



A different kind of mobile

How wearable technology will transform
the future for Tizen mobile developers

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TIZEN[™]
**DEVELOPER
CONFERENCE**
2014
SAN FRANCISCO

What is Marmalade?



Marmalade enables developers to create content on any device, by authoring powerful technology for mobile and connected platforms.

Native performance. Any device.



In practice

- Marmalade is an open and flexible abstraction layer that lets you take a single C++ codebase and easily run it on a wide range of platforms.
- You can use our own or 3rd party middleware and engines to build your game or app.
- At it's core, Marmalade is not an engine; it is a way to make native code run on as many devices as possible, and to run *fast*.

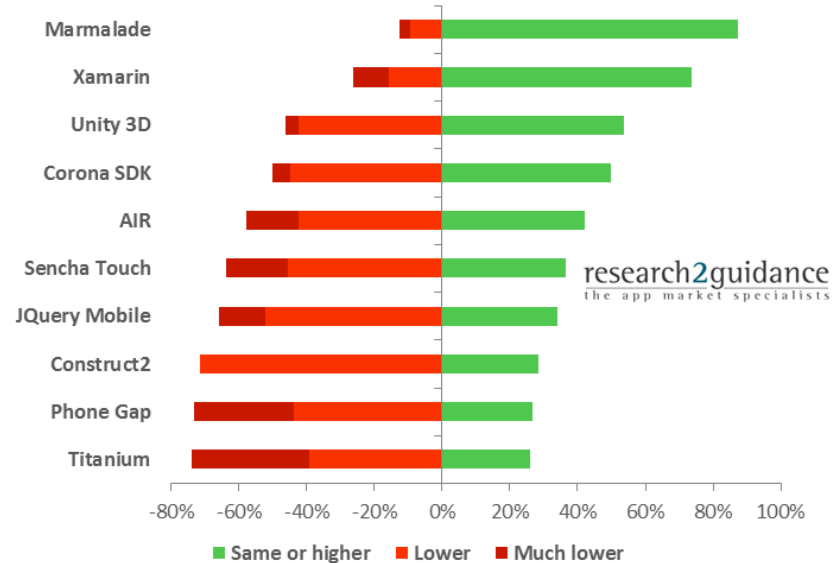


How fast?

- Near native fast.

The majority of Marmalade, Xamarin and Unity 3D users rate app performance same or higher than of native apps

How do you rate the performance of apps built with a cross platform tool compared to native app development?



Source: research2guidance CrossPlatform Tool Benchmarking 2013



made with Marmalade



Overview of the Wearables Market today



Working assumptions on Market size

- Let's agree this year the number of wearable devices will reach 90 million. (ABI research)
- Smart bands shipment (Canalys Analysis)
 - 2014: 8 million
 - 2015: 23 million
 - 2017: 45 million
- 2014 – Wearables become “Key Consumer Technology”.



The Wearables market (CP)

- There are just under 250 devices on the market
- Areas of market focus include:
 - **Lifestyle** - devices used on a daily basis and designed to provide continuous benefits to the user
 - **Fitness** - sports-related and/or non-medical health-related benefits to the user. This includes activity monitors and heart-rate monitors. These devices are not necessarily used at all times, as [lifestyle devices](#) tend to be.
 - **Medical** - devices designed to be sufficiently accurate and reliable for professional medical care. The devices can improve general health, address physical conditions and/or facilitate medical exams.
 - **Gaming** - providing an enhanced user experience during gameplay
 - **Entertainment** - devices providing amusement or pleasure to the user, including digital media playing capabilities
 - **Industrial** - functional tools designed to improve workplace safety, productivity and efficiency for companies
- “developers and analysts predict that wearable technology will very quickly change the technological and cultural landscapes once again, and may even change the nature of mobile phones and other hand-held devices entirely”. <http://www.wearabledevices.com/what-is-a-wearable-device/>



Data from Vandrico Inc Wearables Database

Examples of devices already on the market (CP to complete)



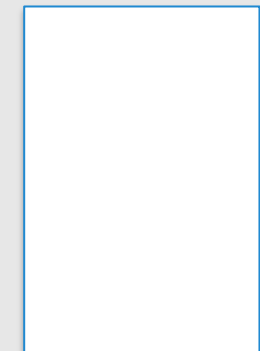
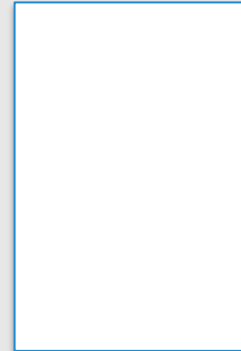
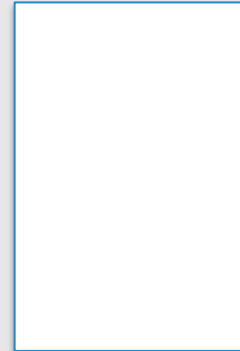
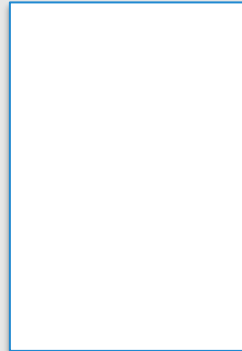
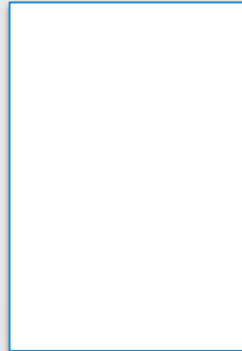
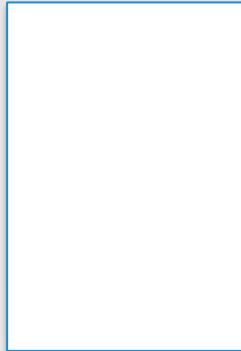
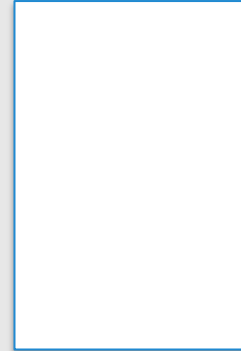
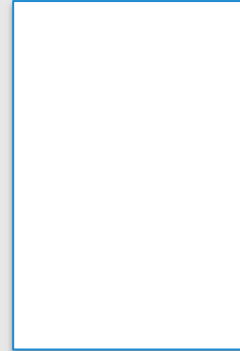
Xensr



Run-n-read



Smart Sensing



Data from Vandrico Inc Wearables Database

A few interesting innovations (CP)

- Wearable tech has huge implications for the fitness and healthcare and medical markets
 - <http://www.wearabledevices.com/2013/10/12/philips-collaborates-with-accenture-google-glass/>
- Music
 - <http://www.wearabledevices.com/2014/04/24/glove-from-imogen-heap/>
- In Games – Augmented reality and wearables will combine to create immersive experiences.
 - **Example here**



Gaming apps and Wearables



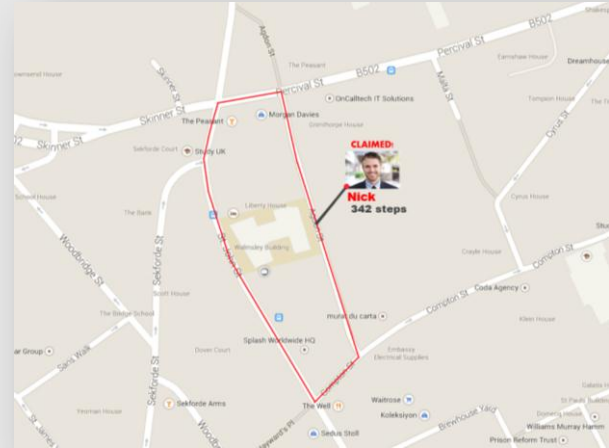
How will games evolve?

- Single source, multiple devices, multiple screens and form factors
- Master and slave devices
- Possibly 3 apps working together to create a totally immersive experience.
 - Smart phone, wristband, glasses
- Future gazing – what could be introduced to take advantage of wearable technology?
- How will games evolve?
- Give some examples
 - Geo-tagging
 - Daily challenges
 - Decathlon



How will games evolve with wearables?

- Ubiquitous game accessibility is becoming a player expectation
- Wearable technology dramatically expands this by turning non-play time into potential progress or chance for change
- e.g. Health band counting steps connecting to mobile geo-location data
 - Encircle street blocks to capture them
 - Length of concurrent journey in steps the deciding factor
 - Turns non-play time into reward



What can wearables bring to gaming?

- Alternative input methods
 - Surgery-style game where delicate procedures requires small-screen switch
- Biometric and health data
 - Track your calmness level – for example, track and compare yourself playing real poker versus your performance playing digital poker
- Second-screen gameplay for extra information and collaboration
 - Extend a board game-style experience with private updates on a wearable
 - Track multiple players heart rate - host app logic sends a monster attack to player with the lowest bpm
- New, personal ways to play
 - Play as a cracker trying to gain access to your wearable – the attachment to your devices heightens the emotional engagement



Crystal ball

- Combine achievements on each owned wearable into one larger experience, triathlon-style
 - Capitalise on each wearables speciality
- Wearable-to-wearable communication facilitating trade of non-private personal data
 - Group collaboration to capture geographic territory with your wearable type signifying your tribe allegiance
 - Spread your virus and avoid attack from other players
 - Persistence on your daily commute – identify who is that spy passing you secret information...



Andrew Parker

Challenges for developers and the Wearables industry



Challenges we see for Developers (AP)

- Market is going to increase dramatically, both in the number of devices and the range of functionality.
- Devices will support a wide variety of combinations of user input and output.
- Endless combinations of primary and wearable devices, plus the likelihood of multiple devices communication with each other.
- Wider range of programming languages, communication methods and protocols.



The future of cross-platform and wearables



The future of Cross-platform and wearables (AP)

- Abstraction of similar wearable features into single APIs to allow interchangeability of wearable devices, e.g. a head mounted motion sensor and arm mounted motion sensor could be mapped to a single gesture API.
- Generic middleware for communicating between devices. Same method of communication no matter what device pairing is being used.
- Reduced exposure to bespoke technologies and need for custom expertise. Stick with familiar development environments.
- Modular system encourages community based contributions which can be leveraged for broader access to different markets.



Tizen, Marmalade and wearbales



Tizen, Marmalade and wearables (AP)

- Tizen provides an API for transmitting data between phone and wearable.
- Use a Marmalade C++ extension to abstract this and integrate it into existing or new apps.*
- Marmalade extension framework makes it simple to write an app which can adapt based on the presence of a Gear device or not is simple with Marmalade.
- For example:
 - Add bonus mini-games which use Gear hand gestures.
 - Have app push a notification to the Gear when power ups have recharged.

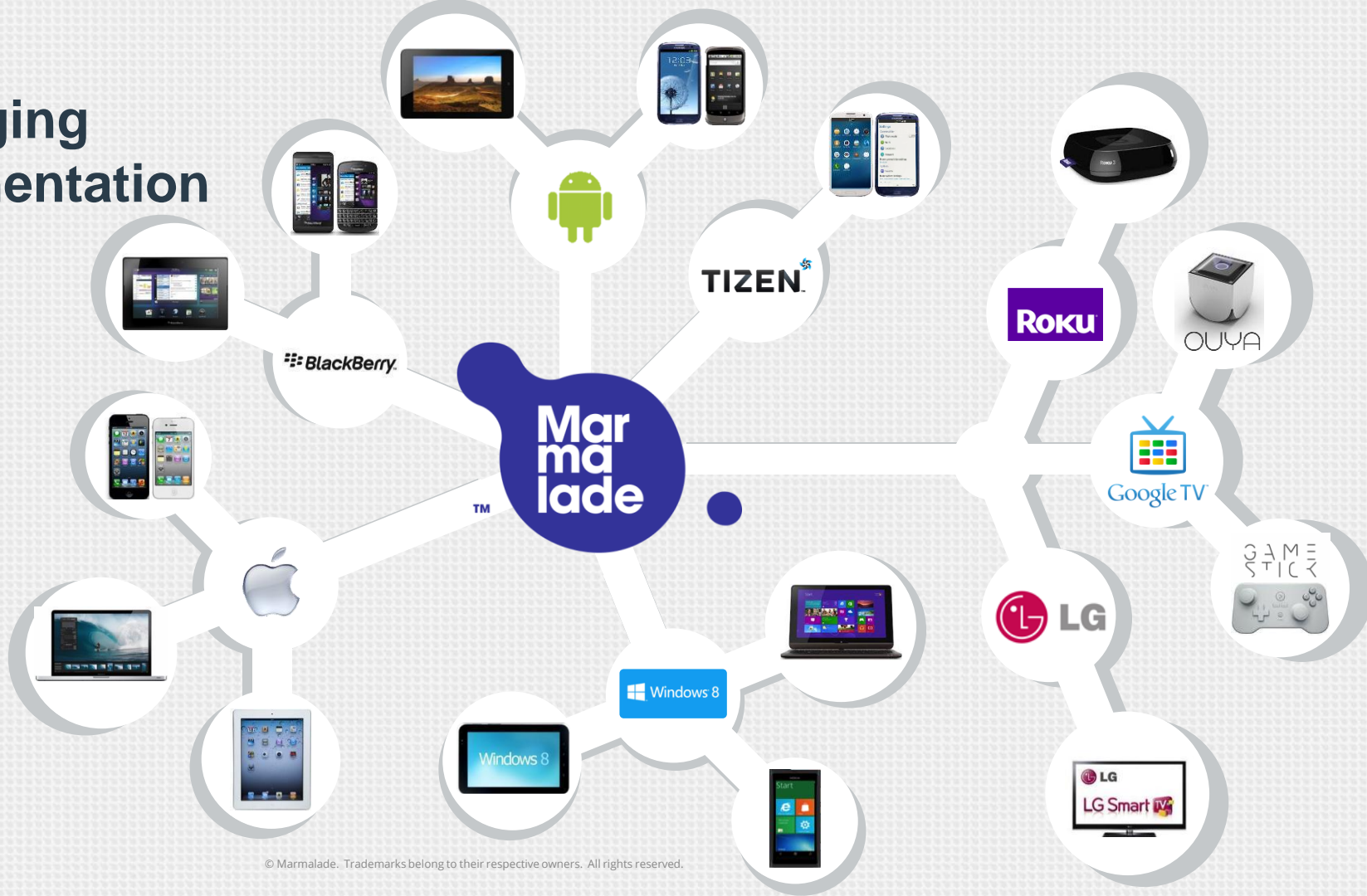


Fragmentation and cross-platform (AP)

- Its going to get worse before it gets better
- Smart phones are beginning to standardise but its taken 7 years.
- The standards are becoming established
- The first few years of wearables will be very fragmented.
- Marmalade manages this complexity so you don't have to.



Managing Fragmentation

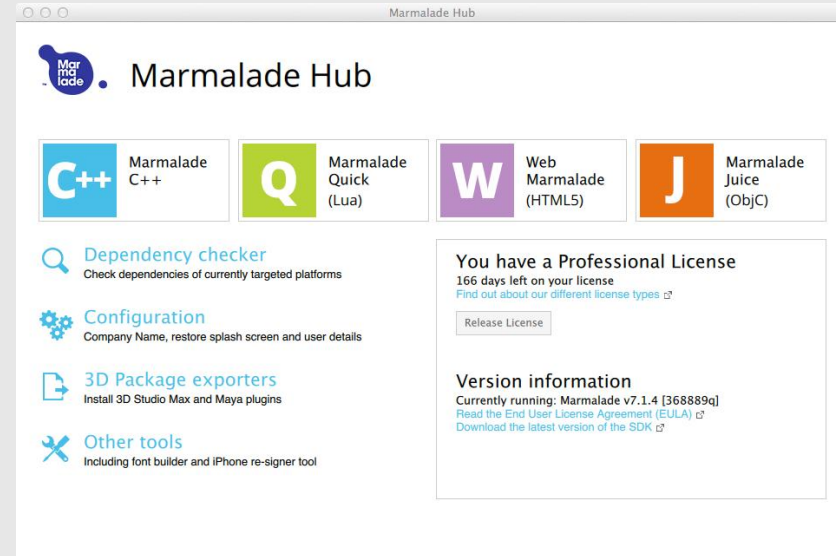


Marmalade features that can be used now to explore Wearables with the Tizen OS

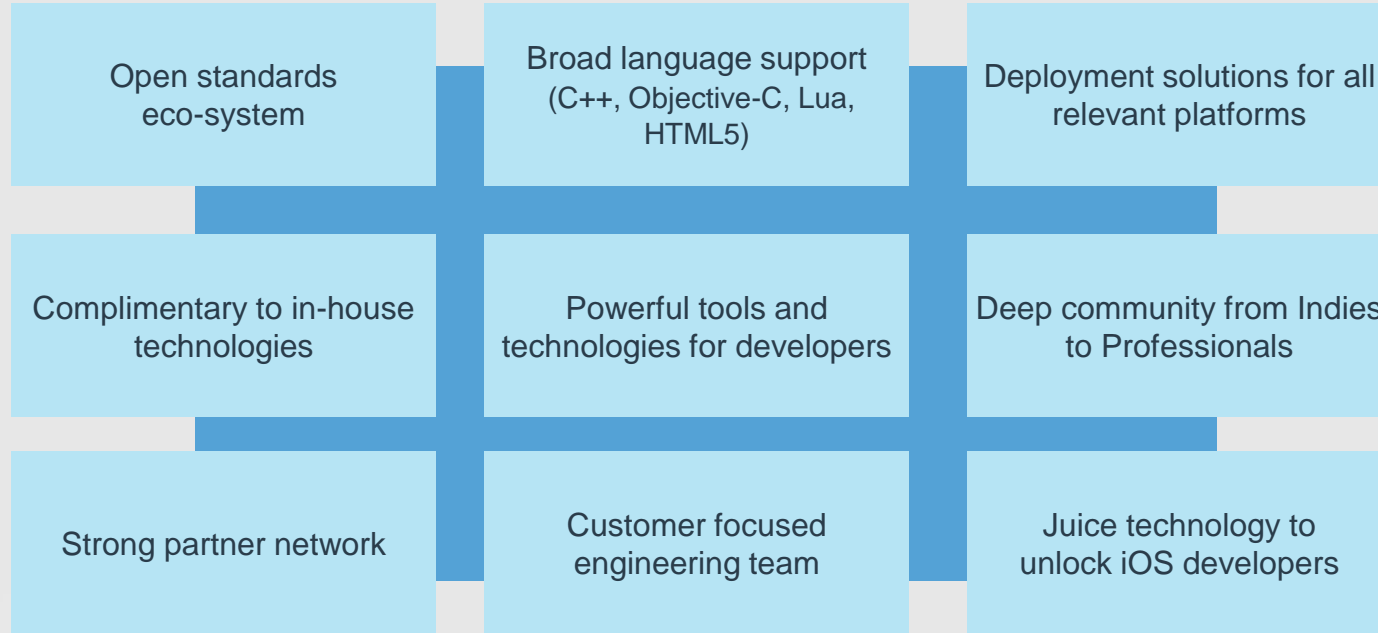


What is the Marmalade SDK?

- Powerful cross-platform tool
 - Open and flexible platform abstraction
 - Enables a single C++ codebase to run on a wide variety of platforms
- Designed for teams and individuals, of all scales
 - Developers deploy their code from a single code base
 - Built on an open standards C++ and OpenGL ES foundation
- Marmalade supports a broad, open partner network
 - Developers choose the technologies that fit their needs



Marmalade Ingredients



Why should developers use Marmalade? (TW/AP)

- What are the Marmalade core features that matter
 - To Tizen
 - To Wearables?



Showcasing Tizen apps made with Marmalade (CP)

- 100s of apps already Made with Marmalade and submitted to Tizen
- Screen shots of a few.



Summary

- You need to make sure your apps are going to be able to adapt to the Wearables explosion that is about to happen
- Ensure your apps are future-proofed and flexible from the start
- From today, the Marmalade extension framework makes it simple to write an app which can adapt based on the presence of a Tizen operated wearable device
- With Marmalade, you get native performance on any device.
- From today, Marmalade is free.





Madewithmarmalade.com

Thank you for listening.