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Tools for Analysis and Decision-Making**

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this model, because even in a directive approach there are limits to what the HQ can formally force the businesses to do in terms of collaboration. Technology and fast-moving consumer goods companies like Cisco Systems and Procter & Gamble (P&G) illustrate this model of influence.

Linkage, evaluative

Finally, the **linkage, evaluative (LE)** influence model explicitly focuses on managing operational synergies through linkages between businesses, but does so passively rather than actively. Rather than direct businesses to realize synergies between them, the goal instead is to create a context that allows businesses to collaborate on synergy realization. While the HQ will still host corporate development functions (M&A and/or alliance teams), and centers of expertise (in areas like best practices, procurement, etc.), their use by business units is more likely to be **elective rather than imposed**. Instead, a strong corporate HR function with an emphasis on building the informal organization that glues the businesses together may be prominent. “Setting context,” “cultural engineering,” and “special projects” are terms often associated with this model of HQ operation. It would seem somewhat more difficult for this influence model to work across geographies because of the cultural and time zone differences.

Resource allocation by the HQ

The influence of the HQ is ultimately exerted on the basis of its resource allocation decisions, regardless of which HQ influence model is adopted; ultimately the HQ has the power to allocate resources to the businesses, not the other way round.

Resource allocation in *directive control* takes the form that major capital expenditure commitments (and therefore strategic

investments) cannot be made without approval and rigorous screening, regardless of the need for capital rationing. In *evaluative control*, capital expenditure requests are granted semi-automatically if they clear hurdles, but individual performance related incentives depend on past performance.

Resource allocation by the HQ may do better or worse than resource allocation by individual investors via the capital markets. The HQ ostensibly has access to better information about each business and the decisions rights to enforce actions by their subordinates that enhance the value of these investments. At the same time, it has access to a smaller set of alternatives and is prone to conflicts of interest between the HQ and shareholders. We focus on providing guidelines for HQ decision-making about resource allocation under the assumption that the decisions are motivated by a desire to enhance the value of the firm.

Resource allocation in multi-business organizations involves decisions about how to spread investment across a portfolio of businesses, and not only whether or not to invest in a particular business. This raises two challenges: **synergy** and **uncertainty**. First the businesses in a multi-business organization are not independent of each other; there are *interactions* between them. These could be in the form of synergies or dis-synergies. How should one take these into account when allocating resources across the portfolio? Second, from the field of finance we have well developed theories for resource allocation under risk (i.e., the future is uncertain but we can describe the possible outcomes and the probability of each of these outcomes occurring). These produce heuristics such as investing in projects only if their internal rate of return (IRR) exceeds their weighted average cost of capital (WACC), or to only invest in positive NPV projects. Under fundamental uncertainty (i.e., the future is uncertain but we do not know all the possible outcomes nor

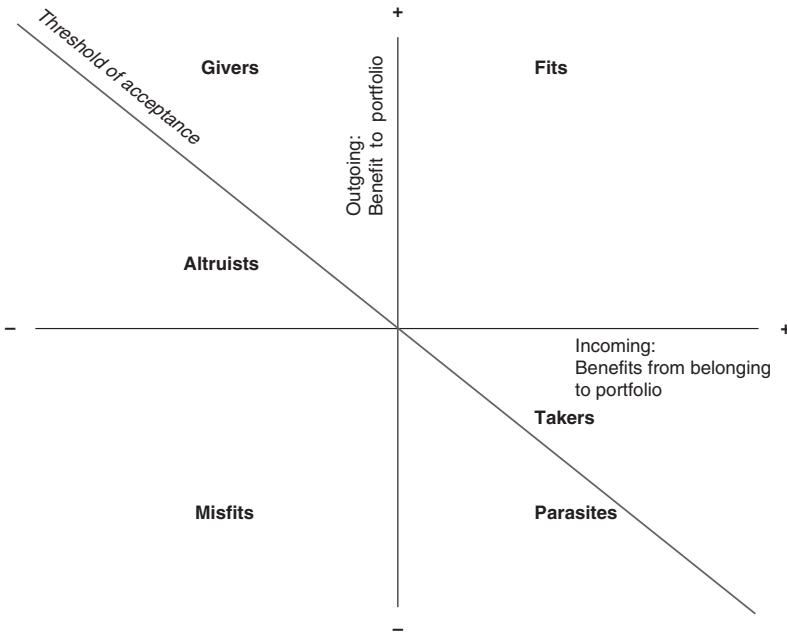


Figure 10.2 Synergistic portfolio framework

their probabilities of occurring), organizations' researchers have recognized that the problem is one of managing the well known exploration–exploitation trade-off: how to balance investment in businesses likely to do well (exploitation) vs. investment in businesses with uncertain outcomes (exploration), which may turn out to be the “next big thing.” If the only way in which one can learn about the value of a business opportunity is by trying it, then some degree of exploratory investment is optimal. But how much?

The **synergistic portfolio framework** tackles both synergies and uncertainty in resource allocation decisions (see Figure 10.2). The two axes correspond respectively to:

Horizontal axis: **Incoming** benefit – how much does this business gain or lose in value from belonging to this portfolio?

Vertical axis: **Outgoing** benefit – how much value do the other businesses gain or lose from the presence of this business in the portfolio?

The total value created by a business being in the portfolio is the sum of the scores on the horizontal and vertical axes. A proxy for incoming benefit could be a comparison of the NPV of this business when operating within the portfolio, with the expected enterprise value when it is spun-off. A proxy for outgoing benefit could be the comparison of the sum of the NPVs of other businesses in the portfolio with the expected enterprise value of the corporation after the focal business has been spun-off.

When both incoming and outgoing benefits are positive, the business is two-sided synergistic and we call these **fits** (top right quadrant). However, one could still want businesses in the portfolio even when they are not in this quadrant. The 45 degree line through the origin, sloping downwards from left to right, shows the **threshold of acceptance** for investment opportunities in the portfolio; if they are above it to the right, it is worth investing in them. This is because both **givers** (high outgoing benefit, low but negative incoming benefit) and **takers** (high incoming benefit, low but negative outgoing benefit) improve the overall value of the portfolio. However, **altruists** (high and negative incoming benefit, low and positive outgoing benefit), **misfits** (negative incoming and outgoing benefit), and **parasites** (high and negative outgoing benefit, low and positive incoming benefit) do not, and should receive little investment or consideration for divestment.

The goal of resource allocation in the portfolio is thus to push businesses further away from the origin toward the top and right, away from the investment threshold. The movement of each

business in the portfolio over time can be traced through this diagram.

However, we must still account for the uncertainty of investment opportunities. We classify each business as best as we can but because such classification depends on assumptions about an uncertain future and we are bound to make errors. A tractable way to think about this involves distinguishing errors of *omission* (believing an opportunity was below the threshold when in fact it was above) from those of *commission* (believing an opportunity was above the threshold when in fact it was not).

First, you should try to minimize both errors by obtaining good information, making sensible assumptions, and following a structured decision process. However, completely eliminating both errors is impossible. To avoid commission errors, you would invest only if you were fully convinced that the business would do well but that would imply plenty of omission errors (i.e., missing out investments in businesses that would have been worthy of investments). To avoid omission errors, you would invest even if you were unsure about the viability of a business but that would imply plenty of commission errors (i.e., money wasted on businesses that turn out to go nowhere). Second, therefore, you should try to minimize the more costly of the two errors. Omission costs increase relative to commission costs if there is a unique opportunity to acquire, a decline in the availability of alternatives, a temporary regulatory loophole, or a technology with increasing returns or network externalities. Higher costs of omission (relative to costs of commission) stimulate exploration. Figure 10.3 shows how the threshold of acceptance should change location as the costs of omission and commission rise.

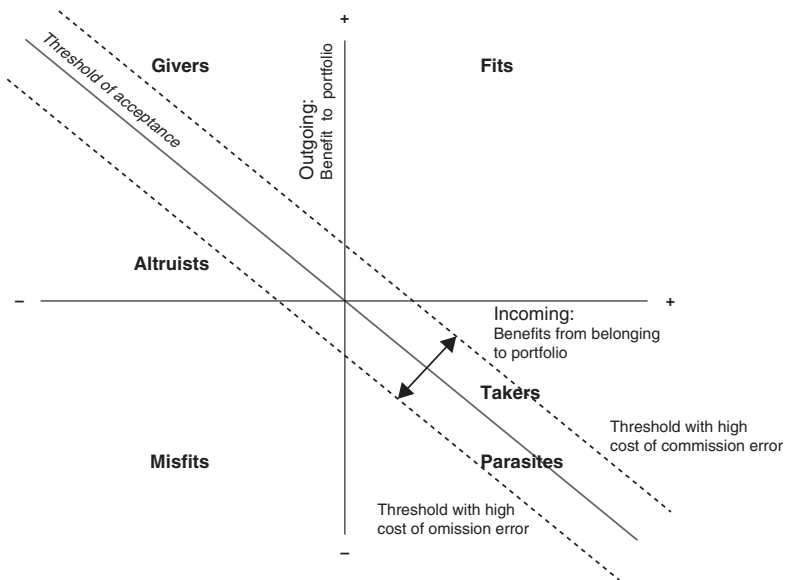


Figure 10.3 The cost of omission and commission errors influences the threshold of acceptance

Application: A2G

A2G has seven business divisions, four of which are in related industries ((A) heavy earth moving, (B) construction, (C) building materials, and (D) infrastructure) and three that are not ((E) publishing services, (F) textile manufacturing, and (G) casinos).

The role of the corporate HQ can be analyzed along two dimensions. The first dimension is *horizontal*, i.e., whether the corporate HQ influences the standalone improvements or linkage benefits of the businesses. For divisions A, B, C, and D the linkage benefits are plausible because they operate in related industries. For divisions E, F, and G, standalone improvements are the best that can be hoped for because of the lack of apparent operational synergies between the divisions.

The second dimension is *vertical*, i.e., directive vs. evaluative control. For divisions A, B, C, and D (active in related industries) the

linkage benefits mostly arise from bundling products and services in order to sell complete projects to customers (i.e., Connection synergies). These synergies are mostly two-sided because everyone benefits. Hence, there is no need for the corporate HQ to be actively involved. Furthermore, because the upstream value chains of A, B, C, and D are quite different, there is no benefit consolidating them at the corporate HQ level. An evaluative approach seems sufficient for A, B, C, and D. This is also the more logical approach for E, F, and G because of the diversity in industries – the corporate HQ is unlikely to be able to add much value.

Accordingly, a cluster approach in which A–D are in one cluster, with E, F, and G operating more or less autonomously seems indicated. Further, this suggests that an evaluative approach focusing on standalone improvements for all divisions and linkage benefits for some is appropriate for A2G.

In terms of resource allocation, you seek information on how much each division gains from being part of A2G (incoming benefit) and how much the rest of A2G gains from having that division in the portfolio (outgoing benefit). The CEO provides you with the data in Table 10.2, which shows for each business the enterprise value computed in two ways: current value within the portfolio (NPV of the going concern), and value of a spin-off (NPV, multiples of comparable standalone firms, IPO pricing, or other techniques used to compute standalone value, see also Chapter 11 on M&A valuation).

You calculate the incoming and outgoing benefit for each division (see Table 10.3) and plot these in an expanding horizons framework (see Figure 10.4). You realize that the portfolio of A2G consists of one misfit (textile manufacturing), one parasite (casinos), one giver (infrastructure), two takers (publishing services and building materials), and two fits (heavy earth moving and construction). As expected, the related divisions within the cluster benefit more from and provide benefits to the portfolio than the unrelated divisions do.

In terms of capital allocation for the next year, recall that A2G follows an evaluative not a directive approach, and is not particularly cash constrained, but investors have been pushing for higher dividends. Furthermore, most businesses are relatively

TABLE 10.2 *Enterprise values before and after hypothetical spin-off (in million dollars)*

Division	Enterprise value			
	Division		Rest of corporation	
	Before a spin-off	After a spin-off	Before a spin-off	After a spin-off
(A) Heavy earth moving	150	100	830	600
(B) Construction	230	200	750	500
(C) Building materials	180	160	800	810
(D) Infrastructure	80	90	890	840
(E) Publishing services	120	80	860	865
(F) Textile manufacturing	110	160	870	890
(G) Casinos	110	100	870	950

mature (so that reasonably good information is available about their prospects) and stable (so that it might be possible, though not necessary, to reallocate resources from one business to another). Further, there is no obvious gain from exploration, as the costs of commission (i.e., making a bad investment) are probably larger than the costs of omission (i.e., ignoring a good business opportunity).

With these ideas in mind, we can now turn to investment decisions by business. Textile manufacturing stands out in a negative sense: it does not benefit from the portfolio and reduces its value. You can suggest minimizing funding and consider a divestiture for this business. While casinos is a thriving business, the rest suffers from casinos due to the negative reputation from gambling. You can again suggest cutting funding and to consider removing casinos from the portfolio altogether. Next, publishing services gains significantly

TABLE 10.3 *Benefits from and to A2G for each division*
(in million dollars)

Division	Enterprise value of business		Enterprise value of rest of corporation			Outgoing benefit	Classification
	Before a spin-off	After a spin-off	Incoming benefit	Before a spin-off	After a spin-off		
(A) Heavy earth moving	150	100	50	640	600	230	Fit
(B) Construction	230	200	30	750	500	250	Fit
(C) Building materials	180	160	20	800	810	-10	Taker
(D) Infrastructure	80	90	-10	890	840	50	Giver
(E) Publishing services	120	80	40	860	865	-5	Taker
(F) Textile manufacturing	110	160	-50	870	890	-20	Misfit
(G) Casinos	110	100	10	870	950	-80	Parasite

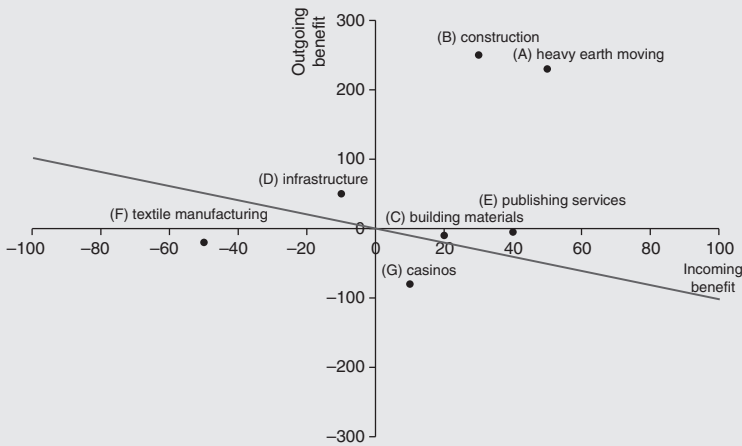


Figure 10.4 Synergistic portfolio framework for A2G

from the portfolio at a small cost to it. You maintain funding at last year's level but flag that their success depends on other divisions in the portfolio. You leave it to them to decide how to do it. On balance, the related businesses are doing well so you maintain funding, though you make additional funds available for projects that increase outgoing benefits (e.g., for building materials) or incoming benefits (e.g., infrastructure).

There are thus two divisions that appear to be struggling in the sense that they would be worth more after spin-off than in the portfolio: textile manufacturing (misfit) and infrastructure (giver). The former you suggest restructuring or divesting, though the latter should continue to receive funds because it is adding value to the corporation. In contrast, on the face of it, casinos (a parasite) is doing well but it is unclear why it should remain in this corporate portfolio, and you would consider divesting it too. Note that these decisions are uniquely driven by the synergistic portfolio framework; an approach that ignored the interactions within the portfolio would (erroneously) recommend divesting textile and infrastructure, and keeping casinos.

Basic facts about the corporate HQ

- Studies decomposing the variance in profitability to business unit, corporate parent, and industry level factors have found that the corporate parent factor represents around 10 to 20 percent of total variance (and 20 to 25 percent of explained variance), using the most recent techniques (McGahan and Porter, 2002). This is in between that for industry and that for business unit. However, it is now understood that this may be a significant under-estimate of the impact of the corporate HQ because of data limitations and the methodology, which mainly has to do with the fact that many business unit specific factors actually originate through HQ decisions.
- The size of the corporate HQ relative to the total size of the corporation varies enormously across sectors and geographies. Primary drivers of differences in HQ size are the scale of shared service functions provided to the businesses in the portfolio, as well as the extent of linkage influence exercised by the HQ.
- The cost of the corporate HQ in large multi-business corporations can range from 2 percent to 7 percent of sales (Roland Berger, 2013) but may be much higher in terms of operating profit.¹ Holding company HQs are relatively cheaper than other kinds of HQs.
- Most multi-business companies use some form of corporate portfolio management frameworks. However, their use in actual capital allocation decisions seems limited, and the missing role of portfolio levels effects (i.e., synergies and dis-synergies between businesses) in most existing frameworks is recognized.

Common mistakes to avoid

- Directive control will only work if the HQ has sufficient competence to understand the specifics of each business. It is unlikely to work in highly diverse portfolios.
- Over-estimating the value of a linkage approach can occur if the HQ has a poor understanding of the value chains of the respective businesses and the sources of potential synergies between

them. The linkage approach, like the directive approach, is thus less likely to work in portfolios with high diversity.

- The flip side to the previous point is that the HQ may overlook the fact that one-sided synergies will not materialize unless there is directive control. Left to their own devices, business units will only pursue two-sided synergies, but the loser in a one-sided synergy project will have little incentive to collaborate unless the HQ intervenes to force a re-distribution of gains.
- The pressures towards uniformity of influence models across businesses are quite high. They arise from the need to maintain perceptions of equity across businesses as well as limits on managerial capacity at the HQ to entertain different and possibly conflicting dominant logics within it. However, it is useful to recognize that these pressures can lead to inappropriate levels of uniformity, and can be dealt with through portfolio restructuring (e.g., divestment) or re-organization (e.g., clustering into homogenous clusters within which a single influence model can be applied).
- Offering centralized shared functions at the HQ is value adding only when there are synergies from consolidating across businesses and significant transaction costs if these functions are outsourced; otherwise, the HQ may end up forcing business to procure internally from it what can be procured more cheaply through external providers.

Frequently asked questions

- 1. How is the synergistic portfolio framework different from the Boston Consulting Group's portfolio allocation framework?**

Corporate portfolio management frameworks such as the Boston Consulting Group's (BCG) growth-share matrix (famous for its "Stars / Cash Cows / Question Marks / Dogs"), the GE-McKinsey framework, or the Business Attractiveness Matrix of Campbell, Whitehead, Alexander, and Goold (2014) are all driven by the