



# Global First

## Web First? Mobile First? Who's First?

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## Abstract

### Abstract:

When creating software, application designers must make a number of choices. Among them are what language to use for the user interface?

When onboarding new customers, we always make the Customer First. We allow them to choose their desired language and we persist that choice in a profile to use later for later email communications, reports, and SMS messages. But what happens if they log in through their mobile device? A mobile device is more an appendage of the user's brain than a desktop or laptop computer is. If the device is in a different language than the user's profile, what language do you send to the device? How do you choose what formats to use for internationalized dynamic information?

This talk will explore these questions and more, focusing on data analysis made over a number of months of user's actual activities and differences between devices used. It will walk through how that data can be used to make market decisions and reduce customer support issues while enhancing the user experience.

### Topics to include:

- user experience flow and where i18n and l10n step in to craft the user experience
- actual user data and the differences by device
- decisions made as a result of user data
- how the device dictates the locale negotiation
- choosing locale for live session, for messaging, for sms
- designing software to make the right dynamic i18n decisions based on context



## Customer First

- Who is my customer?
- To configure
  - Profile
  - UI
  - Email, SMS, Reports
- Ask
  - Where? What region
  - What? Language
  - How? Device



## Mobile Device

- Appendage of user's brain
- Application language?
- Device language
  - Set to what the user actually prefers



## What locale to use?

- Locale resolution
  - All sessions
    - User profile
    - Cookies
    - IP geo location for Region
  - Web
    - Headers: language-accept-list
    - User choice



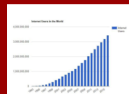
## What locale to use? - Mobile

- Mobile Locale resolution
  - Device system settings
    - Swift
      - `currentDeviceLanguage = Locale.current.languageCode`
    - iOS
      - `NSLocale.preferredLanguages( )`
    - Android
      - `ConfigurationCompat.getLocales(Resources.getSystem().getConfiguration());`
    - http headers
      - User agent?
      - x-wap-profile



## What does *your* internet world look like?

- Need data to decide
  - What regions
  - What languages
  - What markets



## Sources of data

- Published research data
- Examples
  - World Economic Forum
  - internetworldstats
  - Statista
  - Common Sense Advisory
  - Research agencies
    - Forrester
    - Price-Waterhouse, etc.



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<https://toplink.weforum.org/knowledge/explore/all>





## Example stats – overviews

### Global Digital Snapshot



<https://wearesocial.com/uk/special-reports/2017-digital-yearbook>

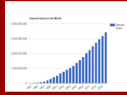


## Example stats – top 10

### Top Ten Languages Used in the Web - December 31, 2017 ( Number of Internet Users by Language )

TOP TEN LANGUAGES IN THE INTERNET	World Population for this Language (2018 Estimate)	Internet Users by Language	Internet Penetration (% Population)	Internet Users Growth (2000 - 2018)	Internet Users % of World (Participation)
<a href="#">English</a>	1,462,008,909	<b>1,055,272,930</b>	72.2 %	649.7 %	25.4 %
<a href="#">Chinese</a>	1,452,593,223	<b>804,634,814</b>	55.4 %	2,390.9 %	19.3 %
<a href="#">Spanish</a>	515,759,912	<b>337,892,295</b>	65.5 %	1,758.5 %	8.1 %
<a href="#">Arabic</a>	435,636,462	<b>219,041,264</b>	50.3 %	8,616.0 %	5.3 %
<a href="#">Portuguese</a>	286,455,543	<b>169,157,589</b>	59.1 %	2,132.8 %	4.1 %
<a href="#">Indonesian / Malaysian</a>	299,271,514	<b>168,755,091</b>	56.4 %	2,845.1 %	4.1 %
<a href="#">French</a>	412,394,497	<b>134,088,952</b>	32.5 %	1,017.6 %	3.2 %
<a href="#">Japanese</a>	127,185,332	<b>118,626,672</b>	93.3 %	152.0 %	2.9 %
<a href="#">Russian</a>	143,964,709	<b>109,552,842</b>	76.1 %	3,434.0 %	2.6 %
<a href="#">German</a>	96,820,909	<b>92,099,951</b>	95.1 %	234.7 %	2.2 %
<b>TOP 10 LANGUAGES</b>	<b>5,135,270,101</b>	<b>3,209,122,400</b>	<b>62.5 %</b>	<b>1,091.9 %</b>	<b>77.2 %</b>
Rest of the Languages	2,499,488,327	<b>950,318,284</b>	38.0 %	935.8 %	22.8 %
<b>WORLD TOTAL</b>	<b>7,634,758,428</b>	<b>4,159,440,684</b>	<b>54.5 %</b>	<b>1,052.2 %</b>	<b>100.0 %</b>

<https://www.internetworldstats.com>



## Example stats – country details



### KOREA, SOUTH

KR - 51,164,435 population (2018) - Area: 99,268 sq km

Capital City: Seoul - population 10,184,582 (2011)

**47,353,649 users in Dec/2017, 92.6% penetration, per IWS.**

43,000,000 Facebook subscribers in Dec/2017, 84.0% penetration

Local Time and Weather in [Seoul, South Korea](#)

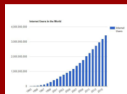
#### [Korea, South](#)

Map of South Korea and country data.

#### [Korea Internet and Telecommunications](#)

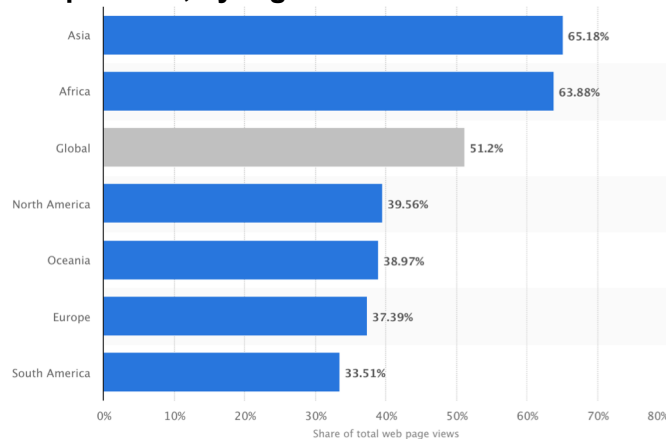
Information about Internet and Telecommunications in South Korea.

<https://www.internetworldstats.com>



## Example stats – mobile internet

### Mobile internet traffic as percentage of total web traffic in April 2018, by region



#### Other stats:

- [Avg connection speed](#)
- [Social media usage](#)
- [Internet penetration](#)

<https://www.statista.com/statistics/306528/share-of-mobile-internet-traffic-in-global-regions/>

## CLDR territory data

### • Territory language information

Territory	Code	Terr. Literacy	Language	Code	Lang. Pop. %	Writ. Lang. Pop. %	Report Bug
Afghanistan	AF	28.1%	Persian {O}	fa	50.0%	28.1%	bug
			Pashto {O}	ps	43.0%		bug
			Hazaragi	haz	5.9%		bug
			Uzbek (Arabic) {OR}	uz_Arab	4.7%		bug
			Turkmen (Latin) {OR}	tk_Latn	1.7%		bug
			Parsi-Dari	prd	1.2%		bug
			Baluchi {OR}	bal	.7%		bug
			Western Balochi	bgn	.6%		bug
			Uyghur (Arabic)	ug_Arab	.0%		bug
			Kazakh (Arabic)	kk_Arab	.0%		bug
			add new		.0%	.0%	
Åland Islands	AX	100.0%	Swedish {O}	sv	99.0%	100.0%	bug
				add new		.0%	.0%
Albania	AL	96.8%	Albanian {O}	sq	100.0%	96.8%	bug
			Greek	el	1.9%		bug
			Macedonian	mk	.5%		bug
				add new		.0%	.0%

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## CLDR territory data

### • Territory market information

Territory	Code	Terr. Pop (M)	Terr. GDP (\$M PPP)	Currencies (2006...)	Days in week (min)	First day of week	First day of weekend	Last day of weekend	Meas. system	Paper Size
Pakistan	PK	200	1,100,000	Pakistani Rupee [PKR]	1	sun	sat	sun	metric	A4
Palau	PW	0.021	300	US Dollar [USD]	1	mon	sat	sun	US	A4
Palestinian Territories	PS	4.5	21,000	Israeli New Shekel [ILS], Jordanian Dinar [JOD]	1	mon	sat	sun	metric	A4
Panama	PA	3.8	99,000	Panamanian Balboa [PAB], US Dollar [USD]	1	sun	sat	sun	metric	US-Letter
Papua New Guinea	PG	6.9	31,000	Papua New Guinean Kina [PGK]	1	mon	sat	sun	metric	A4
Paraguay	PY	6.9	68,000	Paraguayan Guarani [PYG]	1	sun	sat	sun	metric	A4
Peru	PE	31	420,000	Peruvian Sol [PEN]	1	sun	sat	sun	metric	A4
Philippines	PH	100	870,000	Philippine Piso [PHP]	1	sun	sat	sun	metric	US-Letter
Pitcairn Islands	PN	0.000054	2.4	New Zealand Dollar [NZD]	1	mon	sat	sun	metric	A4
Poland	PL	38	1,100,000	Polish Zloty [PLN]	4	mon	sat	sun	metric	A4
Portugal	PT	11	310,000	Euro [EUR]	4	mon	sat	sun	metric	A4
Puerto Rico	PR	3.4	130,000	US Dollar [USD]	1	sun	sat	sun	US	US-Letter
<b>Territory</b>	<b>Code</b>	<b>Terr. Pop (M)</b>	<b>Terr. GDP (\$M PPP)</b>	<b>Currencies (2006...)</b>	<b>Days in week (min)</b>	<b>First day of week</b>	<b>First day of weekend</b>	<b>Last day of weekend</b>	<b>Meas. system</b>	<b>Paper Size</b>
Qatar	QA	2.3	340,000	Qatari Rial [QAR]	1	sat	fri	sat	metric	A4
<b>Territory</b>	<b>Code</b>	<b>Terr. Pop (M)</b>	<b>Terr. GDP (\$M PPP)</b>	<b>Currencies (2006...)</b>	<b>Days in week (min)</b>	<b>First day of week</b>	<b>First day of weekend</b>	<b>Last day of weekend</b>	<b>Meas. system</b>	<b>Paper Size</b>
Réunion	RE	0.79	4,800	Euro [EUR]	4	mon	sat	sun	metric	A4
Romania	RO	22	470,000	Romanian Leu (1952–2006) [ROL], Romanian Leu [RON]	1	mon	sat	sun	metric	A4
Russia	RU	140	4,000,000	Russian Ruble [RUB]	4	mon	sat	sun	metric	A4
Rwanda	RW	12	25,000	Rwandan Franc [RWF]	1	mon	sat	sun	metric	A4

## Gather your data

- How well does your product reflect the world?
- Instrument access to your product
- Record
  - Device info
  - Where: region
  - Language of application
  - Language of device



## Decisions with data

- Markets
- Partner decisions
- Products
  - Platforms to support
  - Priorities on platforms
- Audience
  - Consumer
  - Business



## Your data

- User settings
- Application settings
- Server settings



## Their data - IP

- IP address
  - geoup location
  - ISP
  - Mobile carrier
  - (can be fooled by VPN)



## Their data - Device settings

- Application settings
  - Config info from your application
- Locale preferences
  - System settings



## Their data - http headers

- accept-language
- x-Wap-Profile
  - UAProfile of mobile device
- x-ATT-Device



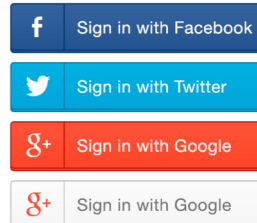
## Their data – User Agent

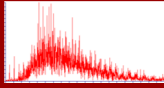
- RFC 7231
  - Product(s)
  - Version(s)
- Different for every manufacturer
- Can identify specific device



## Their data – SSO

- Single Sign On
  - Facebook
  - Google+
  - LinkedIn
  - Twitter
  - OAuth
    - Name
    - Email
    - Language (with permission)
    - Location



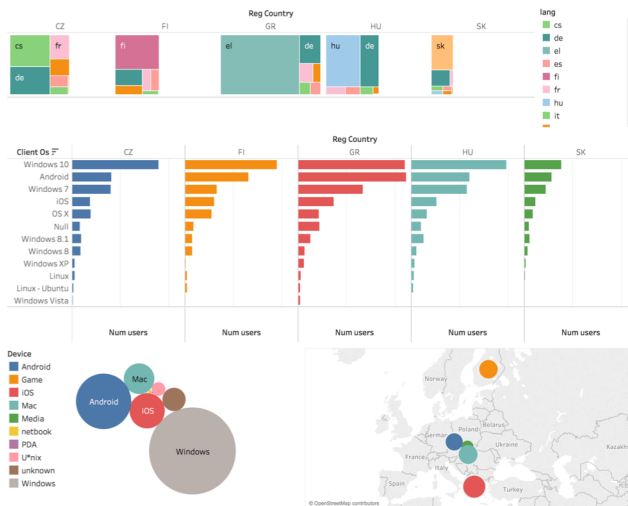


## Data noise

- Bots
  - 51.8% of all internet traffic in 2017
- Hackers
- Default settings (US, null)
- VPNs
  - Hide IP, location, ISP, Carrier
- Data attenuation
  - SaaS may lose original requester state
  - Guest access



## Example data – 5 countries







**Thank you!**



## References

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  - US International Trade Association (ITA) – Market opportunity survey  
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  - <https://docs.microsoft.com/en-us/aspnet/mvc/overview/security/create-an-aspnet-mvc-5-app-with-facebook-and-google-oauth2-and-openid-sign-on>
  - [https://developer.android.com/reference/android/support/v4/os/ConfigurationCompat#etLocales\(android.content.res.Configuration\)](https://developer.android.com/reference/android/support/v4/os/ConfigurationCompat#etLocales(android.content.res.Configuration))