

When Should You Stop Funding an Innovation?

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Research on about 1.5 million patent renewal decisions shows how companies can balance current returns, future options, strategic fit and the cost of keeping ideas alive.

If your startup or small business has ever partnered with a corporation to bring patented inventions to market collectively, you already know the uneasy question: should you keep paying and protecting your patents, or quietly let them lapse once the risks clear up?

Our study of corporate entrepreneurship provides some clues. Corporations often struggle with the question of which ideas to fund. But another decision may be just as important: Which existing ideas should they stop funding?

Managers responsible for R&D portfolios, corporate ventures, product pipelines, and other innovation activities face this problem continually. Although new projects are relatively easy to add, removing projects is harder. Once people, money, and expectations become attached to an initiative, continuation (or escalation of commitment) can become the default. However, keeping every project alive crowds the portfolio and spreads managerial attention too thinly.

The usual tools do not solve this. Stage-gate systems and financial reviews work when managers can forecast an opportunity's value based on reliable information. Innovation decisions often occur before that information arrives, so a technology that fails today's return test may be dropped even though the information that would justify it may be years away. These tools also evaluate each technology on its own. They rarely ask whether the organization has the capabilities to capture that value,

so technologies that look attractive on paper can turn out to be a poor investment.

We set out to understand how companies make keep-or-abandon decisions under uncertainty. We chose patent renewals because they provide an unusually clear and repeated setting for studying the problem. Companies holding patents face scheduled maintenance fees and must repeatedly decide whether to pay to keep a patent alive or allow it to lapse. The decision is concrete, costly, and repeated over time. While we focused mainly on corporations, our findings can also be useful to startups, family firms, and other small- to medium-sized businesses that are partnering with them, or contemplating how to manage their own patents.

What We Expected to Find

We expected companies with stronger long-run innovation records to look beyond a patent's immediate commercial prospects. We thought they would recognize that maintaining an uncertain technology can have option value: keeping the asset alive preserves the possibility of using it later, after the company learns more about markets, technologies, and applications.

Our expectation was thus not simply that companies would renew patents most likely to generate returns today. We expected sophisticated companies to balance near-term value with the value of keeping promising possibilities open.

What We Studied

We analyzed about 1.5 million U.S. patent renewal decisions involving 4,685 publicly traded corporations over roughly four decades. Companies holding patents face maintenance-fee decisions at approximately 4, 8, and 12 years after a patent is granted. Because patents in the study face the same basic fee schedule and the



same underlying keep-or-drop choice, this setting lets us examine renewal behavior at large scale.

For each patent, we examined three characteristics. First was technological breadth: how many distinct independent claims a patent contained and, consequently, how many potential directions for future use it could support. Second was technological fit: how closely the patent connected to the company's existing technology base and capabilities. Third was dependence: how much the company's technology relied on patents controlled by outside organizations.

These measures let us ask whether companies respond only to immediate expected returns or also consider future possibilities, organizational capabilities, and strategic dependence.

What We Found

Three findings stand out. First, companies appear to use two valuations. They not only consider whether an asset's expected near-term value justifies its cost, but they also consider whether maintaining it preserves a useful option for the future. An uncertain technology can fail a short-term return test while still being worth keeping if additional information is likely to arrive later.

Second, breadth matters. Patents with more independent claims, indicating more plausible directions for future use, were renewed at higher rates than narrower patents, even when their near-term value was similar. Breadth gives managers more ways for an uncertain technology to become useful as markets and technologies evolve.

Third, breadth becomes more valuable when it fits the organization. Broad patents were more likely to be renewed when they connected closely to the company's existing technological capabilities. Managers therefore do not simply chase the biggest apparent opportunity. They also ask whether the organization can appropriate it. A smaller opportunity that fits what a company does well can be more attractive than a larger opportunity outside its capabilities.

The most unexpected finding concerned technological dependence. We expected companies that depended heavily on patents owned by outside organizations to diversify more broadly. Instead, dependence led them to defend their technological core more aggressively, building denser patent positions around domains where

they were particularly exposed to outside control. This did not eliminate broader search; it strengthened protection around the core.

Why Patent Renewals Tell Us Something Broader About Corporate Entrepreneurship

The evidence comes from patents, but the managerial problem is broader. Patent renewal is a useful lens because it shares three features with many innovation investments.

First, keeping patents involves inherent ongoing costs. A patent requires maintenance fees; other innovation assets require engineering time, data storage, experimentation, partner attention, or managerial oversight. Second, the ultimate payoff is uncertain and may become clearer only later. Third, value depends partly on how well the asset connects to capabilities the organization already possesses.

These features are common in corporate entrepreneurship. A company deciding whether to continue an internal prototype, maintain a technology platform, fund an exploratory venture, or keep investing in an emerging business is also deciding whether the benefits of continuation justify the cost of preserving a future possibility.

The patent setting does not mean every innovation asset should be managed the same way. Instead, it reveals a decision logic most relevant when managers face recurring costs, substantial uncertainty, and evolving environments. In those situations, the question should not be only, *What is this asset worth today?* but also, *What future possibilities are we preserving by keeping it?*

A Practical Decision Framework For Managers

The findings can be translated into a simple review process for patents and, with appropriate judgment, other innovation assets.

Make continuation an active decision. Put every significant innovation commitment on a review schedule. At each review, require a clear decision to continue rather than allowing the investment to survive because nobody has ended it. The goal is to prevent inertia from becoming an investment strategy.

Identify what could change the decision. Ask: What would have to happen for this asset to become substantially more valuable or obsolete? When are we likely to know? If useful information is expected within a reasonable period, a modest holding cost may preserve a valuable option. If no foreseeable information would materially change the outlook, continuation deserves much more scrutiny.

Rate opportunity and fit separately. Opportunity asks how many plausible ways the asset could create value—new products, customers, applications, cost reductions, or strategic advantages. Fit asks whether the organization has the technology, knowledge, relationships, distribution, or other capabilities needed to capture that value. A simple review can score each dimension from 1 to 5 and examine their interaction rather than averaging them. High opportunity with low fit may indicate partnering, licensing, spinning out, or selling rather than funding internally. Lower opportunity with very high fit may still justify continuation if the opportunity is strategically important.

Map dependence on technology the organization does not control. List critical technologies, standards, platforms, suppliers, partners, and patents on which the portfolio relies. For each dependency, ask two questions: If external technologies became unavailable or more expensive tomorrow, which of our assets would protect or strengthen our position? And which assets would we lose nothing by dropping? Assets that answer the first question are worth keeping even when their direct revenue is small.

Decide what to stop and recycle the resources. When an asset no longer earns continuation, explicitly redirect its people, money, data, and managerial attention toward higher-value opportunities. This makes abandonment part of portfolio management rather than a judgment about whether a team or idea failed.

What Might Surprise Entrepreneurs and Business Owners?

The most surprising implication is that strong innovation may depend as much on disciplined abandonment as on creative generation.

Entrepreneurs often worry about giving up too early. Managers may worry that cancellation signals failure. Our evidence suggests a different interpretation. When uncertainty is meaningfully resolved, continuing simply

because an asset was once promising can waste resources. At the same time, abandoning an asset solely because it lacks immediate returns can be a mistake when it preserves valuable future options.

The practical lesson is therefore not cut more projects. It is *make continuation harder to justify through inertia and easier to justify through explicit strategic logic*. For a startup, this could mean reviewing internal technologies, experiments, partnerships, or product features on a fixed schedule and asking what new information would justify another period of investment. For a larger company, it could mean adding option value, breadth, fit, and technological dependence to portfolio reviews rather than relying only on forecasts and current financial returns. For a family business or entrepreneurial venture, it can mean separating emotional attachment from the strategic reasons for keeping an initiative alive.

Takeaway

The hardest entrepreneurial decision may not be choosing the next opportunity. It may be simultaneously deciding which existing opportunity no longer deserves another dollar, hour, or unit of attention.

Our study of about 1.5 million patent renewal decisions shows that resource allocation under uncertainty is not one-dimensional. Companies appear to consider immediate value alongside the value of preserving future possibilities. They place particular value on technological breadth when it connects to capabilities they already possess, and they respond to technological dependence by strengthening positions around critical areas.

For managers, the implication is straightforward: build a recurring process for deciding what stays alive, what needs more time, what should be partnered or repositioned, and what should be stopped. Innovation is not only about placing better bets. It is also about knowing when to stop paying for bets that no longer make strategic sense and freeing resources for the ones that still might.

Explore the Research

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