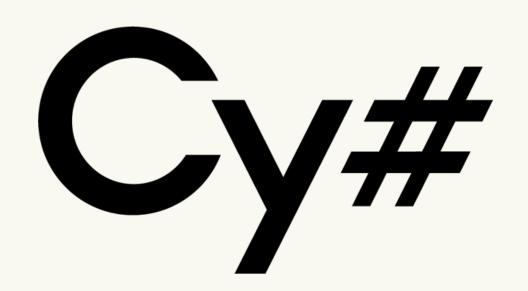# About Speaker

- Yoshifumi Kawai / @neuecc
  - Cysharp, Inc. – CEO/CTO
  - http://cysharp.com/
    - Subsidiary of Cygames. Focusing C# language(.NET and Unity).

- Creating Many(50+) Open Source Libraries
  - MessagePack for C#, UniRx, UniTask, MagicOnion, etc...
    - MessagePack for C# is built into Visual Studio, used in Microsoft SignalR
    - UniRx, UniTask are used in many Unity games

What is Open Source Software?

- Like an AAA Games
    - Hosted on famous foundations(Apache, CNCF, etc...)
    - Hosted by big techs(Microsoft, Google, etc...)

- Like an Indie Games
    - One person or a small team
    - Few persons on small-mid company

Which do you imagine?

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What is Open Source Software ?

- Like an AAA Games
  - Hosted on famous founda
  - Hosted by big techs(Mic.

> Both are important!
> Just as AAA games are not the only games, there are many other small pieces of software that make up the technology ecosystem!

- Like an Indie Games
  - One person or a small team
  - Few persons on sma   pany

> Today's session will be based on my experience.
> Therefore, I will be talking about this side.

Agenda

- My History with Open Source

- Career Development with Open Source
  - for Individual
  - for Company1
  - for Company2

- Important thing to make a successful Open Source

- Important thing to keep maintenance Open Source

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My History with Open Source

List of Libraries(1/7)

#01 2009-04-04 **linq.js**

LINQ for JavaScript. https://github.com/neuecc/linq.js

#02 2009-10-29 **AnonymousComparer**

Lambda compare selector for Linq. https://github.com/neuecc/AnonymousComparer

#03 2010-04-07 **DbExecutor**

Simple and Lightweight Database Executor. https://github.com/neuecc/DbExecutor

#04 2010-04-30 **DynamicJson**

dynamic json structure for C# 4.0. https://github.com/neuecc/DynamicJson

#05 2010-07-15 **XStreamingReader**

Xml Stream(XmlReader) to IEnumerable. https://github.com/neuecc/XStreamingReader

#06 2010-09-12 **ReactiveOAuth**

OAuth library for .NET Framework, SL, WP7. https://github.com/neuecc/ReactiveOAuth

#07 2011-02-22 **ChainingAssertion**

Method Chaining base UnitTesting Extension. https://github.com/neuecc/ChainingAssertion

#08 2011-10-17 **ReactiveProperty**

Rx based self notify property. https://github.com/runceel/ReactiveProperty

List of Libraries(2/7)

#09 2012-02-18 **ImplicitQueryString**

Magic for QueryString parsing. https://github.com/neuecc/ImplicitQueryString

#10 2012-04-02 **HashMapper**

Object-Hash Mapper for Redis and BookSleeve. http://hashmapper.codeplex.com/

#11 2012-12-03 **MemcachedTranscoder**

C# Memcached Transcoders. https://github.com/neuecc/MemcachedTranscoder

#12 2013-02-27 **AsyncOAuth**

HttpClient based OAuth library. https://github.com/neuecc/AsyncOAuth

CTO of Grani, Inc.

#13 2013-04-05 **CloudStructures**

Redis Client based on StackExchange.Redis. https://github.com/xin9le/CloudStructures

#14 2013-12-06 **OwinRequestScopeContext**

RequestScopeContext like HttpContext. https://github.com/neuecc/OwinRequestScopeContext

#15 2013-12-08 **Owin.RedisSession**

Redis Session Provider for Owin. https://github.com/neuecc/Owin.RedisSession

#16 2013-12-23 **LightNode**

Micro RPC/REST Framework built on OWIN. https://github.com/neuecc/LightNode

List of Libraries(3/7)

#17 2013-12-23 **RespClient**

Minimal RESP(REdis Serialization Protocol) client. https://github.com/neuecc/RespClient

#18 2014-05-28 **UniRx**

Reactive Extensions for Unity. https://github.com/neuecc/UniRx

Big hit in Unity(★5700)

#19 2014-09-24 **LINQ to BigQuery**

C# LINQ Provider for Google BigQuery. https://github.com/neuecc/LINQ-to-BigQuery

#20 2014-10-28 **LINQ to GameObject**

Traverse GameObject Hierarchy by LINQ. https://github.com/neuecc/LINQ-to-GameObject-for-Unity

#21 2015-01-14 **Open on GitHub**

Visual Studio Extension for opening files on GitHub.com. https://github.com/neuecc/Open-on-GitHub

#22 2015-03-30 **NotifyPropertyChangedGenerator**

INotifyPropertyChanged Gen by RoslynAnalyzer. https://github.com/neuecc/NotifyPropertyChangedGenerator

#23 2015-11-03 **EtwStream**

Logs are event streams, control logs by Reactive Extensions. https://github.com/neuecc/EtwStream

#24 2016-03-18 **SerializableDictionary**

SerializableCollections for Unity. https://github.com/neuecc/SerializableDictionary

List of Libraries(4/7)

#25 2016-05-23 **MarkdownGenerator**

Generate markdown from C# binary & xml document. https://github.com/neuecc/MarkdownGenerator

#26 2016-05-31 **PhotonWire**

Typed Asynchronous RPC Layer for Photon Server + Unity. https://github.com/neuecc/PhotonWire

#27 2016-06-07 **ObserveEveryValueChanged**

Voodoo Magic for WPF. https://github.com/neuecc/ObserveEveryValueChanged

#28 2016-11-08 **ZeroFormatter**

Fastest C# Serializer and Infinitely Fast Deserializer. https://github.com/neuecc/ZeroFormatter

#29 2017-01-09 **MasterMemory**

Embedded Readonly In-Memory Document Database. https://github.com/Cysharp/MasterMemory

#30 2017-03-05 **RuntimeUnitTestToolkit**

Unity unit test framework focused on run play time. https://github.com/Cysharp/RuntimeUnitTestToolkit

#31 2017-03-13 **MessagePack for C#**

Extremely Fast MessagePack Serializer for C#. https://github.com/neuecc/MessagePack-CSharp

#32 2017-04-20 **ReMotion**

Hyper Fast Reactive Tween Engine for Unity. https://github.com/neuecc/ReMotion

Most starred binary serializer in .NET

List of Libraries(5/7)

#33 2017-04-24 **DatadogSharp**

Yet another C# Datadog client that supports DogStatsD and APM. https://github.com/neuecc/DatadogSharp

#34 2017-06-05 **MagicOnion**

Unified Realtime/API Engine for .NET Core and Unity. https://github.com/Cysharp/MagicOnion

#35 2017-07-09 **MicroResolver**

Extremely Fast Dependency Injection Library. https://github.com/neuecc/MicroResolver

#36 2017-08-18 **MySqlSharp**

Extremely Fast MySQL Driver for C#(work in progress). https://github.com/neuecc/MySqlSharp

#37 2017-09-27 **Utf8Json**

Definitely Fastest and Zero Allocation JSON Serializer for C#. https://github.com/neuecc/Utf8Json

#38 2018-02-16 **HyperMapper**

CEO of Cysharp, Inc.

An alternative to AutoMapper, Hyper fast object-to-object mapper. https://github.com/neuecc/HyperMapper

#39 2019-04-05 **ConsoleAppFramework**

Micro-framework for Cli tools/Daemon/Batch. https://github.com/Cysharp/ConsoleAppFramework

#40 2019-03-28 **Ulid**

Fast .NET Standard(C#) Implementation of ULID. https://github.com/Cysharp/Ulid

List of Libraries(6/7)

#41 2019-05-06 **RandomFixtureKit**

Fill random/edge-case value to target type for unit testing. https://github.com/Cysharp/RandomFixtureKit

#42 2019-05-27 **LitJWT**

Lightweight, Fast JWT(JSON Web Token) implementation. https://github.com/Cysharp/LitJWT

#43 2019-06-06 **UniTask**

Provides an efficient allocation free async/await integration to Unity. https://github.com/Cysharp/UniTask

My most recommended library in Unity(★2856)

#44 2019-08-26 **ValueTaskSupplement**

Append supplemental methods to ValueTask. https://github.com/Cysh

#45 2020-01-30 **ProcessX**

Simplify call an external process with the async streams. https://github.com/Cysharp/ProcessX

#46 2020-02-19 **ZString**

Zero Allocation StringBuilder for .NET Core and Unity. https://github.com/Cysharp/ZString

#47 2020-05-01 **ZLogger**

Zero Allocation Text/Structured Logger. https://github.com/Cysharp/ZLogger

#48 2020-12-15 **UnitGenerator**

C# Source Generator to create value-object. https://github.com/Cysharp/UnitGenerator

List of Libraries(7/7)

#49 2021-04-26 **MessagePipe**

High performance in-memory/distributed messaging pipeline. https://github.com/Cysharp/MessagePipe

#50 2021-09-03 **ObservableCollections**

High performance observable collections. https://github.com/Cysharp/ObservableCollections

#51 2021-12-22 **NativeMemoryArray**

Native-memory backed array for .NET and Unity. https://github.com/Cysharp/NativeMemoryArray

#52 2022-01-10 **WebSerializer**

Convert object into QueryString/FormUrlEncodedContent. https://github.com/Cysharp/WebSerializer

#53 2022-02-28 **DFrame**

Distributed load testing framework for .NET and Unity. https://github.com/Cysharp/DFrame

latest one(released at last month)

Early days

- At first, just a passion for C#

- OSS is a portfolio that tells you who I am
  - LINQ specialist(linq.js)
  - Deep knowledge in C#(various C# libraries)

- Helps to go deeper into the community
  - Information gathers to those who disseminate it
  - Easy to understand your skill when changing jobs

Be aware of what you show

- Keeping to the public has produced technical growth
- Always aware that people would use it, not only for me
    - No matter how small, releasing a product is a great experience. In order to maximize that experience, you need to write code with an awareness of how people will use it, how to present it, and what features to include to make it a selling point.

CTO of Grani, Inc.

- Initial member of an independent game company
  - Grew from 10 to 100 employees in 5 years, then acquired

- I want to be part of the management team and grow the company significantly.
- We want to hire strong people for this purpose, but is there an attraction for them to come to our small startup?

Open Source as technical branding

- Proof that we are doing great things with C#

- If you don't keep going, you'll soon be forgotten
  - Most company stop after the first one doesn't work out
  - Most company, even if you do well, you can't keep going
  - Need to consider that allows for continued release

Separate with to Open Source in mind

- Difficult to separate from internal code after complete
  - Cannot allocate costs for separation
  - Forks for OSS are extremely difficult to maintenance

- Separate and create them in units that can be converted into libraries from the beginning.
  - In other words, we need a declaration that we will do Open Source as a company "from the beginning".

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Open Source as an internal appeal

- Dev team doesn't want to use internal library!
  - Old-fashioned, right?
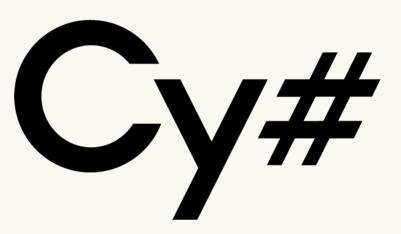 - I can quickly make better one on my own, but what?

- If you put it out there for external use and get welcomed, it can be persuasive for internal use.

CEO of Cysharp, Inc.

- Established as a subsidiary of a large game company
  - Independence and R&D as a company specializing in C#

- Aiming to become even more specialized in development than before
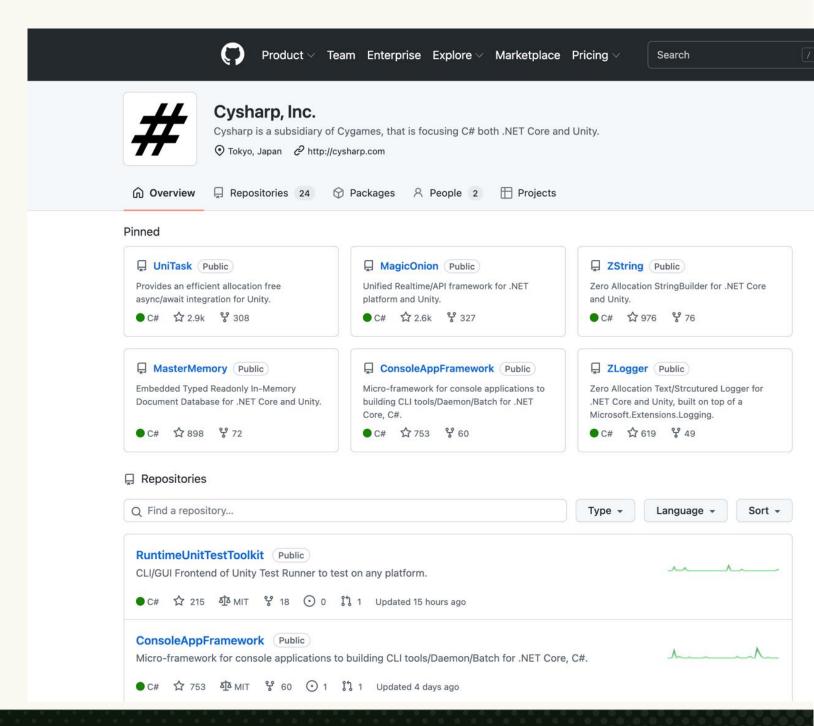
Motivation of Cysharp

- Boost the C# ecosystem

- To get people to choose C# among various languages
  - Makes people choose C# because of exists Cysharp's library collections
  - Areas where large companies like Microsoft and Unity cannot make it.

And we will create a scene where the excitement of C# itself will indirectly benefit Cysharp.

Our Open Source on GitHub

https://github.com/Cysharp

24 Open Source on GitHub
★10776 Total Starred

Important thing to make a successful Open Source

Loooong ReadMe

- No one is interested in you (at first)

- Short ReadMe and links to documentation
  - They don't go to the links and they don't understand what the library does

- One chance to put it all on the line!
  - Scrolling is still more visible than link

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Simple is better

- Nobody wants the most powerful framework that can do a lot of things.

- Many people want to complement what's missing in my toolset with minimal dependencies and minimal functionality.

- Don't be afraid to be small! That's rather a strength!

Smaller ones cannot produce Big Tech. But it is very important to have many of them in the ecosystem.

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Easy-to-understand differentiation

- Why dare to include another library (dependency)?
- It is important to have an easily recognizable personality

- Ported from another language -> not in that language's ecosystem
- Single function (simple/easy) -> less complex = best functionality
- High Performance -> Performance = Best Features

Important thing to keep maintenance Open Source

Open Source itself is not profitable

- Many problems in the most recent
  - faker.js/colors.js -> Uploaded malicious code as a result of not receiving donations
  - log4j2 -> Free response to vulnerability issues
  - Babel -> Difficult to hire full time engineers

- Have a proper way to get revenue from another business

Maintenance is hard

- It's harder to keep going than it is to start

- Pro bono service is inevitably exhausting

- When you publish a large number of libraries, you inevitably get in over your head

- Lack of interest in old code

- Alternative maintainers cannot always be found

Use Stale

- It is hard to Close without accepting Issues and PRs
- So, be sure to set the stale!
  - https://github.com/actions/stale
- Automatically closes if no response is received for a certain period of time
  - Automatically Close is not heartbreaking for either you or the person who sent it out

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Conclusion

Advance the world

- Everyone is part of the technology ecosystem
- What you create becomes a reference for someone in the future
- But mere passion is not enough to keep us going!
  - What leads to your success leads to a good future!
- I hope this session will be one of your guides