

What boost and Qt could learn from each other

Jens Weller

Italian C++ Conference 2017
Meeting C++
@meetingcpp

Thanks to the sponsors!

Bloomberg

 abacogroup.eu

 |  CONAN
C/C++ package manager



think-cell 

 KDAB

 RECOGNITION
ROBOTICS
The Visual Guidance Company

Introduction



- * '81
- C++ since '98
- was a C++ Freelancer
- Meeting C++
- C++ Evangelist
 - Supporting C++ UGs
 - Social Media
 - global Network for C++

Lets get started!

- Introduction
- Comparing
 - boost & Qt
- What could Qt learn?
- What could boost learn?
- Today?
- Focus on boost...

Expectations

- From the C++Now reviews...
 - "What mistakes in QT can Boost community learn from?"
 - "I am also not sure what Boost can learn from Qt other than what to avoid, which would be good for Boost."

Expectations



((Jon Kalb))
 @_JonKalb

Following



We need better communication between the Qt and mainstream C++ communities. No one better to do that then Jens.

@meetingcpp #CppNow

CPPNow @cppnow

Boost vs Qt: What Could They Learn From Each Other? by Jens Weller
 @meetingcpp cppnow.org cppnow2017.sched.com/event/A8J5/boo... #CppNow
 #Cpp

Survey on usage...



Meeting C++

@meetingcpp

Following



Qt vs Boost, short survey on usage for my
[@cppnow](#) talk!

Do you use...

[#Thursdaysurvey](#)

[#cpp](#)

[#cplusplus](#)

37% boost

22% Qt

22% boost & Qt

19% none of the above

337 votes • Final results

Boost

- Strong connection
 - Standard
 - Committee
- Collection of Libraries
 - loose coupling
 - modularization?



Qt

- Qt
 - based on its own ideas
 - OOP influenced
 - “JDK of C++”
- Application Framework
 - provide everything



History & Background



- founded in '98/99
- volunteer driven
- open source
- released in '95
- commercial + volunteers
- LGPL/commercial

Coding style



- what, you can do that?
- Pioneer mindset
- Modern C++
- non idiomatic
- only mature features!
- easy to understand
- binary compatibility
- OOP
 - public APIs
 - private APIs

Events & Marketing

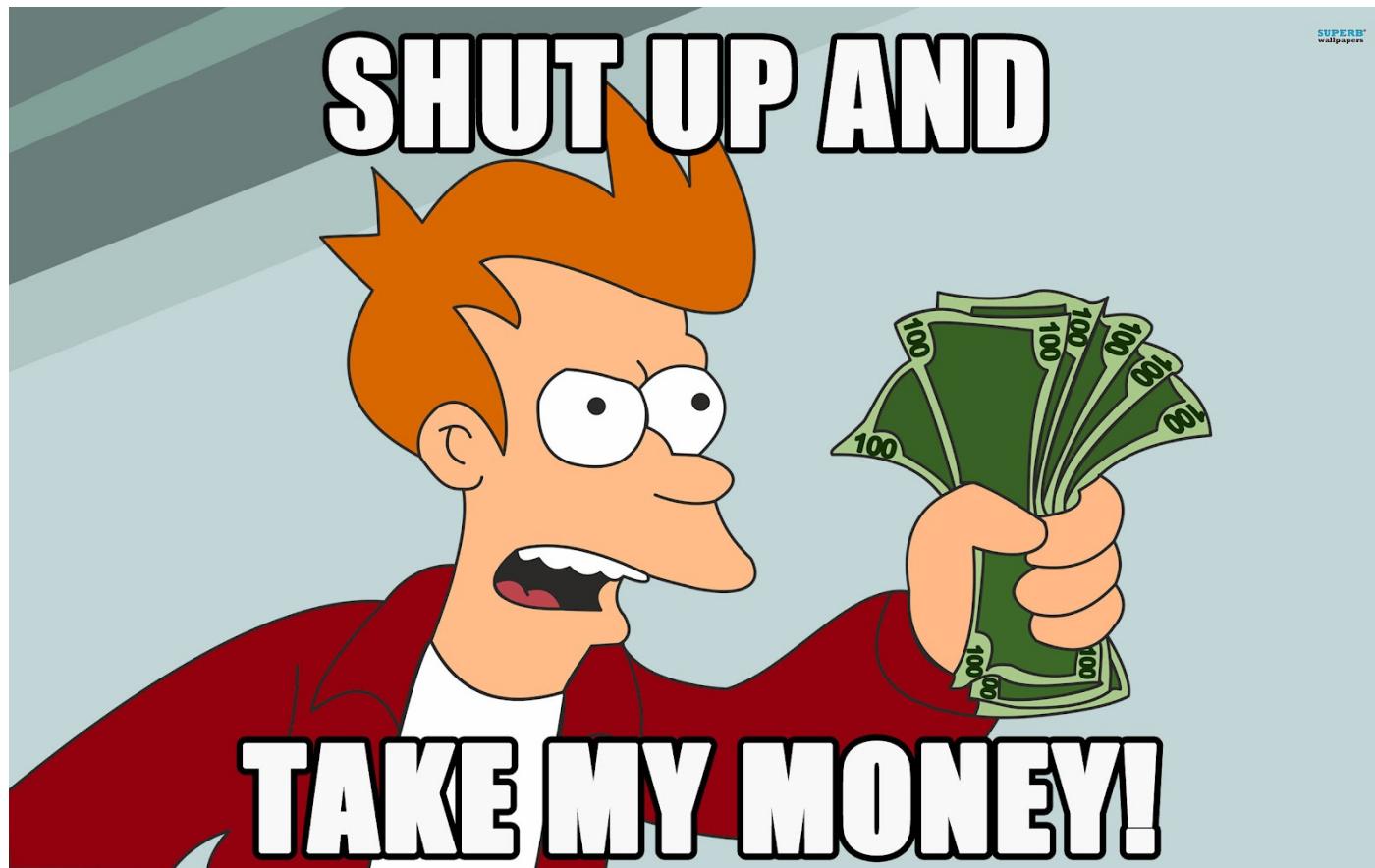


- boostcon
 - RIP '2012
- C++Now 2017
 - 1 boost talk
- Marketing
 - Social Media?
 - no blog
- Events
 - Qt World Summit
 - North America / Europe
 - Asia (China, Japan)
 - Akademy
 - KDE/Qt Community gathering
 - Booth at
 - Embedded World
- Marketing
 - Blog
 - Social Media
 - paid support

Boost pro?



Professional Support?



Boils down to...



- Library focus
 - Application focus
 - Library mindset
 - External Stakeholders
 - KDE
 - Commercial Ecosystem
 - Qt Company, KDAB, ICS, Woboq,...

Code written...



Meeting C++

@meetingcpp

Following



Which C++ code do you write the most?
(tests?->what is the test for?)

#thursdaysurvey

#cpp

#cplusplus

16% generic library code

12% library code

65% application code

7% generic application code

235 votes • Final results

Copy a Directory



- filesystem can
 - ~~copy_directory~~
 - ~~copy~~
- QDir/QFile can
 - nope.

Copy a Directory

- C++17
 - `void copy(const path& from, const path& to, copy_options options);`
- `copy_options`

```
enum class copy_options {  
    none = 0,  
    skip_existing = 1,  
    overwrite_existing = 2,  
    update_existing = 4,  
    recursive = 8,   copy_symlinks = 16,  
    skip_symlinks = 32,  directories_only = 64,  
    create_symlinks = 128,  create_hard_links = 256  
};
```

The new Standards



- Migration of many libs to the std or core language
- Great std support for legacy code
- Thriving, active community?
- C++11 is mandatory
 - since 5.7
- Conservative
- Thriving, active community

boost & new standards



- Libraries in the C++14 Standard
 - 13(array,atomic,bind,lambdas,chrono,enable_if,foreach,function,random,regex,smart_ptr,thread,tuple)
- Libraries soon in the Standard
 - 7 (**any,asio,coroutine,filesystem, special math functions,range,variant**)
- Legacy, pre C++11 Libraries
 - MPL...
 - factory
 - serialization

monolithic boost

- You wanted:
 - bicycle
- boost
 - plane + hangar
 - car + garage
 - shoes
 - Motorcycle
 - Sailboat
 - Helicopter
 - ...



Same is true for Qt

... but its part of their goal of
being an application framework

The elephant...

- moc?
- reflection?
- boost
 - fusion
 - hana



The elephant...



What Qt should learn

- Have advanced
 - Features
 - Traits
 - Lambdas instead of boiler plate code
 - Templatized classes
- Embrace Standard C++
 - C++14 with Qt6.0?



Is nice to for beginners, but should also offer features for more advanced programmers

boost should learn

- better branding
 - marketing
 - community
 - growth
- Visibility
 - events
 - blogs/social media
 - Website
- Commercial outreach
 - BLOMP
 - Sponsoring?

High
resolution
logo?



- “SDK”
 - better devkits
 - Modular versions
- package managers

What both need...

Reflect on their role and mission in a constantly growing C++ Community.

Umbrella to the Standard

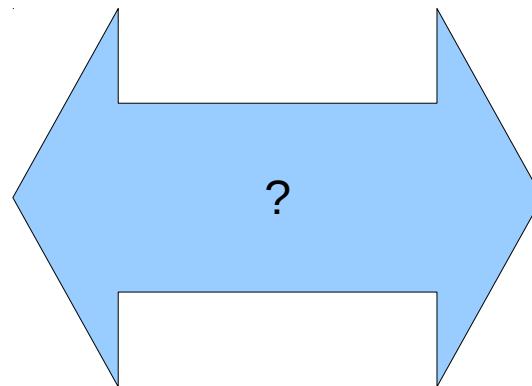
- The new, modern C++ is very popular
 - TMP
 - Brigand, Metal, boost::hana,
(...)
 - Other Examples
 - range-v3
 - modern json, taojson
 - GitHub is full of new libs
 - GSL
- ISO C++ limitations
 - slow
 - ISO itself
 - 3 year cycle is great

C++ Standardization

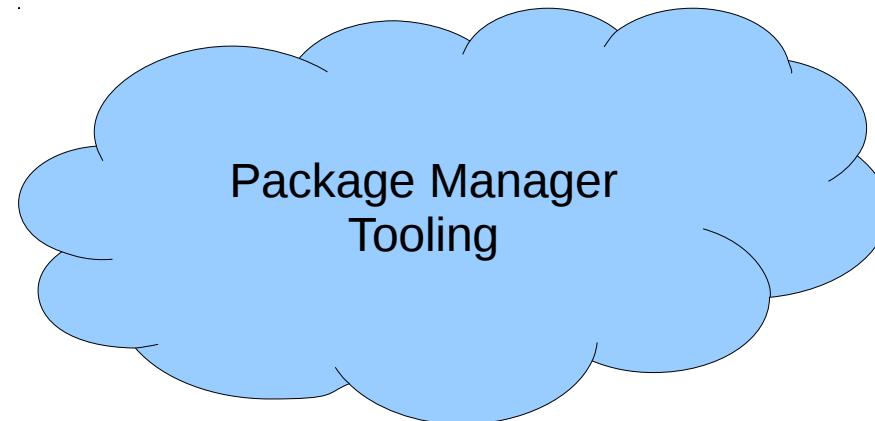


Quo vadis, C++?

- Libraries & Organisations
 - Boost, Qt, ...
- Guidelines
 - GSL



ISO C++
Committee



Thanks!

Questions?
Bonusslides?

Library Certification

- This is an idea
 - r/cpp_review
 - Review Community
 - List at Meeting C++

