



**Code less.  
Create more.  
Deploy everywhere.**

# **Qt: A Cross-Platform Application and UI Framework**

Tasuku Suzuki  
Qt Engineer, Nokia



# Who Am I?

<http://qt-project.org/member/175>

- Tasuku Suzuki
  - Qt Engineer, Nokia Japan
    - <http://qt.nokia.com/title-jp>
    - <http://labs.qt.nokia.co.jp/>
  - Qt user since 2002
  - Joined Trolltech in 2006
  - Nokia since 2008



# Agenda

- Qt
  - Qt / C++
  - Qt / Quick
- Qt 5
- Qt Project
- Q&A



# What is Qt?

<http://qt.nokia.com/>

- Application and UI Framework
  - C++ Class Libraries
  - Qt Quick for rapid UI creation
  - Qt Creator IDE
- Cross Platform
  - Desktop, Embedded and Mobile
- Open Source Project



# Cross Platform

**Linux/X11**

**Windows**

**Mac OS X**

**Linux/QWS**

**Windows CE**

**T-Kernel**

**INTEGRITY**

**QNX**

**vxWorks**

**MeeGo**

**Symbian**

**iOS**

**Android**

**BlackBerry**

**etc**



# Modular Class Library

<http://qt-project.org/doc/qt-4.8/modules.html>

**Unit test**

**Widgets(UI)**

**Qt Quick(UI)**

**Multimedia**

**WebKit**

**Scripting**

**Network**

**Database**

**XML**

**Core**



# User Interface

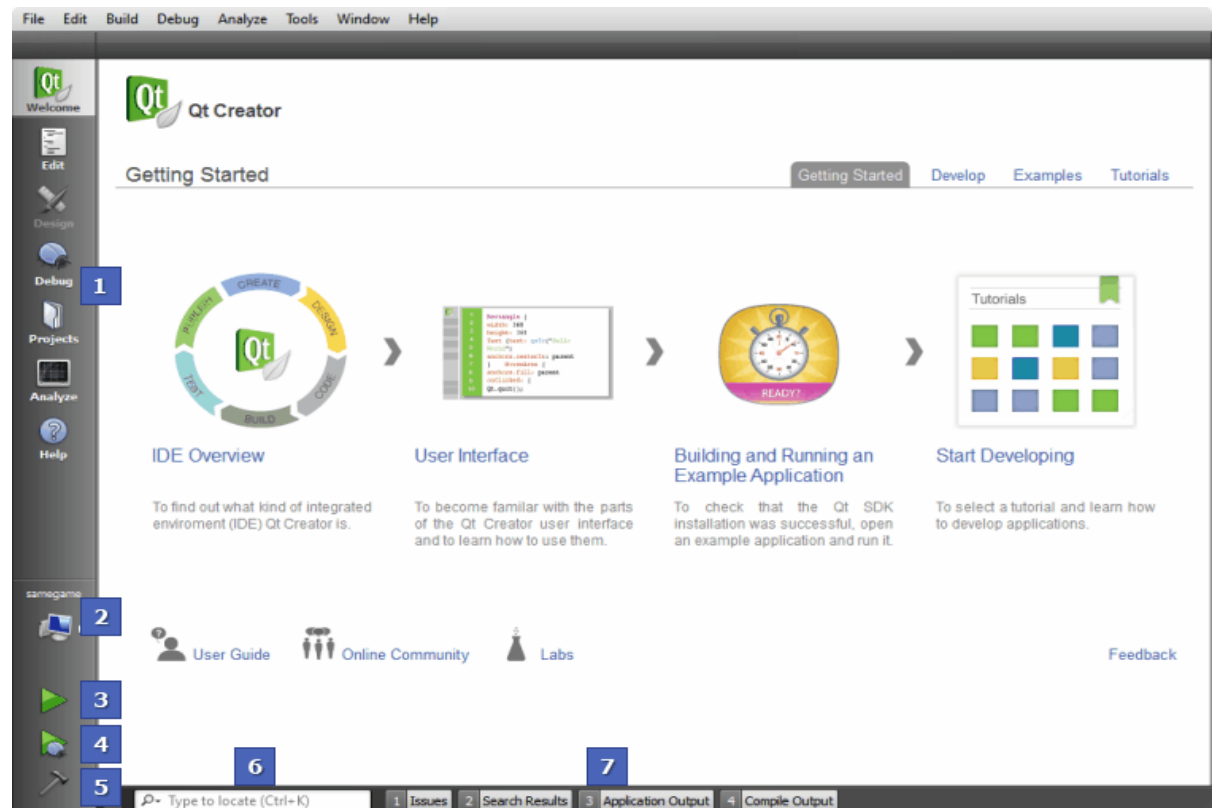
- Widgets
  - C++ (with UI Designer)
  - for Desktop applications
- Qt Quick
  - QML
  - for Embedded and Mobile UIs



# Getting Started!

<http://qt-project.org/downloads>

- Download and Install Qt SDK
  - Qt v4.8, Qt Creator (IDE) and more







# Widgets/C++

<http://qt-project.org/wiki/QtWhitepaper>

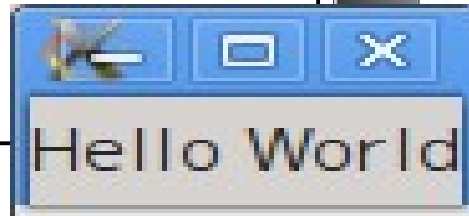
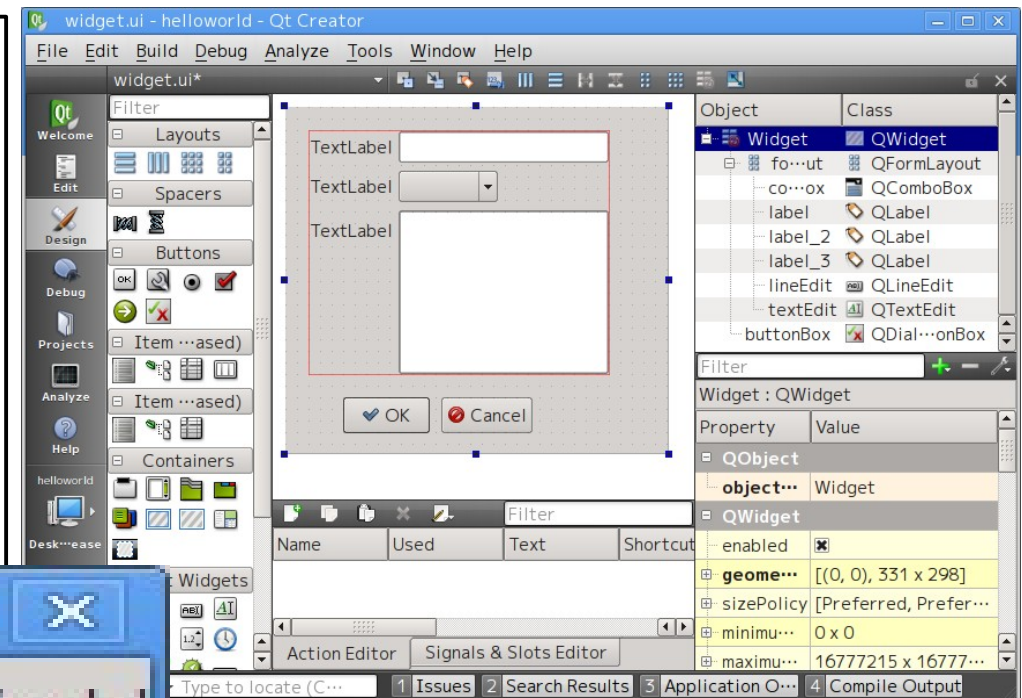
- Traditional way to build UI
- Large scale application w/ static UIs

```
#include <QApplication>
#include <QLabel>

int main(int argc, char **argv)
{
    QApplication app(argc, argv);

    QLabel label("Hello World");
    label.show();

    return app.exec();
}
```





# Qt Quick/QML

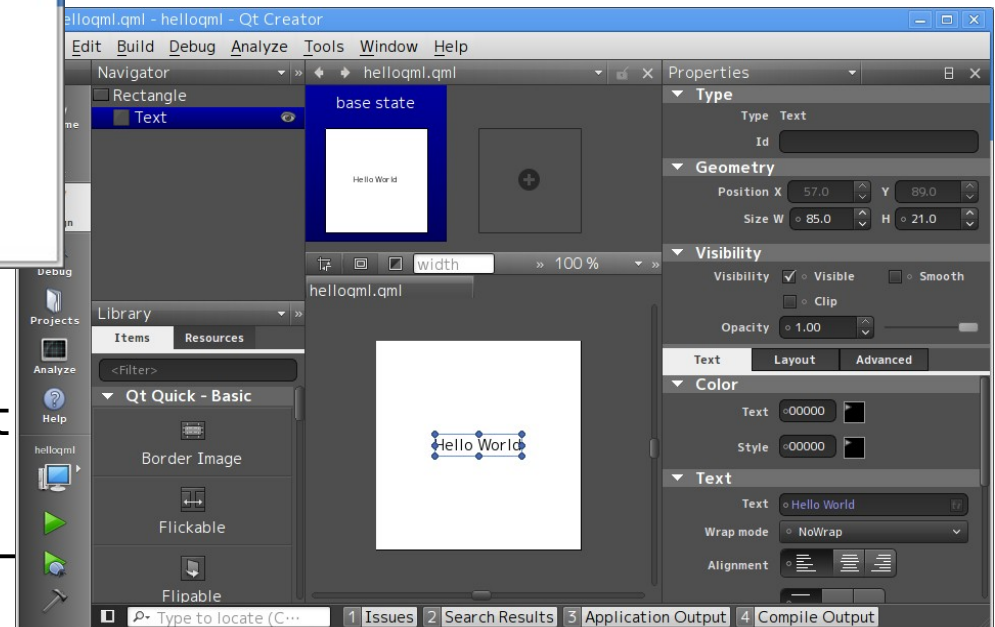
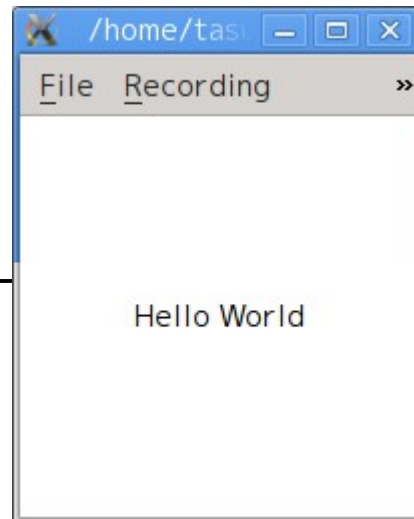
<http://qt-project.org/doc/qt-4.8/qml-intro.html>

- Rapid UI creation
- for touch based fluid UIs

```
import QtQuick 1.1

Rectangle {
    width: 200
    height: 200

    Text {
        text: "Hello World"
        anchors.centerIn: parent
    }
}
```

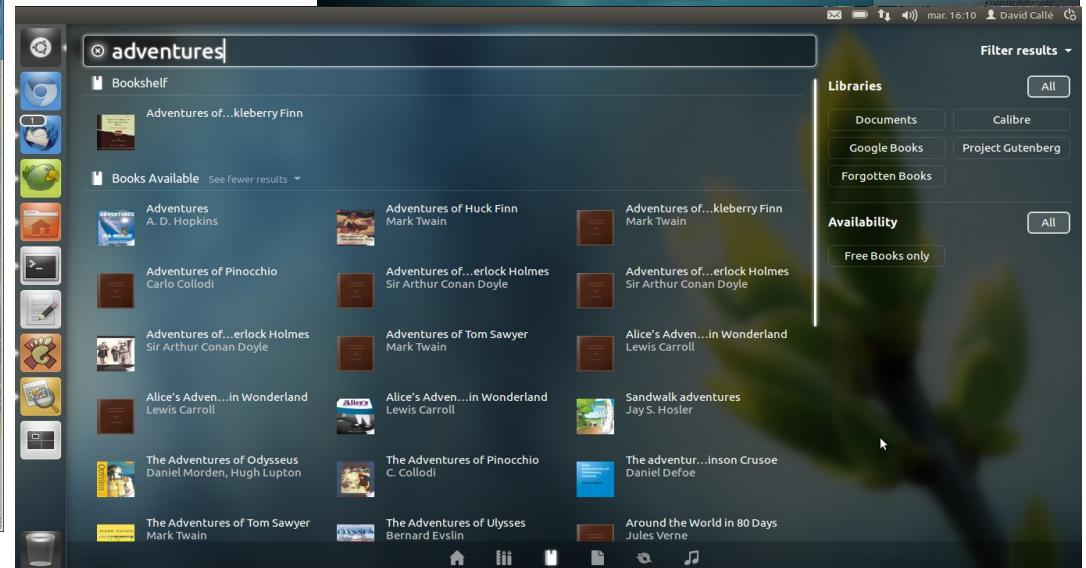
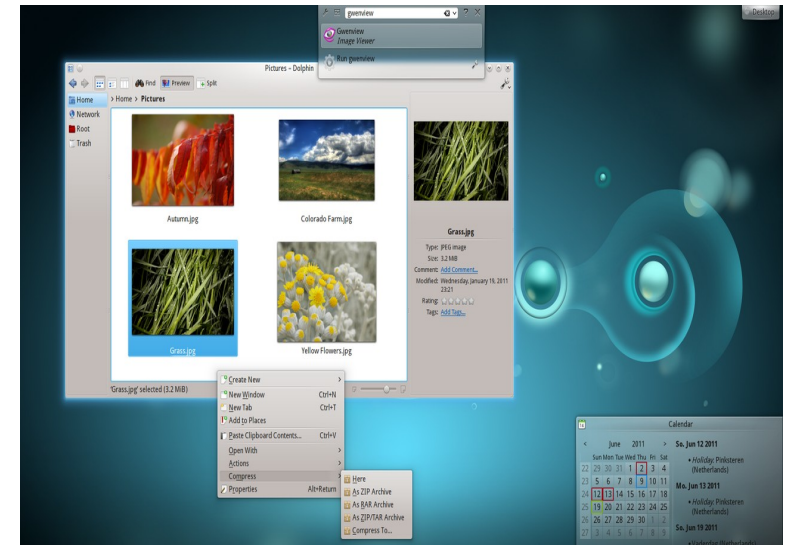
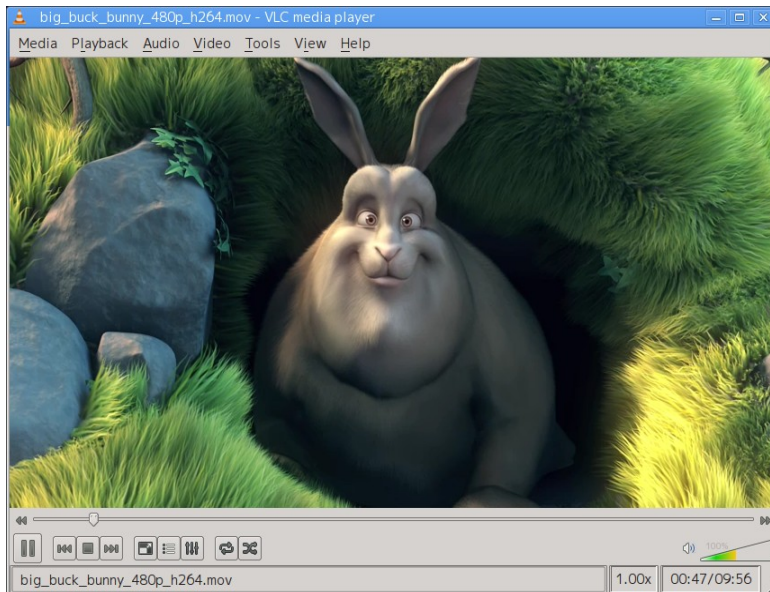




# Qt Everywhere

<http://qt.nokia.com/qt-in-use>

- KDE SC
- Ubuntu Unity 2D
- VLC

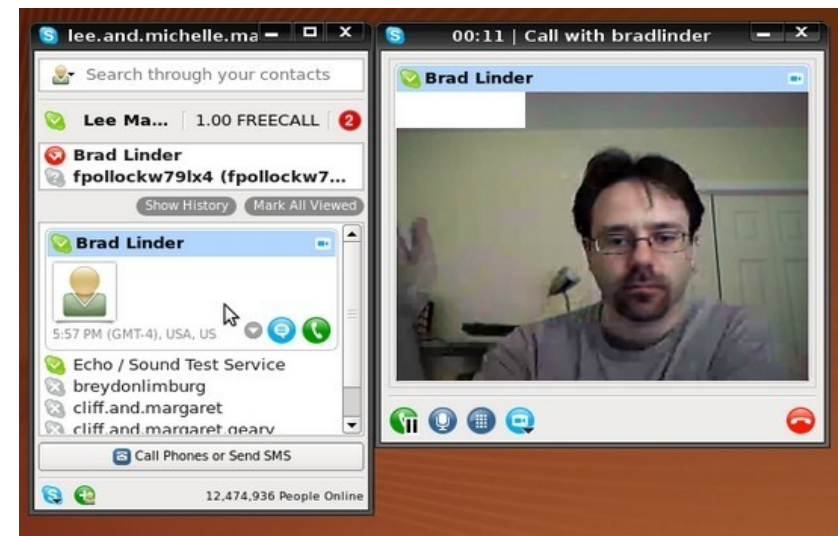
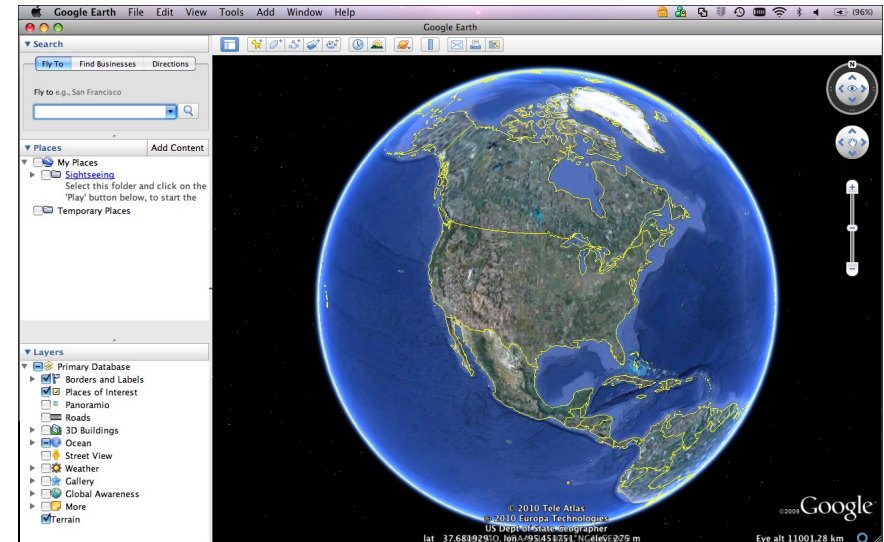




# Qt Everywhere

- Google Earth
- Skype for Linux
- etc

<http://qt.nokia.com/qt-in-use>





# Qt Everywhere

<http://qt.nokia.com/qt-in-use>

- Home media
- IP Communication
- Automotive
- e-reader
- Refrigerator
- Coffee machine





# Qt Everywhere

<http://qt.nokia.com/qt-in-use>



## C++/Qt Cascades

Cascades has been designed to allow you to eas  
BlackBerry native application using an entire fr  
integrated with core services which provide an

## Android Market

Home • Apps • Libraries & Demo

### Ministro II

Bogdan Valtra



★★★★★ (35)

INSTALL



[twitter.com/Qt4iOS](https://twitter.com/Qt4iOS)



# Qt Everywhere

“Over 450,000 developers in more than 70 industries have chosen Qt to build advanced applications and devices.”

<http://qt.nokia.com/qt-in-use/>



5





# Qt History

[http://en.wikipedia.org/wiki/Qt\\_\(framework\)#History](http://en.wikipedia.org/wiki/Qt_(framework)#History)

1996: Qt 1

1999: Qt 2

2001: Qt 3

2005: Qt 4

2011: Qt 4.8

2012: Qt 5

- Adapt to a world that has changed

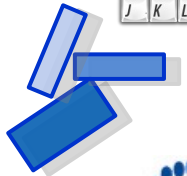


# Qt 5 goals

<http://labs.qt.nokia.com/2011/05/09/thoughts-about-qt-5/>



- Competitive in multiple devices
- State-of-the-art user interfaces
- Modular libraries & repositories
- Small footprint
- Qt 4.x source compatibility





# What is new in Qt 5

<http://qt-project.org/wiki/Qt-5Features>



- Code reorg: essential modules + add-ons



- Qt Platform Abstraction layer



- New graphics stack



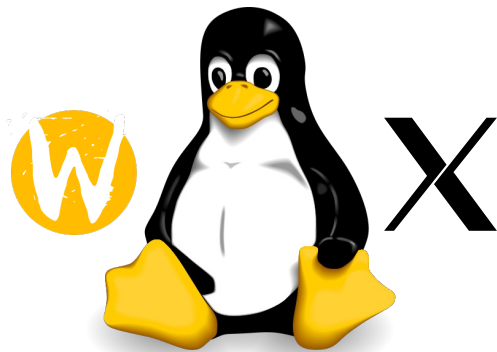
- Qt Quick 2



# Essential Modules

<http://qt-project.org/wiki/Qt-Essentials-Modules>

- QtCore
- QtNetwork
- QtGui
- QtSql
- QtTest
- QtJSBackend
- QtQml
- QtQuick
- Qt3D
- QtMultimedia
- QtWebKit



X



Windows®



Mac



# Add-On Modules

<http://qt-project.org/wiki/Qt-Add-ons-Modules>

- QtBluetooth
- QtPim
- QtDBus
- QtGraphicalEffects
- QtImageFormats
- QtOpenGL
- QtOrganizer
- QtPrintSupport
- Qt Publish and Subscribe
- QtQuick1
- QtScript
- QtScriptTools
- QtSensors
- QtServiceFramework
- QtSvg
- QtSystemInfo
- QtTools
- QtVersit
- QtWayland
- QtWebKitWiedgets
- QtWidgets
- QtXml
- QtXmlPatterns
- ActiveQt
- QtJsonDB
- Phonon
- QtQA
- QtLALR
- QtRepoTools
- QtTranslations



# Qt 5 Status & Plans

[http://qt-project.org/wiki/Qt\\_5.0](http://qt-project.org/wiki/Qt_5.0)

- Alpha released on April 3
- ~~Alpha2~~
- Beta1 expected in June
- *Qt Contributors Summit on June 21 - 23*
- Beta2 in beginning of August?
- Final in mid to end of August



**Qt Project**

<http://qt-project.org>

Open Development  
Open Governance



# Long story short

[http://en.wikipedia.org/wiki/Qt\\_\(framework\)#Licensing](http://en.wikipedia.org/wiki/Qt_(framework)#Licensing)

- 1991?: FreeQt
- 1998: Free Qt Foundation
- 1999: QPL (OSI approved)
- 2000: GPL added (Linux)
- 2005: GPL added (Windows)
- 2008: Nokia acquires Trolltech
- 2009: LGPL added
- 2010: Qt Open Governance plan started
- 2011: Qt Commercial sold to Digia
- 2011: Qt Project is here!





# Qt Project

[http://qt-project.org/wiki/Qt\\_Project\\_Open\\_Governance](http://qt-project.org/wiki/Qt_Project_Open_Governance)

- NPO that hosts the code base
  - git repository, gerrit, CI, JIRA, ML, Wiki etc...
- Four principles

**Fair**

**Transparent**

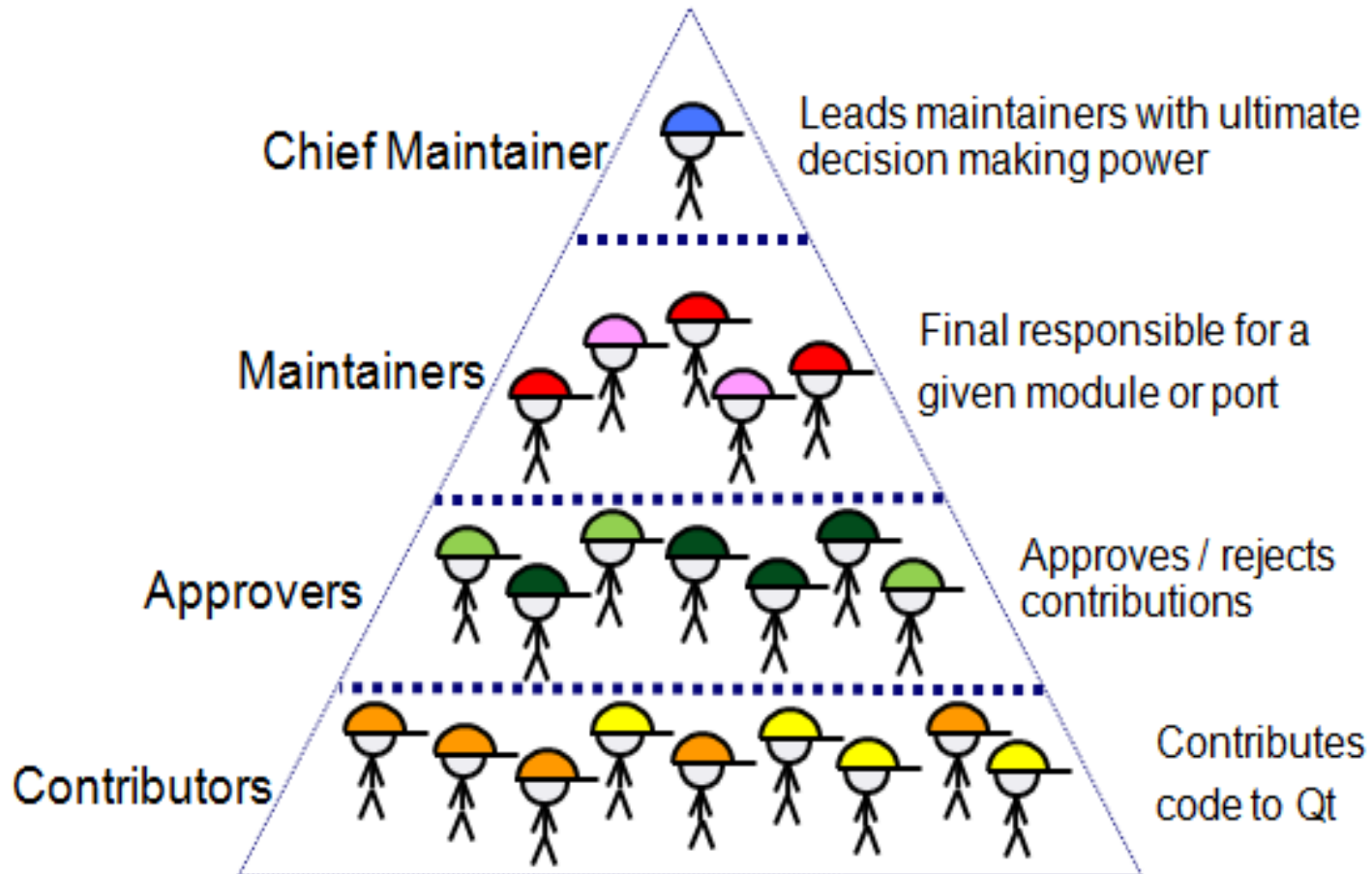
**Inclusive**

**Meritocratic**



# Qt Project Roles

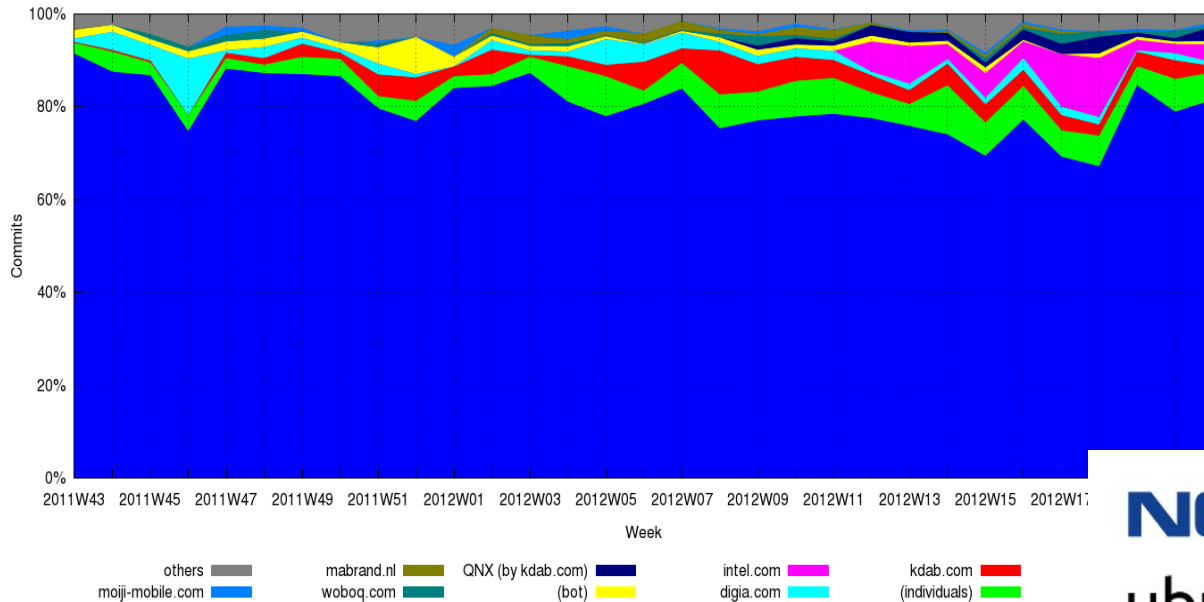
[http://qt-project.org/wiki/The\\_Qt\\_Governance\\_Model](http://qt-project.org/wiki/The_Qt_Governance_Model)





# Qt and NOKIA

- Nokia is a main contributor in Qt Project



\* Qt Contributors Summit Sponsors

<http://qt-project.org/groups/qt-contributors-summit-2012/wiki/Our-sponsors>



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**2012**

**is gonna be fun**

<http://qt-project.org>