MANAGEMENT

Keeping Your Options Open

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MY BACHELOR FRIEND "JOE" HAS had a series of short-term relationships over the past 20 years. Though Joe professes to be a strong believer in marriage, his mother accuses him of having a "commitment problem." In defence of his behaviour, Joe argues: "I have nothing against commitment … I just appreciate the value of keeping my options open."

Why is Joe so intent on keeping his marriage options open? *Uncertainty* is one factor. No one can predict whether a couple will remain compatible over time. And who's to say that Joe won't meet his "perfect match" tomorrow? Marriage is at least partially *irreversible*—it involves making up-front emotional and financial investments that cannot be recovered later if the marriage fails. In addition, there are significant relationship "exit costs" associated with divorce—it would be costly for Joe to change his mind about a relationship once married. Joe is a bachelor because he is not willing to incur these sunk costs and limit his relationship flexibility in the face of such uncertainty.

Uncertainty and irreversibility are also key features of business strategy decisions. And so it is no surprise that business strategists also often seek to "keep their options open." They defer major strategic decisions until uncertainties are clarified, stage investments over time, or share risks through limited joint ventures and alliances. In essence, they buy "real options" that provide the right, but not the obligation, to fully commit to the current strategy or reverse direction later.

Real options can be valuable in uncertain situations because they allow decision-makers to re-optimise over time without incurring substantial sunk costs. But as a happily married man, I realise that full commitment is sometimes the best approach, despite the uncertainty. And as a business consultant, I recognise that managers who defer or stage investments over time may lose significant cash flows and forfeit other first-mover advantages to competitors. When should decision-makers keep their options open, and when should they make full-scale commitments?

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Recognising Real Options

Far too many business decision-makers fail to recognise real option opportunities and treat strategic decisions as "all-or-nothing, now-or-never" choices. Decision-makers should instead recognise the full range of real option and full-commitment strategies at their disposal. When entering a new market, for example, a company may limit its choices to immediate full-scale entry or no entry at all. However, entry decisions can often be deferred or staged over time without significant loss of competitive advantage. For example, staged entry via a limited joint venture with local manufacturers or distributors might provide market insight and relationships that allow the company to easily ramp-up or scale-down commitments over time as market profitability evolves.

Financial option analogies often help managers recognise real option opportunities. Real options resemble financial call or put options because they provide the company with the right, but not the obligation, to invest or divest in the future as the company's information set changes. Real and financial options also manage risk by limiting downside losses while maintaining upside returns. The following three "screens" should help your company recognise real option approaches that create rights to asymmetric payoffs under uncertainty:

- *Competitive Advantage.* If real options are to maintain the upside potential of full-commitment strategies, they must create preferential positions (relative to competitors who don't own equivalent options) to further invest or divest in the future. Competitive advantage might accrue from exclusive rights such as access to technology or to key players in the industry; superior insight/foresight regarding market forces and trends; low-cost positions; or customer relationships and loyalty.
- *Leverage.* If real options are to limit the downside loss potential relative to full-commitment strategies, they must be highly leveraged—the sunk cost of making a full-commitment investment should be a high multiple of the sunk cost of creating or buying the real option.
- *Managerial Flexibility.* Real options must not lock managers into any one course of action, but rather leverage their flexibility to re-optimise decisions later. Real options create rights, not obligations, to pursue different full-commitment strategies.

Joe's marriage strategy passes these real option screens. Dating incurs limited sunk costs relative to marriage, provides further information on couple compatibility, and does not lock Joe in to either marriage or break-up decisions. Similarly, the first phase of a pharmaceutical R&D programme passes these real option screens. Initial research involves limited sunk costs relative to full-scale product development, provides privileged information (and perhaps patents) on drug properties, and allows the management team to quickly scale-up or scale-down commitments based on preliminary results.

Evaluating Real Options

Companies should choose between real option and full-commitment strategies based on the value they deliver to shareholders and other stakeholders. This sounds straightforward enough. But how should companies value strategies under uncertainty, and are different techniques required for real options and full-commitment approaches? For years, business decision-makers have struggled with this issue, often relying on gut instinct to drive decisions when traditional discounted cash flow valuation tools failed to properly account for uncertainty. Recent advances in real option valuation techniques, however, are enabling companies to implement more quantitative, fact-based decision-making processes. These advances build on the analogy between real and financial options, using financial option pricing models such as Black-Scholes to approximate real option value. Details on these advanced techniques can be found in the sources cited at the end of this column.

Uncertainty and irreversibility are key features of business strategy decisions.

Real option valuation models identify four drivers that largely determine the relative value of real options versus full-commitment strategies:

- *Uncertainty.* Real options are more valuable when there is high uncertainty over the cash flows associated with full-commitment investments. Real options preserve the potential upside that greater uncertainty creates, while limiting the downside.
- *Real Option Duration.* The longer a real option is viable, the more it is worth. This will often depend on technology (length of a product life-cycle), intensity of competition, and contract length, including patents, leases, and licenses. For example, real options are often relatively worthless when a competitor is poised to make pre-emptive full-commitment investments.
- *Foregone Cash Flows.* Real options are less valuable when full commitments generate substantial expected near-term cash flows (or prevent the loss of cash flows). Strong first-mover advantages therefore favour full-commitment strategies.
- *Risk-free Interest Rate.* Real options increase in value relative to full commitments as the risk-free interest rate rises. A higher discount rate implies there is more value in postponing major commitments.

Why does Joe prefer his real option of dating to the full-commitment marriage approach? He's convinced that he's still young enough to meet new people (high real option duration), he hasn't met that special someone yet (high uncertainty over success of marriage and a belief that he isn't forgoing much happiness by avoiding marriage), and he "lives for the moment" (high risk-free interest rate).

Managing Real Options

These real option value drivers are dynamic and can be influenced by company strategic actions. Companies implementing real option strategies should therefore be prepared to actively manage these options along two dimensions:

- *Timing.* The relative value of real option versus full-commitment strategies will vary over time as uncertainty, real option duration, forgone cash flows, and the risk-free interest rate vary. Companies should constantly monitor real option valuations and exercise the right to ramp-up or abandon commitments at the appropriate time. Keep in mind that real options are valuable because they give managers the flexibility to change commitments over time—if managers don't proactively take advantage of this flexibility then real option approaches are worthless.
- *Increasing Real Option Value.* Managers who have chosen real option approaches can maximise their value by changing the three value levers they have some ability to influence (uncertainty, real option duration, and forgone cash flows). For example, managers implementing a staged pharmaceutical R&D programme can increase its value by increasing the uncertainty of full-commitment payoffs by focusing on new compounds with wide potential applicability; increasing real option duration by securing early patent protection; and limiting forgone cash flows by including leading health-care payers and providers in the R&D process to induce them away from competitor product offerings.

It is not necessarily easy to manage real option strategies. A focused, full-commitment strategy is often much easier to justify and communicate both to internal (employees, directors) and external (market analysts, other shareholders) stakeholders. Just consider poor Joe and the communication challenge he faces each time he visits his family. At the same time, real option approaches usually require more attention to market signals and more constant decision-making angst. While Joe continuously updates his marriage prospects, and frets over making the right next move, I find great comfort in having already made the marriage commitment. However, I am confident that both Joe and I have made the right decisions so far. As the real option value levers tell us, whether a real option approach is preferable to a full-commitment strategy depends on key elements of the market environment. The best strategic decision-makers then should systematically address real option and full-commitment alternatives, and "keep their options open" when it comes to deciding whether or not to "keep their options open." ◆

Real Option Sources

While an extensive academic literature on real options exists, there are still few practical sources for managers. However, the following four articles are directed at business and government decision-makers:

Dixit, A., and R. Pindyck, "The Options Approach to Capital Investment," *Harvard Business Review*, May-June 1995.

Luehrman, T., "Investment Opportunities as Real Options: Getting Started on the Numbers," *Harvard Business Review*, July-August 1998.

Luehrman, T., "Strategy as a Portfolio of Real Options," *Harvard Business Review*, September-October 1998.

Leslie, K., and M. Michaels, "The Real Power of Real Options," *McKinsey Quarterly*, 1997:3.