Mobilni sistemi i servisi
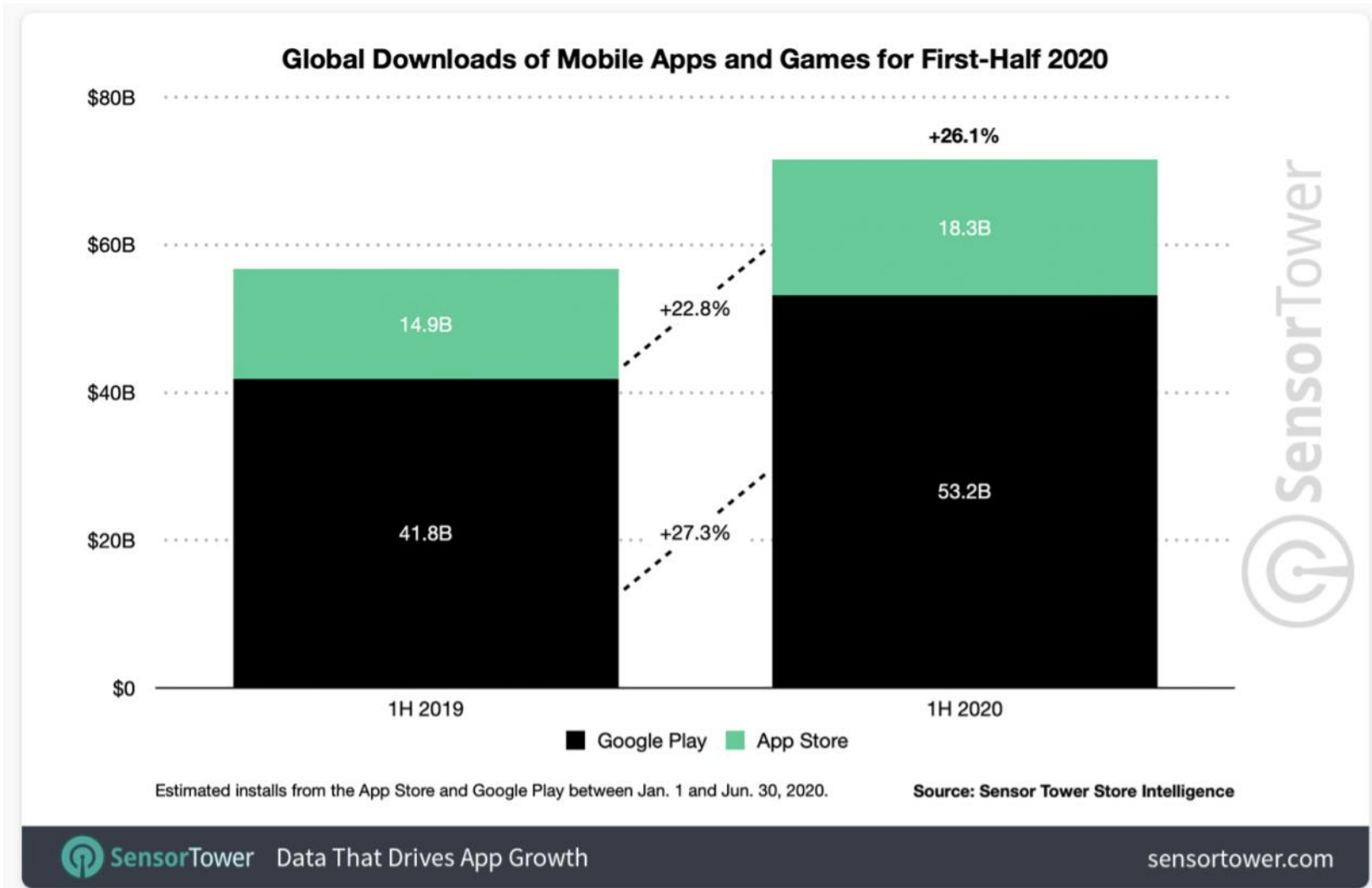
Računarstvo i informatika

- Mobilne aplikacije -
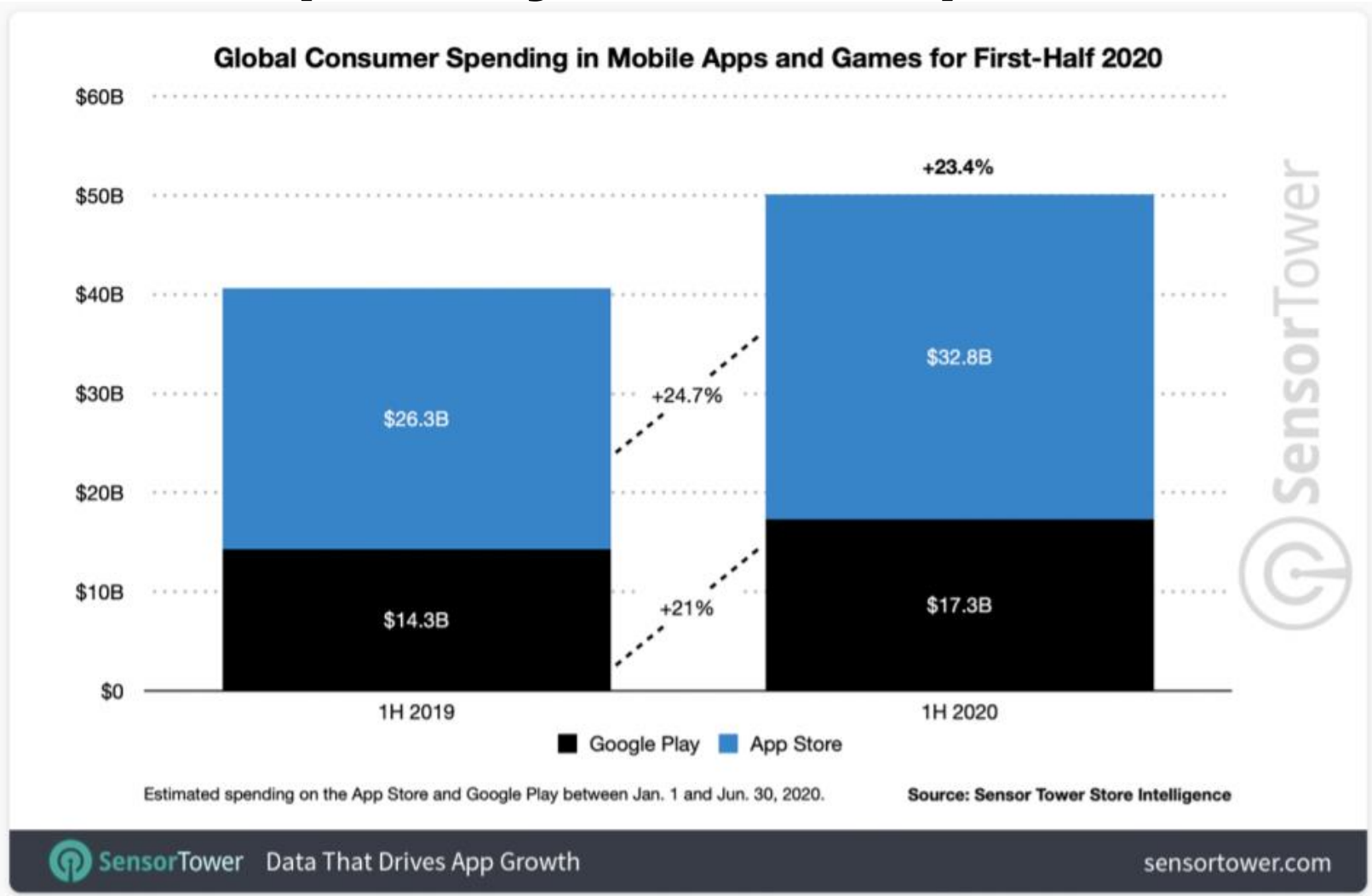
Katedra za računarstvo
Elektronski fakultet u Nišu

Broj download-ovanih mobilnih aplikacija u svetu

Global Downloads of Mobile Apps and Games for First-Half 2020

Mobilne aplikacije

Prihod od mobilnih aplikacija u svetu (u milijardama $)

Mobilne aplikacije

Najpopularnije mobilne aplikacije (2020)

Top Apps Worldwide for the First Half of 2020 by Downloads — SensorTower

Overall Downloads	App Store Downloads	Google Play Downloads
1 TikTok	1 TikTok	1 TikTok
2 WhatsApp Messenger	2 ZOOM	2 WhatsApp Messenger
3 ZOOM	3 YouTube	3 Facebook
4 Facebook	4 Instagram	4 ZOOM
5 Instagram	5 Facebook	5 Instagram
6 Messenger	6 Messenger	6 Messenger
7 Snapchat	7 WhatsApp Messenger	7 Likee
8 Likee	8 Netflix	8 SHAREit
9 Netflix	9 Gmail	9 Aarogya Setu
10 YouTube	10 DingTalk	10 Snapchat

Note: Rankings are based on projected downloads through June 30, 2020. Does not include downloads from third-party Android stores in China or other regions.

SensorTower   Data That Drives App Growth   sensortower.com

There were an estimated 71.5 billion first-time app installs during the first half of 2020

Mobilne aplikacije

Najprofitabilnije mobilne aplikacije (2020)

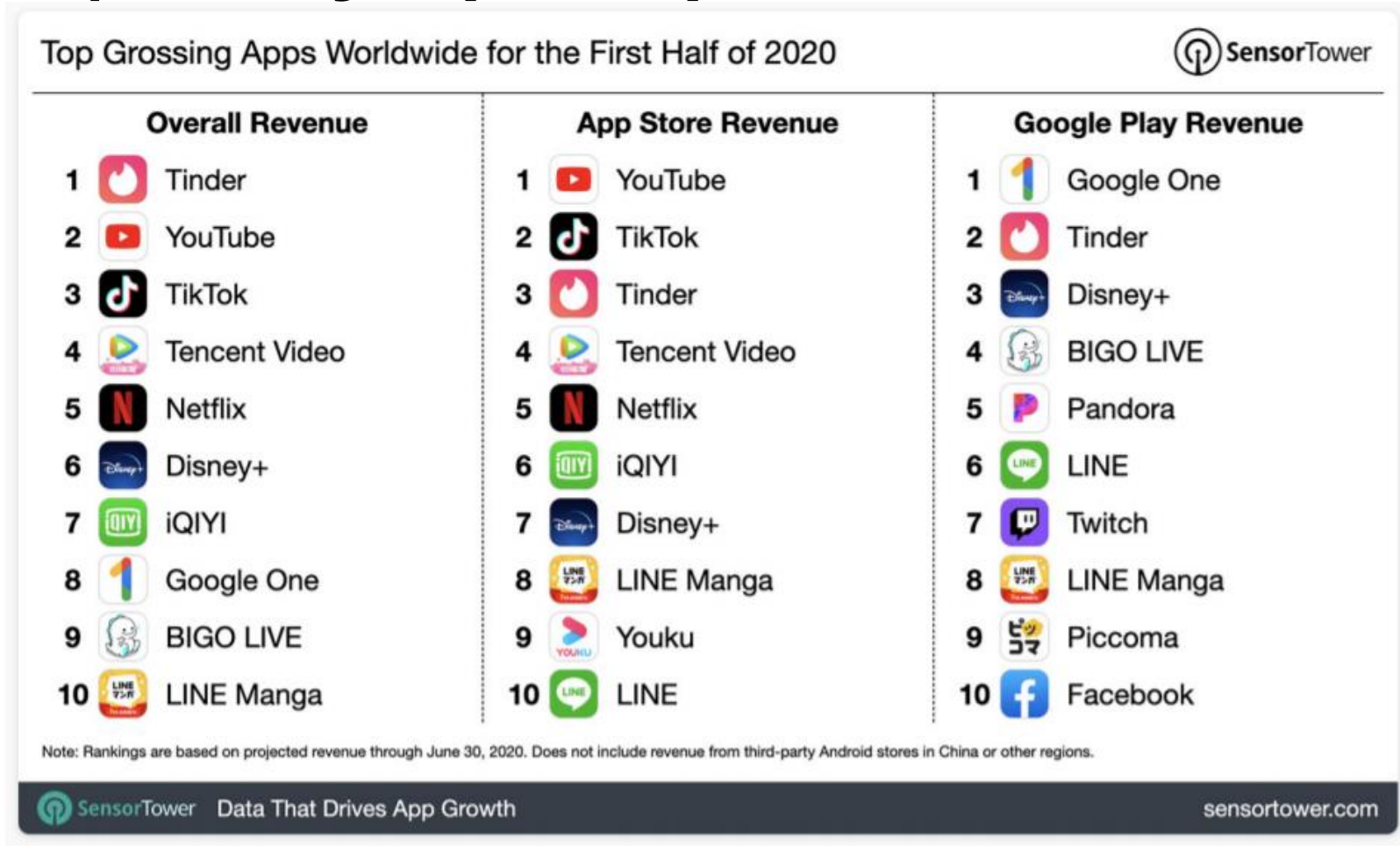Top Grossing Apps Worldwide for the First Half of 2020 — SensorTower

	Overall Revenue		App Store Revenue		Google Play Revenue
1	Tinder	1	YouTube	1	Google One
2	YouTube	2	TikTok	2	Tinder
3	TikTok	3	Tinder	3	Disney+
4	Tencent Video	4	Tencent Video	4	BIGO LIVE
5	Netflix	5	Netflix	5	Pandora
6	Disney+	6	iQIYI	6	LINE
7	iQIYI	7	Disney+	7	Twitch
8	Google One	8	LINE Manga	8	LINE Manga
9	BIGO LIVE	9	Youku	9	Piccoma
10	LINE Manga	10	LINE	10	Facebook

Note: Rankings are based on projected revenue through June 30, 2020. Does not include revenue from third-party Android stores in China or other regions.

SensorTower   Data That Drives App Growth   sensortower.com

Tinder generated an estimated $433 million in spending 1H20 across both stores.

Mobilne aplikacije

Android aplikacije na Google Play

- 3,006,431 aplikacija (mart 2021)
  - 14% slabog kvaliteta

http://www.appbrain.com/stats/number-of-android-apps
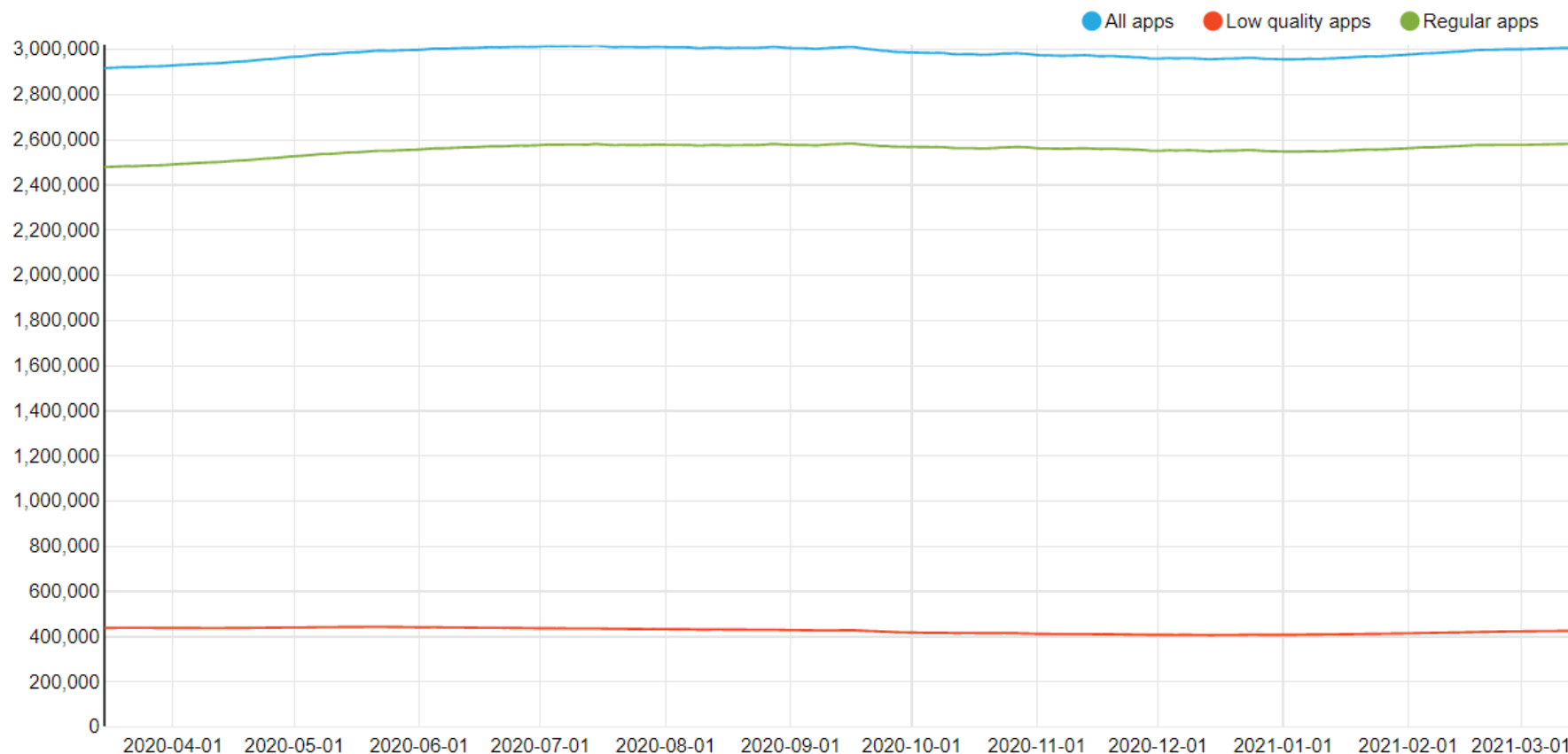
Nove Android aplikacije (mesečno)

⊕ Do 35000 novih aplikacija mesečno (mart 2021)

● Regular apps ● Low quality apps

Izvor: http://www.appbrain.com/stats/number-of-android-apps
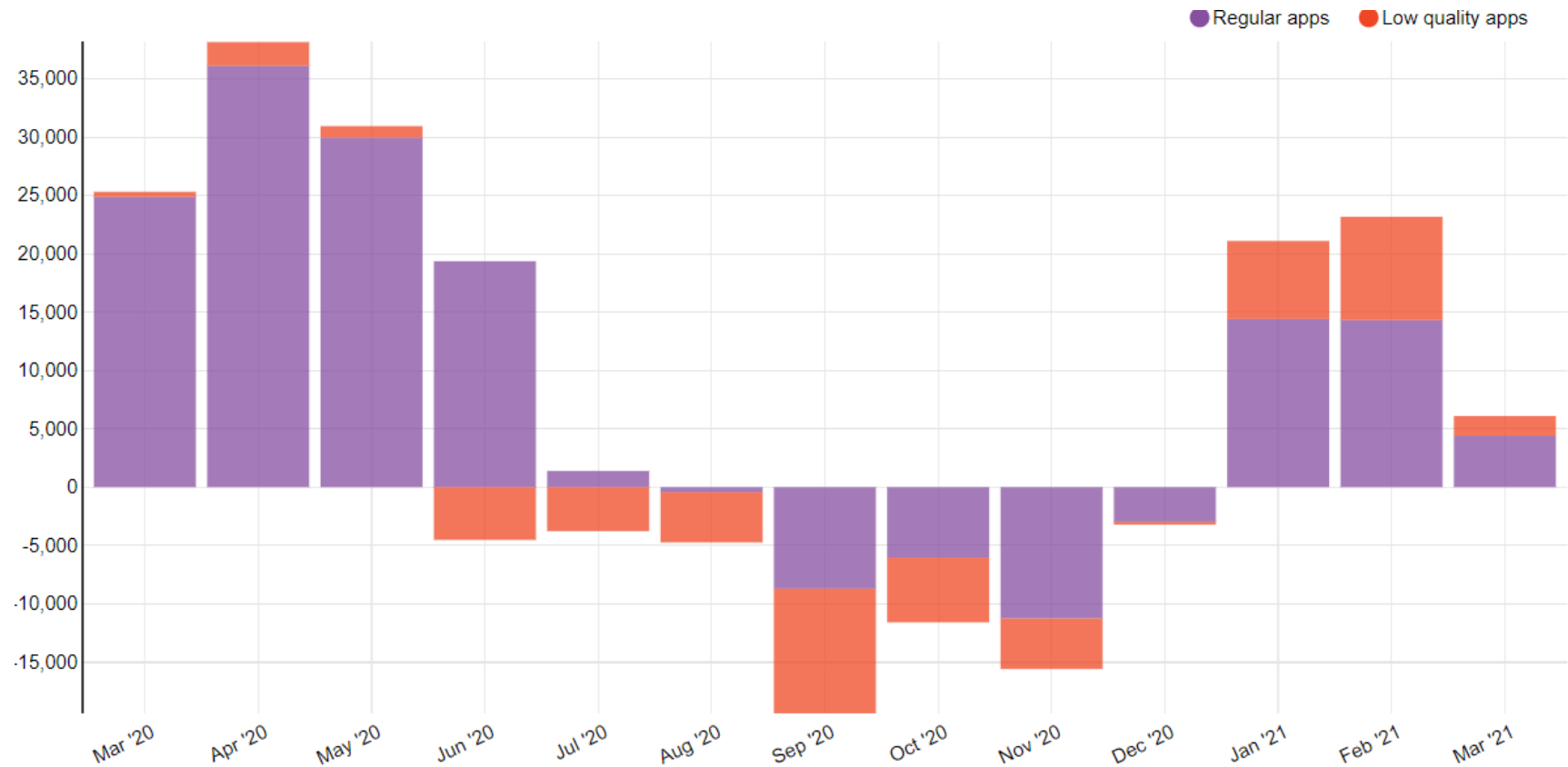
Mobilne aplikacije

Top 10 Google Play categories

Izvor: http://www.appbrain.com/stats/number-of-android-apps
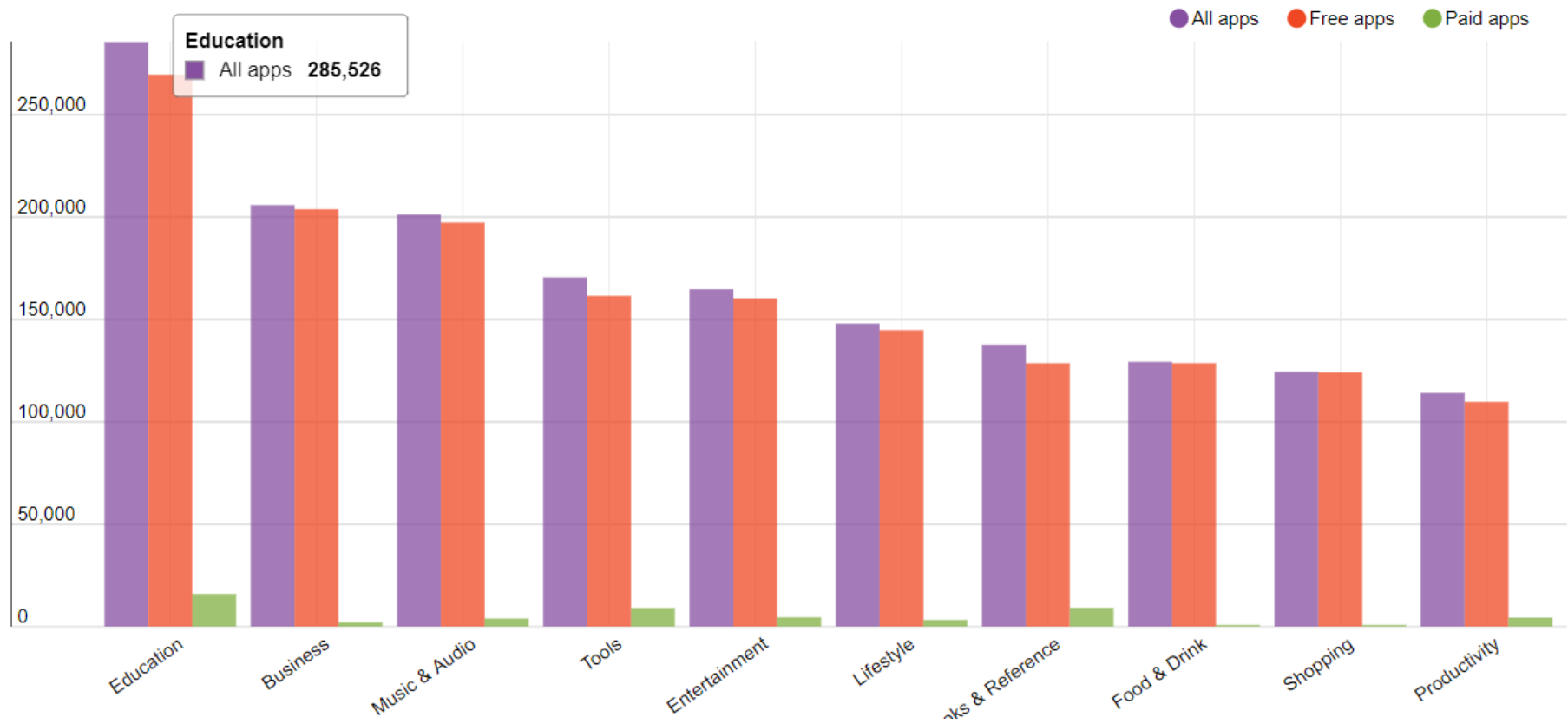
Kako postati milioner razvojem mobilnih aplikacija

- *How to become a mobile app millionaire* – The Guardian
  - http://www.theguardian.com/theguardian/shortcuts/2013/mar/26/how-to-become-an-app-millionaire

- Nick D'Aloisio je sa 17 godina prodao mobilnu aplikaciju *Summly* kompaniji Yahoo za $27 milliona

- Imate ideju za izuzetnu mobilnu aplikaciju?
  - Korak 1: Ideja
  - Korak 2: Plan i specifikacija
  - Korak 3: Novac - investicija
  - Korak 4: Razvoj
  - Korak 5: Marketing

Tipovi mobilnih aplikacija

- Mobilne aplikacije mogu ponuditi različitu funkcionalnost i iskustvo korisnicima

  - Uslužne (*utility*)
    - *Calculator, alarm clock, weather forecast*, …

  - Lokalizovane (*locale*)
    - *Find friends, pubs, route direction*,…

  - Informativne
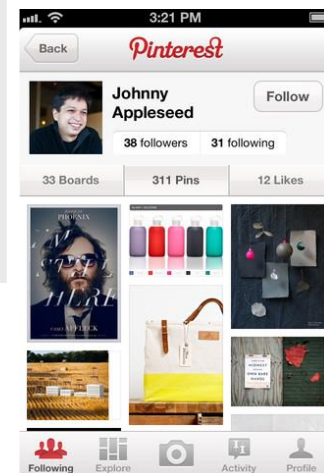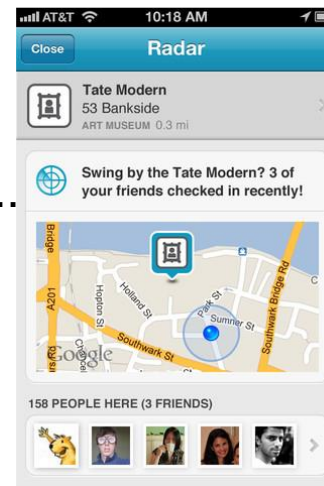   - *News, online dictionary, m-commerce*,…

  - Produktivne
    - *M-business, task-orijentisane aplikacije*,…

  - Uključujuće (*immersive*)
    - Zahtevaju potpunu pažnju korisnika
    - Igre, *media players, entertainment, AR/VR*,..

Popularne mobilne aplikacije

- **Lokaciono-zasnovani servisi** (Location-based services- LBSs)
  - Isporuka saržaja i servisa na osnovu korisnikove lokacije
- **Mobilne socijalne mreže**
  - Najpopularnije socijalne mreže i socijalni mediji imaju i mobilne aplikacije
- **Mobilna trgovina**
  - Ekstenzija e-trgovine u "mobilnom svetu"
- **Mobilne igre**
  - Pervazivne igre u prostoru
- **Kontekstno-svesni servisi i *crowd sensing***
  - Kontekst označava korisnikovu situaciju, interesovanja, okruženje, preference, konekcije, ...
- **Mobilna razmena poruka** (Mobile instant messaging)
  - Skype, WhatsApp, Viber,...
- **Mobilni video, audio**

M-zdravstvo (*m-health*)

- Nadgledanje fizičkog, psihičkog i emocionalnog zdravlja i detektovanje problema

Mobilne aplikacije
Mobilni sistemi i servisi

Prof. dr Dragan Stojanović

12
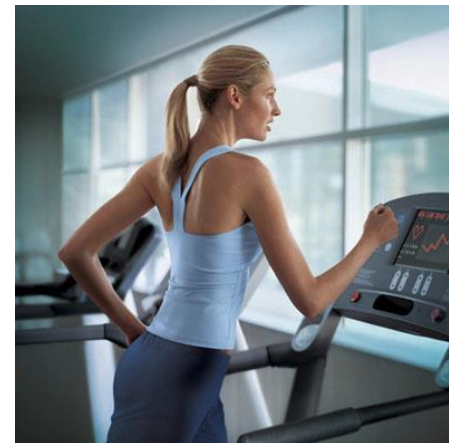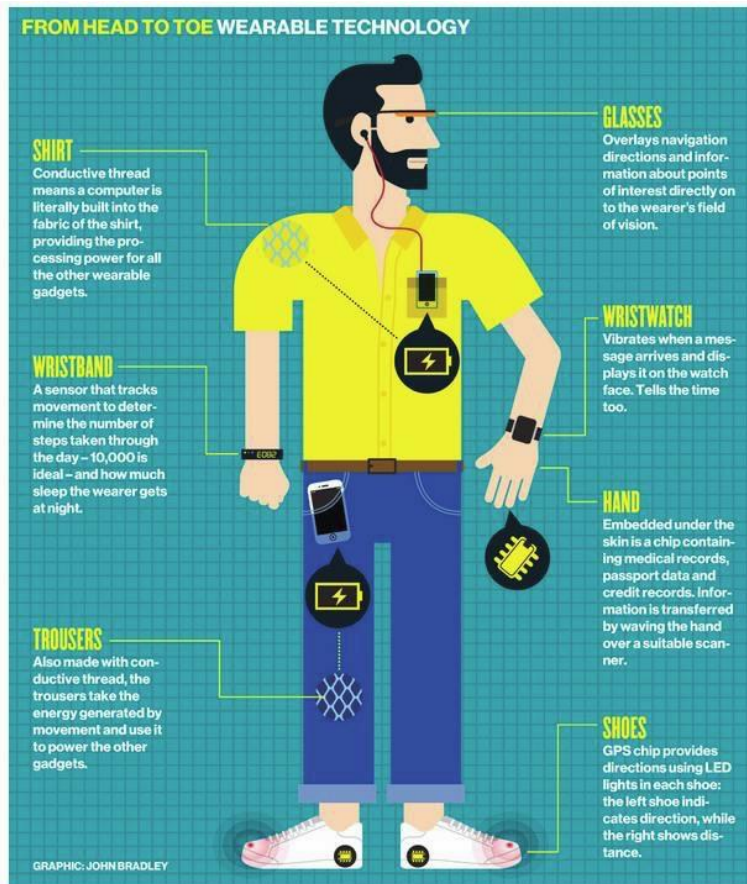
Remote health monitoring

Mobilne aplikacije
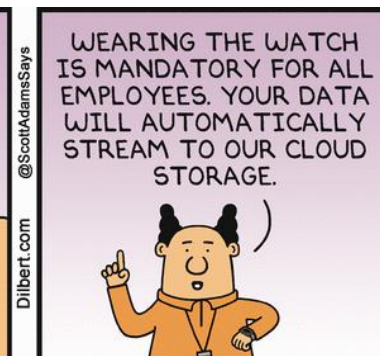
Mobilne transportne aplikacije

- Sigurni i efikasni prevoz
- Upravljanje saobraćajem
- Transport roba - logistika
- Bezbednost pešaka
- Efikasno parkiranje
- *Ride sharing & car pooling*
- *Putnički informacioni servisi*
- *...*

Crowd Sourced Parking Technology

Check out trusted member profiles
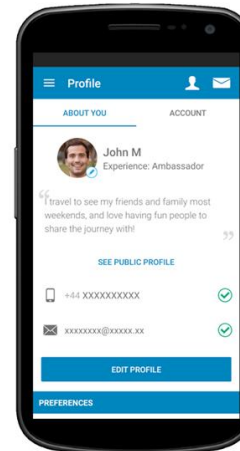
Driving somewhere? Share your costs!
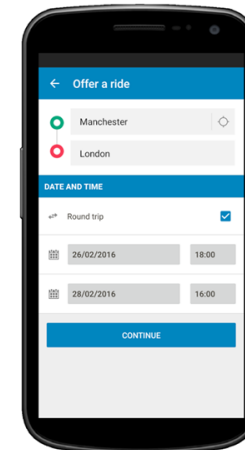
Book instantly
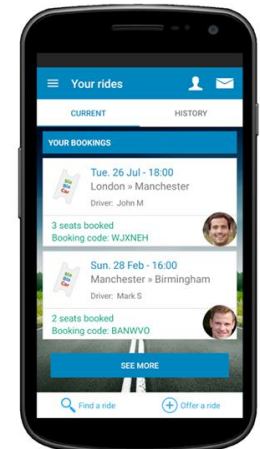
Bla Bla Car - platforma za deljenje prevoza koja povezuje vozače sa slobodnim mestima i ljudima kojima je potreban prevoz. https://www.blablacar.in/apps-mobile

Mobilne aplikacije

Mobilne poslovne aplikacije

- Upravljanje poslovnim sadržajem (*content management*)
- Mobilna prodaja i obrada plaćanja (*Payment processing*)
- Mobilni marketing
- Mobilni sistemi za automatsku naplatu
- Mobilni sistemi za kolaboraciju i razmenu poruka
- Mobilno upravljanje odnosima za korisnicima (*Customer Relationship Management - CRM*),
- Integracija mobilnih aplikacija preduzeća (E*nterprise Application Integration - EAI*)
- Razmena znanja i trening sadržaja (*Knowledge and training content sharing*)
- …
- Google Play Private Channel & Google Play for Work
  - https://developer.android.com/distribute/googleplay/work/about.html

Mobilna prodaja

- Sales Force Automation
  - Primer: **OmniSFA -** www.omnisfa.com

Mobilne aplikacije

Podrška osoblju na terenu

◈ *Field force automation*

Upravljanje proizvodnjom

- Upravljanje proizvodnjom i podrška skladištu i magacinskom poslovanju u okviru kompanije
  - Tagovanje objekata i prozvoda RFID tehnogloijom
  - Praćenje lokacije/kretanja

Mobilne aplikacije
Mobilni sistemi i servisi

Uređaji za upravljanje skladištem

Upravljanje sredstvima i opremom

◈ *Asset management*

Bežične informacije i edukacija

- Bežične tele-konferencije
- M-zdravstvo i bežična tele-medicina
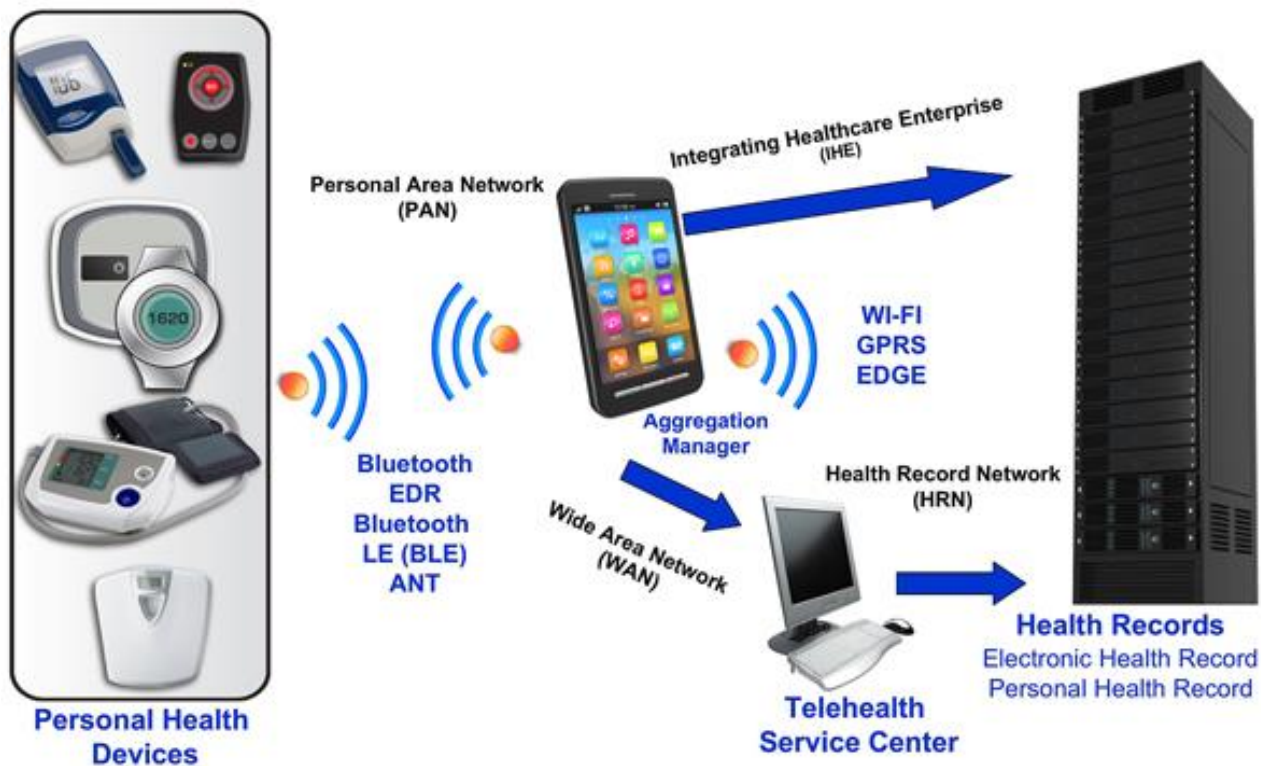
Upravljanje flotom vozila

- Fleet Management

SAP Mobile Platform

- Mobile application development platform
  - Development and management of multiple mobile aplications securely connected to various business data
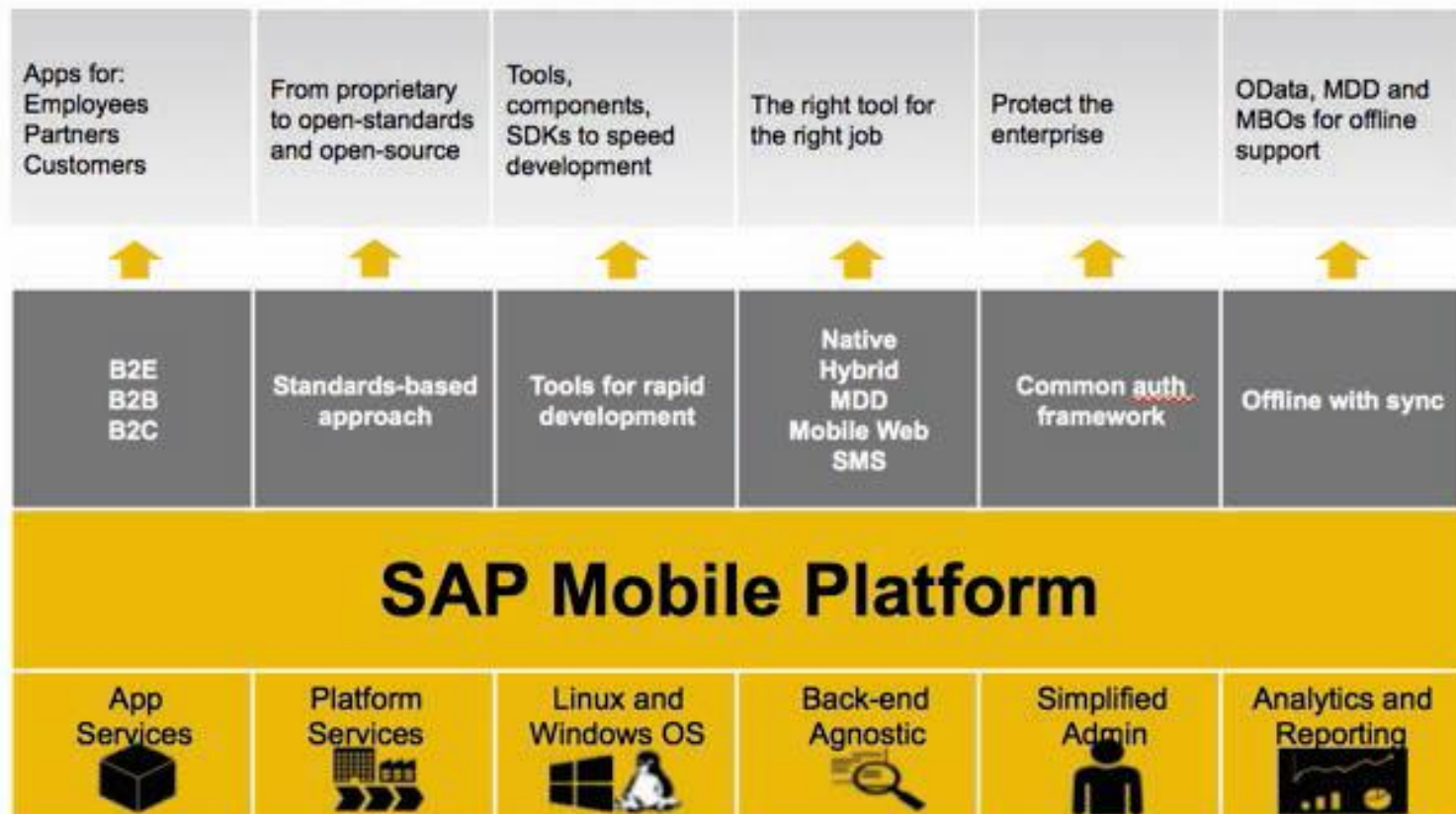
Razvoj mobilnih aplikacija – tehnološki izazovi

- Heterogenost
  - Bežičnih mreža
  - Mobilnih uređaja
  - Programskih platformi i SDK
  - Korisničkih preferenci
- Ograničenja resursa
  - Skladišta podataka
  - Interakcija
  - U/I mogućnosti
  - Propusni opseg bežične mreže
- Dinamičko okruženje
  - Upravljanje podacima, diskonekcijea, sinhronizacija podataka, funckionalnost i sadržaj u pravo vreme na pravom mestu
- Izgled i način upotrebe mobilnog telefona
- Napajanje
- Upotrebljivost
- Efikasan razvoj
- Kros-platformske aplikacije

MWC 2018 – GLOMO Awards

- GLOMO Winners 2018
  - https://www.gsma.com/newsroom/press-release/gsma-announces-winners-2018-glomo-awards/

- Categories
  - Mobile Tech
  - Consumer
  - Fourth Industrial Revolution
  - Device
  - Content & Media
  - Social Good
  - Government Excellence Awards
  - Outstanding Achievement

Mobilne aplikacije

Mobile Tech

- **Best Mobile Network Infrastructure**
  - Huawei 5G Ready Ultra-Wide Band (UWB) Radio Family
- **Best Mobile Technology Breakthrough**
  - Huawei 5G Ready CloudAIR Solution
  - Sprint & Airspan Networks for The Magic Box
- **Best Network Software Breakthrough**
  - Huawei 5G Core solution: Service Oriented Core (SOC)
- **Outstanding Mobile Technology Award – The CTOs' Choice**
  - Huawei for 5G Ready CloudAIR Solution

Consumer applications

- Best Mobile Service for the Connected Life
  - ZTE Smart Parking Solution - http://www.zte.com.cn/global/products/access/GES/zhinengtingche
- Most Innovative Mobile App
  - SMARTIFY – „Scan the art, uncover the story" https://smartify.org/
- Overall Mobile Consumer Innovation (Judges Choice)
  - Ada - personalized health companion - https://ada.com/

Fourth Industrial Revolution

- Best Mobile Innovation for Enterprise
  - LiveCare (SK Telecom & uLikekorea) - low-power, long-range LoRa-based IoT service that enables farmers to monitor and manage their livestock in real time - http://www.livecare.xyz/new/
- Best Mobile Innovation for Health
  - KT Digital Healthcare Solution & Platform "m-Hospital" - providing timely, reliable diagnosis using a hub and spoke model, enabling access to quality healthcare even in remote areas.
- Best Mobile Innovation for Education
  - Shupavu 291 (Safaricom & Eneza Education) - a mobile Short Messaging Service (SMS) study tool which enables Primary and Secondary school learners access Kenya National Curriculum aligned lessons - http://enezaeducation.com/products/shupavu/
- Best Mobile Innovation for Automotive
  - Cisco Jasper Control Center 7.0 for Connected Cars - Launch, manage and monetize connected car services
  - https://www.jasper.com/control-center-for-connected-cars

Fourth Industrial Revolution (2)

- Best Mobile Innovation for Payment
  - Samsung Pay – Highly secure, widely available, accepted almost anywhere that you can tap or swipe a card, ATM compatibility and an integrated awards programme - https://www.samsung.com/us/samsung-pay/
- Best Mobile Innovation for Commerce
  - Whisbi Conversational Commerce Solution for Enterprises - https://www.whisbi.com/solution/
- Best Mobile Innovation for Smart Cities
  - Huawei NB-IoT Smart City Solution

Device

- Best Smartphone 2017
  - Apple iPhone X

- Disruptive Device Innovation Award
  - Apple TrueDepth Camera

- Best Wearable Mobile Technology
  - The Dash Pro (Bragi) -True Wireless Intelligent Earphones, with 4GB of built in storage, an on-board MP3 player, 30 hours of Battery life, automatic activity tracking - https://www.bragi.com/thedashpro/

- Best Connected Consumer Electronic Device
  - Dojo by BullGuard - integrated smart home security solution that seamlessly protects the privacy and security of a consumer's data, devices, home and family by monitoring the home network 24/7 against cyber threats. https://dojo.bullguard.com/

Content & Media

- Best Mobile VR or AR
  - Samsung Gear VR with Controller - http://www.samsung.com/global/galaxy/gear-vr/
- Best Mobile Game
  - Transformers: Forged to Fight (Kabam) - http://www.playforgedtofight.com
- Best Content and Media Innovation (The Judges' Choice)
  - Stranger Things: The Games (Netflix)

Mobile World Congress 2019

- **MWC**, Barcelona, 25-28 Feb 2019
  - https://www.mwcbarcelona.com
  - More than 109,000 visitors from over 198 countries and territories attended MWC19 Barcelona, the mobile industry's premier event.
  - More than 2,400 companies showcased the latest technology, products and services across 120,000 m^2 of exhibition and hospitality space at Fira Gran Via.

- MWC Shanghai 2019, 26-28 June
  - 5G, IoT, AI, Big data and beyond
  - https://www.mwcshanghai.com/

Intelligent Connectivity

- **Intelligent Connectivity** is the overarching theme of MWC's 2019 events that describes the powerful combination of flexible, high-speed 5G networks, IoT, AI and Big data.

- „Intelligent Connectivity marks the beginning of a new era, defined by highly contextualised and personalised experiences, delivered as and when you want them, shaping the future of our industry and our world as new innovations intelligently connecting everything and everyone to a better future."

- Innovation City - a number of hands-on demonstrations across a range of sectors including entertainment, transportation, environment and robotics from our partners Google, Huawei, KT Corporation, Sierra Wireless and Turkcell, as well as from GSMA programmes.

Global Mobile Awards 2019

- Global Mobile Awards 2019 Winners
  - https://www.mwcbarcelona.com/conference-programmes/global-mobile-awards/winners-2019/
- Nominee Shortlist
  1. Mobile Tech
  2. Consumer
  3. **Fourth Industrial Revolution** – Best Mobile Innovation
  4. Device
  5. Content & Media
  6. Social Good
  8. Outstanding Achievement
  9. 4YFN Startup of the Year
  10. 5G

Category 2 - Consumer

🞂 **2a. Best Mobile Operator Service for Consumers**
  ▪ Sunrise & Huawei for Sunrise 5G FWA service

🞂 **2b. Best Mobile Service for the Connected Life**
  ▪ Aira for Aira: Visual Interpreter for the Blind

🞂 **2d. Most Innovative Mobile App**
  ▪ SK Telecom for T Map for Ultimate Driving Safety

🞂 **2e. Best Overall Mobile Consumer Innovation**
  ▪ Epic Games for the Fortnite Franchise

Category 3 - Fourth Industrial Revoution

- **3a. Best Mobile Innovation for Enterprise**
  - Athonet for Athonet BubbleCloud
- **3b. Best Mobile Innovation for Health and Biotech**
  - BIMA for mHealth from BIMA
- **3c. Best Mobile Innovation for Education**
  - Aira for Aira: Visual Interpreter for the Blind
- **3d. Best Mobile Innovation for Automotive**
  - Huawei for C-V2X Solution
- **3e. Best Mobile Innovation for Payment and Fintech**
  - KT for Genie Pay
- **3f. Best Mobile Innovation for Commerce**
  - Ubamarket & DMI for Ubamarket
- **3g. Best Mobile Innovation for Smart Cities**
  - Gaoqing Government & Huawei for Adding "Smart" to "Happy"

Category 4 - Device

- **4a. Best Smartphone (Judges Choice)**
  - Huawei for Huawei Mate 20 Pro

- **4b. Disruptive Device Innovation Award**
  - Google for Google Night Sight

- **4c. Best New Connected Mobile Device @ MWC 2019**
  - Huawei for Huawei Mate X

- **4d. Best Wearable Mobile Technology**
  - Samsung for Samsung Galaxy Watch

- **4e. Best Connected Consumer Device**
  - Goodix for Secure Live-Finger Detection Solution

Category 7 - Government Excellence

- 7a. Government Leadership
  - Finnish Government
  - The Finnish Government has applied an interesting and experimental approach that requires all companies offering passenger mobility services to provide essential data on routes, stops, timetables prices and accessibility through APIs, which also ensure that ticket and payment systems are interoperable.
  - As this develops we believe it will demonstrate how digital communications can work to drive a potentially massive change in a very important sector. In addition, the panel were impressed by the work being carried out to ensure spectrum is available in time for 5G services.

Category 10 - 5G

- **10a. 5G Leadership Award**
  - Nokia for Nokia 5G Future X – Unleashing the Potential of 5G
  - https://networks.nokia.com/5g
- **10b. 5G Industry Partnership Award**
  - Hamburg Port Authority, Deutsche Telekom & Nokia for First Large Scale Industrial Commercial 5G Trial

Mobile World Congress 2020

- With due regard to the safe and healthy environment in Barcelona and the host country today, the **GSMA has cancelled MWC Barcelona 2020** because the global concern regarding the coronavirus outbreak, travel concern and other circumstances, make it impossible for the GSMA to hold the event.

- 2020 #GLOMOAwards

  - Nominee Shortlist - https://www.mwcbarcelona.com/global-mobile-awards/nominee-shortlist/

  - Winners - https://www.mwcbarcelona.com/global-mobile-awards/winners/

Pitanja i komentari