Qt Project Update (Updated)

Akademy 2012, Tallinn

Thiago Macieira, Qt Core Maintainer

Who am I?

- Open Source developer for 15 years

- KDE hacker since 2000/2001

- Software Architect at Intel's Open Source Technology Center (OTC) since last year

- Maintainer of two modules in the Qt Project
    - QtCore and QtDBus

- MBA and double degree in Engineering

- Previously, led the "Qt Open Governance" project
    - Ended with the creation of the Qt Project
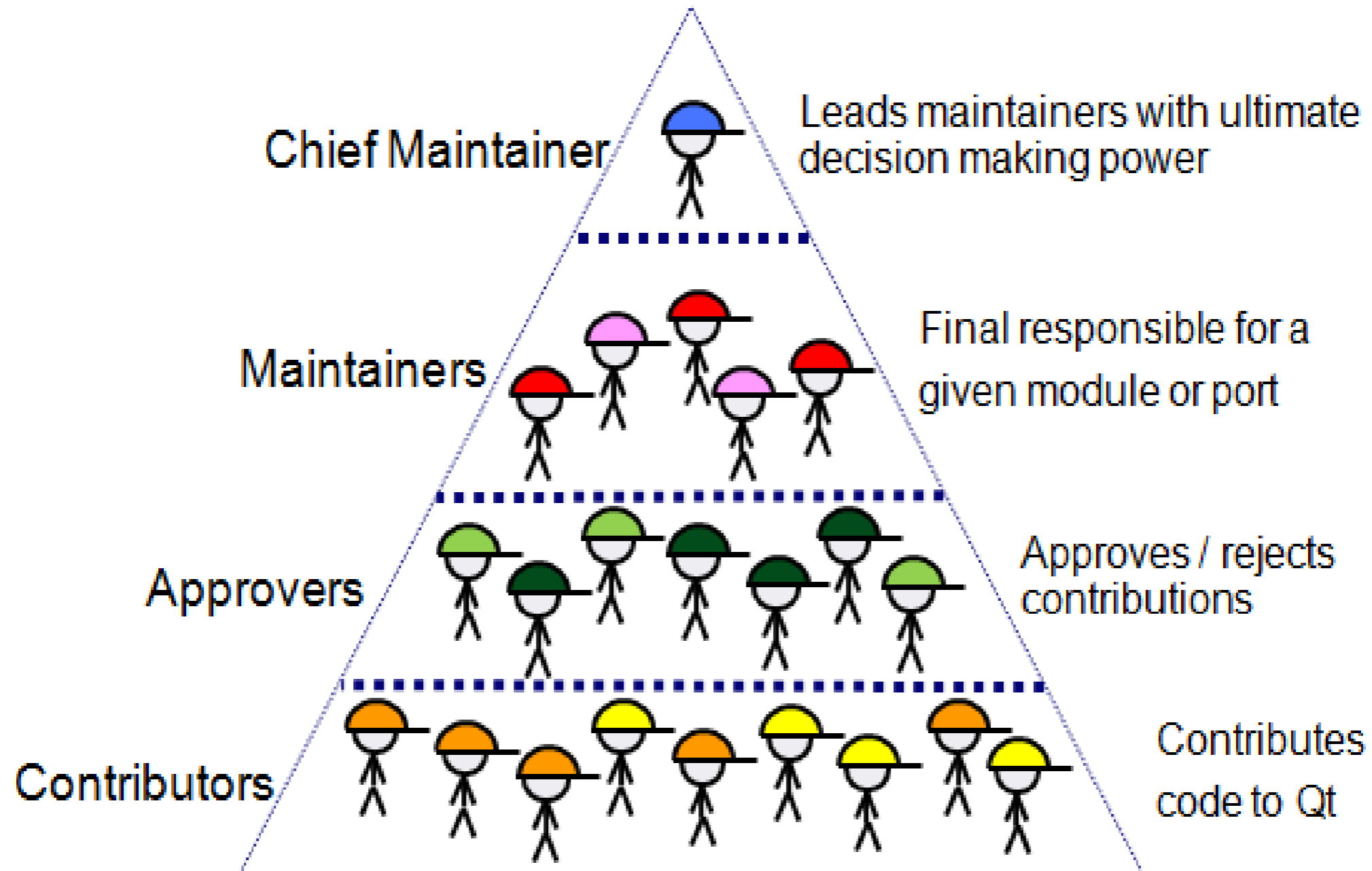
Qt Project live for 8 months!

Qt Project

Fair

Transparent

Inclusive

Meritocratic

Project Roles

Chief Maintainer — Leads maintainers with ultimate decision making power

Maintainers — Final responsible for a given module or port

Approvers — Approves / rejects contributions

Contributors — Contributes code to Qt
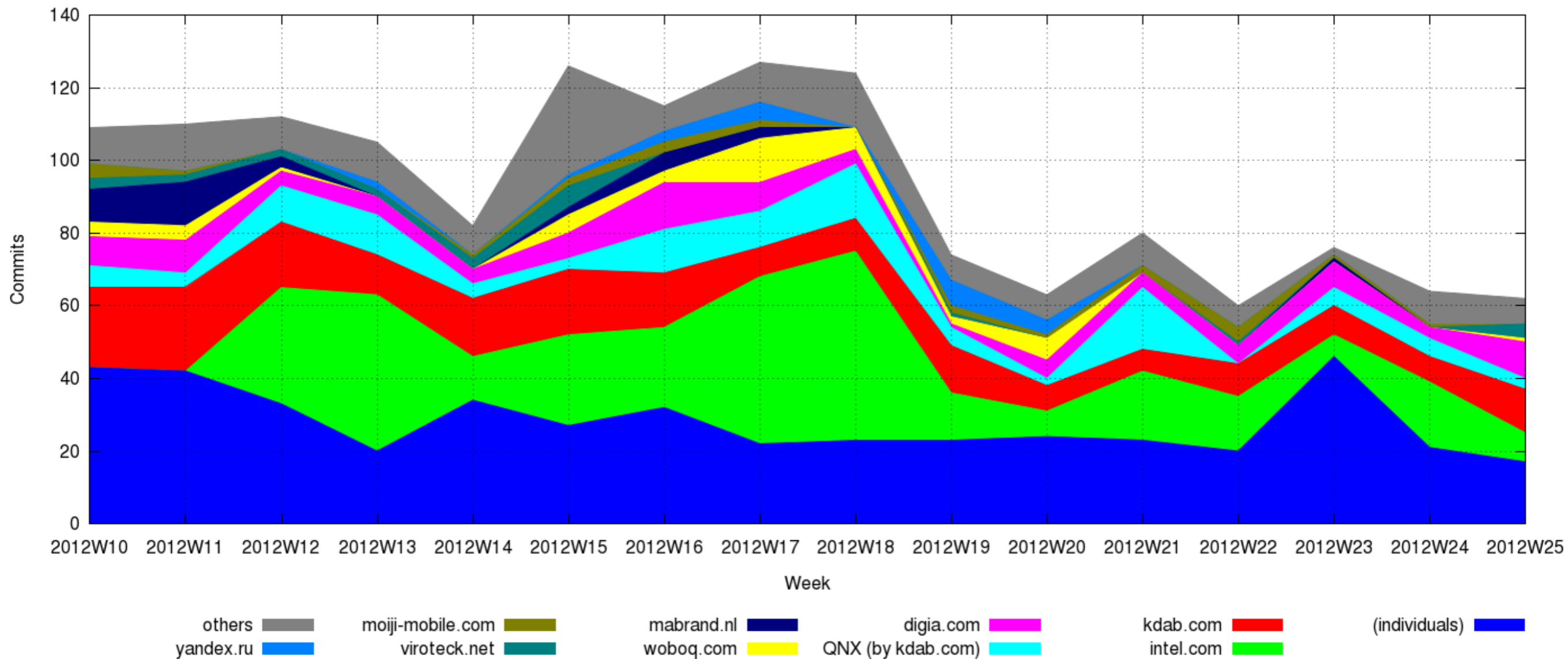
Some Numbers

- In these 8 months
  - ~18000 merged commits
  - ~40% non Nokia contributions on qtbase
  - >10% non Nokia contributions on qt-creator

  - Top contributors: Nokia, Many individuals, KDAB, Digia, Intel, RIM, Woboq, Moiji Mobile, Accenture, Collabora

  - 481 different committers (by email)

Weekly commits to Qt

Non Nokia commits

Qt 5

Qt 5 - Goals

- Works for whole ecosystem

- State-of-the-art UIs

- Modular

- Small footprint

- Compatible with Qt 4.x

What is new in Qt 5.0?

- Qt Quick 2

- New structure

- New graphics stack

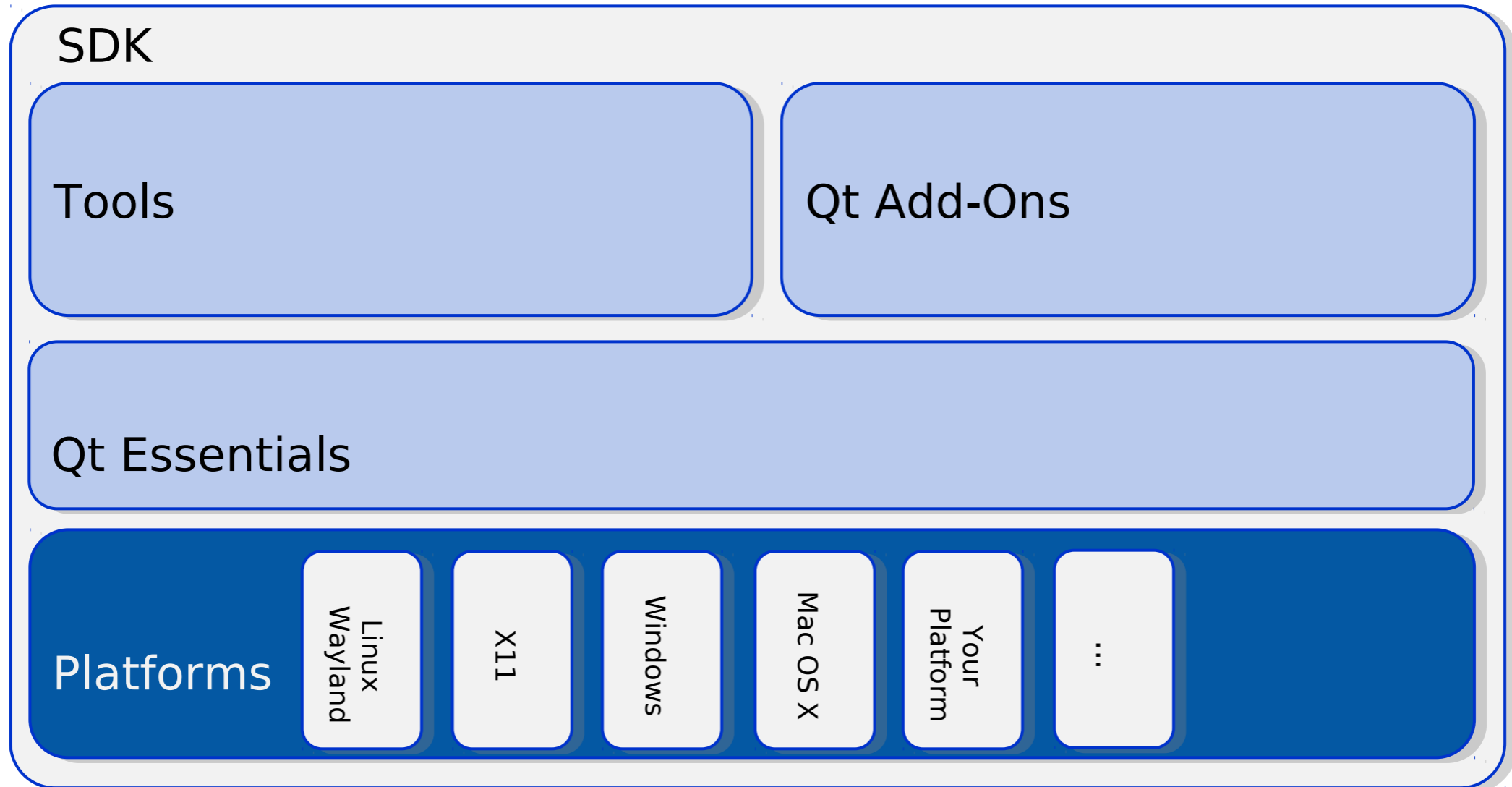- All platforms use QPA and share more code

A taste of new features...

- JSON support
- Mimetype support
- Performance improvements
- QStandardPaths
- XCB instead of Xlib
- QRegularExpression based on PCRE
- New Signal/Slot connection mechanism
- C++11 support
- WebKit2 architecture in QtWebKit
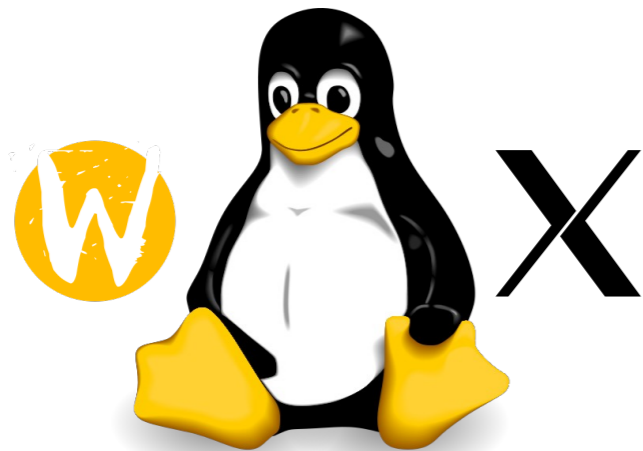- V8 as JS engine
- ...

Structure of Qt 5

SDK

Tools

Qt Add-Ons

Qt Essentials

Platforms | Linux Wayland | X11 | Windows | Mac OS X | Your Platform | .. |

Essential

- Qt Core
- Qt Network
- Qt Gui
- Qt Widgets
- Qt WebKit
- Qt Multimedia

- Qt Sql
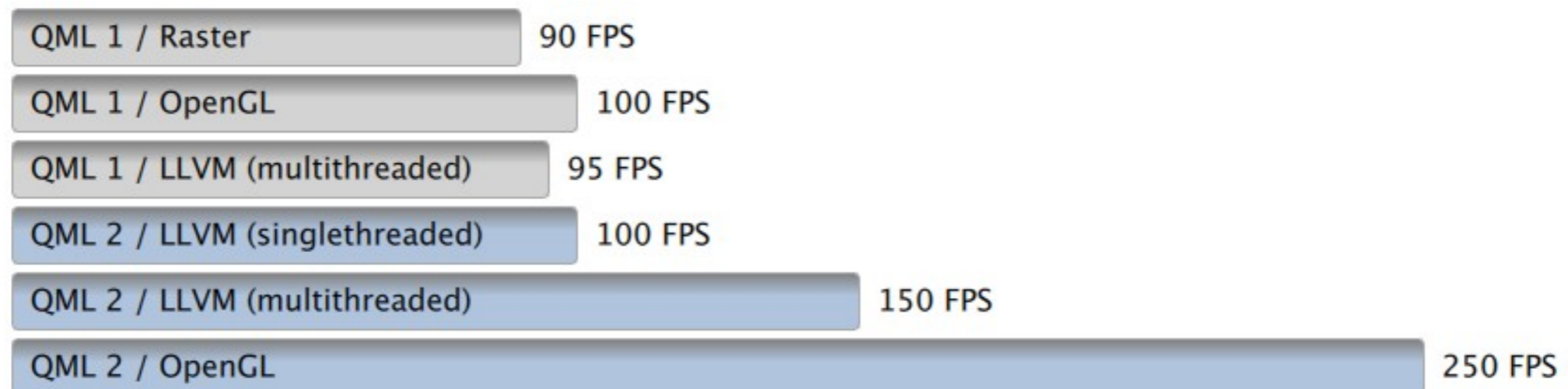- Qt Quick 1
- Qt Qml
- Qt Quick 2
- Qt 3D

Add-On Modules

- Qt Widgets (desktop)
- Qt Quick components
- Qt Svg
- Qt Xml
- Qt XmlPatterns
- Qt Script, Qt Script Tools
- Qt Concurrent
- Qt Print Support
- Qt Help
- Qt UiTools
- Qt Designer
- Qt ActiveQt (Windows)

- Qt WebKit (WebKit1)
- Qt Multimedia Widgets
- Qt Feedback
- Qt 3D
- Qt Compositor
- Qt Wayland
- Qt Graphical Effects
- Qt Json Db
- Qt Mime Type
- Qt Organizer
- Qt Contacts
- Qt Versit

New Graphics Stack

- Qt 5 supports two rendering paradigms
    - Software rasterizer/QPainter: used by QWidgets
    - OpenGL (ES): used by Qt Quick 2
- QPainter
    - Optimised for many years
- Qt Quick 2 is built and optimized for OpenGL
    - Even SW rasterization can give great performance

QML 1 / Raster	90 FPS
QML 1 / OpenGL	100 FPS
QML 1 / LLVM (multithreaded)	95 FPS
QML 2 / LLVM (singlethreaded)	100 FPS
QML 2 / LLVM (multithreaded)	150 FPS
QML 2 / OpenGL	250 FPS

Qt 5.0 Platforms

- Reference platforms:
  - Windows
  - Mac OS X
  - Linux/X11
  - Linux/Wayland

- Other platforms expected as well
  - Direct FB backend contributed right after Qt Project launch
  - Android and iOS ports actively being worked on
  - QNX port

Qt 5.0 Milestones

- Feature frozen

- Alpha is out

- Beta in Real Soon Now™

- Done during the Fall

Migrating from Qt 4 to Qt 5

- Compatible with Qt 4 with very few exceptions

- Qt Widgets are supported in Qt 5

- Doesn't require migration to Qt Quick

- Doesn't require OpenGL

- Doesn't require JavaScript

After Qt 5.0

- Time based release schedule
  - 2 feature releases per year
- Possible focus areas
  - Full Desktop support in Qt Quick
  - Integrated Software OpenGL renderer
  - Continue to evolve the WebKit2 based Qt WebKit
  - More processor architectures for JavaScript
  - Improvement on the V4 engine

Summary

- Qt Project
  - Fully open and transparent
  - Join us to drive Qt forward
  - Fully backed by Nokia
- Qt 4.8
  - Released in mid December 2011
  - Supported for a long time
- Qt 5
  - Adapts Qt to a changing world
  - Very easy transition from Qt 4
  - QWidgets still fully supported
  - QML offers innovative ways to build UIs

Thank you!

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