6 TRENDS IN GAME DEVELOPMENT SOFTWARE DESIGNERS CAN'T OVERLOOK

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INTRODUCTION

Game development software is big business, with [Statista](#) reporting that the software development market is worth $2.1 billion in 2022. Increasingly, today's sophisticated gamers demand amazing experiences from the games they play and that's pushing the margins on innovation around topics like accessibility for disabled gamers, leveraging AI, finding cross-platform gaming strategies, and more. These trends in game development software are inviting developers and designers to innovate, integrate new tools, and ask important questions about industry best practices. Let's take a closer look at six key trends and explore how they're reshaping the way game developers approach their work in 2022 and beyond.

PLAYER ACCESSIBILITY IS A CRUCIAL CONCERN

Gamer accessibility is an area that's in the spotlight and getting looked at in greater detail. Do the games you're creating optimize play for a wide range of different audiences? For example, could a user who relies on a screen reader interact with your virtual experience? Or could someone who needs voice control for their devices successfully operate your game? There's a layer of consideration around other physical and neurological concerns as well. Another common question being asked is whether games are designed with neurodivergent players in mind.

Accessibility needs are wide ranging, and often begin with assessing controls to see if they can be reorganized or simplified, and whether compatibility can be increased for a wide range of different assistive devices. Avoid repetitive and flickering patterns, as well as strobing effects, to avoid issues for players with seizure disorders. Sensitivity controls improve the user's ability to optimize game play for their own unique needs. Use clear language, easy-to-read fonts, and visually accessible design along with tools such as interactive tutorials to help players with questions easily access solutions.

The creation of resources such as Game Accessibility Guidelines highlights the wide industry considerations and provides a smart starting point for software designers interested in expanding their understanding of these critical points.

CROSS-PLATFORM GAMING CREATES NEW OPPORTUNITIES

As today's users often rely on multiple devices in both their personal and professional lives, they want experiences that seamlessly integrate between those devices. For example, a user might begin an application on their virtual reality headset and hope to later complete the game or task on their computer or smartphone. Cross-platform gaming is about designing a game that offers maximum flexibility to players to customize the user experience.

Designing cross-platform games follows several best practices, including:

- Utilize a gaming engine with unified code feature and the ability to export or adapt games to different platforms in order to streamline the process

- To that end, choose a game engine that offers these capabilities. For 3D games, options include Unity and Unreal Engine.

- Design an experience to meet the needs of players using different devices by keeping technology as simple and unified as possible, yet aligned with platform standards where required

- Work your code in one of the best languages for cross platform adaptation, including C#, C++, and Lua.

LEVERAGING AI BRINGS MACHINE LEARNING TO GAMING

Artificial intelligence and machine learning technologies can help quickly parse data, anticipate responses based on previous patterns, and drive interactions. AI can be used in multiple ways, and software developers who incorporate it are able to streamline numerous features, including:

- **QA Testing:** Rely on AI tools to conduct routine tasks such as QA testing, to save time and free up your team so they can focus on strategic priorities.

- **Player Verification:** Player identity can be verified through biometrics or using a range of other AI features, such as searching for unfamiliar patterns of play.

- **Graphics Automation:** In years past, the creation of complex visuals was one of the most time-consuming tasks developers faced. AI or machine learning can expedite that process and vastly improve the quality of graphics delivered in fast timelines.

- **Expanding Interaction Capabilities:** AI can be used to introduce new features within game play, for exploring and learning new behaviors and anticipating a wide variety of different prospective outcomes.
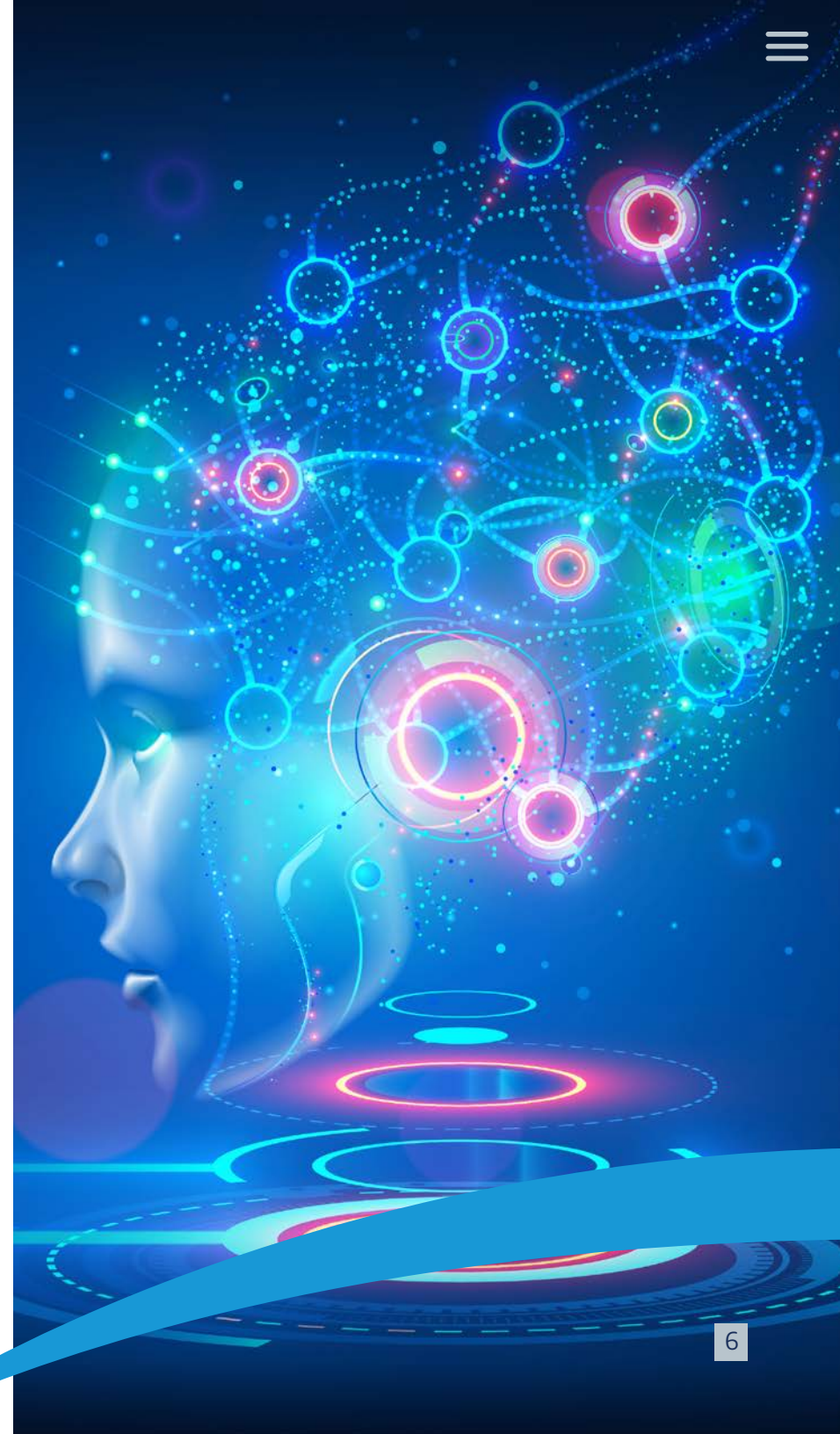
VR AND AR ADD NEW DIMENSIONS TO GAMES

The virtual reality and augmented reality markets have evolved rapidly in the last two years. Models such as the Oculus Rift and Quest, HTC Hive, and PlayStation VR target the consumer market. Cross-over models (or those targeting the business world) include Pico, Samsung Gear VR, HTC Hive Pro, Samsung Odyssey, and Valve Index.

The adoption of AR, VR, and mixed reality has expanded the game development world significantly. There are numerous opportunities to work with business clients on everything from training to virtual reality solutions in manufacturing. Creating these different scenarios has empowered today's designers to push the boundaries on what's possible when creating content designed for virtual platforms. The rapid growth of AR/VR has also created a context where game software developers can explore whether games should be created for one or more platforms as part of a sequential launch or a simultaneous launch in real time.

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GAMING AS A SERVICE EVOLVES

Gaming as a service (GaaS) focuses primarily on the shift from buying games to embracing a subscription model. In the consumer sector, players such as the Microsoft Xbox Game Pass, Nintendo Switch Online, Apple Arcade, Amazon, NVIDIA, and Sony have existing or forthcoming subscription programs to engage users.

As developers adopt subscription models, there are significant impacts to gaming software development. One is that the subscription model vastly changes the funding structure for the industry. The ability to generate ongoing revenue may open opportunities for smaller studios to self-fund initiatives. Subscription models also tend to imply that strength or specialized abilities are tied to a payment method and to related factors such as length of loyalty.

For companies that service the business world by licensing or providing GaaS services to solutions such as real-time augmented reality assisted repairs or training suites, the barriers are lower for businesses to try these solutions. At the same time, these services offer the providers more stable sources of revenue over the long term. For developers themselves, building the narrative and structure of subscription-based games requires some adaptation of the format and style to keep players engaged over time with escalating stakes, custom content, and sequentially released quests, modules, and rewards.

FAST-CHANGING USER INTERFACES AND UX CONSIDERATIONS

The gaming software development industry has always relied on providing sounds and visuals that immerse players into the game worlds, especially in virtual reality, augmented reality, and mixed or extended reality environments. However, as technologies have become more sophisticated, designers now have new data streams and feedback loops to build into their games and deliver unforgettable experiences. These technologies include:

Voice Recognition: As natural language processing and voice search capabilities expand, developers are integrating voice recognition into game user interfaces in whole new ways. These include the ability to control games through voice interaction, have more nuanced conversations with non-player characters in a game, or interact collaboratively with other players in an experience. Voice can help create a sense of engagement or be used to shift how users interact with content with a virtual world.

Facial Recognition: Facial recognition is being used in the gaming industry for better privacy and player controls. Some experiences have biometrics built in that require a user to verify their identity. Alternatively, they may be used to detect whether a player meets

the minimum age requirements for playing a certain game. This way of personalizing the privacy aspects of gaming software also has implications for personalizing a game based on specific facial expressions and the factors they discern.

Speed and UX: The wider availability of technologies such as 5G and Wi-Fi 6 and 6E has vastly expanded mainstream and small business access to fast connectivity. The speed of connectivity can have a direct impact on the UX and how it's experienced by players in new virtual worlds. Fast transition times provide new opportunities for revolutionizing the end-user experience.

NEXT STEPS

Innovative gaming software designers are developing a host of new tools that are changing the way companies do business and offering compelling virtual experiences to consumers around the globe. The latest trends in game development software offer an exciting opportunity to implement new technologies and approach important questions about the future of the discipline.

Break through to the next level of game development. Contact an Account Manager today to discuss your challenges.

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