CASE 4: FUTURE OF MOBILITY

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It is early March and Iztok is preparing for Hidria's yearly strategic sessions. As the Managing Director he reflects on the rich, bold, innovative, and successful history of Hidria.

Although there was hardly a car to be found on Slovenian roads in 1955, a company in a small remote town of Tolmin had a vision and was bold enough to start manufacturing plugs for cars. First glow plugs for diesel engines were manufactured in the early 1970s, followed by flywheel magnetos for small petrol engines just a few years later. In the early 1960s, Hidria continued its expansion by launching production and assembly of central heating installations, water distribution installations, and air conditioning. The first engines for hermetic compressors were exported from Idrija to the United States in the 1980s. In the second half of the 1990s, Spodnja Idrija, a subsidiary company of Hidria, started manufacturing laminations for the automotive industry and later aluminum component production also started.

Hidria's key companies joined into the corporation in the period over the last twenty years, after the establishment of the parent company Hidria. After the privatisation, total restructuring and merger of key companies, Hidria has grown into a corporation of 1,800 employees in companies in Slovenia and abroad. It is one of the leading European corporations in fields of integral solutions for the heating, ventilation and air-conditioning of buildings and components for HVAC systems, and many of Hidria's automotive products, like innovative car engine solutions and vehicle steering systems, are incorporated in the automobiles of the leading European trademarks. Today, they sell their products in 55 countries around the world and have companies in Slovenia, Germany, Hungary, the USA and China.

An engine cold start system, the Hidria Optymus PSG, which was developed by Hidria through a long and expensive development process cooperation with various stakeholders, including the research and educational sectors, was given an award for Green Innovation of the Year in 2017. Using advanced technology, this smart plug helps reduce consumptions and emissions by 30% and is now built into every third modern car with a diesel engine. On the other hand, Hidria's laminations for electric motors now provide solutions for 30% of manufactured electric or hybrid vehicles.

Iztok believes that as a result of lack of natural resources, the world is already at a time where profound changes are imminent, a time of paradigm shifts. Being in the mobility business, he realizes that transportation of people and goods creates somewhere between 15 and 20 percent of greenhouse gas emissions, while an average car creates approximately 300g of CO_2 emissions per travelled kilometer, which is certainly not sustainable and will need to change, while Hidria will have to find its place inside this change. The speed of conversion is affected by many different factors like state subventions, access to the city centres only by electrical and non-emission vehicles, easily available and free parking places for electrical vehicles and European emission standards which significantly redefine transportation emission every 4 years.

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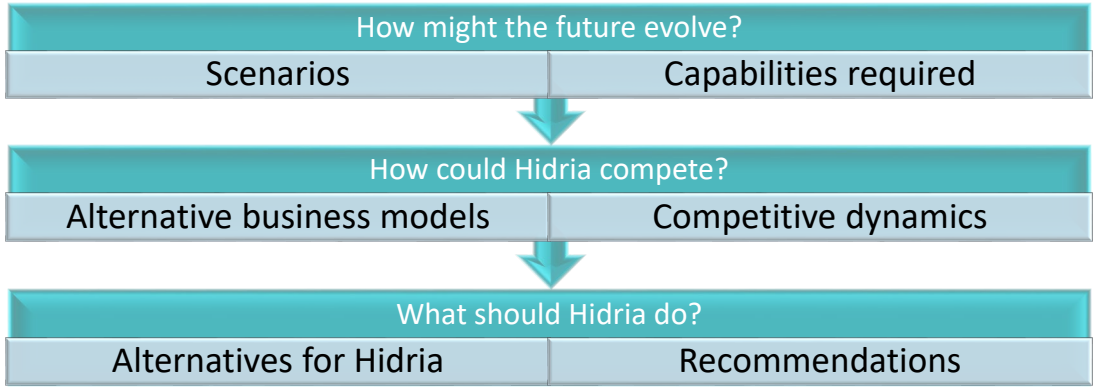
To lead all this, a fast pace of technological development is needed - to support the change while being economically viable at the same time. An interesting example of this are batteries, the capacity of which is expected to double every 3 years, while the prices should decrease by half in the same time. Factors like these support change and drive it at the same time. It is estimated that by the end of 2021 each new car will be equipped by a small 10-15kw motor, and by 2026 cars will be at least serial mild hybrids. In less than two decades Iztok expects a gradual disappearance of the internal combustion engine. On one hand, he knows Hidria will benefit from this as it is already involved in a lot of electrical motor development projects but at the same time, he realizes that their revolutionary diesel cold start technology, which was developed not long ago, will have to be rethought, meaning Hidira will have to work and invest intensively on other types of applications for its technology, preferably, not involving internal combustion engines. What Hidria has to do, is to step into a different thought paradigm, where they do not think only about cars, busses and other vehicles. It has to envision meaningful interactions between people and new transportation modalities, new way of mobility. Hidria has to think about how can travel and transportation ecosystems be changed and improved in an incremental but significant manner and how does Hidria fit in?

To prepare itself for big changes lying ahead and perhaps even to lead them, Iztok and his team at Hidria realize they need to be able to think of a different future - to dream about the future in a systematic way. It is a process that is by its nature very abstract but at the same time they have to use tools, structures and processes based on scientific analysis and ability to convert these dreams into a very solid vision, strategy, and products or services.
They have to ask themselves how will the future look like and what might Hidria need to do to compete in the future?

Electric cars, autonomous vehicles, charging stations, etc. When observing superficially, to an outsider they may still seem as the future, but for an innovative company such as Hidria, they are already here and for the rest of us, they will become a part of everyday life in the next couple of years. So, what is important for Hidria is how to think beyond that? How to look beyond what is already visible on the horizon? Or perhaps even, how could they invent the future?



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Additional Reading Materials

Rethinking Mobility

- The pay-as-you-go car
https://orfe.princeton.edu/~alaink/SmartDrivingCars/PDFs/Rethinking%20Mobility_GoldmanSachsMay2017.pdf
- There's More Than Autonomous Cars
https://go.forrester.com/blogs/rethinking-mobility-theres-more-than-autonomous-cars/
- Rethinking Everyday Mobility
http://civitas.eu/sites/default/files/rethinking_everyday_mobility.pdf
- Rethinking mobility for a human city
https://www.tandfonline.com/doi/full/10.1080/01441647.2018.1423612
- Mobility Tech
https://www.weforum.org/agenda/2020/02/travel-transport-urban-mobility/
- The future of public transportation
https://theconversation.com/four-visions-for-the-future-of-public-transport-125443

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- http://openaccess.city.ac.uk/5953/1/BadenFullerHaefliger13_openaccess.pdf
- https://pure.uva.nl/ws/files/1779615/159088_402942_2.pdf
- https://hbr.org/2000/05/building-an-innovation-factory-2
- https://sloanreview.mit.edu/article/what-to-do-against-disruptive-business-models/
- https://www.wiley.com/en-us/Value+Proposition+Design%3A+How+to+Create+Products+and+Services+Customers+Want-p-9781118968055
- https://dare.uva.nl/search?identifier=0eff5b55-4800-4c9d-90c9-6683560af47e

CASE 4: FUTURE OF MOBILITY

TEACHING NOTE 4: FUTURE OF MOBILITY

This case is meant to be used to uncover important issues for companies recognizing opportunities in new and sustainable technologies. The focus lies in development of new – sustainable business models and disruptive business innovation. Students will also be able to learn about the contemporary trends in mobility, technology and sustainability.

We present the case of Hidria, a company dealing with development and production of products for the car industry, but sees an opportunity in reducing emissions, electrification and especially in new form of mobility. Electric and autonomous vehicles are already on the market, but Hidria is interested in what new forms of mobility may look like and how can they position themselves in this future.

The case, including additional reading materials, explains the background and potential challenges. It can be used in different ways depending how in depth students are expected to understand the presented topic and which learning objectives are planned to be fulfilled.

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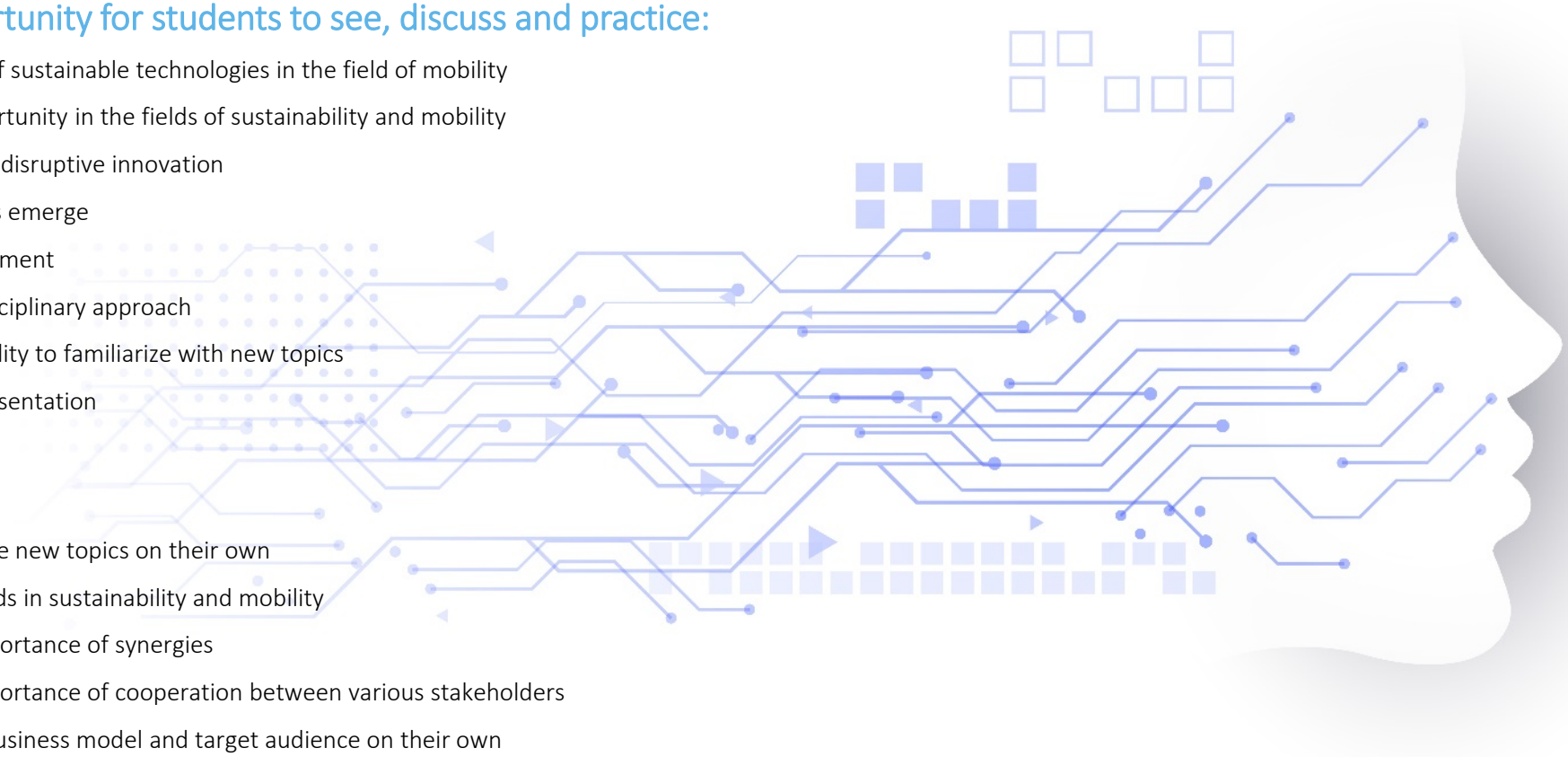
The case provides an opportunity for students to see, discuss and practice:

- Current status and near future of sustainable technologies in the field of mobility
- How to develop a business opportunity in the fields of sustainability and mobility
- How to support development of disruptive innovation
- How do sustainable technologies emerge
- Practice business model development
- Practice group work and interdisciplinary approach
- Practice problem solving and ability to familiarize with new topics
- Practice communication and presentation



LEARNING OBJECTIVES:

- To teach students how to explore new topics on their own
- To get familiar with current trends in sustainability and mobility
- To teach students about the importance of synergies
- To teach students about the importance of cooperation between various stakeholders
- To make students decide for a business model and target audience on their own
- To teach students about teamwork and utilizing various competences of different team members
- To teach students on the importance of interdisciplinary cooperation and involvement of governments in supporting development of new/sustainable technologies.

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Teaching Process

Although sustainable technologies are an important part of this case, the potential to learn business modelling is also important part of this case. We suggest that the teacher starts with business modelling exercises and later continues with more emphasis on disruptive technologies and sustainable technologies.

Task	Time
Introduction	30 min
Group work and preparation of presentations (Students should have constant support and feedback provided)	5 - 15 days
Presentation and discussion	20min + 10min for discussion
Summary by professor	10 min

Tasks for students

1. Based on additional research, develop a suitable business model for Hidria in line with the emergence of new mobility technologies and paradigms.
2. Develop a new value proposition.
3. Make a SWOT analysis.
4. Show how the new business model you have developed works within the specificity of the context you have chosen.
5. Show how should companies address emergence of sustainable technologies, and sustainable business models.
6. Show the role of national governments and international political bodies in context of developing sustainable technologies, and sustainable business models.