RosaeNLG

2021 - 2nd meetup

4 JANVIER 2021 at 09:00

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A KEY PLAYER IN EUROPEAN EQUITIES

EXANE BNP PARIBAS

Exane BNP Paribas is a leading European equities business. We offer a high quality execution platform with full electronic trading capability. Our Research product is renowned for its depth and quality and is reinforced by experienced, top-ranked Sales & Specialist Sales teams as well as a dedicated corporate access service.

No.1	**No.1**	**€330 bn**	**250**
Developed Europe Research*	Industry Research*	in Pan-European volumes traded (in 2019)	Analysts, sales, sales-traders and traders

*2020 All-Europe Institutional Investor Survey.

NO. 1 IN INDUSTRY RESEARCH

1st ALL-EUROPE RESEARCH   1st SALES   1st SPECIALIST SALES

Agenda

The project goals

Functional ecosystem

Technical architecture

The data, the rules, RosaeNLG output

The final product

Next steps

Q & A

The project goals

1. **Produce automated comments** of company financial statements data

2. **Build a core knowledge base** of financial analysis rules and apply them over a large set of industrial firms

3. **Use a multilingual corpus** of financial texts, rather than translating each document

Our first NLG project is promising

Exane BNP Paribas Functional ecosystem

1. **CUBE** our client web site

2. **SAKE** the financial database, over 30 years of data, for ~800 European and US firms

3. **La Grid** a matrix of 1,200 financial indicators for each firm

A quick demo

Architecture

Rosae NLG servers:

Rosae Server (JavaScript) ← Pug rules ← Desknotes Modules (Python)

Rosae server (Python, Flask)

Batch

eSake

Texts
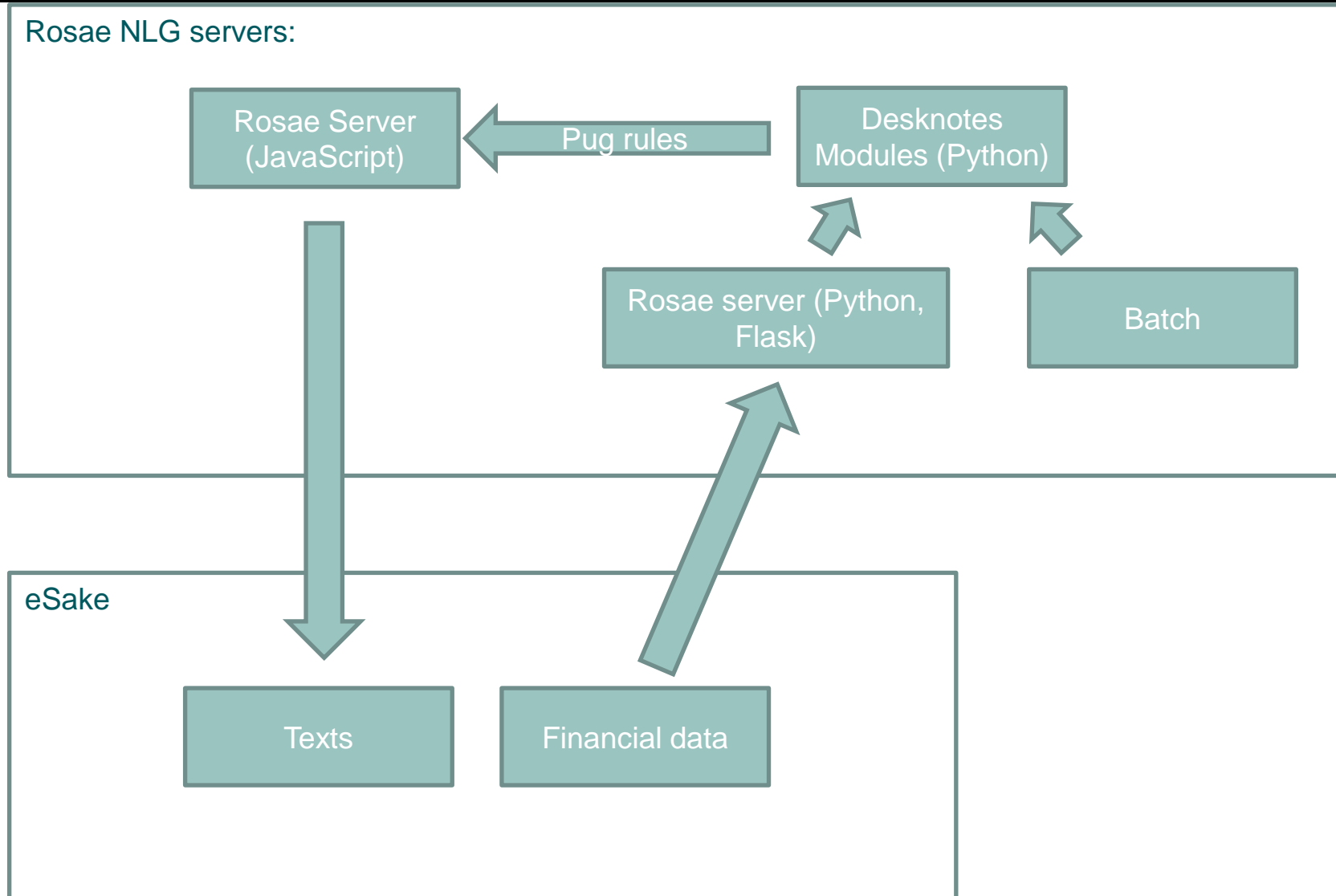
Financial data

The data

Step by step

1. Data are accessed via API on the Sake servers and loaded into Python Panda matrices

2. We calculate series min/max, averages, medians and other financial ratios that are used in
    our rules model

```python
211 def getNbConsecutiveNegativeYears(df, i, timeSpan, vis):
212     indicators = ['Result','ROCE', 'EBITDA', 'CAPITAL_INCR',
213                   'EBITDA_CONVERSION_IN_FREE_CASH_FLOW', 'CH
214                   'FirstEstimated','LastPublished','LastEsti
215     indic = indicators[i]
216     colProv = df[indic]
217     m = len(colProv)
218     colonne = colProv[m-vis-timeSpan : m-vis]
219     nb = 0
220
221     for val in colonne:
222         if type(val) != str :
223             if val < 0 :
224                 nb += 1
225             else:
226                 nb = nb
227     return nb
228
```

3. The data surfaces is then fed via a json object to the Rosae NLG engine to mix with the
    PUG file

The rules

Step by step

1. Rules were expressed by experienced analysts and defined in a pseudo code as:

   IF % of (Nb of Years of FCF >0) > 80% AND Last Year FCF < 0 AND 1st Etimated FCF > 0 THEN

   Despite having increased in the past, FCF was down in the last 2 years, but we expect it to recover in (FCF1st estimated year).

2. Rules are then written in the PUG file:

```
648 mixin FCFFlowGrowth
649   - var val20 = 0.20 ;
650   - var val80 = 80 ;
651   - var pct200 = 200;
652
653   if stock.Pct_PosFCFLT >= val80
654     if stock.Last2YearsNeg == 2
655       if stock.FirstEstimatedFCF > 0
656         | Despite having #[+FCFregularly] #[+FCFincreased] in the past, FCF was down in the last 2 years,
657         | but we expect it to recover in #{stock.FirstEstimated}.
658         recordSaid('FlowGrowthPositive')
659
```

Where you can also see the synonyms #[+FCFregularly] and injection of the data from the frames #{stock.FirstEstimated}

```
177 mixin FCFregularly
178   synz
179     syn
180       | regularly
181     syn
182       | repeatedly
183     syn
184       | frequently
185     syn
186       | recurrently
187
```

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# The output

1. Output is batched in XML files

Valuation

The company uses limited financial leverage. Liabilities and commitments other than debt account for 24 % of the EV (The stake in Volkswagen, which is Porsche SE's primary and only material asset, is consolidated by the equity method. Hence EV multiples are irrelevant.).

Growth & Returns

The company delivered 3.2 % sales growth in the past 5 years on average, mainly driven by organic growth. Free Cash Flow was very volatile over the last 10 years from a minimum of c-8864 in year 2020 to a maximum of c3165 in year 2022. The group creates value with a ROCE of 21.3 %, significantly above its cost of capital 10 %.

2. Or accessible for a real time refresh via the server API
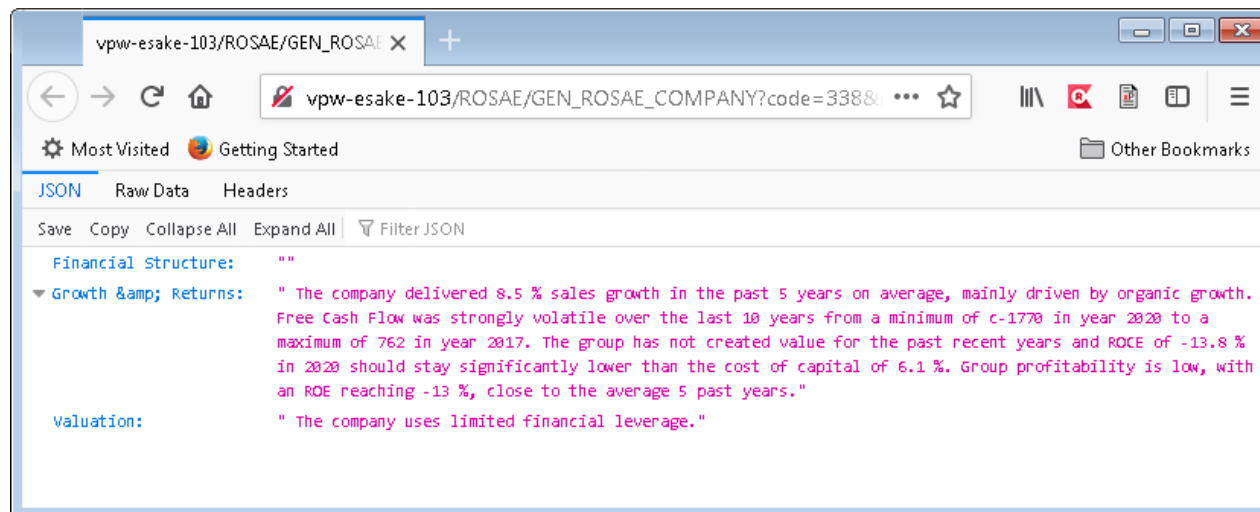
A web site and downloadable document for our clients

Accor =

White label

FINANCIAL HIGHLIGHTS

| Per Share data (EUR)	Dec. 17	Dec. 18	Dec. 19	Dec. 20e	Dec. 21e	Dec. 22e
EPS restated, fully diluted	1.50	1.27	0.89	(1.79)	(0.33)	0.70
% change	+46.4%	-15.3%	-30.3%	NC	+81.6%	NC
Book value (BVPS)	18.8	22.4	25.2	22.4	22.0	22.8
Net dividend	1.05	1.05	1.05	0.00	0.00	0.49
Pay out	70.1%	82.7%	118.6%	0.0%	0.0%	70.0%
Valuation metrics	Dec. 17	Dec. 18	Dec. 19	Dec. 20e	Dec. 21e	Dec. 22e
P/E (x)	27.0	34.2	42.9	NC	NC	43.2
Net yield (%)	2.6%	2.4%	2.8%	0.0%	0.0%	1.6%
FCF yield (%)	6.2%	1.1%	3.6%	-8.7%	-1.8%	2.2%
EV/Sales (x)	3.20	3.81	2.91	4.65	3.16	2.63
EV/EBITDA (x)	14.3	19.3	14.3	NC	41.9	15.4
EV/EBITA (x)	17.9	25.0	23.7	NC	NC	29.4
Income statement (EURm)	Dec. 17	Dec. 18	Dec. 19	Dec. 20e	Dec. 21e	Dec. 22e
Sales	2,773	3,610	4,049	2,146	3,193	3,759
Organic sales growth	+7.9%	+8.8%	+3.8%	-52.0%	+64.5%	+28.7%
Restated EBITDA	622	711	825	(347)	241	640
Restated EBITDA margin	22.4%	19.7%	20.4%	-16.2%	7.5%	17.0%
Restated EBITA	496	549	497	(521)	(18)	335
Restated EBITA margin	17.9%	15.2%	12.3%	-24.3%	-0.6%	8.9%
Net Profit (restated)	432	367	241	(485)	(89)	191
ROE	7.9%	5.8%	3.5%	-8.0%	-1.5%	3.1%
ROCE	10.6%	6.9%	5.9%	-9.4%	-0.3%	4.3%
Cash Flow (EURm)	Dec. 17	Dec. 18	Dec. 19	Dec. 20e	Dec. 21e	Dec. 22e
Operating cash flow	1,110	621	749	(390)	204	698
Capex	(189)	(308)	(209)	(140)	(140)	(200)
Free cash flow	762	147	389	(753)	(155)	190
Dividends paid	(163)	(323)	(294)	(282)	0	0
Net debt (EURm)	Dec. 17	Dec. 18	Dec. 19	Dec. 20e	Dec. 21e	Dec. 22e
Adjusted net debt	2,776	2,040	1,912	2,183	2,305	2,083
Net financial debt (cash)	1,889	1,153	785	1,089	1,244	1,055
Gearing	48%	32%	35%	44%	46%	41%
Adj. financial debt / EBITDA	4.5x	2.9x	3.0x	NC	11.9x	4.1x

COMMENTS

Valuation

The company uses limited financial leverage.

Growth & Returns

The company delivered 8.5 % sales growth in the past 5 years on average, mainly driven by organic growth. Free Cash Flow was fairly volatile over the last 10 years ranging between a minimum of -753 in 2020 and a maximum of 762 in 2017. The group has not created value for the past recent years and ROCE of -9.4 % in 2020 should stay significantly lower than the cost of capital of 6.2 %. Group profitability is low, with an ROE reaching -8 %, close to the average 5 past years.

SALES / EBIT MARGIN

SALES / ORGANIC SALES GROWTH

EPS CHANGE

EV TO EQUITY BRIDGE
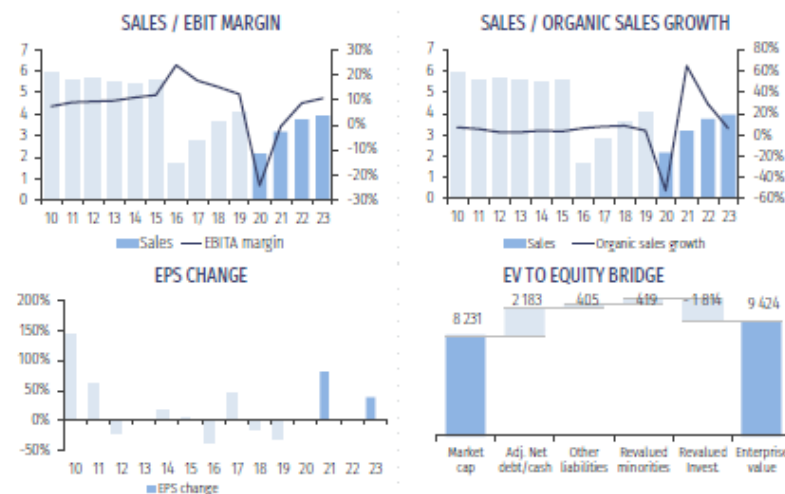
Next steps

Our future developments will include:

1. Adding the comments to our client web site Cube

2. French version, and other European languages

3. Improving our comments, that are far away from replacing analysts expertise

4. Creating other use cases around sales marketing

Q&A

We appreciate your attention!

Happy to answer any questions…

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