# What Is a Core Technology — and Why Naming Yours Changes Everything

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Most founders can tell you what their company makes. Fewer can tell you what their company knows. Specifically, which areas of applied science and engineering they are systematically advancing, and how those areas connect to the competitive advantage their business is built on.

That gap is not a communications problem. It is a management problem. And closing it is one of the most leveraged things a founder can do for the commercial value of their R&D.

## What a Core Technology Actually is

Technology, precisely defined, is the practical application of science. A core technology is a specific area of applied science or engineering that is central to a company's commercial success and sustained competitive advantage. One that the company advances through systematic R&D.

Core technologies are not products, not teams, and not processes in the operational sense. They are the underlying knowledge domains that make the products possible. A precision engineering company's product is a machined component. Its core technologies are the specific manufacturing sciences such as subtractive processes, additive manufacturing, measurement and quality systems. This facilitates the production of that component to a standard its competitors cannot replicate.

In industrial automation, core technologies typically include robotics and motion control, system architecture, and the integration of sensor and software infrastructure into physical environments. In software, they might cover a proprietary algorithm, a security architecture, or a novel data processing approach. In MedTech, they span device engineering, materials science, and regulatory validation methodology. In agri-food, they include cultivar development, precision sensing, and post-harvest processing.

## Why Naming Matters

The act of naming core technologies explicitly, not leaving them implicit in product descriptions or project records, changes several things at once.

It makes the knowledge base manageable. Once the technologies are named, R&D activity can be connected to them deliberately: investigations assigned, advancements recorded, state-of-the-art documented. The company builds a compendium of what it knows in each technology area, rather than scattering that knowledge across project files.

It makes funding more accessible. R&D tax credit and grant frameworks reward companies that can demonstrate systematic advancement of specific technologies. A company that can articulate what it is advancing, and why it represents a genuine step beyond the known state of the art, is in a fundamentally stronger position than one reconstructing that story at year-end from project records.

It makes IP more deliberate. When you know what technologies you are advancing, you can make active decisions about what to protect and when. This is makes the process easier rather than realising you have created

protectable IP after the fact.

It makes competitive positioning clearer. In manufacturing, in MedTech, in agri-food, the companies that win supply chain positions and premium customer relationships are usually those that can articulate their technical differentiation credibly. A named, managed core technology base makes that articulation possible.

## The Two Streams — and the One that gets Missed

R&D flows into a company's core technologies through three streams. The first, dedicated strategic development programmes, is usually visible. A company investing in a new materials science capability or a next-generation algorithm knows it is doing R&D.

The second and third streams are where the most common under-claiming happens. Product and service delivery R&D is the work undertaken during customer-facing projects, where specific technical challenges must be resolved that go beyond known solutions. Process optimisation R&D is the work involved in advancing the underlying technologies through which the company manufactures or delivers — where improvements go beyond standard operational efficiency into genuine technological advancement.

Both of these streams produce qualifying R&D. Both are systematically under-documented in companies that manage R&D at the project level rather than at the technology level. The fix is the same in both cases: connect the work to the named technology it is advancing, at the time it happens.

## What this Means in Practice

The starting point is a straightforward question: what are the three to five areas of applied science or engineering that underpin everything we make and sell, and that we are actively advancing?

For most founders, the answer comes quickly. The harder part is building the structure that connects ongoing R&D activity to those technologies, documents the state of the art, and records what is being advanced and why. Not retrospectively, but in real time.

If you would like to see how this works in practice, the companion article walks through how to assess and map your company's core technology portfolio.