project management methods will suffice. But this approach poses the risk of excluding experimentation, fast learning, adaptation, and innovation—ultimately potentially leading to project failure.

Ironically, fostering ingenuity may, in some ways, be easier in the context of ambitious superprojects than in typical corporate transformations. When the goal and context are unprecedented, being unreasonable is expected—nobody believed you could put a person on the moon without challenging existing thinking, or, as Dr. Bourla put it in *Moonshot*: "to achieve [the Lightspeed project], it was clear that incremental improvements would not move the needle. We needed to completely rethink the way we operated."

How to Apply the Practices of Superprojects to Corporate Change

We recommend that the next time you set up a new change project or review your existing project portfolio, you ask yourself the following questions:

- **Heroic Goal.** Are we certain that following our existing approach will guarantee that we reach our aims effectively? Is the goal of the project embedded in a purposeful and inspiring narrative to which employees can personally commit? Do our teams feel empowered to reinvent our recipe for success when they encounter a roadblock or spot potential for improvement? If not, your project could benefit from a heroic goal that motivates members of the organization to break with their existing mental models and procedures—while also enhancing alignment and coordination by providing a new north star.

- **Evolvable Plan.** Is it sufficient to have an unchanging plan that locks in precise milestones, roles, and resource allocation in advance? Are we confident that we will face a relatively static environment and will not frequently discover new information that might necessitate changing our plans? If not, implement a planning process that tolerates uncertainty and change—for example, by following an iterative approach and making the plan more modular.
- **Optionality.** Have we put in place provisions for mitigating failure and risk—even if these may come at the cost of short-term efficiency? If not, consider further derisking your project by expanding optionality, for example through redundancy or the pursuit of parallel options.
- **Simplicity.** Have we done everything we could to streamline our administrative structures and processes? Do we have a process for pruning complexity? If not, remove constraints that do not serve a clear purpose, thereby reducing complexity and leaving more room for ingenuity. Tolerate informal mechanisms for alignment and cooperation based on trust and reciprocity rather than rigid procedure.
- **External Mobilization.** Are we actively working with all our external partners to leverage their capabilities and reduce internal complexity? Are they convinced of our mission and approach, and willing to help us achieve our goals? If not, start by assessing your relationship with your stakeholders. Be willing to rely on them and foster trust-based cooperation.
- **Drumbeat.** Do we have a process in place that sets a fast and transparent "rhythm" for decision making? Does this process facilitate making hard decisions quickly and breaking existing rules where necessary? If not, establish a drumbeat function to ensure the project keeps moving forward.

We live in an era of constant and ever-accelerating change—which, in the corporate context, is digested through organizational change projects. While change is a constant necessity, achieving it is difficult. Our review of the Apollo and Lightspeed projects suggests a key unlock: accept that you need both ingenuity and control, and identify ways for them to coexist harmoniously.

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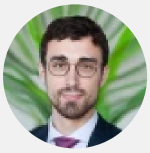

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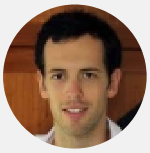

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