WORKING IN THE AUTOMOTIVE INDUSTRY

EXERCISE BOOK

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INTRODUCTION

The automotive industry is a sector that is growing on a worldwide level at different paces. While markets in Europe are stagnating, those of the BRICS countries (Brasil, Russia, India, China and South Africa) are almost exploding and opening up a huge economic potential. However, it is important to keep in mind the countries' differences in culture, infrastructure, legislation, economy and environment. International vehicle manufacturers like Renault, Toyota, BMW or VW should be aware of the impact of these differences when establishing a factory, dealer network, or releasing a new type of vehicle in a new local market.

The automotive industry is changing more rapidly than ever. The first company dedicated to producing vehicles was the French company French Panhard et Levassor, in 1889. Peugeot followed only two years later. Since then, vehicles have changed significantly. This is a result of increasingly stricter legislation and regulation, as well as changing customer demands (behaviour). Safety comes first. In the past, a vehicle used to be delivered with a tool case to be used in case of a breakdown. Nowadays, every vehicle released on the market has to be well developed and thoroughly tested during the construction process. This is executed using different methods and analyses. Clearly, this also means that the education of mechanics and engineers needs adaptation. As the automotive industry will continuously innovate, the technical schools are to anticipate on these changes. Self-driving cars and alternative fuel systems influence the way a vehicle is designed and produced. These changes will also affect the infrastructure. For example, think of all the necessary charging stations at parking lots, businesses, homes, etc. Moreover, how will a self-driving vehicle know where it is when it is in a tunnel?

This exercise book is a valuable addition to the Automotive Engineer training events. It should help the participants to repeat and remember the content of the training and through different exercises strengthen their knowledge.

The structure of this exercise book is based on the Automotive Engineer Skill Set. For most of the competences and techniques defined in the skill set the exercise book will provide exercises.

U1 INTRODUCTION

E1.PC1 TRAINER QUESTIONS

1. What does BRIC stand for?
2. What should all international car producers be aware of when establishing a factory?
3. Why are cars changing so rapidly?
4. What were the power sources of cars before combustion engines were introduced?
5. What can you tell about the 'Systém Panhard' design?
6. What were the after effects of World war 1 on the European car industry?
7. What were the after effects of World war 2 on the European car industry?
8. What was the effect of the oil crisis on the car industry of Japan and Europe?
9. What did CAD systems bring to the automotive industry?

E1.PC2 TRAINER QUESTIONS

10. Where does the abbreviation SAE stand for?
11. Name four alternative fuels.
12. Why are vehicles segmented in different segments?

E1.PC3 TRAINER QUESTIONS

13. Name 3 segments in passenger cars and where do the segments stand for?
14. What does OEM stand for and what does it mean?
15. What are tier one and tier two suppliers and how do they relate to an OEM?
16. Can a tier one also be a tier two.
17. How does a tier one communicate with a OEM?
18. Based on the reading, do you think the car as we know it is going to disappear?

Discussion!

19. Name one of the quality standard in the automotive branch.
20. Why is the supply chain in the automotive industry very important?
21. Why is there a growing demand for engineers and other technical personnel?
22. What is the impact of software on the functionality of a modern car?