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Introduction



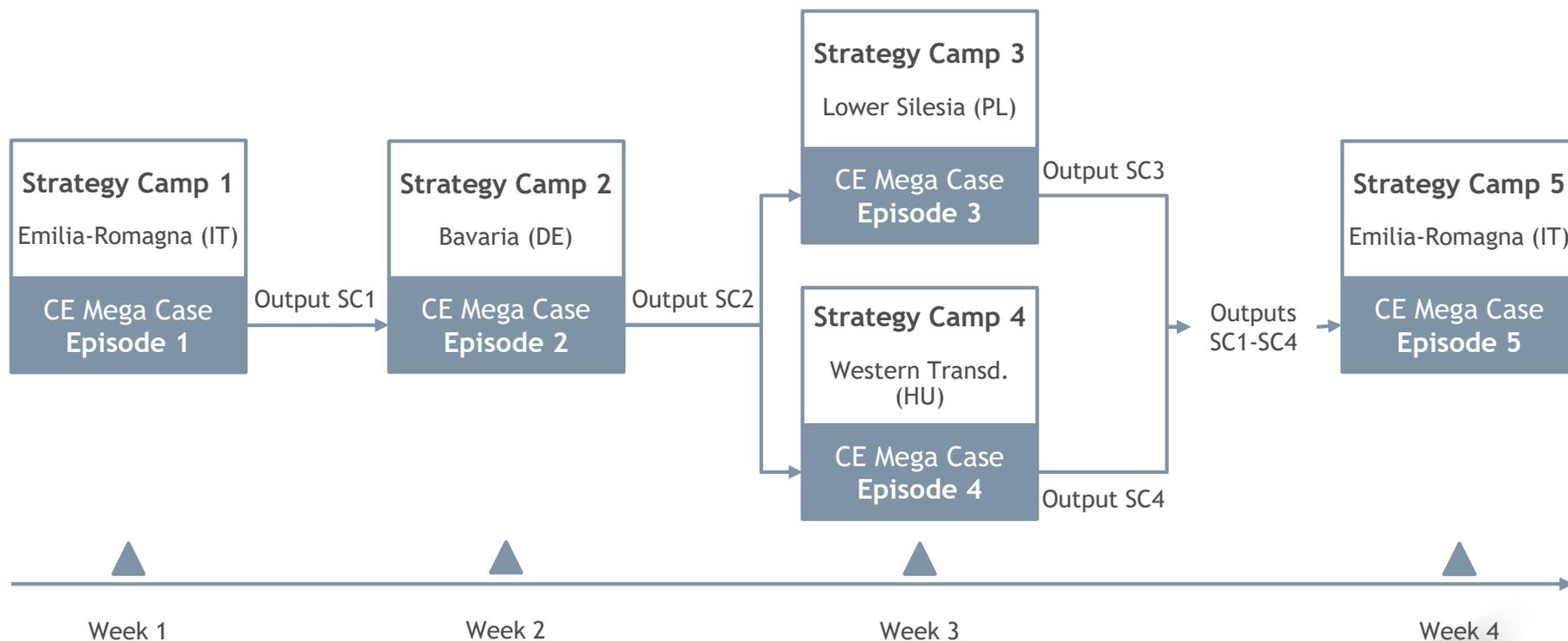
Working with the CE Mega Case



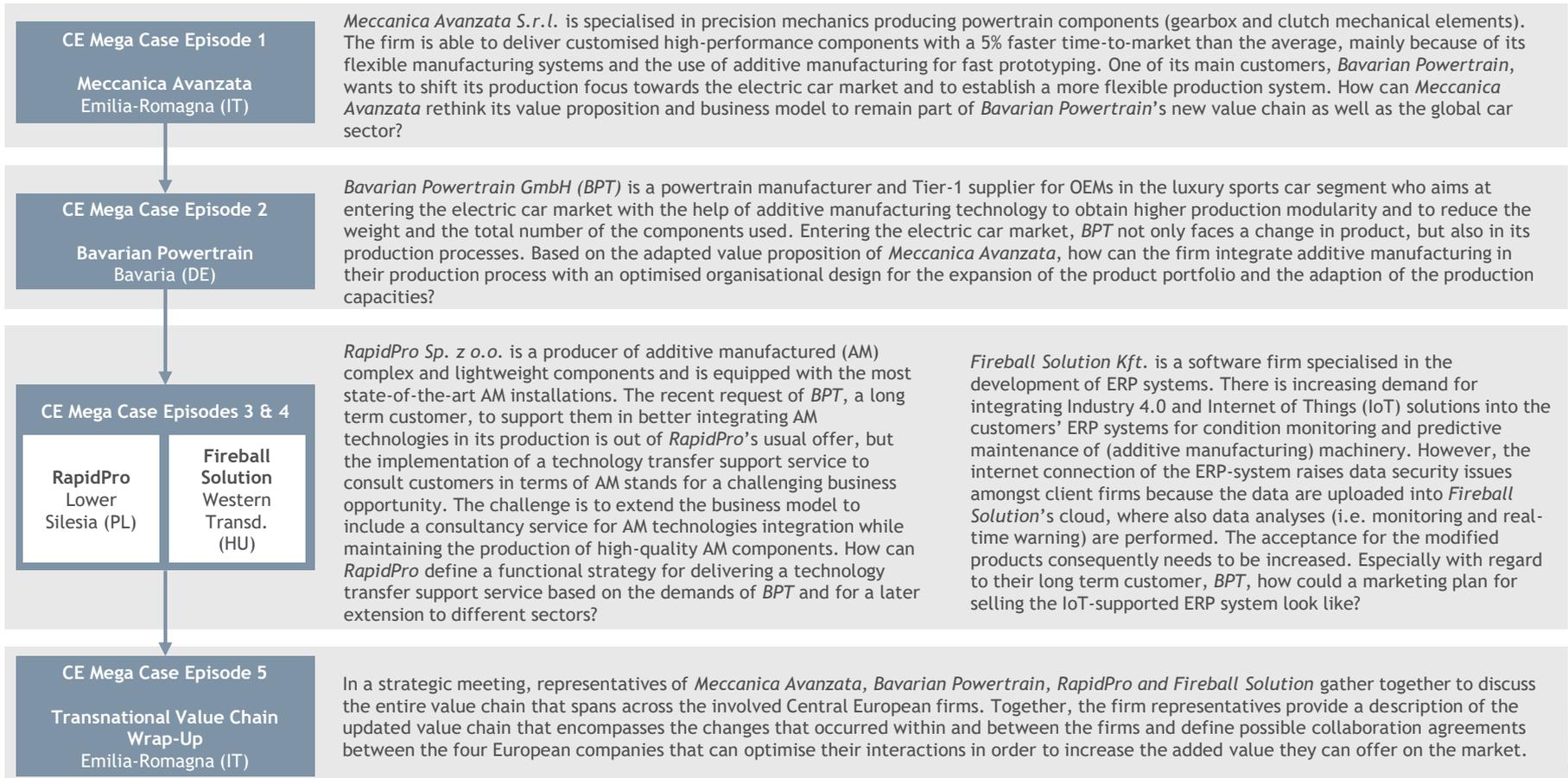
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GENERAL LOGIC

Exemplary Logic and Timeline of the CE Mega Case in AVM Strategy Camps



Interconnection of the CE Mega Case Episodes



How to work with the CE Mega Case?



1. Make yourself familiar with the rules of the game and form small interfirm groups of 3-5 people.
2. Get together in your group and read through the plotline and information cards given to you. Assign one key character to each of the group members. Each group member takes on the role of one key character.
3. As a group, **explore** the problem at hand. Try to understand the problem and solve it by broadening your knowledge about the people behind it. You are dealing with real people and with real problems.
4. Now, your creativity is in demand. Come up with imagined alternatives, create and negotiate feasible solutions and convert those into **potential solutions!**
5. Come up with a **prototype**, i.e. a concept for the final solution that is agreed upon by all participants (key characters) of the group. Once you come up with a prototype, envisage how you could illustrate the process of your solution on a **graphic storyboard** explaining the evolution process of your prototype including the interactions by the characters.
6. Present your results to the other groups in plenary discussion.
7. After each group has presented its solution, a winner is selected. This winner's output will serve as input for the following strategy camp.



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Emilia-Romagna



CE Mega Case
Strategy Camp 01



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Meccanica Avanzata S.r.l.

Industry: Automotive

Founded: 1982

Headquarters: Modena, Emilia-Romagna

Main products: Powertrain components

Revenue: € 10 million

Number of employees: 90

FIRM DESCRIPTION

Meccanica Avanzata S.r.l. is specialised in precision mechanics producing powertrain components, especially gearbox and clutch mechanical elements. It started as a supplier of the well-known local Motor Valley and, since the mid-1990s, has positioned itself within the value chains of European automotive suppliers. *Meccanica Avanzata* has two factories in Modena and 40% of its five production lines are organised as Flexible Manufacturing Systems. For fast prototyping, the company has recently introduced additive manufacturing (AM) technology. However, the AM printer does not run at its capacity limit at the moment. The company's main competitive advantage is the ability to deliver customised high-performance components with a 5% faster time-to-market, compared to the European average of competitors for small- and medium-sized batches.

THE CHALLENGE

Recently, *Meccanica Avanzata's* CEO visited a main client, making up 40% of the company's overall turnover, the *Bavarian Powertrain GmbH (BPT)* in Germany. *BPT* is a Tier-1 supplier for OEMs in the luxury sports car segment, manufacturing entire powertrain systems. *Meccanica Avanzata's* CEO discovered that *BPT* wants to rethink both, its product focus and production processes, as the company plans to expand into the electric car market and to establish more flexible production systems in order to compete on the global market. Therefore, *BPT* is considering to build up all necessary competences and to include AM technologies, potentially allowing for a more flexible production, reduced weight and total number of used components. For this reason, *BPT* already got in touch with a Polish company specialised in AM. However, the transformation at *BPT* threatens the role of *Meccanica Avanzata* as one of *BPT's* fundamental suppliers for powertrain components, as electric powertrain solutions require different, fewer and partly less complex components compared to conventional powertrain systems.

YOUR MISSION

Redefine the value proposition of *Meccanica Avanzata* and prepare a business model that enables the company to remain part of *BPT's* new value chain as well as the global car sector!



Ermanno Bottelli

Chief Executive Officer & Owner
Meccanica Avanzata S.r.l.



Born in 1950, Ermanno Bottelli founded *Meccanica Avanzata* after gaining first experiences as turner and designer in the local mechanical engineering industry. He started the firm as a small business and transformed it soon into a well-established company in the automotive sector. Ermanno Bottelli is very proud that his firm is famous for high-quality powertrain components nowadays. As global competition, especially in the car market, is becoming increasingly fierce, Mr Bottelli wonders what the best strategy might be to secure the future revenue streams of the firm. “Technical advancements of our products might not be sufficient to secure our market position. We might have to restructure the company by expanding our core competencies in technological as well as business domains. I hope that my daughter Cristina, who has previously worked as change manager and is now working in our family business, has new ideas to overcome this challenge!”.



Cristina Bottelli

Marketing Manager

Meccanica Avanzata S.r.l.



Cristina Bottelli was born in 1984 and is the daughter of *Meccanica Avanzata's* CEO, Ermanno Bottelli. After completing her MBA at the Bocconi School of Management, she started to work as a strategy consultant in Switzerland. Five years ago, she returned to the family firm *Meccanica Avanzata*. Since then, she has transformed the business by strengthening the firm's marketing and sales activities and diversifying the client portfolio. Despite the great difficulty and the internal resistance she has faced when implementing these changes, she could make it. Thus, she knows that a further business transformation “won't be easy as it will affect our production processes”. However, she is convinced that the automotive industry will change and that *Bavarian Powertrain* is not the only client undergoing a transformation. Thus, *Meccanica Avanzata* has to adapt to the new market conditions to be able to operate successfully in future. Through her previous experience as a consultant, Ms Bottelli knows that it is essential to form a strategic partnership with clients. “Strategic partnerships enable *Meccanica Avanzata* to plan on a long-term basis and remain an important supplier.”



Paolo Casalgrande

Chief Operating Officer
Meccanica Avanzata S.r.l.



Born in 1969, Paolo Casalgrande was the first engineer at *Meccanica Avanzata*. Knowing the company by heart, he started to supervise the production of special components for luxury car clients and soon became the Chief Operating Officer supervising the whole production process. In close cooperation with *Meccanica Avanzata*'s CEO, Ermanno Bottelli, Mr Casalgrande is constantly working to optimise the company's production capacities. In the last years, he has focused on implementing Flexible Manufacturing Systems (FMS) and automation. Recently, he has introduced various pilot projects regarding the digital monitoring of production lines. Mr Casalgrande feels great pressure as fierce competition requires both cutting costs and fast time-to-market. He knows that the planned production changes of *Bavarian Powertrain* might lead to huge changes in *Meccanica Avanzata*'s organisation. "I fear that our complete organisational design, especially our personnel management and operations, will be affected. Cristina Bottelli, with her previous experience, will turn everything upside-down".



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Bavaria



CE Mega Case
Strategy Camp 02



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Bavarian Powertrain GmbH

Industry: Automotive

Founded: 1950

Headquarters: Munich, Bavaria

Main products: Powertrains

Revenue: € 80 million

Number of employees: 500

FIRM DESCRIPTION

The *Bavarian Powertrain GmbH (BPT)* is one of Germany's leading industrial powertrain manufacturers and Tier-1 supplier for OEMs in the luxury sports car segment. Ever since, *BPT* focuses on technical innovation as well as flexible capacities and reliable production processes. The company has modern manufacturing lines and assembly capacities. The main production site is close to Munich (Germany) and a smaller subsidiary is located in Mexico. With the trend towards electro mobility, *BPT's* customers signal growing interest in powertrain solutions for electric and hybrid vehicles. This includes requests for the production of electric drive units and hybrid engines. To secure its competitive position, *BPT* plans to expand its product portfolio to match the changing demand. Therefore, adequate production competence should be developed and existing capacities adapted. This also includes the use of additive manufacturing (AM) technologies, potentially allowing for a higher production flexibility, reduced weight of components as well as fewer components used.

THE CHALLENGE

Entering the electric car market via order production of electric drive units and hybrid engines requires the adaption of existing production capacities and the development of necessary competences, given the original focus on combustion engines. Now, new production technologies and practices will be necessary. Also, other components need to be produced, sourced and handled and suppliers have to be redefined. Additionally, as *BPT* wants to use AM technologies, the company has to think of ways to reorganise production processes in the light of two challenges: the new products and new possible production practices. At the moment, there is an existing offer of support from *Meccanica Avanzata* (an existing Italian component supplier of *BPT*) to manage the transition to the electric car market.

YOUR MISSION

Identify the most critical problems or topics that *BPT* has to deal with. How would you approach those challenges? Then, prepare an organisational design for the expansion of the product portfolio and the adaption of the production capacities!



Robert Dreher

Head of Global Production

Bavarian Powertrain GmbH



Born in 1975, Robert Dreher started as car mechanic apprentice with *BPT* before completing a university degree in mechanical engineering. After graduation, he started his career in the automotive industry with a well known OEM. He held various positions on his way to a proven production manager, building up a reputation as a person with a clear mind and an ear for the problems at the production lines. *BPT* brought him back after the crises in 2010 to optimise the site in Mexico. Since 2017, he is in his current position as the Head of Global Production, responsible for the production sites in Germany and Mexico. Perceived by others as a calm person, he has some difficulties with Dr. Scheper, the CTO of the company. In his opinion, she has a tendency to “oversimplify” the feasibility of projects. Robert Dreher likes the idea of applying useful, modern technology when building up new production lines, but is afraid of adapting and expanding the existing production processes to include the production of the electric drive units. He fears that adding additive manufacturing technology makes the production process at *BPT* more complex and more expensive (e.g. due to increased handling requirements). Also, he is afraid of costly quality issues during the complicated and time consuming ramp up phase that could result in production delays and, in the worst case, a damaged image of the firm.



Dr. Maria Scheper

Chief Technology Officer (CTO)

Bavarian Powertrain GmbH



Dr. Maria Scheper was born in 1976. After completing a diploma in management and technology she finished her doctoral degree at the Technical University in Munich. She started her career with an international consulting firm working on technology-related innovation projects for clients in the automotive industry. After five years in consulting, she took an offer from her last client and switched to an *BPT* internal management position. Climbing up the corporate ladder, she never lost her fascination and curiosity about the potentials of new technologies - even if they are costly and their “return on innovation” cannot be quantified to the last cent in advance. Dr. Maria Scheper sees the adaption of the production process as a necessary step to fulfil the companies’ long-term strategy of offering high quality powertrain solutions to customers in the premium automobile segment. This includes the development of flexible production capacities. In her opinion, applying additive manufacturing is a cautious approach to learn the handling of such “flexible technologies”. This is one of the reasons why she does not understand Mr Dreher’s, the firm’s Head of Global Production, “innovation resistance”. Also, she is very keen on closely cooperating with its long-term supplier *Meccanica Avanzata*, also for the expansion into the electric car market.



Konrad Macke

Head of Business Development
Bavarian Powertrain GmbH



Konrad Macke was born in 1981 and is with *BPT* since he graduated from university with a master's degree in Business Administration. He completed the three-year-long management trainee program of the company. Since then, he was working in different positions in the departments of Controlling, Sales and Business Development. In Konrad Macke's opinion, the automobile industry is going to change drastically with alternative powertrain solutions being the future. He has been pushing to foster endeavours towards the "electrification of the product portfolio", as competitors already have such products in their portfolios. "If we don't act quickly, we risk losing our competitive position and that our customers won't perceive *BPT* as a highly innovative partner anymore." Besides the market pressure, he sees the product expansion as valuable new revenue stream. At the same time, to counteract deteriorating profit margins, he proclaims the need to produce the new products as cost-conscious as possible and to leverage every potential of reorganised production processes to cut production costs for existing parts. Financially, using additive manufacturing technologies is a black box for him. This is why he supports the production of the new products in a proven, reliable way. Regarding the proposal of *Meccanica Avanzata* he is cautious as he fears that the cooperation might result in a risky single-source dependency.



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Lower Silesia



CE Mega Case
Strategy Camp 03



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RapidPro Sp. z o.o.

Industry: Additive manufacturing

Founded: 2004

Headquarters: Wrocław, Lower Silesia

Main products: Complex and low weight components

Revenue: € 8 million

Number of employees: 21

FIRM DESCRIPTION

RapidPro Sp. z o.o. is a Polish producer of additive manufactured complex and lightweight components with a well-established market position and long-term customer relations in high quality demanding sectors, such as automotive, aerospace or racing. The firm is equipped with the most state-of-the-art additive manufacturing (AM) installations and deploys skilled technicians to assist those companies ready to go the extra mile to create innovative products.

THE CHALLENGE

RapidPro is strongly oriented on growth and innovation. Recently, *Bavarian Powertrain GmbH (BPT)*, one of the firm's main customer who operates in the field of powertrain supplies for the automotive sector, has decided to reorganise its production processes and increasingly make use of additive manufacturing technologies. Based on long-time cooperation and mutual trust, *BPT's* CEO asked *RapidPro* for technology transfer support services. The request is out of *RapidPro's* usual offer, but stands for a challenging business opportunity that could attract new business partners while expanding to new business areas. *RapidPro's* expertise in additive manufacturing as well as the rising popularity of 3D-printing technologies and their implementation into production processes seem to be promising conditions to extend its business model to include a consultancy service for additive manufacturing technologies integration. The main challenge for *RapidPro* thereby is to maintain the production of high-quality additive manufactured components while simultaneously developing a consulting service that helps the customers to optimally integrate and exploit additive manufacturing technologies in their production processes.

YOUR MISSION

Prepare a functional strategy for delivering a technology transfer support service based on the demands of *Bavarian Powertrain* and for a later extension to different sectors.



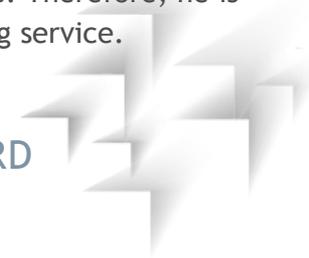
Edward Nowakowski

Marketing Manager

RapidPro Sp. z o.o.



Edward Nowakowski was born in 1972 and is one of the company founders. Since a small start-up counting four people, he has been working hard to achieve the current market position and country-wide recognition of *RapidPro*. In management, he is visionary and many times his ideas have brought *RapidPro* success and high return from investments. In his opinion, *RapidPro* is stuck with its current offer and cannot develop in the pace that would be satisfactory. Therefore, he sees the proposition from *BPT* as a profitable opportunity. He wants to use this chance to diversify the business into new areas of activity, which will evolve into expanding the business to other countries and larger manufacturing plants. In his opinion, expanding *RapidPro*'s portfolio with a consultancy service for AM technologies integration perfectly fits with the firm's image that stands for innovation as well as high-quality products and services. The new service should also guarantee stable growth and the expansion to new markets. Therefore, he is strongly counting that the other members of the top management team will support his initiative. He has the support of the Managing Director who is currently a bit withdrawn from *RapidPro*'s management due to personal problems and strongly relies on Mr Nowakowski's judgments. He knows that the other top management team members, Ms Kozłowska and Mr Winnicki, who he thinks are too strongly attached to the current status of *RapidPro*, won't be so easy to convince. Therefore, he is working on a strategy plan to show the advantages of extending *RapidPro*'s business model to include a consulting service.



Agnieszka Kozłowska

Operating Manager

RapidPro Sp. z o.o.



Born in 1982, Agnieszka Kozłowska has been working at *RapidPro* for the last ten years and has worked herself all the way up from different levels of the hierarchy. This allowed her to gain substantial expertise in almost all areas of the firm. Since four years, she holds a strong position as *RapidPro's* Operating Manager. She is strongly focused on effective and high-quality production processes without unnecessary downtimes or other types of resource waste. Ms Kozłowska values the current business model of the firm that has ensured such a high position on the market and doubts that trying to answer to *BPT's* request will bring the expected results. In her opinion, there are many factors that have to be thought of carefully in order to minimise any risk that goes along with a change in the current business model. Delivering AM production process consultation to long-term customer, in her opinion, might eventually lead to a cannibalisation of the own business. Besides these strategic issues, there are many organisational questions that need to be answered and might not be realisable with the current resources. Setting up a technology transfer service is a complex process that has to be thoughtfully prepared and requires severe internal reorganisations in its implementation. For her it would be the first time to be part of such a big change project and, due to lack of experience in this area, she is not willing to be responsible for its realisation. At the same time, she feels strong pressure from the Marketing Manager, Mr Nowakowski and knows that she will have to present strong arguments against at the top management team to convince the Managing Director that this idea is too risky and might not bring the expected benefits for *RapidPro*.



Tomasz Winnicki

Technical Design Chief

RapidPro Sp. z o.o.



Tomasz Winnicki was born in 1973 and has been working for *RapidPro* since five years. Before, he has gained substantial knowledge in AM technologies working in a large company in the United Kingdom. He therefore enjoys the unquestioned authority in the area of AM processes used at *RapidPro*. As *RapidPro*'s Technical Design Chief, he is setting development trends and bringing great results clearly visible in the quality of the products. Tomasz Winnicki is against the idea of changing *RapidPro*'s business model because he thinks that this endeavour is too risky and too costly in terms of not only the financial, but also personnel and physical resources that would be required. However, the Managing Director would see him as number one candidate for taking on the role of the manager for the new consulting service because of his substantial expertise in this area. Although Mr Winnicki is not yet convinced that the change in business model to include a consulting service will bring the expected benefits to the company, he finds himself in an ambivalent situation because the offered position would mean a big step forward in his personal career.



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Hungary



CE Mega Case
Strategy Camp 04



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Fireball Solution Kft.

Industry: Software

Founded: 2005

Headquarters: Western
Transdanubia

Main products: Industry 4.0
software

Revenue: €20 million

Number of employees: 46

FIRM DESCRIPTION

Fireball Solution Kft. (eng.: ltd.) was founded in 2005 as a small family business. In the other half of 2000s, the company has increasingly centred its main activities on the development of Enterprise Resource Planning (ERP) systems which eventually led to the launch of the company's own ERP solution in 2008. The other main focus of the firm is the customer support, including the maintenance and servicing of already implemented ERP systems as well as the updating of ERP systems to satisfy the demand for new features. Customer service therefore is an important area to foster *Fireball Solution's* connection with national and international customers. Only recently, the firm has therefore opened a new customer service office in Germany.

THE CHALLENGE

The change in processes through digitalisation often requires the adaption of existing software, such as ERP systems. *Fireball Solution* increasingly sees the demand for integrating Industry 4.0 and Internet of Things (IoT) solutions into the customers' ERP systems. *Bavarian Powertrain GmbH (BPT)*, already using *Fireball Solution's* ERP system, faces exactly this challenge of integrating the information of its new additive manufacturing machine sensors via IoT add-on into an ERP system. Because of earlier professional connections of the Managing Director to *BPT*, this seems the ideal opportunity to consolidate the firm's position on the German market and to become a pioneer in terms of IoT-supported ERP systems. Precisely, the demand of *BPT* includes that the machine data that is continuously measured by sensors should, via a real-time monitoring system, be immediately uploaded into the ERP database to not only shorten reaction times in case of error, but to also predict malfunctions at an early stage. However, the internet connection of the ERP-system raises data security issues amongst client firms because the data are uploaded into *Fireball Solution's* cloud. Moreover, the data analyses (i.e. monitoring and real-time warning) are performed in the cloud. The firm consequently has to think of ways to increase the acceptance of their IoT-supported ERP system, especially with regard to their long term customer, *BPT*.

YOUR MISSION

Prepare a marketing plan for selling the IoT-supported ERP system to *BPT*!



László Váradi

Managing Director
Fireball Solution Kft.



László Váradi was born in Hungary in 1970. After he finished his PhD at the Technology University of Budapest, he moved to Germany where he worked for *BPT*. At *BPT*, he started to work in production, but soon switched to the informatics department of the company to support production processes with production process monitoring and real time data analyses. In 2005, he returned to Hungary and founded *Fireball Solution*. *BPT*, who currently wants to make its production system more flexible and therefore needs to gather and analyse data to tune its new additive manufacturing production machines, seems to be a potential new client for *Fireball Solution's* customised and IoT-supported ERP system. Now, the biggest challenge is to design and implement new solutions related to the customer needs and integrate this new solution into the self-developed ERP system. Despite the good personal and professional connection of Mr Váradi to *BPT*, *BPT* is skeptical about data security issues that might arise with the new solution. Mr Váradi is therefore aware, that not only in the case of *BPT*, but also for future customers who are demanding IoT-supported systems, it is increasingly important to define a strategy to increase acceptance. With regard to *BPT*, he sees himself as the primary person to negotiate the possible solutions because of his long term relationship to the firm.



Nikolett Pataki

Marketing & Sales Manager
Fireball Solution Kft.



Nikolett Pataki was born in 1980 and obtained her MA degree in the field of Marketing in 2003. Since then, she has worked for several companies in Hungary. She joined *Fireball Solution* in 2010. Since 2015, she is the Marketing & Sales Manager of the software firm. She is especially strong in process thinking and structural problem solving. Also, Nikolett Pataki has a good feel for customer demands and market trends and possesses excellent communication skills in English and German. Currently, her main task is to develop and define a marketing plan for making *Fireball Solution's* customised IoT add-on of the ERP solution marketable and increasing the acceptance for existing and future customers in terms of data security issues. The Managing Director, Mr Váradi, has high hopes and trust in Ms Pataki to achieve a successful solution in this regard. However, this is a conceivably tough challenge because there is never the guarantee of total security in the field of informatics (e.g. in terms of required certificates or VPN connections). Additionally, the customised and individualised offer of the IoT add-on demands deliberate consideration in terms of a holistic marketing plan that encompasses all customers. Nevertheless, the German customer, *BPT*, must be convinced that the security level of the monitoring add-on of the ERP system is adequate. Mr Faragó, the Senior Developer, actively supports Ms Pataki with any technical issues that arise in preparing the marketing plan.



Martin Faragó

Senior Developer
Fireball Solution Kft.



Martin Faragó was born in 1988 and obtained his MSc degree in Computer Science in 2013. After that, he started to work at *Fireball Solution*. As the Senior Developer in the company, he is responsible for the implementation of the new ERP features such as the monitoring system, security issues and other Industry 4.0 and Internet of Things solutions. His expertise in these areas is beyond dispute. However, he occasionally tends to neglect the point of view of the customer. Despite his weaknesses in sensing the needs of customers, he actively supports Ms Pataki, the Marketing & Sales Manager, in any technical issues that arise in preparing the marketing plan for the customised IoT add-on of the ERP solution. Mr Faragó is a specialist in installations and new module initialisation. Therefore, he is responsible for the ERP IoT add-on initialisation at *BPT* and acts as the main contact person for the firm in this regard. Since the main challenge from the technological point of view is the data security issue, he implements the security levels, groups and security installations at all levels, such as the operating system, the network (intranet), the databases and data as well as the monitoring system (application). He sees the implementation of a single-sign-on authentication system as one of the most crucial things to ensure highest data security.



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InnoPeer AVM Transnational Value Chain



**CE Mega Case
Strategy Camp 05**



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InnoPeer AVM Transnational Value Chain

Industry: Automotive

Members & Countries:

- Bavarian Powertrain (DE)
- Fireball Solution (HU)
- Meccanica Avanzata (IT)
- RapidPro (PL)

VALUE CHAIN DESCRIPTION

The German powertrain manufacturer *Bavarian Powertrain* is a Tier-1 supplier for OEMs in the luxury sports car segment, which aims at entering the electric car market with the help of additive manufacturing (AM) technology. In its attempt, the firm asked a technology transfer support to its Polish partner *RapidPro* - a producer of AM complex and lightweight components, which should update its business model to answer such a request. Also *Meccanica Avanzata*, a long-term partner of *Bavarian Powertrain* as supplier of powertrain components, is redefining its value proposition to be included in the new value chain that the German company is trying to build. Finally, the decision of *Bavarian Powertrain* is strengthening the opportunity for *Fireball Solution*, a Hungarian supplier of ERP systems, to introduce Internet of Things (IoT) solutions in monitoring systems for *Bavarian Powertrain's* new AM machines.

THE CHALLENGE

Meccanica Avanzata, *RapidPro* and *Fireball Solution* are connected to *Bavarian Powertrain* on the basis of their specific commercial and supply agreements. Therefore, the German company could limit itself to manage separately the relationships that it has with these suppliers. Yet, *Bavarian Powertrain* is persuaded that it would be more competitive as supplier of the global automotive OEMs, if it could offer them an integrated package of diversified competences through which supporting them with innovative solutions for the production both of electric and traditional cars. As it is not possible for *Bavarian Powertrain* to internalise all the necessary competences, its management is thinking how to develop stronger collaborations with its external partners. Promising areas to work together seem to be business data analysis, research, development and innovation, training and production collaboration models.

YOUR MISSION

Define possible collaboration agreements between the four European companies that can optimise their interactions in order to increase the added value they can offer on the market.



Konrad Macke

Head of Business Development
Bavarian Powertrain GmbH



Konrad Macke was born in 1981 and is with *Bavarian Powertrain* since he graduated from university with a master's degree in Business Administration. He completed the three-year-long management trainee program of the company. Since then, he was working in different positions in the departments of Controlling, Sales and Business Development. In Konrad Macke's opinion, the automobile industry is going to change drastically with alternative powertrain solutions being the future. He has been pushing to foster endeavours towards the "electrification of the product portfolio", as competitors already have such products in their portfolios. Besides the market pressure, he sees the product expansion as valuable new revenue stream. At the same time, to counteract deteriorating profit margins, he proclaims the need to produce the new products as cost-conscious as possible and to leverage every potential of reorganised production processes to cut production costs for existing parts. He is convinced that, in order to avoid to compete simply on costs, his company has to transform itself from a component supplier to an innovation partner. To do so, he is interested in promoting the knowledge exchange and education between the companies of the value chain and to coordinate his partners as a consortium to present *Bavarian Powertrain* as the coordinator of a multi-disciplinary supply chain when competing for a contract with OEMs.



Cristina Bottelli

Marketing Manager

Meccanica Avanzata S.r.l.



Cristina Bottelli was born in 1984 and is the daughter of *Meccanica Avanzata's* CEO, Ermanno Bottelli. After completing her MBA at the Bocconi School of Management, she started to work as a strategy consultant in Switzerland. Five years ago, she returned to the family firm *Meccanica Avanzata*. Since then, she has transformed the business by strengthening the firm's marketing and sales activities and diversifying the client portfolio. She is convinced that the automotive industry will change and that *Bavarian Powertrain* is not the only client undergoing a transformation. Through her previous experience as a consultant, Ms. Bottelli knows that it is essential to form strategic partnerships. In this sense, she would like to build R&D&I collaborations both with *Bavarian Powertrain* and *RapidPro*. However, she also knows that her technical and production divisions consider it highly sensitive to share their internal technical data with external partners. Moreover, *RapidPro* could be a potential competitor as component supplier in the long run.



Edward Nowakowski

Marketing Manager

RapidPro Sp. z o.o.



Edward Nowakowski was born in 1972 and is one of the company founders. Since a small start-up counting four people, he has been working hard to achieve the current market position and country-wide recognition of *RapidPro*. In management, he is visionary and many times his ideas have brought *RapidPro* success and high return from investments. In his opinion, *RapidPro* is stuck with its current offer and cannot develop in the pace that would be satisfactory. Therefore, he sees the proposition from *Bavarian Powertrain* as a profitable opportunity. He wants to use this chance to diversify the business into new areas of activity, which will evolve into expanding the business to other countries and larger manufacturing plants. In his opinion, expanding *RapidPro*'s portfolio with a consultancy service for AM technologies integration perfectly fits with the firm's image that stands for innovation as well as high-quality products and services. International collaborations could be a promising opportunity to define and validate production collaboration models and adapt for expanding their business model on the global market. On the other hand, he is well aware of the difficult balance its company has to achieve between sharing and protecting its core technical knowledge.



László Váradi

Managing Director
Fireball Solution Kft.



László Váradi was born in Hungary in 1970. After he finished his PhD at the Technology University of Budapest, he moved to Germany where he worked for *Bavarian Powertrain*. At *Bavarian Powertrain*, he started to work in production, but soon switched to the informatics department of the company to support production processes with production process monitoring and real time data analyses. In 1995, he returned to Hungary and founded *Fireball Solution*. The collaboration proposal of *Bavarian Powertrain* represents a promising opportunity to extend the reach of its company throughout Europe and to develop IoT solutions suitable for inter-organisational production systems. Such a proposal also offers the possibility to exploit the automotive supply chain in order to engage the OEMs of this sector as direct clients. However, he is aware that the other partners of *Bavarian Powertrain* will be reluctant to give *Fireball Solution* access to their business data.

