

Gaining insights into strategy formulation by taking an optimization perspective

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Strategy formulation involves multiple dimensions, including identifying customer segments, selecting products and services to offer, and obtaining the required resources and skills to execute the strategy. Common strategy development processes take a hierarchical approach and include numerous implicit decisions. Looking at strategic decision-making through the lens of optimization problem solving makes it possible to overcome numerous strategy formulation fallacies.

Strategy is at the core of business success. But many strategies fail. Cândido and Santos, in their 2015 paper *Strategy implementation: What is the failure rate?* find that, on average, 50% of all strategies fail. In addition to failing during implementation, many strategies are built on poor conceptual thinking. Deductive, linear thinking is advocated by many strategy scholars and adopted by both large and small strategy consulting firms. For example, Barney *et al.* advocate rooting strategic thinking in a firm's resources. Porter argues that strategic thinking starts with deriving a competitive advantage from positioning. Other strategic thinkers root their approaches in business models, managerial power, the external environment, or by treating strategy as a configuration problem.

LOOKING AT STRATEGY THROUGH AN OPTIMIZATION PROBLEM LENS

A typical optimization problem is characterized by three elements, that is,

- i) a set of *variables*, that is, unknowns,
- ii) a *utility function* on the variables, describing the goal sought-after, and
- iii) a set of *constraints* based on the variables, defining what is called the solution space.

Solving an optimization problem is achieved by determining values for the variables (i) that maximize or minimize (or a combination of both) the utility function (ii) and satisfy the constraints (iii).

Developing a strategy can be formulated as solving an optimization problem. There exist three types of variables or unknowns (i) in strategic thinking, that is,

- what customer segments or markets to target,
- what products and/or services to offer and what price to charge, and
- what resources and skills to rely upon to produce and deliver the products and/or services.

Contrary to common strategy formulation approaches, there is no a priori hierarchy or preferred sequence among these categories of unknowns. By preferring one set of variables over another—for

example, by choosing to focus first on selecting which markets to enter—traditional strategic approaches arbitrarily narrow the solution space, possibly excluding some optimal strategies.

Strategy is about maximizing the utility (ii) a firm can create for its stakeholders. In the simplest terms, this means maximizing shareholder value. More recently, frameworks have emerged that include customer value creation and societal benefits, in addition to firm value appropriation.

There exist three categories of parameters that form the basis of the constraints (iii) used for characterizing a strategy as an optimization problem. They are a given and the firm cannot change them.

- What problems customers want to solve, what needs they want satisfied, what pains they are looking to alleviate, and what gains they are after.
- How competitors operate, that is, what values they associate to their variables when solving their version of the strategy optimization problem.
- What restrictions are given by the external environment (political, economic, social, technological, environmental, and legal), including what role suppliers play.

BENEFITS FROM TAKING AN OPTIMIZATION APPROACH TO STRATEGY

Taking an optimization perspective towards strategic thinking offers three unique benefits:

Transparent utility. By explicitly defining the objective function a firm is trying to optimize and specifying the variables, a corresponding strategic goal can be formulated in a simple and transparent way. The focus is placed on optimization towards a particular objective, rather than chasing targets or benchmarking competitors. Identifying the best possible outcome rather than a “good enough” one becomes the goal.

Avoiding implicit constraints. By considering all variables co-equal, it is easier to avoid implicit constraints that could be caused by hierarchical thinking. This helps businesses avoid the fallacy that an optimal solution means aiming to pursue the seemingly best result in one variable. For example, although China is the biggest market in Asia, an optimal strategy for a specific firm may be to target Singapore instead.

Making externalities explicit. It is often not easy to distinguish between external constraints and decision variables. By requiring the strategy formulation process to make all constraints explicit, an optimization problem formulation approach helps businesses avoid unnecessary constraints. Although a firm may decide how (what values to associate to variables) to satisfy constraints, it cannot change them. For example, a computer manufacturing firm may decide not to offer a laptop with a touch screen, but it cannot change the constraint introduced by customers expressing their desire for such a screen.

WHAT BUSINESSES GAIN FROM TAKING AN OPTIMIZATION PERSPECTIVE

By taking an optimization perspective to strategy formulation, executives can focus on clarifying what their goal is (utility function), which decisions they want to take (variables), and what the externalities are (constraints).



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