Investigation the Features of a Software

For the software investigation, I applied the ISO 9126 quality model to the software of the PlayStation 4 (Game console from Sony Corporation). The ISO 9126 quality model describes software quality by defining software characteristics. According to ISO 9126, 'quality is defined as a set of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs' (Losavio, 2003, as cited in ISO/IEC, 1998). So, what are the characteristics of software? There are six characteristics:

1. **Functionality:** If any software feature does not run well, it will destroy the user experience and the software. Software should have a proper appearance, components, and function to provide good software to its users.

2. **Usability:** Usability describes the easiness of software utilisation. The easier the software usage is, the more user-friendly it is. Thereby, the time for the software understanding plays a significant role. The user should navigate through the software without any problems. Moreover, an exemplary user interface (human-computer interaction), such as the functionality of the design to communicate with the computer, is crucial for success.

3. **Efficiency:** This characteristic describes the software's ability regarding the CPU, memory, time, network bandwidth, etc. The more efficient the software is, the better the success. In addition, the software must offer great features for

completing tasks faster, storing a massive amount of data and executing the output in a shorter time.

4. **Flexibility**: Software flexibility is the ability of modifications after release. The software must be changeable without interrupting the current software version. Regarding the continuous development of digital technologies, the software must be able for updates and adapt to future technologies.

5. **Reliability:** Reliability is the ability to use features or the entire software without failing in a certain period. In other words, reliability describes the software lifetime. Software should perform as efficient as on the realise day and maintain its performances level as long as possible.

6. **Portability**: Portability describes the possibility to use the software independently from the hardware. Nowadays, suitable software should function with any hardware without any restrictions.

7. **Integrity:** This term is understood as presenting the software's safety, security, and maintainability. Furthermore, the software should follow the regulation of the industry and country to receive permission for bringing it onto the market (Scaler Academy, 2022)

Because of the software complexity, I will only briefly describe the PlayStation 4 (PS4) system software with the above-written characteristics.

1. Functionality

The system or operating system (OS) of the PlayStation 4 is Orbis OS, based on FreeBSD 9 (FreeBSD is an open-source software). It was launched in November 2013 and is now over eight years old (9th March 2022). In addition, the PS4 is not only a game console but also a PC and offer internet access, streaming video services like Netflix, a communication function and even broadcast gaming session (Zamora, 2019).

2. Usability

Figure 1: Operation Interface of PlayStation 4

The picture shows the main page of the PS4's operation interface. Based on my observation, the operating system is one of the most user-friendly OS on the current market. Since children can play with the PS4 console, the OS must be easy to navigate. The main page shows everything you need to start a game, browse the internet, or watch

videos on streaming video services. Moreover, the features are accessible within one click, and those descriptions are less than usual. The simplicity can be explained by applying more visualisation than text-based explanation.

3. Efficiency

As I mentioned before, the PS4 is, for the most part, a standard PC since it has a PC CPU, standard GPU (Graphics Processing Unit) and RAM. Here are some technical data about the PlayStation 4:

- Processor: A "Jaguar" eight-core x86 processor from AMD with a clock rate of 1.6 GHz
- Memory: 8 GB of RAM in GDDR5 memory type
- Graphics card: Radeon GPU with a clock rate of 800 MHz and 4K HD enablement
- Hard drive: 500 GB to 1 TB storage capacity (Sander, 2016)

4. Flexibility

Sony Corporation continually modifies its operating system. Therefore, keeping the OS in its current state is essential, as the games have reached a higher performance level since 2013. However, Sony launched the next-generation PlayStation 5 in November 2020.

5. Reliability

The PS4's operating system has an excellent lifetime. Also, the OS function runs flawlessly with a lifetime of over eight years; thank the updates for keeping the system up to date.

6. Portability

Theoretically, as the PS4 is like a PC, the operating system can logically be installed on any other hardware. However, since it has custom-made hardware and probably a coding system that does not allow the usage of other hardware, it is practically impossible. The PS4 offers a Remote Play function, whereby users can stream games to their PC, Mac, smartphone, iPad, or PlayStation Vita (Netzwelt, 2020).

7. Integrity

Since the ps4 runs all over the world, it follows all regulations and safety requirements for proper usage.

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