



Tableau Prezentacija

AGENDA DOGAĐAJA

Agenda prezentacije:

1. Blok

- Potreba za Vizualizacijom velike količine podataka
- Vizualizacija kao nova grana u razvoju
- Tableau istraživanje izgleda kontrolnih tabli

2. Blok

- Vizualizacija podataka ML u domenu personalizovanih kampanja

3. Blok

- Vizualizacija podataka ML u domenu predikcije i simulacije cena

4. Blok

- Vizualizacija u domenu finansijskih analiza

5. Blok

- Proizvodi, licence i cene
- Q&A
- Networking uz katering

How do organizations thrive in the age of data?

Alexandre Bougrov

How do organizations thrive in the age of data?

Alexandre Bougrov,
Senior Commercial Territory Manager

“The world’s most valuable resource
is no longer oil, but data”

The
Economist

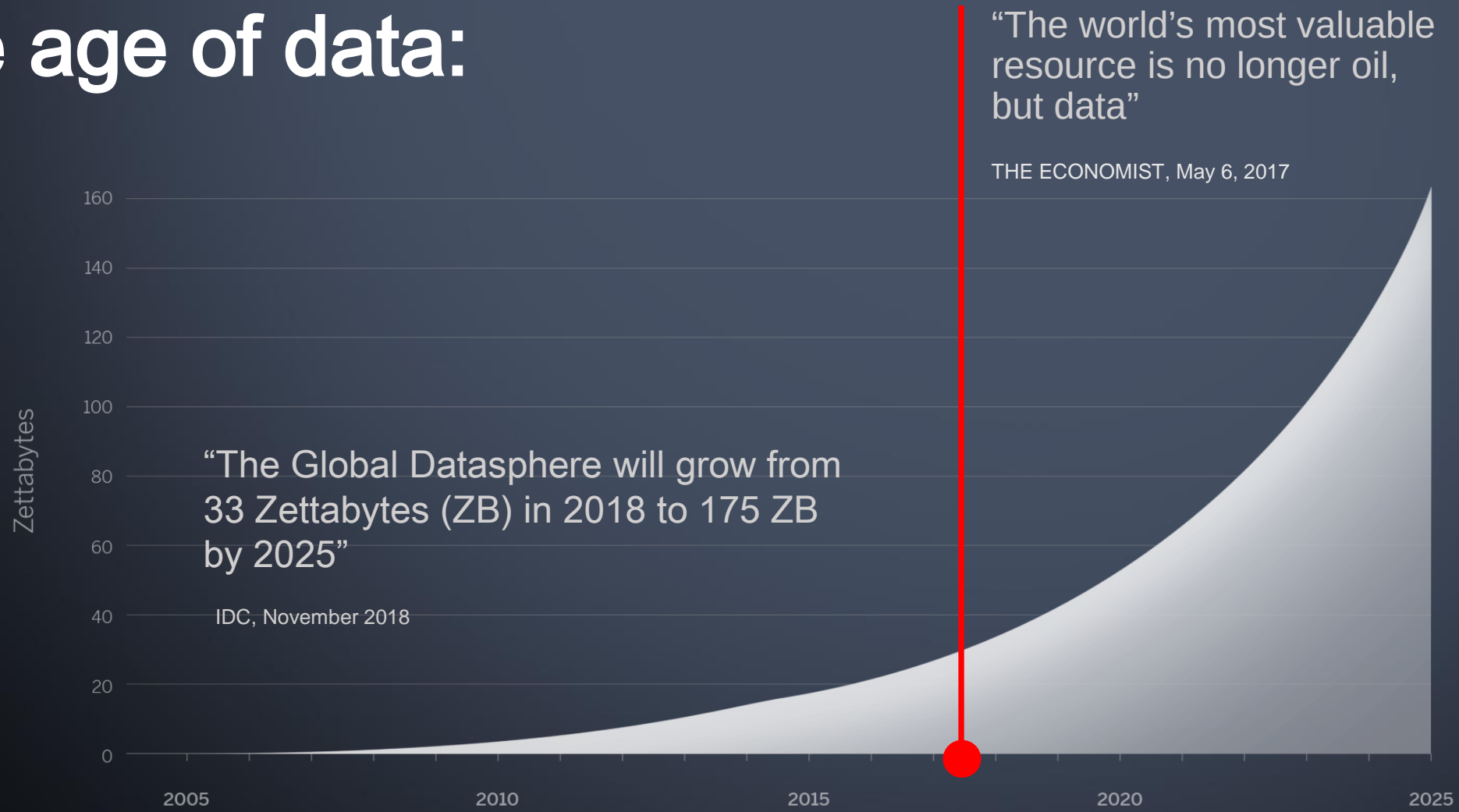
May 6, 2017

“In 2000, Blockbuster declined several offers to purchase Netflix for a mere \$50 million...

In 2010, Blockbuster declared bankruptcy”

In 2019, Netflix is valued at more than \$150B

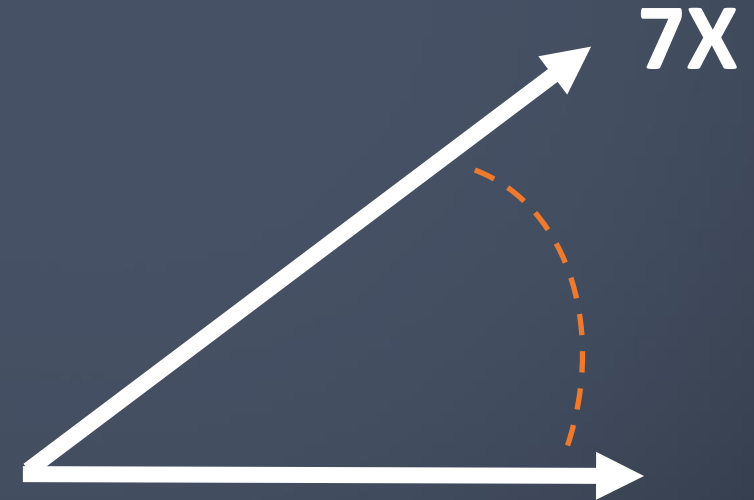
The age of data:



Source: IDC 2017

Source: <http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource>

Insights-driven organizations will grow at least 7X faster than global GDP





Data-driven behavior change

98.6% of executives indicate that their firm aspires to a data-driven culture, while only 32.4% report success.

How do you become a data-driven organization?

Tableau helps people and organizations become more data-driven

Analytics people
love to use

An integrated
platform
that is easier to
start and scale

The trusted
leader in analytics



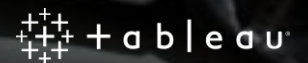
Jaguar Land Rover scales Tableau to 70% of business in 9 months

- CEO requested all board reporting be done in Tableau, and nine months later, 7 of 10 businesses used Tableau for executive reports
- Opportunity for tens of millions in savings
- KPI dashboard increases dealer-level transparency
- Analytics-driven culture increases skill-building and employee retention



The beauty of Tableau is how the visualizations help close the gap between the analyst and the end user [so that] analytics energy is focused on what analytics to do, not how.

CLIVE BENFORD, SENIOR ANALYTICS PROGRAM
MANAGER,
JAGUAR LAND ROVER



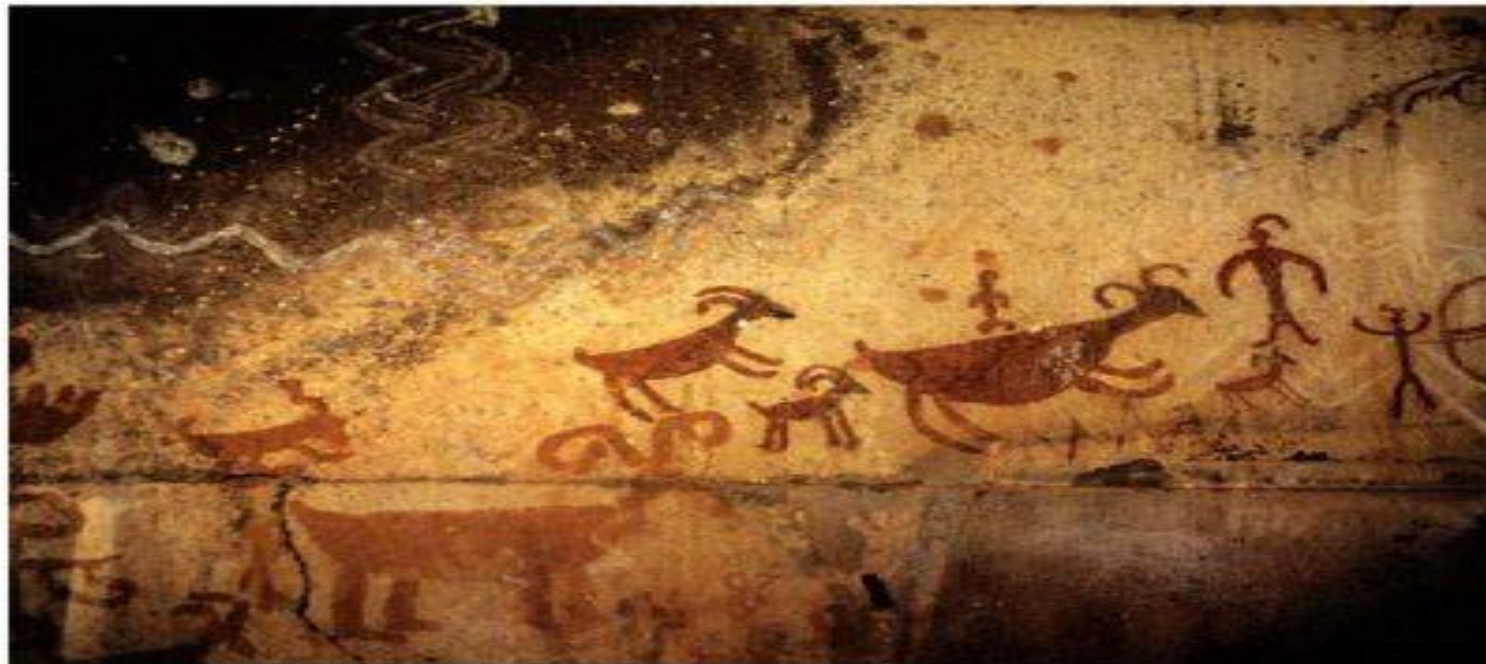
Vizualizacija – nova grana u razvoju

Danijel Subotić

KONTROLNE TAČKE

Značajni koraci

- Slike nastale pre jezika





KONTROLNE TAČKE

Značajni koraci

- Slike nastale pre jezika
- Brže se tumače

Country	1950		2000		2030	
	Per cent urban	Population (in millions)	Per cent urban	Population (in millions)	Per cent urban	Population (in millions)
1 China	12.5	555	35.8	1275	59.5	1485
2 India	17.3	357	29.0	1009	40.9	1409
3 USA	64.2	158	77.2	283	84.5	358
4 Brazil	36.5	54	81.2	170	90.5	226
5 Indonesia	12.4	79	41.0	212	63.7	283
6 Nigeria	10.1	30	44.1	114	63.6	220
7 Pakistan	17.5	40	33.1	141	48.9	273
8 Mexico	42.7	28	74.4	99	81.9	135
9 Japan	50.3	84	78.8	127	84.8	121
10 Bangladesh	4.3	42	25.0	137	44.3	223

Source: United Nations, 2002

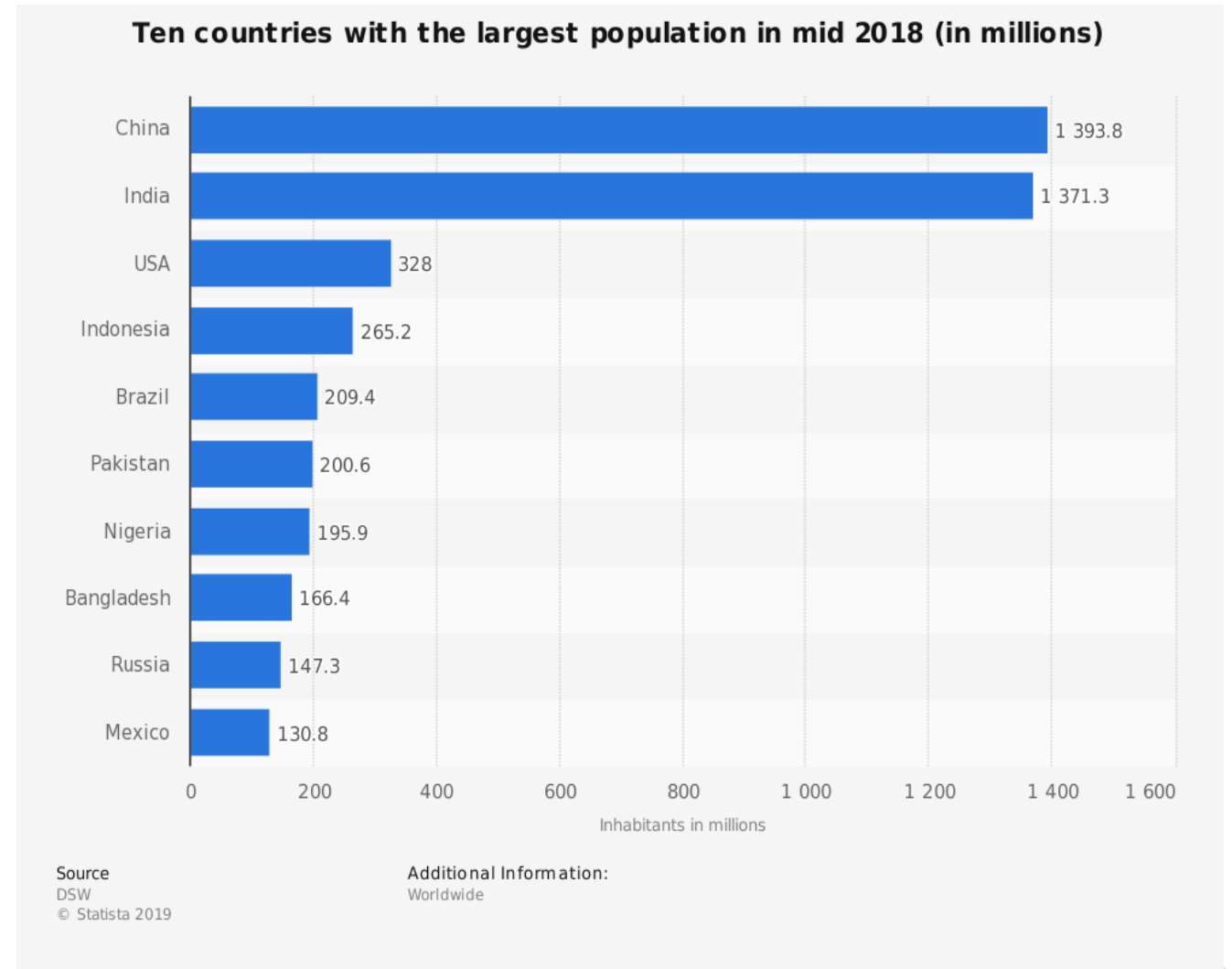




KONTROLNE TAČKE

Značajni koraci

- Slike nastale pre jezika
- Brže se tumače





KONTROLNE TAČKE

Značajni koraci

- Slike nastale pre jezika
- Brže se tumače
- Prijatne za oko
- **Globalni trend automatizacije i brzih rešenja**

„Dobra skica je bolja od hiljadu reči“

Napoleon Bonaparta



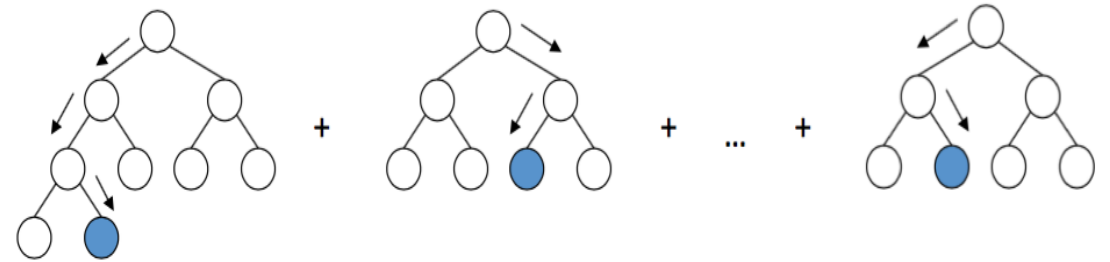


ERA BRZIH REŠENJA

Ekspanzija alata za vizualizaciju

Razvoj kompleksnih algoritama

- Mašinsko učenje
- Veštačka inteligencija



Deep Neural Network

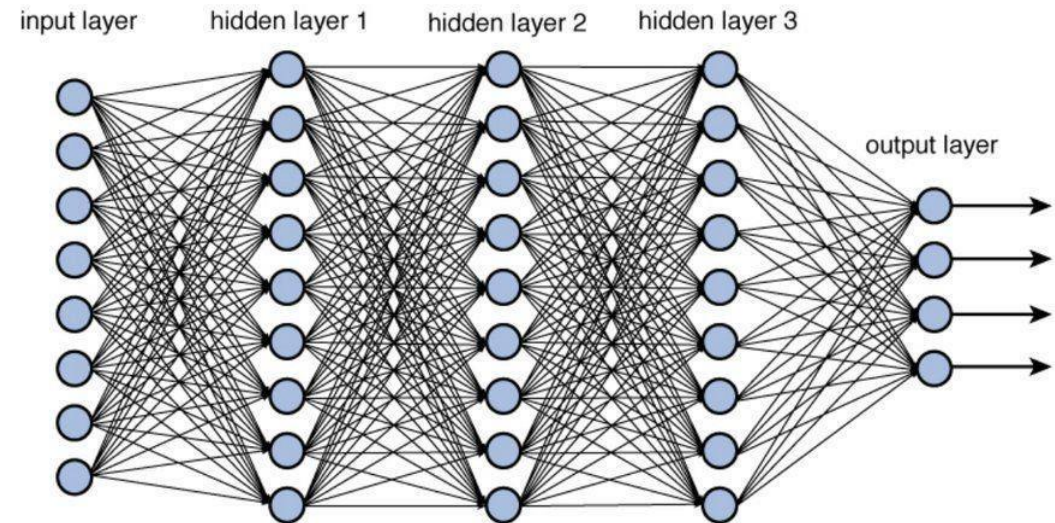
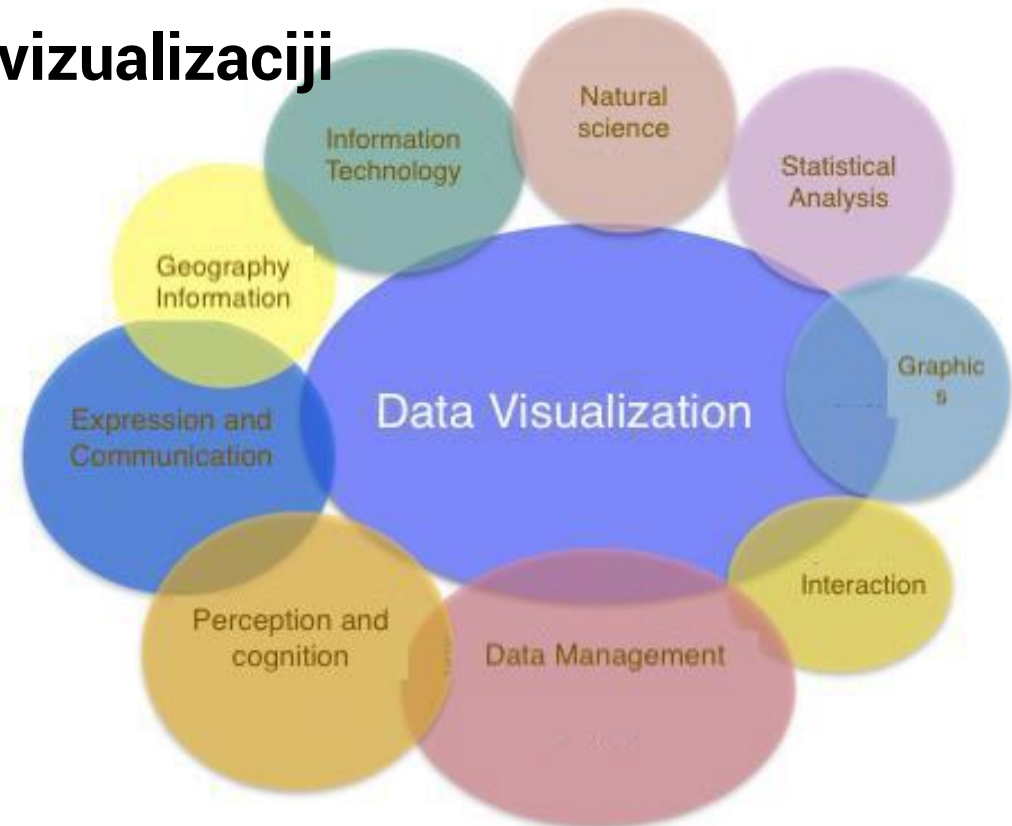


Figure 12.2 Deep network architecture with multiple layers.



NAUKA O PODACIMA

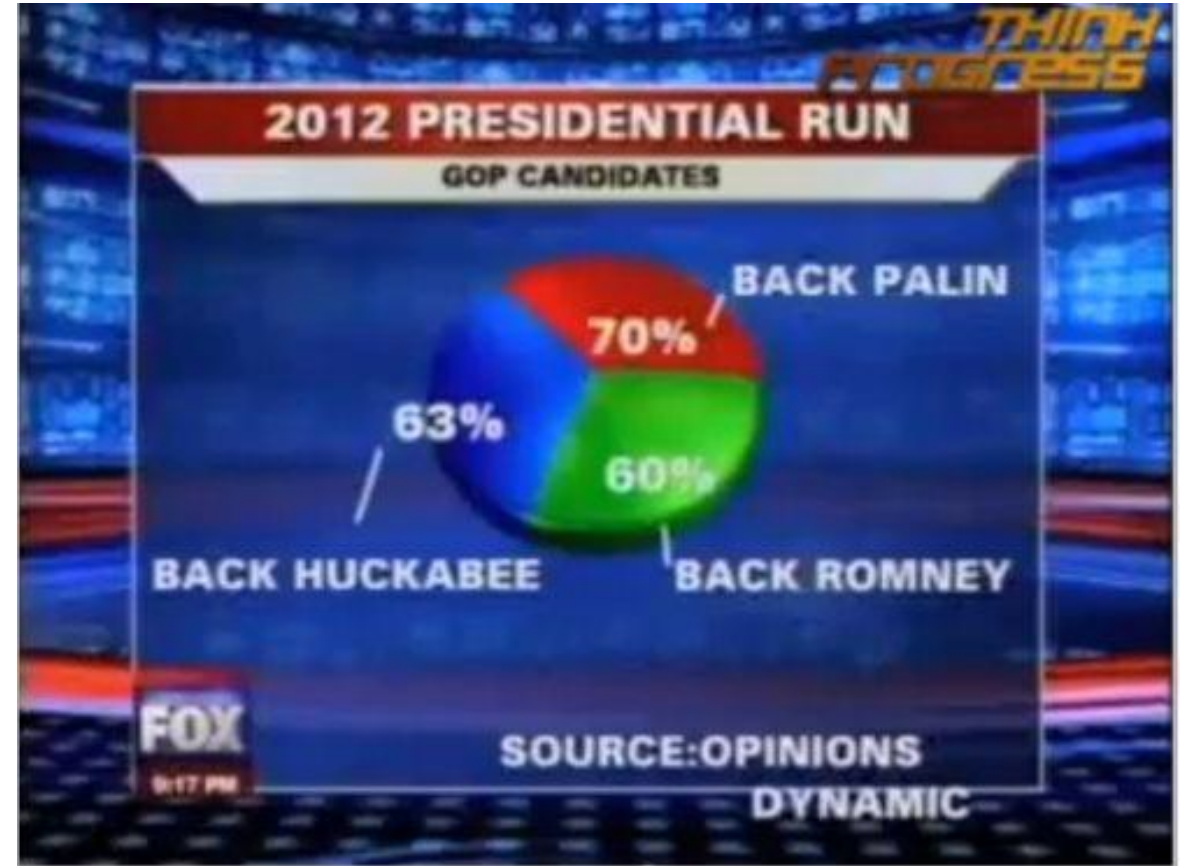
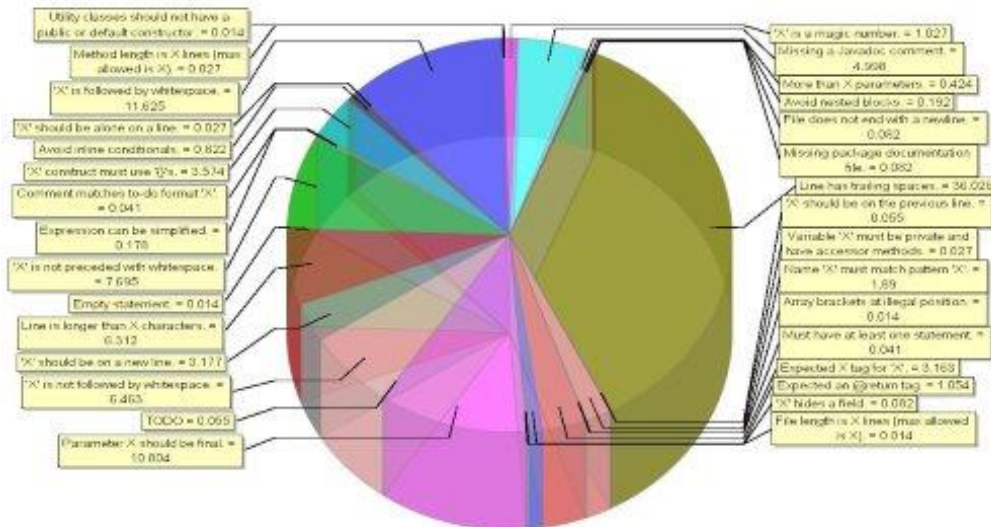
- Aktivno se razvija oblast „Data Science“ - nauka o podacima
- Paralelno: nauka o vizualizaciji
- Naučne konferencije posvećene vizualizaciji
 - IEEE VIS
 - OPEN VIS conf
 - Tableau





LOŠA VIZUALIZACIJA

- Neinformativni
- Nepregledni
- Nema kompletne slike





Upravljanje kampanjom - odabir kampanje -

Korišćeni su podaci od 01.01.2018 do 31.03.2019

asw: INTEGRATED IT SOLUTIONS

Pol: (All) Bračno stanje: (All)

Godine: 14 - 91

Datum ulaska u program: 13.5.2013. - 31.3.2019.

Odabir kupaca za kampanju

Klaster: **Grupa 4** ✕

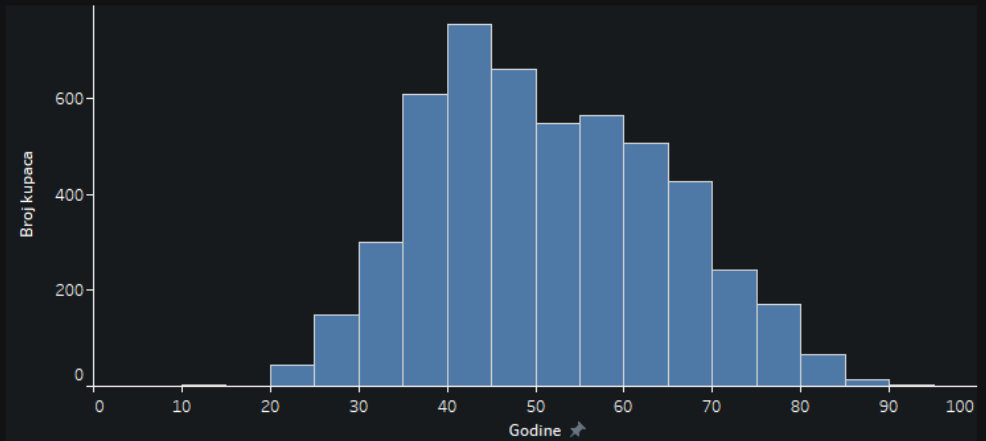
Odabir ponude: **Odabrana ponuda**

Minimalna verovatnoća prihvatanja ponude: **50%**

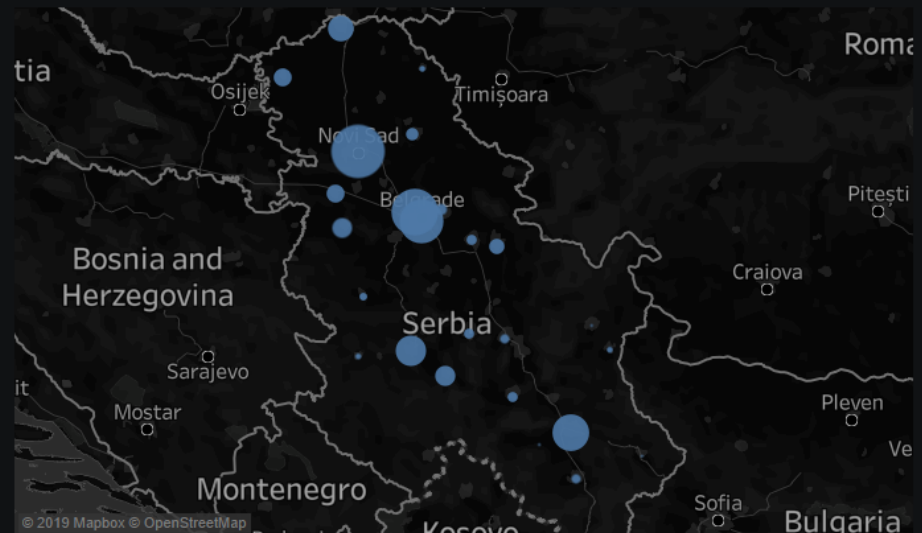
Broj odabranih kupaca: **5,071**

Klasteri

- Grupa 1
- Grupa 2
- Grupa 4
- Grupa 5
- Grupa 6
- Grupa 7



Naziv klastera	ID kupca	Ukupna potrošnja [din]	Verovatnoća prihvatanja ponude [%]
Grand Total		904,128,494	58.7%
Grupa 4		129,042	55.3%
		142,756	55.5%
		238,098	50.0%
		316,495	66.7%
		215,411	52.2%
		158,829	51.3%
		144,007	57.6%
		144,328	50.8%
		151,888	56.5%
		169,128	51.2%
		145,602	60.0%
		209,818	58.5%



Prelazak na analizu kupovnih navika

Tableau kontrolne table - Koncept

Filip Jekić

● TABLEAU STUDIJA PRAĆENJA POGLEDA

- Kontrolna tabla - alat za upravljanje
- Koncept nastao kao rezultat dve godine istraživanja i studija
- Koncept zasnovan na istraživanju praćenja pogleda
- Posmatrane metrike:
 - Vreme do prve fiksacije
 - Trajanje fiksacije



How to develop a
designer's instinct:
A study of dashboards

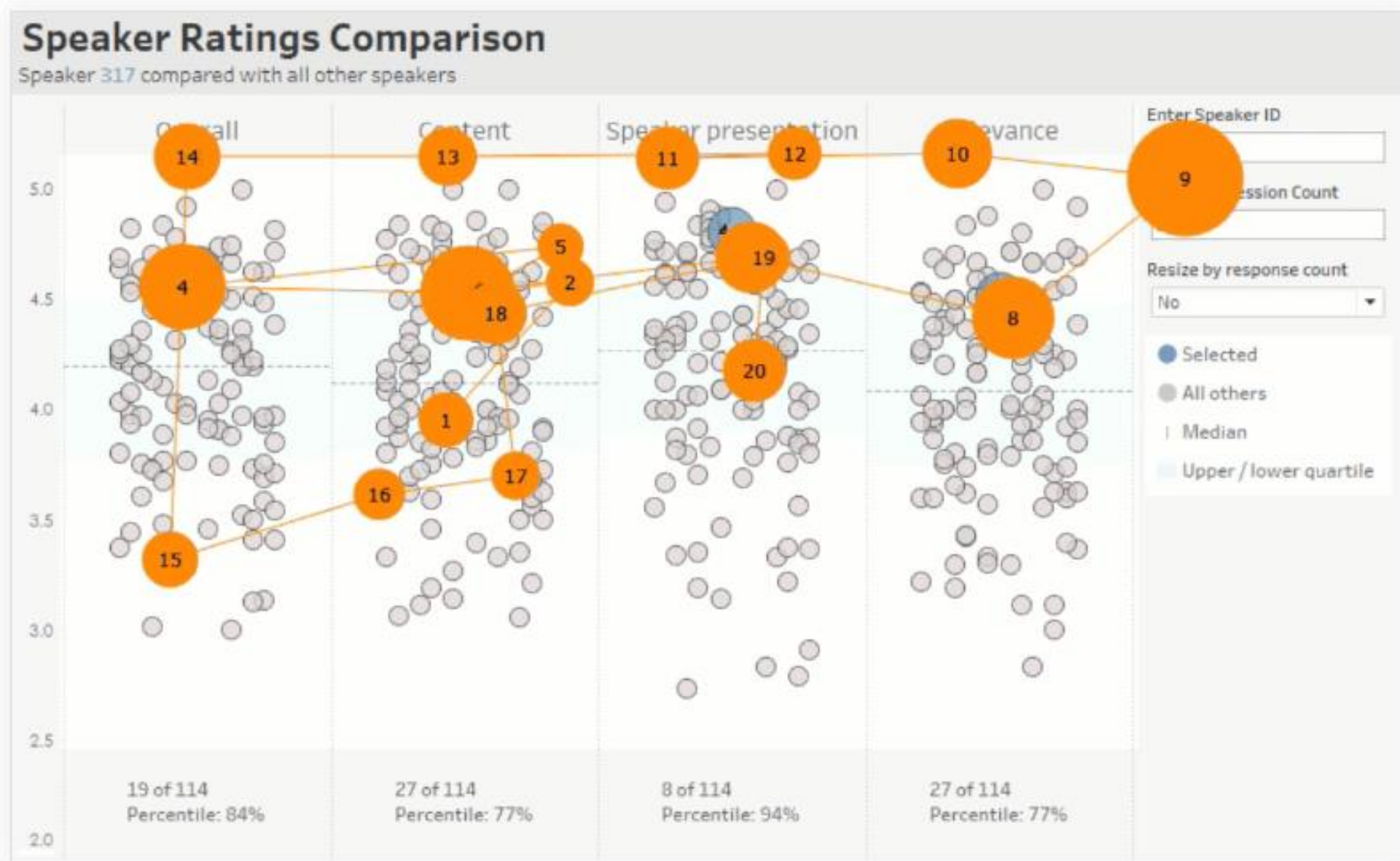


TABLEAU STUDIJA PRAĆENJA POGLEDA - HEATMAP



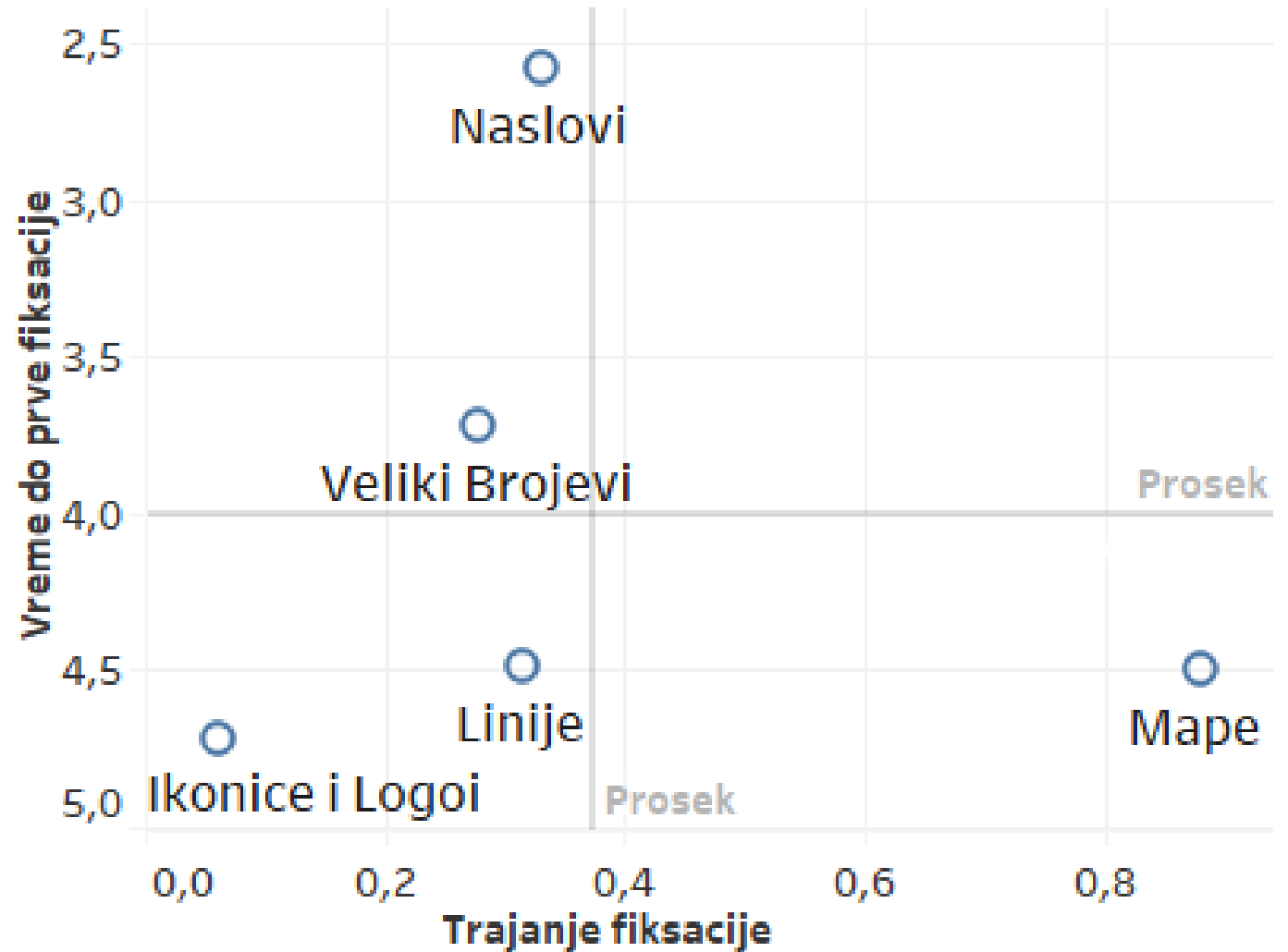


TABLEAU STUDIJA PRAĆENJA POGLEDA – GAZE PLOT FOR SEQUENCE



DASHBOARD - KONCEPT

- Osnovni elementi:
 - *Naslov
 - *Veliki brojevi (Totali i KPI)
 - *Grafici
 - *Tabela
 - *Mapa
- Interakcija sa informacionim sistemom kompanije



DASHBOARD - KONCEPT

- Osnovni elementi:
 - *Naslov
 - *Veliki brojevi (Totali i KPI)
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- Interakcija sa informacionim sistemom kompanije

Naslov <i>+ datum korišćenih podataka</i>	Pogled <i>Opis i odabir pogleda: filteri, parametri..</i>	Logo
<p style="text-align: center;">KPI</p> <p style="text-align: center;">Sumarne vrednosti, predstavljene velikim brojevima</p>	<p style="text-align: center;">Grafički prikaz</p> <p style="text-align: center;">Linijski ili stupčani (bar chart) prikaz</p>	
<p style="text-align: center;">Tabelarni prikaz</p>		<p style="text-align: center;">Mapa</p>



Procena rizika kupca

Odabir kupca

10522

Kreditni limit

4,000,000

Predikcija rizika

High Risk

Predikcija kasnjenja

64.02

Ukupan promet
15,902,352

Ukupan dug
61,455

Dozvoljeno zaduzenje
3,938,545



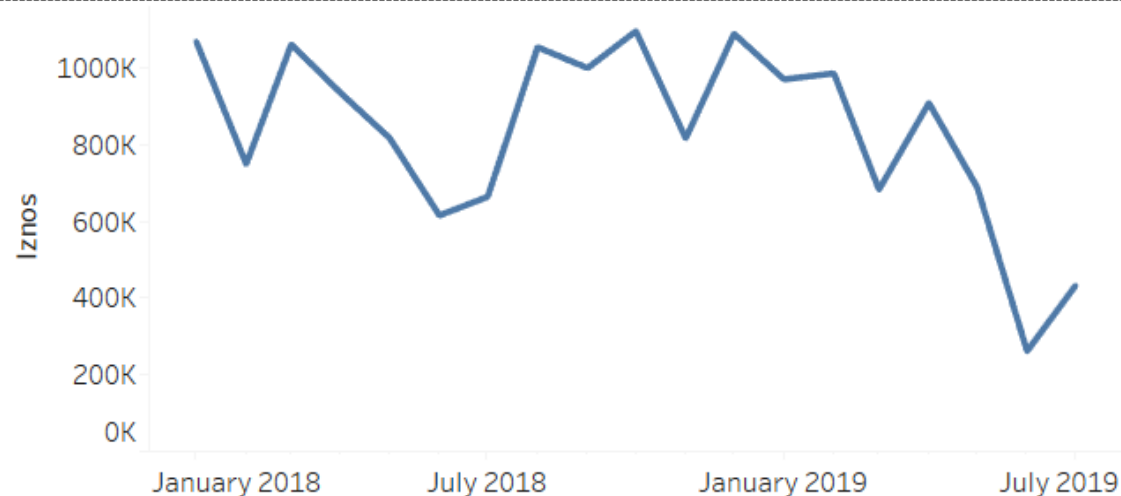
Vremenski period

04-Jan-18

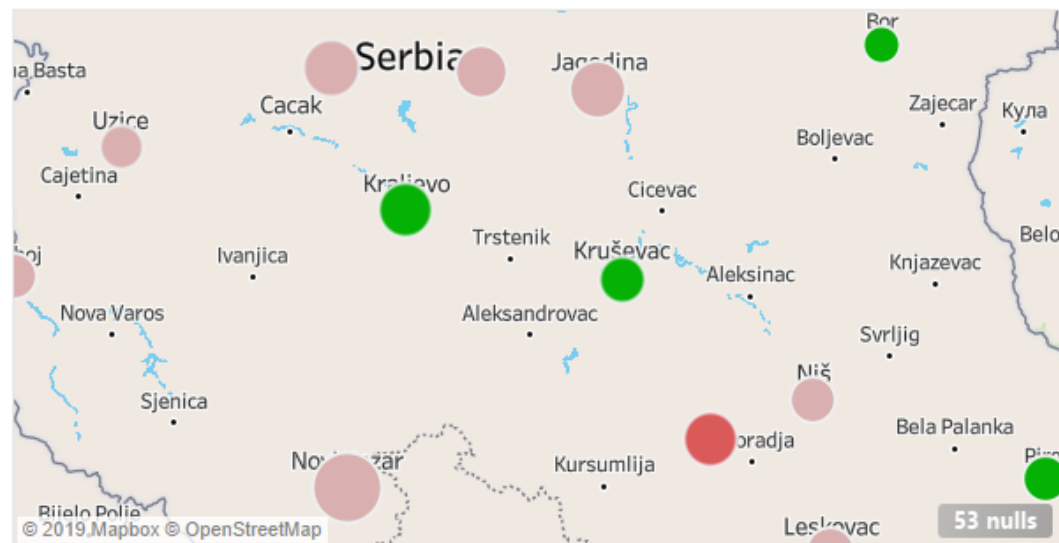
31-Jul-19

asw:

Integrated in solutions



Month of Mjeseci	Broj transakcija	Iznos	Prosecno kasnjenje	Prosecna valuta dana
Grand Total	2,036	15,902,352	0	6
July 2019	94	432,271	0	6
June 2019	65	261,728	-1	9
May 2019	121	689,171	-1	10
April 2019	105	909,026	0	8
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August 2018	96	1,054,518	1	4





FILTERI

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 04-Jan-18 31-Jul-19

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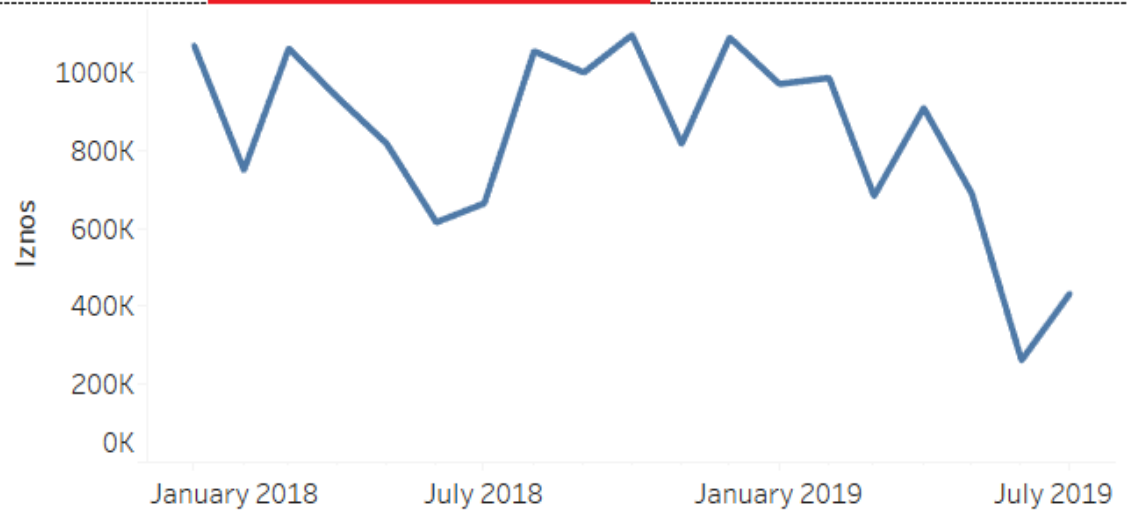
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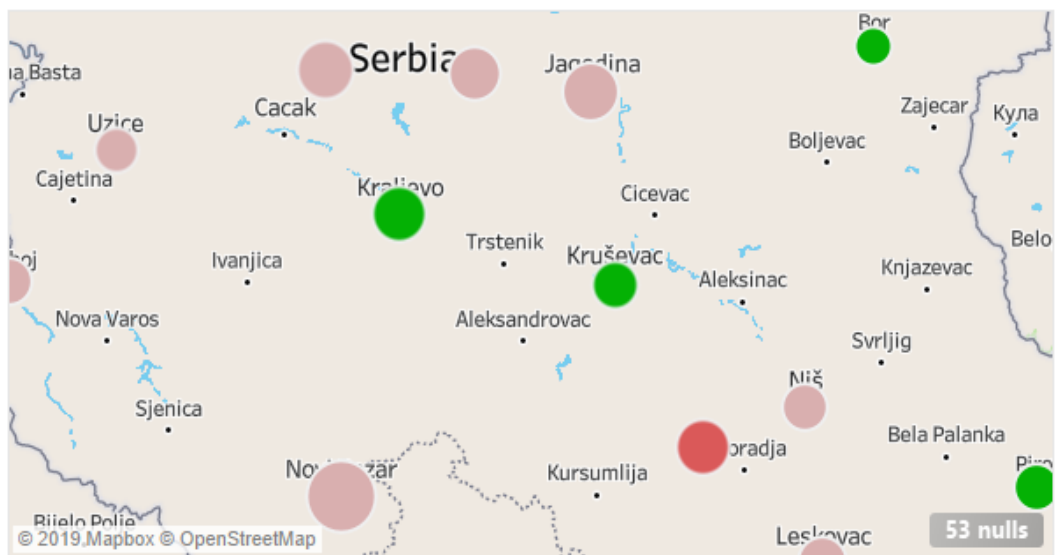
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KPI I TOTALI

Procena rizika kupca



Vremenski period

04-Jan-18 31-Jul-19



Integrated in solutions

Odabir kupca

10522

Kreditni limit

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High Risk

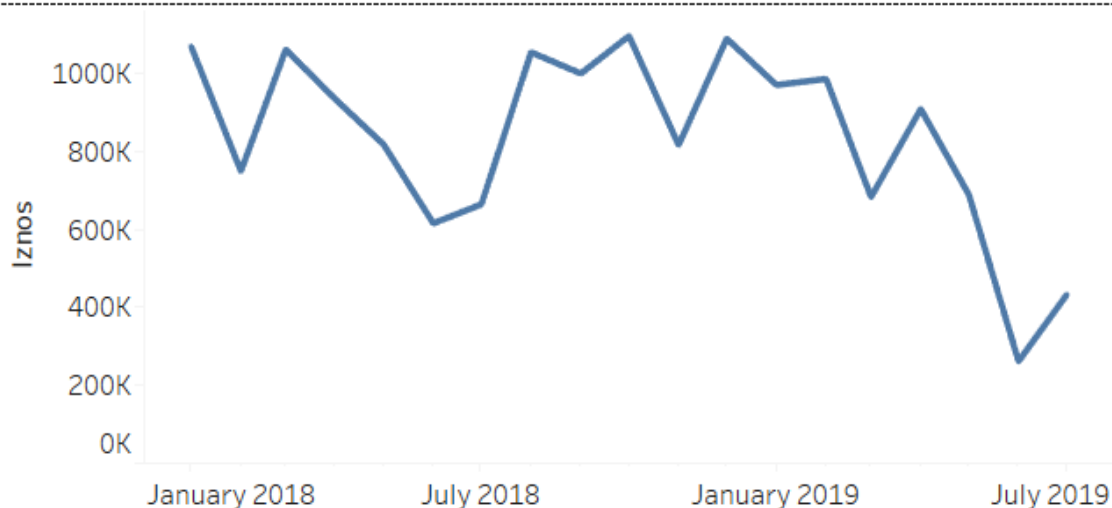
Predikcija kasnjenja

64.02

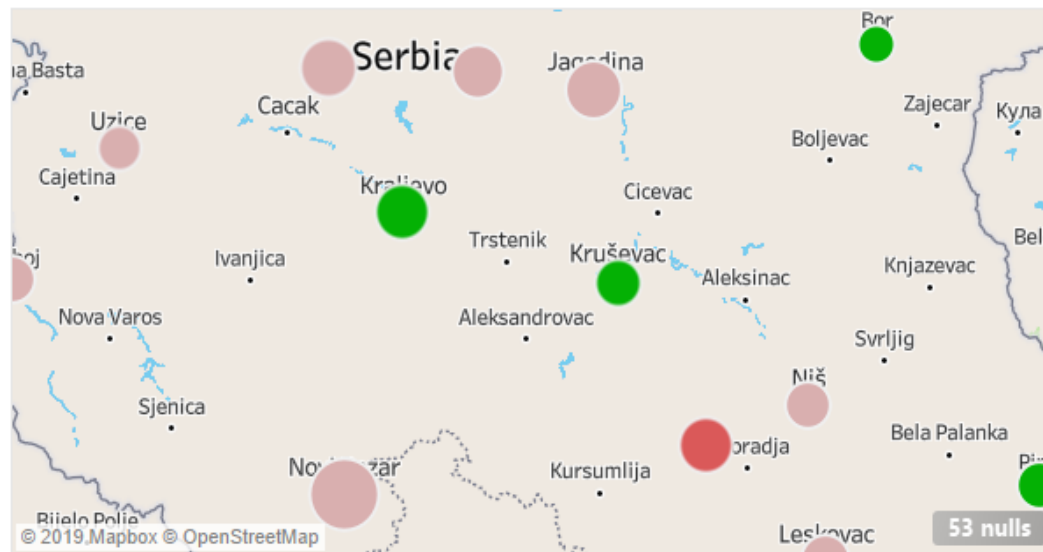
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Procena rizika kupca



Vremenski period

04-Jan-18 31-Jul-19



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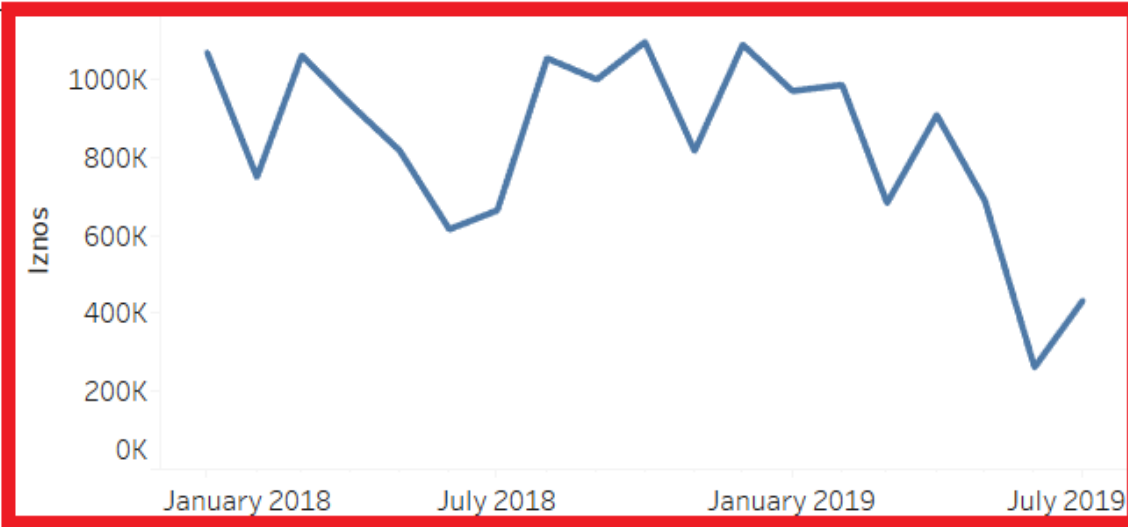
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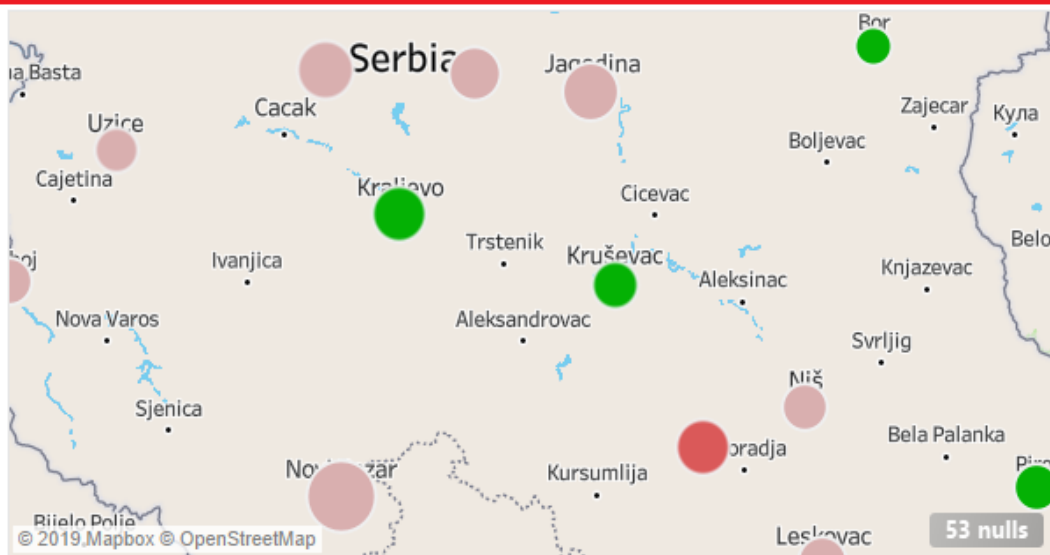
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TABELA

Procena rizika kupca



Vremenski period

04-Jan-18 31-Jul-19

asw:

Integrated in solutions

Odabir kupca

10522

Kreditni limit

4,000,000

Predikcija rizika

High Risk

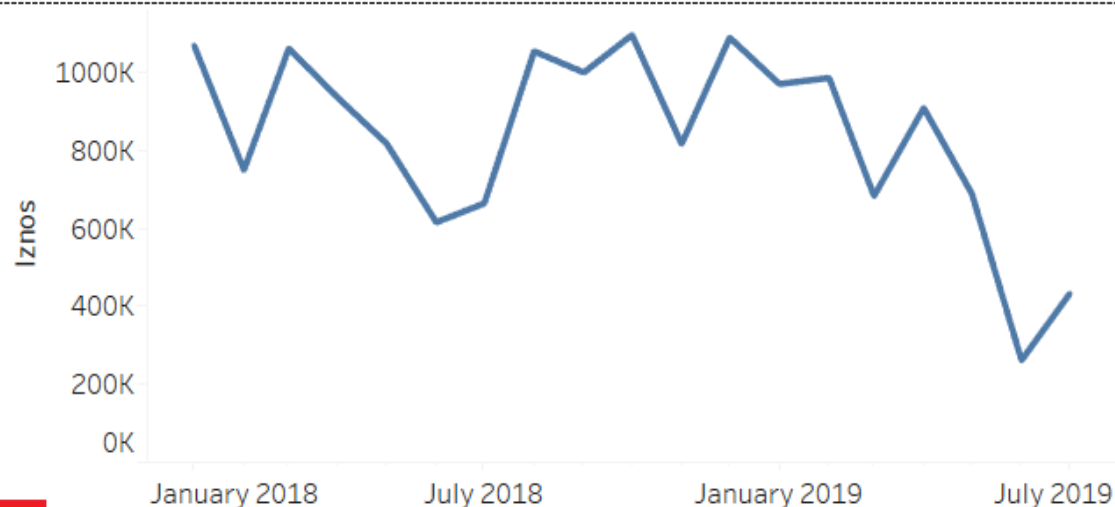
Predikcija kasnjenja

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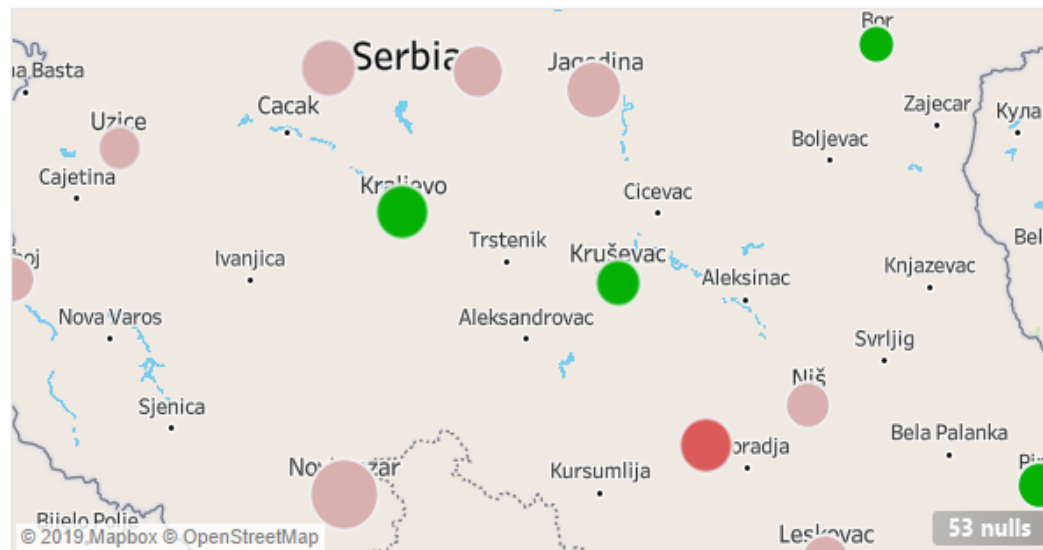
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Procena rizika kupca



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Integrated in solutions

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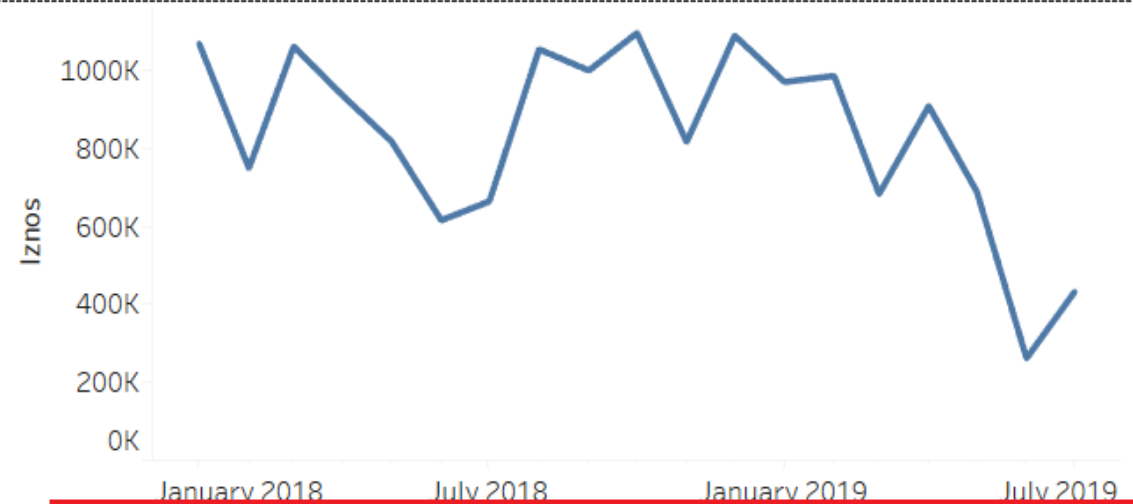
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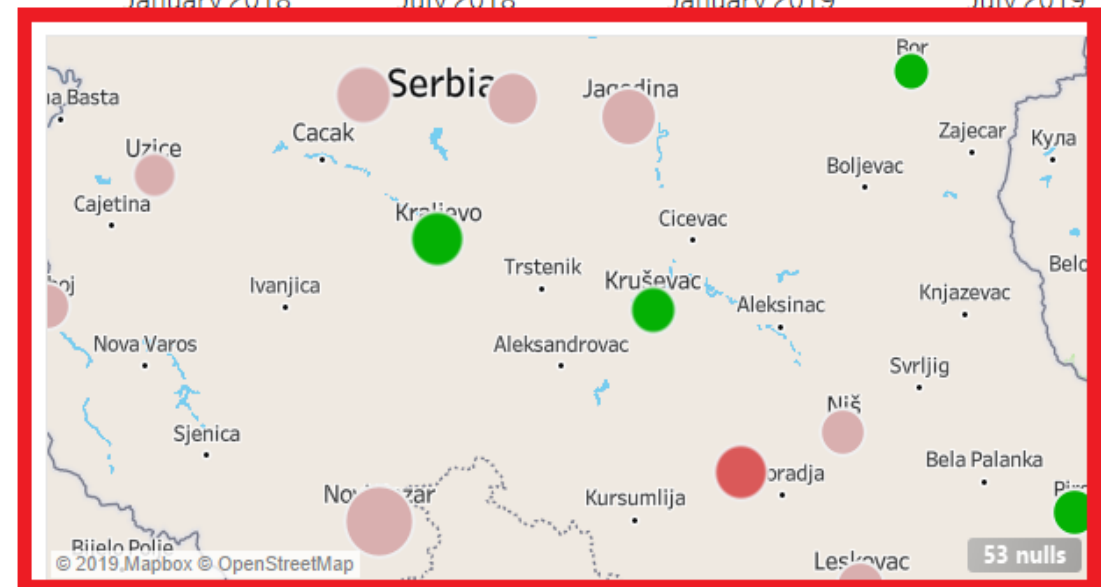


Tableau kontrolne table u domenu personalizovanih kampanja

Danijel Subotić



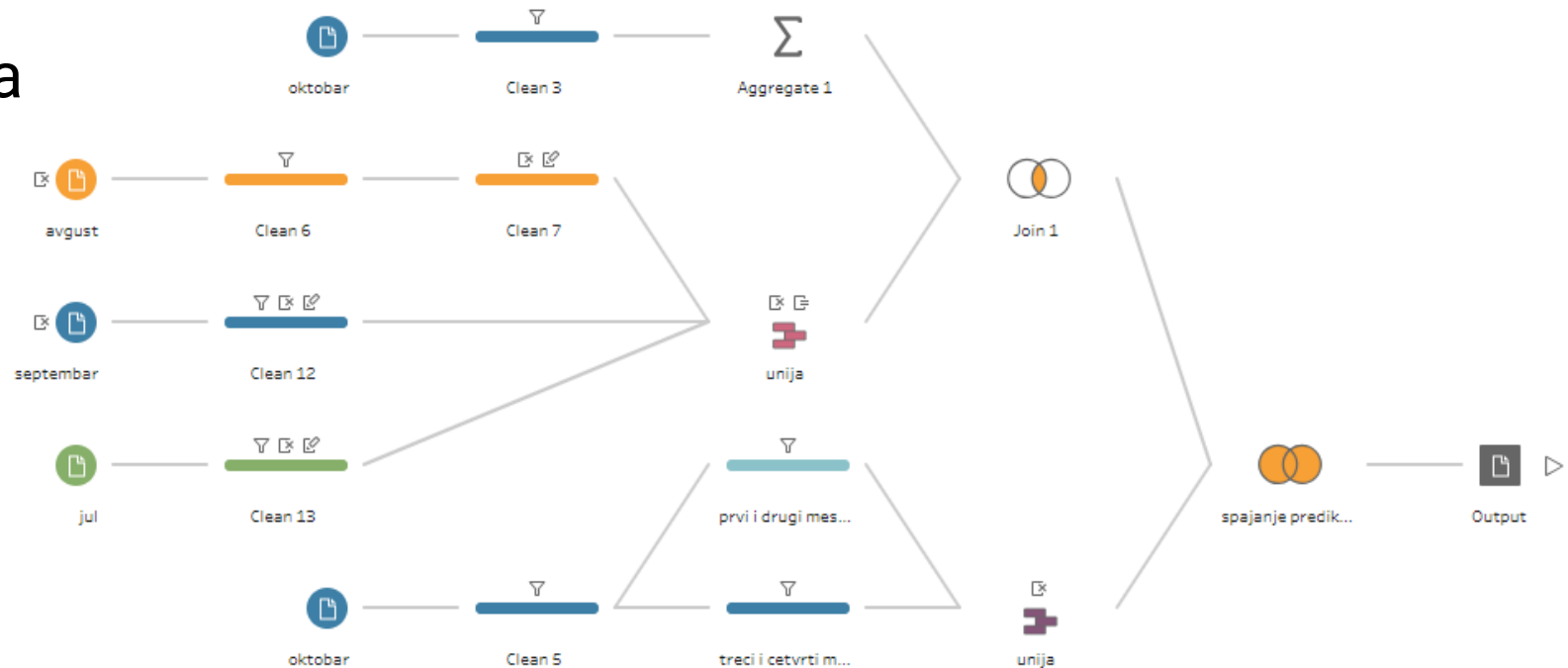
UPRAVLJANJE KAMPANJOM

- Ključni koraci:
- Priprema, čišćenje i eksploratorna analiza podataka.
- Standardizacija i segmentacija korisnika.
- Ocenjene verovatnoće preuzimanja.
- Targetiranje korisnika.
- Planiranje kampanje.



PRIPREMA I EKSPLORATORNA ANALIZA PODATAKA

- Tableau Prep Builder
- Osnovna informacija o podacima
- Tableau Desktop
- Brojni dijagrami i grafici
- Uočavanje interakcija





STANDARDNIZACIJA I SEGMENTACIJA

Pol (All) Bračno stanje (All)

Godine 14 91

Datum ulaska u program 13.5.2013. 31.3.2019.

- Postojeće segmentacije se učitaju u Tableau
- Tableau pruža efikasne načine prikaza segmenata
- Mogućnost prikaza hijerarhijske strukture

Klasteri

- Grupa 1 (Blue circle)
- Grupa 2 (Orange square)
- Grupa 4 (Teal X)
- Grupa 5 (Green star)
- Grupa 6 (Yellow diamond)
- Grupa 7 (Brown triangle)



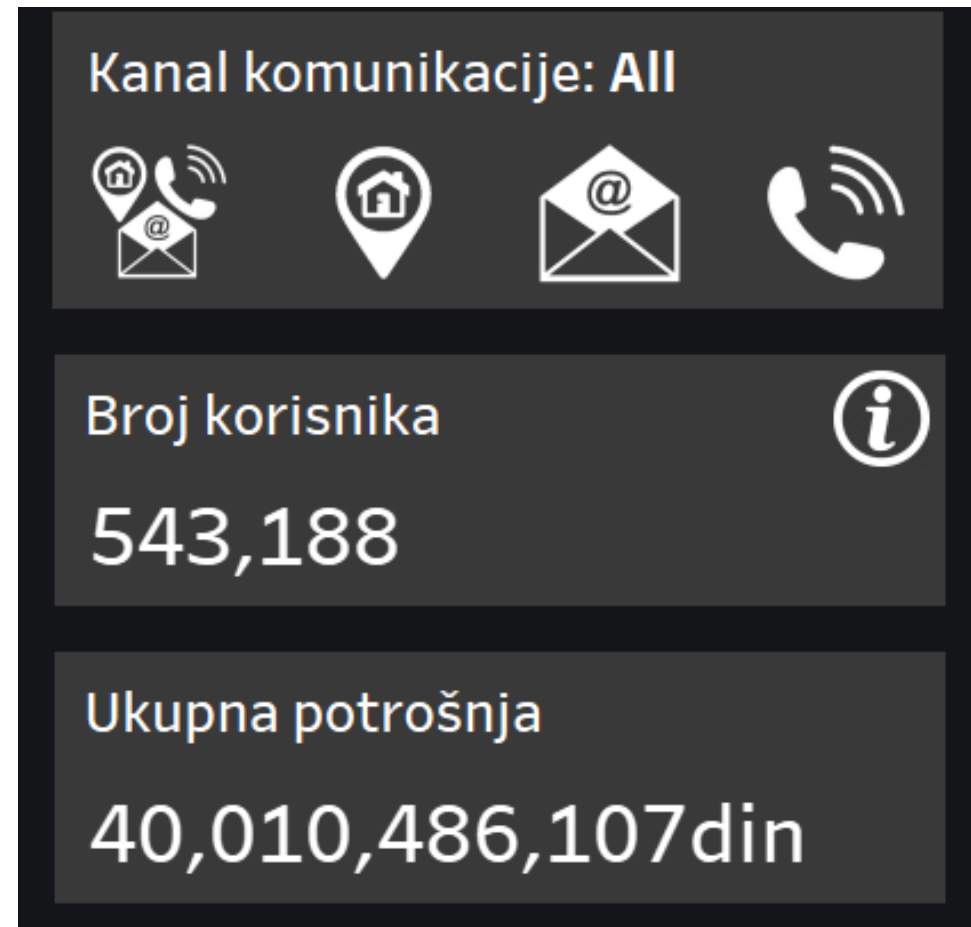


OCENJENE VEROVATNOĆE PRIHVATANJA

- Ocenjuju se pomoću alata mašinskog učenja
- U izvornom obliku rezultati su nerazumljivi
- Potrebno približiti i efikasno prikazati

TARGETIRANJE KORISNIKA

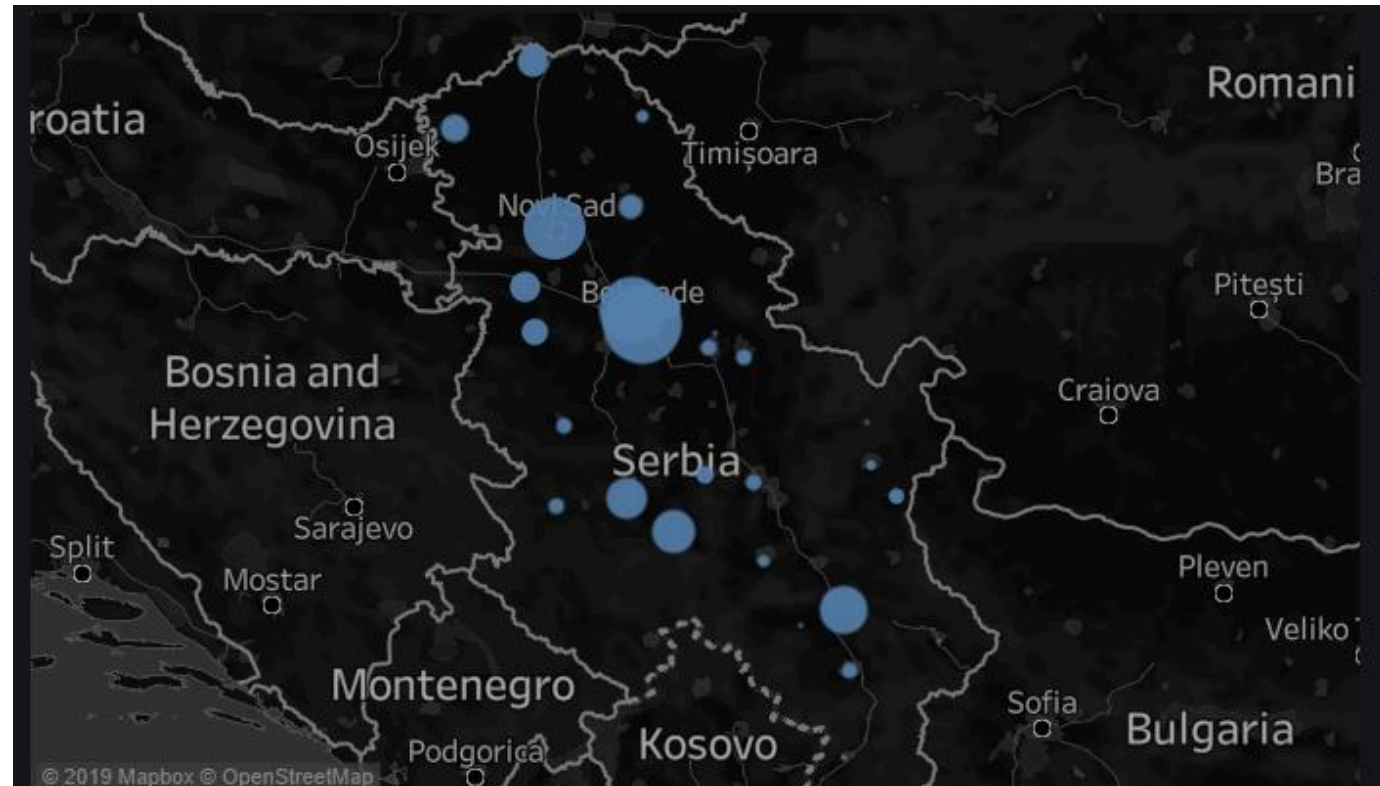
- Tip vizualizacije
- **Interaktivni odabir**
- Prikazani podaci
- **Broj korisnika i ukupna istorijska potrošnja za odabrane**





TARGETIRANJE KORISNIKA

- Tip vizualizacije
- **Symbol maps**
- Prikazani podaci
- **Ukupna potrošnja korisnika po gradovima**





TARGETIRANJE KORISNIKA

- Tip vizualizacije
- **Interaktivni totali i KPI**
- Prikazani podaci
- **Ključni indikatori i totali**

Odabir kupaca za kampanju

Klaster	Grupa 4
Odabir ponude	Odabrana ponuda
Minimalna verovatnoća prihvatanja ponude	50%
Broj odabranih kupaca	2,289



Tableau kontrolne table u domenu personalizovanih kampanja **DEMONSTRACIJA**



Upravljanje kampanjom - globalni prikaz -

Korišćeni su podaci od 01.01.2018 do 31.03.2019

Posедуje mob. aplikaciju

(All)



Slanje promocija

(All)



Datum ulaska u program

13.5.2013.

31.3.2019.

Kanal komunikacije: All



Broj kupaca

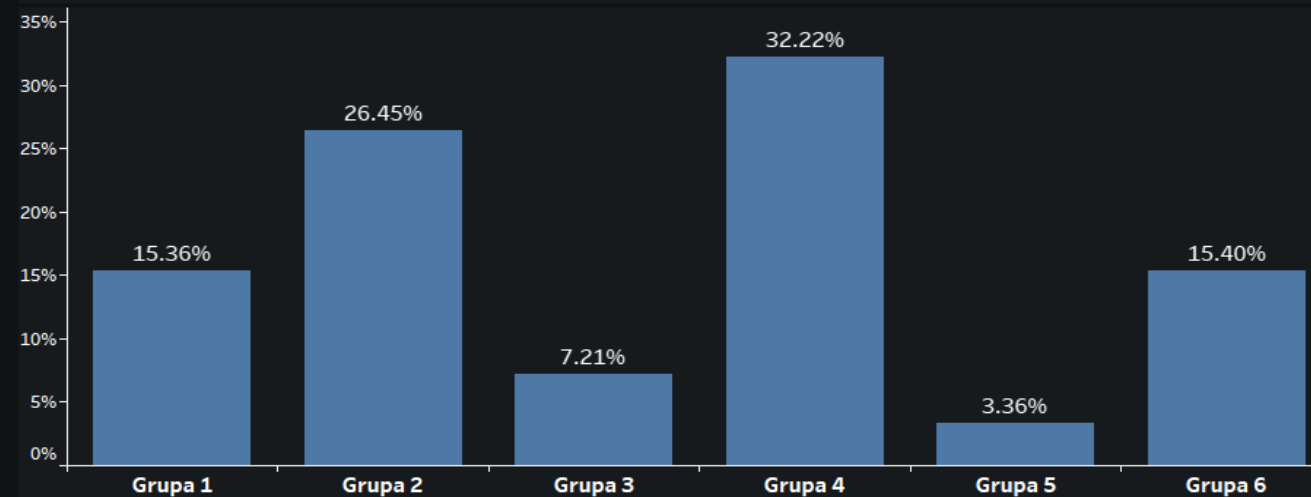
325,359



Ukupna potrošnja

5,675,311,712din

Prodaja po klasterima



Odabrati klaster za analizu:



Naziv klastera	Ukupna potrošnja [A]	Broj kupaca [B]	Potrošnja po kupcu [A/B]
Grand Total	5,675,311,712	325,359	17,443
Grupa 1	871,490,823	176,117	4,948
Grupa 2	1,501,209,763	62,540	24,004
Grupa 3	409,396,266	45,298	9,038
Grupa 4	1,828,613,746	32,361	56,507
Grupa 5	190,641,291	902	211,354
Grupa 6	873,959,822	8,141	107,353



Upravljanje kampanjom - odabir kampanje -

Korišćeni su podaci od 01.01.2018 do 31.03.2019

Pol: (All) Bračno stanje: (All)

Godine: 24 - 77

Datum ulaska u program: 13.5.2013. - 31.3.2019.

asw: INTEGRATED IT SOLUTIONS

Odabir kupaca za kampanju

Klaster: **Grupa 6** ◆

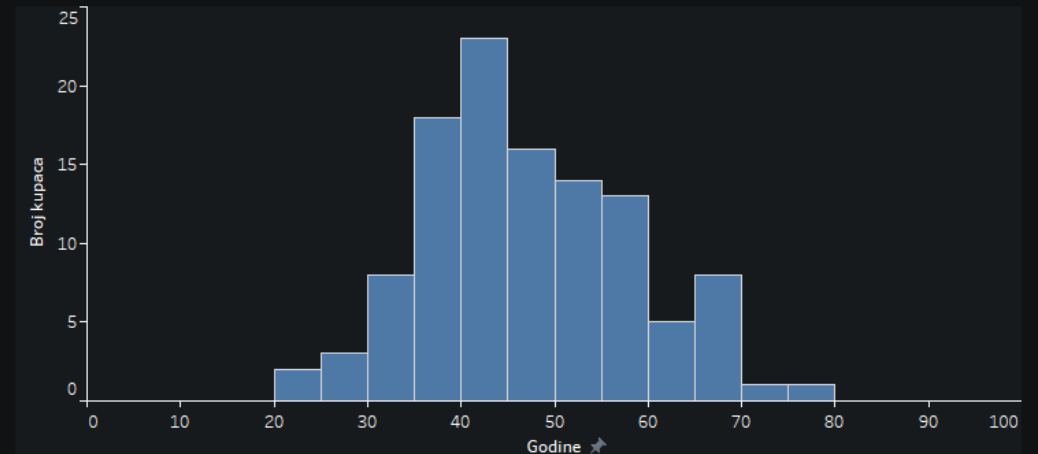
Odabir ponude:

Minimalna verovatnoća prihvatanja ponude: ◆

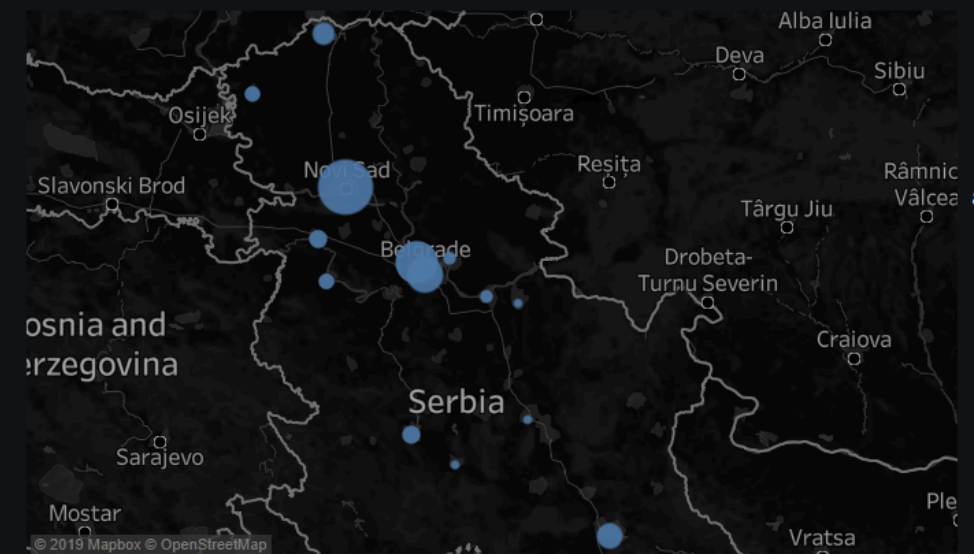
Broj odabranih kupaca: ⓘ 112

Klasteri

- Grupa 1 ●
- Grupa 2 ■
- Grupa 3 +
- Grupa 4 ✕
- Grupa 5 ★
- Grupa 6 ◆



Naziv klastera	ID kupca	Ukupna potrošnja [din]	Verovatnoća prihvatanja ponude [%]
Grand Total		12,276,173	65.4%
Grupa 6		98,436	63.3%
		166,752	64.5%
		78,869	67.2%
		90,538	63.3%
		85,744	62.9%
		69,212	61.6%
		137,285	70.5%
		83,334	61.0%
		63,216	65.2%
		106,505	68.4%
		124,655	62.0%
		88,898	65.6%



Prelazak na analizu kupovnih navika





Upravljanje kampanjom - lansiranje kampanje -

Korišćeni su podaci od 01.01.2018 do 31.03.2019



Bračno stanje
(All)

Godine
24 ————— 77



Datum ulaska u program
13.5.2013. ————— 31.3.2019.

Broj kupaca



112 (0.0%)

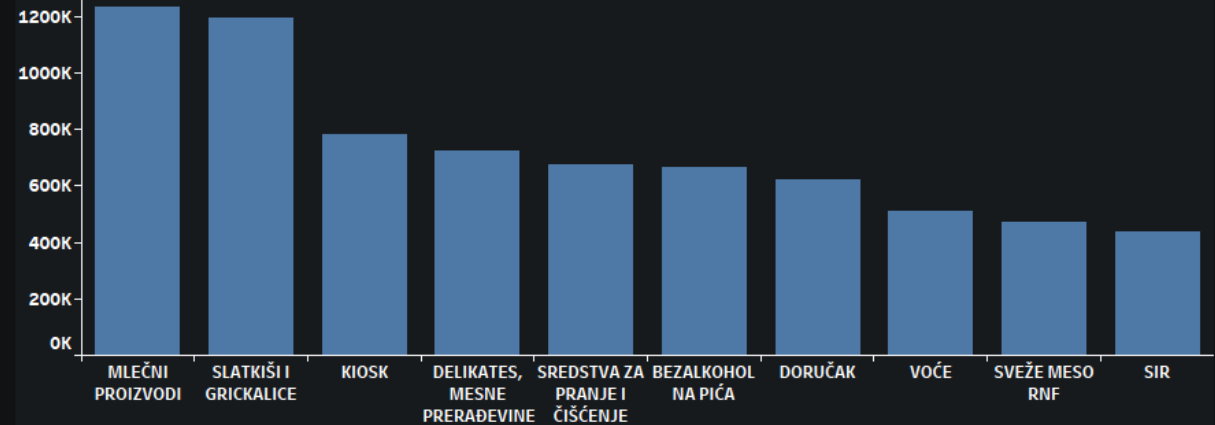
Ukupna potrošnja

12,276,173 (0.2%)

Pol

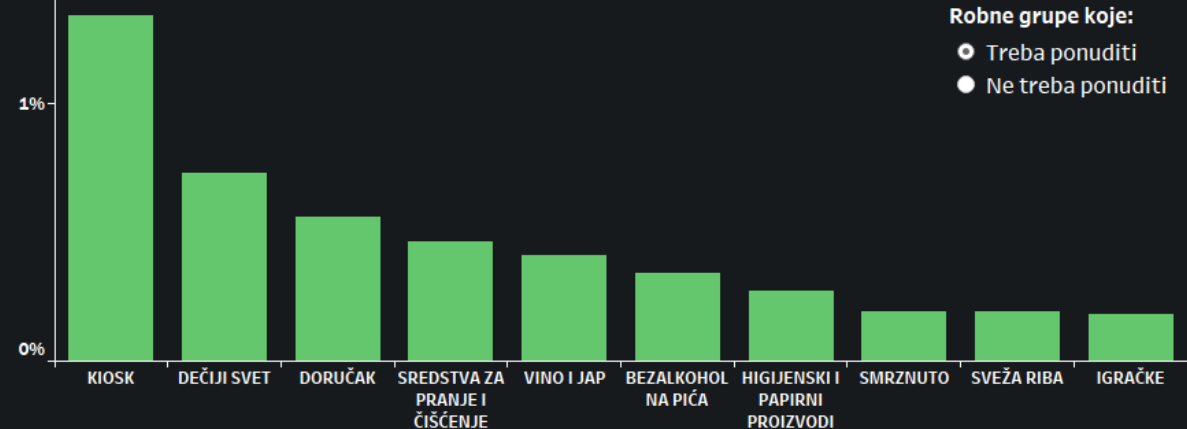


Najzastupljenije robne grupe



Naziv klastera	ID kupca	Ukupna potrošnja [din]	Verovatnoća prihvatanja ponude [%]
Grand Total		12,276,173	65.4%
Grupa 6		98,436	63.3%
		166,752	64.5%
		78,869	67.2%
		90,538	63.3%
		85,744	62.9%
		69,212	61.6%
		137,285	70.5%
		83,334	61.0%
		63,216	65.2%
		106,505	68.4%
		124,655	62.0%
		88,898	65.6%
		131,867	73.6%

Robne grupe koje se kupuju više od proseka



Robne grupe koje:

- Treba ponuditi
- Ne treba ponuditi

Lansiranje kampanje

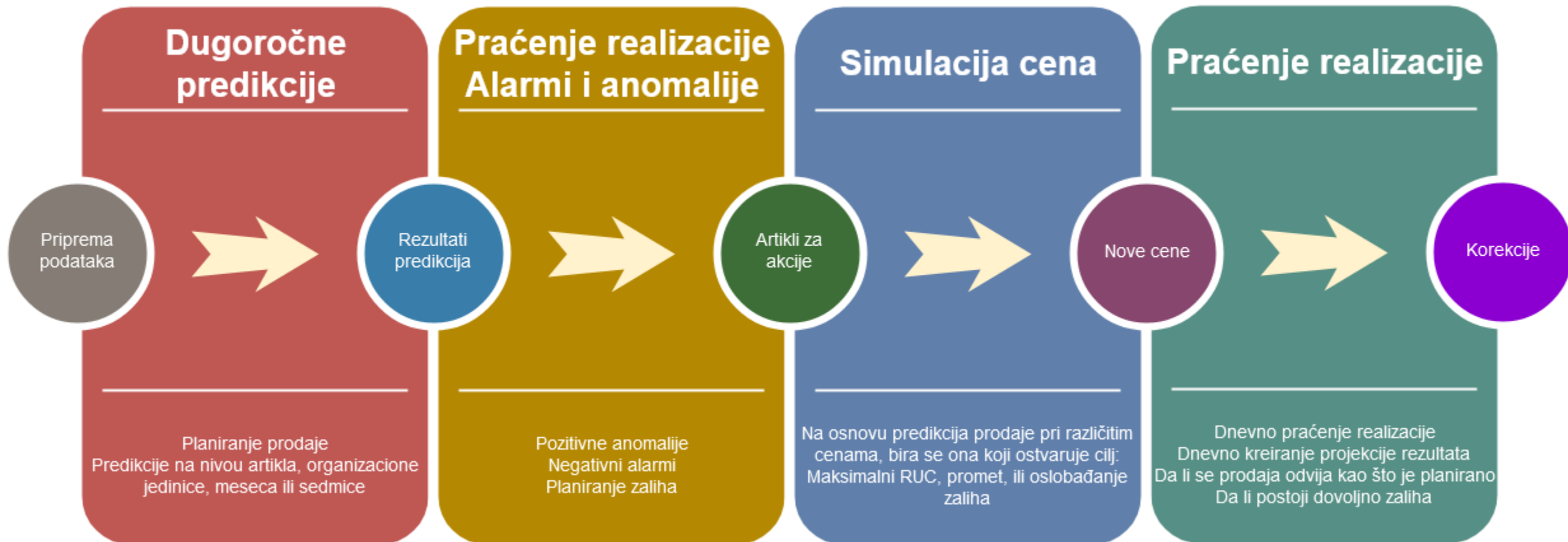


Tableau kontrolne table u domenu predikcije i simulacije cena

Filip Jekić



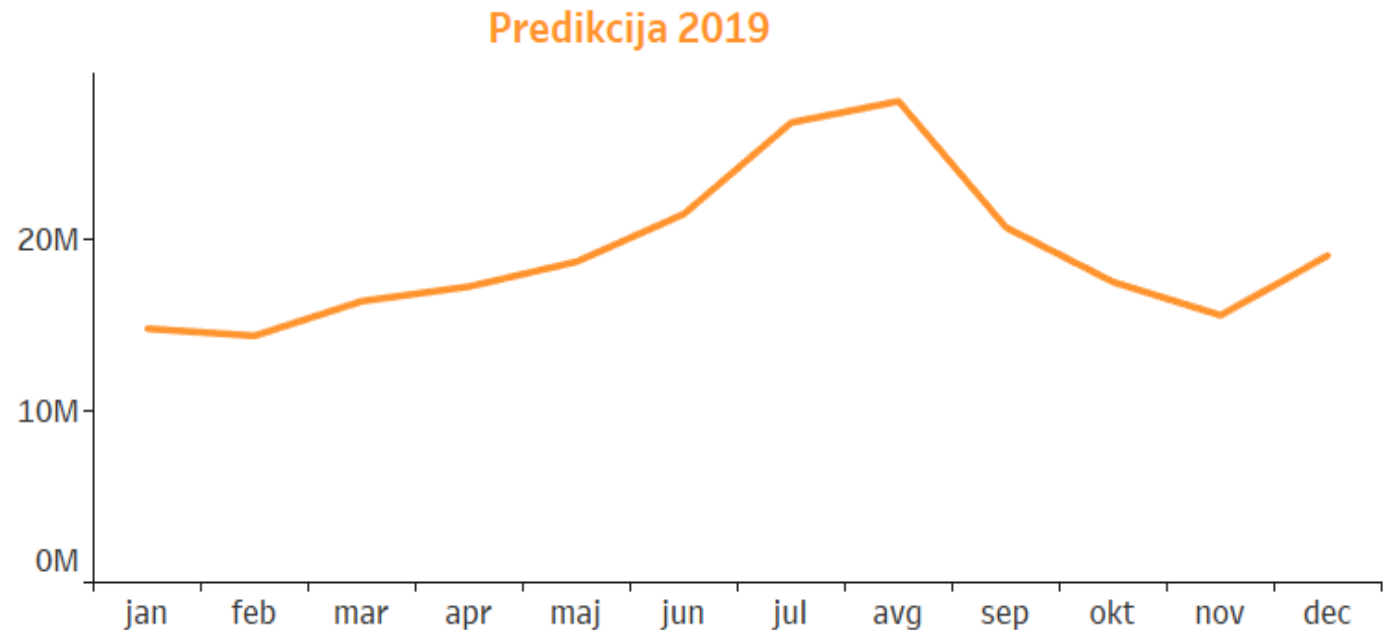
SISTEM KONTROLNIH TABLI





DUGOROČNE PREDIKCIJE I PRAĆENJE REALIZACIJE

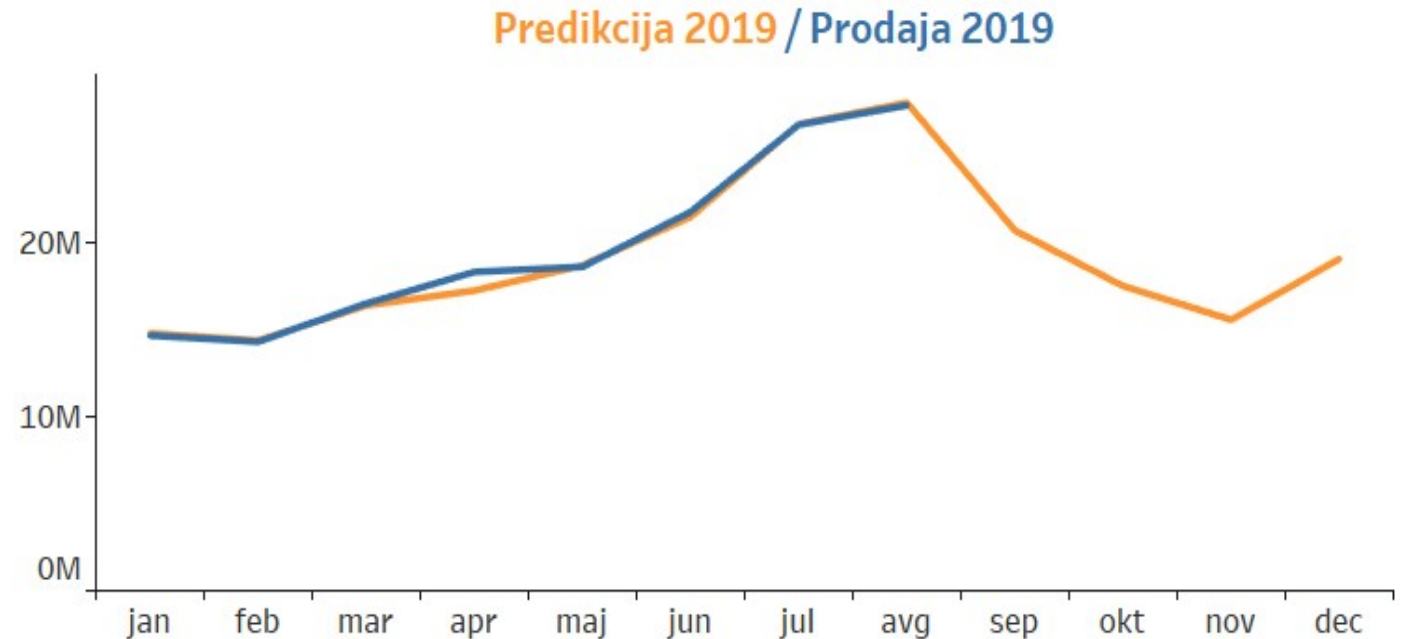
- Tip vizualizacije
- **Lines (continuous)**
- Prikazani podaci
- **Predikcija prodaje svakog artikla**





DUGOROČNE PREDIKCIJE I PRAĆENJE REALIZACIJE

- Tip vizualizacije
- **Lines (continuous)**
- Prikazani podaci
- Predikcija prodaje svakog artikla
- **Realizovana prodaja u prethodnim mesecima**



DUGOROČNE PREDIKCIJE I PRAĆENJE REALIZACIJE

- Tip vizualizacije
- Lines (continuous)
- **Horizontal bars**

- Prikazani podaci
- Predikcija prodaje svakog artikla

- Realizovana prodaja u prethodnim mesecima
- **Realizovana prodaja u trenutnom mesecu**





DUGOROČNE PREDIKCIJE I PRAĆENJE REALIZACIJE

- Tip vizualizacije
- Lines (continuous)
- **Horizontal bars**

- Prikazani podaci
- Predikcija prodaje svakog artikla
- Realizovana prodaja u prethodnim mesecima
- Realizovana prodaja u trenutnom mesecu

- **Projekcija prodaje za trenutni mesec**





DETEKCIJA ALARMA I ANOMALIJA

ORGJED	Prodaja 2018 [A]	Prodaja 2019 [B]	Predikcija 2019 [C]	Odstupanje od predikcije [€] [B-C]	Odstupanje od predikcije [%] [(B-C)/B]	Realizovani trend rasta [(B-A)/A]
Grand Total	23,764,286€	24,123,239€	24,147,376€	-24,137€	-0.10%	1.51%
135	12,076,481€	11,955,212€	11,965,860€	-10,648€	-0.09%	-1.00%
797	3,173,851€	3,303,607€	3,256,288€	47,319€	1.43%	4.09%
352	2,721,611€	2,786,938€	2,795,022€	-8,084€	-0.29%	2.40%
113	1,459,248€	1,960,297€	1,646,367€	313,930€	16.01%	34.34%
364	1,589,668€	1,632,280€	1,641,559€	-9,280€	-0.57%	2.68%
670	1,272,702€	1,487,327€	1,423,074€	64,253€	4.32%	16.86%
281	1,470,725€	997,578€	1,419,205€	-421,627€	-42.27%	-32.17%

Tip vizualizacije:

- Text table
- Symbol maps

Prikazani podaci:

- Statistike prodaje za prethodnu i trenutnu godinu
- Odstupanje od predikcije
- Trend rasta



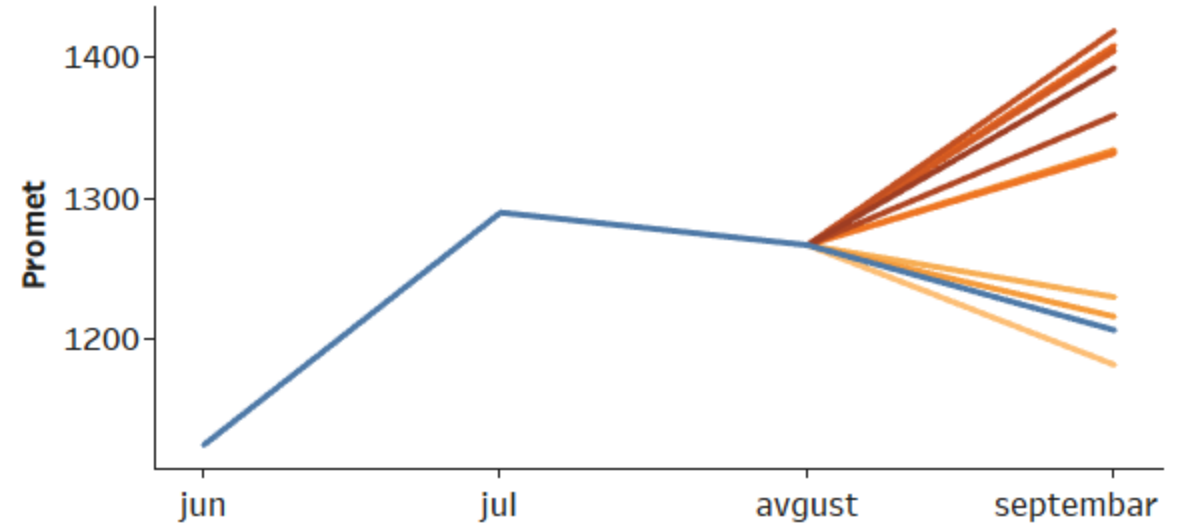
Interaktivnost:

- Hijerarhija po organizacionim jedinicama
- Odabir reda u tabeli - filter cele kontrolne table



SIMULACIJA CENA – SIMULACIJA PRODAJE

- Tip vizualizacije:
- **Lines (continuous)**
- Prikazani podaci:
- Prodaja odabranih proizvoda u prethodna dva meseca
- Predikcija prodaje pri postojećoj ceni za naredni mesec
- Simulacije prodaje pri različitim cenama za naredni mesec

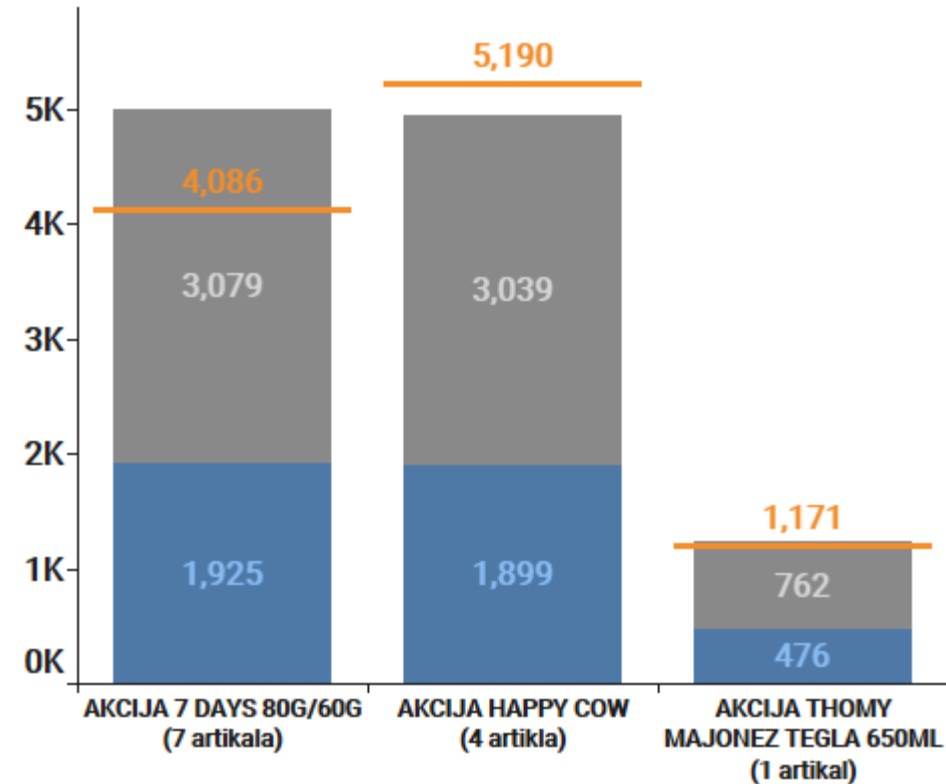


Interaktivnost:

- Odabirom parametra se prikazuje promet, RUC, ili količina
- Klikom na grafik, odabrana nova cena se pokazuje na kontrolnoj tabli

PRAĆENJE REALIZACIJE

- Tip vizualizacije:
 - Horizontal bars (Swap rows and columns)
 - Gantt Bar**
- Prikazani podaci:
 - Trenutna realizacija
 - Predikcija ukupnog rezultata
 - Projekcija ukupnog rezultata



Interaktivnost:

- Postavljanjem kursora na akciju se u tooltip-u prikazuje njena "lična karta"
- Klikom na grafik, detalji odabrane akcije se prikazuju na kontrolnoj tabli
- Ukoliko ne postoji dovoljno zaliha za realizaciju akcije, informacija o potrebnoj dopuni se klikom šalje u odgovarajuće organizacione jedinice ("**Go to URL**" akcija)

Tableau kontrolne table u domenu predikcije i simulacije cena **DEMONSTRACIJA**



PREDIKCIJE I SUMULACIJE CENA - DEMONSTRACIJA

Predikcija i realizacija prodaje 2019-e

Nivo: robna grupa - brend
Podaci zaključno sa 19.08.2019.



POGLED: Regionalni menadžer
NAJMANJA PRODAJA: 0€
FORMATI: All
PRODAVNICE: All
ROBNE GRUPE: All
BRENDovi: All



Pogledi:
Regionalni menadžer
Najmanja prodaja:
0€



FORMAT
(All)
PRODAVNICA
(All)



ROBNA GRUPA
(All)
BREND
(All)

Procenat realizacije u avgustu: 63.59% Projekcija: 103.75%

Prodaja 2018
548,148,434

Prodaja 2019
562,556,523

Predikcija 2019
557,489,310

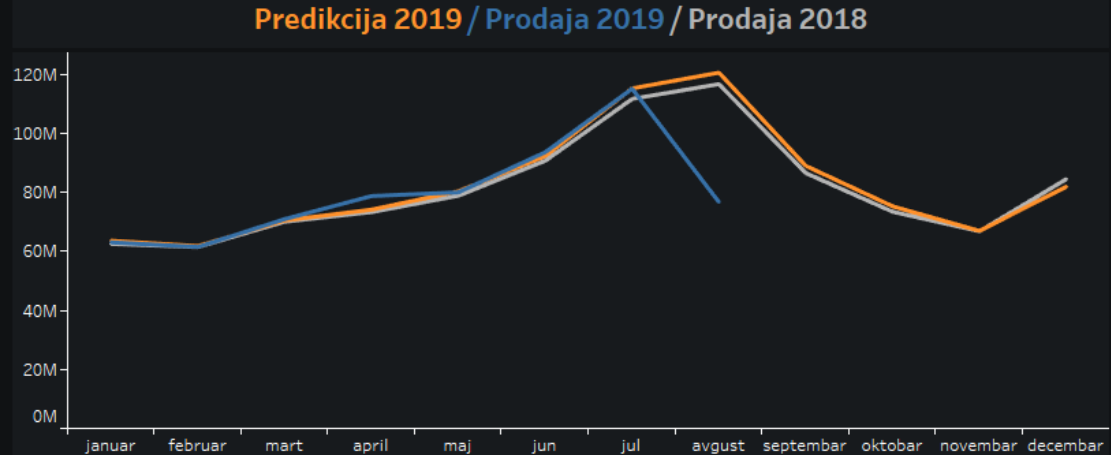
Trend rasta
2.63%

Odstupanje od predikcije
0.90%

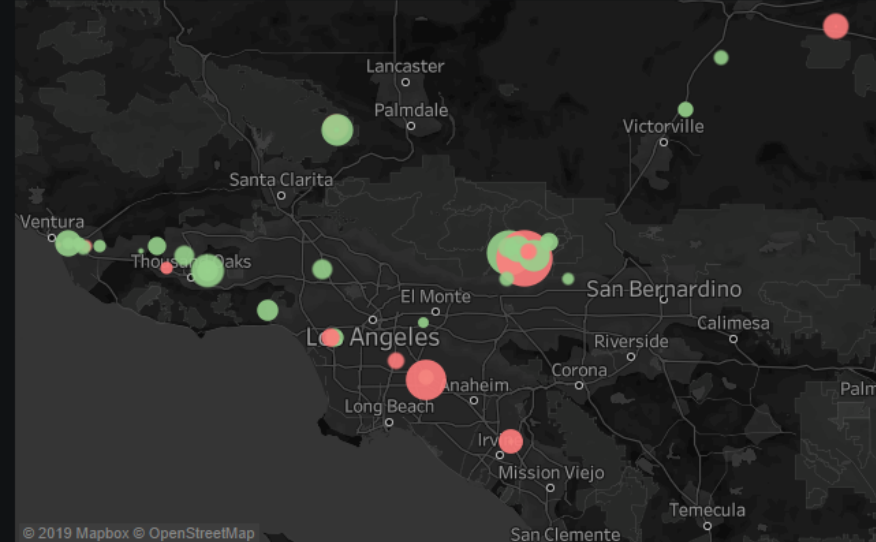
Ukupna mp prodaja 2019
568,994,401€

Ograničenje:
6,437,878€
(1,13%)

Prodaja 2019 (like to like)
562,556,523€



Format	Orgjed	Prodaja 2018 [A]	Prodaja 2019 [B]	Predikcija 2019 [C]	Odstupanje od predikcije [€] [B-C]	Odstupanje od predikcije [%] [(B-C)/B]	Realizovani trend rasta [(B-A)/A]
Grand Total		548,148,434	562,556,523	557,489,310	5,067,212€	0.90%	2.63%
HIPERMARKET	Total	177,887,648	183,510,688	179,252,649	4,258,039€	2.32%	3.16%
	148	47,729,622	51,487,311	47,476,404	4,010,907€	7.79%	7.87%
	28	23,619,313	25,150,256	23,580,329	1,569,927€	6.24%	6.48%
	88	16,215,268	17,371,952	16,491,543	880,409€	5.07%	7.13%
	52	17,121,801	18,022,849	17,982,321	40,528€	0.22%	5.26%
	43	41,527,586	41,128,222	41,342,227	-214,005€	-0.52%	-0.96%
	73	15,848,094	15,379,060	15,709,645	-330,586€	-2.15%	-2.96%
	172	15,825,962	14,971,038	16,670,178	-1,699,140€	-11.35%	-5.40%
SUPERMARKET	Total	154,880,136	162,869,905	159,123,871	3,746,034€	2.30%	5.16%
	37	25,699,902	27,432,151	25,342,829	2,089,322€	7.62%	6.74%
	16	7,513,575	9,381,447	7,791,802	1,589,645€	16.90%	21.86%





Simulacija cena - Odabir artikala -

Podaci zaključno sa 30.06.2019.



ROBNE GRUPE: All
BRENDovi: All
FORMATI: All
PRODAVNICE: All
TIP CENE: B, C, D and 1 more

NADREDJENA R.G.

(All)



ROBNA GRUPA

(All)

BREND

(All)

TIPCENE OBJEKTA

(Multiple values)



PRODAVNICA

(All)

asw:

INTEGRATED IT SOLUTIONS

Sifra

(All)

Prodaja 2018
129,790€

Prodaja 2019
130,696€

Predikcija 2019
121,436€



Trend rasta
0.70%



Odstupanje od predikcije
7.08%

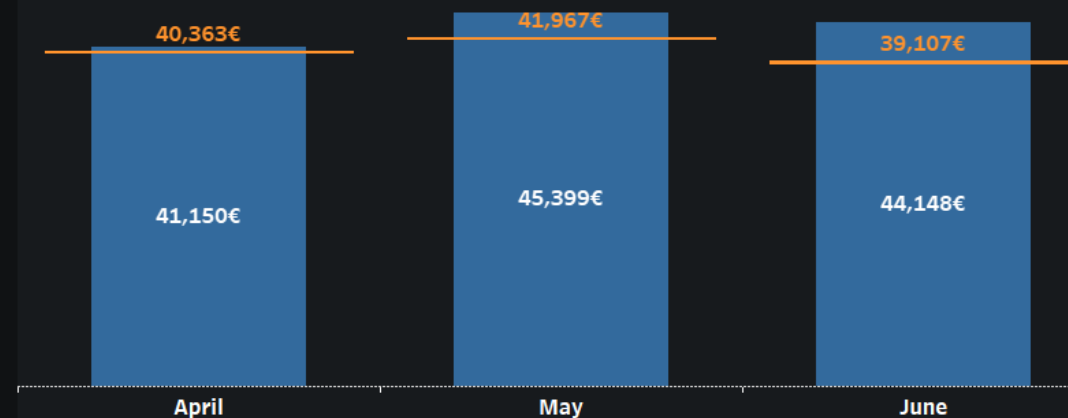
Ukupna prodaja 2019
56,244,065€



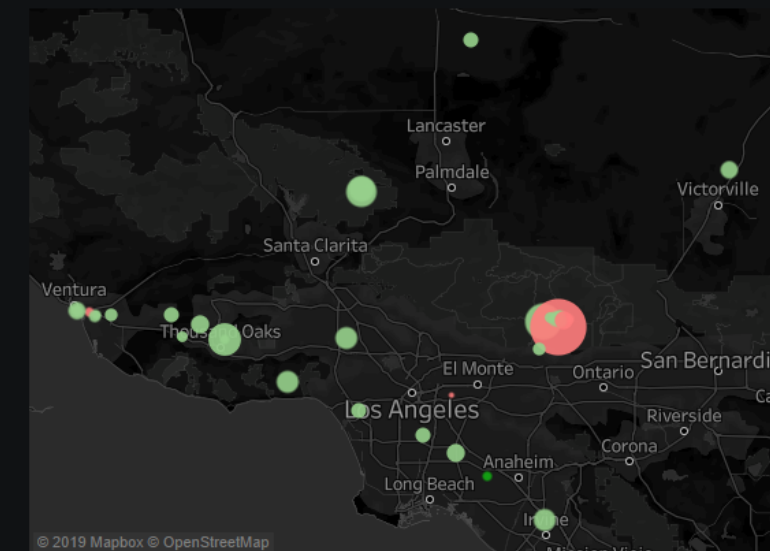
Ograničenje:
9,520,308€
(16.93%)



Prodaja 2019 (like to like)
46,723,757€



Sifra	Prodaja 2018 [A]	RUC 2018 [B]	Prodaja 2019 [C]	RUC 2019 [D]	Predikcija 2019 [E]	Odstupanje od predikcije [C-E]	Rast prometa [C-A]	Rast RUC-a [D-B]
2299	5,463€	484€	4,672€	518€	4,420€	252€	-792€	27€
2313	3,990€	463€	3,662€	420€	3,613€	48€	-329€	-42€
87746	3,983€	483€	3,525€	400€	3,312€	213€	-458€	-81€
155075	3,195€	250€	3,459€	289€	3,207€	252€	264€	15€
2755	3,548€	466€	3,438€	453€	3,263€	175€	-110€	-26€
11118	5,985€	-153€	3,404€	312€	3,319€	85€	-2,581€	461€
155076	2,951€	221€	3,100€	279€	2,929€	171€	148€	54€
64521	3,280€	407€	3,085€	474€	3,087€	-2€	-195€	57€
155077	2,449€	188€	2,986€	279€	2,684€	302€	537€	87€
75466	3,023€	362€	2,679€	419€	2,897€	-219€	-345€	53€
106091	1,148€	109€	2,471€	122€	1,514€	957€	1,324€	11€
2401	1,784€	281€	2,281€	349€	2,025€	257€	498€	63€
2306	2,172€	241€	2,220€	253€	2,234€	-14€	48€	4€





Simulacija cena - Lansiranje akcija -



ROBNE GRUPE: All
BRENDVI: All
FORMATI: All
PRODAVNICE: All
TIP CENE: B, C, D and 1 more



Parametar:

Promet

ARTIKAL

(All)



TIP CENE OBJEKTA

(Multiple values)

PRODAVNICA

(All)



Početak akcije

01-Jul-19

Završetak akcije

31-Jul-19

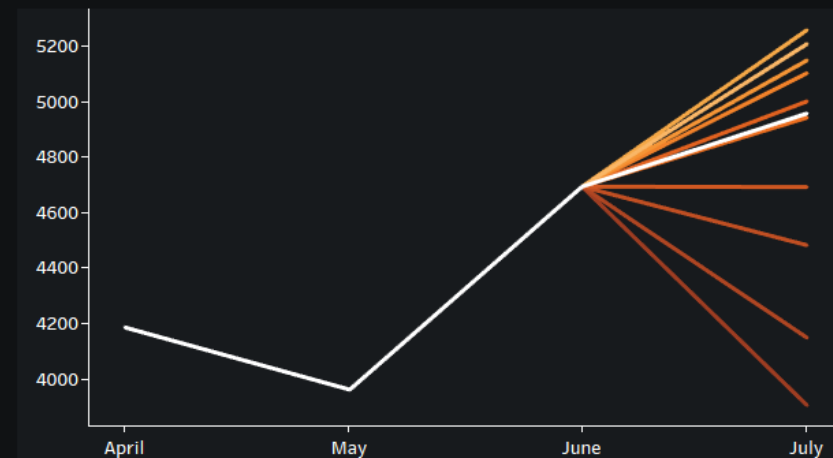
Podaci zaključno sa 30.06.2019.

ARTIKAL SIFRA	Trenutna cena (bez popusta)	Fakturna cena bez popusta	Fakturna sa popustom	Očekivani promet	Očekivani RUC
2299	0.53€	0.35€	0.30€	2,011€	498€
2313	0.46€	0.33€	0.27€	1,368€	326€
87746	0.53€	0.35€	0.27€	1,578€	474€

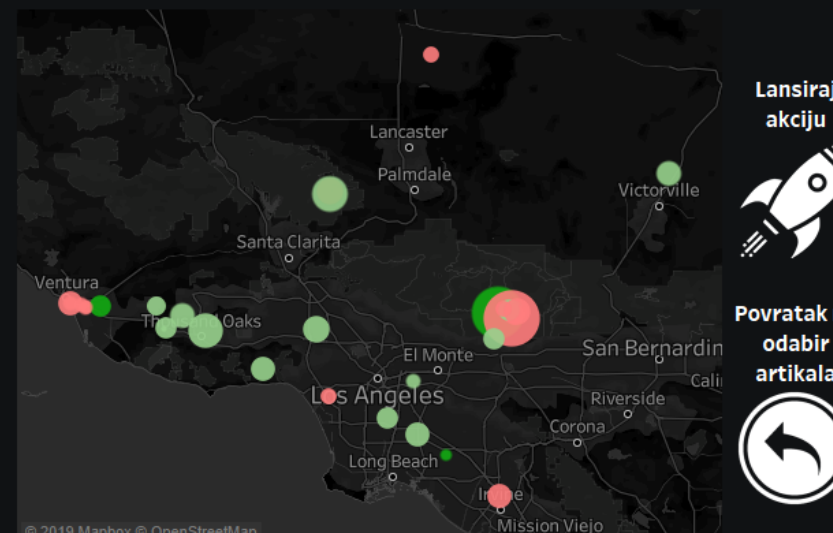
Očekivani promet
4,957€

Max promet
5,302€

Marža
30.00%



ARTIKAL SIFRA	TIPCE..	ORGJED	Cena	Popust	Kolicina	Promet	RUC	Marža	Potrebna dopuna
2299	B	9	0.44€	10.00%	84	37€	5€	20.05%	41
		20	0.44€	10.00%	395	174€	23€	20.05%	218
		40	0.44€	10.00%	608	268€	40€	20.05%	525
		63	0.44€	10.00%	82	36€	5€	20.05%	39
C	C	18	0.44€	10.00%	165	72€	9€	20.05%	102
		23	0.44€	10.00%	82	36€	5€	20.05%	41
		50	0.44€	10.00%	675	298€	51€	20.05%	521
		55	0.44€	10.00%	136	60€	8€	20.05%	57
		57	0.44€	10.00%	34	15€	2€	20.05%	13
		58	0.44€	10.00%	331	146€	15€	20.05%	170
		59	0.44€	10.00%	127	56€	9€	20.05%	105
D	D	1	0.44€	10.00%	103	45€	6€	20.05%	27
		2	0.44€	10.00%	52	23€	4€	20.05%	15



Lansiraj akciju



Povratak na odabir artikala



Tableau kontrolne table u domenu finansijskih analiza

Nataša Blagojević



SVETSKA EKONOMSKA KRIZA



● CILJEVI CONTROLLING-a

- Ostvarivanje ciljeva kompanije
- Efikasno korišćenje resursa
- Olakšana koordinacija između organizacionih jedinica kompanije
- Alarmiranje na nepoželjne aktivnosti
- Podizanje motivacije zaposlenih

● PREDNOSTI TABLEAU

- Različiti izvori podataka (database, sql upit, txt, csv, excel...)
- Spajanje izvora podataka
- Vizuelizacija velike količine podataka
- Publish i pristup sa različitih uređaja
- Automatizacija kreiranja informacija



ANALIZE

- Total sales (poslovni prihodi)
- Margin (marža)
- P&L (bilans uspeha)
- Planning (planiranje)
- Cash flow (tokovi gotovine)
- Financial indicators (finansijski indikatori)



Tableau kontrolne table
u domenu finansijskih analiza
DEMONSTRACIJA

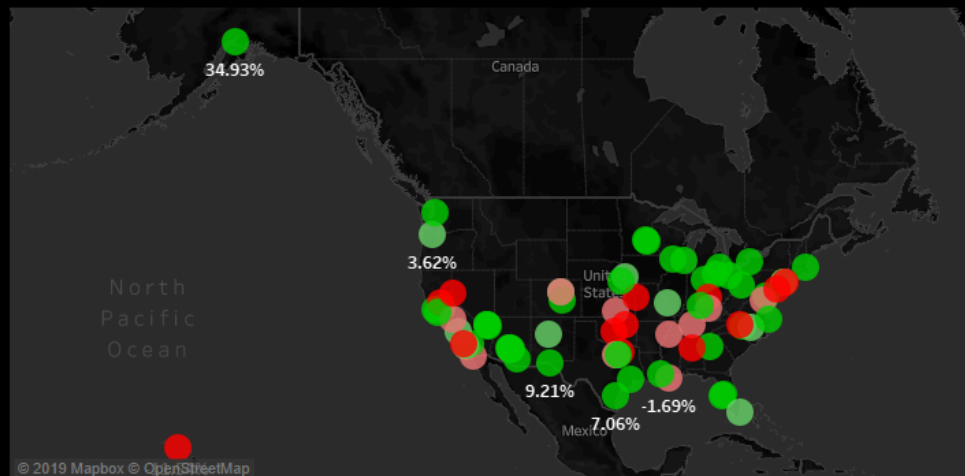
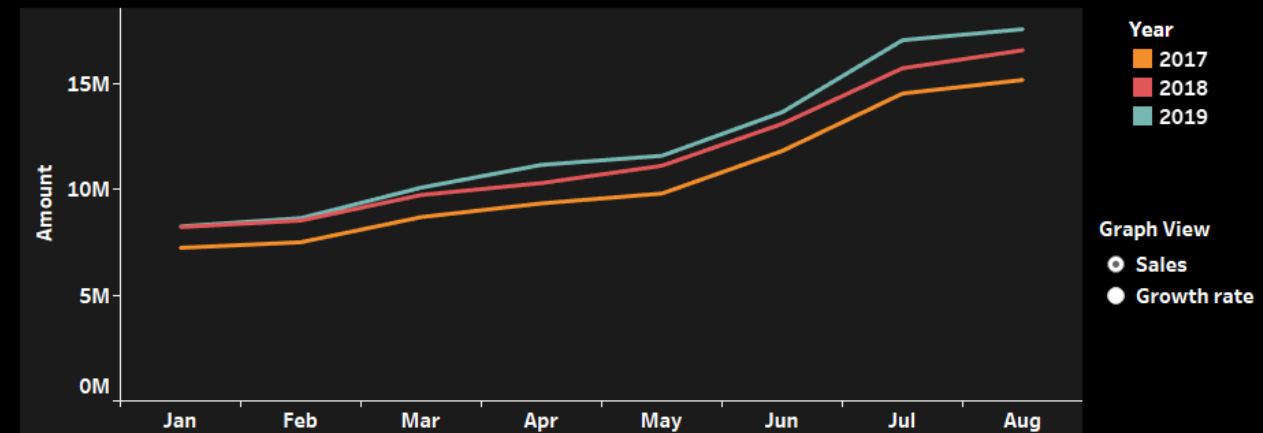
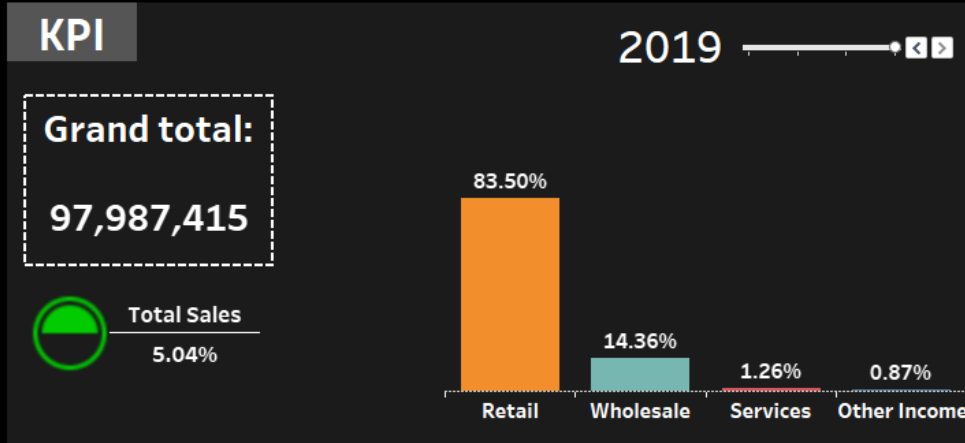


Total Sales

View: **Total Sales**
 Type: **All**
 Year: **2017, 2018, 2019**
 Month: **January, February, March and 5 more**
 Growth rate: **None**
 Format: **All**
 OU: **All**

Period: jan 2016 - aug 2019
 Creation date: 20.09.2019

View: Total Sales | Type: (All) | Year: (Multiple values) | Month: (Multiple values)
 Growth rate: (All) | Format: (All) | OU Name: (All)



Tabular

Type	2017		2018		2019	
	Amount	% Difference i..	Amount	% Difference i..	Amount	% Difference i..
Grand Total	84,083,501		93,286,603	10.95%	97,987,415	5.04%
Retail	70,849,986		78,810,503	11.24%	81,818,936	3.82%
Wholesale	11,595,685		12,738,586	9.86%	14,072,260	10.47%
Services	924,032		1,161,870	25.74%	1,239,434	6.68%
Other Income	713,798		575,645	-19.35%	856,784	48.84%

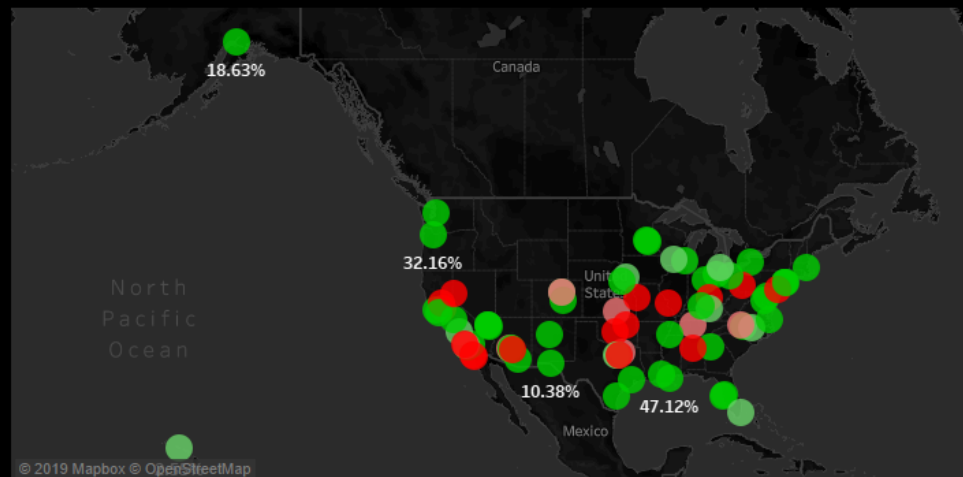
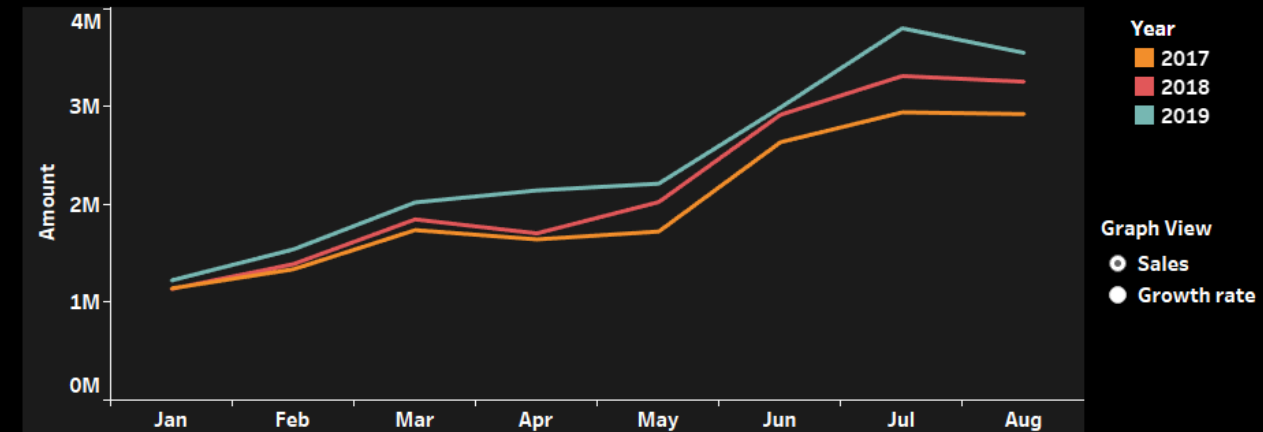
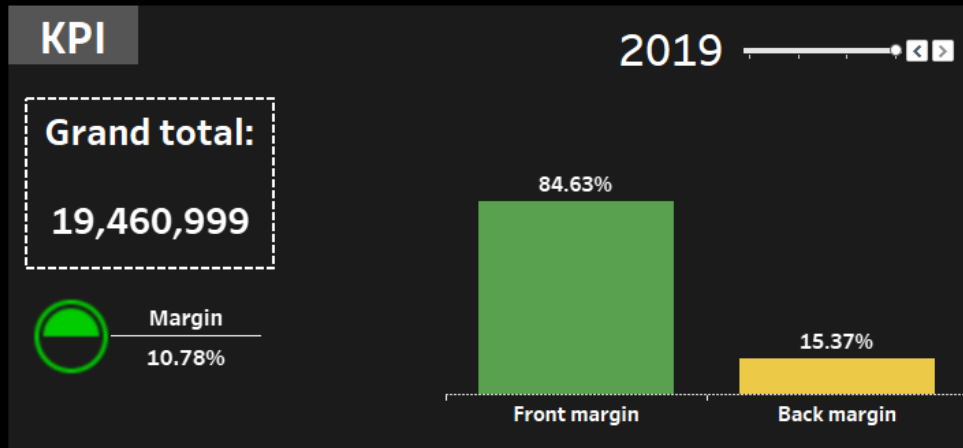


Margin

View: **Margin**
 Type: **All**
 Year: **2017, 2018, 2019**
 Month: **January, February, March and 5 more**
 Growth rate: **None**
 Format: **All**
 OU: **All**

View: **Margin** | Type: **(All)** | Year: **(Multiple values)** | Month: **(Multiple values)**
 Growth rate: **(All)** | Format: **(All)** | OU Name: **(All)**

Period: jan 2016 - aug 2019
 Creation date: 20.09.2019



Tabular

Type	2017		2018		2019	
	Amount	% Difference i..	Amount	% Difference i..	Amount	% Difference i..
Grand Total	16,066,801		17,567,061	9.34%	19,460,999	10.78%
Front margin	13,597,923		14,662,790	7.83%	16,469,411	12.32%
Back margin	2,468,878		2,904,271	17.64%	2,991,588	3.01%



FINANSIJSKE ANALIZE - DEMONSTRACIJA

EBITDA



Year: 2017, 2018, 2019
 Month: January, February, March and 5 more
 Format: All
 OU: All



EBITDA rate
 (All)



Year
 (Multiple values)

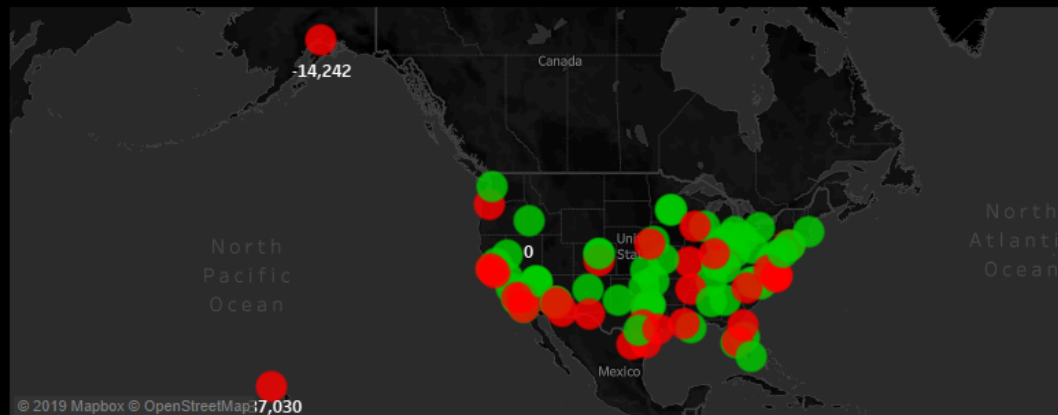
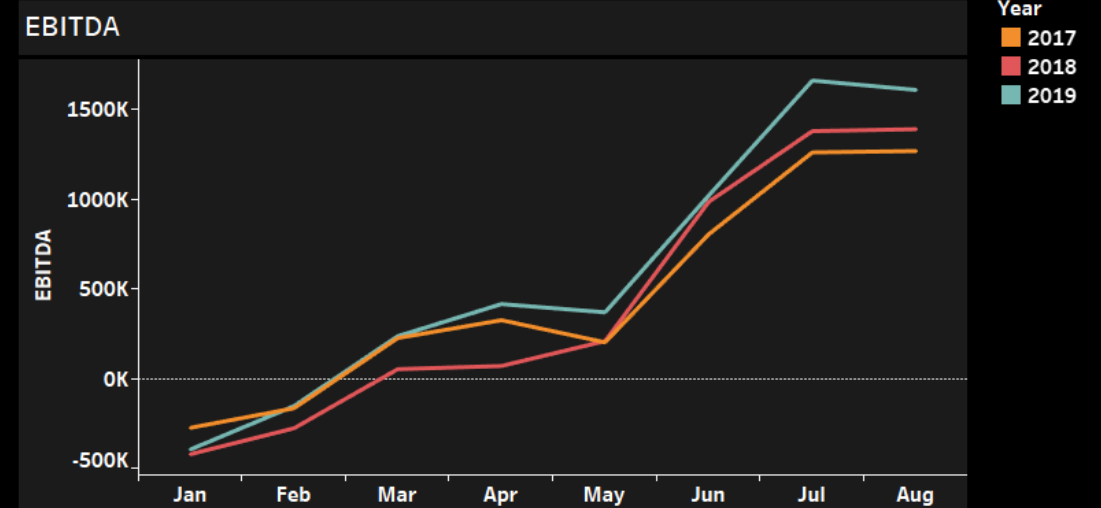
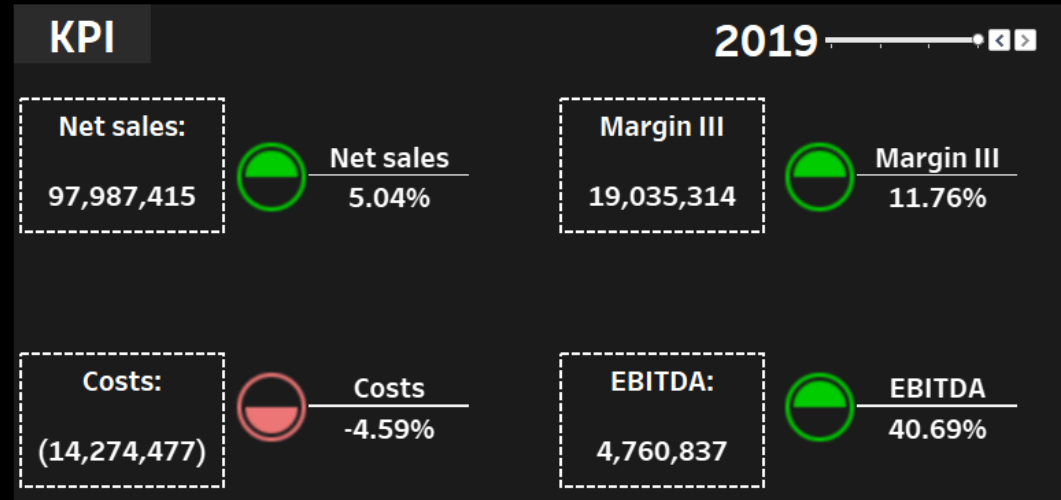
Month
 (Multiple values)



Format
 (All)

OU Name
 (All)

Period: jan 2016 - aug 2019
 Creation date: 20.09.2019



EBITDA

OU Format	OU Name	2017	Year 2018	2019
CAFFE	Prodavnica 12	11,646	7,312	-18,410
	Prodavnica 16	9,672	6,017	6,756
	Prodavnica 49	-52,412	-38,521	-33,291
	Prodavnica 61		20,030	55,394
DISKONT	Prodavnica 20	-40,346	-124,040	-31,046
	Prodavnica 40	100,336	237,123	686,070
	Prodavnica 47	-16,274	-34,573	-3,630
	Prodavnica 53	-25,720	-36,221	-49,892
HIPERMARKET	Prodavnica 10	315,581	140,156	182,903
	Prodavnica 15	316,245	210,681	300,105
	Prodavnica 18	184,519	47,086	93,480

Go to P&L

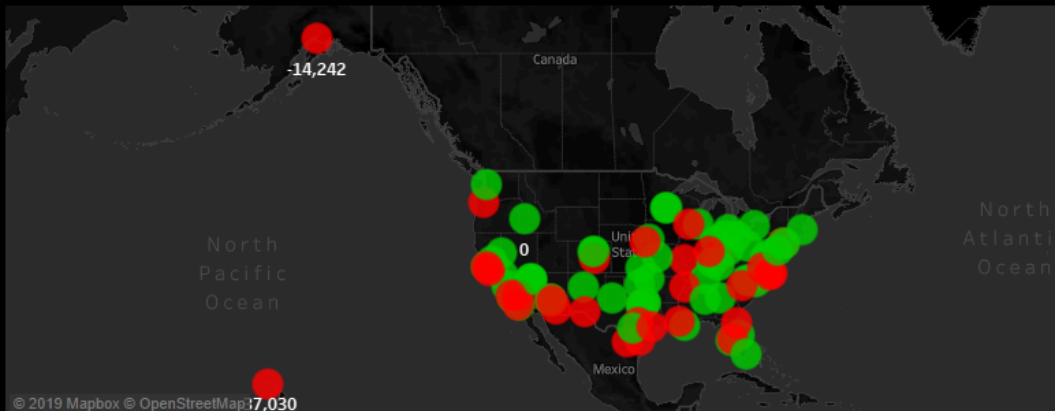
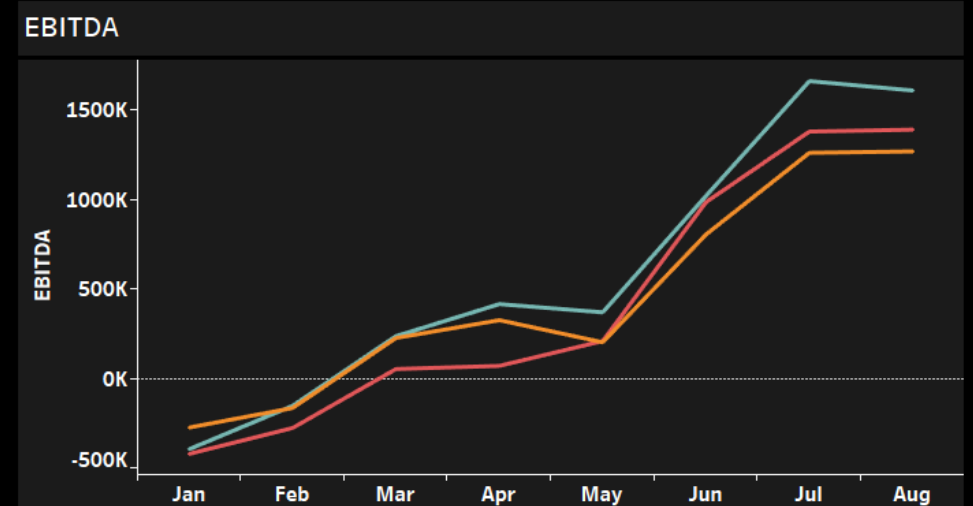
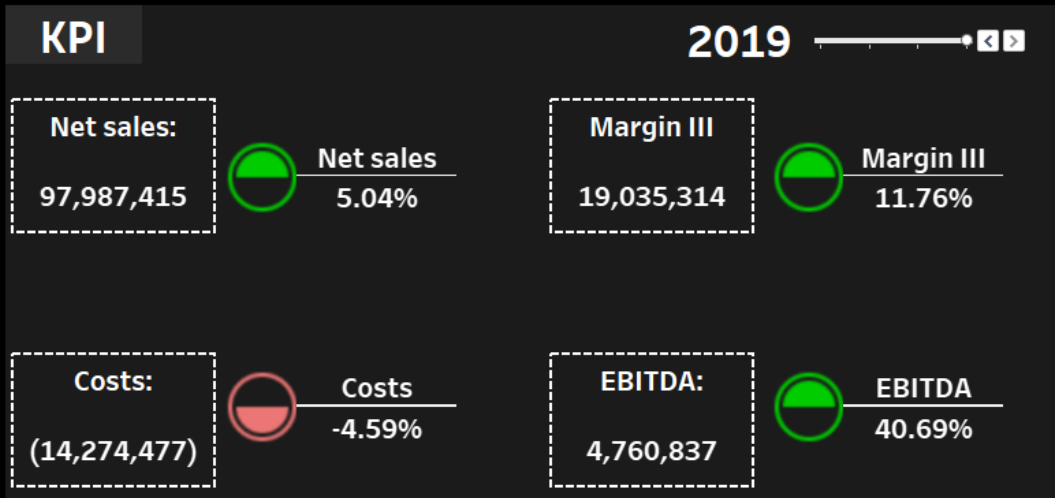


FINANSIJSKE ANALIZE - DEMONSTRACIJA

P&L

Year: 2017, 2018, 2019
 Month: January, February, March and 5 more
 Format: All
 OU: All

EBITDA rate (All)
 Year (Multiple values)
 Month (Multiple values)
 OU Format (All)
 OU Name (All)



P&L

P&L	2017		Year 2018		2019	
	Amount	% Differenc..	Amount	% Differenc..	Amount	% Differenc..
1. Net sa..	84,083,501		93,286,603	10.95%	97,987,415	5.04%
6. COGS	-71,070,841		-79,316,039	-11.60%	-82,335,138	-3.81%
7. COGS ..	-60,302,919		-67,607,889	-12.11%	-69,328,277	-2.54%
8. COGS ..	-10,767,922		-11,708,150	-8.73%	-13,006,861	-11.09%
9. Sales ..	13,012,660		13,970,564	7.36%	15,652,277	12.04%
10. Recei..	3,000,878		3,517,874	17.23%	3,786,290	7.63%
11. Sales..	16,013,538		17,488,438	9.21%	19,438,567	11.15%
12. Stock..	-394,332		-456,305	-15.72%	-403,253	11.63%
13. Sales..	15,619,206		17,032,133	9.05%	19,035,314	11.76%

Go to EBITDA



FINANSIJSKE ANALIZE - DEMONSTRACIJA

Budget analysis

Type: All
Format: All
OU: All
Month: All

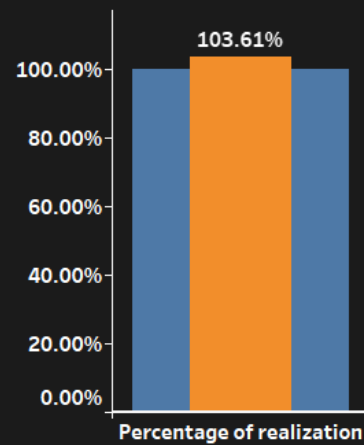
Period: jan 2019 - aug 2019
Create date: 20.09.2019

Type: (All) Format: (All) OU Name: (All)
Rate: (All) Month: (All)

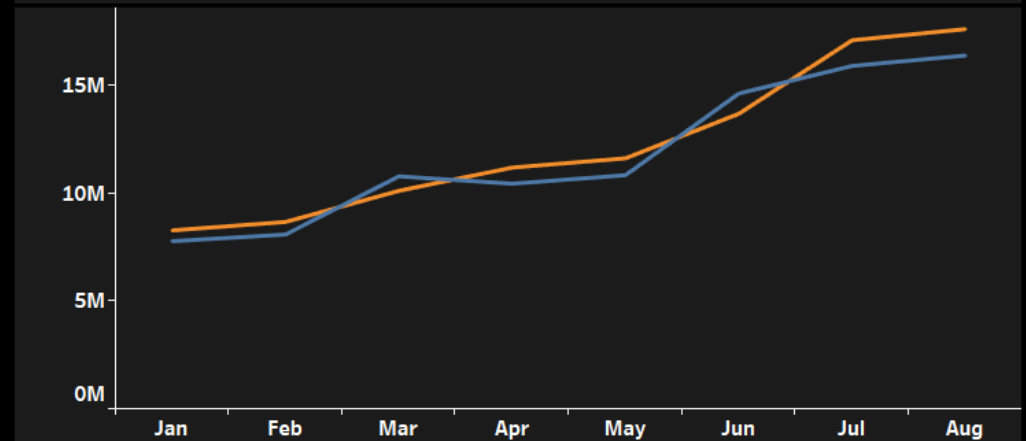
KPI

Realized:
97,985,248

Planned:
94,570,996



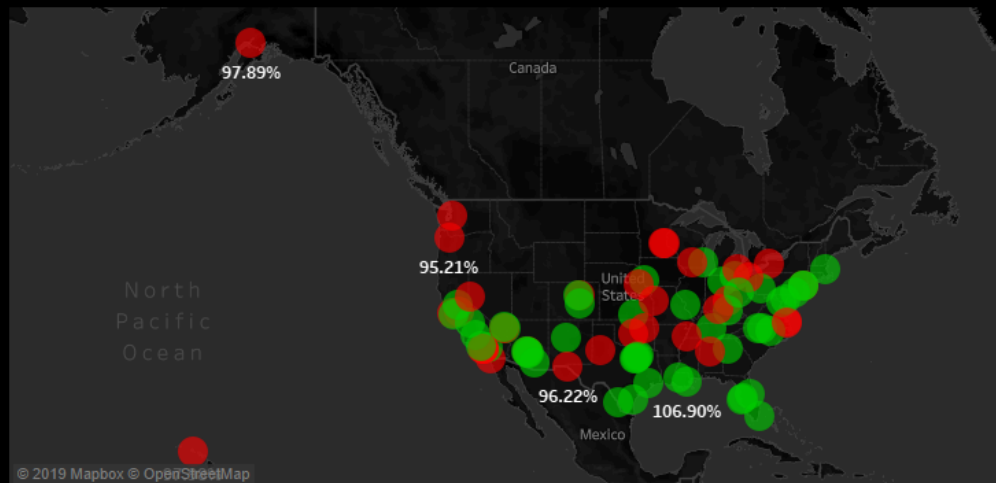
Graph



Measure Names
Realized
Planned

Tabular

Type	Planned	Realized	Rate
Grand Total	94,570,996	97,985,248	103.61%
Sales of goods retail	79,346,818	81,818,936	103.12%
Sales of goods whol..	13,197,520	14,072,260	106.63%
Services income	1,202,929	1,239,434	103.03%
Other income	823,729	854,617	103.75%





FINANSIJSKE ANALIZE - DEMONSTRACIJA

CASH FLOW

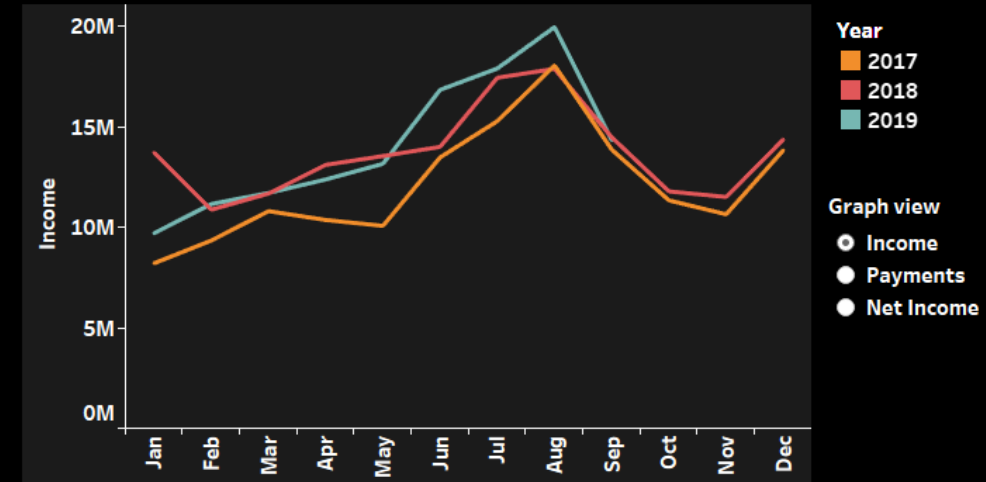
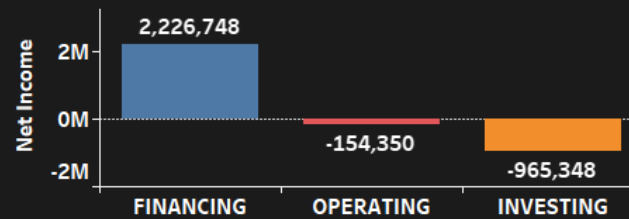
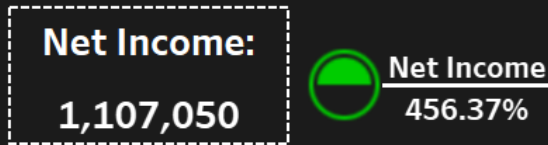
Year: 2017, 2018, 2019
Month: All
Activity: All

Year: (Multiple values)
Month: (All)
Activity: (All)

Period: jan 2016 - aug 2019
Creation date: 23.10.2019

KPI

2019



Tabular

Activity	Account Group	2017			2018			2019		
		Income	Payments	Net Income	Income	Payments	Net Income	Income	Payments	Net Income
FINANCING	41	3,960,000	159,372	3,800,628	5,696,736	191,403	5,505,333	1,320,000	0	1,320,000
	42	8,011,687	8,534,311	-522,623	8,056,778	9,330,712	-1,273,934	6,714,249	5,807,501	906,748
INVESTING	02							0	31,749	-31,749
	23	849,200	975,019	-125,820	796,679	1,190,773	-394,094	0	933,599	-933,599
OPERATING	20	9,875,793	1,274,261	8,601,533	12,403,862	1,040,117	11,363,745	9,146,002	657,732	8,488,270
	22	147,209	1,180,704	-1,033,495	274,263	1,341,232	-1,066,969	207,125	924,988	-717,863
	34	0	180,000	-180,000	0	200,459	-200,459	0	105,616,849	-105,616,849
	43	0	118,932,204	-118,932,204	0	136,075,048	-136,075,048	0	7,167,639	-7,167,639
	45	0	7,543,735	-7,543,735	0	8,948,477	-8,948,477	0	212,899	-212,899
	46	0	987,095	-987,095	0	1,323,736	-1,323,736	0		



FINANSIJSKE ANALIZE - DEMONSTRACIJA

DIO



Indicator: DIO
Year: 2017, 2018, 2019
Month: All

Period: jan 2015 - mar 2019
Creation date: 08.04.2019



Indicator
DIO



Year: (Multiple values)
Month: (All)

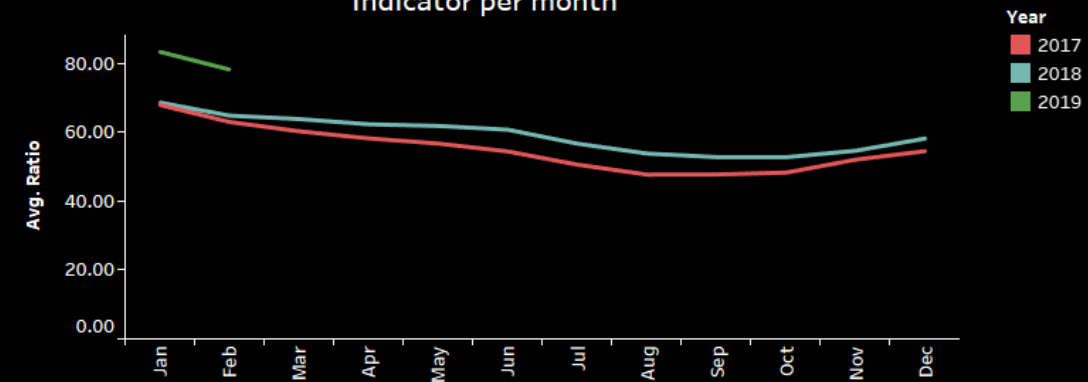
KPI

2019

Ratio: 80.79



Indicator per month



Month of D..	2017		Year 2018		2019	
	Avg. Ratio	Growth Rate	Avg. Ratio	Growth Rate	Avg. Ratio	Growth Rate
January	67.93		68.63	1.03%	83.36	21.46%
February	62.98		64.84	2.95%	78.21	20.62%
March	60.28		63.84	5.91%	-	-100.00%
April	58.22		62.32	7.04%	-	-100.00%
May	56.72		61.84	9.03%	-	-100.00%
June	54.42		60.74	11.61%	-	-100.00%
July	50.59		56.69	12.06%	-	-100.00%
August	47.70		53.82	12.83%	-	-100.00%
September	47.74		52.78	10.56%	-	-100.00%
October	48.28		52.76	9.28%	-	-100.00%
November	52.06		54.65	4.98%	-	-100.00%
December	54.52		58.20	6.75%	-	-100.00%

DIO

Vreme obrta zaliha predstavlja koliko u proseku (u danima) su se zalihe prodale.

Koeficijent je važan za firme koje se bave trgovinom jer pokazuje koliko brzo zaliha postaje novac.

Za poslovanje kompanije je pozitivno što manji koeficijent, odnosno da se zalihe zadržavaju manje dana.



DPO



Indicator: DPO
Year: 2017, 2018, 2019
Month: All

Period: jan 2015 - mar 2019
Creation date: 08.04.2019

Indicator

DPO



Year

(Multiple values)

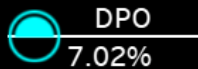
Month

(All)

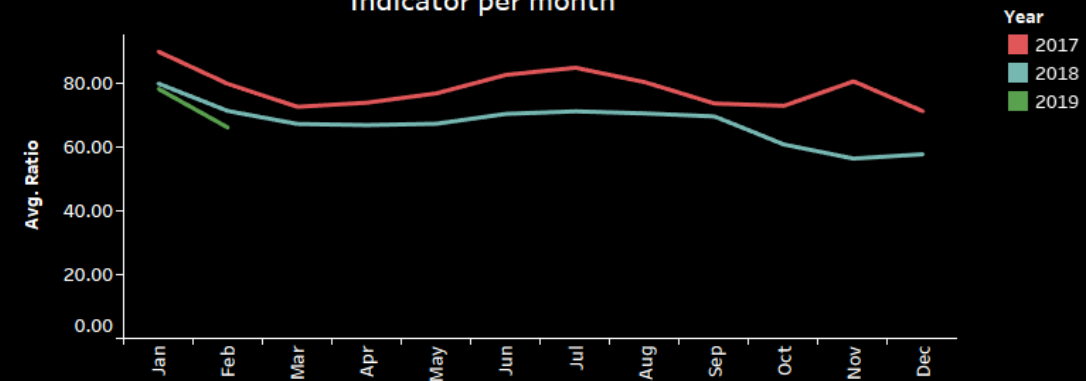
KPI

2019

Ratio: 72.09



Indicator per month



Month of D..	2017		Year 2018		2019	
	Avg. Ratio	Growth Rate	Avg. Ratio	Growth Rate	Avg. Ratio	Growth Rate
January	89.82		79.81	-11.14%	78.16	-2.07%
February	79.70		71.22	-10.64%	66.01	-7.32%
March	72.52		67.16	-7.39%		-100.00%
April	73.82		66.80	-9.51%		-100.00%
May	76.74		67.23	-12.39%		-100.00%
June	82.53		70.31	-14.81%		-100.00%
July	84.77		71.11	-16.11%		-100.00%
August	80.23		70.46	-12.18%		-100.00%
September	73.56		69.51	-5.51%		-100.00%
October	72.85		60.72	-16.65%		-100.00%
November	80.51		56.31	-30.06%		-100.00%
December	71.14		57.67	-18.93%		-100.00%

DPO

Koeficijent obrta dobavljača je finansijski odnos koji pokazuje prosečno vreme (u danima) koje je potrebno kompaniji da izmiri svoje obaveze prema dobavljačima.

Kompanija koja ima visok koeficijent može koristiti višak sredstava za kratkoročne investicije i povećanje obrtne imovine. Međutim povećanje koeficijenta obrta dobavljača ne mora uvek biti pozitivna za poslovanje kompanije. Visok koeficijent može da ugrozi odnose sa dobavljačima, ostvarivanja kasa skonta itd.



FINANSIJSKE ANALIZE - DEMONSTRACIJA

DSO



Indicator: DSO
Year: 2017, 2018, 2019
Month: All

Period: jan 2015 - mar 2019

Creation date: 08.04.2019



Indicator

DSO



Year

(Multiple values)

Month

(All)

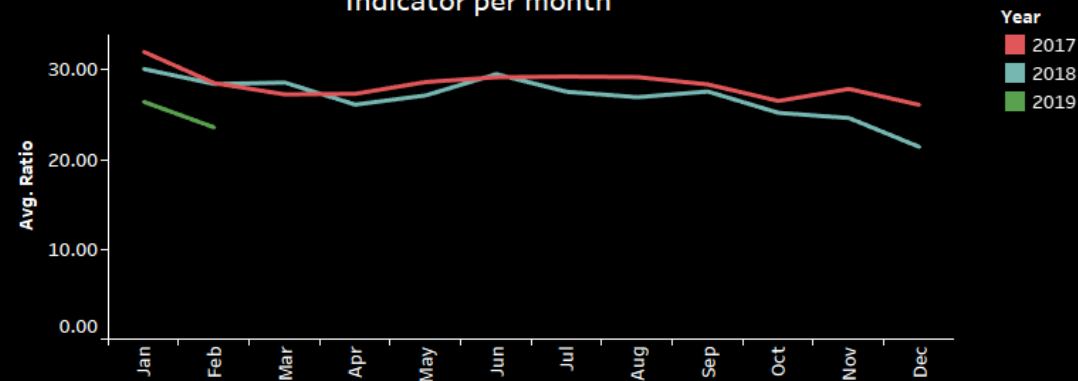
KPI

2019

Ratio: 25.01



Indicator per month



Month of D..	2017		Year 2018		2019	
	Avg. Ratio	Growth Rate	Avg. Ratio	Growth Rate	Avg. Ratio	Growth Rate
January	32.01		30.09	-6.00%	26.44	-12.13%
February	28.52		28.42	-0.35%	23.58	-17.03%
March	27.26		28.58	4.84%		-100.00%
April	27.33		26.12	-4.43%		-100.00%
May	28.64		27.15	-5.20%		-100.00%
June	29.17		29.52	1.20%		-100.00%
July	29.24		27.55	-5.78%		-100.00%
August	29.19		26.95	-7.67%		-100.00%
September	28.37		27.58	-2.78%		-100.00%
October	26.53		25.21	-4.98%		-100.00%
November	27.87		24.63	-11.63%		-100.00%
December	26.09		21.41	-17.94%		-100.00%

DSO

Koeficijent obrta kupaca je finansijski odnos koji pokazuje prosečno vreme (u danima) koje je potrebno kompaniji da naplati svoja potraživanja od kupaca.

Smanjenje koeficijenta predstavlja pozitivni efekat na likvidnost kompanije jer je potrebno manje dana za naplatu potraživanja.



FINANSIJSKE ANALIZE - DEMONSTRACIJA

Liquidity



Indicator: Liquidity
Year: 2017, 2018, 2019
Month: All

Period: jan 2015 - mar 2019

Creation date: 08.04.2019

Indicator

Liquidity



Year

(Multiple values)

Month

(All)

KPI

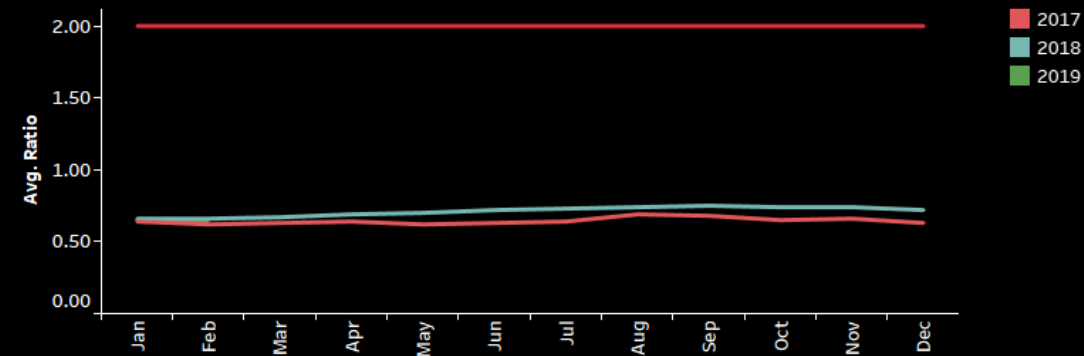
2019

Ratio: 0.65



Liquidity
-8.45%

Indicator per month



Month of D..	2017		Year 2018		2019	
	Ratio	Growth Rate	Ratio	Growth Rate	Ratio	Growth Rate
January	0.64		0.66	3.13%	0.65	-1.52%
February	0.62		0.66	6.45%	0.65	-1.52%
March	0.63		0.67	6.35%		-100.00%
April	0.64		0.69	7.81%		-100.00%
May	0.62		0.70	12.90%		-100.00%
June	0.63		0.72	14.29%		-100.00%
July	0.64		0.73	14.06%		-100.00%
August	0.69		0.74	7.25%		-100.00%
September	0.68		0.75	10.29%		-100.00%
October	0.65		0.74	13.85%		-100.00%
November	0.66		0.74	12.12%		-100.00%
December	0.63		0.72	14.29%		-100.00%

Liquidity

Tekući ratio likvidnosti predstavlja odnos obrtno imovine i kratkoročnih obaveza.

Kompanije koje imaju koeficijent tekuće likvidnosti preko 2 imaju dobru sposobnost izmirivanja obaveza.

Kompanije koje se bave maloprodajom u praksi najčešće imaju koeficijent likvidnosti manji od 1 iz razloga što one brzo sakupljaju novac od potrošača a dužem periodu izmiruju obaveze prema dobavljačima. U ovoj industriji se koeficijent ispod 1 smatra normalnom pojavom.

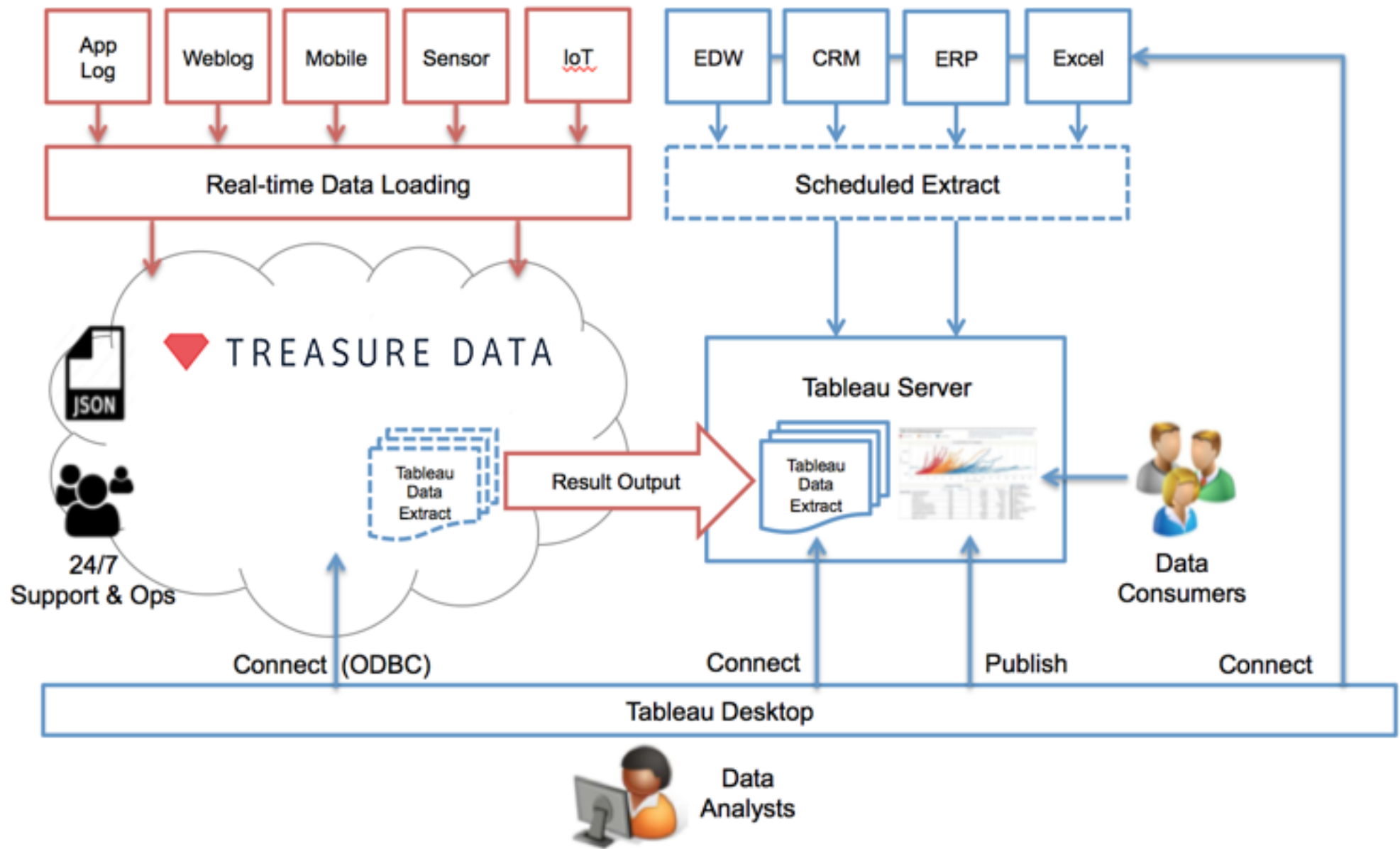
Ukoliko je koeficijent veći od 3, to ukazuje da kompanije ne koristi efektivnu obrtnu imovinu u investiranje i ne upravlja dobro svojim obrtnim kapitalom.

Tableau Proizvodi, Licence i Cene

Bogdan Jorgović-Pejić



ARHITEKTURA SISTEMA





ARHITEKTURA PROIZVODA

Tableau Prep

Prepare your data for Visualization

Desktop

Create Your Visualizations



Mobile



Server

Consume Your Visualizations Using a Variety of Delivery Methods

Web



Desktop



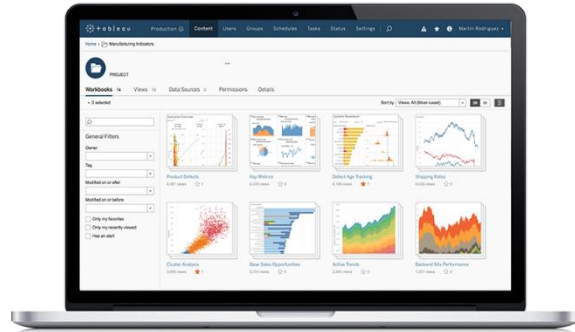
Server
Standardize
Your
Visualizations





ARHITEKTURA PROIZVODA

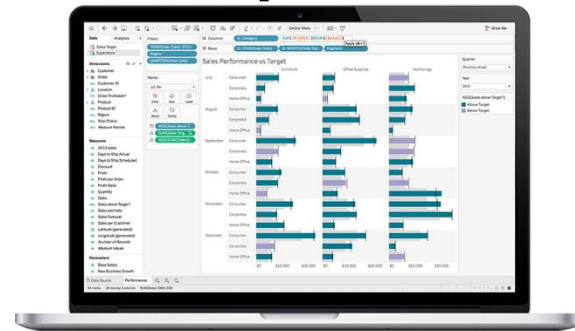
Creator:



Proizvodi i licence:

- **Tableau Desktop** – aplikacija koju je moguće instalirati direktno na kompjuter
- **Tableau Prep** – alat za laku pripremu podataka za ubacivanje i manipulaciju u Tableau
- **Tableau Server** – Online Creator Licenca

Explorer:



Proizvodi i licence:

- **Tableau Server** – Online Explorer Licenca

Viewer:



Proizvodi i licence:

- **Tableau Server** – Online Viewer Licenca





DETALJNE FUNKCIJE I CENE

	Creator	Explorer	Viewer
Web i mobilni pristup	+	+	+
Ugrađeni sadržaj	+	+	+
Interakcija sa vizuelizacijama i dashboard-ima	+	+	+
Preuzimanje vizualizacija kao slika (.pdf, .png)	+	+	+
Preuzmite sažete podatke	+	+	+
Preuzmite potpune podatke	+	+	
Kreirajte i podelite prilagođene prikaze	+	+	
Komentari na kontrolnoj tabli ili vizualizaciji	+	+	+
Napravite pretplatu za sebe	+	+	+
Primajte upozorenja o podacima	+	+	+
Kreirajte pretplate za druge	+	+	
Kreirajte upozorenja o podacima	+	+	
Izmenite postojeće workbook-ove i vizuelizacije	+	+	
Kreirajte i objavite novi radni workbook iz postojećeg objavljenog izvora podataka	+	+	
Kreirajte i objavite novi workbook sa novim izvorom podataka	+		
Kreirajte i objavite nove izvore podataka	+		
Kreirajte nove workbook-ove na osnovu unapred pripremljenih "Starters Dashboard-a"	+		
Kreirajte nove tokove podataka (.tfl)	+		
Uredite i izmenite tok podataka (.tfl)	+		
Izvezite podatke (.tde, .hiper ili .csv)	+		
Objavite i pokrenite protok	+		
Isplanirajte protok	+	+	
Pratite performanse i kvalitet protoka	+		
Upravljajte korisnicima i dozvolama	+	+	
Upravljajte sadržajem i potvrđujete izvore podataka	+	+	
Administracija servera	+		
Minimum licenci	1	5	50

HOSTOVANO NA PRIVATNIM SERVERIMA

Creator	Explorer	Viewer
63 EUR	32 EUR	11 EUR

20%
popusta na događaju

HOSTOVANO NA TABLEAU SERVERIMA

Creator	Explorer	Viewer
63 EUR	38 EUR	13 EUR

*Cene su na mesečnom nivou
a plaćanje se vrši na godišnjem



Q & A

HVALA NA PAŽNJI