From exploratory models to production
About B2W

**History**
Created in 2006 with the merger of the 3 leading e-commerce companies in Brazil
No cash position in day 1

**Brands**
4 complementary brands: Americanas.com, Submarino, Shoptime and SouBarato
Different positioning and low customer overlap

**Sales Platform (1P + 3P)**
Hybrid model: best balance between 1P & 3P
1P: High traffic, volume, private label, strategic categories and suppliers
3P: Long tail assortment, margin and qualified sellers

**Tech Enablers & Supply Chain**
Acquisition of best in class companies (10 tech enablers & 3 last mile providers)
11 DCs +200 hubs
98% of delivery through proprietary platform

**User Experience**
#1 in Customer Service reputation
Main awards of customer service
Cross device personalization using high scale analytics
About B2W

B2W invested over the last 10 years to build the dominant digital platform in Brazil

- Market Share: 27.7%¹
- 9.7K Sellers on the Marketplace
- 4.6MM items (~90% via Marketplace)
- Traffic: 2 Bn (total visits in 2017), 62.7% from mobile (4Q17)
- 15MM active clients (+1MM last twelve months)
- 4 complementary brands (low overlap of customers)
- Highest customer service reputation
- Proprietary Supply Chain and Digital Platform

¹. Source: Ebit (4Q17)
About B2W

The Digital Platform that connects People, Businesses, Products and Services.

Total GMV (R$)

<table>
<thead>
<tr>
<th>Year</th>
<th>GMV (Bn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>0.1</td>
</tr>
<tr>
<td>2015</td>
<td>0.9</td>
</tr>
<tr>
<td>2016</td>
<td>2.2</td>
</tr>
<tr>
<td>2017</td>
<td>4.5</td>
</tr>
<tr>
<td>2018E</td>
<td>5.0</td>
</tr>
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</table>

Market share (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>18%</td>
</tr>
<tr>
<td>2017</td>
<td>35%+</td>
</tr>
<tr>
<td>2018E</td>
<td>50%+</td>
</tr>
</tbody>
</table>

Source: 2017 results from ri.b2wdigital.com, Ebit (4Q17)
Problem Statement

Growing as a digital platform increases the complexity and the scale of problems to be addressed.

Only AI and ML at scale can keep us at the edge.

How can we abstract the complexity in the creation of an AI application?
To empower data science teams to deliver AI applications, simplifying the process of exploration and modeling.
## Marvin DASFE pattern

<table>
<thead>
<tr>
<th>Data</th>
<th>Algorithm</th>
<th>Serving</th>
<th>Feedback</th>
<th>Evaluate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data acquisition and cleaning</td>
<td>Model training</td>
<td>Model prediction</td>
<td>Model training</td>
<td>Model evaluation</td>
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<tr>
<td>Training preparation</td>
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<tr>
<td>Prediction preparation</td>
<td></td>
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</tbody>
</table>
Artificial Intelligence

**Statistical Models**
- Forecast demand
- Fraud detection
- Ad spend optimization

**Natural Language Processing**
- Feature extraction from product description
- Product category classification

**Computer Vision**
- Image matching to find associated products
Open Source Release

- In 2017 Marvin was published as an Open Source project
- Partnerships: MIT, UFSCAR (São Carlos, São Paulo), Cloudera, Apache (Open Source certification)
- Presented at Papis 2017, MIT, Big Data Week (São Paulo), Saturn (Carnegie Mellon, Software Arch., Maio)
Marvin general features

• Training pipeline REST interface
• Experiment and artifacts versioning
• Engine project scaffold generator
• Data sampling and impor CLI
• Engine test framework (unit, functional, dryrun)
• Toolbox: Python support
• Artifacts persistence layer: HDFS support
• Remote provisioning and deployment
Fork me on GitHub.com/marvin-ai

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