Game Audio Middleware

Leonard J. Paul
Vancouver, Canada
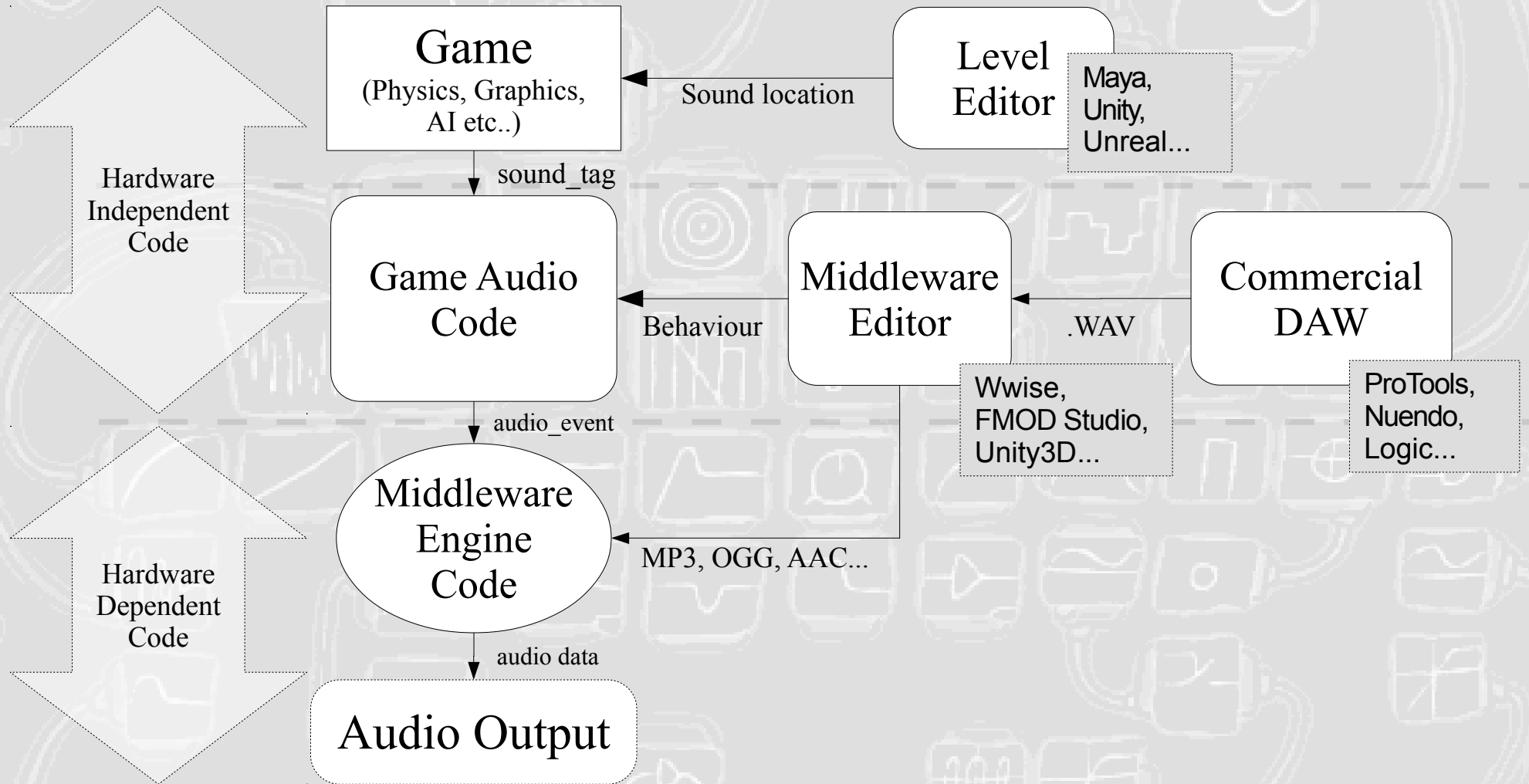
School of Video Game Audio

VideoGameAudio.com

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Game Audio Flowchart

Game
(Physics, Graphics, AI etc..)

Level Editor

Sound location

Maya, Unity, Unreal...

sound_tag

Game Audio Code

Middleware Editor

Commercial DAW

Behaviour

.WAV

Wwise, FMOD Studio, Unity3D...

ProTools, Nuendo, Logic...

audio_event

Middleware Engine Code

MP3, OGG, AAC...

audio data

Audio Output

Hardware Independent Code

Hardware Dependent Code

Wwise

Wwise

- Audiokinetic is based in Montréal

- Launched 2006

- 900+ page manual

- Forum: https://www.audiokinetic.com/qa/

- Authoring tool available for PC & Mac

- Plugins for Unity, Unreal, CryEngine & more

- AkCube open source game available (Mac/PC)
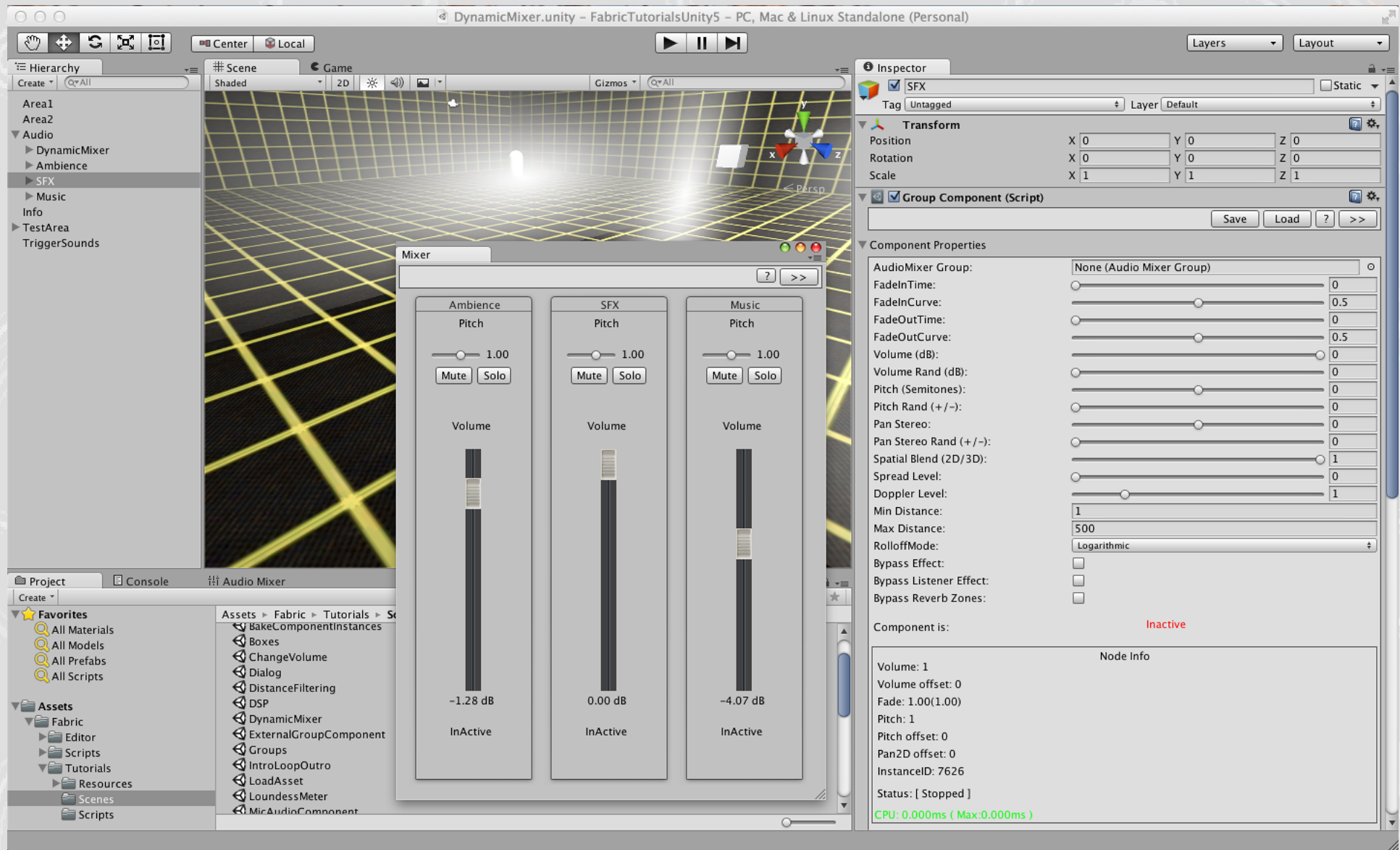
- Limbo demo game available for PC

FMOD Studio

FMOD.org

FMOD Studio

- Firelight Technologies is based in Melbourne, Australia

- Launched 2012

- 200+ page manual

- Forum: http://www.fmod.org/support/qa/

- Authoring tool available for PC & Mac

- Plugins for Unity & Unreal

- EarthWarrior3D open source PC game available

Fabric

Fabric Audio

- Tazman Audio is based in Brighton, UK

- Launched version 1.0 in 2011

- 50+ page manual

- Forum:
  http://www.tazman-audio.co.uk/#!moot-forum/c1nh8

- Runs on all Unity platforms

- Unity 5 demos available

- Will be released as a stand-alone soon

Pure Data

Pure Data

- Pure Data by Miller Puckette in San Diego

- Launched in 1996

- *Designing Sound* by Andy Farnell is a good reference book and is 600+ pages

- Forum: http://forum.pdpatchrepo.info/

- Android, iOS, Mac & Windows platforms

- Runs on PC & Mac with Unity

- In early development but free & open source

Usage Comparison Chart

Middleware Use in Large & Indie Titles
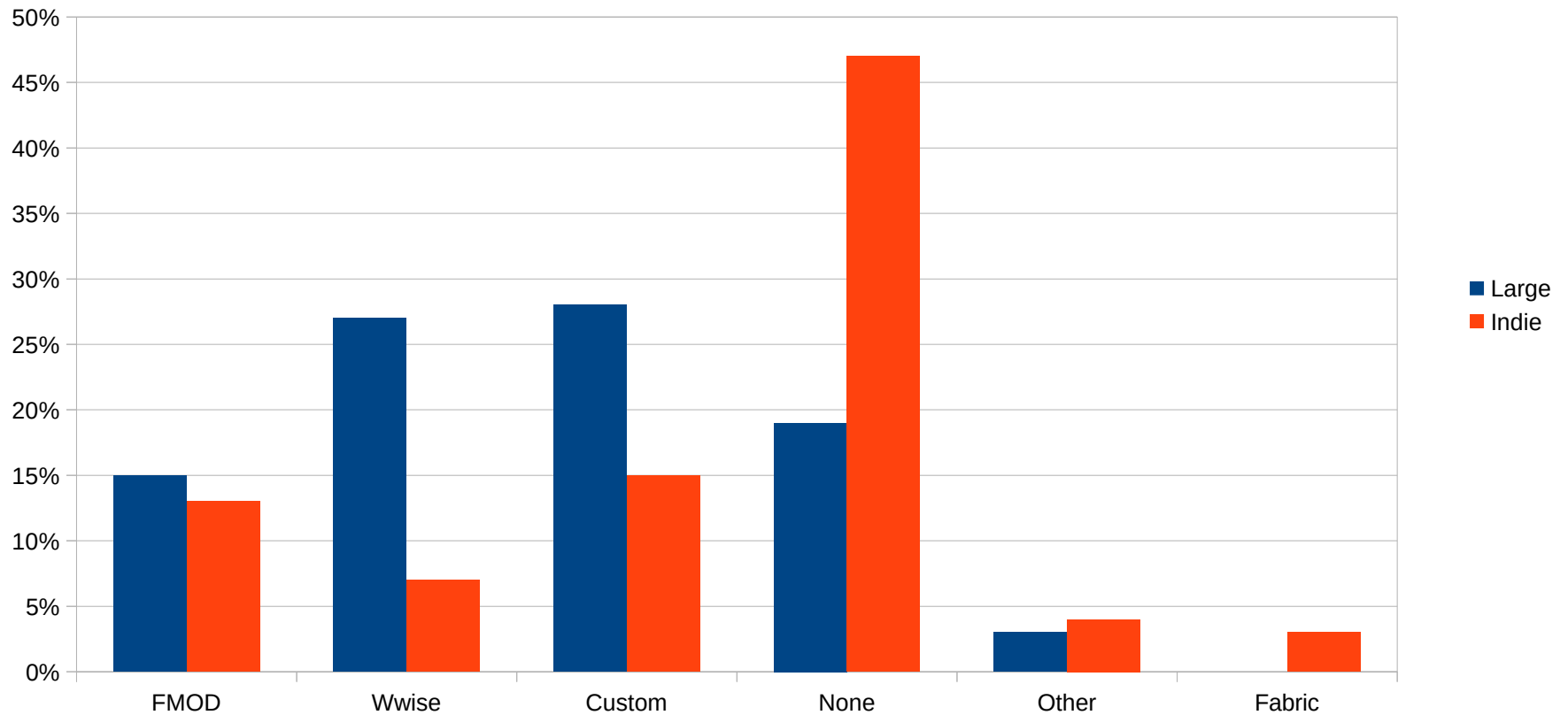
From GameSoundCon 2014 Survey of 500+ game audio professionals

Cost Comparison Chart

First Tier Budget Ranges

■ Budget Low　■ Budget High

Fabric	Budget High: $500,000 / Budget Low: $100,000
FMOD Studio	Budget High: $500,000 / Budget Low: $100,000
Wwise	Budget High: $1,500,000 / Budget Low: $150,000

$0　　$500,000　　$1,000,000　　$1,500,000　　$2,000,000
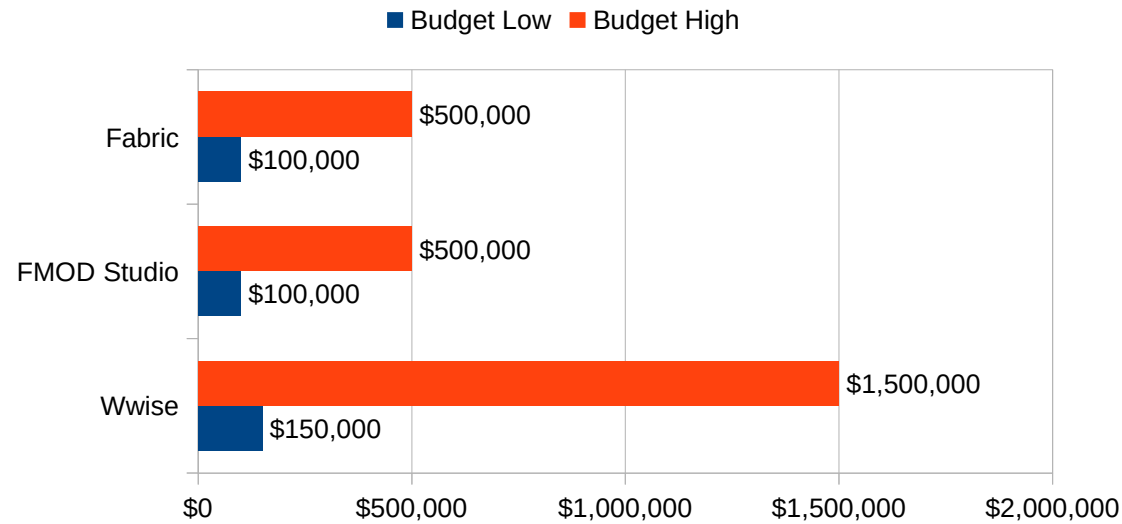
* Free version of Wwise only supports 200 sound objects

■ First Tier Cost

Wwise	~$750
Fabric	~$2,400
FMOD Studio	~$3,000

$0　$500　$1,000　$1,500　$2,000　$2,500　$3,000　$3,500

Tier Cost is per platform
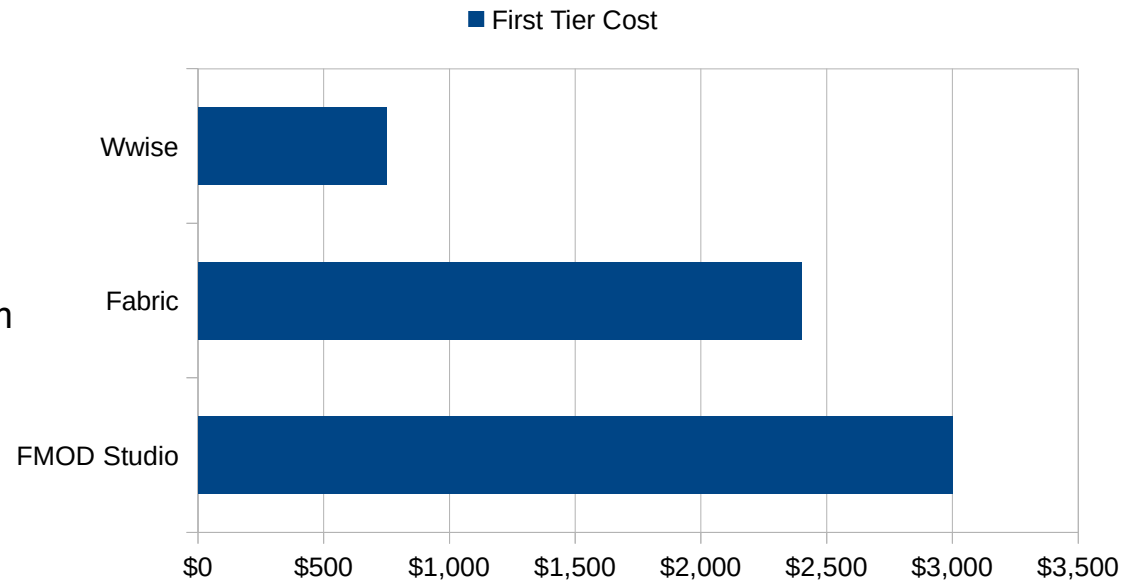
Platform Comparison Chart

	Wwise Free	Wwise Paid	FMOD Free	FMOD Paid	Fabric	Pure Data
Android	✓	✓	✓	✓	✓	✓
iOS	✓	✓	✓	✓	✓	✓
Linux	✓	✓	✓	✓	✓	
Mac	✓	✓	✓	✓	✓	✓
Windows	✓	✓	✓	✓	✓	✓
Windows Phone 8	✓	✓	✓	✓	✓	
3DS		✓		✓		
Wii		✓		✓		
Wii U		✓		✓	✓	
PS3		✓		✓	✓	
PS4		✓		✓	✓	
PS Vita		✓		✓	✓	
Xbox One		✓		✓	✓	
Xbox 360		✓		✓	✓	
BlackBerry			✓	✓	✓	
PSP				✓		
Google Native Client			✓	✓		
Oculus Rift					✓	
Gear VR					✓	
Android TV					✓	
Samsung SMART TV					✓	
Tizen					✓	

Which to Choose?

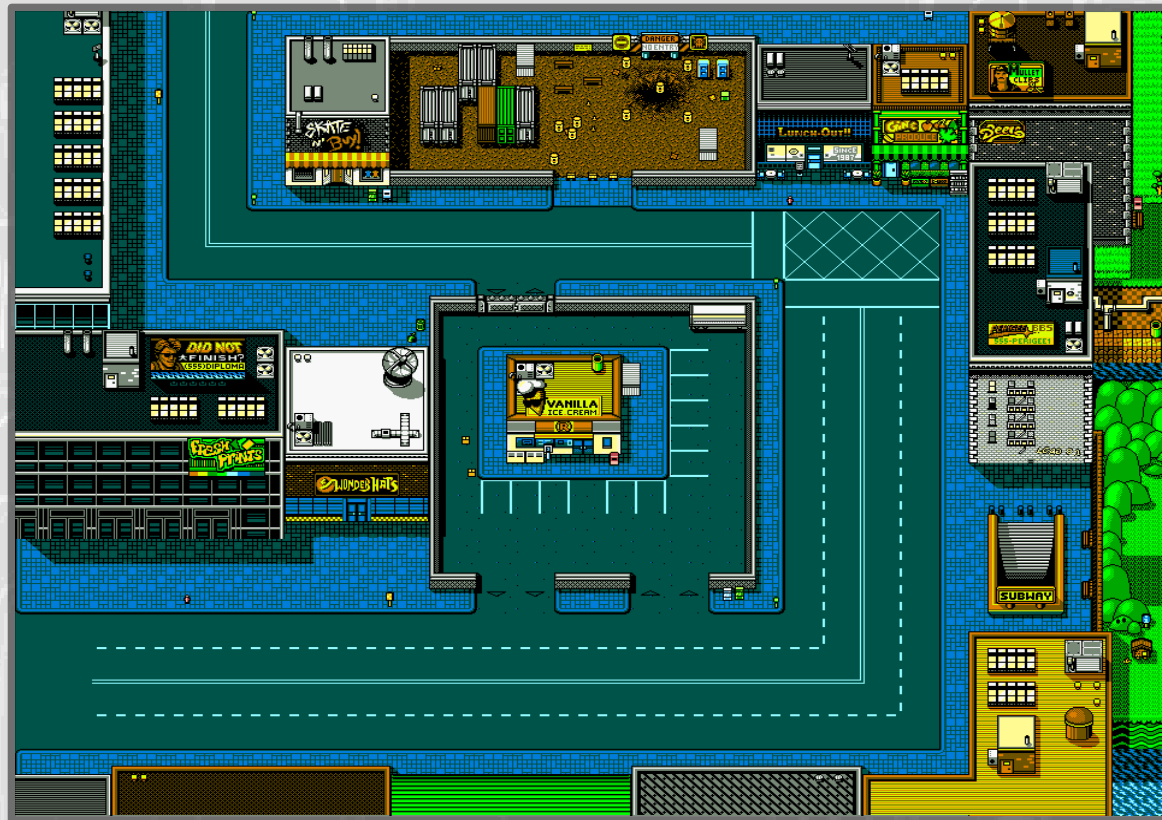- Wwise used more for AAA games & overall

- FMOD Studio used more with indies

- Fabric supports all Unity platforms

- Pure Data is free but risky

- All solutions lower time & cost to developers

Indie Games = Make your Own :)

- *Retro City Rampage*

RetroCityRampage.com

Questions ?

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