Code your infrastructure: Elo success story

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Brazil

5th largest country in the world

207 million population

US$ 1.796 trillion Gross Domestic Product

12.6% unemployment rate

8th largest Economy in the world
2017 Brazilian Cards market

- $400 Billion in payments volume
- 13 Billion transactions
- +7.5% Growth from 2016 to 2017
- 33% Share of PCE (personnal consumption expenditure)
- 63% Credit cards share in total transactions
- 37% Debit cards share in total transactions

Sources: Monitor ABECS 2017
Created in 2011

100% Brazilian

Shareholders

Bradesco

Itaú

Caixa
total cards (million)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>37</td>
</tr>
<tr>
<td>2014</td>
<td>57</td>
</tr>
<tr>
<td>2015</td>
<td>78</td>
</tr>
<tr>
<td>2016</td>
<td>103</td>
</tr>
<tr>
<td>2017</td>
<td>115</td>
</tr>
</tbody>
</table>

evolution of our payment network
purchase volume (US$ billion)
evolution of our payment network

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (US$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>5.9</td>
</tr>
<tr>
<td>2014</td>
<td>12.5</td>
</tr>
<tr>
<td>2015</td>
<td>18</td>
</tr>
<tr>
<td>2016</td>
<td>26.9</td>
</tr>
<tr>
<td>2017</td>
<td>38.1</td>
</tr>
</tbody>
</table>
evolution of our brand

Number of transactions (million)

- 2012: 36.3
- 2013: 217
- 2014: 523
- 2015: 846
- 2016: 1,238.3
- 2017: 1,951.6
acceptance network (million)

Evolution of our payment network:
- 2012: 0.78 million
- 2013: 1.16 million
- 2014: 1.45 million
- 2015: 2 million
- 2016: 2.9 million
- 2017: 4.5 million
- 2018: 6 million

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Acceptance network

2018

99% of coverage

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International acceptance with Discover Global Network

- 190 countries
- 42 Million merchants
- 1.9 Million ATMs
Elo’s tokenization platform enables OEM and Issuer wallets...

...and digital payments

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Elo as a service

API Platform

Become the most open platform in Brazil

Connecting issuers, fintechs, startups and merchants

Top of mind for developers community.

Agile product development process

New experience for consumers

APIs
Platform and Specs

Dev Site
Tools and templates to help the implementation

Community
Close relationship with startup ecosystem and developers community

Service by Slack
Service channel to support the development and integration process

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Products
A complete portfolio

<table>
<thead>
<tr>
<th>Debit</th>
<th>Credit</th>
<th>Specialized</th>
<th>Prepaid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumer</strong></td>
<td><strong>Debit</strong></td>
<td><strong>Basic</strong></td>
<td><strong>Agro</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Mais</strong></td>
<td><strong>Construcard</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Grafite</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Nanquim</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Business</strong></td>
<td><strong>Debit</strong></td>
<td><strong>Small business</strong></td>
<td><strong>Prepaid</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Large business</strong></td>
<td><strong>consumer</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Travel</strong></td>
<td><strong>BNDES</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Purchase</strong></td>
<td><strong>Bill</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>payments</strong></td>
</tr>
</tbody>
</table>
**benefits**

**Mais**
- Enhanced awards
- Free Wi-Fi
- Home assistance
- Car assistance

**Grafite**
- Enhanced awards
- Free Wi-Fi
- Travel insurance
- Home assistance
- VIP Lounge
- Car assistance

**Nanquim**
- Enhanced awards
- Free Wi-Fi
- Travel insurance
- Purchase protection
- VIP Lounge
- Extended warranty
- Home assistance
more color

⭐⭐⭐⭐
first cards with colored border in Brazil
Strong presence in merchants and destinations
Sponsorship of the world’s most famous Carnival

Rio de Janeiro’s Carnival
soccer

Official sponsor of Brazil’s Cup

Advertising boards around the field
entertainment and concerts

- Exclusive pre-sale for Elo’s card holders
- 8 artists
- Novos Baianos Tour
- Elton John/James Taylor
- Paul McCartney
- Gorillaz
- Pearl Jam
- Ozzy Osbourne
- Roger Walters

...and many more!
Brazilian Travel Destinations
international promotions

exclusive offers

• Spend & Get
• USA and Argentina
Orlando

Brazilian travel destinations

Spend

$150

Get

$50

In restaurants, shops and entertainment
Buenos Aires

Brazilian travel destinations

Restaurants in Puerto Madero
Buy one bottle of wine and get another one

Galerias Pacífico
One bottle of wine every 1,500 pesos spent

Duty Free
Exclusive offers
Brazilian travel destinations

Restaurants
Get a bottle of wine on selected restaurants

Duty Free
Gifts and special offers on shops
Growth challenge for Infrastructure
Problems to solve...

- Overload of virtual servers
- Provisioning up until 45 days
- High maintenance cost
- Decentralized control in the OS management, hardening and audit
- Human intervention in basic tasks
- Limited growth of basic infrastructure
New architecture 2016...

- Redesign of the architecture in 2015
- Hyperconverging, modular and scalable infrastructure
- Reduction of 30% on the recurrent cost
- No 'lock-in' to a vendor
- Freedom for decision-making in the hands of Elo
We knew where we wanted to go, but how?
Strategic Partnership

Respond to demands
Automate to conquer, delivering strategic projects in record time.

Simplified tool management
Portal and efficient deploy control

Implementation strategies
Tools such as Satellite, Ansible and OpenShift for policies, auditing, inventory, automation and reports

Specialized guidance
Red Hat Solution Architect and TAM guidance, working proactively to prevent issues and keep a stable platform
How did we solve it?

Overload of virtual servers:

- Tuning
- Performance
How did we solve it?

Provisioning up until 45 days:

- Automated deployments with Ansible and Satellite
How did we solve it?

High maintenance cost:

- Pet vs. Cattle Principle
- OpenShift Container Platform
How did we solve it?

Human intervention in **basic** tasks:

- Infrastructure as a Code
How did we solve it?

Limited growth of basic infrastructure:

- Automated deployments with **Ansible** and **Openshift**
Architecture evolution

RED HAT MANAGEMENT
IDM ↔ IDM
Management
Auth
Policies

RED HAT SATELLITE
Packages
Repositories
Docker Containers

RED HAT ANSIBLE Tower
Hardware — Network Devices
Operation System — OpenShift

RED HAT OPENSHIFT Container Platform
PaaS

CLOUD

RED HAT GLUSTER STORAGE
Virtual / Baremetal
Why Ansible?

Ansible is the **smoothest** way to automate your IT!

**SIMPLE**
- OS implementation
- Hardening and compliance
- Software installation
- Punctual Adjustments

**POWERFUL**
- Automated deployment
- Configuration management
- Installation of backup/monitoring agents
- Basic administration of environment

**AGENTLESS**
---
- hosts: webservers
  vars:
    http_port: 80
    max_clients: 200
    remote_user: root
  tasks:
  - name: ensure apache is at the latest version
    yum: name=httpd state=latest
  - name: write the apache config file
    template: src=/srv/httpd.j2 dest=/etc/httpd.conf
    notify:
      - restart apache
  - name: ensure apache is running (and enable it at boot)
    service: name=httpd state=started enabled=yes
  handlers:
  - name: restart apache
    service: name=httpd state=restarted
---

Simple and powerful automation tool!
WHAT IS ANSIBLE TOWER?

Complementary solution that provides a web user interface and operation functions in a corporate environment, with a friendly Dashboard to administrate all of Ansible’s components, besides monitoring resources and store data for auditing.

- Detailed view of all automation
- Follow up of execution tasks
- Controlled execution test
- Workflow creation
- User credential
¿Algún vez se puso a pensar cómo sería su vida hoy sin una tarjeta de crédito?
THANK YOU

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