The Top 10 Reasons to **Develop with Qt**

Why Companies Select Qt
for Software Development

Qt

The Top 10 Reasons to Develop with Qt

1. Optimized Productivity

2. Shorter Time-to-Market

3. Code Once, Deploy Anywhere

4. AI-Enhanced Development

5. Robust Chipset Independence

6. Best-in-Class Developer Experience

7. Enhanced Cybersecurity Resilience

8. Immersive Experiences in 2D & 3D

9. The Largest Embedded Developer Ecosystem

10. Securing Your Long-term Investment

The World Standard for Cross-Platform Development

Framework and Tools

With its comprehensive cross-platform software libraries, the Qt Framework helps customers deliver iconic digital experiences across all types of devices—embedded, desktop, mobile, and more.

Supplemented by dedicated tooling for each stage of the product lifecycle (design-to-code conversion, logic implementation, debugging, profiling, deployment, and beyond), Qt offers the creative environment for developers to efficiently **realize their product vision** to the full extent.

Customer Base

Today, Qt software powers billions of devices across the world. Embedded systems manufacturers in more than 70 sectors leverage Qt development framework to deliver industrial software that meets the highest quality and safety standards.

With 30 years of history in enabling OEMs to efficiently deliver intuitive, reliable, and effective software, **Qt technology has shaped the notion of digital experience across industries—** from the automotive, aviation, and industrial automation sectors to medical and consumer electronics.

Optimized Productivity

50-70%
Reduced Delivery Time

Benefits

Comprehensive libraries and tooling for a wide range of industrial use cases

Increased dev focus on added-value features (as opposed to low-level details)

Integrated working methodology across all stages of software development, from design handover to deployment on target

Intuitive and expressive UI definition language—QML

Streamline your software development process with a comprehensive suite of effective tools and libraries

From the automated conversion of visual designs into functional code up to debugging, profiling, and optimization, Qt tools help developers efficiently deliver high-quality cross-platform software.

Qt Creator's IDE supports developers with code completion, syntax highlighting, refactoring, and readily available documentation.

Qt Quick libraries deliver **highly optimized UI components** that can be readily adopted and customized in your project.

By abstracting over the low-level details of the hardware and operating system, Qt Framework acts as Middleware **to glue different systems and modules together.**

End-to-End Workflow

Today, we can proudly say that there is no gap between what our designers demand and what our developers can deliver. And the Qt products play a big part in this. **Read more ›**

B/S/H/

Accelerated Development

Qt was a natural fit for this project and accelerated development right out of the gate, we plugged it in and were ready to go in just a couple of days. **Read more ›**

BLUESCAPE

Complete Toolkit

Qt has the tools you'd expect as a developer, but it also has a large set of libraries that are constantly evolving. **Read more ›**

esri

Comprehensive Libraries

I don't think everyone knows how powerful Qt's libraries are. Our development process is much easier than before. **Read more ›**

ULSTEIN®

Qt

Shorter Time-to-Market

50%
Faster Releases

Benefits

Streamlined workflow with Qt tools as the connective glue across the product lifecycle

Reusability of highly optimized components

Simplified software maintenance by use of standardized, high-quality code

Low-code GUI development

Maximize efficiency and cost savings with workflow acceleration and ready-made solutions

Created to enhance productivity, Qt tools enable **workflow acceleration** across all stages of the software lifecycle.

1. Designs are automatically converted into functional GUI code.

2. Development can happen on the PC or cloud emulator, independently of the target hardware.

3. Deployment to target is automated for a wide range of platforms.

By leveraging ready-to-go software libraries with over 5 million lines of code, developers can focus on building innovative products instead of tinkering with the fundamentals of their applications.

Highly-Optimized, Ready-Made Components

By transitioning to a configure-to-order approach and standardizing configurable functionality and features, coupled with the automated generation of numerous GUI mimics and the use of a GUI-editor tool (which is also developed on top of the Qt framework), **we have substantially cut down delivery time, potentially by 2-3 times,** *depending on system requirements.*

While accelerating the delivery process, this strategy also enhances product quality by ensuring functional correctness and minimizing the number of engineers required for product delivery. **Read more** >

blue|ctrl

Decoupling Development from Target Platform

With Qt technology, we were able to develop and test the UI on a PC while a second team was developing the hardware from bare metal. When we moved to integration, the UI graphics and functionality were already tested and only needed to be verified on the actual hardware. Such parallel workflow **reduced our delivery time by over 50%.** **Read more** >

DUCATI Official Supplier 2024

Qt

Code Once, Deploy Anywhere

Qt

Code Once, Deploy Anywhere

150+
Supported Platforms

Benefits

Full interoperability with other platforms

UX Scalability from microprocessors to microcontrollers

Ability to develop on a single codebase for multiple platforms

Higher quality at scale, by reusing premium code

Leverage reusable code and assets that can be deployed across your various devices with minimal customization efforts

With the increasing adoption of GUIs, companion apps, headless devices, and SCADA systems across industries, cross-platform usability has become a fundamental feature of modern software. Qt lets you develop responsive user experiences that can be consistently ported to embedded microprocessors or microcontrollers—as well as desktop or mobile devices.

While providing access to the target's capabilities and look-and-feel, without the need to resort to the target's native APIs, Qt's extensive libraries enable **reusability at scale,** for greater efficiency and reduced development effort. Additionally, you can embed Qt content (e.g., advanced 3D graphics) within other environments, or vice versa, embed third-party code in Qt.

Reusability Across Devices

*Our camera has an electronic viewfinder and a touch display, running the same GUI at different resolutions. Qt handles both. Then, Qt for MCUs allowed us to quickly implement a smaller version of the UI on our top display using the same workflow and developers, with **a consistent saving in time and effort.*** Read more >

UX Scalability

*When working on a wide product portfolio, **scalability across hardware and re-usability of software are key factors.** Qt cross-platform framework allows to create software for the whole Model S series at once and to deploy it to the different hardware and form factors of the various models with great efficiency.* Read more >

Code Standardization and Reusability

*The Qt framework naturally enables the creation of atomic UI components that can be reused across projects and appliances. Atoms can be composed into larger molecules (or templates) that can be shared across projects with great benefit. This allows us to **port a consistent, optimal user experience across different devices.*** Read more >

AI-Enhanced Development

55%
Faster Development with Coding Assistants*

75%
Enterprise Software Engineers Will Use AI Code Assistants by 2028**

Benefits

- Code completion and documentation
- Code review and commit
- Unit test case creation
- Open framework allowing integration of AI capabilities

Develop a cross-platform user interface in a day, with GenAI-powered Qt tools

By leveraging GenAI and Computer Vision algorithms, Qt products accelerate the software development process from the design handover to code writing and functional testing. The integrated Github Copilot enables code completion, documentation generation, review & commit automation, and unit test creation.

Qt open framework lets you access all your favorite ML & AI packages and utilities, among which those for Deep Learning from TensorFlow and PyTorch, via Qt for Python.

Image Recognition for Industrial Automation

NVIDIA AI platform automates fault detection in the production chain via image recognition. Read more ›

Open Qt framework Enhanced with ML

Data Driven Decision Support Systems require accurate models and intuitive user interfaces to be trusted and accepted by users and this is what Ekkono and Qt bring to the fingertips of embedded developers in an accessible format. Read more ›

Ekkono

Integration with AI Libraries and Tools

Qt users can leverage the power of AI to create stunning GUI applications. Read more ›

Robust Chipset Independence

Benefits

Reduced risk of chip shortage affecting production and GTM strategy

Consistent functionality across platforms via code reuse

Time and cost savings via code reuse

Ability to reduce BOM by resorting to more cost-effective hardware

Protect your investment by reducing your dependence on hardware suppliers with a truly platform-independent framework

The chip shortage is not over, and several industries struggle to meet the market demands and their growth targets due to it. The inability to quickly adapt to a variety of chipset technologies can seriously hinder production.

By enabling you to resort to different types of hardware with minimal adaptation, Qt cross-platform capabilities help you **emancipate from dependency on specific hardware** suppliers and scale the same user experience across all your products—no matter the underlying platform.

Code Reusability

The business logic and UI code can be compiled on all platforms, practically eliminating the need for any platform-specific code. If we ever need platform-specific functionality, Qt has hooks into those underlying APIs as well.
Read more >

The Need for Flexible Development Frameworks

Smarter development processes can adapt to supply chain shocks and semiconductor shortages and keep the pace of product delivery moving forward. **Read more >**

Forester Consulting

Protect Your Investment

The prototype cluster we created with our initial platform had performance issues that would have impacted the overall motorcycle's functionality. We examined several alternative UI frameworks to fix this, but only Qt met our demands in terms of out-of-the-box functionality, flexibility, and performance. And because Qt is cross-platform, **we were able to re-use much of our original environment, just running it faster,** *enabling us to prototype, evaluate, and deliver quickly.* **Read more >**

Best-in-Class Developer Experience

1.5M

Developers Worldwide

Benefits

> Ready-made code and libraries for industry-grade use cases

> Intuitive and expressive UI definition language—QML

> Integration with best-of-breed third-party libraries

> Flexibility to use different host platforms and IDE, including cloud-based ones and digital-twin technology

Foster productivity and quality by leveraging a development platform that simplifies and enhances your team's work

As the need to integrate more advanced functionality within digital devices increases, software complexity increases accordingly. Qt provides standards, templates, APIs, and well-proven best practices for development teams to **innovate rapidly and effectively.**

By providing predefined high-quality components, reusable code, and API integrations, Qt helps you comply with industry standards and increase your developers' productivity and focus on value-added features.

Additionally, Qt's cloud-based platforms streamline the configuration of hardware, software, and network resources, by offering a standardized development environment independent of physical infrastructure—for a faster and more scalable development experience.

A Configure-to-Order Mindset

*Qt's cross-platform capabilities and QML's modularity make all the difference. **The systems are not equal at all, but the building blocks are.** We don't program anything in the deliveries. We just configure, the parts we have made in C++ and Qt.*

In the current setting, one single engineer can deliver a project in about 12 weeks from contract date to delivery. And of course, that person usually works on 2-4 projects at the same time. Read more ›

Cloud-Based Development

Adding our tool suite to AWS Marketplace will save OEMs considerable development and testing time, reducing the amount of iterating and prototyping. Read more ›

Rich with Documentation and Examples

We think it's really fun to use Qt to develop our UI, the main reason being that it's well documented. Read more ›

Easy to Use

The wow-effect was there when you program with QML. It keeps on astonishing with it's ease-of-use and efficiency. QML has provided a solid base for our software. Read more ›

A Platform of Easily Deployable Reusable Components

Enhanced Cybersecurity Resilience

Protect your investment for the future with a stable and secure software platform helping you comply with the industry regulations

With the upcoming Cyber Resilience Act (CRA), manufacturers are obliged to take security seriously throughout the product's life cycle.

Digital hardware and software products constitute one of the main avenues for cyberattacks. In a connected environment, a cybersecurity incident in one product can affect an entire organization or a whole supply chain, often **propagating across borders** within a matter of minutes.

With Qt as your middleware provider, you can reach easily CE marking for safety regulations.

Benefits

Long-term Support releases maintained for at least 3 years

Extended Security Support

Technical documentation & Software BOM

Transparent issue tracking

Conformity assessments

Safety issues early warning list

Long-Term Support

Qt is a GUI framework which offers all we need for GUI development. It is well established in the market and has long-term support which is very important to us. **Read more** ›

The Added Value of a Maintained Framework

Koenigsegg

I see a strong value in a professionally maintained framework. I believe this will become apparent as our organization grows and ***the whole team will benefit from a standardized application framework and expanding toolchain.***

With the recent LTS release, we will benefit from new features that are very well aligned with current and future system usage and design. Over the years, I have also been pleasantly surprised by Qt's proactive approach to mutually defining the roadmap ahead. **Read more** ›

Accessing Qt Groups Full Portfolio

We are quite excited about the new opportunities offered by **accessing the full Qt commercial** *offering. We already love QML for delivering beautiful UI applications so efficiently. But we see a huge potential in the availability of integrated QA and testing tools.* **Read more** ›

Immersive Experiences in 2D & 3D

Easily increase informativity and usability by leveraging the full power of 2D and 3D graphics combined within one framework

Graphics make software more intuitive, easier to use and understand. Charts, graphs, and maps help display complex information and data. Advanced 3D graphics represent real-world objects and life-like situations on the UI—for instance as **digital twins.**

In addition to their utility, there is an undisputed **aesthetic value** in the creation of visually appealing software—good UX design and pleasant visuals attract more users and **reinforce brands.**

Qt's graphics capabilities let you represent complex behavior through real-time 3D graphics and interact with it seamlessly using intuitive 2D controls.

Benefits

- Intuitive visualization of complex information for enhanced usability
- Enhanced 3D support for AR, XR, VR, and digital twin applications
- Better compatibility through PBR materials
- Photorealism via accurate HRD light calculations
- Optimization for low-end hardware (incl. MCUs)

High-Performance Graphics

The market requires modern, rich, and sophisticated graphics, with dynamic visuals that adapt to world events. Speed, the intervention of electronic vehicle control system, RPMs should be reflected on screen in real-time, with a constant data flow happening in the range of milliseconds. ***We needed to achieve smartphone-like performance but without the corresponding gigahertz clock capabilities.*** Read more ›

DUCATI | Official Supplier 2024

Next-Gen In-Vehicle Experience

*By selecting Qt, GM is looking to achieve its ambitions to transform the in-vehicle user experience and connect customers' digital lives, providing drivers and passengers with an **enhanced in-cabin experience** that can be conveniently modified and updated while limiting the need to purchase new or additional hardware.* Read more ›

General Motors

2D & 3D in Full Harmony

We needed to show both 2D and 3D content on a single screen and Qt helped immensely with that. With the Mini Cooper, we pushed the boundaries in terms of rendering AR onto 2D screens. We also run Qt on a very lean single SoC and being able to do that is very important. Read more ›

HARMAN A SAMSUNG COMPANY

Immersive XR Experiences

The Largest Embedded Development Ecosystem

1B
Qt-Powered Devices in 70 Industries

Benefits

> Ready answers to common issues by tapping into the community

> Extensive support for HW & SW platforms via partners' network

> Integration with best-of-breed third-party libraries

> Shorter time-to-market via community and partners' support

Capitalize on the wealth of code produced by millions of developers and on Qt's solid partnership with the largest software and hardware vendors in the embedded world

With its solid presence in all verticals, Qt technology has shaped the notion of digital experience across industries worldwide. Qt Dev Community actively develops and shares solutions that are regularly reviewed by Qt Maintainers and, if approved, integrated into the Official Qt Repository.

Qt ecosystem of service and technology partners offers third-party integration, hardware support, and industry-grade solutions for a variety of use cases across over 70 industries.

Tap into the Qt Community

The thing I like the most about Qt? Its lively community and energetic company. ***Developers like to work with Qt*** *which can't be said for every other tool or framework.*
Read more >

Next-Gen In-Vehicle Experience

With their efficient design and development workflow, not to mention over 30 years of production history across verticals, Qt's technology has delivered us the tools to develop and deploy UI applications more seamlessly than ever. Bringing all those efficiencies and productivity gains from Qt tooling to our microcontrollers means our customers will be able to ***cut their time to market in half****—from product design to production.* **Read more** >

Cloud-Based Development

Making our solutions available in AWS Marketplace and enabling development on AWS means bringing Qt's brand and products to millions of users and developers. We're also excited about what the future holds for bringing the benefits of Qt on AWS to other verticals like medical device design and industrial automation. **Read more** >

Securing Your Long-Term Investment

3–10

Years Code and API Backward Compatibility

Benefits

Reduced risk of obsolescence with LTS increased longevity and stability

Portability with API stability for a guaranteed 3 years; up to 10 years

Constantly evolving framework, updated with the latest technology

Mandatory code reviews, merit-based inspection, and security updates to leverage to OSS contributions

Ensure your product's longevity in the market with Qt long-term support, security updates, patches, and a stable roadmap

Beyond simple GUI implementation, Qt technology offers world-leading enterprises the foundational building blocks of their development framework. With a strong production history and billions of devices in the market meeting the highest industry standards of quality and safety, **Qt is the first choice across verticals** to secure business penetration and permanence in an ever-evolving market.

Released every 18 months and maintained for years with security updates, patches, and a customer-centric roadmap, Qt long-term releases secure your product's permanence on the market over time. Extended Support provides direct assistance, bug fixes, and issue tracking. and Qt Professional Services helps you maximize Qt's most advanced features quickly and cost-effectively.

Future-Proof Technology

*With the recent LTS release, we will benefit from new features that are very well aligned with current and future system usage and design. The same goes for the expanding toolchain that will aid us in our coming development activities. Over the years I am also pleasantly surprised by **Qt's proactive approach to mutually define the roadmap ahead.*** Read more ›

Koenigsegg

An Established Partner

*Qt is **well established in the market** and has long-term support which is very important to us.* Read more ›

FRESENIUS KABI

Quick Ramp-Up with Qt Core Developers

Qt Professional Services worked closely with our engineers throughout the development of the new Gamry Echem Analyst to continually refine requirements and create documentation for compiling and deployment that would facilitate a smooth hand-off of the new system to Gamry's software team. Read more ›

Gamry Instruments

The Future of Digital Experiences

Qt Group offers cross-platform solutions for the entire software development lifecycle.

Qt Group (Nasdaq Helsinki:QTCOM) is a global software company, trusted by industry leaders and over 1.5 million developers worldwide to create applications and smart devices that users love.We help our customers to increase productivity through the entire product development lifecycle - from UI design and software development to quality management and deployment.

Our customers are in more than 70 different industries in over 180 countries. Qt Group is headquartered in Espoo, Finland, and employs over 800 people globally.