



What We Learned From Porting 50+ Cloud Apps to Tizen

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**DEVELOPER
CONFERENCE**
2014
SAN FRANCISCO

From tizen.org

Tizen is an open source, standards-based software platform...

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What are the “must have” features for a computing platform?

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- **Access to the Internet**
- **Ability to do office productivity tasks**

What is the most popular office productivity solution in the world?



over 1,000,000,000 users

What is the second most popular office productivity solution in the world?

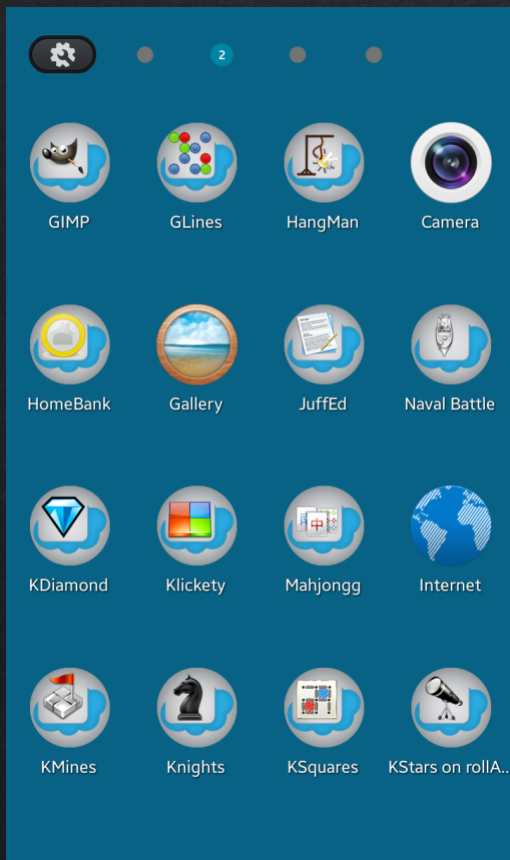


Apache
OpenOfficeTM


over 100,000,000 users

How long will it take to port these apps to new platform like Tizen?





We made
more than **50** popular desktop
apps
available on Tizen
in about **3 months**

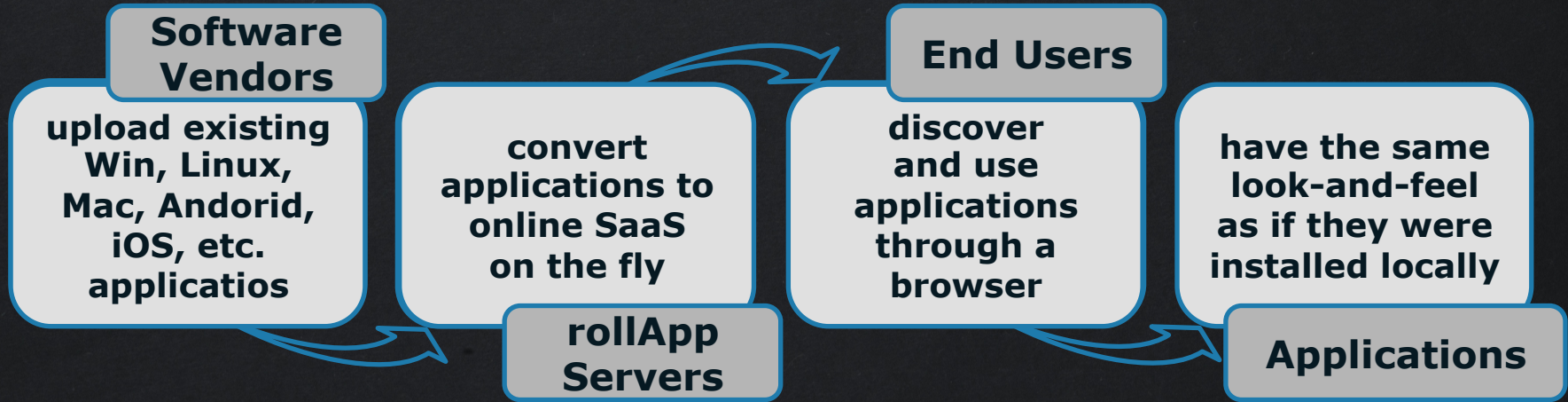


rollApp: cloud
applications
platform

rollApp: cloud applications platform

- **Supports Linux, Windows and Java desktop apps**
- **Works on**
 - Chrome, Safari, Firefox
 - iOS, Android, Tizen
- **Integrates with Dropbox, Google Drive, Box**

Work With Any App From Any Device With Just a Browser



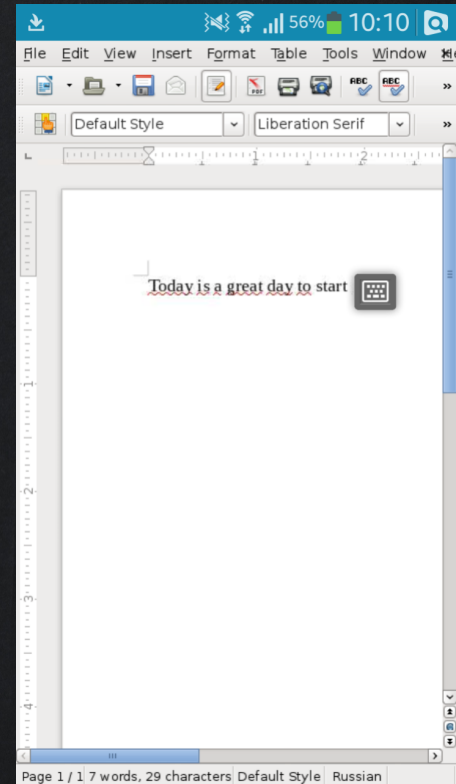
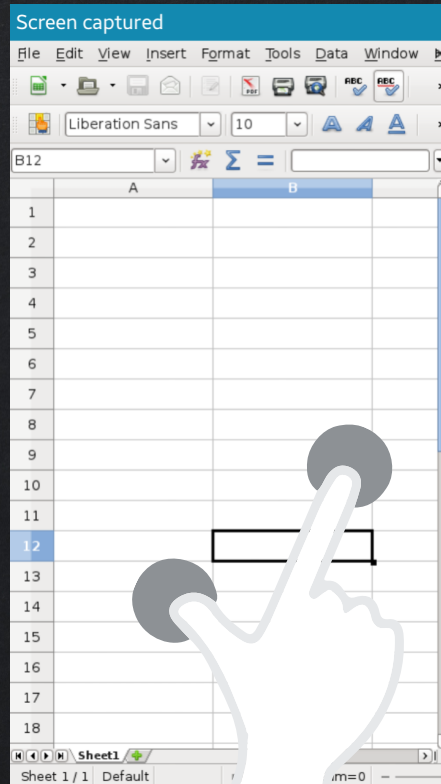
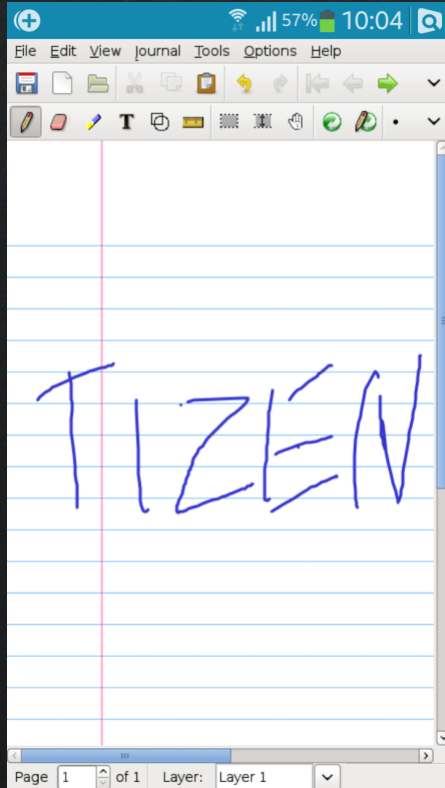
IBM Estimates: **50B Connected Devices by 2020**,
“You Can Put a Chip in Nearly Anything”

rollApp’s goal is to enable all existing software
on all existing and future browser-equipped devices

rollApp Today

- Palo Alto (CA) based startup
 - R&D in Ukraine
- Relatively small team (less than 30 people), includes some of the best experts on the planet
 - Bjarne Strastrup (the author of C++) and Bob Iannucci (former CTO from NOKIA) are members of our Advisory Board
- Backed by prominent international venture investors
- Publicly available beta version of the technology
 - attracted tremendous interest (over 100-fold traffic growth during the year, over 5 mln users last month)

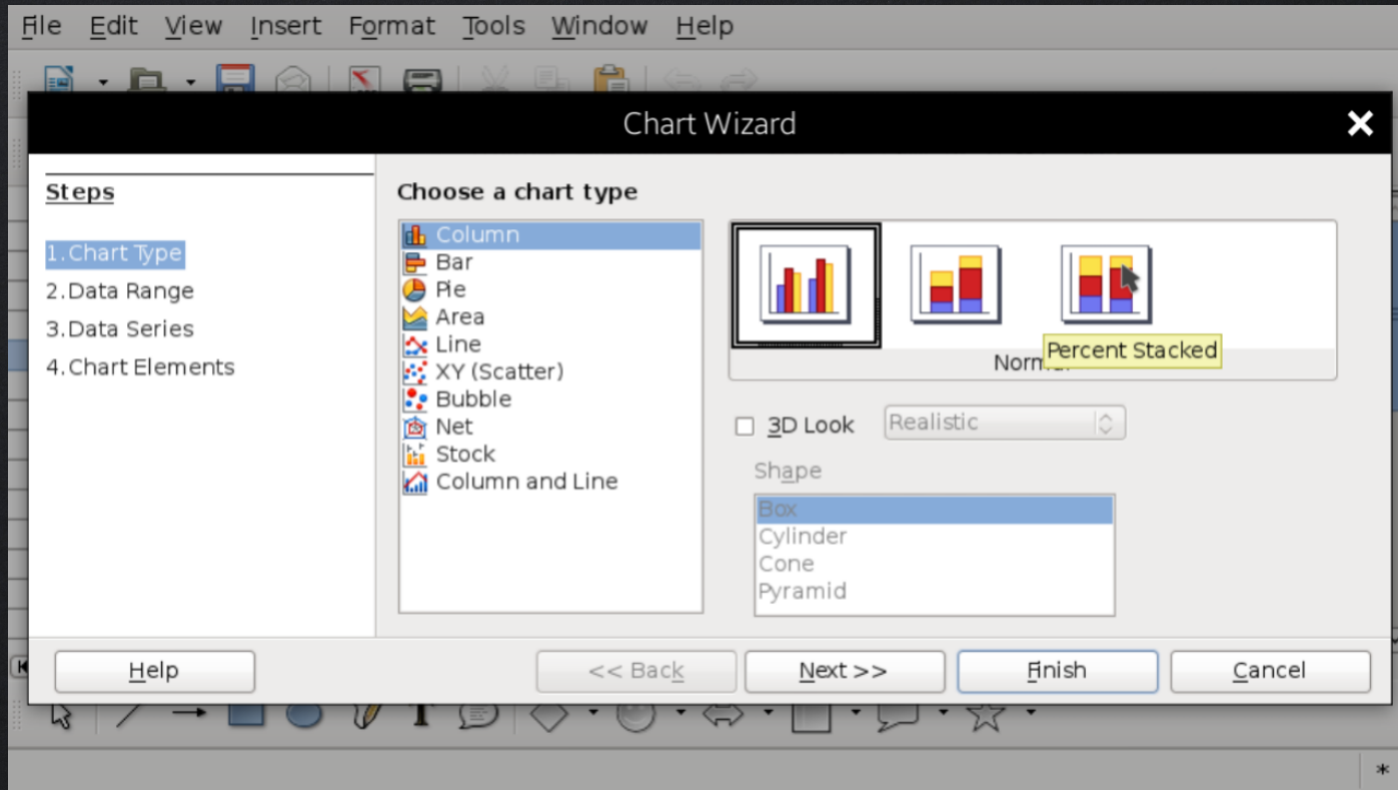
Apps Adapted For Touch Input



Do Precise Work With Touch Screen



Smart Window Management: Modals

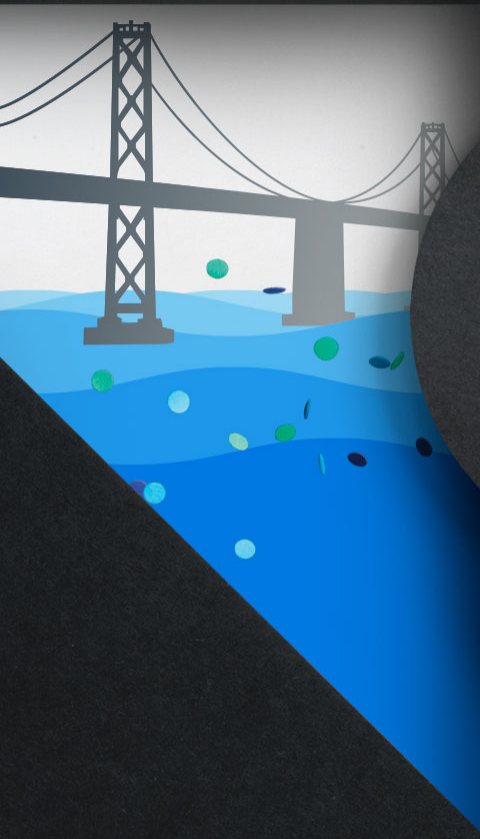


Smart Window Management: Documents

The screenshot displays the LibreOffice Calc interface with the following details:

- Main Window:** cc_camdencountydates.xls - LibreOffice Calc
- Font Settings:** MS Sans Serif, size 10
- Formula Bar:** A105, formula: = Fires: Fire at Peter Hagan Shipyard
- Spreadsheet Data:**

	A	B	C	D
103	"Sindia" wrecked on Ocean City Beach	12	15	1901
104	Battle of Gloucester	11	25	1777
105	Fires: Fire at Peter Hagan Shipyard			
106				
107				
108				
109				
110				
- Overlaid Windows:**
 - Untitled 1 - LibreOffice Writer:** A blank document window with a red 'X' icon.
 - cc_camdencountydates.xls - LibreOffice Calc:** A smaller version of the spreadsheet window with a red 'X' icon.

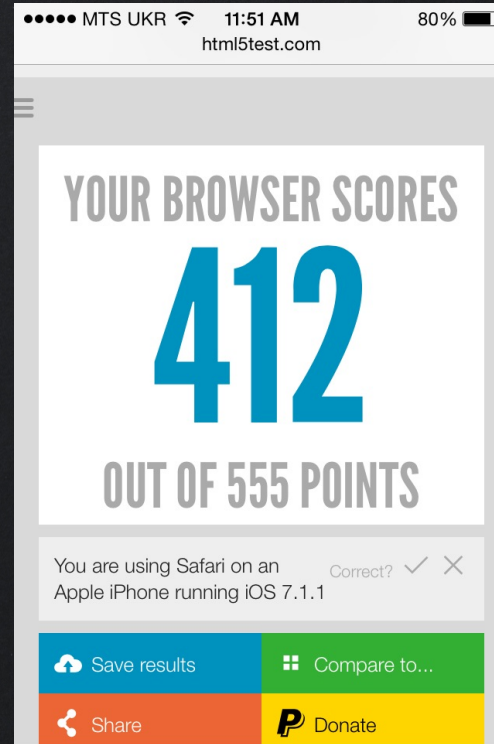
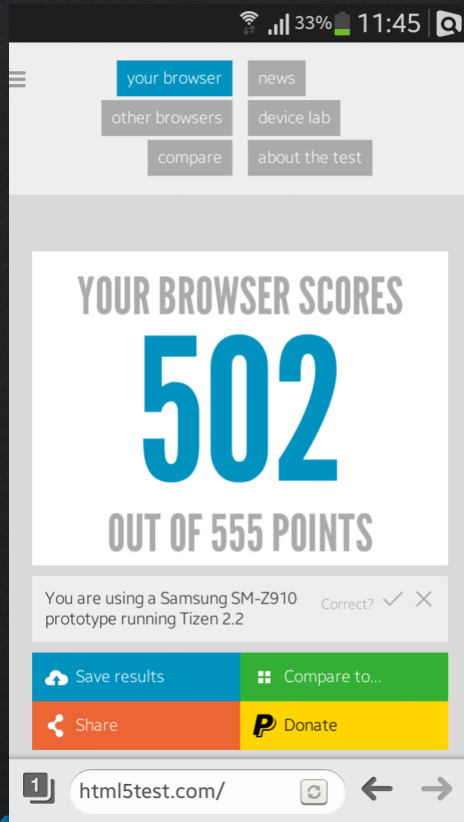


Making it all
work together

Basic options for building apps

- **Native C++ app**
 - Great for performance and access to low-level platform features
 - Heavy-duty development, zero portability
- **Native Web JavaScript app**
 - Good balance of access to low-level features and speed of development
 - Portability is still questionable
- **“Hosted” JavaScript app**
 - Great portability and speed of development
 - Tricky access to low-level features

Good news: standards are on your side



Good news: standards are on your side,
but they **are not panacea**

5.1.6 Browser Context Names



... a new browsing context is being requested,
and what happens depends on the user agent's
configuration and/or abilities.

More at <http://www.w3.org/TR/html5/browsers.html>

Lesson: Web app ≠ JavaScript Mobile app

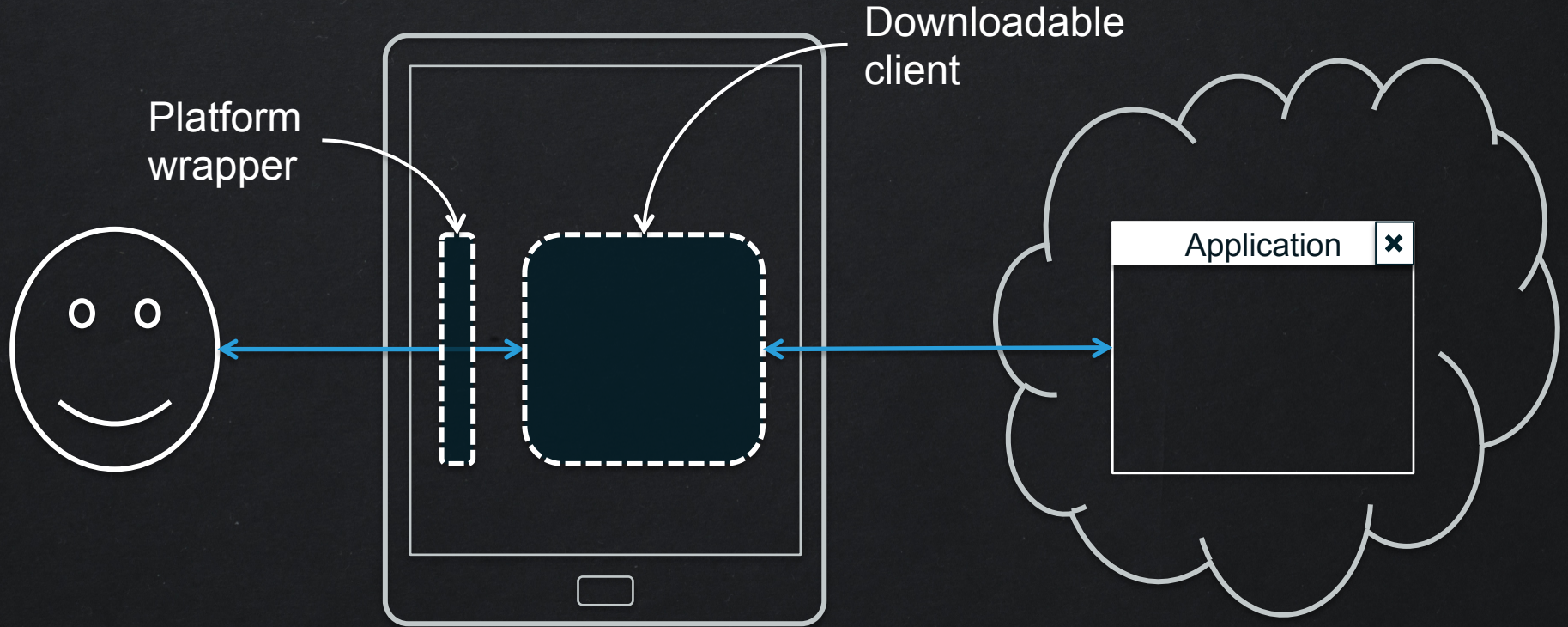
	Web app	Mobile app
Connectivity issues	Browser is the app. Your app is just a content	Have to be handled by the app
Sleep mode		
Hardware buttons		
App UI/UX	Hey, it's the Web! Do what you want!	Have to conform to platform UI guidelines
Access to 3 rd -party web services	Well developed and natural	Can be cumbersome and “not native”

“Cross-platformity” in rollApp

Features need to work in a way
“natural” for a target platform

Features need to work in a way
“natural” for an application and
its main use cases

30,000 feet overview



Platform-specific vs. cross-platform

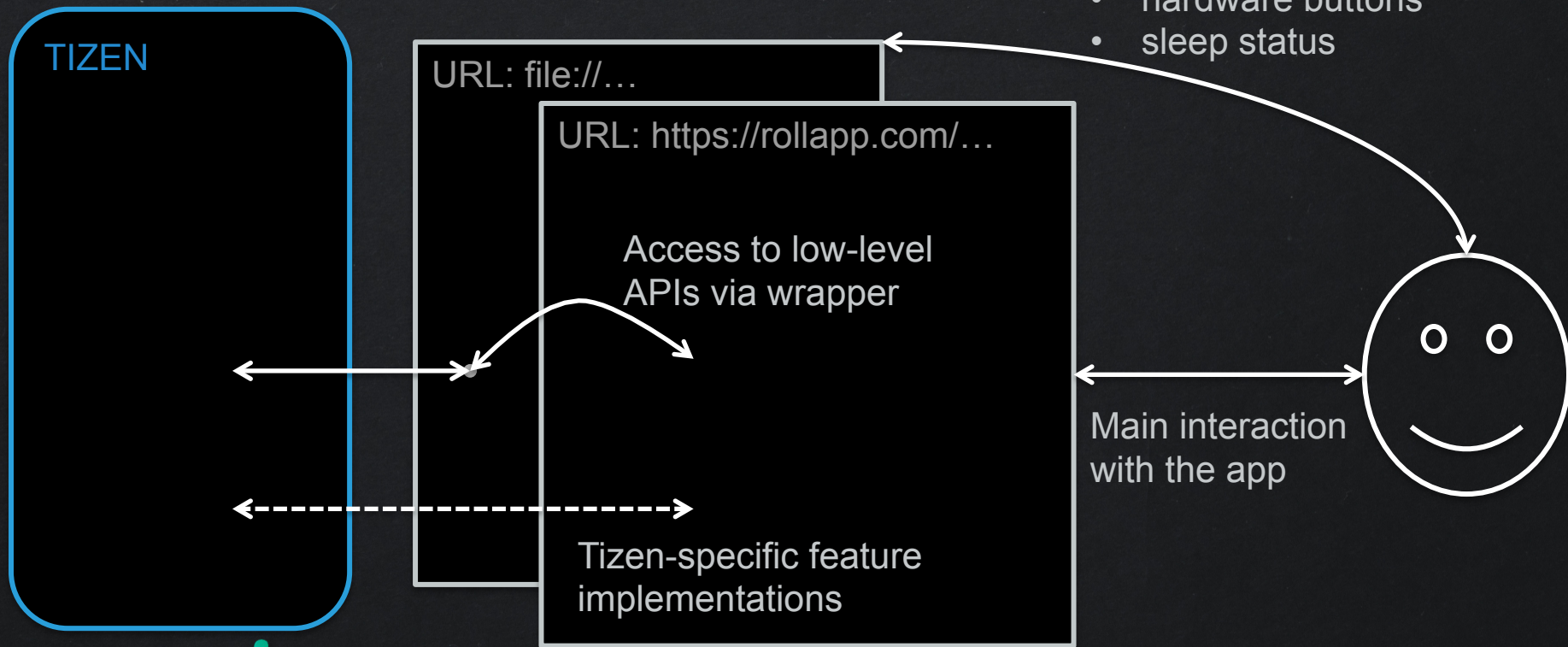
Platform Wrapper

- Installable component available from the store
- Helps handling low-level platform specific functions
- Helps conforming to UX guidelines

Downloadable Client

- Does all the user-app interaction heavy lifting
- Adapts application UX to target platform
- Supports “in-browser” operation for all supported platforms

Platform Wrapper Architecture



What's most popular mobile web browser engine of present day?

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Lesson: No one platform is a good approximation of another platform

- **Fonts/image rendering**
 - Scaling issues
 - Handling of retina screen
- **Keyboard activation**
 - Window is resized, when keyboard is open
 - `.focus()` does not activate keyboard from `ontouchstart()` handler
- **Performance**
 - `canvas.getPixelData()`

Lesson: Configuration Management **is** important

Platform under active development
+
Your app under active development
=



At times bugs can be related to very basic features

Tizen Mobile 1.x & 2.x / TDIST-371 3 of 4 ▲▼

Incorrect touchstart events fired for multitouch gestures

[Edit](#) [Comment](#) [Assign](#) [More ▼](#) [Assigned](#) [Resolved](#) [Export ▼](#)

Details

Type:	<input checked="" type="checkbox"/> Bug	Status:	<input checked="" type="checkbox"/> New (View Workflow)
Priority:	<input checked="" type="checkbox"/> P1	Resolution:	Unresolved
Affects Version/s:	2.0	Security Level:	Declassified
Component/s:	[TP] web-w3capi		
Labels:	None		
Environment:	2.0 on Ref.Device-210		
Affected Language:	English		
Defect Classification:	Feature Failure Without Workaround		
Platform/s:	Lunchbox		
Profile/s:	Smartphone		
Reproducibility:	Always (100%)		
Severity:	Major		

People

Assignee:	Gavin Hindman Assign to me
Reporter:	Dima Malenko
Votes:	0
Watchers:	3 Stop watching this issue

Dates

Created:	15/Mar/13 6:06 PM
Updated:	27/Sep/13 6:12 AM

Lesson: Hosted apps and app store aren't exactly friends

- **Publishing of v.1 can be painful**
 - Hosted components updated instantaneously, but verification of resubmitted apps can take weeks
- **Having components on different deployment paths can add complexity**
- **Managing many apps on the app store can be a hassle**

Summary

- **rollApp is a universal cloud platform making any application available on any device**
- **JavaScript has become first class citizen for mobile apps development, but some difficulties remain**
- **Turning Web app into high-quality JavaScript mobile app is no easy ride**
- **Do not rely on cross-platform toolset; develop and test on the specific platform**
- **Good engineering practice always helps**

www.rollApp.com

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The logo features a stylized camera lens with five blue and black petals, surrounded by a blue circular frame with motion lines. The background of the entire slide is a white paper effect with torn edges, revealing a cityscape and a bridge. There are also scattered blue and green confetti-like dots.