**New IoT Scenario: Smart Sports Coach and Immersive Social Platform**

In this IoT scenario, we have designed a home-oriented smart wearable device made from elastic materials in the form of a bodysuit or kit, integrated with micro-sensors that do not impede movement and can accurately capture motion data (sensors are designed to be integrated into gloves, soles, headbands, or wristbands, capturing crucial motion data while maintaining the wearability and comfort of the device.) This device is specifically tailored for sports enthusiasts, such as tennis and basketball players, who are constrained by time and space. It utilizes high-precision sensors to capture the wearer's body movements and reflect this data in real-time within a virtual sports scene. The core functionalities of this scenario are summarized in the following points:

**1. Personalized Sports Coaching:** Through the use of VR glasses, users can immerse themselves in a virtual sports scene. Based on the motion data captured by sensors, intelligent algorithms evaluate the accuracy and safety of the user's sports posture (for example, assessing whether the hand position is correct during a tennis match, or if certain movements might potentially harm the knees) and provide professional guidance and suggestions for improvement. This not only helps users correct their movements and prevent sports injuries but also enables the system to automatically generate or adjust personalized training plans based on the user's performance and progression speed. This means that as users improve their skills, the challenge level and training content will be correspondingly adjusted to maintain the training's effectiveness and keep users' interest sustained. Besides guiding sports skills, the device can also track health data (such as heart rate and calories burned) and provide visual feedback on progress. This allows users to not only see their technical improvements but also gain insights into their health improvements.

2. **Virtual Social Platform:** The built-in community feature of the device allows users to enter a virtual sports community. Here, they can see other players using the same device, and through invitations or room creation, utilize VR technology to fully immerse in the environment, teaming up with players from around the world for virtual matches in tennis, basketball, etc., thus breaking through time and space limitations. This community is not limited to competitions but can also be a space for various exchanges and sharing of techniques. Based on the community feature, virtual sports tournaments are regularly organized, allowing users to sign up from all over the world. This not only adds elements of social interaction and competition but also gives users the opportunity to showcase their skills on a larger platform.

3. **Intelligent AI Opponents:** Through advanced artificial intelligence algorithms, users are provided with a highly customized and interactive sports experience. They can compete against virtual AI opponents that can simulate the techniques and strategies of real athletes at various levels, from beginners to professional players. Interaction with AI opponents not only enhances users' sports skills but also offers an exciting and challenging competitive experience.

Question 1:

Introduce this new IoT-based solution/ service in 1 or 2 slides and identify at least 2 main stakeholders who will be affected positively or negatively.

Question 2：

Define 2 capabilities and 1 (or more) associated devices. (These capabilities & IoT-enabled device must be focused to serve the 2 or more stakeholders identified in question 1)

Describe what building blocks of the solution that would be IoT enabled (Explain why IoT brings a specific value, why the solution requires IoT)

Question 3:

Describe and explain (possibly with a diagram) the technical components (hardware/applications/communications…) of the solution.

For each element, identify what technology aspects/components would be available now and which ones require specific research and product development.

Question 4:

Outline the intended Business Model for deploying your IOT application/ service. How will it be profitable ? Will it be deployed as a non-profit service? Who is going to finance it or pay for it? How much ? Per subscription or pay-per-use? What value strategy would you choose to focus on?

Operating excellence (cost) Product leadership Customer intimacy