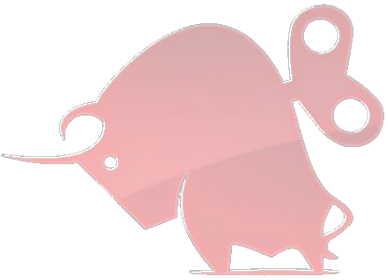
Propietary Engine
VS
Commercial engine



BRAVO
game studios

by Zalo
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About me

B.S. Computer Engineering

9 years of experience, 5 different companies

3 propietary engines, 2 commercial engines

I have my own engine :P

My current job:
Bravo Games, Seville

http://bravogamestudios.com

Summary

Propietary engine:

- Advantages
- Disadvantages

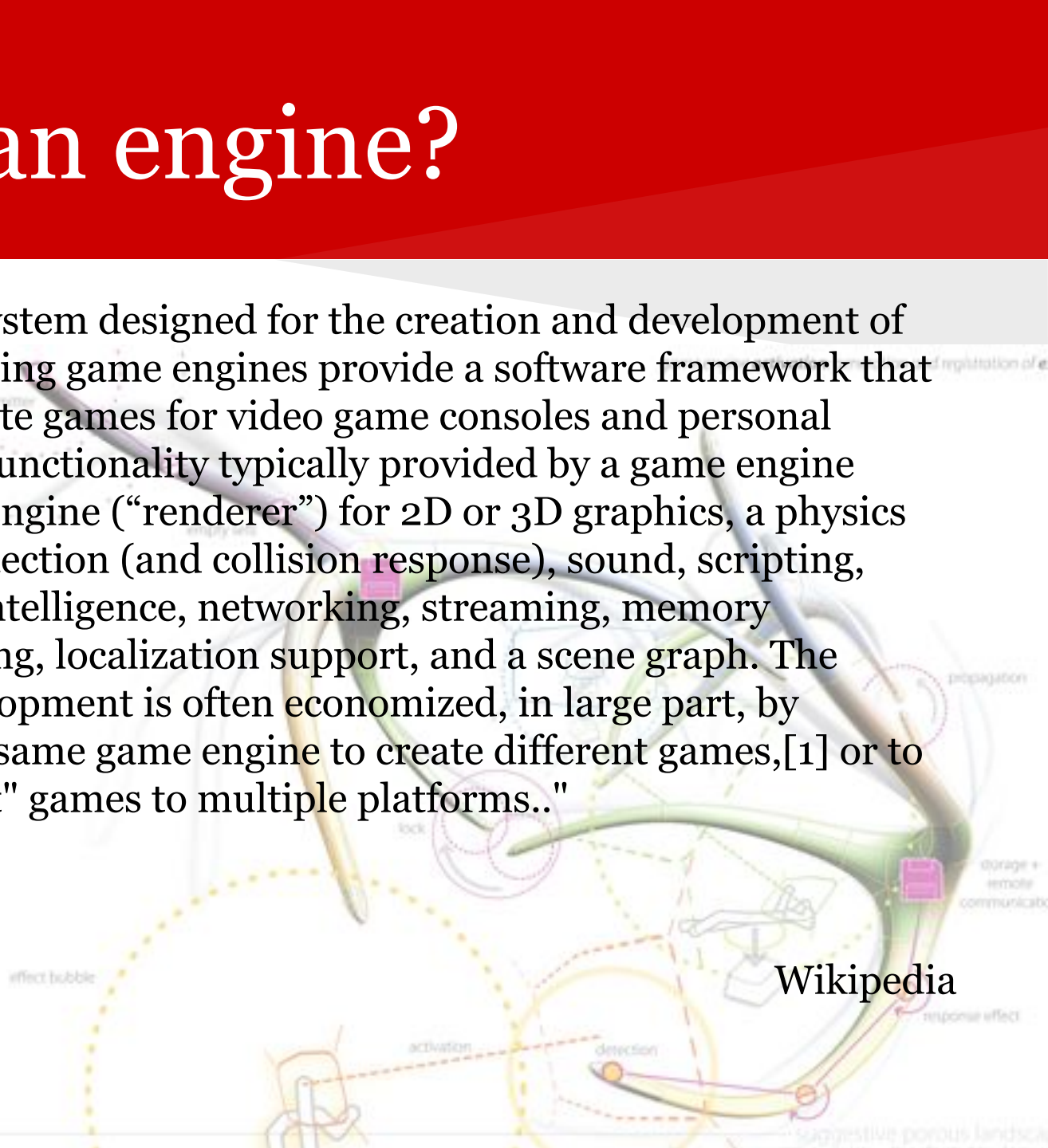
Commercial:

- Advantages
- Disadvantages

What is an engine?

"A game engine is a system designed for the creation and development of video games. The leading game engines provide a software framework that developers use to create games for video game consoles and personal computers. The core functionality typically provided by a game engine includes a rendering engine (“renderer”) for 2D or 3D graphics, a physics engine or collision detection (and collision response), sound, scripting, animation, artificial intelligence, networking, streaming, memory management, threading, localization support, and a scene graph. The process of game development is often economized, in large part, by reusing/adapting the same game engine to create different games,[1] or to make it easier to "port" games to multiple platforms.."

Wikipedia



Propietary engine. Advantages

Propietary engine. Advantages

- Take the hardware to its own limit
- Limited by hardware
- Máximum optimization
- Best graphics
- Best performance

Propietary engine. Advantages

Prestige

- For the company
- For the developers
- For the final user

Propietary engine. Advantages

Reach all platforms:

- Mobile: android, IOS, Windows Phone,blackberry, Tizen, LiMo, Bada, Symbian, j2ME, WebOS...

- Pc: Windows, Linux, Mac Os, Flash, Native Client

- Consoles: Nintendo 3DS, PS Vita, Wii U, XBox 360, Playstation 3, Xbox One, Playstation 4

Propietary engine. Advantages

Ready for the upcoming technologies

First to receive SDKs

Market advantage being there at new consoles launch, providing the first games

Propietary engine. Advantages

Bug Fixing, fix your own bugs without depending on anyone else

Crucial on final stages of development

Propietary engine. Advantages

Knowing very well the hardware, having the chance to take it to the limit

Any doubts can be resolved by the technology team. Easy to ask them

Source code available anyway

Propietary engine. Advantages

Doesn’t cost extra money

No extra licenses

Propietary engine. Advantages

Technology can be sold

Extra source of income

eg. Epic, Crytek

Propietary engine. Advantages

Developing an engine has a lot of knowledge attached to it

People learn how to code and how to get documented

People learn to work as a team

It is easier for these programmers to use other engines, learn from them and detect posible design mistakes

Propietary engine. Advantages

Freedom of choosing the software you want to work with

- 3ds Max
- Maya
- Blender
- Adobe Photoshop
- Flash

...

you select the better programs for your team

Propietary engine. Disadvantages

Propietary engine. Disadvantages

Developing a good engine is a very hard task

- Difference between knowledge and how to organize all that knowledge
- Constant code review
- Needs more people that it seems
- Every time a new feature is added another feature can become affected
- Basic stuff: memory management, memory leaks, profiling, debugging tools
- It must be easy to use by the final user

Propietary engine. Disadvantages

Cross platform engines are harder to develop

It is hard to find suitable people

Easy to make mistakes good coders usually avoid: code duplication, macro abuse...

The code must be reviewed more than ever. Any change done in any platform can affect the others

Propietary engine. Disadvantages

A good technology is not enought, it must come with good tools: editors, exporters/importers, resource managers, localization tools...

The tools must be tested and reviewed

Scalability

They need to be easy to use (even by non programmers)

Propietary engine. Disadvantages

Delegating too much tasks into one only person

If that person leaves the company there will be caos

The documentation left is not enought, but it is better than noting

Propietary engine. Disadvantages

Better programmers =>

experienced progammers =>

more expensive programmers

Propietary engine. Disadvantages

Last time bugs hard to get solved with time constraints: memory overflow, stack overflow…

Errors easy to detect but hard to prevent from happening, specially when the code comes from juniors

Technology bugs never happen until the last minute

Use of horrible hacks because of no time to fix things properly

Propietary engine. Disadvantages

Suffer beta technologies

Working with new technologies on their early stages can be a nightmare

Working with new technologies on earlier stages (not publically available) can be a worst nightmare

Propietary engine. Disadvantages

Not too much help or maybe no help at all

Fixing issues that doesn't appear on a simple google search

Propietary engine. Disadvantages

New people need to be taught to use the technology

Even if they are experienced programmers, they need some time to learn the technology

Commercial engine.Advantages

Commercial engine. Advantages

Technology already implemented

No need for a technology department

No need to worry about common assets importation: meshes, textures, sounds, etc

Commercial engine. Advantages

Cross platform support without expending any time on it (most commercial engines are cross platform nowadays)

Unity3D: Windows, Android, IOS, Flash, BlackBerry… and many more, including incoming devices

Commercial engine. Advantages

Tested technology

Before a new version is realeased it is tested by the technology provider

Because there are lots of users bugs and workarounds are shared very fast on the net

If there is a serious bug a new version is released

Commercial engine. Advantages

Very well documentation

It comes with examples

You can search more examples on the internet done by other users

Commercial engine. Advantages

Less experienced programmers

Cheaper

Some commercial engines like Unity are very accesible. People with no previous coding experience can develop games without extra help

Commercial engine. Advantages

A good engine comes with good tools

Editors, exporters…

A good scene editor can be decisive when choosing an engine

Commercial engine. Advantages

Faster knowledge adquisition than writing things from scratch

- Physics
- Shaders
- Networking
-...

Commercial engine. Advantages

Tasks from different departments unified

- programming
- design
- art
- sound

Commercial engine. Advantages

It is easier to find new people

Because these technologies are used on many companies and even publically available it is easy to find people that already worked with them (even at home)

Commercial engine. Advantages

You can sell your scripts as another source of income

Unity Asset Store

Commercial engine. Disadvantages

Commercial engine. Disadvantages

You never have everything that you need: advertising, in app purchasing, analytics, push notifications…

You end up needing people with certain knowledge (objective C, Java, XCode, Eclipse)

Commercial engine. Disadvantages

Not access to the source code can limit the final user to improve performance in some scenarios

Limited by the engine implementation

Even with source code access one can be limited by its architecture

Commercial engine. Disadvantages

Only most popular platforms are supported

Loss of opportunities not being able to port a game into an emerging platform

Commercial engine. Disadvantages

Some bugs take months to be fixed

Finally when they are fixed your code has a lot of workarounds

Wish lists are a good idea, but some of them even seeming pretty obvious take time to be done

Commercial engine. Disadvantages

Commercial engines are not free

Unity costs 1500$ + 1500$ per platform(IOS + Android = $3000). Per seat. Upgrading to a newer version has an extra cost of $750 + $750 per platform. Basic license (free)doesn't give you support to native plugins (no in apps, no adds…)

Udk costs $99 until $50000 profit, then it is 25% of total profit. Android is not included, you need an unreal engine license

Don't forget Apple and Google costs (yearly license plus profit percentage)

Commercial engine. Disadvantages

People that never coded before now do it

- Unexperienced programmers, even with no training at all: inheritance, polymorphism, pointers, memory management, design patterns…
- Low maths level
- Not used to read and get doccumented
- Ugly code: code duplication, poor design, no comments, bad code formatting, no scalability… if it works that's fine

Commercial engine. Disadvantages

Copy paste abusing

Scripts are bought or downloaded without knowing how they work. No knowledge involved

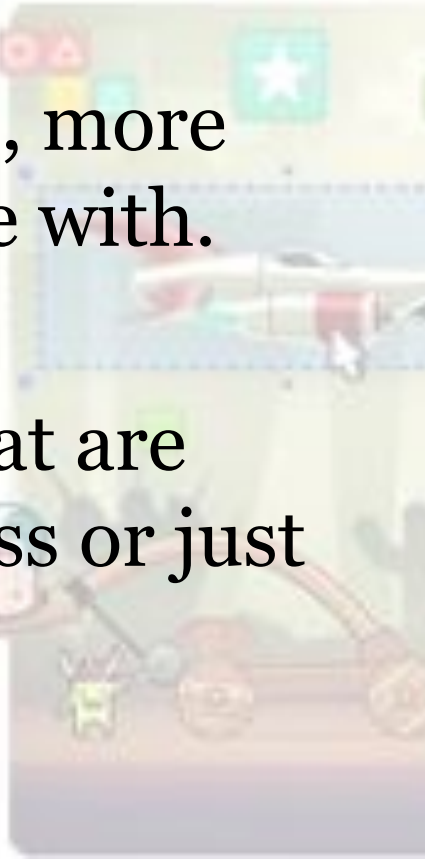
Bad implemented scripts are shared again and again

Commercial engine. Disadvantages

Accessibility has saturated the market

Every day there are more (good) games, more companies and more people to compete with.

It is impossible to play all the games that are released every day, it is harder to success or just earn some money



Commercial engine. Disadvantages

Dependency on the company that developes the engine. If it is shutted down is a problem for you

Doubts, Questions

Thank you very much

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