

Context

How it all started...?



Context

Nowadays...

- ♦ +52.000 live only from Mercado Livre
- ♦ +15 countries
- ~ 3 sales per second
- ❖ ~100 MM registered users
- 15% to 40% of SI are from Mobile!
- +16 MM downloads







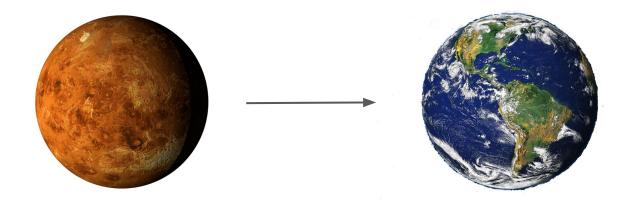




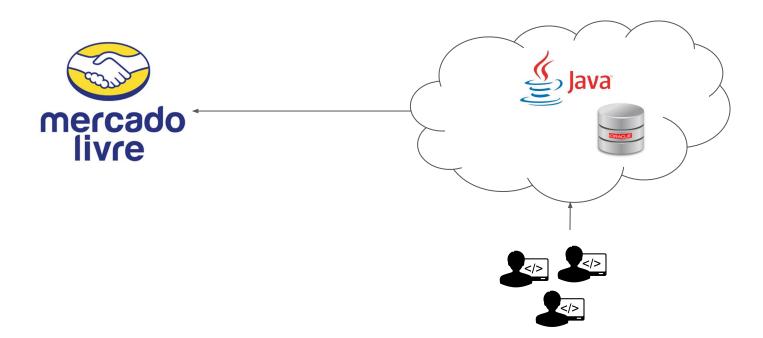




From an old world to a new world













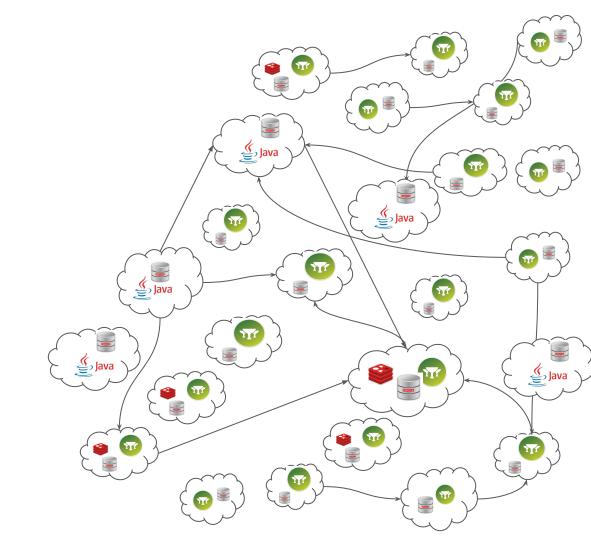










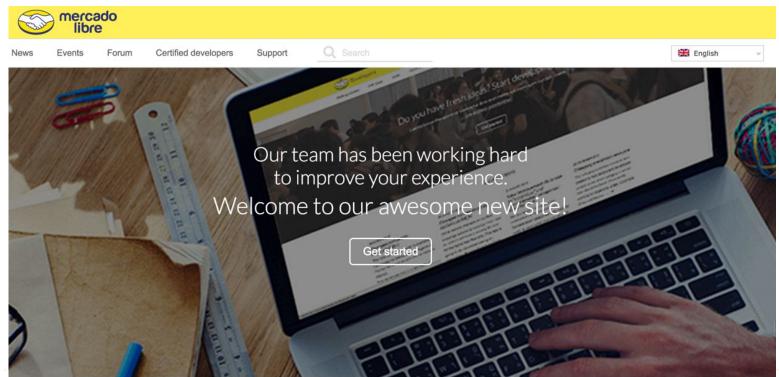




MICROSERVICES EVERYWHERE!

Microservices

http://developers.mercadolibre.com/



Microservices

https://www.acamica.com/mercadolibre





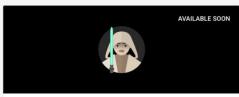
Introducción a la API de Mercado Libre

Aprende a integrarte con el mayor Marketplace de América



Trabajando con la API de Mercado Libre

Lleva tus ideas a la práctica con la API de MercadoLibre



La API Mercado Libre: conceptos finales

Termina de pulir tus ideas y completa el proceso de Integración con la API de MercadoLibre







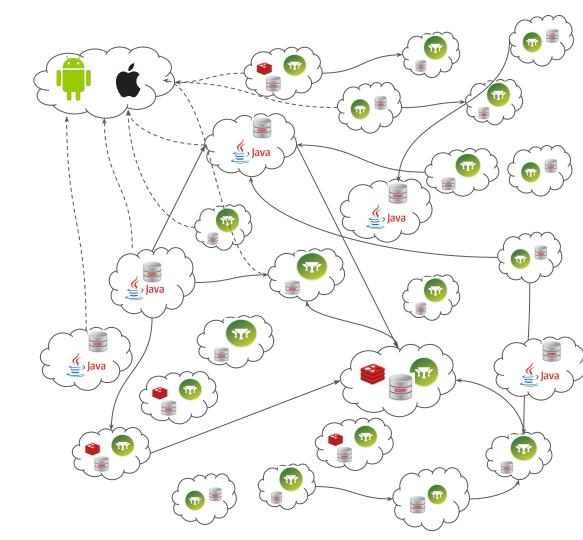




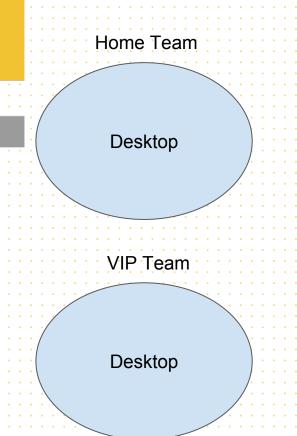


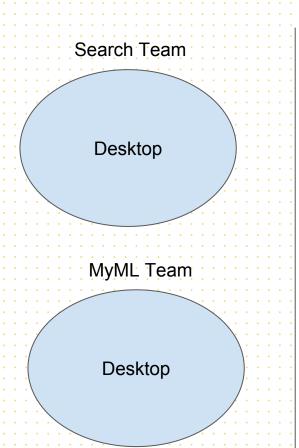


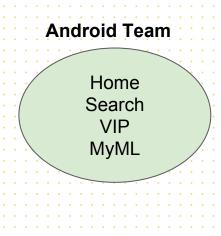


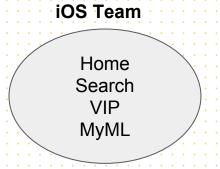


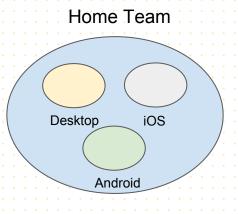


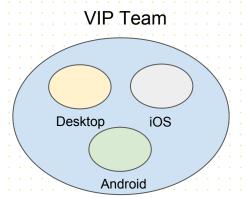


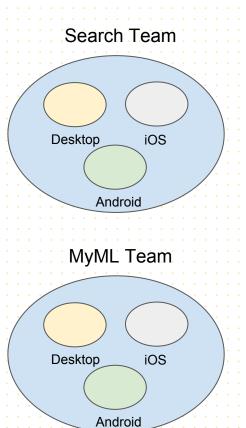


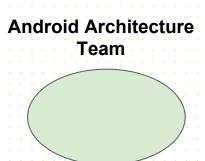


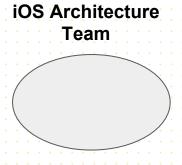










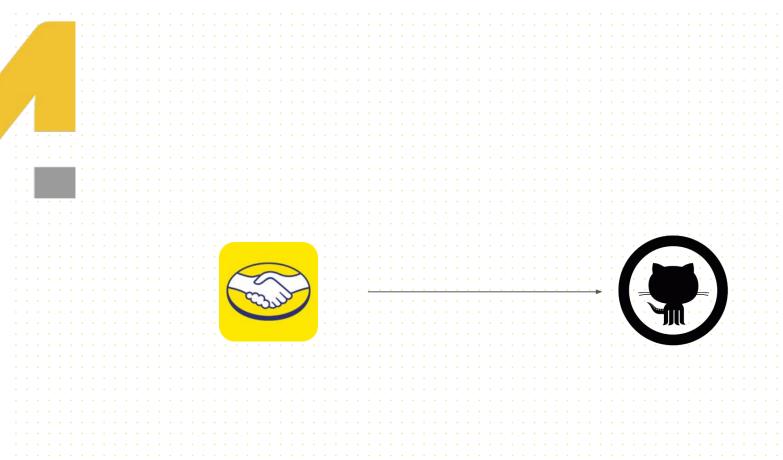


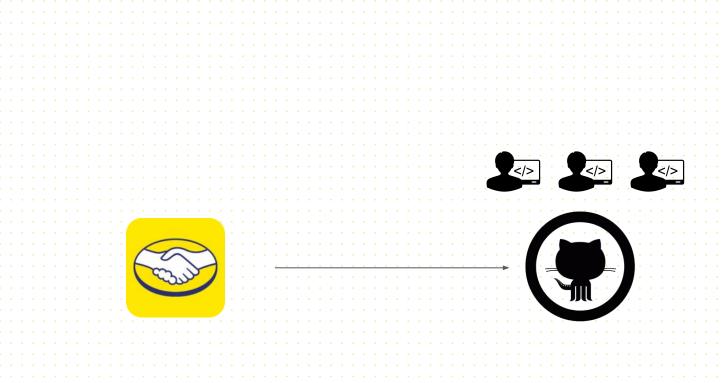


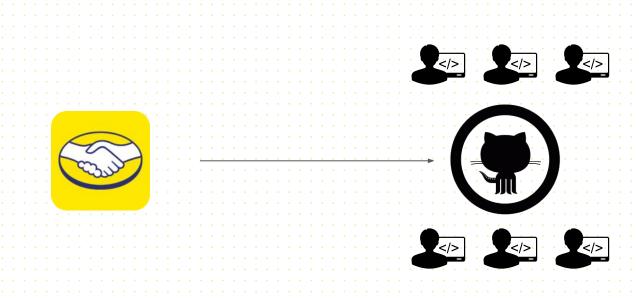
What we wanted to do?

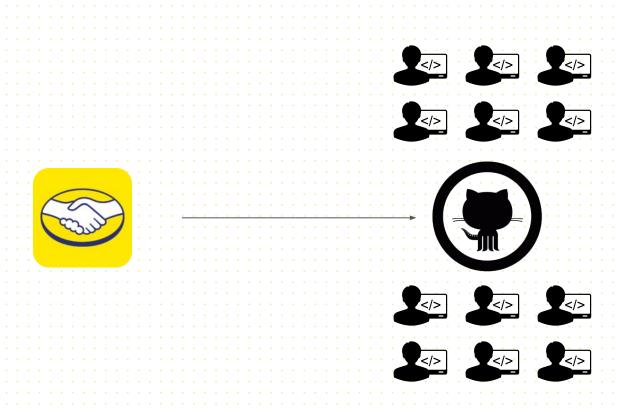
- Different teams collaborating in the development of mobile apps.
- Improve code quality & reduce bugs.
- Facilitate the mobile development.
- Support new teams in the native app development.
- Agile development, new features to prod faster.

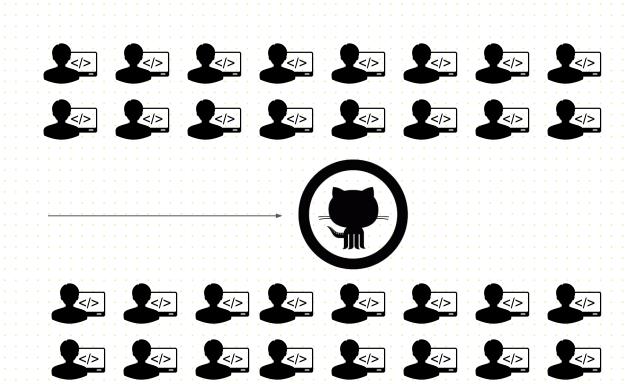
2 Scaling the Mobile Code













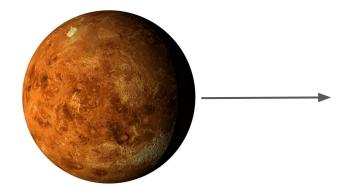


Scaling the Mobile code

Status

- Tightly coupled code
- Constant merge and rebase problems
- Manual and unstable testing
- Difficult coordination between teams.
- Publishing to the store: manually, error prune

From an old world to a new world

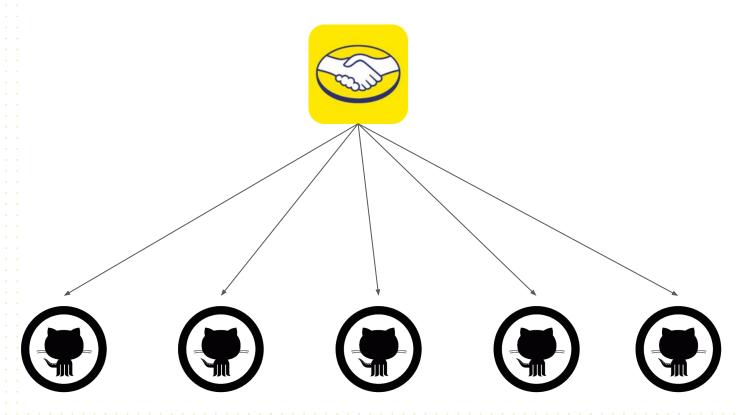






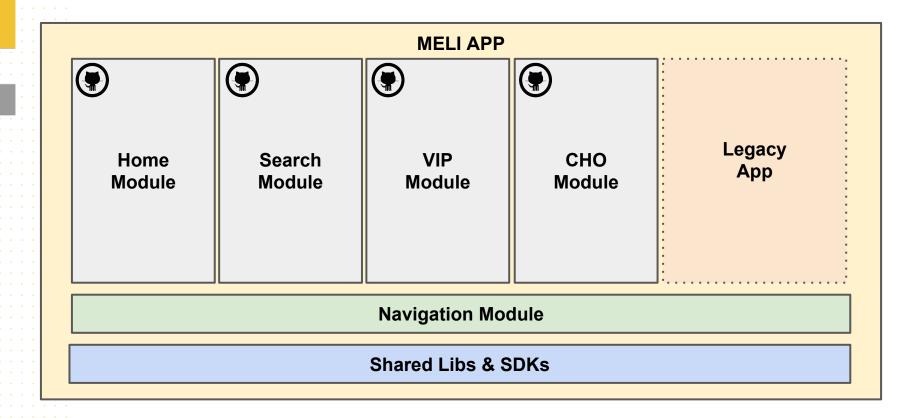


Componentization



3 How did we do it?

Componentization

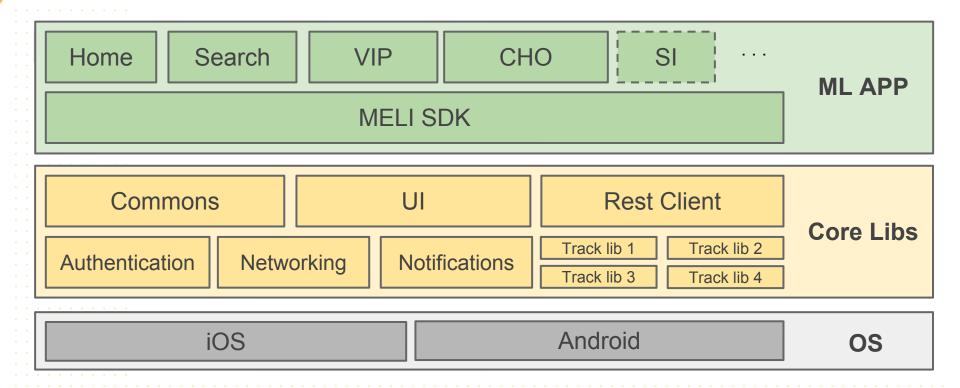




Characteristics

- Each module is a repository in Github
- Different Front-Ends are build based on the OS (Android,iOS) and our MELI SDK (set of libraries).
- Each module is an application that works on its own (with a TestApp).

Componentization



How do the modules communicate?

How do the modules communicate?





Navigation

- Modules don't know each other and the navigation is through predefined URLs
- 100% decoupled and each module is "Deep Linking" Ready

```
Intent intent = new Intent(this);
intent.setData(
Uri.parse("myscheme://myhost/segment1?queryparam1=val1&queryparam2=val2"));
startActivity(intent);
```



How do the modules communicate?

Navigation

- Parameters are passed by query string or path params.
 - Pro: Simple and known.
 - Con: The Uri has to be parsed.

mycompanydeeplink://item/meultemld

Navigation Example

```
<activity
 android:name=".activities.MyActivity"
android:launchMode="singleTop"
android:theme="@style/Theme.MLTheme">
 <intent-filter>
  <action android:name="android.intent.action.VIEW"/>
  <category android:name="android.intent.category.DEFAULT"/>
  <category android:name="android.intent.category.BROWSABLE"/>
  <data
    android:host="myhost"
    android:scheme="myscheme"/>
 </intent-filter>
</activity>
```

Navigation Example

```
public class MyActivity extends AppCompatActivity {
 @Override
 protected void onCreate(Bundle savedInstanceState) {
  super.onCreate(savedInstanceState);
  // myscheme://myhost/segment1?queryparam1=val1&queryparam2=val2
  if (getIntent().getData() != null) {
    Uri deeplink = getIntent().getData();
    List<String> segments = deeplink.getPathSegments();
    String queryparam1 = deeplink.getQueryParameter("queryparam1");
    String queryparam2 = deeplink.getQueryParameter("queryparam2");
    •••
```

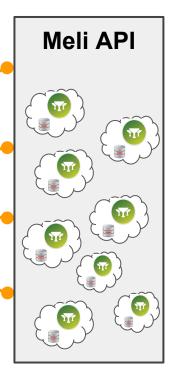
5 Wrapper 2.0

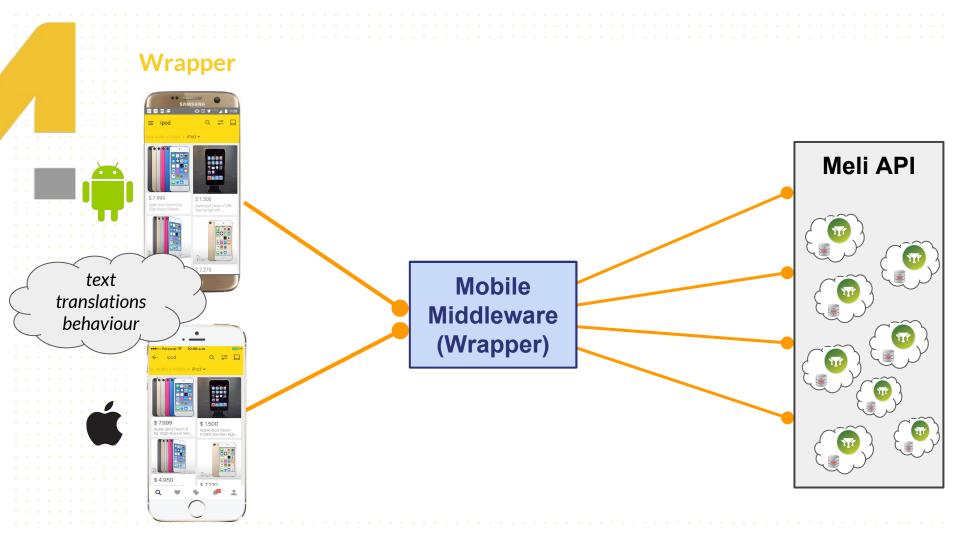
Wrapper

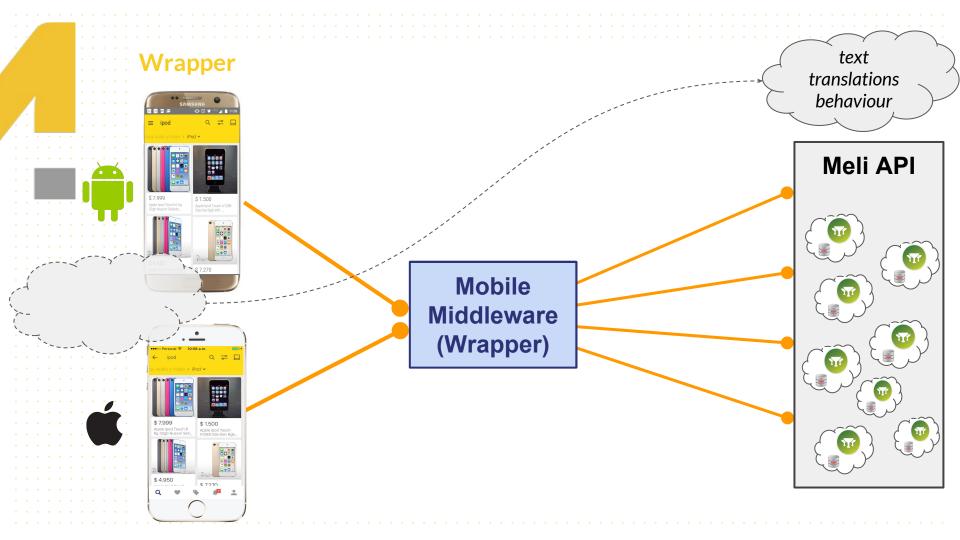




Mobile Middleware (Wrapper)







Wrapper 2.0





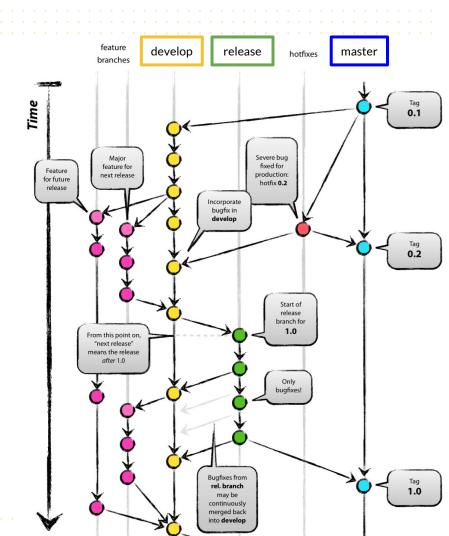
Wrapper 2.0

```
id: "sign up",
title: "Ainda não tem conta?",
button:
   text: "Cadastre-se grátis",
   text color: "#666666",
   background color: "#ffffff"
action: "meli://register",
image: "http://static.ml.com/2b7c0ecb042a5.png",
background color: "#ffffff"
```

Wrapper 2.0

- The backend response can change based on the App version (design the **frapi** with that in mind).
- The backend is easily modified, the apps are not.
- Backend changes must always be backward compatible.

A successful Git Branching Model





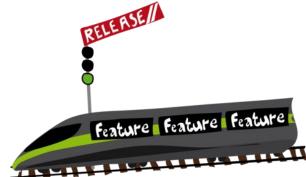
Release Process

- We didn't have a clear process.
- Releases were made when we thought it was a "good time".
- With many teams working with us, that needed to change.

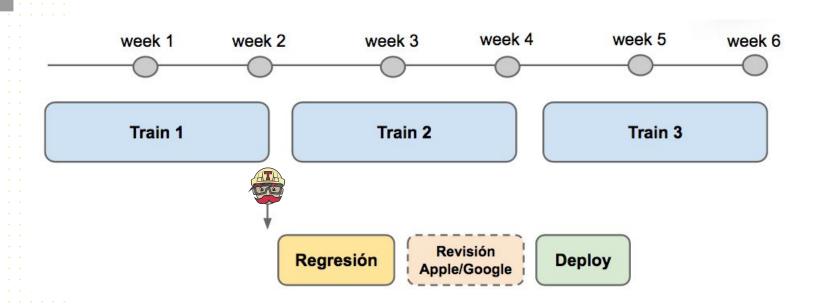


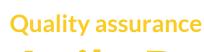


- **Every 2 weeks** a new version is released.
- Every 2 weeks, the train passes by and takes with it all merged PRs.
- A release train is implemented with a **Milestone** in Github.









- ❖ The release is defined by a **Milestone** in **Github**.
 - ➤ The tag is created with the **Changelog.md** file.
 - The "train" is created with everything <u>merged</u> to develop.
- ❖ After the release, a manual regression is run, and if no issues are found ⇒ Progressive Rollout



Release Manager

- Assigning Pull Requests.
- Tests for manual regression.
- Checking if everything is ok.
- Creating the "What's New"
- Creating the APK and rolling it out.
- Following issues.





How to I add a new Feature?

- Must have:
 - Unit tests
 - Screenshots of the changes
 - Changes for the What's New
 - New Regression tests
 - Dependencies declaration.





How to I add a new Feature?

- Will my feature be added?
 - > Only if the PR was made with time.
 - Code quality is up to the standards.
 - Doesn't have bugs.
 - > CR was made and changes were made.
 - > Dependencies are met.
- The feature will be added only if it's merged





★ Better communication.

RM @natponzo Fecha de finalización del desarrollo para las libs: 2... (more)

- ★ Different teams can estimate based on this schedule.
- ★ New versions are better tested and controlled.

MercadoLibre v6.15.0 Due by July 14, 2016 © Last updated about 2 hours ago RM @barriosnahuel; Fecha de finalización del desarrollo para las... (more) Mercado Libre v6.16.0 Due by July 29, 2016 © Last updated about 6 hours ago 0% complete 1 open 0 closed



Status: Testing Automation

- Tests were ran **manually** in the developer machine.
- Unstable tests.
- Each team added **new tests**, increasing a lot the number of tests.
- \diamond To scale \Rightarrow everything **must** be automated.



Android Testing Pyramid





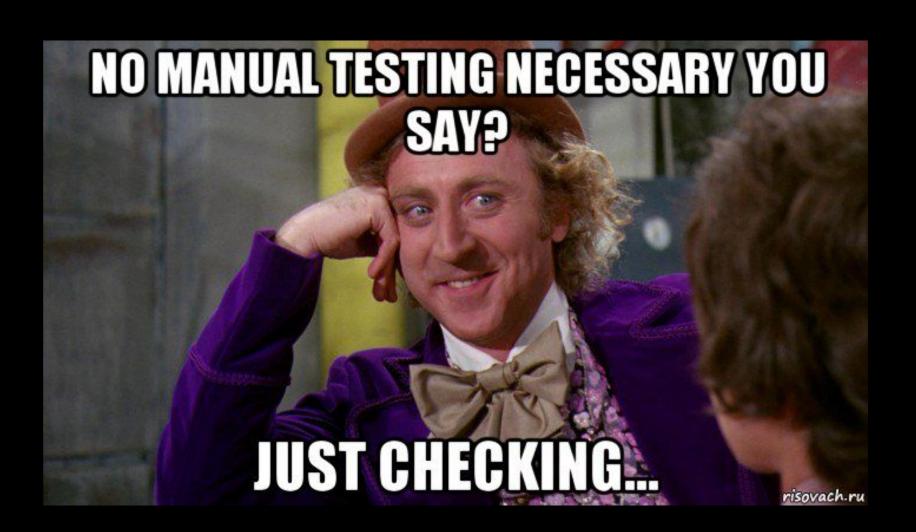
Testing Automation







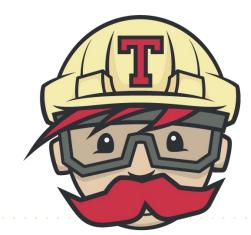






Continuous Integration

- Tests were ran manually by the developer.
- ❖ Hard to tell when the tests were green or not.
- The work of the Release Manager was nearly impossible!.



Continuous Integration in Github

☐ \$\ 0 Open ✓ 27 Closed	Author +	Labels +	Milestones +	Assignee ▼	Sort ≠
Search version 3.13.1 #2742 by nravasi was merged 2 days ago Mercado Libre v6.17.0					
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Continuous Integration in Github

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□ ③ One pull request to fix Z ✓ #2734 by saantiaguilera was merged 2 days ago ↑ Mercado Libre v6.17.0	Q P 5

Continuous Integration





test-travis-oom use JDK switcher

1840 failed

Commit bf310c3

Compare 479bacd..bf310c3

ran for 3 min 38 sec.

14 days ago



Build Jobs

1840.1

</>
/> JDK: oraclejdk7

TEST_SUITE=instrumentation

(1) 1 min 47 sec

1840.2



</>
/> JDK: oraclejdk7

TEST_SUITE=unit

O 1 min 51 sec

Continuous Integration





Pull Request #1704 Upgrade SDK library to latest release 2.7.0

Upgrade SDK library to latest release 2.7.0

1993 passed

Commit 4d06913

#1704: Upgrade SDK library to lates

(§ ran for 41 min 26 sec.

about 5 hours ago



Nahuel Barrios authored and committed

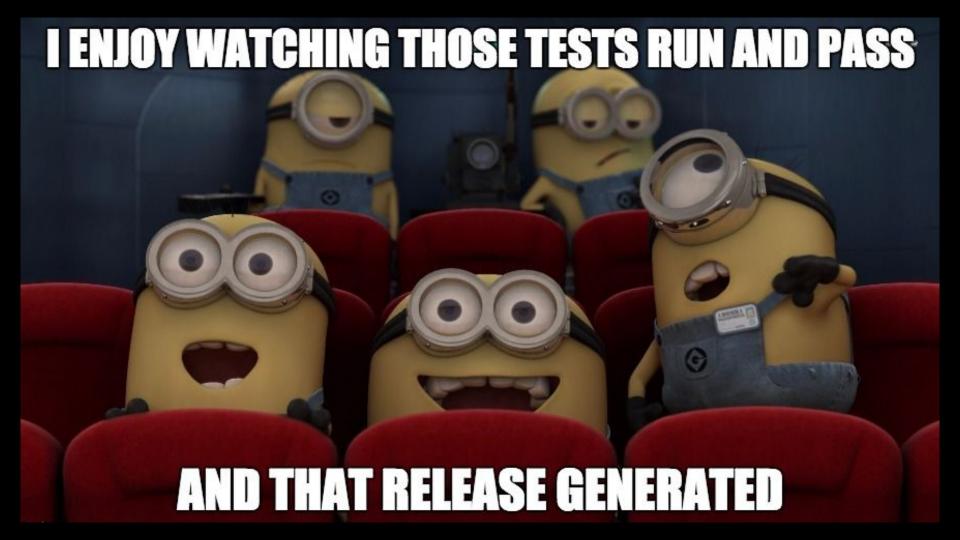
Build Jobs

1	# 1993.1	♦ A A JDK: oraclejdk7	TEST_SUITE=instrumentation	○ 21 min 17 sec
1	# 1993 2	A (/> IDK: oracloidk7	PITEST SUITE=unit	() 20 min 9 sec



Continuous Deployment

- The APK is generated in Travis
- ❖ How?
 - If the last commit to release or master contains [ci deploy].
 - A tag and a release is created in github using as changelog the <u>Changelog.md</u> file.
 - The APK is automatically published to HockeyApp and to the PlayStore in Alpha.





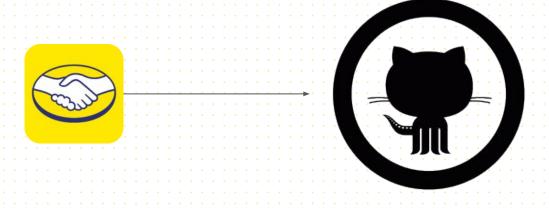
Code Review

- Code standards.
- Improve code quality and documentation.
- Share good practices.
- * Reduce bugs.
- Accept constructive comments.

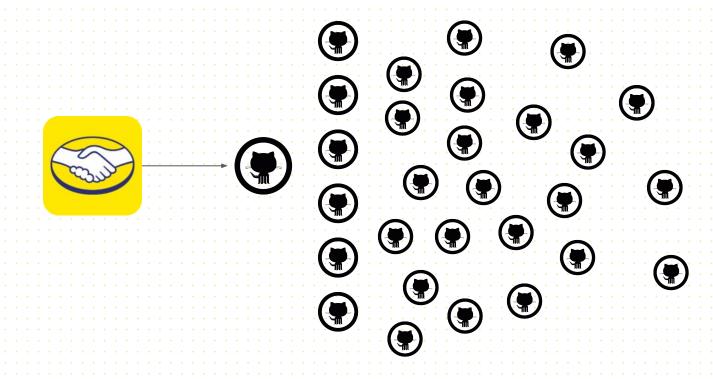


6 Well... how that worked out ??

We had one big-fat-repo



Distributed development



Pull Request of a new feature...

Search version 3.13.1 #2742



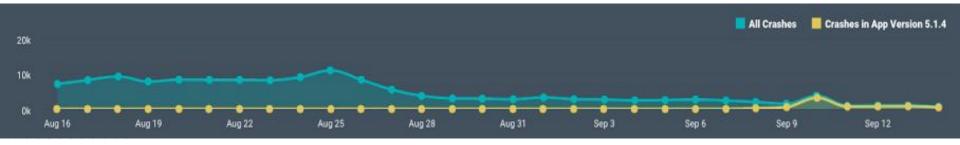
Changes from all commits ▼ 1 file ▼

```
2 gradle.properties
               @@ -14,7 +14,7 @@ meliTestingVersion=3.0.3
  14
          14
         15
               # FFnds
  16
         16
               checkoutVersion = 1.8.1
  17
               -searchVersion = 3.12.0
         17
               +searchVersion = 3.13.1
  18
         18
               vipVersion = 3.13.2-EXPERIMENTAL-+
         19
               homeVersion = 4.12.0
               questionsVersion=4.0.5
```



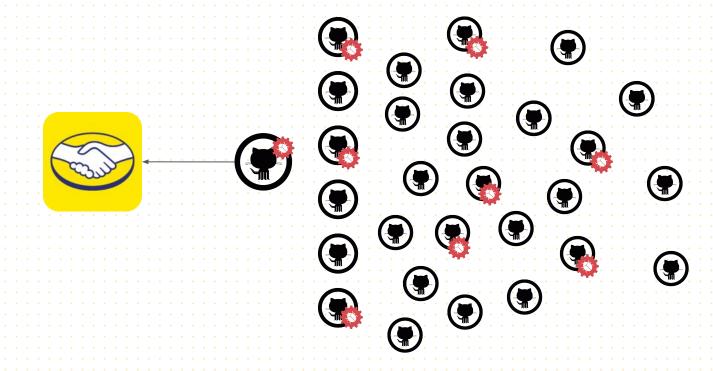
Reduced crashes

App crashes down from ~10.000/day to less than 1000/day

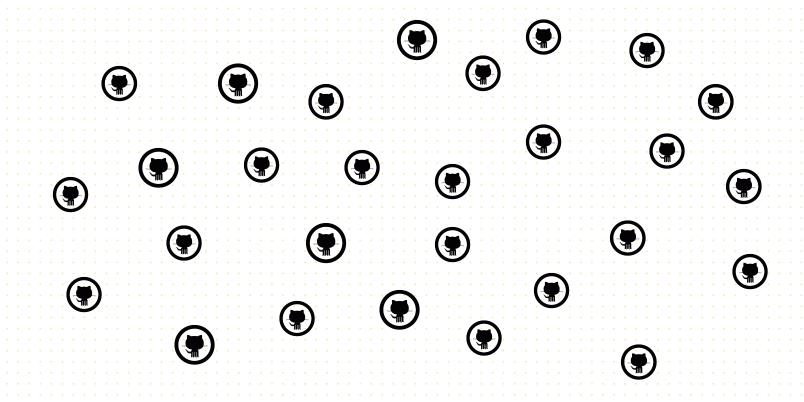


Challenges

Distributed bugs



Evangelize good practices



Mercado Livre Experience

http://mercadolivreexperience.com.br/2016/

cupom AndroidDev 20% desconto tem comida gratis!!



EXPERIENCE

A Universidade Mercado Livre e Developer Conference juntas em um único evento!

17 DE SETEMBRO DE 2016

11 : 19 : 04 : 28

HORA(S) MINUTO(S) SEGUNDO

