



# *Business Adaptive Strategies in Crises*

The Impact of the Corona Crisis on Crystal Sound, an Event Technology Provider

Konstantin Friedrich Kogeler

Dissertation written under supervision of Ricardo Ferreira Reis

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**Abstract**

**Dissertation Title:** Business Adaptive Strategies in Crises – The Impact of the Corona Crisis on Crystal Sound, an Event Technology Provider.

**Author:** Konstantin Friedrich Kogeler

**Keywords:** Event industry, event technology equipment, COVID-19 pandemic, crises, change management, dynamic capabilities, vertical integration, collusion, strategic alliance

**Sustainable Development Goals:** SGD08, SDG09, SDG12

The COVID-19 pandemic has a significant impact on the event sector. Large events are fully prohibited in Germany since March 2020. Crystal Sound, as a provider of event technology, had to adjust its operations as well as its strategy to the changed external environment. To compensate this decline in sales, Crystal Sound cut costs. Furthermore, Crystal Sound launched together with competitors a new legal entity to organize events for visitors in cars. This vertical integration shifted Crystal Sound from a pure service provider to a more forward integrated organizer of events. This strategic alliance enabled to achieve a regional monopoly leading to enforcing higher prices and generating higher profits. In addition, Crystal Sound shifted its focus more towards innovative digital solutions, e.g. streaming of events.

However, these adjustments did not suffice to achieve break-even. Therefore, Crystal Sound decided to sell a portion of its non-current assets to disclose hidden assets to retain a positive equity-ratio. In the fiscal year 2021, Crystal Sound will generate probably again a loss. The management has to decide whether to compensate the loss by injecting additional equity or by raising additional loans.

This dissertation shows how an enterprise is able to respond very quickly to significant changes in the external environment. Adjustments in the product portfolio, vertical integration, collusion with competitors, disclosing hidden reserves of the balance sheet, and tremendous cost-cutting enabled that Crystal Sound generated a profit in the fiscal year 2020 despite the pandemic and massive reduction in revenue from traditional customers.

**Resumo**

**Título da Dissertação:** Estratégias Adaptativas de Negócios durante Crises - O Impacto da Crise do Coronavírus na Crystal Sound, uma fornecedora de tecnologia para eventos.

**Autor:** Konstantin Friedrich Kogeler

**Palavras-chave:** indústria de eventos, tecnologia de eventos, pandemia COVID-19, crises, gestão de mudanças, dynamic capabilities, integração vertical, conluio, aliança estratégica

**Objetivos de desenvolvimento sustentável:** ODS08, ODS09, ODS12

A pandemia COVID-19 tem um impacto significativo no setor de eventos. Grandes eventos estão totalmente proibidos na Alemanha desde março de 2020. A Crystal Sound, fornecedora de tecnologia de eventos, teve que ajustar as suas operações, bem como a sua estratégia ao ambiente externo alterado. Para compensar a queda nas vendas, a Crystal Sound cortou custos. Além disso, a Crystal Sound lançou com concorrentes uma entidade legal para organizar eventos disponíveis a partir de carros. Essa integração vertical mudou a Crystal Sound de fornecedor de serviços puro para um organizador integrado de eventos sofisticados. Esta aliança estratégica alcançou um monopólio regional, permitindo preços mais altos e à geração de alguns ganhos. Além disso, o Crystal Sound mudou seu foco para soluções digitais como streaming de eventos.

No entanto, esses ajustes não foram suficientes para o breakeven. Portanto, a Crystal Sound decidiu vender alguns dos ativos não-correntes para contabilizar ativos antes ausentes e equilibrar o balanço. No ano de 2021, o Crystal Sound gerará novamente um prejuízo. A administração deve decidir se compensa a perda injetando capital ou levantando empréstimos adicionais.

Esta dissertação mostra como uma empresa é capaz de responder rapidamente a mudanças significativas no ambiente externo. Ajustes no portfólio de produtos, integração vertical, conluio com concorrentes, revelação de reservas ocultas do balanço patrimonial e enorme corte de custos permitiram que a Crystal Sound gerasse lucro no ano de 2020, apesar da pandemia e da redução maciça na receita de clientes tradicionais.

## Table of Contents

<b>Acknowledgements</b> .....	<b>I</b>
<b>Abstract</b> .....	<b>II</b>
<b>Resumo</b> .....	<b>III</b>
<b>I. Introduction</b> .....	<b>1</b>
<b>II. Case Study</b> .....	<b>2</b>
2.1. Financials (Profit margin) .....	2
2.2 Product Portfolio .....	3
2.3 Customer Structure.....	3
2.4 Impact of the COVID-19 Pandemic .....	4
2.4.1 Cost Structure .....	4
2.4.2 Additional Liquidity .....	5
2.4.3 Collusion to Integrate Vertical .....	5
2.4.4 Focus on Digital Services.....	6
2.4.5 Fiscal Year 2021 .....	6
2.4.6 Negative Equity-Ratio .....	6
2.4.7 Potential Merge with a Competitor .....	7
2.4.8 Potential Structure of the Deal .....	7
2.4.9 Valuation of the Deal .....	8
2.5 Future Competition.....	8
<b>III. Theoretical Background</b> .....	<b>9</b>
3.1 SWOT-Analysis .....	9
3.2 A Simplified Strategy Matrix for Vertical Integration .....	9
3.3 McKinsey Framework for Identifying, Quantifying and Capturing Synergies .....	10
3.4 Dynamic Capabilities and Strategic Management .....	10
<b>IV. Teaching Note</b> .....	<b>11</b>
4.1 Questions.....	11
4.1.1 Could you please apply the SWOT-analysis .....	12
4.1.2 How would you structure the deal (merger vs acquisition)? .....	13
4.1.3 What are the advantages and disadvantages of an alliance with competitors?.....	16
4.1.4 Is the forward integration strategically useful? .....	17
4.1.5 Which resources could and which couldn't be adjusted to the changing external environment? .....	20
4.1.6 What are the available options to compensate the expected loss in the fiscal year 2021? ...	21
<b>V. Conclusion</b> .....	<b>23</b>
<b>VI. Appendix</b> .....	<b>25</b>
6.1 Citations of the Interviews .....	25

6.2 Balance Sheet of Crystal Sound .....	27
6.3 Profit & Loss Statement of Crystal Sound .....	28
6.4 Group Structure of Crystal Sound .....	28
6.5 D&b Software Solutions .....	29
6.6. Sound Systems .....	30
6.7 Projects of Crystal Sound .....	31
6.8 Kulturbühne Karlsruhe (Strategic Alliance).....	32
<b>VII. References .....</b>	<b>33</b>

**List of Figures**

<b>Figure 1</b> – SWOT Analysis .....	13
<b>Figure 2</b> - Advantages & Disadvantages of a Merger .....	14
<b>Figure 3</b> - McKinsey Framework for Identifying, Quantifying, and Capturing Synergies.....	15
<b>Figure 4</b> - Advantages & Disadvantages of an Acquisition .....	16
<b>Figure 5</b> - Advantages & Disadvantages of Collusion .....	17
<b>Figure 6</b> - Advantages & Disadvantages of Forward Integration .....	19
<b>Figure 7</b> – A Simplified Strategy Matrix for Vertical Integration .....	20
<b>Figure 8</b> – Group Structure.....	28
<b>Figure 9</b> – D&b NoizCalc .....	29
<b>Figure 10</b> – D&b ArrayCalc.....	29
<b>Figure 11</b> – A Complete Sound System .....	30
<b>Figure 12</b> – A Line Array System .....	30
<b>Figure 13</b> - Böhse Onkelz at Hockenheimring (400,000 visitors) .....	31
<b>Figure 14</b> - Das Fest in Karlsruhe (around 250,000 visitors).....	31
<b>Figure 15</b> - Kulturbühne Karlsruhe .....	32
<b>Figure 16</b> - Kulturbühne Karlsruhe Stage .....	32

## **I. Introduction**

This master thesis will investigate the impact of the corona crisis on Crystal Sound, a specialist event technology provider for large events. The master thesis consists of a case study, a theoretical literature review, and a teaching note. The Crystal Sound GmbH was founded in Baden-Baden in 1979 and has constantly increased its market position in the event industry. Crystal Sound provides technology for events (from speakers, lights, LED-walls to instruments over furniture, and decorations). The service ranges from the technical planning to the technical support of events. Crystal Sound, the technology-focused company is based in Karlsruhe, Baden-Württemberg and its sister company, Machart Eventdesign specialized in furniture / decorations is based in Frankfurt, Hesse. The customer portfolio consists of B2B clients from the music industry (festivals, tours of bands), enterprises (e.g. fairs, product presentations), sport-sector (e.g. football clubs, marathons, triathlons) and governments (e.g. folk festivals). The majority of the revenue is generated in the DACH-region (Germany, Austria, and Switzerland), nevertheless, its clients are located across Europe. The event industry is probably the most affected industry of the corona virus, i.e. large events were prohibited at the beginning of pandemic and were also probably just allowed when the pandemic is defeated. Under this circumstances, it is highly interesting to analyze how an enterprise in this field adjusted its strategy to survive the pandemic.

The emergence of the corona crisis has changed the external environment of Crystal Sound. Since February 2020, nearly all events have been cancelled, whereby the revenue dropped by nearly 90%. The thesis is analyzing the adaptive strategies of Crystal Sound to handle the changing environment. The adaptations are very diverse, from cost cuttings to adaptations in its product portfolio. The cost cutting activities are not sufficient to achieve break-even. Consequently, Crystal Sound raised liquidity in terms of loans and liquidity issued of bailout funds by the German government to compensate the loss. To generate additional returns, Crystal Sound created an alliance with local competitors to strategically integrate forward to offer jointly events for visitors in cars. The thesis provides a summary of the adoptions of Crystal Sound in the fiscal year 2020 to handle the corona crisis. In the fiscal year 2021, the management expects to generate a loss. The available options to handle the loss will be presented. The reader could form his own opinion by considering how he / she would have decided. Another essential question is whether or not to merge with an indirect local competitor. The characteristics of a potential deal will be shown, enabling the reader to build its own opinion concerning a potential deal.

## II. Case Study

Crystal Sound has been founded in Baden-Baden in 1979. Crystal Sound is a 100% subsidiary of the RS3 GmbH, which is owned to 75% of the R.K. Management- und Beteiligungs GmbH (RKMBG) and to 25% of the CEO Gerd Gruss. The RS3 GmbH owns four different subsidiaries: Crystal Sound (specialized on providing event technology), Fein.media (focused on planning and selling complex sound and light solutions to business customers), Rock Shop (a retailer for musical instruments for private customers), Machart Eventdesign (provides furniture and decorations for events). The synergies between all business units are high. The Rock Shop as a retailer for instruments and Fein.media as a retailer for event technology, enables that Crystal Sound could receive its assets for production prices.

RKMBG, the major shareholder of Crystal Sound is an investment firm that holds medium-sized companies. The portfolio of RKMBG currently generate an annual total turnover of about €1.1 billion with over 3.000 employees. RKMBG provides financial and strategic support to its portfolio companies.

### 2.1. Financials (Profit margin)

The consolidated revenue of the RS3 GmbH was around 20 million euros (2019). The group employed around 100 employees in 2019. Crystal Sound generated a revenue of around 4 million euros and a profit of around 100,000 euros. This corresponds to an overall profit margin of 2.5%. The profit margin varies tremendously among the different customer groups. In general, the margin in the corporate & sport sector is higher than in the music industry. This is caused due to the fact that festivals and concerts are oftentimes open-air events. In Germany most open-air are only feasible during summer because the winter is too cold with snow and negative Celsius temperatures. In addition, successful bands require the newest sound and light system. The situation in the corporate sector is completely different. Marketing / event manager of enterprises are often not aware of the new technology, i.e. they are only interested that the event is accomplished successfully. In addition, most corporate events are in-door and therefore not restricted to the summer. Crystal Sound serves despite the low margin many large festivals and concerts due to two reasons. Firstly, those events are a perfect marketing instrument for Crystal Sound. Secondly, the project-volume is oftentimes very high and useful to cover at least the overall fixed costs of Crystal Sound.

## **2.2 Product Portfolio**

The service portfolio consists from planning events to the actual technical supervision of events. Employees of Crystal Sound plan the technical realization of a project by animating the location in 3D including the technology. It is essential to determine the suitable speaker, light or cable to perform the respective event. Three different software's enables to simulate the surroundings of the respective locations. Firstly, suitable equipment will be determined to perform the event optimally. In the next steps, employees of Crystal Sound set up the technology at the locations. During the event, employees of Crystal Sound manage the technical execution of an event. For musicians, it is essential that experts supervise the event because the sound characteristics has to be adjusted live in real-time to the respective conditions of the locations. Employees of Crystal Sound have mixed the sound live for world stars, such as Iron Maiden, Shakira, or Phil Collins.

Concerning the technical equipment, Crystal Sound exclusively applies premium technology. All speaker for instance are products of d&b, which is the leading producer for speakers for large events. The speakers of d&b enable to adjust the sound waves to the audience. This is especially essential for open-air events, which are closely located next to residential areas. The sound waves besides the audience are interfering and thereby imperceptible. In addition, speakers of d&b are able to adjust their direction, controlled digitally from the mixing console. This feature is important for concerts in halls due to the fact that the setup is done when the hall is empty. However, the acoustics is sometimes completely different when the location is crowded with humans. Therefore, the feature of d&b speakers to adjust the sound in real-time controlled by the mixing console supported by a special software is tremendously useful. The joint offer of premium brands together with the experience of Crystal Sound employees is a real USP and enables that Crystal Sound is allowed to supervise concerts of world stars.

## **2.3 Customer Structure**

Crystal Sound is purely operating in a B2B environment. The majority of its revenue is generated in the music sector (around 70%). Crystal Sound provides technology for large festivals, for instance for the famous Wacken Open Air, a heavy-metal festival with 85,000 visitors or the Donauinselfest in Vienna with approximately three million visitors. In addition, Crystal Sound provides technology for concerts of bands, well-known musicians are for example Lenny Kravitz, Phil Collins or Shakira. Another segment are sport events, such as the European Ironman championship or the professional football clubs from Hamburg and Freiburg.

Moreover, Crystal Sound provides event technology for enterprises, e.g. for trade fairs or product presentations. Prominent enterprises are for example Ferrari, BMW or Audi. The fourth customers group are governments, for example folk festivals or the visit of the Pope in Valencia, Munich or Freiburg.

## **2.4 Impact of the COVID-19 Pandemic**

The emergence of the corona crisis forced Crystal Sound to adopt its operations to a changed environment. The major effect is a tremendous reduction in revenue by around 90%. The product portfolio of Crystal Sound is focused on large events (larger than 1,000 visitors). Due to the distance rules, it is prohibited to organize large events. Therefore, Crystal Sound is forced to adjust its product portfolio by implementing two changes: More digital solutions and creating an alliance with competitors to integrate forward. The contracts in the event industry are short-term oriented, whereby organizers of events are able to cancel the contracts even immediate before an event. To handle the massive drop in revenue, Crystal Sound reduced its cost structure and raised additional liquidity of €500,000.

### **2.4.1 Cost Structure**

The third largest cost position of Crystal Sound is rent (€253,346.23). The property of Crystal Sound is owned by the RS3 GmbH, therefore, the entire rent of Crystal Sound could be eliminated. The second largest cost position are personnel cost (€630,874.82). Those costs are also able to be eliminated due to the integration of “short-time working”. This is an instrument offered by the German government to secure the workplaces. When companies could prove that their employees cannot work because of too few projects, then the German governments pays 60% of the salary of the employees. Companies are free to decide whether they are willing to raise the salary of their employees to 100%. Crystal Sound decided to not raising the salary of their employees, therefore, the personnel costs are reduced by over 90%. Short-time working is not possible for executives, therefore, the salary for the management remained.

Other costs are financing costs, e.g. amortizations and interest for debt & rates for leasing contracts. It is possible to shift the leasing rates to future periods, however, this is not infinitely practicable. At the end of the fiscal year 2020, leasing providers require to receive the leasing rates for the fiscal year. This instrument is only useful in short-term, and Crystal Sound has to repay all leasing rates of the fiscal year 2020. Concerning the cost for debt, it is possible to terminate a certain percentage of the amortization, nonetheless, the full interest rates still have to be paid for the fiscal year. The overall cash burn of Crystal Sound is €50K per month.

### **2.4.2 Additional Liquidity**

The cost reductions are not enabling break-even, therefore, additional liquidity is necessary to compensate the loss. The German government offers loans that are 100% backed by the German government. The loans are requested and issued by the respective “house bank”. A company has to fulfill certain characteristics to receive the loans, e.g. a certain number of employees and revenue. This instrument secured Crystal Sound additional liquidity of 450,000 euros. The parent company of Crystal Sound, the RS3 GmbH holds real estates with a market value of around 10 million euros, from which only 30% is secured with loans. Those assets facilitate Crystal Sound the access to the loan. The loan is 100% backed by the German government, however, banks still require securities.

Another instrument of the German government to support companies is emergency aid consisting of liquidity, which companies do not have to pay back. To receive emergency aid, firms also have to fulfill certain characteristics, such as a certain number of employees and revenue. Crystal Sound received 50,000 euro’s emergency aid. The additional liquidity enabled Crystal Sound to compensate the loss of the fiscal year 2020 to achieve a positive cash flow.

### **2.4.3 Collusion to Integrate Vertical**

Events for visitors in cars are allowed because people are protected in their own car and the infection risk is tremendously low. Therefore, Crystal Sound launched together with other event technology providers a new legal entity, the Kulturbühne Karlsruhe GmbH, responsible for organizing events for visitors in cars. This move shifted the event technology providers jointly to organizers of events (vertical integration) They organized 23 shows with around 10,000 visitors. The other shareholders of the Kulturbühne Karlsruhe GmbH are all service providers in the event industry. Some are direct competitors of Crystal Sound, e.g. Pink Event Service, a firm that offers also sound and light systems. Other shareholders are more indirect competitors, i.e. their focus is more on LED-walls, stages or tents and they offer only small and standardized sound and light systems.

The alliance enabled, that all necessary services could be provided internally. Therefore, expenses for external technology was not necessary, which clearly reduces the risk of the project. Another advantage of the alliance is the creation of a local monopoly. The supply is controlled by the alliance, which enables to increase the price per ticket.

#### **2.4.4 Focus on Digital Services**

The other adaptation in the product portfolio is the focus toward digital solutions. Traditional physical events are mostly canceled, however, some events are shifted towards digital formats. The amount of necessary equipment for digital events is lower compared to traditional live events with physical visitors, nevertheless some elements are still necessary, e.g. LED-walls, lights, small stages, or microphones. Crystal Sound equipped for instance large tents with technology for the university of Karlsruhe (KIT, with 25,000 students) that lectures are feasible with enough distance among students.

#### **2.4.5 Fiscal Year 2021**

The current financial planning for the fiscal year 2021 anticipates as well as in 2020 only 10% of the usually planned revenue. By assuming that the situation is not changing, i.e. that large events will be still prohibited. Therefore, Crystal Sound will also generate a loss in 2021, that has to be compensated. It is very likely that the entire proportion of the loss is compensated by liquidity from the German government. The CEO Gerd Gruss assumes that 250,000 euros has to be compensated by additional loans of banks or by liquidity of the shareholders. He also assumes that banks are probably not willing to provide additional loans even though real estates of around 7 million euros are not secured with loans. Therefore, the shareholders have in principal three options. The first option consists of injecting additional equity of 250,000 euros. The second options consist of selling a property to receive liquidity. The third option is declaring bankruptcy. Additional loans would cause a negative equity-ratio; therefore, Crystal Sound need additional equity from its shareholder to keep a positive equity ratio. It is not possible to apply in the fiscal year 2021 again the strategy to generate a profit by selling undisclosed assets from its balance sheet.

#### **2.4.6 Negative Equity-Ratio**

It is essential that Crystal Sound possess a positive equity ratio in its balance sheet. To receive projects from large corporations and state-owned subsidiaries, it is crucial to possess a positive equity-ratio. Crystal Sound owns undisclosed reserves in its balance sheet. The RS3 group will launch a new subsidiary, that will acquire those non-current assets of Crystal Sound. The purchase price will be higher than the value in the balance sheet. This effect will cause a profit to compensate the loss from the normal operative activity of the fiscal year 2020. This strategy could only be applied once, because all hidden reserves are then disclosed.

### **2.4.7 Potential Merge with a Competitor**

Megaforec is a competitor from Karlsruhe specialized in offering stages for large events. Crystal Sound offers also stages for smaller events, but for large festivals, Crystal Sound is specialist on electronic components, e.g. speakers, light, cables, and microphones and not on stages. Therefore, the merger could cause high synergies between both enterprises. They could offer a joint solution to its clients: stages & technology. Megaforce is in a similar situation as Crystal Sound concerning the necessary liquidity. Megaforce is probably also generating a loss in 2021, which has to be compensated by additional liquidity and the CEO, who is the sole owner the company, is not able to provide additional equity.

### **2.4.8 Potential Structure of the Deal**

There are different available options to structure the deal. The first option is based on a merger. Megaforce and Crystal Sound will be merged to a newly created legal entity. This merger will cause high synergies, e.g. both companies are located in the same city, Karlsruhe. Therefore, both headquarters could be merged to a single one. This will reduce the rent significantly by approximately 50% (€ 126,673.12 p.a.). Centrally organized departments, such as marketing or bookkeeping, could be merged, which will lead to a cost reduction of 100,000 euro per year. The sales activities could also be bundled due to the fact that their customer structure is really similar. The cross sell potential between both customer portfolios is tremendously high. Currently, each company serve around 93% of their customers independently.

The culture in both organizations is similar, i.e. the etiquette is very informal & a dress-code doesn't exist neither. Due to the fact that both organizations generate the majority of their revenue in the music industry, it is reasonable that the modern and casual culture of the music industry is also present by their subcontractors.

Another deal structure would foresee that RKMBG acquires Megaforce. The CEO of Megaforce should keep 25% of its shares. RKMG pursues the strategy that the management is also shareholder of its portfolio companies. This strategy should ensure aligned interests between RKMBG and the management of the portfolio companies. The operational alignment of Crystal Sound and Megaforce would be way more complex in this case. Both CEO's are responsible for the practical operation of their company and they are only shareholder of their company. Therefore, it will be complex that they act also in the interest of the other company.

### **2.4.9 Valuation of the Deal**

In the first case, Crystal Sound and Megaforce has to be valued to determine the ownership structure of the new legal entity. In the second option, Megaforece has to be valued to define the purchase price for 75% of the shares. It is impossible to apply a multiple on the EBITDA or to apply a DCF model because the profit and the cash flow is negative.

### **2.5 Future Competition**

To evaluate the impact of the pandemic on the overall event industry, it is essential to consider the impact on Crystal Sounds competitors and clients (hosts). When the prohibition of large events will continue in 2021, then many competitors will declare insolvency. This could have a positive effect for Crystal Sound because less supply by the same demand lead to higher prices and also higher margins. In addition, it is also important to determine the impact of the pandemic on Crystal Sound clients (hosts). In general, Crystal Sound clients (host) outsourced the capital-intensive processes to its service providers. Furthermore, organizers of events enter short-term contracts with its service providers. This enables them to cancel the contracts even immediate before events. Therefore, organizers of events are able to eliminate its largest cost position. Some fixed costs still remain, such as the rent of their office or salaries, however, they can keep often the income of the tickets because they can shift the validity of the tickets to the next year. This is possible with a loyal customer base. The heavy metal festival “Wacken Open Air” with 85,000 visitors offered its customers to shift the validity of their tickets from 2020 to 2021 and over 90% of its customers agreed to the change. This enables the organizers to keep the liquidity to cover emerging costs. The Wacken Open Air is one of the largest heavy metal festivals worldwide and one of Germanys largest festivals. Crystal Sound supervises the technical implementation of this festival for many decades. At Wacken, Crystal Sound tested and developed together with d&b (the leading producer for professional sound systems) NoizCalc, a software to reduce the noise pollution in close residential areas. This example shows the close collaboration between Crystal Sound, d&b and Wacken.

The management of Crystal Sound believes that most festivals will be able to survive by shifting the validity of its tickets to 2021. This will ensure that event technology providers keep their clients. Nevertheless, it is still highly interesting for Crystal Sound to further integrate forward in case that festivals declare insolvency. Due to the already launched forward integrated alliance, the “Kulturbühne Karlsruhe”, Crystal Sound is able to continue this strategy. In addition, RKMBG would support this path with liquidity and know-how.

### **III. Theoretical Background**

The aim of this chapters is to explain the functionality of academic frameworks. The teaching note provides questions that should be answered by applying the presented strategy framework. The content of the case study should be sufficient to answer the questions deeply enough.

#### **3.1 SWOT-Analysis**

The SWOT-analysis is a useful framework to analyze the strengths, weaknesses, opportunities, and threats of an organization. Strengths and weaknesses are internal elements of an organizations. Strengths are elements of an enterprise that lead to competitive advantages. Oppositely are weaknesses that generate a disadvantage in relation to all competitors. Opportunities and threats are caused by the external environment. An opportunity is defined as a characteristic of an enterprise that could be exploited to an advantage. Threats are elements that could negatively affect a firm by causing damages (Madsen, 2016).

#### **3.2 A Simplified Strategy Matrix for Vertical Integration**

By integrating vertically, firms could choose between four different strategies: Full integration, taper integration, quasi-integration or contracting. Firms need to own 100% of the other entity to be able to implement the full- and taper integration. In the full integration, an enterprise is buying or selling all of the requirements for their offered services or products internally. Taper integration is conducted when firms purchase a portion of their requirements from external partners and some requirements are provided internally. In the quasi-integration, enterprises do not own 100 percent of the other firm, however, they produce all, some or none elements internally. Contracting is based on precisely defined documents that define the responsibilities of each company (Harrigan K. , 1983).

The essential question is to actually define under which circumstances the respective strategy is more effective. The volatility of industry structures, bargaining power, and corporate strategy objectives influence the efficiency of the respective strategy. Volatility of industry structures is defined as the pace of changes in an organization. The bargaining power is the relative power of an enterprise in relation to another firm. The corporate strategy objective consists of the business unit, which could achieve technology leadership or a specialized market niche position (Harrigan K. , 1983).

### **3.3 McKinsey Framework for Identifying, Quantifying and Capturing Synergies**

The McKinsey framework for identifying, quantifying, and capturing synergies provides a systematic approach to identify and quantify synergies. The framework consists of three layers for value creation: Protect the base business, capture combinational synergies, and seek select transformational synergies. Protect the base business is defined as preserving the pre-merger value to maintain the core business. Capture combination synergies enables to achieve economies of scale and improvements in efficiency. Seek select transformational synergies is focused on transforming targeted processes or functions (Engert & Rosiello, 2010).

Every layer of the framework consists of three different levers of value creation: Cost, capital, and revenue. Cost is defined as cost savings by improving the efficiency and decreasing redundancies. Capital captures improvements in the balance sheet, e.g. reducing working capital, fixed assets or funding costs. Revenue is defined as revenue growth by creating new capabilities, such as expanding the product portfolio or expanding into new regions (Engert & Rosiello, 2010).

### **3.4 Dynamic Capabilities and Strategic Management**

The dynamic capability framework analyses the capability of an organization to adjust its resource base to a rapidly changing environment. The theory was developed by David Teece, Gary Pisano and Amy Shuen and published in 1997 in the paper “Dynamic Capabilities and Strategic Management” (Teece, Pisano, & Shuen, 1997). The concept describes the capability of a firm to integrate, build, and reconfigure its external and internal competencies to react to rapidly changing environments. They “define dynamic capabilities as the firm’s ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments. Dynamic capabilities thus reflect an organization’s ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions” (Leonard-Barton, 1992). In general, the framework suggests that organizations basic competencies should be applied to achieve short-term competitive positions that can be expanded into longer-term competitive advantages. The concept defines three essential capabilities that firms could react successfully to the challenges: Firstly, employees should be able to learn quickly to develop new strategic assets. Secondly, firms should integrate the new strategic assets, such as capability, technology and customer feedback, into the processes of an organization. Thirdly, firms should be able to transform or changing the usage of existing assets that have been impaired in value (Teece, Pisano, & Shuen, 1997).

#### **IV. Teaching Note**

This chapter provides deeper information to facilitate an instructor the teaching of the case. Suggested questions including detailed answers will be provided. Students should be able to answer the questions by including the provided information of the case. The answers should be based on provided strategy frameworks.

##### **4.1 Questions**

1. Could you please apply the SWOT-analysis
2. How would you structure the deal (mergers vs acquisition)?
3. What are the advantages and disadvantages of the alliance with competitors?
4. Is the forward integration strategically useful?
5. Which resources could and which couldn't be adjusted to the changing external environment?
6. What are the available options to compensate the expected loss in the fiscal year 2021?

#### **4.1.1 Could you please apply the SWOT-analysis**

##### **Strengths:**

Crystal Sounds non-current assets consist of premium brands, such as d&b. This enables to offer its customers special features. Additionally, Crystal Sounds employees are highly skilled, which is especially important in the music sector. Phil Collins, Shakira and many other world stars has been supervised by Crystal Sound. For a band, it is tremendously important to hire professional service providers because the sound must be continuously adjusted that the audience hears the perfect sound. The combination of high-end technology and experienced employees enables it, that world stars' trust Crystal Sound.

Another strength of Crystal Sound is the group affiliation with the Rock Shop and Fein.Media. This enable Crystal Sound to purchase technology at production costs. Crystal Sound does not have to pay the retailers margin. The combination of a large retailer for event technology and a service provider for event technology is completely unique in Germany. There is no other group with the same structure in Germany.

##### **Weaknesses:**

A major weakness of Crystal Sound is the uniformity of its product portfolio. The entire service is focused on large events. This strategy is advantageous in terms of learning-effects, which leads to a good service and constant improvements. In addition, Crystal Sound didn't invest a lot in innovative digital solutions, which will be probably more important in the future.

##### **Opportunities:**

The probability is high that competitors have to declare bankruptcy. This could lead to a bigger market share of Crystal and a larger profit margin due to less supply in the market. Another opportunity to increase the profit margin is to continue integrating forward by offering also traditional event types, e.g. festivals or concerts. The Kulturbühne Karlsruhe offers only events for visitors in cars. By tackling traditional events, the potential market size is tremendously higher.

**Threats:**

There are two major threats for Crystal Sound business model. Firstly, fully digital events require different and especially less event technology, leading to decreasing revenues. The current technology portfolio is focused on large events and only some components are also useful for digital events. Secondly, political prohibitions of events are a major threat. The ban is usually caused by security issues, e.g. terror attacks or pandemics as currently.

<b>Strengths:</b> <ul style="list-style-type: none"> <li>- High-end technology</li> <li>- Skilled employees</li> <li>- Group affiliation with Rock Shop and Fein.media</li> </ul>	<b>Weaknesses:</b> <ul style="list-style-type: none"> <li>- Uniformity of its product portfolio</li> <li>- Lack of digital services</li> </ul>
<b>Opportunities:</b> <ul style="list-style-type: none"> <li>- Forward integration</li> <li>- Bankruptcy of competitors</li> </ul>	<b>Threats:</b> <ul style="list-style-type: none"> <li>- Digital events</li> <li>- Security issues (terror attack, pandemic)</li> </ul>

**Figure 1 – SWOT Analysis**

#### 4.1.2 How would you structure the deal (merger vs acquisition)?

##### **First case: Merger between Crystal Sound and Megaforce**

A merger between Crystal Sound and Megaforce could strengthen both organizations due to several reasons. The synergy potential between both enterprises is tremendously high. All centralized functions could be combined, e.g. marketing, bookkeeping, and sales. This will lead to a decrease in personnel costs (wages). The CEO of Crystal Sound assumes a saving potential of around 10% for personnel costs. In addition, Crystal Sound offers sometimes for smaller projects also stages or at least components of stages. Those elements could be then provided internally, therefore, the cost savings potential has been assumed by the CEO of around 5% for materials. The overall synergy potential due to costs reductions is €164,724.86 p.a.

The actual synergy potential is probably higher due to the fact that some of the currently occurring costs of Megaforce could be reduced. In addition, cross-selling between both organizations could increase the overall revenue. Hence, the profit could also be improved from both sides; caused by cost cuttings & the sales volume increase. Another advantageous effect could be tax benefits, i.e. that future profits and losses of both operative units could netted against each other.

The merger between Crystal Sound and Megaforce possess also some risks, which could cause disadvantages. Diseconomies of scale could occur, e.g. additional costs due to inefficient communication, a slow response time or a duplication of work. It is unlikely that diseconomies of scale could have a significant effect because both organizations are small in terms of number of employees. In addition, a cultural clash could also emerge, i.e. big cultural differences between both organizations. Both enterprises have similar cultures, whereby a clash is unlikely. The loss of clients is probably a more serious trouble. Due to the merger, Crystal Sound would compete additionally with stage providers and Megaforce with sound and light event technology providers. Some regular customers could be lost because Crystal Sound and Megaforce have with some event organizers a tense relationship.

#### **Synergy Potential based on Crystal Sounds P&L:**

Material (5%) =  $0.05 * €2,032,747.62 = €101,637.38$

Wages (10%) =  $0.1 * €630,874.82 = €63,087.48$

The overall synergy potential is €164,724.86 p.a.

<b>Advantages of a Merger</b>	<b>Disadvantages of a Merger</b>
<ul style="list-style-type: none"> <li>- Synergy potential</li> <li>- Economies of scale</li> <li>- Greater efficiency</li> <li>- Tax benefits</li> <li>- Improved customer base (cross-sell)</li> </ul>	<ul style="list-style-type: none"> <li>- Diseconomies of scale</li> <li>- Potential cultural clash</li> <li>- Potential loss of key clients</li> </ul>

**Figure 2 - Advantages & Disadvantages of a Merger**

To deeply analyze the actual synergy and value creation potential, it is useful to apply the McKinsey framework for identifying, quantifying, and capturing synergies. Below is the analyzed version to understand the potential of a merger between Crystal Sound and Megaforce (Engert & Rosiello, 2010).

	Cost	Capital	Revenue
<b>Seek select transformational opportunities</b>	<ul style="list-style-type: none"> <li>Jointly performing marketing campaigns</li> <li>Combined sales structure</li> </ul>	<ul style="list-style-type: none"> <li>Optimized hedging of risks</li> <li>Combining product portfolio for new projects</li> </ul>	<ul style="list-style-type: none"> <li>Jointly entering new markets (e.g. France or Netherlands)</li> <li>Offering new services (e.g. forward integration or offering more digital solutions)</li> </ul>
<b>Capture combinational synergies</b>	<ul style="list-style-type: none"> <li>Less external material necessary</li> <li>Duplicate overhead</li> <li>Overlapping sales branches</li> </ul>	<ul style="list-style-type: none"> <li>Sweep account and joint treasuring</li> <li>Leverage lower funding rates</li> </ul>	<ul style="list-style-type: none"> <li>Cross-sell between current customer portfolios</li> </ul>
<b>Protect base business</b>	<ul style="list-style-type: none"> <li>Maintain slim costs structures of both companies</li> <li>Continue focusing on small cost positions</li> </ul>	<ul style="list-style-type: none"> <li>Manage liquidity carefully that both organizations could continuously fund their core business</li> </ul>	<ul style="list-style-type: none"> <li>Maintain current customer portfolios and the good reputation</li> </ul>

**Figure 3 - McKinsey Framework for Identifying, Quantifying, and Capturing Synergies**

**Second case: Acquisition of Megaforce by RKMBG**

The second option is based on an acquisition of Megaforce by RKMBG. This would be riskier for RKMBG; however, the expected return would also be higher in case of success. In addition, diseconomies of scale and a cultural clash are less likely. However, diseconomies of scale and a cultural clash are both not so relevant in case of Crystal Sound and Megaforce. Therefore, those advantages that usually strengthen an acquisition are quite weak. Another more relevant argument is that RKMBG knows already the market. This would facilitate the due diligence process, especially the commercial due diligence. By considering a more general perspective, the investment is less risky for RKMBG compared to an investment in an entirely new market due to the already existing insight knowledge.

The acquisition would also possess disadvantages in comparison to the merger. The practical implementation of the acquisition would be complicated. Megaforce would be either a fully owned subsidiary of RKMBG or partially owned, in case that the CEO remain shareholder. Crystal Sound would be continuously a subsidiary of RS3, which is owned to 75% of RKMBG and to 25% of Gerd Gruss (CEO Crystal Sound). By considering this structure, it will be complicated to benefit of synergies between both companies. The CEO’s of both organizations are only shareholder of their own firm. Therefore, they are not monetarily incentivized to support the other company. Although, as CEO’s they are responsible for the operative implementation of strategic changes. The employees are also not directly incentivized to cooperate with the other firm.

<b>Advantages of an Acquisition</b>	<b>Disadvantages of an Acquisition</b>
<ul style="list-style-type: none"> <li>- High return potential for RKMBG</li> <li>- RKMKG knows the market</li> <li>- Less Diseconomies of scale</li> <li>- No risk of cultural Clash</li> </ul>	<ul style="list-style-type: none"> <li>- Complex practical implementation</li> <li>- Lower synergy potential</li> <li>- Lower economies of scale</li> </ul>

**Figure 4 - Advantages & Disadvantages of an Acquisition**

#### **4.1.3 What are the advantages and disadvantages of an alliance with competitors?**

##### **Alliance with Competitors (Collusion)**

Collusion occurs when firms agree to work together. This enables to set higher prices and generating higher profits. The Kulturbühne Karlsruhe is an example for formal collusion, i.e. it is a cartel that is officially announced to the public. Well-known cartels are oftentimes created on a global scale. For products that are sold worldwide, a cartel has to be created on a global level to be efficient. The visitors of events are generally bounded to its region. Due to the emergence of corona virus and the consequential restrictions in mobility, people were even more focused to their hometown. In Germany, accommodations in hotel was prohibited for private travelling. The low mobility explains very well the effectiveness of this regional cartel.

It can be assumed that cartels in the event industry won't be effective when the corona virus is controlled through vaccines or other types of medications. The mobility of the population will increase and the geographical scale of a cartel has to increase as well to remain its efficiency.

Usually, the primary motivation of cartels is generating higher profits by increasing prices. The Kulturbühne Karlsruhe offers events for visitors in cars. The market size of those events is lower compared to traditional events. This type of event is limited to owners of cars. Karlsruhe has around 310,000 inhabitants and 43,000 students. Many students are financially restricted and cannot afford to purchase a car. In addition, the public transportation is very well developed, which reduces the need to purchase a car. Another reason is the lower willingness of the population to visit events in their car compared to traditional events. The feeling in a crowd of people is more intensive compared to sitting isolated in a car. The cartel enables to bundle the supply to a single firm. The reduced supply leads to achieving break-even and generating profits.

Another argument, that strengthen the effectiveness of the cartel, is that the alliance consists of event technology provider's specialized in different products. This ensures that all services could be conducted internally. The risk of the project is strongly reduced due to the fact that no costs arise for technology. The only significant costs are the artist fees per show, which is currently low because artists (bands or comedians) have no alternative requests.

The implementation of the collusion possesses also several weaknesses. The dependency among the member-companies is tremendously high. If one company is involved in a scandal, then this will affect the reputation of the other companies in a negative manner. Another disadvantage of the implementation is the missing rivalry due to the regional monopoly, which could lead to inefficient processes.

The creation of a cartel is usually not allowed on a global level. The Kulturbühne is only operating on a regional level, therefore, antitrust authorities are tolerating the cartel. In addition, politicians strengthen the project to support the event sector.

Advantages of Collusion	Disadvantages of Collusion
<ul style="list-style-type: none"> <li>- Enables to achieve higher Prices</li> <li>- Leads to higher Profits</li> <li>- Reduction of competitiveness</li> <li>- Risk reduction</li> <li>- Enables to offer all services internally</li> <li>- No dependency on external providers</li> <li>- Save the margin of external providers</li> </ul>	<ul style="list-style-type: none"> <li>- High dependency among members</li> <li>- No incentive for efficiency</li> <li>- Missing rivalry</li> </ul>

**Figure 5 - Advantages & Disadvantages of Collusion**

#### 4.1.4 Is the forward integration strategically useful?

##### Forward Integration

Forward integration is a type of vertical integration, when firms control the direct distribution or supply of it products. Firms move closer to the customer by expanding their service / product portfolio. In general, firms have three different options to integrate vertically. Firstly, a firm could acquire another firm, which is located more forward in the value chain. Secondly, a firm could offer forward integrated services under the exiting brand (legal entity). Thirdly, a firm could launch a new brand (legal entity) to integrate forward. Crystal sound implemented this strategy by launching the Kulturbühne Karlsruhe together with competitors.

The forward integration was a very efficient to react to the changing market environment due to the emergence of the corona virus. Nearly all planned projects were cancelled. Most organizers of events didn't adjust their events to new formats, e.g. digital events or events for visitors in cars. Crystal Sound and many competitors recognized that the format for visitors in cars could be successful. Therefore, they as event technology providers decided to integrate forward to organize those events. This step includes additional services, e.g. selling tickets, and bookings artists & caterings firms.

It is essential to clarify the actual benefits of a forward integration. Firstly, the time horizon to plan the event was very short. Usually, large events are planned in one year or at least in six months. In this case, the available time horizon was less than three months. Therefore, forward integration enabled to operate faster. Time is usually lost by coordination & operation between external providers due to the fact that services must be adopted and the decision-making process is independent in every firm. Another advantage is an increased profit margin. Organizers of events generate high margins, which could be generated by the service providers itself. Moreover, the forward integration reduces the dependency on external enterprises, which clearly lead to a risk reduction. This is particularly important during the pandemic. Some organizers are highly leveraged, which could lead to bankruptcy. Furthermore, the forward integration leads to a direct interaction with the final customer (visitors of the event). This enables to collect data of the end-customer. The data collection could facilitate to analyses future business decisions, such as improving the service or launching additional services.

The forwards integration could also lead to several disadvantages. The quality of the services could be diminished due to the fact that all enterprises are only specialized on providing technology for events. However, organizing events require different competences. The lack of those competences could decrease the quality of the offered service. In addition, the forward integration lead to direct competition with Crystal Sound own clients. This could downgrade Crystal Sounds reputations and consequentially result in a loss of clients.

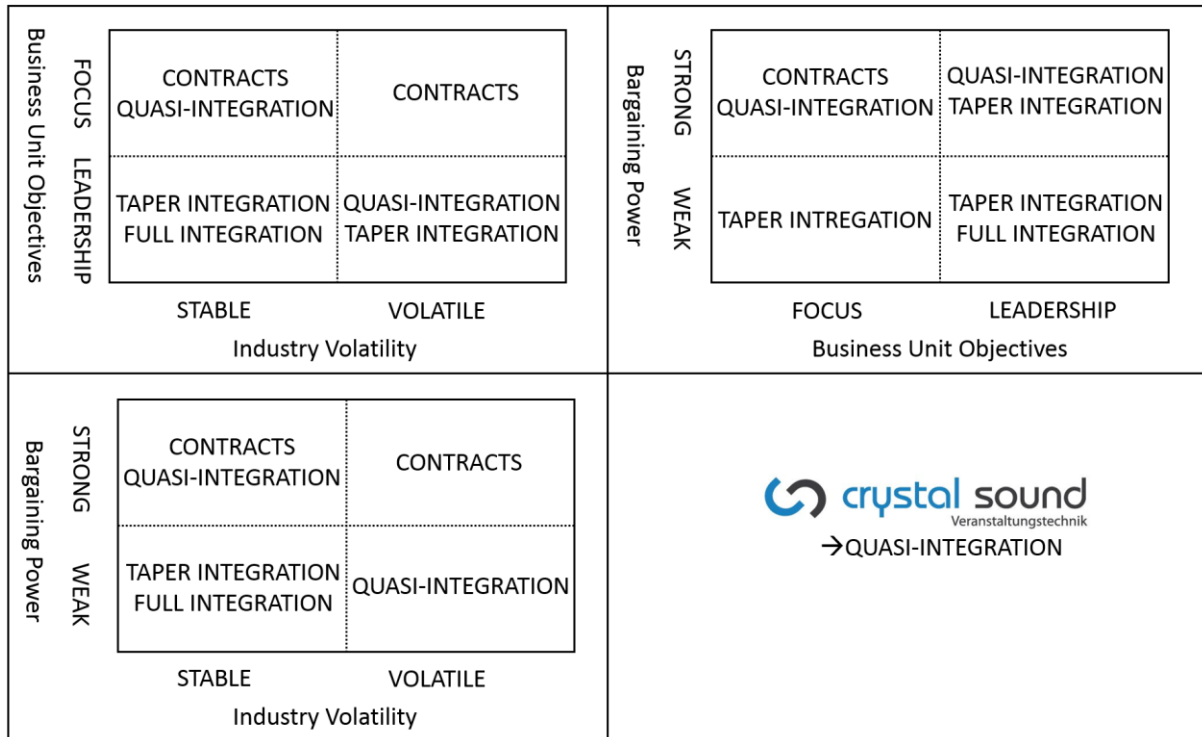
Besides the forward integration, there are also other possibilities, for instance a joint venture with an organizer of events or long-term explicit contracts.

Advantages of Forward Integration	Disadvantages of Forward Integration
<ul style="list-style-type: none"> <li>- Generating higher profits</li> <li>- Elimination of market transaction costs</li> <li>- Faster operations</li> <li>- Improve supply chain coordination</li> <li>- Reduced dependency on external firms, lead to a risk reduction</li> <li>- In direct relation with the end-customers, enables to collect data</li> </ul>	<ul style="list-style-type: none"> <li>- Could lead to a reduced efficiency and lower quality of products</li> <li>- Competition with its own clients</li> <li>- Potential loss of key clients</li> </ul>

**Figure 6 - Advantages & Disadvantages of Forward Integration**

After analysing the benefits and disadvantages of the forward integration for Crystal Sound, it is necessary to clarify, which integration strategy should be pursued by Crystal Sound. According to (Harrigan K. , 1983) , Crystal Sound is implementing a quasi-integration strategy because the share of the Kulturbühne Karlsruhe is smaller than 100 percent. (Harrigan K. , 1983) mentioned in her paper that enterprises are not able to fully own a company under certain circumstances. For Crystal Sound it is the case that a 100 percent ownership is not feasible. The other shareholders are necessary to perform nearly all services internally. The product portfolio of Crystal Sound is too narrowed that a full or taper integration is useful.

In addition, the characteristics in the external environment has to be defined to evaluate whether the quasi-integration is useful. Figure 6 facilitates the evaluation of the appropriate strategy. The volatility in the event industry is quite stable. The general format of events has been stable for the last decades. This characteristic is aligned with the quasi-integration. The bargaining power of service providers is between low and medium, however, the power is for sure not strong. Therefore, the quasi-integration is not aligned with the bargaining power in the market. The business unit objective is a market niche position. The market for visitors in cars is a niche market. Therefore, the business unit objective is aligned with the quasi-integration strategy.



**Figure 7 – A Simplified Strategy Matrix for Vertical Integration**

**4.1.5 Which resources could and which couldn't be adjusted to the changing external environment?**

**Employees competencies**

Crystal Sound employees are specialized in planning, installing, and realizing large events with more than 1,000 or mostly even more than 10,000 visitors. Those event types are currently prohibited due to distance rules. Digital events are still allowed and some traditional events were shifted to innovative digital events. Crystal Sound offers also digital formats, e.g. streaming of events, however, the market share is quite low. The required skills to realize digital formats are to some extent different compared to traditional events. The planning and design of the stage is for instance different. Crystal Sound employees were able to offer also digital formats, however, the experiences and competences are lower compared to firms that are purely specialized on digital formats for a long time. Overall, Crystal Sound employees were able to adjust to the changing environment, nevertheless a short-term competitive position and a long-term competitive advantage is not possible.

**Event technology (non-currents assets)**

The event technology of Crystal Sound is similar to the knowledge and competences of its employees. The technology is specialized for large events, which are currently prohibited. The majority of the non-current assets consists of equipment for large events, e.g. large sound or light systems. Those assets are currently mostly useless and not transformable to digital events. Some assets, such as microphones, cables, LED-walls, and small lights could also be used for digital formats. Crystal Sound is not able to achieve a short-term competitive position and a long-term competitive advantage.

The employee competence as well as the event equipment are both no dynamic capabilities. Crystal Sound is not able to react adequately and timely to the changes in the external environment.

**Forward Integration by colluding with Competitors**

The forward integration enabled Crystal Sound to reduce the dependency on organizers of events. More importantly, it enabled to generate a higher profit margin, because the usually high margin of organizers could be kept. The collusion with competitors created a regional monopoly, which leads to higher prices and consequentially also higher profits. This strategic move is a dynamic capability. It leads to a short-term competitive position and a long-term competitive advantage.

**4.1.6 What are the available options to compensate the expected loss in the fiscal year 2021?**

Crystal Sound disclosed hidden reserves of its balance sheet to compensate the loss of the fiscal year 2020. This strategy is not feasible in 2021. Therefore, Crystal Sound needs additional liquidity to compensate the expected loss of the fiscal year 2021.

In general, Crystal Sound has two different available options to compensate the loss. On the one hand, Crystal Sound could raise additional debt. The RS3 GmbH owns real estates of around 7 million euros that are not secured with loans. Therefore, the RS3 GmbH as Crystal Sound mother company could provide letters of patronage. Under these circumstances, banks could be willing to provide Crystal Sound additional loans. However, additional loans would lead to a negative equity ratio in Crystal Sound's balance sheet. Thereby it will be difficult to participate in large public tenders in the future.

The major shareholder, the financial investor RKMBG, is able to provide additional equity, nevertheless, the other shareholder, the CEO Gerd Gruss, is limited to provide additional equity. Therefore, either RKMBG provides a shareholder loan treated as equity or RKMBG provides equity and the shares of the CEO Gerd Gruss will be diluted. This strategy is more realistic because a negative equity ratio won't occur. In case that RKMBG provides additional equity and the shares of the CEO Gerd Gruss will be diluted, it is essential to determine the enterprise value of Crystal Sound. The value determination will be complicated due to the fact that a multiple method is not possible without a profit and the DCF-method is also complicated to be applied with a negative cash flow.

In general, the enterprise value of Crystal Sound is currently low. CTS Eventim, a publicly listed event organizer, decreased its enterprise value by over 40% due to the corona pandemic. By considering this sharp decrease as a peer valuation for the event sector, the CEO Gerd Gruss won't be satisfied about the low valuation. In the other scenario, when RMBG provides a shareholder loan, the valuation of Crystal Sound is not necessary. The interest rate for the loan should be quite high because the risk is relatively high. In case of bankruptcy, the loan could be worthless because it won't be secured, for instance with the real estates or other non-current assets, e.g. event technology. By considering the practicability of each financing method, then the shareholder loan is the most suitable method for this situation.

## **V. Conclusion**

The thesis has shown the adjustments of Crystal Sound to handle the consequences of the COVID-19 pandemic. The major impact of the pandemic on Crystal Sound's business model is a massive reduction in revenue due to the fact that large events are currently prohibited. Therefore, Crystal Sound implemented several strategic changes to adjust its business model to the modified external environment. However, some elements cannot be adjusted, leading to a high cash-burn and the generation of a loss. This situation creates an essential threat for Crystal Sound, which will lead in the worst case to insolvency.

Crystal Sound is able to adjust its business model to the pandemic. Large cost pools, such as salaries, repayments or rent, could be eliminated. Furthermore, adjustments in Crystal Sound product portfolio enabled new revenue sources. Crystal Sound offered more intense digital solutions, e.g. streaming of events. Another more strategic adjustment is a vertical integration together with competitors. Crystal Sound launched a new legal entity together with direct and indirect competitors that is forward integrated, e.g. to expand its position from pure service providers to organizers of events (hosts). The collusion enables to achieve a local monopoly, leading to higher prices and consequentially also to generate higher profits. The forward integration reduces the dependency on third independent clients. In addition, the forward integration enables to expand its profit margin by keeping the high profit margin of organizers (former clients). Despite the adjustments, the cash-burn is still €50K per month. In the fiscal year 2020, Crystal Sound is able to compensate the loss by disclosing hidden reserves of the balance sheet. This strategic move is not applicable again in 2021. Therefore, it is essential to clarify how the expected loss in the fiscal year 2021 could be compensated.

In general, Crystal Sound has two different options to compensate the expected loss in 2021. Firstly, Crystal Sound could raise new debt to compensate the expected loss. However, this strategy would lead to a negative equity ratio in Crystal Sound's balance sheet. Thereby it will be difficult to participate in large public tenders in the future. Secondly, the shareholders could provide additional equity to compensate the loss. The major shareholder, the financial investor RKMBG, is able to provide additional equity, nevertheless, the other shareholder, the CEO Gerd Gruss, is limited to provide additional equity. Therefore, either RKMBG provides a shareholder loan treated as equity or RKMBG provides equity and the shares of the CEO Gerd Gruss will be diluted.

Moreover, it is also essential to clarify whether a buy and build strategy is attractive for RKMBG by acquiring competitors of Crystal Sound or by integrating vertical. RKMBG knows already the event sector, whereby the risk is not so high. Furthermore, the valuation for organisations in the event sector are currently tremendously low. In case that large events are allowed again, high return could be expected. In the other scenario that events are still prohibited, RKMBG must probably provide more equity and the cluster risk will increase.

In conclusion, the thesis has shown an operator in the event sector, which is probably the strongest affected sector. Large events were firstly banned and will probably be allowed lastly. Therefore, the thesis represents very clear how enterprises could adjust their strategy to a completely changed external environment. The learning curve is tremendously high for the reader by realizing the strategic changes of Crystal Sound.

## **VI. Appendix**

### **6.1 Citations of the Interviews**

*G. Gruss (CEO Crystal Sound)*

“The corona crisis shifted Crystal Sound in its biggest crisis since its foundation. In the first quartile of 2020, we clearly underestimated the impact of the pandemic, i.e. we didn't reduce our costs fast enough and burned too much liquidity. We continued to plan the upcoming events, therefore, we paid our employees in this period still their full salaries. We burned around 120,000 euros. When large events would have been allowed again, and we would have sent our employees in short-time working, then we couldn't have carried out our projects. This would have caused a significant reputational damage. The important large players in the event industry are connected and information's are shared really fast among competitors & organizers of events (our clients). It is of course always easier in retrospect to analyze what we could have done better.

We adjusted our strategy to the new external environment. We created a strategic alliance with competitors to integrate forward. We also adjusted our product portfolio towards more digital projects. We received a large project from the KIT (university in Karlsruhe with 25,000 students), where we equipped large tents with technology that lectures with enough distance are possible.

The crisis is currently of course a fundamental threat, however, I believe we could also consider this crisis as a huge opportunity. We adjusted our product portfolio towards more innovative digital solutions. We will benefit in the future from this adjustment. The alliance with competitors to integrate forward is also a huge opportunity. We shifted our position from a pure supplier of events to the host of events.”

*T. Sauer (Project manager Crystal Sound)*

“As a project manager, I can evaluate our adjustments on an operational level. Due to the corona virus, we lost the majority of our projects because physical events with real visitors are prohibited. Our technical equipment is adjusted to the need of events with more than 1,000 visitors. By defining our target group deeper, I would define our primary evens with even more than 10,000 visitors. In addition, our employees are highly skilled in managing large events. Those figures show our current market position.

We adjusted our product portfolio in two major ways. Firstly, we focused more on digital services, such as streaming of events. I believe that this move was necessary and correct. However, the digital streaming market cannot compensate our revenue stream that we generate with traditional business with physical visitors. Besides the focus on more digital solutions, we also created a strategic alliance with competitors to integrate forward. This strategic move shifted our position from a pure supplier to the host of events. I believe that this move could be important in 2021 and especially in 2022 because many hosts could declare insolvency. We are currently just a service provider for the hosts, therefore, we are fully dependent on them. I believe that some hosts won't survive the pandemic, especially hosts of large festivals. In this case, we could acquire the bankrupt hosts. This move could strengthen our position, especially hosts of festivals generate high margins. We could acquire them for a very low multiple due to the fact that most financial investors are not willing to invest in this insecure market at the moment. RKMBG our major shareholder is a professional investment firm. They could support those future acquisition in terms of capital and knowledge.”

*D. Leier (Executive Assistant to the CEO of RKMG)*

“RMBG is consciously following a diversification in its portfolio companies. This strategy is highly effective, especially in crisis. By analyzing the impact of the current pandemic on our portfolio, it is clearly identifiable that Crystal Sound is our portfolio company that is most intensively affected from the pandemic. Other portfolio companies, for instance a bakery chain, a mechanical engineering company focused on the pharma industry or a wholesaler for medications, even benefited from the pandemic. However, the largest group of our portfolio companies generate less revenues because of the pandemic, nevertheless, they remained profitable, e.g. we invested in the largest German car retailer and service contractor of BMW or we invested in a supplier for the automotive and aviation industry (Airbus). The revenue of those company's has been reduced, nevertheless, they still remain profitable and generate a dividend due to efficient cost cuttings. We are able to provide Crystal Sound additional liquidity to compensate the generated loss and also to apply a buy and build strategy in the event market. We could either acquire competitors to strengthen our position as a service provider. Or we could also integrate forward by acquiring hosts, that are in financial troubles. I believe that a backward integration by acquiring manufacturers of technical equipment is not interesting. The valuations of manufacturers are still too high and Crystal Sound receives its assets for production prices from our subsidiaries.”

## 6.2 Balance Sheet of Crystal Sound

*Crystal Sound GmbH, Karlsruhe*

*Balance sheet, as of 31th December 2019*

	TOTAL (€)
ASSETS	
<b>A. Currents Assets</b>	
Cash and cash equivalents	218,593.33
Accounts Receivable	205,786.40
<b>B. Non-Current Assets</b>	
Equipment	1,182,564.00
Licenses	96,120.00
<b>C. Other Assets</b>	14,550.02
<i>TOTAL ASSETS</i>	<i>1,717,613.75</i>
LIABILITIES & SHAREHOLDERS EQUITY	
LIABILITIES	
<b>A. Current Liabilities</b>	
Accounts Payable	155,232.97
<b>B. Long Term Liabilities</b>	
Bank loan	1,229,227.00
Other long-term Liabilities	100,586.65
SHREHOLDERS EQUITY	
Nominal capital	25,000.00
Retained earnings	107,558.77
Profit	100,008.36
<i>TOTA LIABILITIES &amp; SHAREHOLDERS EQUITY</i>	<i>1,717,613.75</i>

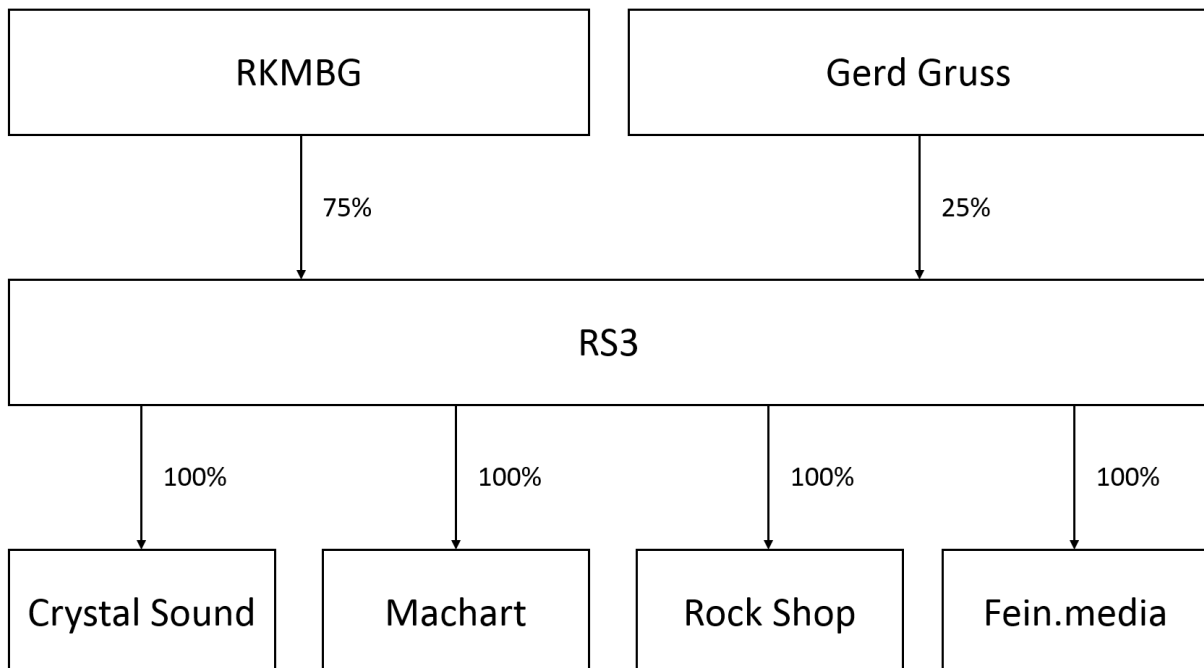
### 6.3 Profit & Loss Statement of Crystal Sound

*Crystal Sound GmbH, Karlsruhe*

*Profit & Loss Statement, as of 31th December 2019*

	TOTAL (€)
Income	4,017,545.31
<b>EXPENSES</b>	
Material	2,032,747.62
Wages	630,874.82
Rent	253,346.23
Other Expenses	599,174.89
Depreciations	347,540.78
Taxes	53,852.61
Profit	100,008.36

### 6.4 Group Structure of Crystal Sound



**Figure 8 – Group Structure**

### 6.5 D&b Software Solutions

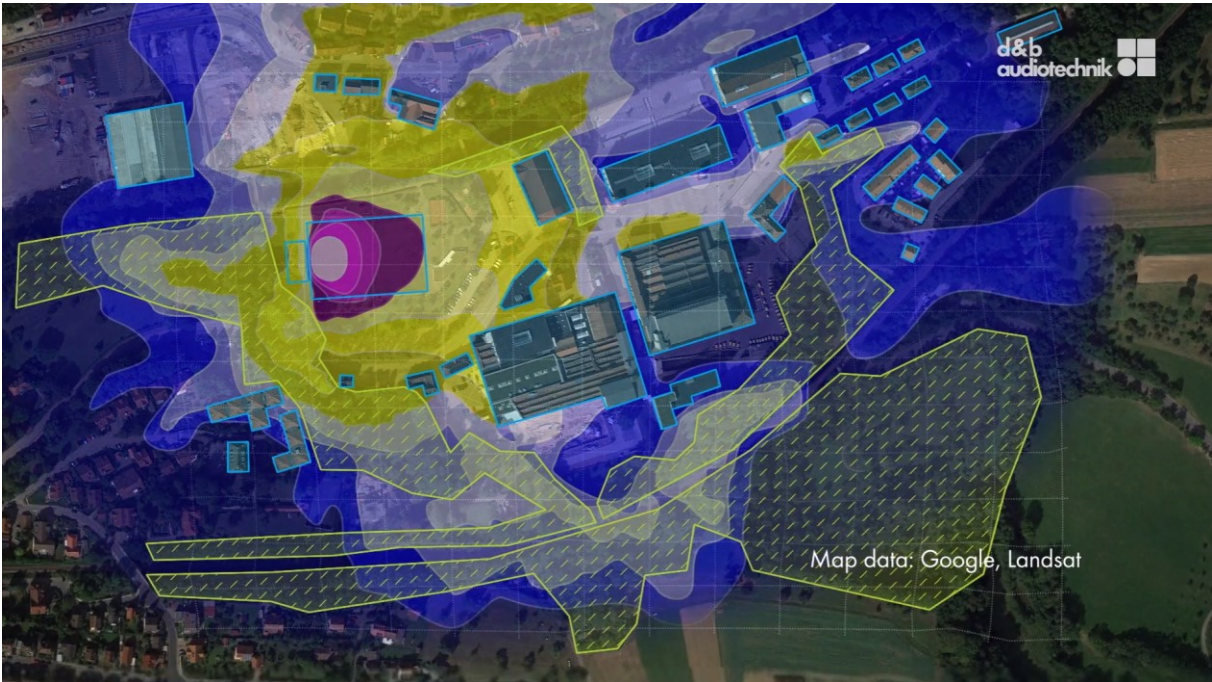


Figure 9 – D&b NoizCalc

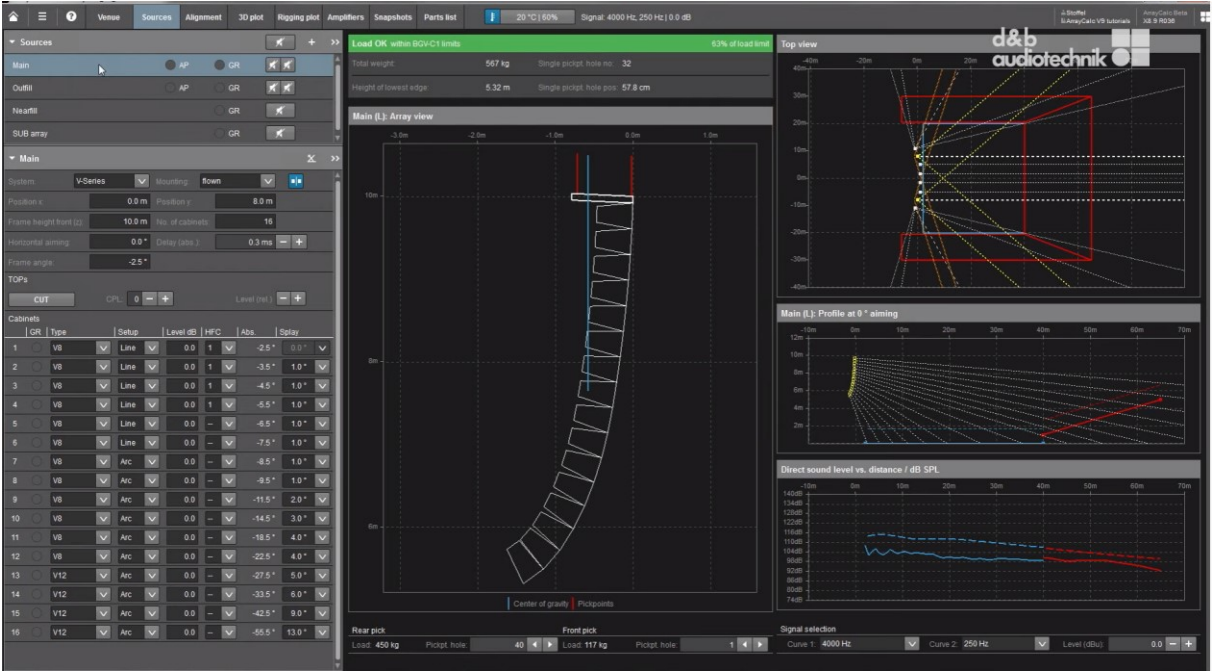


Figure 10 – D&b ArrayCalc

## 6.6. Sound Systems



Figure 11 – A Complete Sound System



Figure 12 – A Line Array System

### 6.7 Projects of Crystal Sound



Figure 13 - Böhse Onkelz at Hockenheimring (400,000 visitors)



Figure 14 - Das Fest in Karlsruhe (around 250,000 visitors)

### 6.8 Kulturbühne Karlsruhe (Strategic Alliance)



Figure 15 - Kulturbühne Karlsruhe



Figure 16 - Kulturbühne Karlsruhe Stage

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### ***Crystal Sound:***

#### **Documents & Interviews:**

- Balance Sheet 2019
- Group Structure of the RS3 GmbH
- Interview G. Gruss (CEO Crystal Sound)
- Interview T. Sauer (Project Manager Crystal Sound)
- Interview D. Leier (Executive Assistant to the CEO of RKMKG)
- Profit & Loss Statement 2019
- Software Solutions of the d&b audiotechnik GmbH

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