Background
The enormous improvement and performance of Internet, computers & telematics has made real time communication over long distances easy and accessible globally. The gaming and movie industry has pushed 3D renderings and motion into software solutions that can generate virtual representations of our world and everything inside it, to act and perform as it mimics or enhances our commands. The development of AI and Automation is pushing boundaries further by providing self-learning and self-programming devices that is starting to become almost impossible to distinguish from real life, and on top of that usually outperforms humans in everything from simple identification to self-driving cars.

One way to connect the virtual world with real life persons is called Metaverse, and this has been used by the gaming industry for many years. Metaverse is a hypothetical iteration of the Internet as a single, universal and immersive virtual world that is facilitated by the use of virtual reality (VR) and augmented reality (AR) headsets. If e.g., your boat was represented in a metaverse together with your friends’ boats, service hubs, marinas, restaurants, real time updated information, maps, weather etc. it opens for a whole new world of services, social life and instant connection between R&D, OEM and end users.

If Volvo Penta could develop their own version of a Metaverse, for now called Pentaverse, that could potentially become an amazing tool for Product Development to tap into end user needs and problems, new and improved services would be possible, end users will have a better control and OEM’s can keep track of needs.

Task
- Detailed investigation of Metaverse technologies and development – literature, papers, IP etc.
- Investigate existing Metaverse solution within OEM’s and the gaming industry
- Select a location, possibly a harbor, and design a simplified Pentaverse copy of that
- Pentaverse should contain boats, vehicles, restaurants, workshops, etc.
- Develop ideas on how to test new products and functions, preform services and socialize
- Come up with novel ideas for services and other ideas possible in a Pentaverse
• Surprise us with how you think modern product development could be done 2030 in Pentaverse
• The end result should be a simplified working version of a small Pentaverse
• Include a business scenario and explain how PV should be managed and designed

Students
The project is in cooperation with Chalmers and Pennsylvania State University. The project team will consist of two to four students from Chalmers and two to four students from Penn State.

Suitable background: TKAUT, TKELT, TKDAT, TKMAS, TKTFY
Group size: 2 to 4 students
Number of groups: 1
Prerequisites: Programming.
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References
Surprisingly often companies make massive investments into products and services that’s of little or no use for customers.

Most likely everyone has the experience of trying to resolve a problem with a product or a service, and it’s close to impossible to find an actual person that can help you.

Engineers that develop new products and services have problems to understand and relate to end users that both lac and are totally uninterested in detailed understanding of the technology – it should just work!