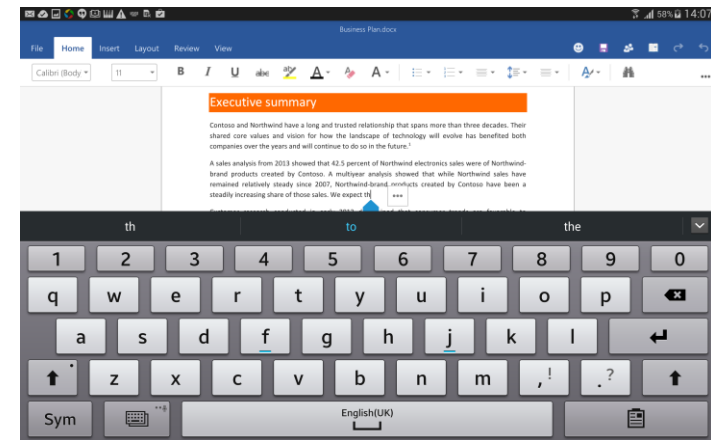


Mobile computation and mobile agents

Juan Camilo Rada

Types of mobiles applications



SMS Applications



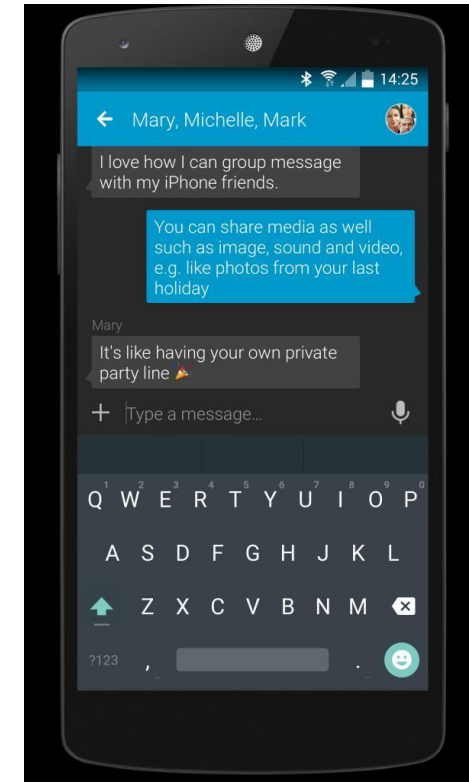
SMS applications

PROS

- Work on any device
- Useful for sending timely
- Easily incorporate into any web or mobile app
- Simple to setup and manage

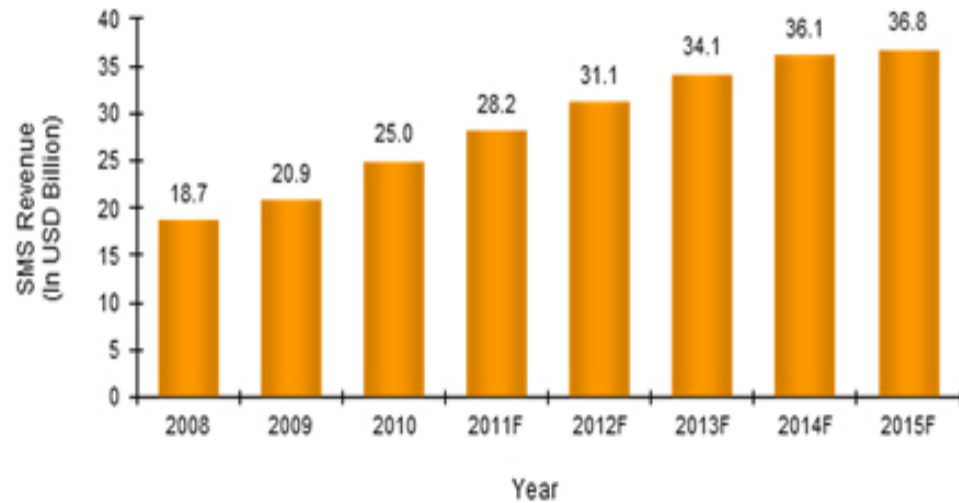
CONS

- 160 Characters
- Limited text experience



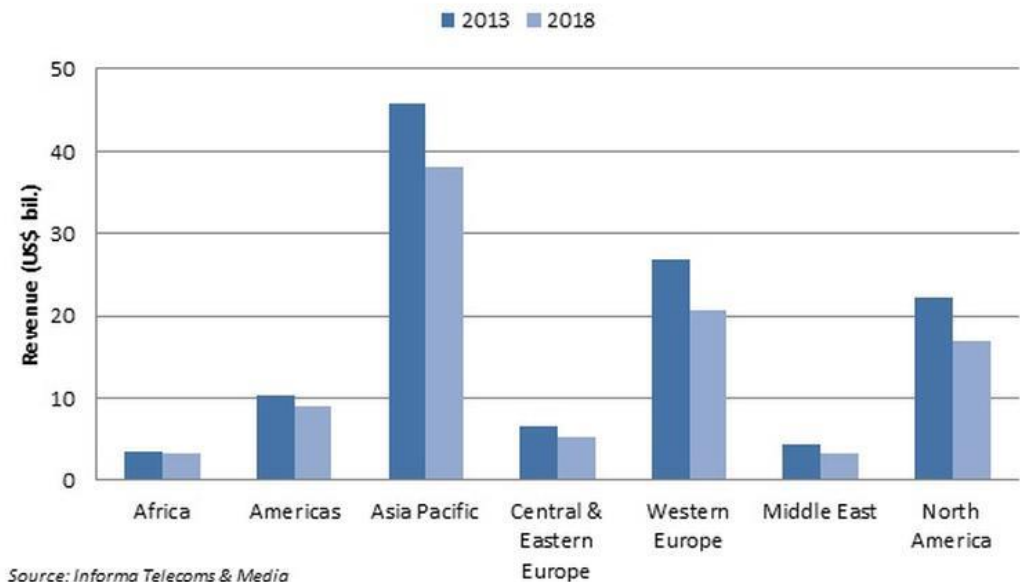
SMS applications

SMS Revenue – North America (In USD Billion, 2008 – 2015F)



Source: Portio Research Ltd.

Global, SMS revenues by region, 2013 and 2018



Source: Informa Telecoms & Media

SMS applications



Google SMS applications

Use Google applications via SMS text message.

- **Calendar SMS**
Check your calendar when you're on the go.
- **Google Voice Text messages**
Send and receive SMS text messages through the Google Voice.
- **Blogger Mobile**
Keep your readers posted wherever you are.

SMS and your Account

- **Account Verification / Password Change Notification**
Additional reasons why Google might send you an SMS.

Not all services are available in all countries. Charges may apply. See specific product links above for details.

Sim Card Applications



Sim Card applications

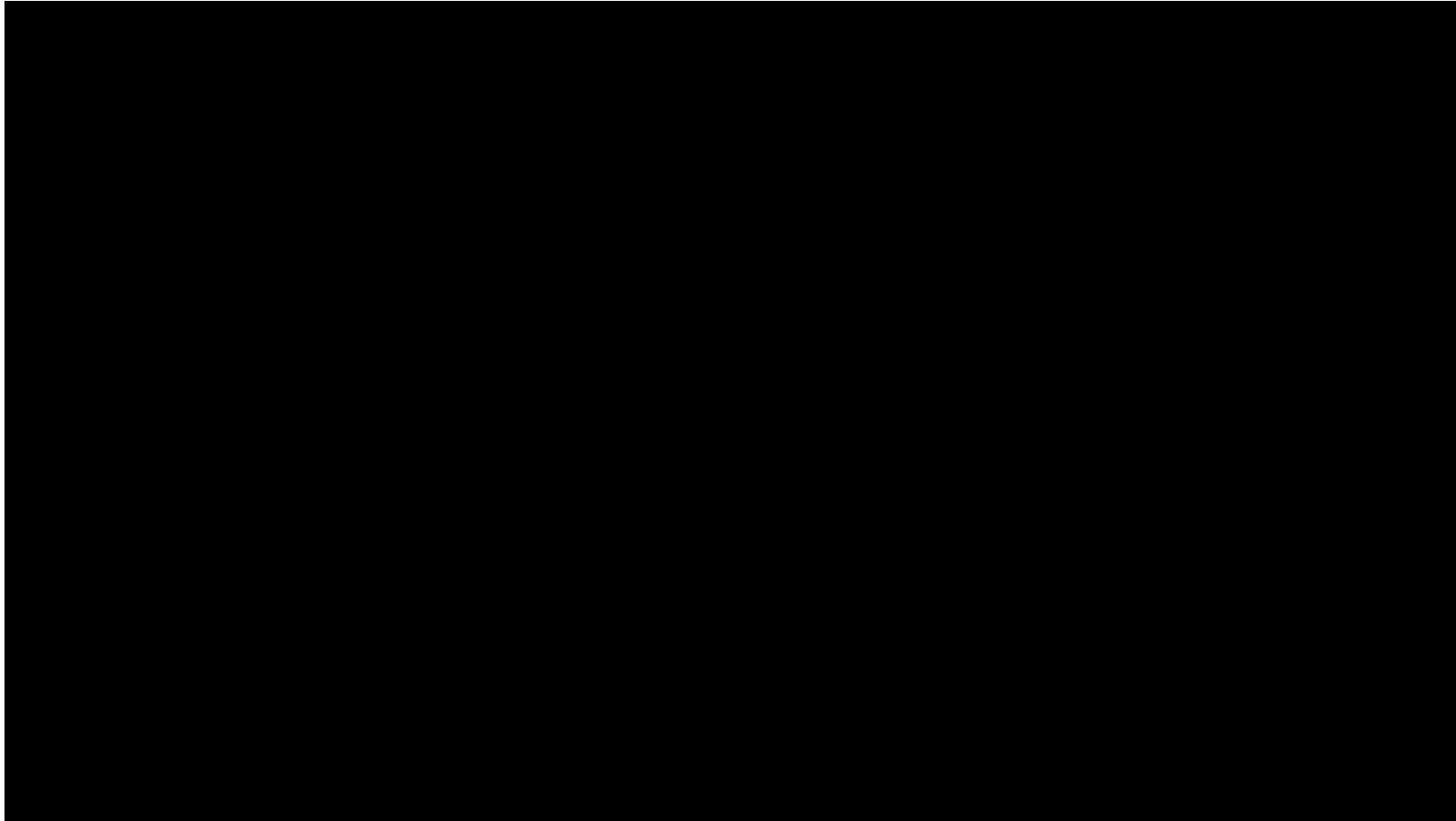
PROS

- Interoperability.
- Portability
- Runs on SIM card CPU, separate from phone
- Send SMS, initiate calls, initiate and use data services.
- Receive and act on events (call connected, call disconnected)

CONS

- Rudimentary UI – display text, menus, play tones, read input.
- Java applets

Sim Card applications



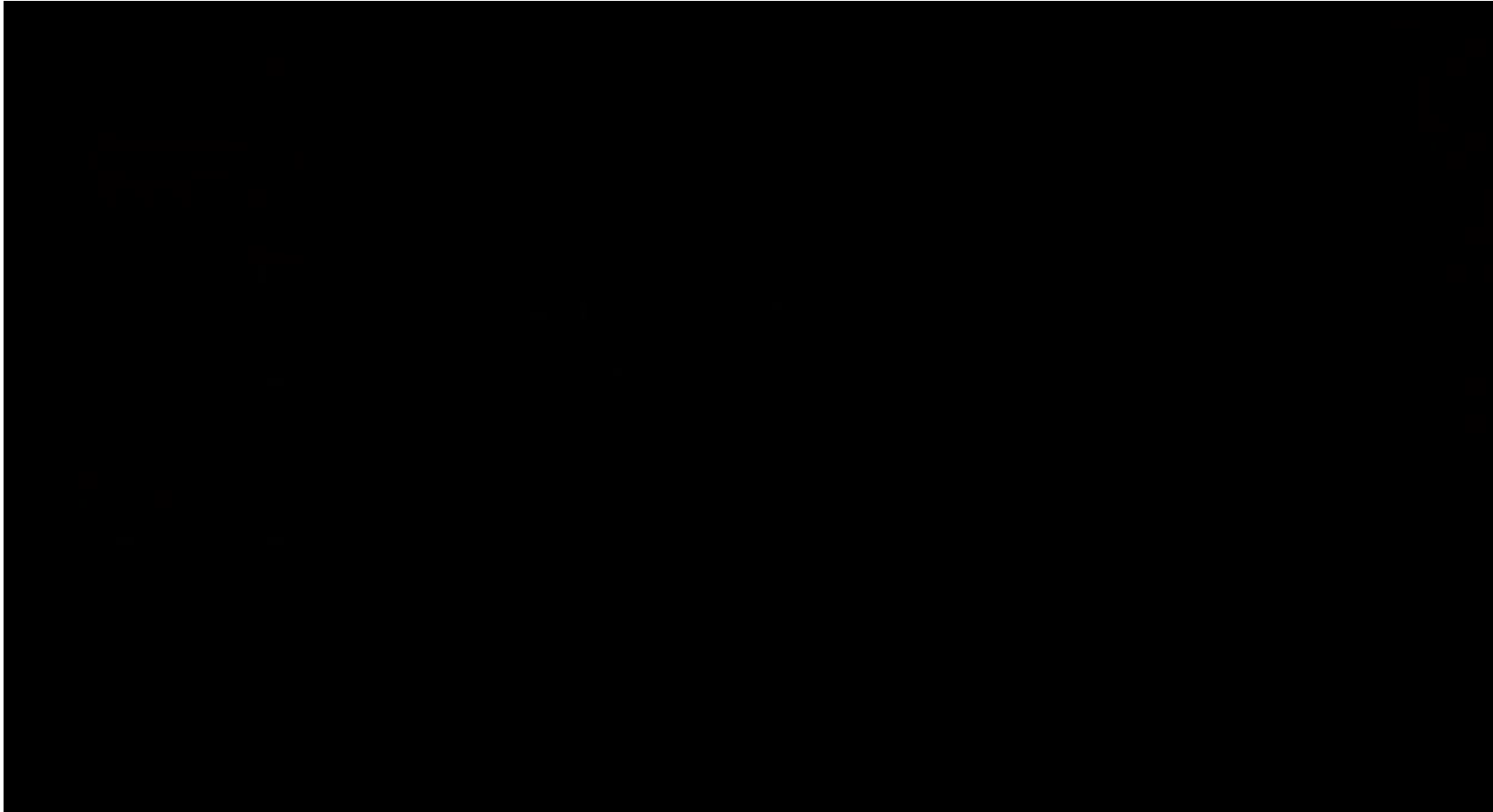
Mobile web site or responsive



Simple responsive web site

- [simple.html](#)

Complex responsive web site



Mobile web site or responsive

PROS

- Interoperability.
- Easy to create, maintain and publish

CONS

- Limited experience
- Slowly load time
- They can be difficult to support across multiple devices

Mobile web application

Feature	Safari on iOS	Android Browser		BlackBerry Browser		Internet Explorer	Opera		Firefox	webOS Browser	Symbian Browser
Version tested	iPhone, iPad	Phones (1.0-2.3)	Tablets (3.0+)	Phones	Tablet	Windows Phone	Mobile	Mini	Android		Nokia phones
Minimum version tested	3.2	1.5	3.0	6.0	1.0	9	11	6	6	1.4	A3
Application Cache <u>W3C API</u> Online package installation.	✓	✓ 2.1+	✓	✓ 6.0+	✓		✓		✓	✓	
Web storage <u>W3C API</u> Persistent and session storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Web SQL storage <u>W3C API (no active)</u> Persistent SQLite storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓		✓			✓	
Geolocation <u>W3C API</u> Geolocation & tracking using GPS, cells or Wi-Fi.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Multimedia <u>W3C API</u> Video & Audio Players	✓	✓ 2.3+	✓	✓ 7.0+	✓	✓	✓		✓	✓	
Server-Sent Events <u>W3C API</u> EventSource pattern to maintain the connection to the server open.	✓ 4.1+						✓		✓		
Web Sockets <u>W3C API</u> Newbidirectional protocol over HTTP	✓ 4.2+			✓ 6.1+	✓		✓		✓		



Mobile web application

- <http://demos.jquerymobile.com/1.4.5/>

Mobile web application

PROS

- Easy to create using basic and standard HTML, CSS and javascript
- Simple to deploy
- Better experience, offline use
- Content is accessible on any mobile web browser

CONS

- The optimal experience might not be available on all handset.
- Challenging to support across multiple devices.
- Not support for all native features.

Native application



Native application

PROS

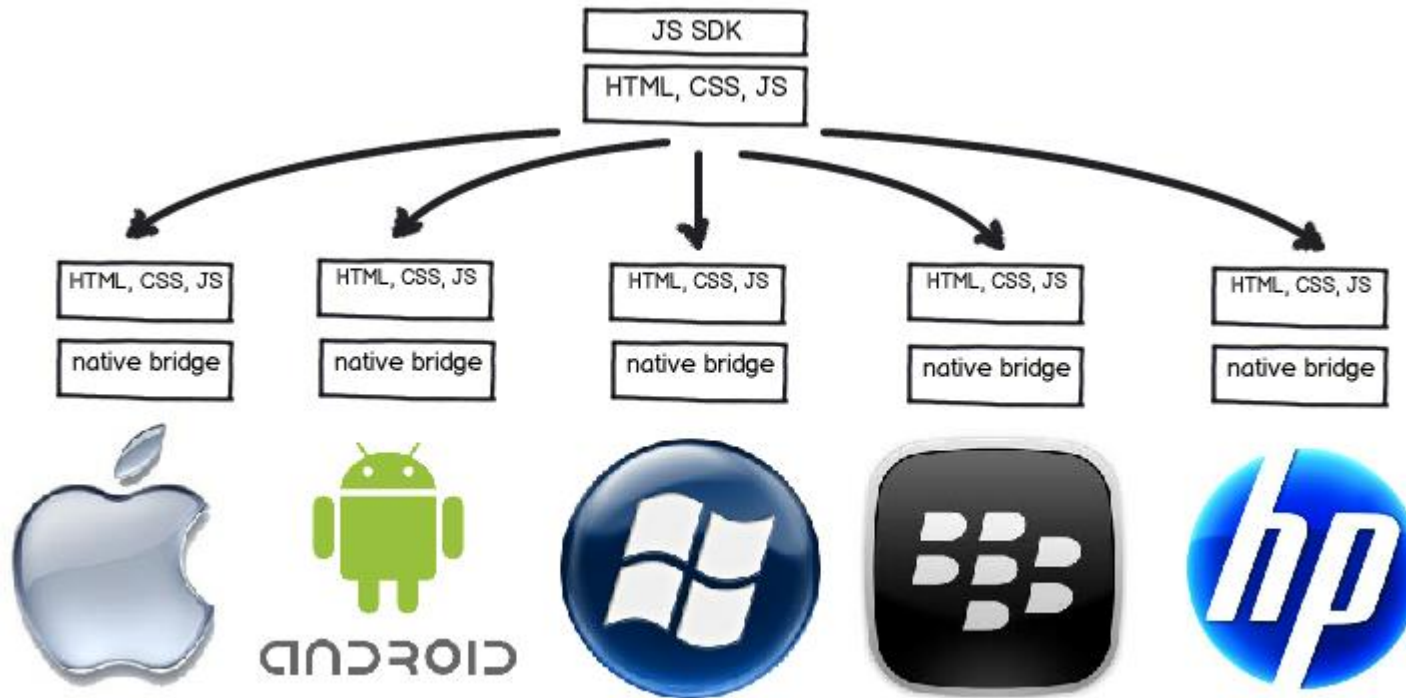
- Best user experience
- Best performance (Access hardware features)
- Relative easy to develop for single platform
- Easy distribution

CONS

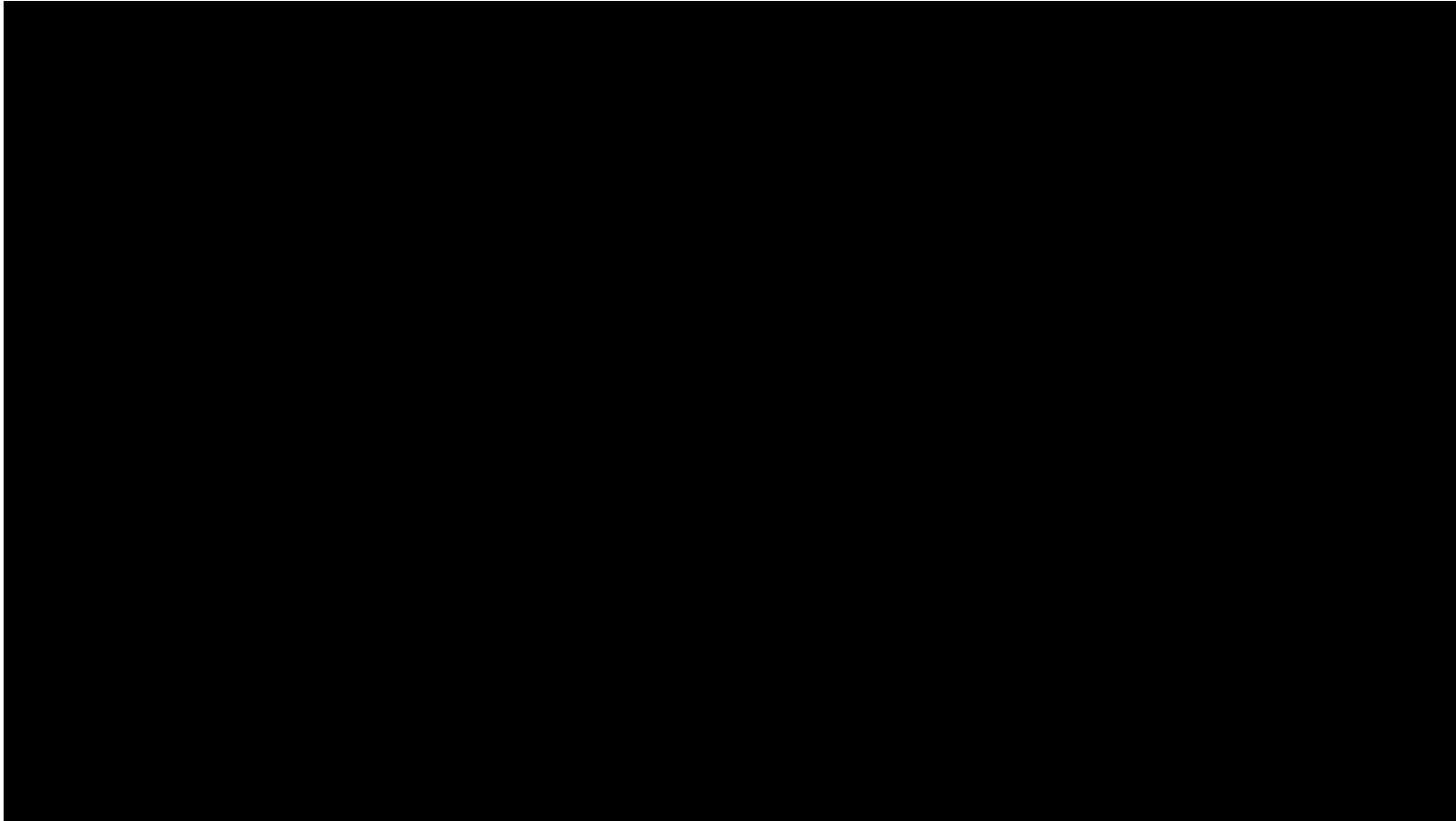
- Can not be ported easily to other mobile platforms
- Share revenue with third parties

Hybrid Applications

- [Mobile frameworks comparison](#)



Hybrid applications

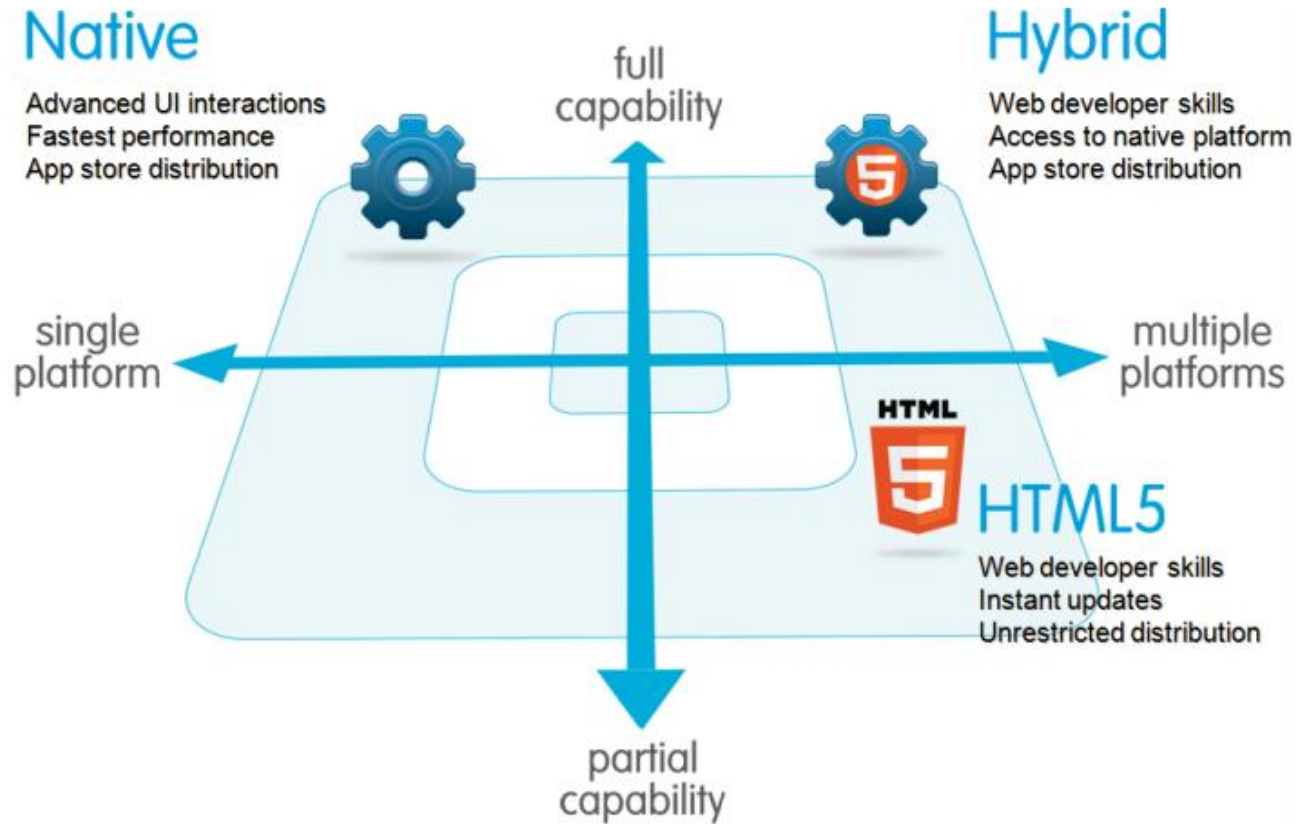


Hybrid applications

PROS

- There is one code base for different mobile platforms.
- Frameworks offer access to hardware features.
- Updates on server
- App distribution
- **CONS**
- Performance can be bad when the content and components lives on the server.
- Meet design guidelines of different platforms can be challenging

Comparison



Native application (Xamarin)



Native application (Xamarin)



Mobile computation and mobile agents

System – Business scenario	Platform
Tetris type video game	
3d car video game	
Airport services	
Emergency services	
Newspaper online	
Integrated development environment (IDE)	
Video calls system	
Compass app	
Constellations identification system	

Mobile computation and mobile agents

	Device support	Complexity	User experience	Language	Offline support	Device features
SMS	All	Simple	Limited	N/A	No	None
Mobile websites	All	Simple	Limited	HTML	No	None
Mobile web widgets	Some	Medium	Great	HTML	Limited	Limited
Mobile web applications	Some	Medium	Great	HTML, CSS, JavaScript	Limited	Limited
Native applications	All	Complex	Excellent	Various	Yes	Yes
Games	All	Complex	Excellent	Various	Yes	Yes