In my presentation today, I'm going to talk about Game engines.

What is a game engine

A game engine is the software that provides game creators with the necessary set of features to build games quickly and efficiently.

A game engine is a framework for game development that supports and brings together several core areas. You can import art and assets, 2D and 3D, from other software, such as Maya or 3s Max or Photoshop; assemble those assets into scenes and environments; add lighting, audio, special effects, physics and animation, interactivity, and gameplay logic; and edit, debug and optimize the content for your target platforms.

Why game engines

Game engines are great things, able to take the weight off developing a game to let you focus on the idea itself. Powerful engines like the Unreal Engine, Source Engine and indie-darling Unity3D are examples of great tools built by people who want to make games bigger and better. Game engines provide developers with a slew of components and helpers they can use to build their games faster and with less hassle, but the most important factor game engines provide are interoperability between the various gaming systems available.

Graphics

Describing all the graphical features that game engines provide would take thousands of words, but in essence game engines are all there to make your task as simple and straightforward as possible. Developers don't want to deal with converting their carefully crafted 3D models to cryptic formats, or manually building meta-data to show them properly. Game engines do their best work when they take your creative output and spits it out on the screen without (too much) hassle. This, combined with post-processing effects, terrain building and particle effects means that you can create an entire game world inside the game engine by combining assets from various sources.

Animation/cutscene

Cutscene is a part of a game shown as a development of a storyline, a completion of a certain level or is used to demonstrate a characters' death or such segment of the game. There is a cutscene in between missions that fills in the gaps in the story. This sequence is not interactive - we can refer to them as "small movies". Cutscenes also appear in other forms, such as series of images or a plain text/audio.

Physics

A physics engine is responsible for solving the equation of motion and for detecting collisions. You can think of a physics engine as a continuous loop. It starts off by simulating an external

force such as gravity. At each new time step, it detects any collisions, then calculates the velocity and position of an object. And finally, sends the location data to the GPU. This continuous loop creates the illusion that an object is falling due to gravity. You don't have to do all the hard coding by yourself, neither code every move created in the scene by the game elements, or collisions between your game components. Physic engines enable you to create objects that can behave in a realistic way with just a few lines of code.

Audio

Game Audio is the profession of Composers, Sound Designers, Voice Artists and Audio Programmers working in the video game industry. In addition to traditional music production skills, game audio professionals often work with game engines such as Unreal and Unity using third-party middleware software to manage the audio assets and create adaptive audio environments.

Aside from being the most deeply creative artform in existence today, video games generate over 90 billion dollars a year in revenue, dwarfing the film, TV and music industries combined. The Interactive Entertainment Industry is vast and encompasses many different platforms. Each one has an entirely different way of handling audio and many use proprietary engines. Creating this audio content and making it play seamlessly inside the software can be a massive creative and technical undertaking for sound professionals.

To conclude, I'd like to deal briefly with Unreal engine.

Unreal engine

One of the most popular and widely used game engine is the Unreal Engine by Epic Games.
The original version was released in 1998 and 21 years later it continues being used for some of the biggest games every year.

Notable titles made with Unreal Engine include the Gears of War series, Mass Effect series, Bioshock series, and the Batman: Arkham series.

The strength of the Unreal Engine is its ability to be modified enough that games can be made into very unique experiences.

The latest version, Unreal Engine 4, is said to be the easiest one to use when in the hands of a professional.

Right, let's stop there. If you have any questions, I'd be pleased to try to answer them.