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DevLive

| Level Up

| MySQL
Summit

Accelerating Real-time Marketing Insights at Half the Cost with MySQL HeatWave

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Pablo Lemos, CO-FOUNDER, CTO Tetris.co

Advertiser,

Got into tech doing Flash websites (who is old enough here to remember when Flash was killed by Apple? :)

More than an engineer, a Tinkerer - this will make more sense later on.

Self-taught engineer with vast experience handling a large portfolio of technologies, Pablo was awarded with two Cannes Lions for media tech innovation. He is responsible for international media data governance for clients such as L'Oréal, Iberdrola, Dufry, and more. Pablo holds an advertising degree from Universidade Federal Fluminense, Brazil.



WE ARE A MARTECH STARTUP

We work with a focus on developing scalable **services** and **technologies** with the goal of **unifying** data and **automating** results governance for both off and online paid media, generating **insights** so our clients can make informed **strategic decisions**.

TIMELINE

2015

2016

2017

2018

2019

2020

2021

Go
Live

Organizing advertising data for C-Level stakeholders.
Classic OLTP. Not a huge amount of data.
Mostly "Big Numbers".
Start of the proprietary data modeling.

TIMELINE

2015

Go
Live

2016

2017

New
Cohort

2018

2019

2020

2021

Had to make the tool also appealing for the analysts handling the campaigns. "Put all stakeholders on the same page." More data depth.

TIMELINE

2015

Go
Live

2016

2017

New
Cohort

2018

2019

OLTP
Limits

2020

2021

OLTP SQL optimization started
to face its limits. Needed to go
OLAP.

TIMELINE

2015

Go
Live

2016

2017

New
Cohort

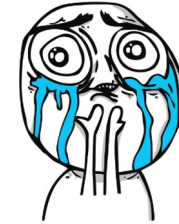
2018

2019

OLTP
Limits

2020

OLTP x OLAP Data Nightmare



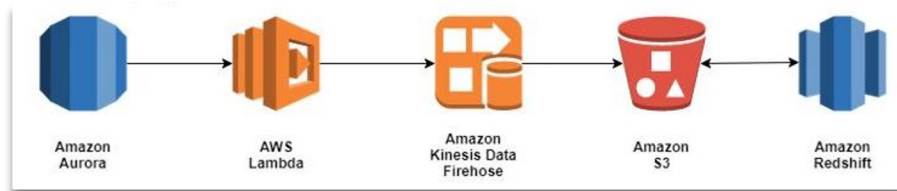
2021

MySQL
Heatwav
e

The challenges:

- Expand the analytics beyond the C-level down to the marketing analysts with the daily responsibility of running campaigns;
- Expansion plan to also serve smaller clients, increasing the volume of our data exponentially, in an ever growing number of *data sources* and demand for detailed, segmented analysis;
- Keep high speed queries responses at reasonable cost and minimal technical overload, maintaining our transactional advantages to data governance.

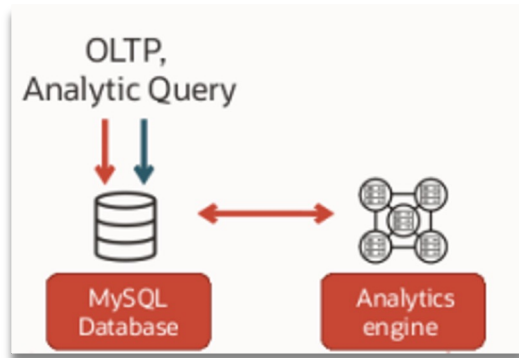
The old solution: transfer your data to a whole different database. Deal with data headaches and high costs.



As an advertiser that became an engineer, it was mind blowing to see the lack of a simple (and affordable) solution for this problem in the market.

MySQL HeatWave, a dream come true.

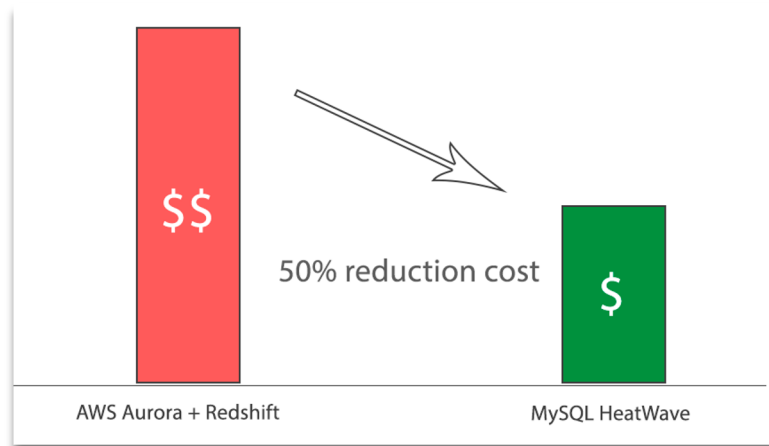
- Complex queries accelerated with blazingly fast speed from minutes to milliseconds, much faster than RedShift and Google Big Query;
- The ability to make queries straight to MySQL that were virtually impossible using only AWS Aurora;
- No longer moving data around. “Real Real-time” insights with no effort.



It just works. You send analytical queries to the MySQL database and it automatically offloads it to the Heatwave layer, returning with unprecedented speed.

It fit like a glove in hand.

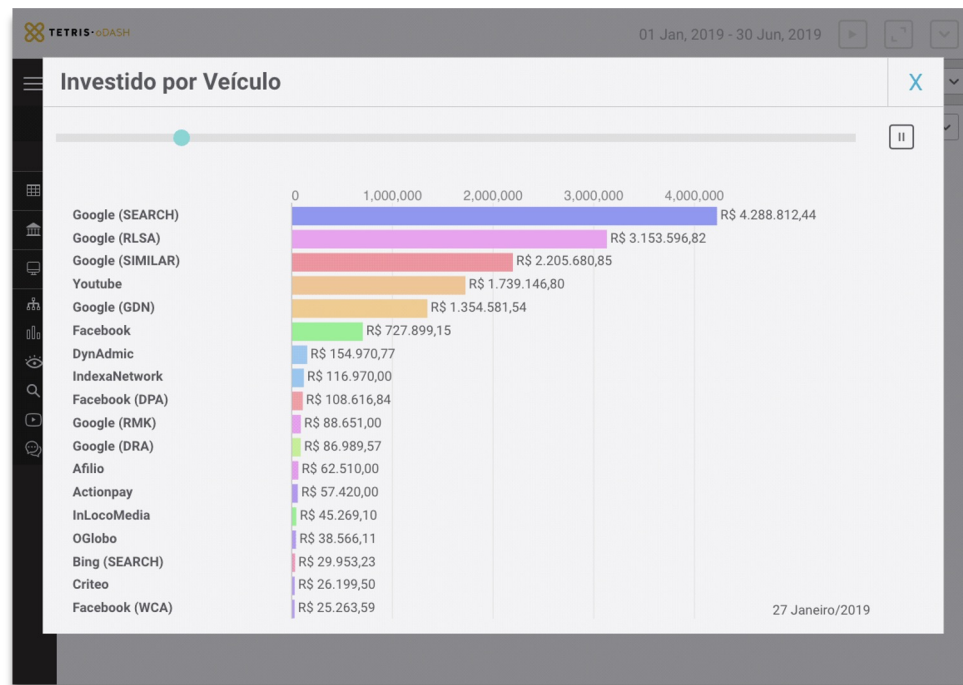
- Dramatically reduction of costs, more than 50% cheaper than AWS Aurora + Redshift;
- We went live in a less than month with minimal changes in our code.



Cheaper, faster, better. The speed with which we migrated our application and the amount of money saved changed the way we think about our business model.

Direct positive impact in our business

- Faster, more precise analytics used in real-time during meetings;
- Better understanding of ad performance, more strategic thinking;
- Less data headaches means more time available to develop better features;
- Scalability made our expansion plan possible, allowing us to onboard more data and clients without impact in our costs.



No fear to ask the data. Super fast responses over massive amounts of data allowing runtime strategic thinking.

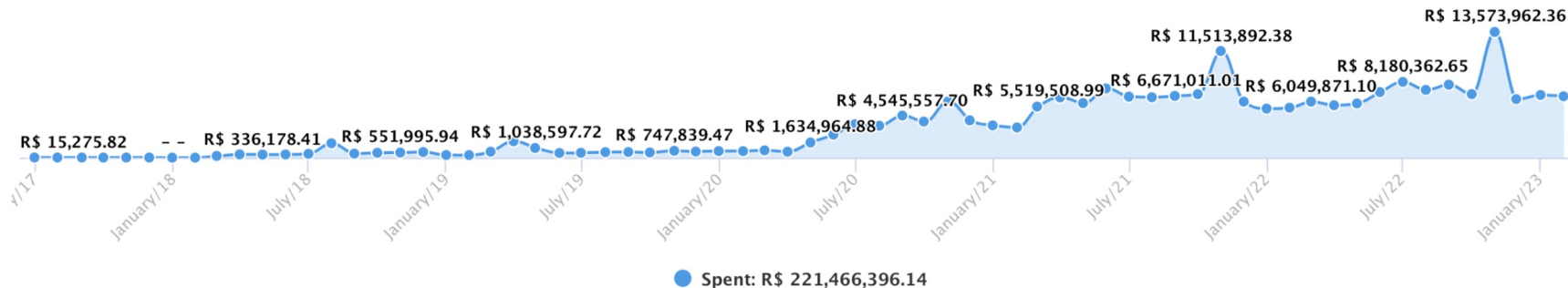
Heatwave tips

- It does not support ALL MySQL queries;
- ML deciding over OLAP x OLTP is amazing, but no perfect (*Force_With_Deflection*, please 🙏);
- Use taxonomy to mark tables and columns you want into Heatwave (___HW);
- Make sure Heatwave is always loaded.



What is next? **HeatWave AutoML**

- We have a proprietary schema that organizes and classifies marketing data, and we have many clients with long term data history onboarded in our database;
- We've been studying how to deliver machine learning insights from our clients' data for a couple of years but struggling with the complexities and the prices of specialists in the field, until now.



Easy to use and no extra costs.

- With the friendly MySQL interface, Machine Learning is now available at the hands of our developers with no specialized knowledge on ML algorithms (and additionally, our python developers can leverage extra customization with their skills, given the flexibility of Heatwave AutoML);
- There is no need to transfer data, no need to pay for extra layers of service, we just use the infrastructure we already have and the data that is already loaded into the Heatwave cluster.



Everything happens within the same Oracle MySQL service, for the same price.

Use case: Classification

- We have many clients that work together with us to track and organize their whole CRM funnel, from ad click to sales completed. Heatwave AutoML will help us to identify users more likely to become customers.

The screenshot shows a CRM interface with a top navigation bar containing 'Lead Generation', 'Home', 'Chatter', 'Accounts', 'Contacts', 'Leads', and 'Campaigns'. Below the navigation bar are three tabs: 'Details' (selected), 'Activity', and 'Chatter'. The 'Details' tab displays a form for a lead named 'Foster Brothers'. The form is organized into two columns of fields, each with an edit icon (pencil) to its right. The left column includes fields for Opportunity Name, Account Name (58620851), Account Profile, Lead Source Bucket (Inbound), Lead Source, Lead Source Detail, Channel Partner ID, Type, Manual Amount Approved, Amount Requested (\$500.00), and Card Shipping Tracking URL. The right column includes fields for Opportunity Owner (Ray Jorge), KYB Reviewer, Underwriter, UW Second Reviewer, Fraud Reviewer, SMB Cosell Owner, Docs Specialist, Close Date (6/20/2022), Stage (Submitted to UW), Amount (\$500.00), Ratio of Avg Daily Balance to Amount (1.0), Amount Approved by Risk, and Forecasted Amount (\$25.00).



Given the information provided by the user, what is the chance of them becoming a new customer?

Use case: Regression

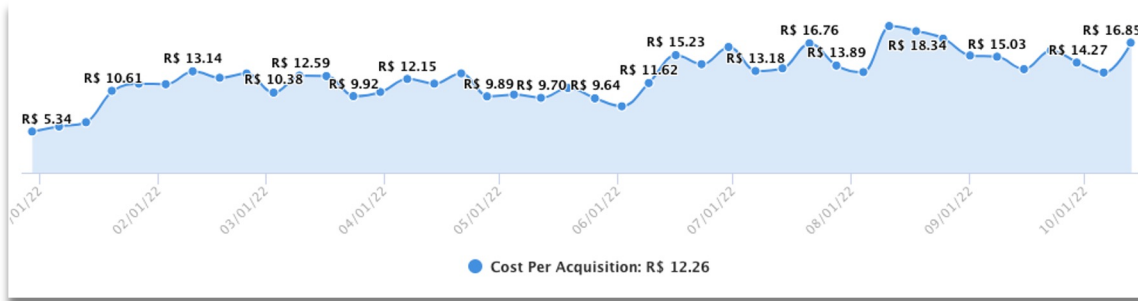
- Heatwave AutoML will help us predict for our clients how many units of a given product will be sold depending on price and campaign investment.

PRODUCT'S LINK	EXTERNAL CAMPAIGN	RETAILER [PRODUCTS]	SKU	BARCODE (GTIN)	PRODUCT ID	RELATIVE SPENT	AVG SPENT	PRODUCTS SOLD	REVENUE (TRANSACTIONS)	AVERAGE PRICE
						R\$ 967,886.17	R\$ 967,886.17	23,215	R\$ 3,362,977.59	R\$ 144.86
https://www.epocac	acd_drb_all:set/22_	Época Cosméticos	44511	3337875655200	7926451420762211	R\$ 1,175.22	R\$ 394.37	32	R\$ 5,957.59	R\$ 186.17
https://www.drogari	acd_drb_all:ao_raia	Droga Raia	25877	7899706156912	2115895898458106	R\$ 187.22	R\$ 22.26	23	R\$ 5,747.70	R\$ 249.90
https://www.epocac	acd_vic_all:set/22_	Época Cosméticos	27209	7899706152389	5910814335650221	R\$ 968.41	R\$ 330.21	21	R\$ 2,517.94	R\$ 119.90
https://www.epocac	acd_drb_all:set/22_	Época Cosméticos	27209	7899706152389	5910814335650221	R\$ 814.79	R\$ 350.66	20	R\$ 2,427.10	R\$ 121.36
https://www.paguen	acd_vic_all:ao_pagu	Pague Menos	46279	7899706124829	3010237342394150	R\$ 103.21	R\$ 155.93	20	R\$ 669.80	R\$ 33.49
https://www.paguen	acd_cer_all:ao_pagu	Pague Menos	45113	3337875696548	2919829441473500	R\$ 723.54	R\$ 532.38	19	R\$ 2,906.81	R\$ 152.99
https://www.epocac	lpd_lan_all:set/22_e	Época Cosméticos	17882	3605533286555	5614331748589845	R\$ 1,348.10	R\$ 868.32	18	R\$ 9,432.00	R\$ 524.00
https://www.epocac	acd_drb_all:set/22_	Época Cosméticos	27209	7899706152389	5910814335650221	R\$ 713.70	R\$ 287.19	17	R\$ 2,009.38	R\$ 118.20
https://shopee.com	cpd_all_all:ao_shop	Shopee	16908713741	--	5519302554750542	R\$ 521.67	R\$ 286.71	17	R\$ 936.36	R\$ 55.08
https://www.paguen	acd_cer_all:ao_pagu	Pague Menos	51462	7899706159357	3012373632164857	R\$ 279.14	R\$ 198.86	17	R\$ 1,359.83	R\$ 79.99
https://www.epocac	acd_drb_all:set/22_	Época Cosméticos	29683	7899706158213	8716578961700785	R\$ 867.76	R\$ 332.80	17	R\$ 3,268.56	R\$ 192.27

What is the best combination of media investment and product price to give me the biggest sales return?

Use case: Forecast

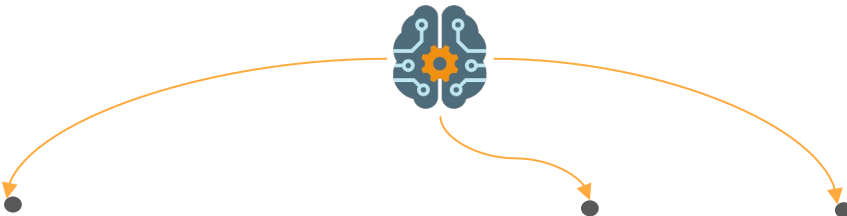
- With the multi year marketing data history that we govern, Heatwave AutoML will help us to predict trends on Cost per Acquisition and many other KPIs.



Given this Cost Per Acquisition trend, how much will it be in the coming weeks?

Explainability will inform our clients' strategies

- Since Heatwave AutoML is not opaque, we can show our clients the features that most affect their marketing goals.



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Which aspects of our marketing efforts affect our results the most?



Thank you! | Obrigado!

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Please rate this session.

Session ID – MS12

