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Collaborative business models: Aligning and operationalizing alliances

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Abstract It is not unusual for companies to generate substantial revenue through alliances. However, alliance failure rates are high, leaving much revenue at risk and value unrealized. The big challenge facing managers is to align company interests with alliance interests. Such alignment can only be achieved when executives pay considerable attention to building the right collaborative business model. In this article, we synthesize the insights of the existing literature to arrive at three collaborative business models—sharing, specialization, and allocation—that managers can use to address the specific requirements of their alliances. Because the literature provides limited insight regarding how to operationalize these models, we highlight what managers need to focus on when operationalizing each of these models. We find that the choice for an overall business model is relatively straightforward in most cases but that operationalization of business models requires more complex combinations of management techniques. Finally, we show how the three collaborative business models can be combined to build hybrid models.

1. Making alliances work

Alliances account for a large portion of company revenues and costs. Companies invest 30% of their research expenditures in alliances that generate over a quarter of their revenue (Kale & Singh, 2009). In addition to generating revenue, alliances

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play an important role in innovation (Kavusan, Noorderhaven, & Duysters, 2016). Still, many alliances do not realize their full potential. Executives do not pay sufficient attention to the fundamentals of collaborative business models that align company and alliance interests, without which alliances cannot bloom. In a collaborative business model, alliance partners can create, capture, and deliver value (Osterwalder & Pigneur, 2010; Rohrbeck, Konnertz, & Knab, 2013).

Though the extant literature provides insights into collaborative business models, less attention has been given to how collaborative business models are operationalized. In this article, we describe three primary collaborative business models identified in the literature and show that each business model has its own unique operationalization requirements that must be addressed consistently. Our conclusion is that the source of alliance complexity lies not so much in the choice of business model, as this tends to be relatively clear, but it arises in the operationalization phase when companies need to fine-tune the chosen business model to meet individual circumstances. We also discuss how executives can build on these three collaborative business models to create and manage more complex hybrid models.

2. Three collaborative business models

The literature on alliances is extensive and has identified a number of building blocks for collaborative business models. Table 1 synthesizes the literature in three primary collaborative business models: sharing, specialization, and allocation. Each of these models has specific characteristics for value creation, value capture, and value delivery.

We first look at the three models through the lens of value creation. The *sharing model* creates value by combining similar capabilities to reach greater scale or network effects (Dussauge, Garrette, & Mitchell, 2000; Oxley & Sampson, 2004). These alliances are horizontal in that they operate on the same stage in the value chain (Dussauge et al., 2000). The benefits of working together tend to be predictable because economies of scale are often easy to identify. The *specialization model* focuses on economies of skill by combining complementary capabilities into an innovative offering that neither partner could have developed alone (Dussauge, Garrette, & Mitchell, 2004; Grant & Baden-Fuller, 2004). Specialization alliances are diagonal, involving partners from different businesses. Because specialization models relate to innovation, the value creation potential is unpredictable as learning needs to take place (Ireland, Hitt, & Vaidyanath, 2002) and innovation success is hard to predict. In fact, such alliances are reorganized more frequently than the other two forms (Dussauge et al., 2000). The allocation model revolves around an important driver for alliances: managing risks (Das & Teng, 2001; Hwang, 2017; Mayer & Teece, 2008). In the *allocation model*, value is created by allocating roles and responsibilities in connection to risks between partners in an optimal way (Dyer, 2000; Kaplan, Norton, & Rugelsjoen, 2010). This model is applicable when partners have overlapping capabilities but one of the partners is more adept at a specific activity; this often shows up in vertical relationships. By allocating activities to the partner best suited to manage the risk associated with that activity, partners create greater combined value, lowering the overall risk profile of the alliance. Residual risks that no partner can influence individually can be shared

Table 1. Primary collaborative models compared

	Sharing	Specialization	Allocation
Value creation			
Economies of	Scale	Skill	Risk
Capabilities	Similar	Complementary	Overlapping
Relationship of the partners	Horizontal	Diagonal	Vertical
Value creation potential	Predictable	Unpredictable	Increased predictability
Value capture			
Mechanisms	Pre-agreed split	Each partner carries own revenue/cost	Incentives tied to performance
Value delivery			
Interdependence	Reciprocal	Pooled	Sequential
Level of integration	High	Low	Focused

jointly. By improving the allocation of risks between partners, value creation becomes more predictable as each partner focuses on what it does best.

A second element identified in the literature is the nature of value capture (Gulati & Singh, 1998). Alliances create two different benefit types for participating firms: common and private benefits. Common benefits are shared between partners, whereas private benefits are gained individually (Dyer, Singh, & Kale, 2008). These different forms of value capture offer different incentives to companies involved in alliances. Balance between the two benefit types requires alliances to implement different value capture mechanisms. Sharing alliances generate more common benefits because the partners share capacity, revenues, and/or costs. Specialization alliances, on the other hand, generate benefits that are unique to the contribution of the respective participants. Allocation alliances contain a mix because they generate value based on how well the partners manage joint and individual risks. Value capture mechanisms follow this logic:

- In the sharing model, partners use a pre-agreed split to capture value (50/50 or other);
- In the specialization model, each partner carries its own revenue/cost; and
- In the allocation model, incentives or targets are tied to how well the partners manage risks (de Man, 2013).

The third element of collaborative business models is value delivery, which requires managing the interdependence and level of integration needed to achieve the desired economies of scale, skill, or risk. The higher the level of interdependence, the more the information processing needs of participating firms increase (Aggarwal, Siggelkow, & Singh, 2011). This increases coordination efforts among firms (Gulati, Wohlgezogen, & Zhelyazkov, 2012). In sharing alliances, the partners need to coordinate similar capabilities simultaneously in order to achieve alliance goals. This reciprocal interdependence (Thompson, 1967) requires a high level of integration (Dussauge et al., 2000) because the alliance needs to be run as a single business. That is why joint ventures—alliances in which two or more partners create a new separate company—use the sharing model. Specialization alliances, on the other hand, require partners to contribute dissimilar resources that can be developed separately but that, when combined, aggregate to a complete customer solution. This pooled interdependence can be managed by a low level of integration because each partner can focus on its own specialization (Grant & Baden-Fuller, 2004). As allocation alliances revolve around similar operational processes requiring crucial handoffs between partners, there is the need to coordinate activities at a sequential level, focusing mainly on the activities involved in the handoff.

In practice, the models are easy to recognize. We asked managers of 142 alliances which models they use. The most used model is specialization, with 45% of alliances working according to this model. The allocation and sharing models are almost equally popular with 22% and 21% respectively. The remaining alliances had a mix or no agreed model on how to create, capture, and deliver value.

2.1. The sharing model

As an initial example, take a successful and long-running alliance: the alliance between Air Lines, Air France-KLM, and Alitalia (DAFK). In an effort to expand their businesses, the partners realized they could increase revenues by connecting their networks. Through this partnership, each airline increases the number of destinations it can offer to its passengers, thus making it more attractive for passengers to fly with the alliance. On paper, this was a logical thing to do. However, in practice, the members faced three significant alignment challenges:

- How to ensure the right level of coordination to realize the desired revenue growth;
- How to ensure each partner captured a fair part of this value for itself; and
- How to manage changes that might affect each partner differently and thus undermine the alliance.

The DAFK alliance is an example of the sharing model. Economies of scale are captured by combining similar capabilities. Since the value of the DAFK alliance lies in increasing the number of passengers, the firms made the decision to share all the revenues and costs on transatlantic flights. The partners create value when they sell tickets to each other's destinations. Offering passengers a one-stop shop to more destinations benefits all partners since this attracts new passengers. It also is a relatively safe bet because the benefits of this are predictable: there is little doubt passengers like the idea. The partners capture value through a pre-agreed split: they share the profits equally between the American and the European sides of the alliance. This model ensures all parties have the same

incentive: maximize profitability on their transatlantic routes. With 24% of all the flights on the busiest route in the world, the alliance now generates billions of dollars for the partners (de Man, 2013).

Over the years, the partners have had to deal with tremendous change in the airline industry. Hence, managing these changes effectively was an important key to success because partners are reciprocally interdependent and the required level of integration is high. For this, a multilevel governance structure was put in place to manage the many issues that come up in such a highly integrated alliance. An executive committee consists of the CEOs of Delta, Alitalia, Air France, and KLM. This committee was set up to deal with unforeseen circumstances in the alliance and to discuss its strategic direction. The alliance steering committee (ASC) consists of the senior managers who are responsible for those departments in the partner firms that are most affected by the alliance. They make most of the day-to-day decisions. It consists of about a dozen individuals from diverse functional areas and nationalities. Finally, there are 12 working groups that are responsible for executing decisions made by the ASC about issues like the route network, passengers, sales, finance, and cargo. The strong point of the alliance is that it ensures almost perfect alignment between company and alliance interests. For example, a Delta salesperson can sell an AF/KLM ticket and count that sale toward his target and AF/KLM salespeople can do the same thing for Delta tickets. Because the alliance partners share their profits, it simply does not matter who sells what; the focus is on increasing sales as much as possible.

2.2. The specialization model

An example of the specialization model is the alliance between Philips and coffee brand Douwe Egberts (DE). As part of the alliance, Philips created a new type of coffee machine called Senseo. DE created Senseo pods, pre-packaged ground coffee beans in their own filter, which are inserted in the Senseo machine. The capabilities of the two partners were perfectly complementary: Philips understands the coffeemaker business, DE understands coffee. Overlap in their capabilities is zero. However, this diagonal relationship also raised the issue of how to align such diverse capabilities in a way to create a seamless proposition for clients. The problem is that the Philips and DE revenue models are different. Philips' revenue model depends on one-time sales of coffeemakers, whereas DE's revenue model depends on reoccurring sales of coffee pods. In addition, the production processes are totally different. Hence, there was no natural way to share ongoing revenue and costs as in the DAFK alliance.

The solution was a collaborative model that respected each company's capabilities and ensured alignment where needed. This required defining effective interfaces to ensure value delivery. The companies created a product development committee to coordinate technical specifications like size of coffee pods and required heat of the water. Once that was determined, each firm could work independently on its own part of the innovation. This allowed each company to focus on what it does best. The contract also agreed on a joint marketing and sales process. A marketing committee coordinated efforts and joint sales teams went into the field. Each committee contained representatives of both parties and ensured that both partners were on the same page.

The interfaces ensured autonomy for each partner during the collaboration. This autonomy also showed in the value capture arrangement. Each partner had its own costs and revenues from selling the coffeemaker (Philips) or selling the pods (DE). As the partners agreed that the coffeemaker would be introduced at a low price in order to create an installed base quickly, Philips received some income from the pod sales to compensate for that. Marketing costs were shared on roughly a 50/50 basis. Each partner carried its own expenses and a regular check was done to determine that costs were still balanced. In essence, the entire model revolves around keeping the companies separate, thereby enabling them to focus on what they are good at without being distracted by complex integration issues; the level of integration was low. Alignment between companies is managed by the committees and the financial model, which provides an incentive for both companies to invest in selling pods. Because the partners operate so independently, it is critical that clear interfaces are defined (e.g., like the product development and marketing committees for the Senseo product). In order to deal with ongoing issues, Philips and DE instituted a business planning process that ensured the companies were on the same page each year regarding product innovation and entry of new markets.

2.3. The allocation model

The allocation model recently become popular in public-private partnerships around large infrastructure projects. In alliances created by ProRail, a Dutch governmental organization tasked with railway construction, risks are now divided between

ProRail and the respective contractor, with each managing the risks it can influence directly. In traditional contracting models, risks were borne either by ProRail or by its contractors. When ProRail incurred all the risk there was no incentive for contractors to perform, which led to budget overruns. When contractors were responsible for all the risks, they found they were unable to address risks that were outside of their sphere of influence, also leading to budget overruns or extreme financial losses for the contractor.

An alliance using the allocation model solves this conundrum. Under this model, risks are allocated to the partner best able to influence them. For example, contractors carry the risk of malfunctioning equipment, which they can mitigate through regular equipment maintenance programs. ProRail carries the risk of delays in obtaining official building permits, which, as a government entity, it is in a better position to influence. For the risks that cannot be foreseen or that neither party can influence, ProRail creates an alliance fund. An example of this is coming across an unexpected archeological site that needs to be excavated. When a joint risk occurs and leads to costs, this is paid out of the alliance fund. At the end of the project, the fund is shared 50/50 with the contractor. This provides an incentive for the contractor to come up with creative ideas for mitigating the costs of the unexpected risks. In the archeological site example, the contractor may choose to redirect personnel to work on another job while the site is being excavated. This prevents salaries from having to be paid out of the fund for people who are idle. Similarly, it provides an incentive for ProRail to work with other government bodies to speed up the process of giving necessary permits to continue the work. Again, this avoids costly delays. Hence, both partners have strong incentives to perform their part of the job to the best of their abilities. A second element is that the alliance fund can be enlarged by any cost savings a contractor identifies. Because the 50% of the alliance fund represents a high margin, it pays for a contractor to proactively identify cost savings. This system increases the predictability of the end result because it lowers the chance of budget overrun.

Many allocation alliances are vertical (Keers & van Fenema, 2015). As in the ProRail case, the traditional client-supplier relationship is partly replaced by an alliance though partners' interdependence remains sequential. Partners operate in different phases of the value chain and need to coordinate across the phases to achieve alliance goals. The level of integration this requires is best described as focused. A high level of integration may be necessary where partner processes intersect—like in managing the alliance fund in the ProRail case—but in most cases, partners maintain their own operating procedures. In this model, the company and alliance interest are aligned by the shared financial incentive provided through the alliance fund. Both parties have an incentive to increase its size as they both get an equal share of it.

2.4. Hybrid models

As the cases show, the primary models can readily be observed in practice. Our large-scale research found that the vast majority of alliances (88%) follow one of these models. However, alliances often face specific circumstances such that the primary models must be adapted to fit the specific needs of individual alliances. In addition, even though the main goal of an alliance may be to realize either economies of scale, skill, or risk, there usually is a secondary need to also manage the other two elements. Therefore, and as the cases show, collaborative business models usually incorporate elements of the other models. This leads to the emergence of hybrid forms.

Many of these hybrid forms are light hybrids, which follow one primary model but add some features from the other models. For example, the alliance fund in the ProRail alliance is derived from the sharing model. By customizing a primary model to meet the specific needs of the alliance partners, the latter can fine-tune the primary model to meet the specific complexities the alliance faces. This customization can take many different forms, leading to a substantial variety among alliances.

More far-reaching forms of hybridization occur when economies of scale, skill, and risk are equally important. The broader the alliance scope, the more complex the alliance (Khanna, 1998). We find that, in this case, partners are able to reduce that complexity by operating two or more of the primary models in parallel rather than mixing them. An example of such dual business models is the alliance between Orion and Novartis, which consisted of a supply and marketing collaboration and a development collaboration around a drug to treat Parkinson's disease. Orion developed this drug but did not have the global market reach of Novartis. It mainly marketed its drug in Northwest Europe. Novartis took the lead in bringing the product to other markets around the world. Orion produced the drug and delivered it to Novartis. Next to this supply and marketing relationship, research around the drug also continued. The supply/marketing relationship followed the allocation model: Novartis had more knowledge in marketing drugs outside Northwest

Europe than Orion. In keeping with the supply nature of the relationship, Novartis pays Orion based on cost of goods sold plus a royalty component; incentives are tied to performance. The development relationship followed the sharing model in that joint teams work on drug development. The financial arrangement was also inspired by the sharing model. Costs are shared based on the relative benefit either party receives from a development initiative. The model is a hybrid between the sharing and the allocation model. Even though the overall picture is complex, the primary models can still be discerned in this alliance because they operate in parallel and different teams are involved in running the two parts of the alliance.

3. Operationalizing collaborative business models

A clear collaborative model goes a long way to create alignment between partners. However, even though choosing the right collaborative business model is important, it is insufficient in getting an alliance to work. The business model also needs to be operationalized. Even though the literature identified three primary business models, it pays little attention to the operationalization of these models. There are two reasons why special attention for operationalization is important. First, operationalization is complex. As shown above, managers can readily identify which primary business model they should use based on intended objectives. Operationalizing those business models, on the other hand, involves many details and dealing with those leads to high complexity in alliances. Second, alliances exist in fast-paced environments. External changes will affect partners differently, requiring continuous calibration of the collaborative business model (Arino & de la Torre, 1998). Since the management requirements in the three models differ markedly, managers need to pay attention to different operationalization requirements in each of the models. Table 2 summarizes them.

3.1. Managing incentives

One core requirement in each of the three models is incentivizing partners to contribute to the alliance in a productive manner. How to do so differs in the various models. In the case of sharing alliances, incentives are naturally aligned by the fact that both parties benefit when scale is increased. However, that does not prevent firms from attempting to take advantage of their partners. For instance, in the DAFK alliance, the joint incentive to optimize profits goes a long way in aligning partners' interests. However, there was also a possible dark side: Although partners may work hard to increase sales, each partner individually has an incentive to offload costs on the alliance. This can be done, for instance, by the partners flying their least fuel-efficient planes for the alliance and using their most efficient planes for flights outside of the alliance scope. For that reason, partners specified which costs would be assigned to the alliance. In the case of inefficient planes, the partners agreed that only a percentage of the fuel costs of such planes could be attributed to the alliance. As operating costs change over time due to new technologies, regulation, etc., this requires the alliance to adopt such ground rules. Hence, in order to effectively operationalize this type of alliance, it is necessary to anticipate where sharing might become unequal and put conditions in place to circumvent such tendencies.

Partners in specialization alliances face internal alignment issues that can undermine the alliance. In

Table 2. Operationalizing the collaborative models

	Sharing	Specialization	Allocation
Managing incentives	Determination of costs and revenues to be assigned to the alliance	Determination of aligned internal incentives	Determination of project targets and handover processes
Relationship building	Companywide	In interfaces	On team level
Accountability & decision making	At C-level	At functional or business unit level	At project or program management level
C-level role	Strategic overseer	Mediator	Arm's length exception manager
Reporting	Full P&L metrics calculated via open books	Progress toward revenue objectives	Progress toward milestones, rewards, penalties, and deliverables

the Senseo alliance, the different organizational structures of the partners presented a barrier. Philips had a product-oriented structure that enabled the Senseo manager to decide in which countries the Senseo was introduced. DE, on the other hand, had a country-based structure, which meant that each individual country manager could decide to introduce the Senseo. To remedy incentive misalignments resulting from the different structures, DE installed an internal coordination process that aligned its country objectives with Philips' product objectives. This example shows that partners often need to adapt processes to ensure that incentives are congruent (Spekman, Isabella, & MacAvoy, 2000).

In the allocation model, incentives are set on a project level rather than on the organizational or business unit level. The requirement here is to ensure employees focus on similar things and effective handovers between companies. Handovers are notoriously difficult, and setting a clear guideline as to when a certain product is ready to be transferred to the partner is essential for making these alliances work. Disagreement about achieved performance is one of the risks in the allocation model. Precision at the beginning in defining good performance becomes a necessity. In the ProRail case, this was operationalized by setting project targets in terms of financial targets (e.g., maximizing the alliance fund); however, a more common approach is target-setting based on a scorecard (Kaplan et al., 2010). Project targets often are moving targets as well. Over the lifetime of an alliance, new technologies may become available that require changes in the deliverables and the handover processes.

3.2. Relationship building

Relationship building is a key element in the success of alliances. Alliances are characterized by incomplete contracts because it is essentially impossible to envision all possible outcomes of an alliance (Arino & Reuer, 2004; Gomes-Casseres, 2015). This may lead to uncertainty and ambiguity. One way of managing this uncertainty and ambiguity is by forging strong relationships (Tjemkes, Vos, & Burgers, 2018), but operationally this requires the parties in the alliance to interact in a highly cooperative manner. The elements to focus on differ across collaborative models, however. In the DAFK alliance, the collaboration touches a substantial part of each partner's business, meaning that the challenges around relationship building are quite different from those in the other two alliance types. The extensive investment in joint DAFK teams led to companywide relationship building, which made it possible to handle complex coordination issues. Other mechanisms to ensure relationship building were face-to-face meetings, often with an informal component to them, and the use of linking pin functions, which ensured that overlapping networks of individuals emerged. As most employees of the partners work for the alliance, widespread relationship building is a necessary investment to deal with change in the relationship.

Specialization alliances are more limited in terms of number of relations that need to be built; rather than needing to integrate each function within respective party firms, it is only necessary to form relationships across the specific functions involved in the alliance. However, this is challenging because the partners are from different industries. In the DAFK alliance, there is a common element between employees because all work in the airline business. In specialization alliances like the one with Senseo, Philips and DE staff work in different businesses. Consequently, functional differences need to be understood and overcome before relationships can be developed properly. In the Senseo alliance, this is achieved by creating a specific number of interfaces between the companies, which create multiple points of contact between the partners. This may seem counterintuitive because, in such different organizations, the use of a single point of contact for coordination may seem to be more efficient. However, single points of contact run the risk of becoming bottlenecks in the communication process, which ultimately undermines alignment. Therefore, operationalizing relationships in specialization alliances requires managers to understand the proper level of relationship building that is required.

Recognizing this, the Senseo partners specified contacts at the board, middle management, and the sales team levels. This system also was responsible for executing the annual planning cycle, which started with national sales organizations making business plans to be approved by the board level. In our research, we found that among the three different types of collaborative business models, the presence of formal business planning processes has the strongest impact on alliance performance for specialization alliances. The reason for this is that the horizontal and vertical interaction processes of sharing and allocation models provide natural foundations for relationships. The diagonal nature of specialization alliances does not offer such a basis and requires augmentation through joint planning.

The teams that carry out the project operationalize relationship building in allocation alliances. Colocation is one way to achieve this. In the ProRail

alliance, the contractor and the ProRail people are located on the same site, albeit in different construction sheds. This enables easy communication and gives each party the opportunity to have internal discussions. Teams are staffed by both partners and trust-building guidelines are put in place. The latter include statements about consensus seeking, sharing problems sooner rather than later, sounding out important decisions informally, and avoiding confronting partners with unexpected things.

3.3. Accountability and decision making

The three models also differ in the appropriate level of accountability and decision making in the sense of who makes the most important decisions and who has to answer for them. Usually, there is not just one individual who is accountable for an alliance. In the majority of cases, there are at least two people—one from each side of the alliance—who are held accountable. Following the logic that accountability should lie at the level that has the best information available to make decisions (Devlin & Bleackley, 1988), the next picture emerges. In the DAFK example of a sharing model, decisions to be made may involve any aspect of the partners' business. Balancing all these interests can only be done at the C-level. That is why the CEOs of the DAFK alliance spend a substantial amount of time in alliance affairs. Specialization alliances, on the other hand, tend to be smaller than sharing alliances. Only one or two business units within each partner may play an important role in them. Accountability should, therefore, lie primarily with the head of the business unit or function. This level also has the best view of the business the alliance operates in.

In keeping with the project-based logic of allocation alliances, project managers are to be held accountable for the alliance results. In the ProRail alliance, a single alliance manager whose main task was to maximize the alliance fund was put in charge. In other alliances, there may be project managers from different partners. The main problem in terms of accountability lies in the fact that not all elements of the alliance are under project managers' control. For example, in the ProRail alliance, other decision makers within the partner firms can make decisions that lead to major changes to a project, which may affect the size of the alliance fund. To make the system work, senior managers on both sides of the alliance need to understand the special position of the alliance manager. If their decisions reduce the ability of the alliance manager to perform well, the alliance manager's superiors need to take this into account when evaluating the alliance manager's performance.

3.4. C-level roles

The role of C-level executives in different alliances varies based on the specific challenges the respective collaborative business models face. In the sharing model, the challenges lie in the complexity of coordination and the difficulty of affecting change in such all-encompassing alliances. In keeping with those challenges, the C-level acts as a strategic overseer. In the latest change in the DAFK alliance, the executive committee realized that the increased unpredictability of the airline business required them to monitor change and ensure it was translated internally. It became their explicit task to affect large-scale change when necessary.

The role of the C-level in specialization alliances is best defined as that of a mediator. The C-level plays a mediating role in two ways: to mediate conflicts between the partners and to mediate conflicts between the alliance and the business. Conflicts between partners may occur on the level of business unit managers or on the level of the alliance managers on both sides. To solve this, an escalation procedure involving the C-levels of both sides is a standard solution in alliance management (de Man, 2013; Watenpaugh, Lynch, de Man, & Luvison, 2013). Conflicts between the alliance and the business within one of the partners may occur when the business is not sufficiently incentivized to contribute to the alliance as discussed in the Senseo case. Alternatively, the alliance may simply not have a value proposition that appeals to the business. The C-level needs to resolve such internal problems.

The allocation model is best operationalized by having the partners focus on implementing a strong project management process. The key is to get daily operations right. The importance of achieving established milestones calls for a high level of project management skills to ensure timely completion of milestones and correct allocation of resources in the project. This is best done by the person most knowledgeable about the project: the project manager. The C-level should be involved only in exceptional circumstances and hence should manage the alliance at arm's length. Of course, there is a role for the C-level during periods of transformation to determine whether the alliance should be extended or wound down should strategic priorities shift.

3.5. Reporting

A final operational requirement is to report about the progress of the alliance. Here each

collaborative model should focus the reporting on the key value creators in the financial model (Dekker, Sakaguchi, & Kawai, 2013). For the sharing model in the DAFK alliance, the goal is to maximize profits. Logically, this means that a full profit and loss statement of the alliance needs to be created. A risk was that partners offload costs on the alliance or hide some of the alliance revenues. Open books were necessary to manage profitability effectively.

In the specialization model, the risk lies in a loss of focus on joint objectives when the partners' businesses develop in different directions. Measuring the progress to the revenue targets partners have set is a good solution for this. In the Philips/DE alliance, the two firms coordinated pipelines and conducted joint sales calls. This focuses the partners on activities that contribute to overall success: How many joint sales calls were done? How many proposals were sent to prospective clients? How many of those were successful? A focus on the numbers may sound narrow, but it provides a clear focus.

The main challenges in allocation alliances lie in the potential for disagreement about performance achievement and what constitutes an acceptable handoff. In the ProRail alliance, there are frequent discussions about these issues and progress toward the goals are regularly reported. Similarly, the impact of any event on the alliance fund is always shared with all involved. In such alliances, milestone payments, rewards, and penalties are reported and the progress toward them is discussed. Frequent discussions about such matters are important in allocation alliances because they bring differences in perspective to the fore early on. The earlier that differences in perspective surface, the easier it is to solve such issues. This requires openness on both sides, as well as a willingness to discuss proactively unexpected setbacks or mistakes made.

3.6. Operationalizing hybrids

The elements of Tables 1 and 2 contain the basic building blocks to manage alliances that conform to pure versions of the three types. How these building blocks are applied depends on the specific situation. It is like Legos: the building blocks are relatively simple but from simple building blocks, highly complex structures are created. The simpler hybrids follow one of the primary models and may mix and match some elements of Table 2 to fit their need. Dual business models, like the Novartis-Orion alliance, need to install mechanisms that ensure the coordination of the separate suballiances that run in parallel. Each suballiance largely defaults to the elements in Table 2 that fit with its model. For example, for the development part of the relationship, they assigned costs to each partner based on the value created per partner. This is in keeping with the sharing model.

The use of parallel teams, however, required further coordination on an organizational level. The two suballiances worked independently to quite some extent, but they were also related. To address relationship building and oversight, the partners set up an oversight committee at the middle management level to coordinate across the two sides of the alliance. Instead of having two teams at the middle management level (one per sub-alliance), there was one. The complexity of the structure required this to be a standing committee initially. Later when the alliance matured and settled in its routine, it became an ad hoc committee. This structure also ensured that there was shared accountability between the two parties. Similarly, the suballiances did not report separately to the CEOs. Instead, the CEOs received one report about the alliance. The roles of the CEOs were also a mix of strategic overseers and arm's length exception managers.

4. Conclusions and recommendations

Our research shows that, in the majority of cases, companies choose a clear primary collaborative business model. When these models are operationalized, complexity increases significantly because the general business model idea needs to strike the right balance to meet the interests of all partners. This requires attention to many operational details. Hybrid models may solve the conundrum of operating different business models by mixing various solutions. Our research suggests that to navigate through the various choices companies have to make, they should follow the next steps.

First, they need to clarify what value the alliance should create. This requires an analysis of the question of what to optimize: scale, skill, risk, or a mix. Second, companies need to clarify which levers help capture and deliver value. Do the default value capture mechanisms make sense for this alliance? What level of integration and interdependence are necessary to realize the value creation and capture? In this phase, alliances that aim to realize a mix of scale, skill, and risk need to discover whether a light hybrid or a hybrid with a dual business model is required. With the primary business model determined, the third step is to operationalize the collaborative business model to ensure the intended value is delivered. The

fine-tuning required increases complexity and companies should dedicate quite some time to this. Table 2 provides managers with guidelines and the main points of attention to address. Hybrid alliances should look for a mix of the mechanisms listed in Table 2 to deal with the additional complexity. Finally, companies should realize that collaborative business models require continuous maintenance. Regular review of the model is required to assess whether the collaborative business model still meets the requirements of the partners and the market.

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