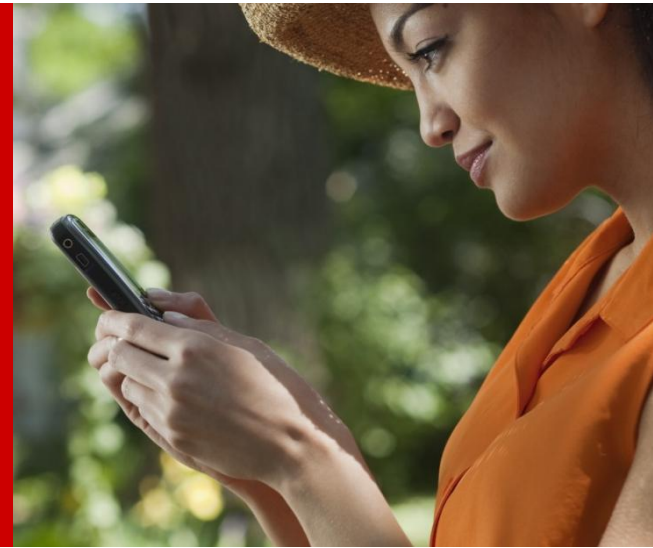


Native or Web Application?

How Best to Deliver Content and Services to Your Audiences over the Mobile Phone



April 2010

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Methodology:

This industry briefing is based on a month long survey with 87 developers, publishers, service providers, and design agencies, as well as in-depth interviews with topic experts at leading publishers and technology consortiums such as IAC, Sanoma Publishing, W3C, and Ericsson Research Lab.

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Abbreviations and acronyms

API(s)	Application Programming Interface(s)
App(s)	Application(s)
CTR	Click Through Rate
HTML	H yper T ext M arkup L anguage
NFC	Near Field Communications
OEM	Original equipment manufacturer
OS	Operating System
PIM	Personal Information Management
QA	Quality Assurance
ROI	Return on investment
TV	Television
UX	User Experience

Introduction

Definitions

Native:

- *An application specifically designed to run on a device's operating system and machine firmware*
- *It typically needs to be adapted/adjusted for different devices*

Web:

- *An application in which all or some parts of the software are downloaded from the Web each time it is run*
- *It can usually be accessed from all web-capable mobile devices*



Why the study?

The choice over a web or native (i.e. device specific) application holds important implications on, or is dictated by, a number of launch considerations for any mobile publisher or service provider:

- **User Experience design** – native apps are traditionally superior in terms of performance and the only means to access device attributes such as geolocation API, camera, address book, and accelerometer.
- **Billing** – web apps or mobile-optimized web sites typically offer greater billing options and allow for open distribution, independent of third-party vendors such as carriers or OEM app stores.
- **Reach** – while mobile app stores attract more active users overall, web apps allow publishers and service providers to serve all smartphone audiences without the compatibility issues facing native app distribution.
- **ROI** – the costs of development and updates are generally higher for native apps, but native app stores are said to generate higher returns thanks to the benefits of larger consumer bases and integrated billing, for example.
- **Go-to-market** – web apps are often quicker to deploy particularly since they are not subjected to distributor approval e.g. Apple AppStore, which can take from weeks to months of evaluation and quality assurance.
- **Discoverability** – with an influx of new applications into proprietary app stores (over 180,000 apps on Apple App Store alone*) it is increasingly hard to generalize whether visibility is higher over the web or native interfaces.
- **User analytics** – web apps or web sites generally offer more direct, unfiltered access to user behavior data, which in turn enables product cross-selling opportunities and helps build customer loyalty.

Finally the constant evolution of web (e.g. HTML 5) and browser APIs, coupled with the increasing connectivity of native applications, continue to blur the lines between web and native applications in terms of end user experience.

* Sources: MacRumors, retrieved on April 8th 2010

Conclusions and implications

New-generation web applications to challenge native app dominance in mobile service distribution

- Despite conventional beliefs, by 2013 the **majority of native device attributes** are set to reach mobile/HTML5 web applications (*as estimated below*) while enabling user experiences that rival those of native applications:



Geo-location



Motion detection



Camera



Contacts



Messaging



Calendar



Files



** simplified, approximate timeline for illustration only*

- Web apps offer an **architectural advantage** when targeting a cross-device launch, where significantly less platform migration is required as compared to native applications enabling substantial savings in porting and QA costs
- The web platform is particularly useful for **subscription-based** services such as communications, news & weather, financial services, retail and shopping, where iterative design and user analytics are more relevant
- The ‘native-only’ approach, which is particularly common among smaller and pay-per-download application providers, will see a decrease in mind share from 44% to 24% as **mobile web usage drastically increases in popularity** *
- This development may in turn lead to a **proliferation of mobile application distribution** beyond the currently controlled App Store environments toward an open model, as seen over the evolution of the PC Internet
- In the near term, native applications will likely remain the preferred interface particularly for **heavier applications** e.g. 3D games and for **pay-per-download** applications thanks to integrated billing options over native App Stores

* Sources: Morgan Stanley, 2010; Opera Mini State of the Mobile Web Report, Feb 2010

Methodology & goal

Our goal

Given the importance of choosing the right application interface, Global Intelligence Alliance aims to offer a supportive guideline for any mobile marketer, publisher, or service provider based on collective experiences from current vendors.

This study also compares the overall future outlook of web-based vs. native applications, with wide-ranging implications beyond mobile services into general consumer electronics, such as tablet computers and connected TVs.

What we did

Between 16-Feb and 18-Mar 2010, GIA collected responses from 87 developers, publishers, service providers and design agencies. These companies collectively represent hundreds of mobile service properties across 20+ content categories serving millions of consumers.

In addition, GIA also interviewed topic experts at leading publishers and technology consortiums such as IAC, Sanoma Publishing, W3C and Ericsson Research Lab.

The resulting findings not only reflect past and present market experiences, but also provide a future outlook based on technology evolution and consumer behavior.

What we observed

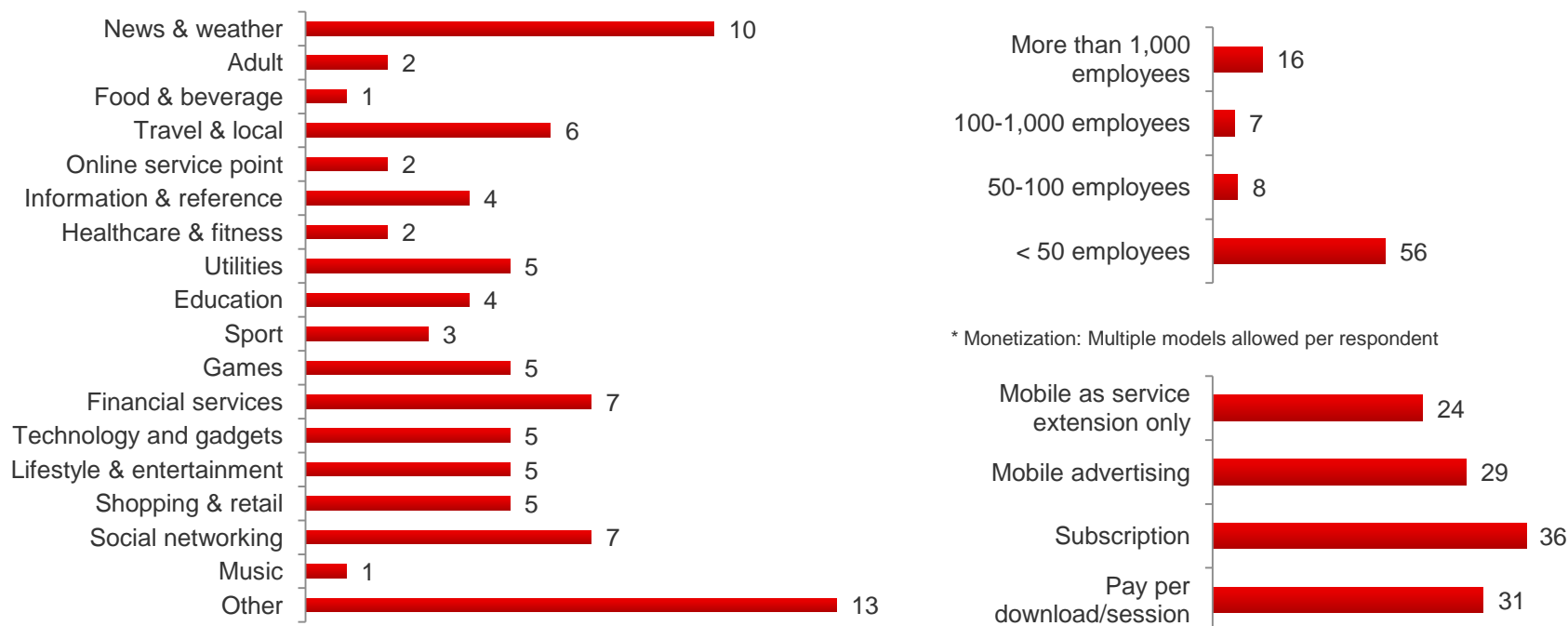
For a thorough evaluation, the study focused on the following aspects of comparison:

- Current market share
- Key decision criteria
- User adoption rates and traffic
- Usage stickiness
- Advertising CTR performance
- User engagement
- Development and maintenance costs
- Launch speed
- Mode of development
- Future outlook

News, Financial, and Social top respondent categories

Stronger representation of small companies (< 50 employees) reflects mobile publisher mix in reality; subscription takes moderate lead over other monetization models

Survey respondents by content category, size, and monetization model* (Total: 87)



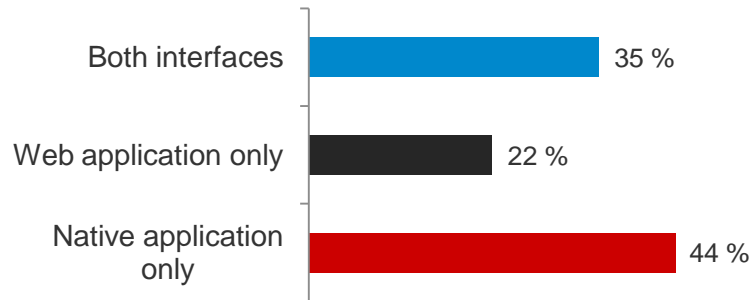
Category notes: 'Social network' includes dating; 'financial services' includes both information and transaction services; 'utilities' includes e.g. navigation, video, radio; 'information and reference' includes e.g. dictionary; 'online service point' includes e.g. FedEx Mobile; 'other' includes books, enterprise, mCommerce, synchronization, productivity, or several of the above.

Application Choice and Drivers

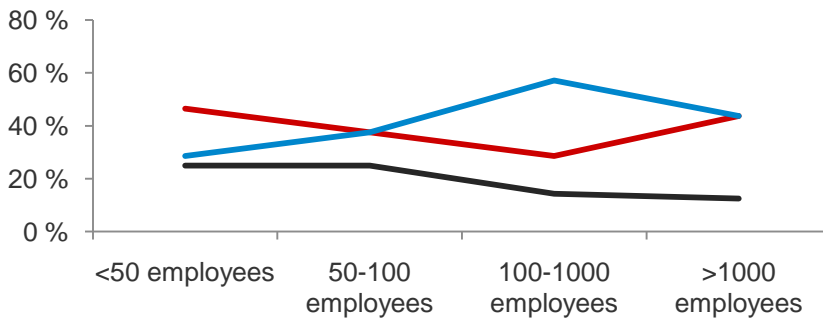
Native apps maintain larger mind share, while bigger publishers tend to offer both interfaces

Native apps appear the primary app interface for pay-per-download and small (<50 employees) firms

Respondent split by interface choice (Total: 87)

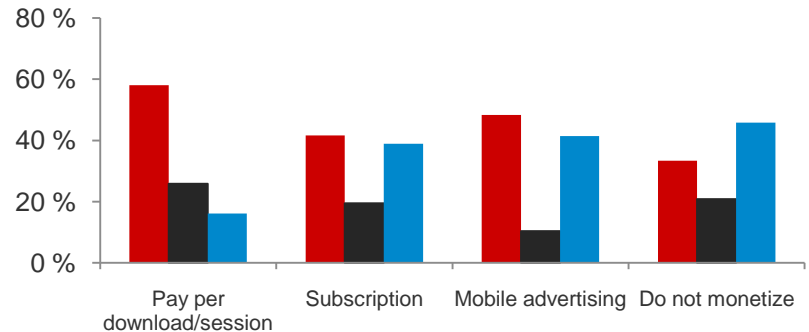


Interface choice split by company size (Total: 87)



Source: GIA native vs. web app industry survey, Feb-Mar 2010

Interface choice split by monetization model (Total: 87)

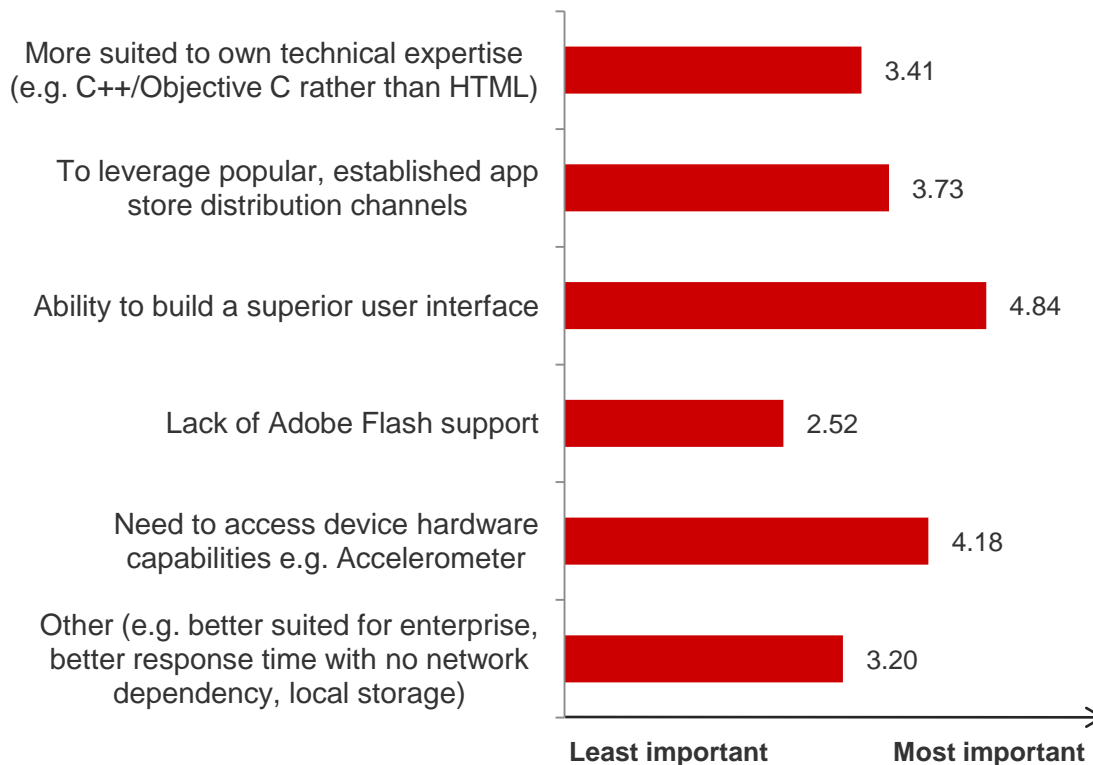


Note: percentages exceed 100% per interface choice group as some respondents use multiple monetization models; proxy data only

User interface and hardware capabilities dominate demand for native interface

Flash support the lowest concern for native application choice

Top reasons for only offering a native application (Total: 38)



Average responses based on a qualitative scale of 1 (least important) - 6 (most important)

Top native app content categories

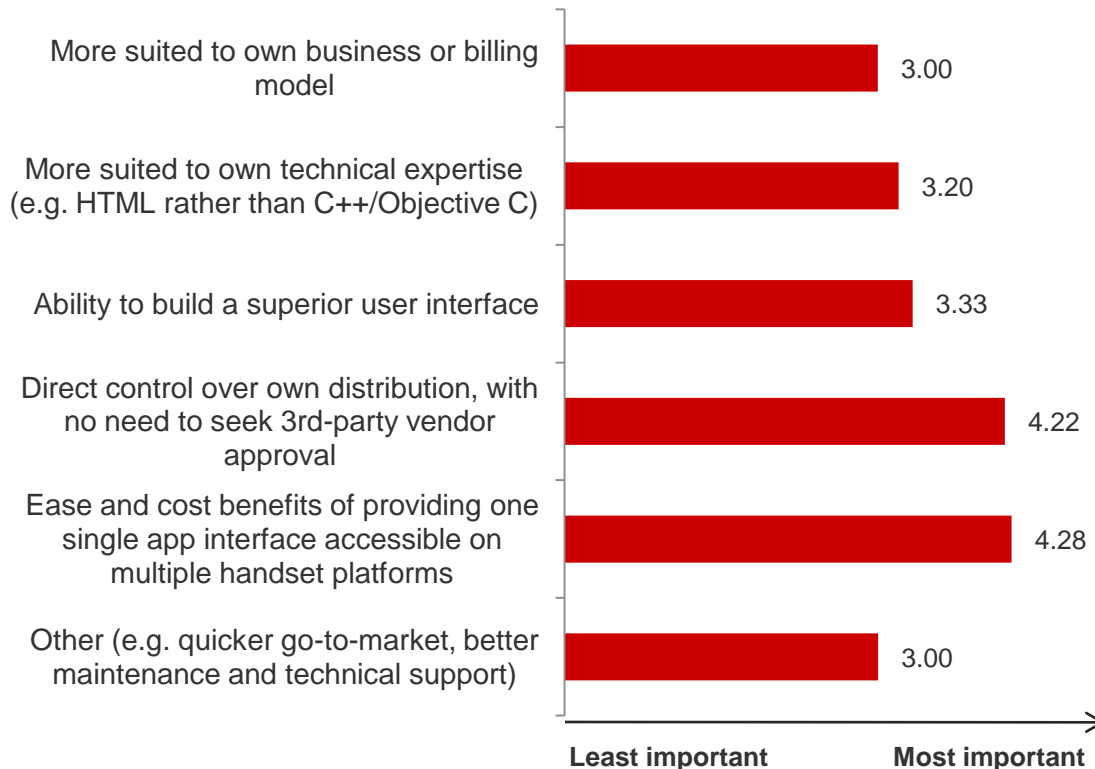
- Games
- Social networking
- Lifestyle and entertainment
- Technology & gadgets
- Travel & local

Source: GIA native vs. web app industry survey, Feb-Mar 2010

Distribution control and cost advantages are key drivers behind web app development

Perhaps surprisingly, quicker launch time and billing freedom emerge as secondary concerns

Top reasons for only offering a web application (Total: 19)



Average responses based on a qualitative scale of 1 (least important) - 6 (most important)

Top web app content categories

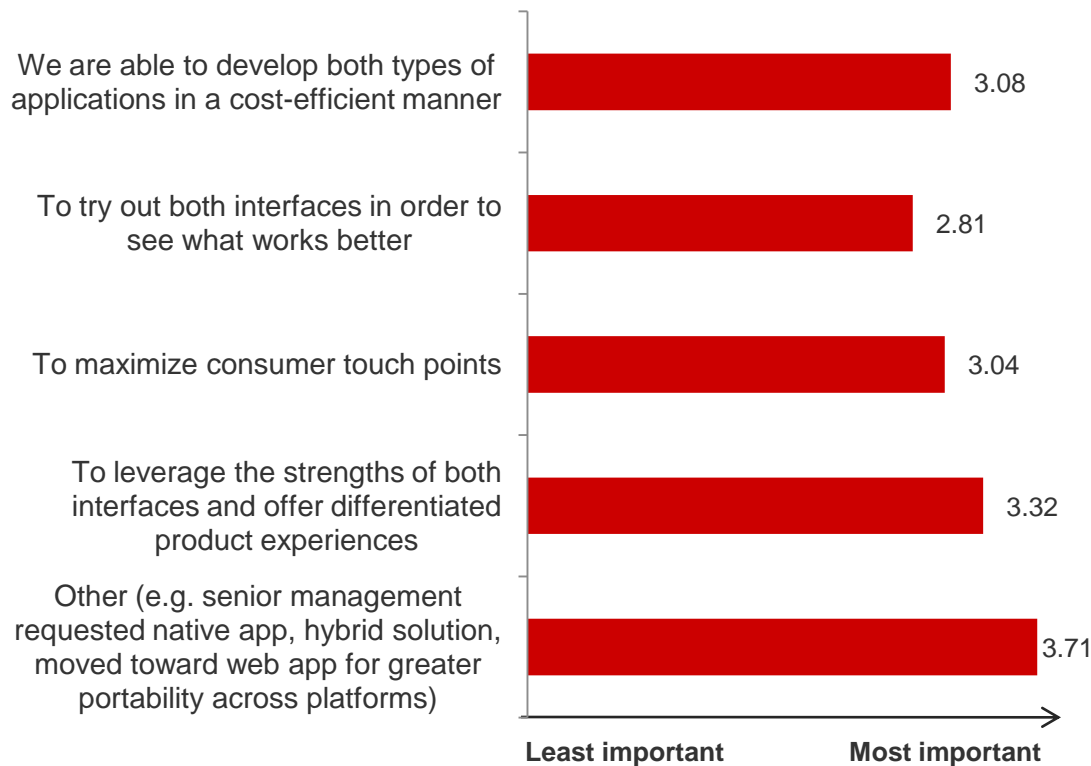
- News and weather

Source: GIA native vs. web app industry survey, Feb-Mar 2010

Decision to offer both interfaces specific to company

Larger firms with greater development budgets tend to leverage benefits of both interfaces

Top reasons for offering both native and web applications (Total: 30)



Average responses based on a qualitative scale of 1 (least important) - 5 (most important)

Top content categories with both interfaces

- Shopping and retail

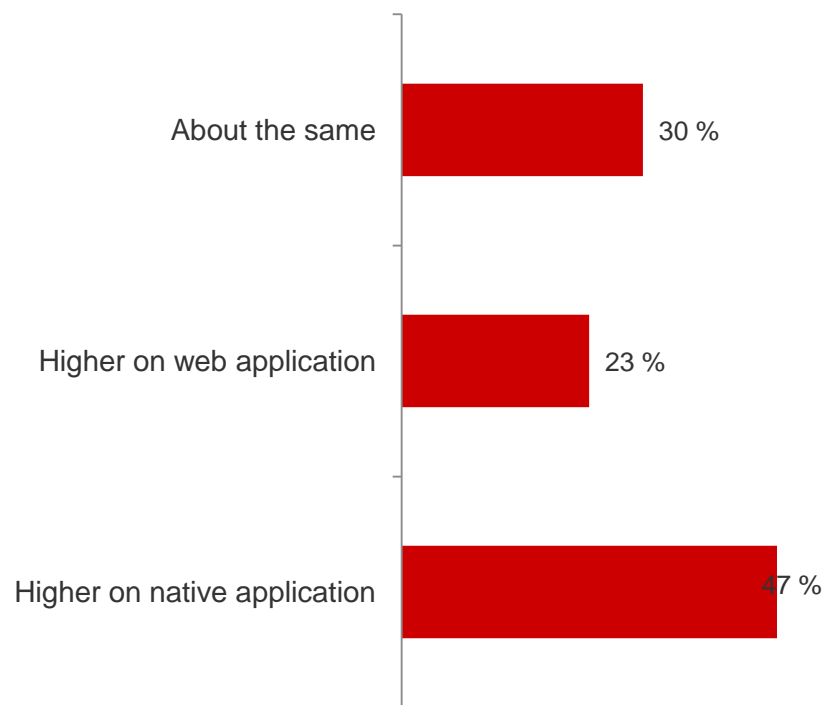
Source: GIA native vs. web app industry survey, Feb-Mar 2010

Performance Comparison

Twice as many publishers see higher user adoption and usage volume on native apps

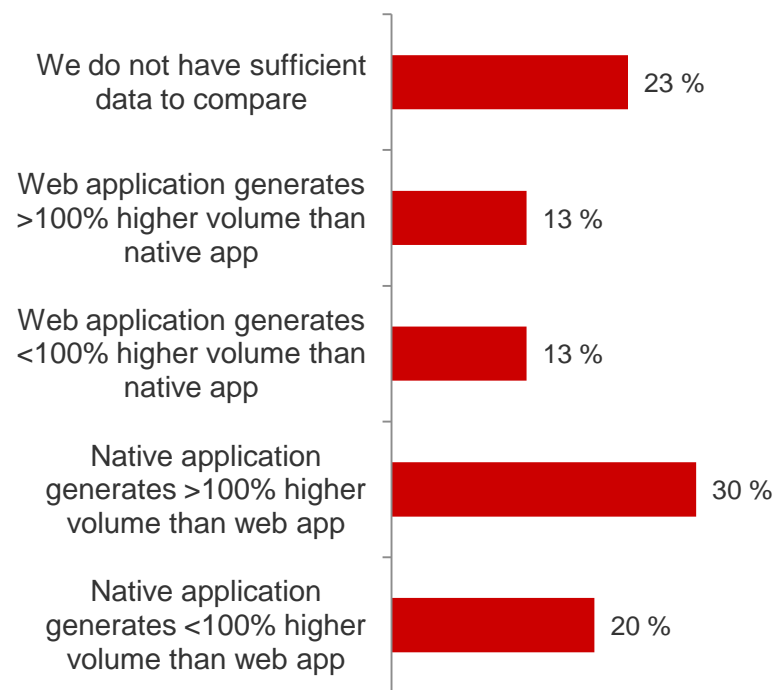
30% respondents with both interfaces see over double usage volume over the native application

User adoption comparison (Total: 30)



Source: GIA native vs. web app industry survey, Feb-Mar 2010

Usage volume comparison (Total: 30)

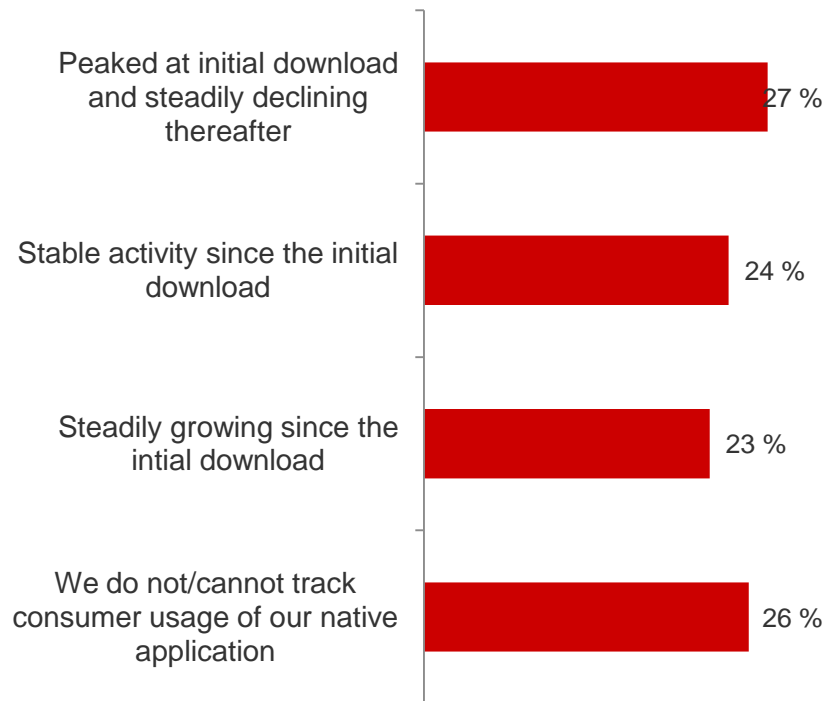


Source: GIA native vs. web app industry survey, Feb-Mar 2010

Usage stickiness appears stronger for web apps, while native app use tends to peak at download

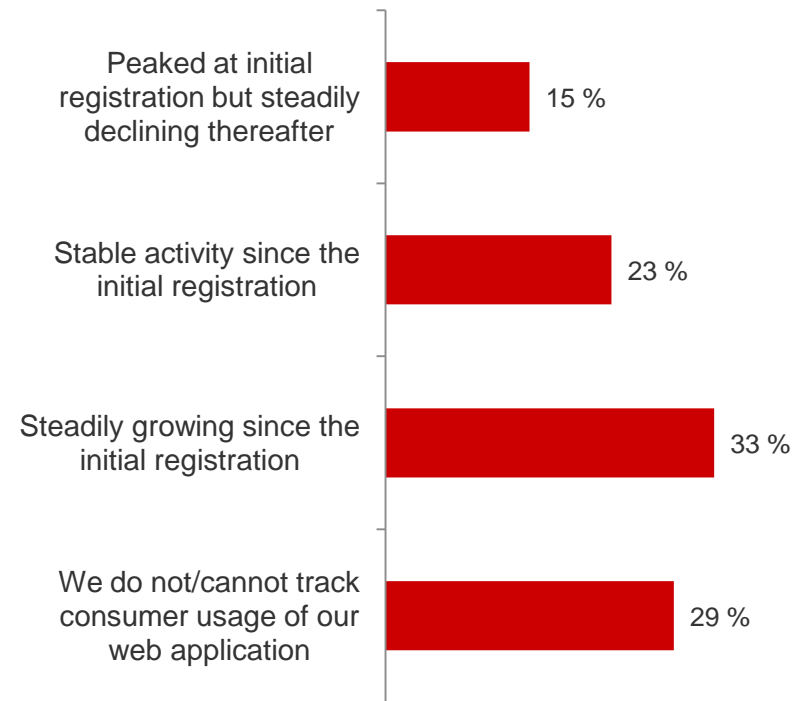
Stickier applications are more often subscription based (33%) than pay-per-download or advertising funded (25% each)

User activity for native applications (Total: 66)



Source: GIA native vs. web app industry survey, Feb-Mar 2010

User activity for web applications (Total: 48)

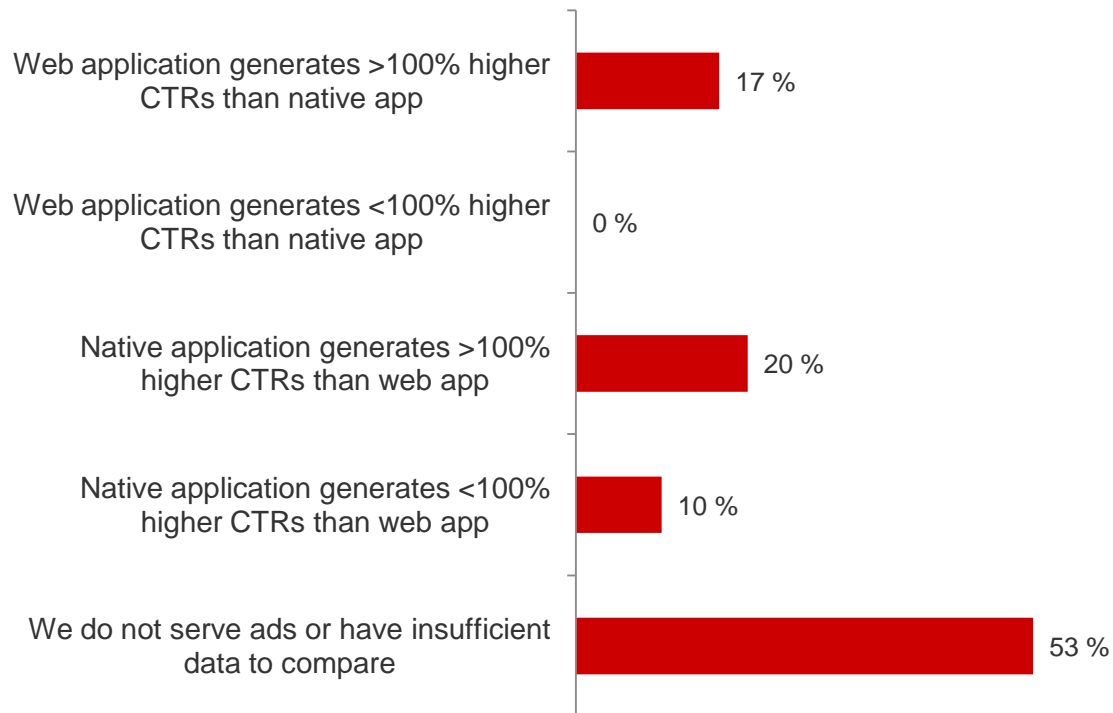


Source: GIA native vs. web app industry survey, Feb-Mar 2010

Native apps hold relative advantage in CTR performance

Although experiences can vary by company and content category

Click-through-rate (CTR) comparison (Total: 30)



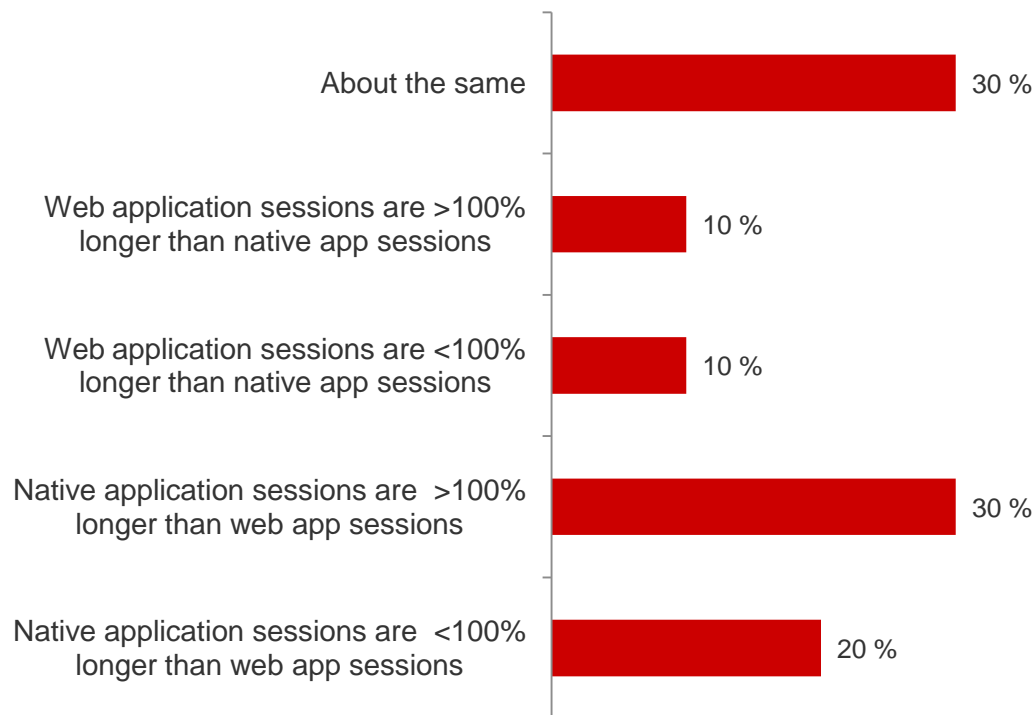
- Majority of surveyed firms still do not serve ads or hold insufficient data to compare.
- Travel and Local apps report higher CTRs via native apps, while Sport apps see higher CTRs via web applications.

Source: GIA native vs. web app industry survey, Feb-Mar 2010

Native apps trump web apps in user engagement

Half of respondents claim longer user sessions over native applications, while 30% see over double usage time on native apps

Usage session length comparison (Total: 30)



- This is most likely explained by the richer user interface provided by native apps, although it may change based on latest HTML5 technology developments.
- Travel and Local companies see more than twice as long user sessions over native applications.

Source: GIA native vs. web app industry survey, Feb-Mar 2010

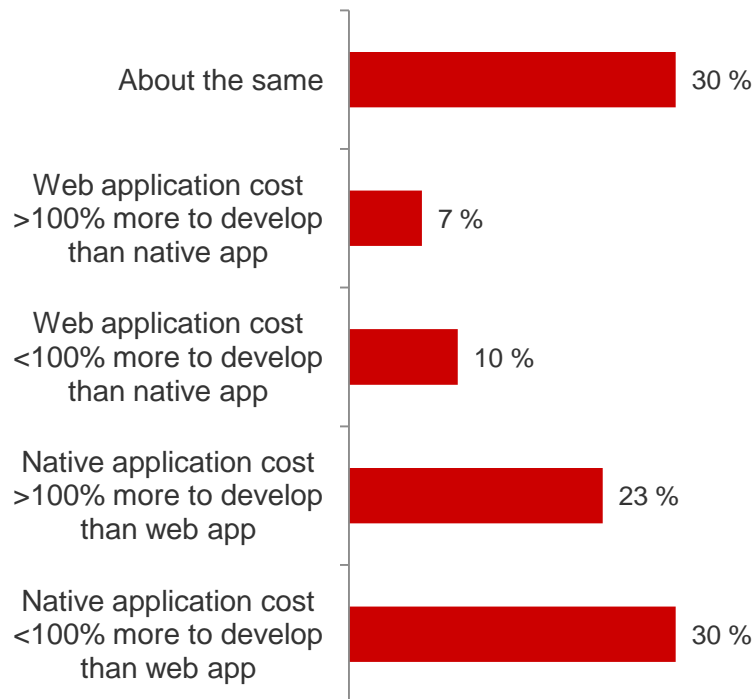
Cost and Go-to-Market Comparison

Web applications hold clear cost advantages

The higher costs for native app development stem from OS platform porting and QA testing

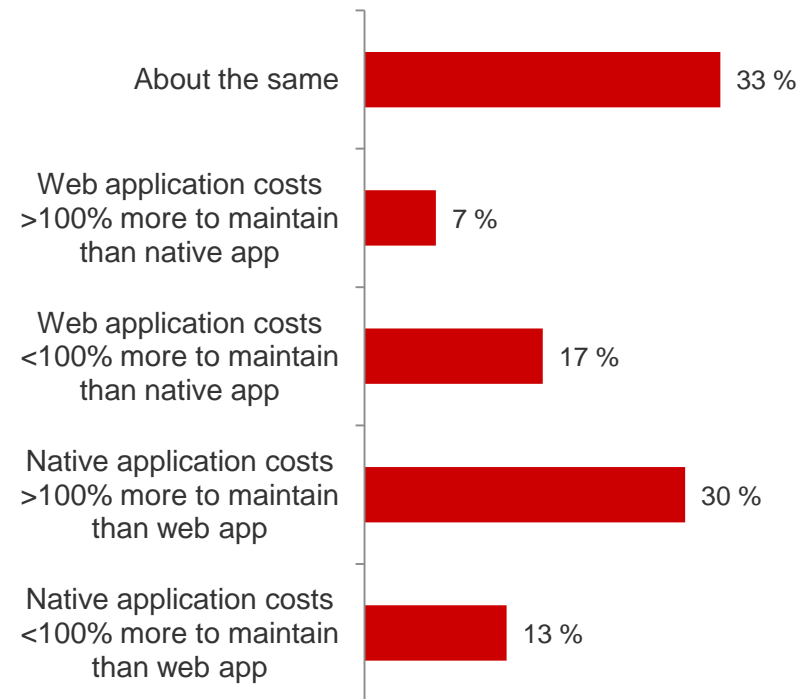
Development cost* comparison (Total: 30)

* Inclusive of handset porting and QA costs



Source: GIA native vs. web app industry survey, Feb-Mar 2010

Maintenance/update cost comparison (Total: 30)

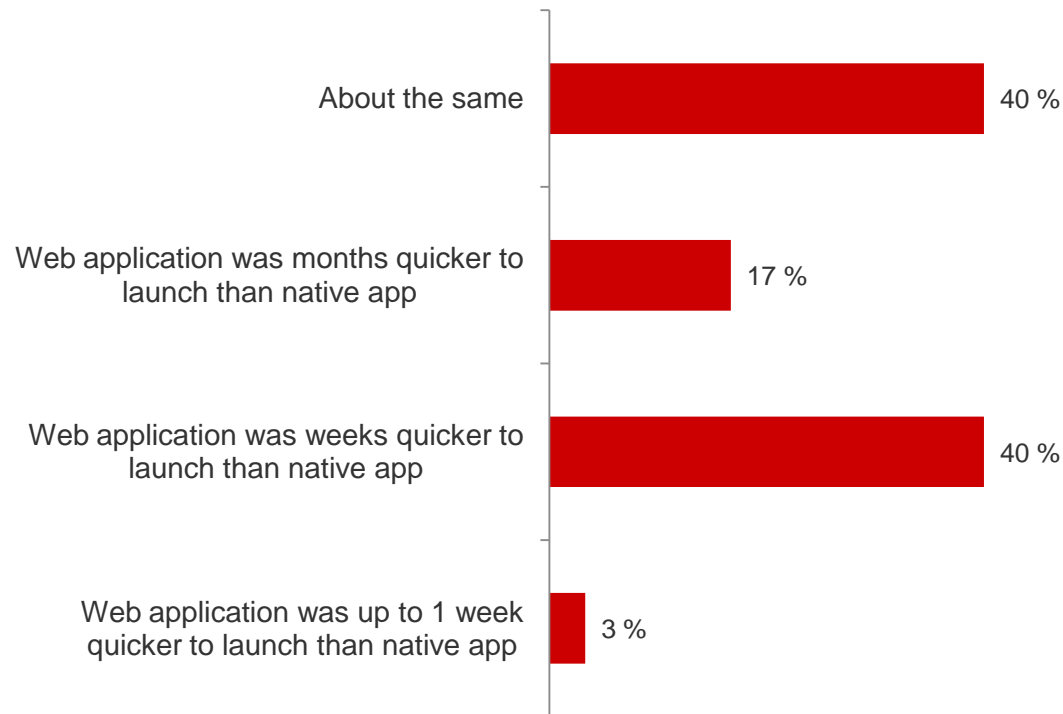


Source: GIA native vs. web app industry survey, Feb-Mar 2010

Web applications are often weeks quicker to deploy

60% respondents see quicker launches via a web application

Launch speed comparison (Total: 30)



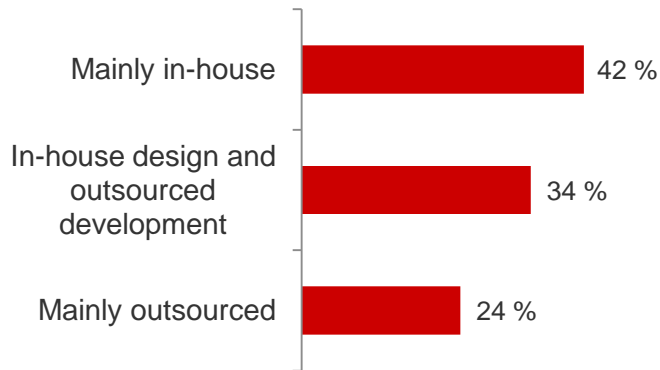
- Go-to-market delays appear as a bigger challenge for iPhone publishers, who face a far more competitive and controlled distribution environment as compared to those on e.g. Android Market.
- Education applications tend to see the same launch speeds for both interfaces.

Source: GIA native vs. web app industry survey, Feb-Mar 2010

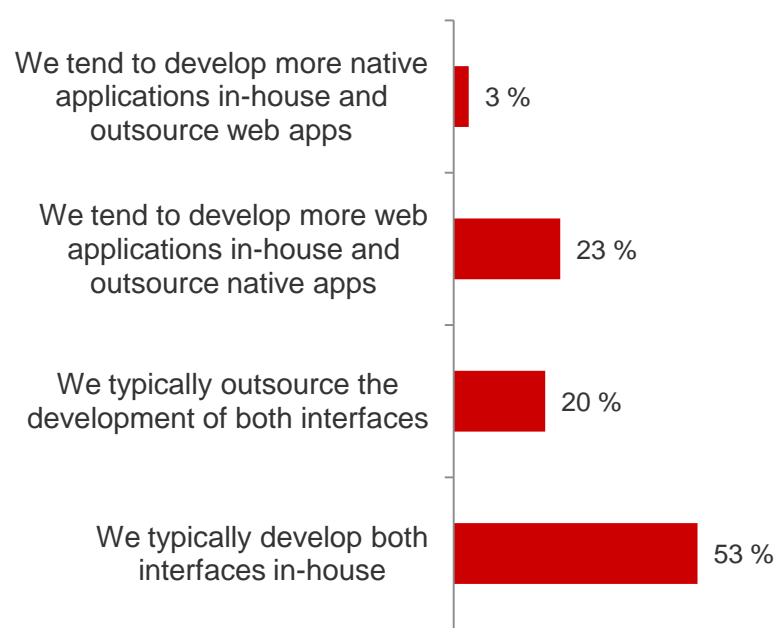
Web apps are more likely to be developed in-house than native apps

While in-house mobile development appears generally dominant across the board

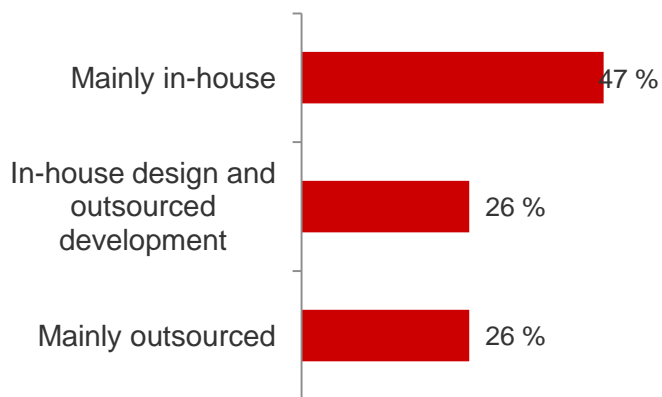
Native-app-only publisher preference (Total: 38)



Native-and-web publisher preference (Total: 30)



Web-app-only publisher preference (Total: 19)



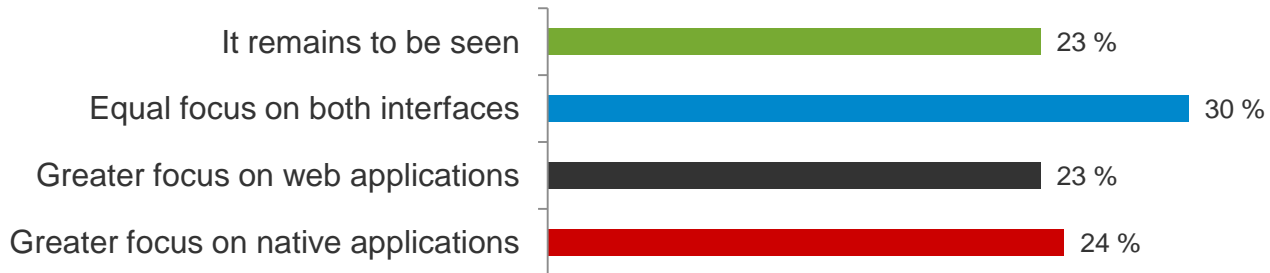
Source: GIA native vs. web app industry survey, Feb-Mar 2010

Future Outlook

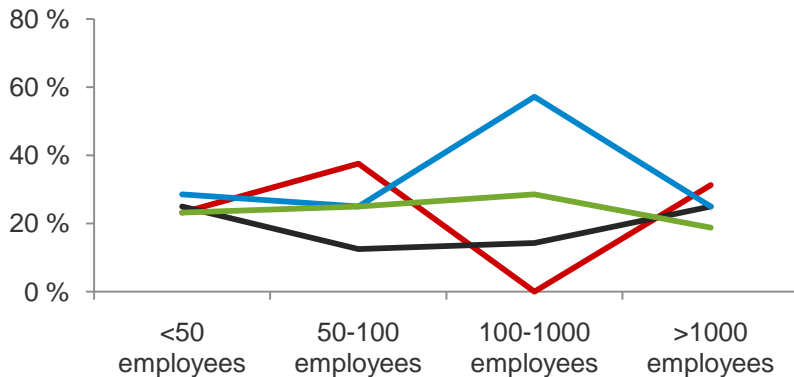
Increasing mind share of web apps and move toward equal focus

Medium-to-large publishers to place equal focus, particularly those in news and sport categories

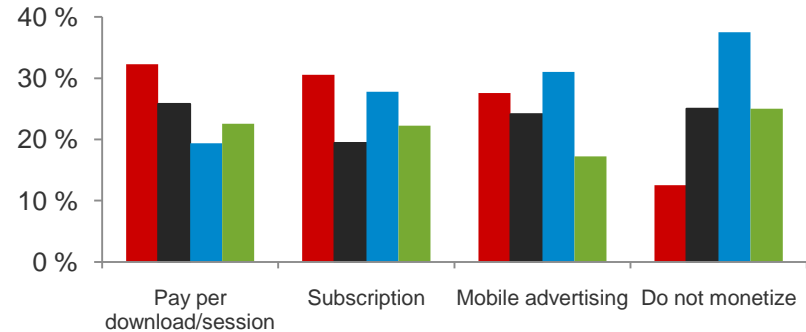
Future focus (Total: 87)



Future focus split by company size (Total: 87)



Future focus split by monetization model (Total: 87)



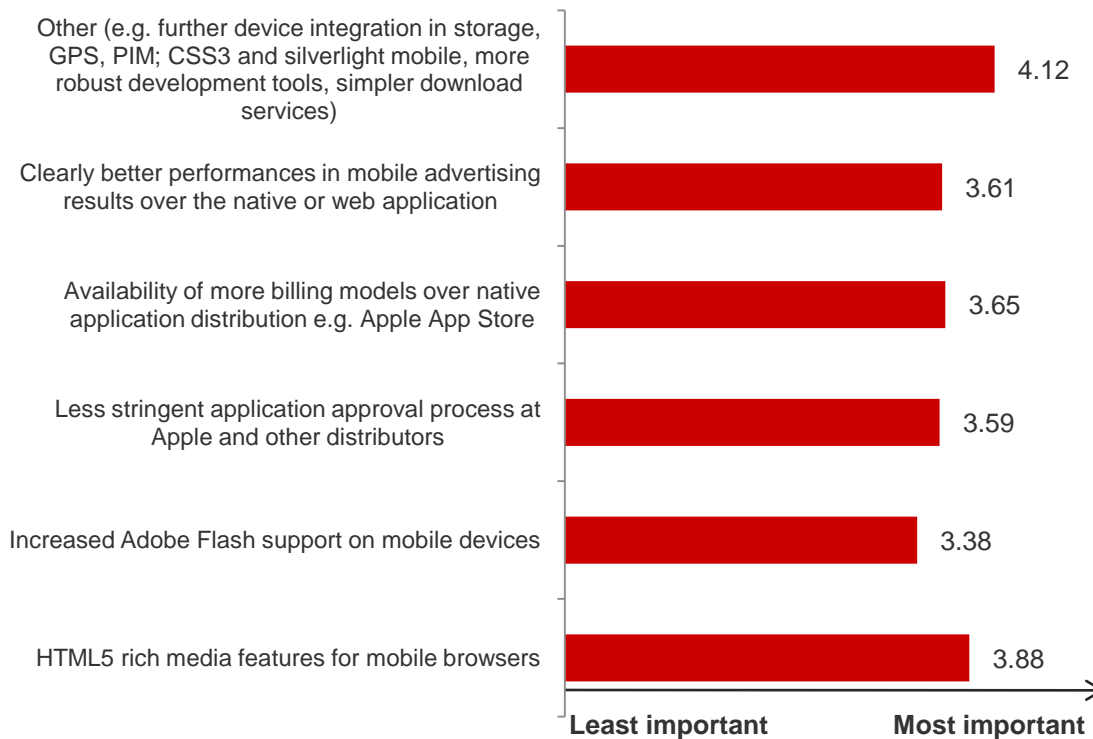
Source: GIA native vs. web app industry survey, Feb-Mar 2010

Note: percentages exceed 100% per interface choice group as some respondents use multiple monetization models; proxy data only

Device integration and HTML5 top drivers for web apps in forthcoming future

Web apps can soon access device capabilities through upcoming releases of mobile browser APIs (e.g. accelerometer, GPS, camera, and PIM)

Key developments influencing future interface choice (Total: 87)



Responses were based on a qualitative scale of 1 (least important) – 6 (most important)

Top categories by future focus

Native

- Games
- Social Networking
- Lifestyle & entertainment
- Education

Web

- Travel and local

Equal focus

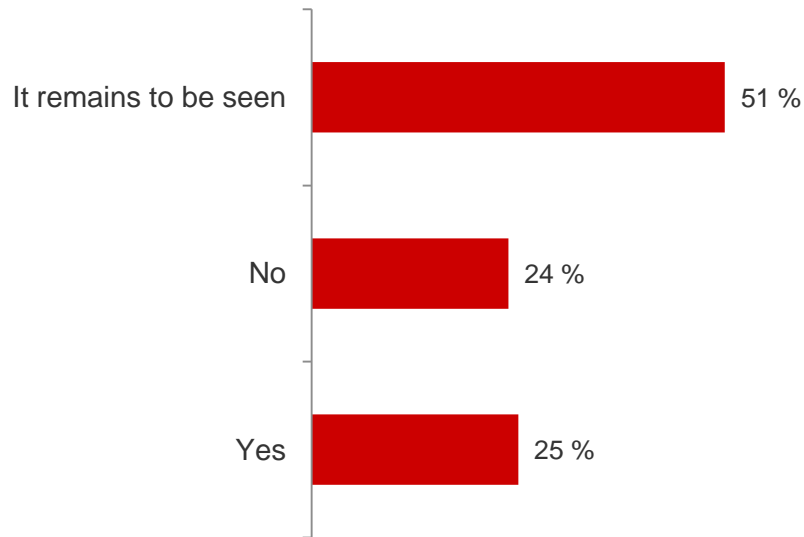
- Information & references
- Social networking
- Utilities

Source: GIA native vs. web app industry survey, Feb-Mar 2010

Publishers optimistic on native iPad applications

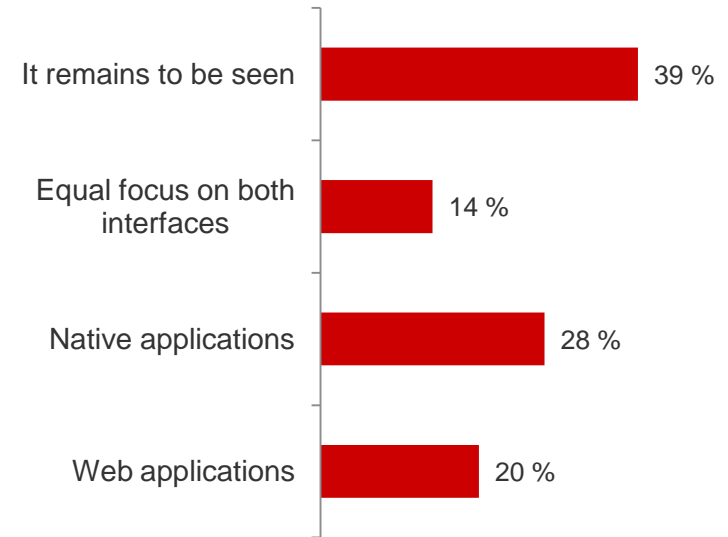
This may be explained by many 1st generation iPads' limited networking capability and previous iPhone app store success

Intent to develop for iPad (Total: 87)



Source: GIA native vs. web apps industry survey, Feb-Mar 2010

Interface choice comparison over iPad (Total: 87)



Source: GIA native vs. web apps industry survey, Feb-Mar 2010

Web technologies to gain access to most device features within 3 years

Mobile browser APIs enable access to diverse device features from GPS, accelerometer, to camera

W3C is the main Internet standards organization and leads mobile Web API working groups that consist of browser vendors, handset OEMs, and operators. This is an iterative process featuring parallel specification, standardization, and implementation. Each API typically takes 1-2 years to roll out depending on complexity.

Core web technologies

WebGL (JavaScript API standard for stronger web app graphics performance led by the Khronos Initiative)

CSS3 (richer style sheets and UI features)

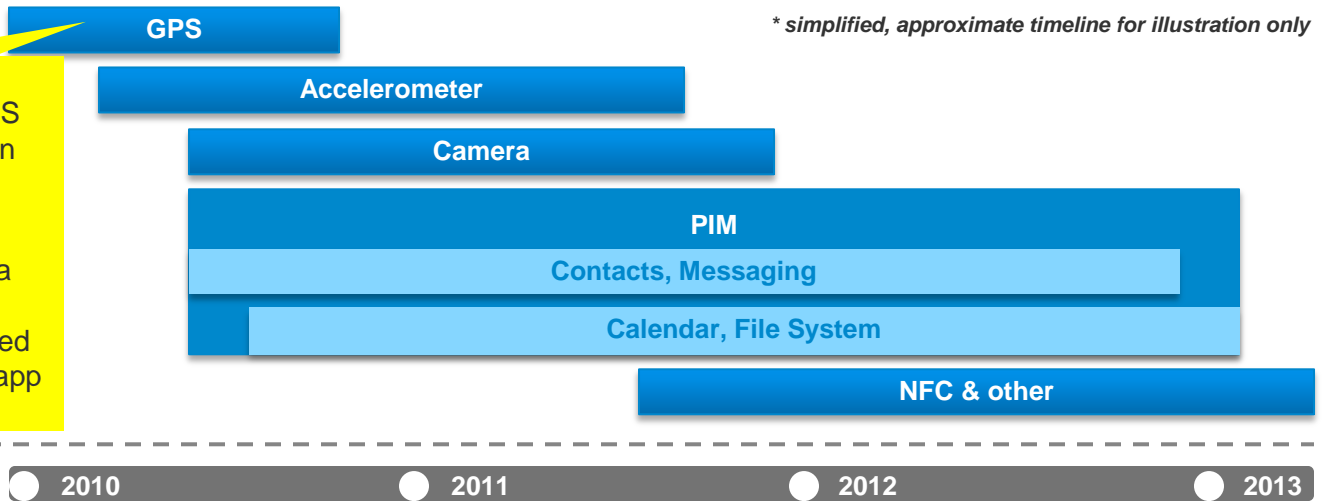
HTML 5 (default web app coding language with built-in video-playback and other rich media features)

APIs

** simplified, approximate timeline for illustration only*

The GPS API is currently available for the iPhone OS and Android 2.0+ and soon Opera Mobile.

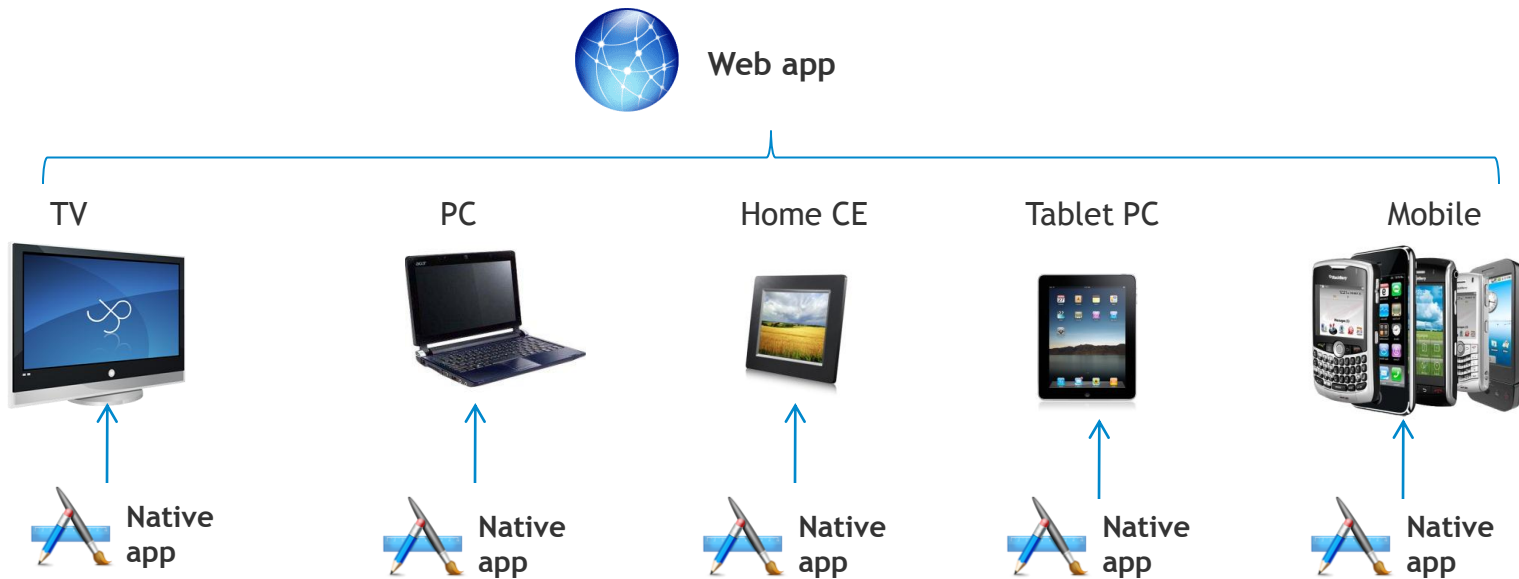
This combined with accelerometer and camera APIs enable sophisticated applications e.g. augmented reality (AR) over the web app platform within 2-3 yr.



Source: interview with Dominique Hazael-Massieux of W3C, 29.3.2010

As design features converge, application development and distribution become the dominant choice factors

Web apps offer an architectural advantage when targeting a cross-device launch, while native apps will remain preferred choice for heavy apps such as 3D gaming in the near future



“The key advantages for web apps is not that you don't need customization, but it is much simpler... The cost advantage increases as the degree of hardware fragmentation increases. Another major benefit is more convenient version updates over web apps.”

Dominique Hazael-Massieux Mobile Web Initiative Activity Lead at World Wide Web Consortium (W3C)

Free, open-source toolkits for web-to-native platform migration

Suitable for converting simple HTML and JavaScript apps on a wide range of smartphone devices



is an open source tool for building fast native apps with HTML & JavaScript.

	iPhone	Android	Blackberry
Geo Location	Yes	Yes	Yes
Vibration	Yes	Yes	Yes
Accelerometer	Yes	Yes	Pending
Sound	Yes	Yes	Yes
Contact support	Yes	Pending	Yes



“There are more web developers than there are Objective-C developers”

Rob Ellis
PhoneGap Creator



Create rich mobile apps in a snap

Symbian Series 60, Windows Mobile 5.0 and 6.0, J2ME, RIM, iPhone supported as of Q2 2009.



A free and open source application development platform, Appcelerator Titanium helps developers create native mobile and desktop application experiences using existing web skills like JavaScript, HTML, CSS, Python, Ruby, and PHP.



Free developer SDK for iPhone, Android, BlackBerry, Windows Phone 7, and Symbian platforms; part of FlyCast's cross-platform mobile app deployment solution incl. payment.

Source: PhoneGap, Appcelerator, Vaayoo, and appMobi web sites

About GIA

GIA is a strategic market Intelligence and advisory group

Global Intelligence Alliance (GIA) was formed in 1995 when a team of market intelligence specialists, management consultants, industry analysts and technology experts came together to build a powerful suite of customized solutions ranging from outsourced market monitoring services and software, to strategic analysis and advisory.

Today, we are the preferred partner for organizations seeking to understand, compete and grow in international markets. Our industry expertise and coverage of over 100 countries enables our customers to make better informed decisions worldwide.



Access local knowledge in over 100 countries

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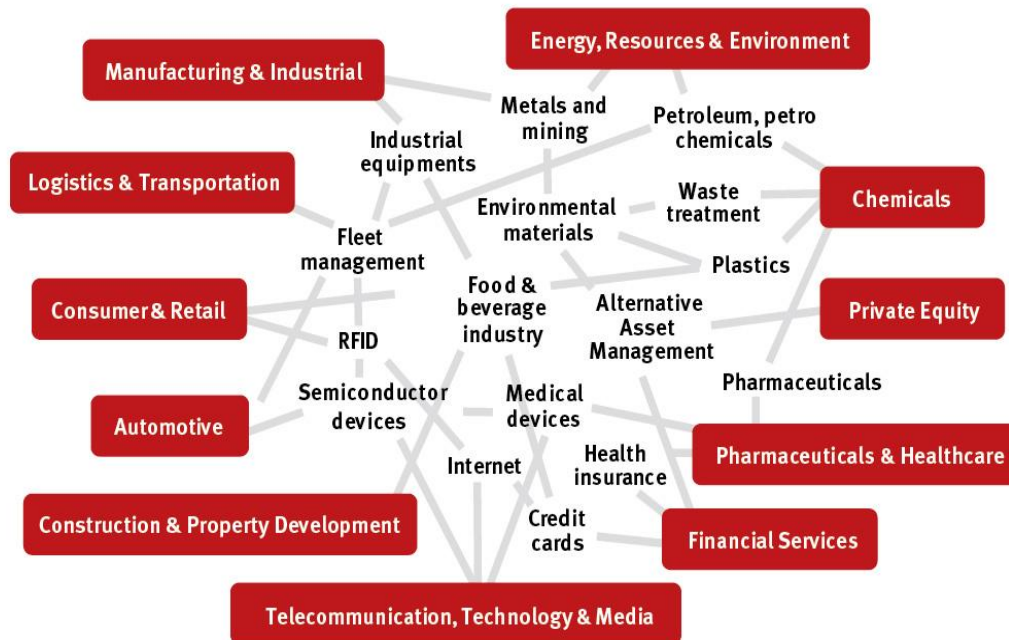
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We understand your business

With a track record of supporting thousands of clients around the world, we bring you practical expertise in your markets, as well as knowledge from our practices covering 11 industries and all the key business functions.

Examples of industry practice knowledge cross-pollination



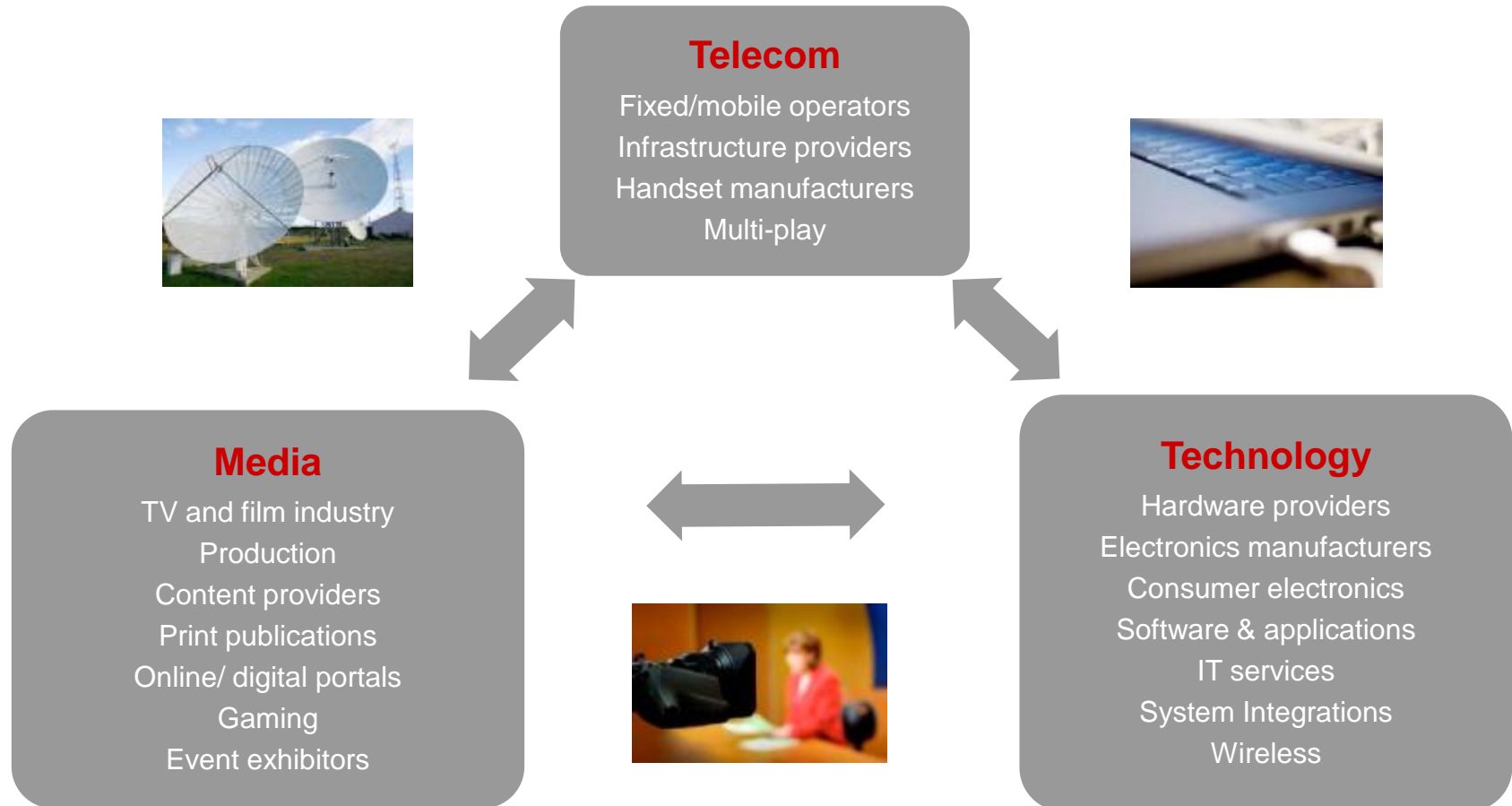
Industry Practices

- Automotive
- Chemicals
- Construction & Property Development
- Consumer & Retail
- Energy, Resources & Environment
- Financial Services
- Private Equity
- Logistics & Transportation
- Manufacturing & Industrial
- Pharmaceuticals & Healthcare
- Telecommunication, Technology & Media

Functional Practices

- World Class Market Intelligence
- MI for Strategic Planning
- MI for Marketing & Sales
- MI for Product & Innovation Management
- MI for Supply Chain Management
- M&A and Partnering

Our expertise spans across the converging fields of Telecommunications, Technology and Media



The TTM industry is being powered by evolving technologies and rapidly changing consumer behaviors

How can multi-play telcos transform into multimedia service providers and stay profitable?

How are IT providers addressing customers' increasing security and privacy concerns?

What is the future of open-source applications, cloud computing or machine-to-machine communication?

What is the most profitable content across advertising or subscription revenue driven markets?

How can media companies and device manufacturers make the most out of social networking?

We can help you answer these questions and more.
Contact us to find out how:
jan.kovero@globalintelligence.com





Global Intelligence Alliance

Strategic market intelligence & advisory

GIA is a strategic market intelligence and advisory group that is consistently commended for its reliable client-oriented and expertise-based solutions. According to our latest customer survey, a full 100% of our retainer clients say they would recommend GIA as a business partner to their peers.

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