**Teaching Note**

**Surfsub**

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1. Overview

The case sets 4 role players in the fictive shoes of two co-founders of an eco-friendly Australian surfboard start-up (Surfsub) and two representatives of a large Chinese conglomerate in the apparel business (BojinWaves). Francine and Sarah are respectively the CEO and CFO of the fast-growing surfboard company and, while running the business together successfully for several years now, their goals recently started to diverge – Francine wants to continue running the business while Sarah is secretly thinking about an exit. Their agenda to expand in the untapped APAC market is facing constraints due to huge amounts of investment required.

In this context, two representatives of BojinWaves are approaching the two Australians to secure an acquisition of this promising Australian start-up. The Chinese brand has recently suffered from bad publicity due to several scandals stemming from environmental damage and bad working conditions. Acquiring this small Australian player would be a fast and easy way to break into the premium surfboard business and help restore their brand image, all while benefiting from powerful synergies thanks to BojinWaves’s excellent supply chain and renowned distribution network.

1. Teaching Guidelines

Students should be asked to form or be placed in negotiation groups of 4 and instructed to read just 1 of the 4 roles each. All students must also have access to a calculator and should be able to take some notes (electronic device or pen & paper). Students should start preparing for the negotiation in teams of two: the two Australians together, and the two Chinese company representatives together. Each team of two will need to resolve an information pooling problem in order to properly valuate the Surfsub company and prepare their negotiation strategy during that time. After conferring together, the two teams meet for the final team-on-team negotiation to negotiate the sale terms in a group of four, then complete the outcome form.

**Proposed lecture timing (4 hours in total)**

* Students read their role and plan their strategy (individual): 15 min.
* Stage 1 (Intra-team negotiation): 1 hour
* Stage 2 (Team-on-team negotiation): 1 hour
* Completing the outcome form\* once sent out by the instructor: 10 minutes
* Feedback with at least 1 member of the other team: 5 minutes
* Break: 15 minutes
* Debrief: 1 hour to 90 minutes

\* The instructor should only distribute the outcome form after a group has finished the negotiation, as the questions give away information asymmetries that are crucial to the case.

1. Summary of Characters and Their Key Interests

#### **Francine (CEO, Surfsub):**

* She wants to stay involved in running the business after the acquisition by BojinWaves and plans to propose that she and Sarah be appointed the heads of the Surfsub division.
* She is very hesitant to sell her company to BojinWaves unless the conglomerate invests AUD$2 million (or equivalently CNY10 million) to obtain the Green Label certification.
* Less concerned with the price and far more concerned about what the BojinWaves acquisition would mean for Surfsub and the values it stands for. Takes a more long-term and values-oriented view of the negotiation.

#### **Sarah (CFO, Surfsub):**

* She welcomes the interest of BojinWaves as a good opportunity to cash in and retire after a successful entrepreneurial venture.
* She does not want to continue with the business post acquisition but has not shared this with Francine.
* She takes a more short-term, financially oriented view of the negotiation.

####  **Ruiyan (Head of PR, BojinWaves):**

* She is pioneering the move within BojinWaves towards being more environmentally conscious, preferring to think about the long-term impact on the brand image more so than short-term financial incentives.
* She admires Francine’s mission and Surfsub as a concept and is also very invested in ensuring a successful acquisition as it will reflect well on PR. As a result, she is less price sensitive and willing to concede issues to make the Surfsub cofounders happy and ensure a deal.

####  **Jiayi (Head of M&A, BojinWaves):**

* Given her record of successful acquisitions in the past, mainly geared towards cost and supply chain optimization, she is less convinced about the value-add from Surfsub’s sustainability proposition. However, she admits Surfsub would be a great addition to the conglomerate’s portfolio due to expected synergies.
* Most interested in getting Surfsub for as low a price as possible, as the remaining money from the M&A budget would go to the year-end bonus for herself and her team.
* She is concerned that Ruiyan could derail the negotiations by conceding too easily, and hence would prefer to negotiate numbers with the Australian team all by herself.
* Prefers to make a full acquisition rather than have either of the Surfsub co-founders stay on in a leadership or decision-making position within the Surfsub division.

1. Information Asymmetries

Intra-Team Information Asymmetry

To correctly value Surfsub, in general, one needs two sets of information: (1) the appropriate discount rate and (2) the forecasts of free cash flows (FCFs). Specifically:

1. Discount rate: 9.3% (per year)
2. Free cash flows from Surfsub (two subcomponents, 2a and 2b):

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 and beyond |
| (2a) Stand-alone | 3,898 | 4,043 | 4,180 | 4,276 | 4,349 | +1.2% per year |
| (2b) Synergies\* | 585 | 606 | 627 | 641 | 652 | - |
| Combined | 4,483 | 4,649 | 4,807 | 4,917 | 5,001 | +1.8% per year |
| \* (2b) are also referred to, in the exhibits, as “Changes in FCF” d²ue to synergies |

These two sets of information are separated between the two roles within each group:

|  |  |  |
| --- | --- | --- |
|  | Surfsub | BojinWaves |
|  | Francine (CEO) | Sarah (CFO) |  | Jiayi (M&A) | Ruiyan (PR) |
| (1) |  | Exhibit 1 |  |  | Exhibit 1 |
| (2a) | Exhibit 2 |  |  | Exhibit 2 |  |
| (2b) |  | Exhibit 1 |  |  | Exhibit 1 |

Inter-Team Information Asymmetry

Ruiyan has already negotiated with the BojinWaves leadership to increase Green Label investment by another CNY15 million (or AUD3 million) if BojinWaves acquires one more eco-friendly company (like Surfsub). This is not known to the Surfsub team. Therefore, the BojinWaves team can easily agree with Francine’s demands related to investing towards the Green Label. This is a compatible preference between the Australian and Chinese teams.

1. Learning Outcomes

As students prepare with their team, they will need to effectively pool their unique financial information and jointly make the finance-wise sound judgement of which information to use (and which to ignore) in order to get their valuation of the company correct. If they do not, the design is such that they will likely sell too low (Australian team) or buy too high (Chinese team). Students will also encounter goal asymmetries within each of their teams. If they do not align goals and strategies in their intra-team negotiation, they may look disorganized or appear to be acting in a too individualistic manner in front of the other team, who may take advantage of such discord.

1. Tutorial - How to Calculate a Company’s Value

The following illustrates the calculation the players will need to go through to value the company, after pooling the information available in the two different roles within each team. It should not be disclosed to the students beforehand. The case should only be used with students who have previously received training in how to value firms with equations of this kind.

To evaluate a company, in general, one needs to go through the following steps:

1. compute the discount factors for each year using the discount rate;
2. compute the continuation value (CV) using the present value formula for a growing perpetuity: CVt = FCFt+1/(k - g), where k is the discount rate and g is the perpetual growth rate;
3. multiply the FCF for each year and the CV with the corresponding discount factor from the previous step to get the present value of each FCF; and
4. sum up all the present values of each FCF to get the company value.

To illustrate, consider the value of Surfsub as a stand-alone company:

1. Given the discount rate of 9.3%, the year-t discount factor is given by 1/(1+9.3%)t, i.e., {0.9149, 0.8371, 0.7658, 0.7007, 0.6411} for year 1 through year 5.
2. The annual growth rate from year 5 to year 6 is 1.2%, giving the year-6 FCF = 4,349×(1+1.2%) = 4,401. Applying the growing perpetuity present value formula, CV in year 5 = 4,401/(9.3% - 1.2%) = 54,336.
3. For example, the PV of all FCF from year 1 is PV1 = 3,898×0.9149 = 3,566. Likewise, PV2 = 3,384, PV3 = 3,201, and PV4 = 2,996. To get PV5, both the FCF from year 5 and the CV valued in year 5 need to be accounted for: PV5 = (4,349 + 54,336)×0.6411 = 37,620.
4. The company value is, therefore, PV1 + PV2 + … + PV5 = 50,768 thousands in AUD. This is also known as the enterprise value of a stand-alone Surfsub.

Doing the same but for the acquired Surfsub, i.e., adding the synergies and using a higher terminal growth rate of 1.8%, yields 61,845 thousands in AUD.

Both teams can compute these two values, as soon as they successfully pooled their information and locate the correct inputs. These two valuations then serve as, respectively, the lower and the upper bound for the negotiation – the seller (Surfsub) will want to sell for at least its stand-alone value, while the acquirer (BojinWaves) will want to pay no more than that plus the synergies. A relatively wide Zone of Possible Agreement (ZOPA) of 61,845 - 50,768 = 11 million in AUD (or 55 million in CNY) is the result, roughly one-fifth (≈ 11/50.8) of the stand-alone valuation of the target, suggesting significant room for value creation and positive net present value (NPV).

1. Case Debrief

The instructor should first give an overview of how to value a company in the M&A context. The students should be reminded of the key inputs to valuation, i.e., the appropriate discount rate and the free cash flow forecasts. In particular, each team (Australian or Chinese) needs to recognize that there are two valuations, the stand-alone value and the value with synergies, serving respectively as the lower and the upper bounds for the negotiation. The instructor should then point out that the relevant information pieces (Part 4 above) are scattered between the two players in each team. This then leads naturally to the importance of the information pooling problems in the role play, in other words cases in which different players held key information that needed to be combined to make the most informed decision possible. Within each team, Sarah & Francine as well as Jiayi & Ruiyan, each have information they need to combine to properly valuate Surfsub. If they don’t do this, the Chinese team (Jiayi & Ruiyan) will tend to overvalue Surfsub whereas the Australian team (Sarah & Francine) will tend to undervalue their company. Finally, the instructor should walk students through the goal asymmetries the four characters have, with members of the same team in some cases having quite different underlying interests and agendas. To bring these topics to life, the instructor should ask students how well they dealt with the information asymmetries and goal asymmetries during the negotiation. How did their strategies impact key relationships, such as those within each team? Finally, the instructor can share some relevant research on the effectiveness of team vs. solo negotiators.

I. Understanding the Valuation in M&As

The instructor can begin by asking what motivates M&As in general. The discussion should lead more to collaborative M&As than to sabotaging, pre-emptive, and hostile take-overs. In the end, the instructor should point out that in the current case the M&A is driven by the potential synergies between Surfsub and BojinWaves. In other words, merging together, additional value can be created and there is certain positive NPV in the horizon. In the language of M&As, such room for value creation or potential positive NPV is referred to as (the value of the) synergies.

The instructor can then turn to the reservation values by asking what the least Surfsub is willing to sell for and what is the maximum BojinWaves is willing to pay. The answer, of course, is that Surfsub will sell for no less than its stand-alone value and BojinWaves will not pay more than the stand-alone value plus the synergies. In explaining this, the instructor can sketch the following to help the students see the relationship among “stand-alone,” “synergies,” and “ZOPA”:

*Surfsub wants to sell for as much as possible*

*BojinWaves wants to pay as little as possible*

Surfsub’s stand-alone value

Stand-alone value plus synergies

Synergy value = ZOPA

With this, it should be easy to see that Australian team’s reservation value (for selling) is just Surfsub’s stand-alone value, while the Chinese team’s reservation value (for buying) is the stand-alone value plus the synergy value.

The instructor can then ask what each team needs to know during the negotiations. At the minimum, each team should know its own reservation value. It is also obviously advantageous to have a sense of where the other team’s reservation stands – the counterparty’s “bottom line.” The difference between the two reservation values constitutes the ZOPA, i.e., the zone of possible agreement or the total possible NPV through the deal.

II. Calculating the Two “Bottom Lines”

Depending on the background of the students, the instructor can selectively cover the valuation methodology reviewed in Section 6 (the tutorial) above. The key point for the students to recognize or to recall through this review is that, in general, two sets of information are needed: the discount rate and the (forecasts of) FCFs.

The instructor can then point out that the FCF information, both for the stand-alone Surfsub and for the synergies, is quite clearly given to both teams. For the Australian team, Francine has the stand-alone FCFs and Sarah has the synergies’ implications for the FCFs. For the Chinese team, it is Jiayi who has the stand-alone FCFs and Ruiyan who has the synergies. Through their intra-team meetings, the students should combine these them to get the full FCF information set. If there is discussion about the exchange rate between AUD and CNY, the instructor can refer the students to the notes in Exhibit 2 of Sarah and/or Exhibit 1 of Jiayi which provides the current exchange rate for the purposes of the case.

The potential challenge lies in the correct discount rate to use. Depending on the background of the students, this discussion might need sufficient time allocation. The instructor can first ask the students which rates they have considered and eventually chosen to use and ask for their justification. The more advanced students should be able to recall that the discount rate should reflect the “opportunity cost” of the financiers’ money. For example, if a student lends $10,000 to another for a year, the borrowing student should repay not only the principle but also some interest to cover what the lending student otherwise could make out of the $10,000 during the year. This understanding, however, is at best partial. The key missing element is that such discount rate should reflect the “nature” of the usage of the money.

To illustrate this, the instructor can ask the students to intuitively judge which of the following two startups will be subject to a higher interest rate if they both want to take a loan from a same bank: (a) a startup focusing on the trading of cryptocurrencies vs. (b) one delivering fresh produce directly to table. Despite the financier being the same (hence in principle same opportunity costs), the two startups will likely get very different interest rates and the reason is that their businesses differ greatly in “nature.” The students should have no problem seeing from this example that such “nature” is the riskiness of the business – the more risky, the higher the interest rate or the discount rate in general.

With the above example, the instructor should be able to conclude that the appropriate discount rate for the valuation here should reflect Surfsub’s business risk (and that of the synergies). The careful students should recall that such information is given in Sarah’s Exhibit 1 and in Ruiyan’s Exhibit 1 and it should be 9.3% per year. (Specifically, it is stated in the exhibit that “such risks translate to a 9.3% cost of capital per annum for a typical pure-play company in surfing.” For those in doubt whether Surfsub’s capital structure should be considered, the instructor should remind them that Surfsub is an all-equity company, as can be seen from Francine’s or Jiayi’s Exhibit 1.)

Still, students might contend that since BojinWaves is the buyer, it is the source of their financing that matters and hence, one should make use of the information from its balance sheet and the Chinese capital markets and use its weighted average cost of capital (WACC) for the discount rate. This is a common fallacy. The financier’s cost of capital in general does not come into play in valuations of M&A deals. The instructor should remind the students of the startup example before: The bank’s cost of capital does not determine how it should make loans to the two startups, but rather it is the nature of the businesses of the startups that matter. The instructor can also extrapolate and ask such students whether they need to pay different prices for a same slice of pizza. The students are likely to respond that they will not because it is the same pizza. The same logic goes in M&A: As long as it is the same pizza (the same Surfsub), the price should be the same regardless of the buyer. Likewise, the pizza price does not change if the customer pays cash or by credit card. The method of payment (the source of financing) does not matter – it is the same piece of pizza (the same business) and it should be the same price. The instructor should then acknowledge that the information about BojinWaves’ financials (Exhibit 2 of Sarah’s role and of Ruiyan’s role) is indeed irrelevant for the valuation of Surfsub and the synergies.

Yet another small fraction of students might attempt to find the discount rate via Surfsub’s financial information (Exhibit 1 of Francine’s role and Jiayi’s role). For example, one might naively equate the latest return on equity (ROE = net income / equity capital) with the cost of equity. The instructor should first point out that if one indeed does that, she or he will find an implausibly high discount rate of 44% per year. This should have raised their eyebrows. The instructor can then elaborate: The balance sheet and income statement information in general is not appropriate for valuation purposes. This is because (1) such accounting data are likely stale, not reflecting the latest state of the company; and (2) even if such information is up-to-date, it only reflects the latest cost-based values, hence not about the future operation of the company. For example, if a company just bought a new machine at a cost of $3 million, this results in an increase of $3 million of fixed assets in the balance sheet. But does this mean that the machine is only worth $3 million for the company? Probably much higher – through its value creation (manufacturing end-products), the machine should be able to create more than what it costs, for otherwise the company should have no incentive to buy it in the first place. This is why the cost-based accounting information should not be used for valuation purposes and one has to resort to educated forecasts.

By now the instructor should have convinced the students that the appropriate discount rate to use is the 9.3% from Sarah’s or Ruiyan’s Exhibit 1. The numbers can then be worked out using both sets of information, as illustrated in Section 6. The instructor can alternatively show the valuation spreadsheet. To conclude, the key numbers to take away are the bottom line for the Australian team, AUD50.8m or CNY254m, and the bottom line for the Chinese team, AUD61.8m or CNY309.2m.

III. Information Pooling in Stage 1 (Intra-Team Negotiation)

After working out the correct valuations above, the instructor can then point out that in order to get these numbers, the players within each team must combine their information to get a correct estimation of the company’s value.

Specifically, the Australian team needs to combine Francine’s Exhibit 2 (stand-alone FCFs) with Sarah’s Exhibit 1 (effects of the synergies and the discount rate). Likewise, the Chinese team needs to combine Jiayi’s Exhibit 2 (stand-alone FCFs) with Ruiyan’s Exhibit 1 (effects of the synergies and the discount rate). The instructor could point out that the information pooling problem is intentionally designed to be similar for the two teams.

Some brief discussions can be entertained to let teams share how they might have failed to pool the information correctly. For example, an overly confident Sarah might insist using BojinWaves’ cost of capital based on her Exhibit 2. She would likely obtain a WACC of about 10.9%, which is higher than the correct 9.3%, leading to an undervaluation by the Australian team. If the Chinese team insisted using BojinWaves’ cost of capital from Ruiyan’s Exhibit 2, the resulting discount rate will be 8.5%, which is lower than the correct 9.3%, thus overestimating the Chinese team’s highest acceptable price. In any case, the resulting ZOPA is artificially widened by these likely errors, and a deal will become more likely. However, the team that makes the information pooling error is at risk of reaching a deal that disfavours their side (i.e., too low a sale price for the Australian team and too high a purchase price for the Chinese team).

Depending on the time constraint, the instructor may choose to skip the calculations of these two incorrect discount rates. For completeness, they are summarized here:

* Using Sarah’s Exhibit 2: BojinWaves has a 25% weight of debt at 6.5% (BBB corporate bonds), a 75% weight of equity at 12.91% (industry average). Examining the income statement, it can be found that the applicable corporate tax rate is 25% (the tax expense of 273 relative to the pre-tax income of 1,093). Therefore, WACC = 25%×6.5%×(1-25%) + 75%×12.91% = 10.9%.
* Using Ruiyan’s Exhibit 2, similarly, BojinWaves has a 25% weight of debt and 75% weight of equity, and the applicable tax rate is also 25%. But in this case, the Chinese team has a more precise understanding of its own cost of capitals: The bonds yield at 6.2%, which is the cost of debt, while the equity’s *expected* return is 9.8%. Combining them, WACC = 25%×6.2%×(1-25%) + 75%×9.8% = 8.5%.

Some students might explain that they did successfully pool all the information during the intra-team meetings, but in the end, they made the wrong call choosing the inappropriate discount rates. To them the hurdle is not in the information pooling but in the finance part. The instructor should leverage such an observation and emphasize that the two sides are often intertwined in reality. A “good” business decision hinges not only on successful communication and negotiation but, perhaps even more importantly, also on the correct evaluation of the “fundamentals.” Without the correct fundamentals, one is negotiating in pursuit of the the wrong aspirations.

IV. Resulting Potential Deals

The instructor can return to the earlier sketch and fill in the correctly calculated numbers:

*Surfsub wants to sell for as much as possible*

*BojinWaves wants to pay as little as possible*

AUD50.4m

(CNY254m)

AUD61.8m

(CNY309m)

ZOPA = AUD11.1m (CNY55m)

A deal therefore can arise anywhere between AUD50.4m and AUD61.8m. Note that any price in this range is admissible because the budget allocated to Jiayi is AUD72m (CNY360m).

There are options that can be used to make a deal more attractive to one or both sides:

1. Green Label: If the two sides agree that BojinWaves will spend an extra AUD3m (CNY15m) for Green Label certification (a compatible preference since Ruiyan has already secured these funds given the acquisition of Surfsub), then Francine will be much more open to selling the company.
2. Keeping the current CEO (Francine) as the head of the Surfsub unit after the acquisition takes place will lead Francine to much more keen on selling. However, Jiayi would have to concede decision power post-acquisition for this to happen.

V. Team Coordination and the Dynamics of Influence

As a general principle, it is advisable to team up in negotiations, since negotiation teams both create and claim more value than solo negotiators (Thompson et al., 1996). Teams create more value because having more people in the conversation facilitates information exchange and value discovery. Teams claim more value because they leverage social conformity pressures again solo negotiators. However, the team advantage in negotiation only emerges if the team is well coordinated and acts as a unit. We refer to the character profiles above for the debrief of the goals of each character. The clash of interests within each team may make them look poorly coordinated and weak in front of the other team during the negotiation process. Successful teams can mitigate this and act as one entity by negotiating interests and coordinating their strategy during the intra-team negotiation.

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Thompson, L., E., Peterson, S. W., Brodt. (1996). Team negotiation: An examination of integrative and distributive bargaining. *Journal of Personality and Social Psychology, 70*(1),
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