

-11,7%

-8,1%

-18,2%

-15,7%

-13,5%

-9,6%

-26,3%

-22,7%

#### Production date: Aprile 6th, 2018 - 18:00 CET

vs FTSE AIM Italia

vs FTSE All-Share

<b>EXPERT SYSTEM</b>		upde	date Italy			FTSE AIM It	Technology	
Rating: BUY	(Hold)		Targe	t Price:	€1,94 (µ	previous € 1,58)	Risk: Medium	(Unchanged)
Stock Performance	1M	3M	6M	1Y	Compa	any Profile		
Absolute	-11,4%	-16,4%	-12,0%	-35,7%	Leader in	the cognitive com	puting and text analy	tics market. Expert

Stock Data (del 05/04/2017)	
Price	€ 1,17
Bloomberg Code	EXSY IM
Market Cap (€m)	41,8
EV (€m)	50,6
Free Float	65,66%
Share Outstanding	35.720.711
52-week high	€ 2,01
52-week low	€1,14
Company Agenda	n.a.

Key Financials (€m)	2017A	2018E	2019E	2020E
Value of production	32,8	36,1	40,4	45,3
EBITDA	1,0	4,3	7,7	10,0
EBIT	-6,5	-3,3	-0,5	1,3
Net Profit	-8,3	-4,0	-2,0	1,8
EPS	n.a.	n.a.	n.a	0,02
EBITDA margin	3,2%	11,9%	18,9%	22,2%
EBIT margin	-19,8%	-9,0%	-1,3%	2,9%

Leader in the cognitive computing and text analytics market, Expert
System offers the most innovative artificial intelligence solutions for
process automation and information management. Through the
Cogito® technology, based on the combination of semantic
understanding and machine learning, Expert System is able to assure
its partners and customers the acquisition of strategic knowledge to
speed up decision-making processes and maximize their profitability:
from customer care to compliance , from the management of risk
profiles to security and intelligence. Expert System has offices in Italy,
France, United Kingdom, Germany, Spain, Canada and the United
States.

#### 1H17 Results and FY18-20F expectations

FY17 results were positive and higher than our estimates up to EBITDA. Due to the higher depreciation and amortization, the EBIT was lower than our forecast, while the net profit was substantially in line with our estimates. FY17 value of production increased by 11% YoY to  ${\ensuremath{\varepsilon}}$  32.8 million (  ${\ensuremath{\varepsilon}}$  29.2 million in FY16). We forecast a substantial stability. There were two growth drivers: the first one concerns foreign countries, and in particular the US (+ 25%) and UK (quadrupled sales) markets; the second one concerns the evolution of the sales mix towards a recurring component with clear advantages in terms of visibility of revenues and margins. The Ebitda returned positive for  $\pounds$  1 million (it was negative for € 2.2 million in FY16). We expected a slight improvement. Moreover, there were non-recurring costs of € 0.7 million linked to the reorganization underway (the adjusted Ebitda would have been of € 1.7 million). The improvement of the Ebitda is also due, to the driving of foreign markets and the changed sales mix, also to the rationalization of the total costs that resulted stable, while expressing an increase in the personnel component of 4.5%.

#### Valuation Update

Main Ratios	2017A	2018E	2019E	2020E
EV/EBITDA	n.m.	11,8 x	6,6 x	5,0 x
EV/EBIT	n.a.	n.a.	n.a.	38,4 x
P/E	n.a.	n.a.	n.a.	23,2 x
NFP/EBITDA	8,4 x	3,0 x	1,7 x	1,1 x

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We value Expert System throghthe DCF and multiple methods. Each valuation methodology is able to capuring one or more aspects of a company's life: economic equity, cash flow and a comparison of listed company operating in the same sector. DCF equity value results of  $\in$  60,8 million. Multiple method results of 77,9 million (net of 25% discount to take account of lower liquidity). The average equity value of  $\in$  69,3 million is our targe price:  $\le$ 1,94 per share (from  $\le$ 1,58 of our note of October 9th, 2017). Unchanged our BUY rating and our medium risk. We note how at the average value indicated ( $\le$  69.3 mln), Expert System trades with a 56% discount compared to the industry average EV / Sales 2018 (2.6x versus 6.0x in the sector) and a 50% discount to the industry average EV / EBITDA 2018 (12.1x versus 24.1 average of the sector).



# Summary

1. FY	17 Results	. 3
1.1 R	esults vs our forecast	. 3
1.2 2	018-20F Business plan and our forecast	. 4
2. Ec	onomics & Financials	. 8
3. Va	luation	. 9
3.1	DCF valuation	. 9
3.2	Ratio valuation	10
3.3	Final considerations	11



## 1. FY17 Results

## 1.1 Results vs our forecast

FY17 results were positive and higher than our estimates up through EBITDA. Due to the higher depreciation and amortization, EBIT was lower than our forecast, while net profit was substantially in line with our estimates.

P&L (Data in € mln)		2017			2016		
	Actual	Forecast	% Ch	Actual	% Ch		
VALUE OF PRODUCTION	32,8	29,8	10,1%	29,6	11,0%		
Total Costs	(31,8)	(31,9)	-0,4%	(31,8)	0,0%		
EBITDA	1,0	(2,1)	n.m.	(2,2)	n.m.		
Ebitda margin %	3,2%	n.m.		n.m.			
Depreciation & Amortization	(7,5)	(6,4)	17,2%	(6,3)	19,0%		
EBIT	(6,5)	(8,5)	n.m.	(8,5)	n.m.		
Ebit margin %	n.m.	n.m.		n.m.			
NET INCOME	(8,3)	(8,7)	-4,6%	(8,1)	n.m.		

Fig. 1 – FY17A results vs our forecast and vs FY16

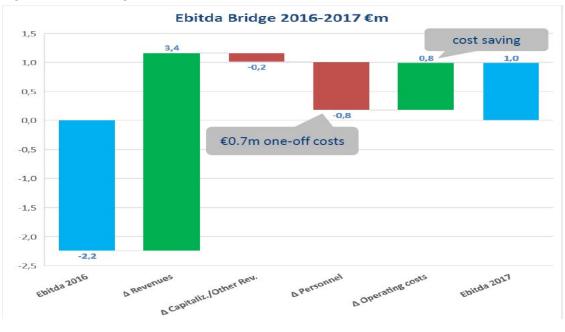
Source: Expert System and Integrae SIM

FY17 value of production increased by 11% YoY to  $\in$  32.8 million ( $\notin$  29.2 million in FY16). We forecast substantial stability. There were two growth drivers: the first concerns foreign markets, and in particular the US (+ 25%) and UK (sales quadrupled); the second concerns the evolution of the sales mix towards a recurring component with clear advantages in terms of visibility of revenues and margins. Compared to FY16 we underline two important aspects of business activities:

- continuous growth on foreign markets, which represented 63% of turnover against 61% in FY16;
- continuous growth of annual licenses, which represented 41% of turnover against 28% in FY16.

The EBITDA became positive again for  $\leq 1$  million (it was negative for  $\leq 2.2$  million in FY16). We expected a slight improvement. Moreover, there were non-recurring costs of  $\leq 0.7$  million linked to the reorganization underway (adjusted EBITDA would have been  $\leq 1.7$  million). The EBITDA improvement is due to the stimulus from foreign markets and the changed sales mix, as well as the rationalization of total costs that resulted stable, while posting an increase in the personnel component of 4.5%.





#### Fig. 2 – EBITDA Bridge

Source: Expert System

EBIT improved by  $\notin$  2 million ( $\notin$  -6.5 million against  $\notin$  -8.5 million) after amortization, depreciation, write-downs and provisions for  $\notin$  7.5 million due to higher investments in technological development, as well as amortization of the consolidation difference from the acquisition for  $\notin$  2.3 million.

The  $\notin$  2 million improvement in EBIT did not benefit net income, which remained negative for  $\notin$  8.3 million ( $\notin$  8.1 million in FY16). The reasons are net losses on exchange rates of  $\notin$  1.7 million (profit of  $\notin$  0.3 million in FY16) and the performance of the euro / dollar exchange rate which affected the financial receivables that the parent company has with subsidiaries (therefore, purely an accounting item not resulting in cash outflow).

Net financial debt improved to  $\notin$  8.8 million (from  $\notin$  11.1 million in FY16) mainly due to the  $\notin$  10 million capital increase and the decrease in short-term net financial debt for  $\notin$  0.8 million.

On 3 August, the Company obtain the qualification of Innovative SME from Trento Chamber of Commerce. Thanks to this qualification, which recognizes the Company's broad propensity towards technological innovation in the evolution of its business model, investors will benefit from tax incentives provided by the "2017 Stability Law".

## 1.2 2018-20F Business plan and our forecast

During the presentation to the financial community of 26 March, Expert's management reiterated its commitment to continue the internationalization of the group particularly in the United States but also in Europe, where the initial results of the growth strategy became evident in 2017. Moreover, management expects a further and progressive shift of the revenue mix towards the recurrent component of services and the percentage reduction of the professional services component, including through the creation of new partnerships with leaders in the ICT sector.



During the presentation, Expert's management also provided estimates for the income statement and net financial debt for the years 2018-19F:

Year ended 31 December - €/m	2017	2018	2019
Revenues	25,6	28 <i>,</i> 5 - 30	33 - 34,5
Value of Production	32,8	35 <i>,</i> 5 - 37	39,8 - 41,3
EBITDA	1,0	4,0 - 5,0	7,0 - 8,0
Margin%	3,2%	11,3% - 13,5%	17,6% - 19,4%
EBIT	(6,5)	(3,7) - (2,7)	(1,1) - (0,1)
Margin%	-19,8%	-10,4% -7,3%	-2,8% - 0,2%
Net Earning	(8,3)	(4,6) - (3,9)	(2,3) - <mark>(</mark> 1,6)
Net Financial Position	8,8	13,6 - 12,9	13,0 - 12,0

## Fig. 3 – Company forecasts

Source: Expert System

The commercial strategy will continue to aim towards a presence of products and customers characterized by broad potential for development, in particular in the banking sector and where Expert System has already successfully implemented projects and case histories. The mix between market development and cost rationalization policy should allow Expert System to post progressive recovery of margins in the coming years, after a necessary period of considerable expansion, which has allowed the Company to position itself as a global leader in artificial intelligence applied to cognitive calculation.

We emphasize in this regard that Expert System is the only European company to have been included simultaneously in the "Magic Quadrant for Insight Engines" by Gartner and in Forrester Wave's Big Data Analytics Platforms.

The results of FY17, better than our estimates, allow us to upgrade the 2018-19F estimates (in line with management's expectations presented on 26 March).

Data in € mln		FY18F	:	FY19F			FY20F		
	Old	New	% Ch	Old	New	% Ch	Old	New	% Ch
Production value	31,6	36,1	14,2%	35,8	40,4	12,9%	39,5	45,3	14,6%
Ebitda	3,2	4,3	34,2%	5,9	7,8	31,5%	9,2	10,0	9,2%
Ebitda margin	10,1%	n.m.		16,5%	19,2%		23,3%	22,2%	
Ebit	-3,3	-3,3	n.m.	-0,6	-0,5	n.m.	0,8	1,1	42,3%
Ebit margin	n.m.	n.m.		n.m.	n.m.		2,0%	2,5%	

#### Fig. 4 – Old and new 2018-20 forecast

Source: Expert System and Integrae SIM



The Company's forecasts for 2018-19F aim to further improve the group's geographic diversification and reap the benefits of the significant growth process that was undertaken in the last two-three years.

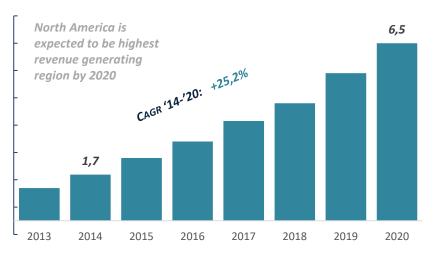
Thus, growth is based in particular on the development of foreign markets, where the Company believes that there are large growth margins due to both the size of the markets (larger than Italian market) and the growth rates expected by the largest and most important analysts in the industry.

We believe that the progressive creation of products and solutions and their replicability on various market segments can also lead to a significant increase in the percentage of software and maintenance licenses that will affect the recurring component of turnover as well as the average business risk.

As we wrote in our note of 9 October 2017, FY17 was a transition year, but the initial results of the investments made in recent years started to benefit profitability. From 2018F, and even more in 2019-20F, we believe that the Expert System group may be able to post sustainable profitability (EBITDA margin) similar to that of the recent past and above 20%. Our estimates for 2020F show the EBITDA margin reaching 22.2%.

We also estimate an improvement in operating cash flow linked to the reduction in average payment times on foreign markets. Moreover, due to the completion of the integration process for foreign branches, we also believe that the group could benefit from significant economies of scale, benefiting both gross and net margins.

Our estimates are also based on the expectations of growth in the artificial intelligence market relative to Text Analytics. According to estimates of the World Text Analytics Market - Opportunities and Forecasts, 2013-2020, CAGR 2014-20F is expected to be 25.2%, with the market expected to reach US \$ 6.5 billion in 2020F (US \$ 1.5 billion in 2014).



## Fig. 5 – Text Analytics market

## GLOBAL TEXT ANALYTICS MARKET (\$US BN)

Source: World Text Analytics Market – Opportunities and Forecasts, 2013-2020



We believe that the widespread adoption of cognitive and artificial intelligence systems in a wide range of industries worldwide will drive estimated revenues of US \$ 47 billion in 2020 (US \$ 8.0 billion in 2016). The sectors that made the largest investments in cognitive systems in 2016 are banking and retail, followed by healthcare and manufacturing (these four sectors generated more than half of the revenue). North America (USA and Canada) is by far the region with the largest spending in cognitive computing worldwide, with 2016 sales close to \$ 6.2 billion. Europe, the Middle East and Africa (EMEA) will remain the region with the second largest global spending including through 2020F. Therefore, Expert System has decided to invest heavily in the US. We are convinced that Expert System can be one of the leaders in this sector, characterized by forecasted strong growth.

Our estimates for 2018-20F are based on the following assumptions:

- Sales force: strong focus on foreign markets, especially the United States and Germany. In order to strengthen the Group's position and increase market penetration, we expect the indirect sales force dedicated to COGITO's sales activities to third-party distributors to increase;
- Costs: We estimate a significant increase in personnel costs (direct sales). R&D in the coming years will focus on standardization of products in order to reduce integration activities;
- Investments: We expect € 23.5 million of total investments will be for R&D during the period 2018-23F, in order to improve the quality of other languages (e.g., Mandarin, Japanese and Korean) and continue the development of Cogito and its characteristics. In addition, we do not exclude the possibility of future acquisitions in order to increase the customer base and / or enter new markets.



## 2. Economics & Financials

## Fig. 6 – FY16 and 2017-19 forecast

•					
P&L (€/000 data)	2016A	2017A	2018F	2019F	2020F
Total Sales	23.367	26.136	29.011	33.943	39.713
VALUE OF PRODUCTION	29.553	32.808	36.088	40.419	45.269
Total Costs	(31.798)	(31.762)	(31.793)	(32.760)	(35.224)
EBITDA	(2.245)	1.046	4.295	7.659	10.046
Ebitda margin %	-7,6%	3,2%	11,9%	18,9%	22,2%
Depreciation & Amortization	(6.304)	(7.542)	(7.550)	(8.202)	(8.727)
EBIT	(8.549)	(6.497)	(3.255)	(543)	1.318
Ebit margin %	-28,9%	-19,8%	- <i>9,0</i> %	-1,3%	2,9%
NET INCOME	(8.126)	(8.339)	(4.000)	(2.000)	1.800
			_		
A&L (€/000 data)	2016A	2017A	2018F	2019F	2020F
Total Assets	22.557	21.562	20.500	17.500	17.000
Working Capital	11.683	13.137	14.336	15.282	16.123
Total Provisions	(6.703)	(6.634)	(6.500)	(6.600)	(6.750)
INVESTED CAPITAL	27.537	28.065	28.336	26.182	26.373
Equity	16.437	19.276	15.276	13.276	15.076
Net Debt	11.100	8.789	13.061	12.906	11.297
TOTAL FUNDS	27.537	28.065	28.336	26.182	26.373
Cash flow (€/000 data)	2016A	2017A	2018F	2019F	2020F
Net cash flow from Operating activities	(4.613)	(5.879)	(820)	2.414	4.362
	5.383	7.490	. ,		
Cash flow from Financing activities Net Increase / (Decrease) in Cash	5.383 1.495	7.490 2.311	(4.225) (4.272)	(3.000) 156	(3.500) 1.608
			( <i>)</i>		
Cash at the beginning of the period	(12.595)	(11.100)	(8.789)	(13.061)	(12.906)
Final cash position	(11.100)	(8.789)	(13.061)	(12.906)	(11.297)

Source: Expert System and Integrae SIM forecasts



## 3. Valuation

## 3.1 DCF valuation

The results of the DCF method are a function of estimates and variables, including business visibility. Visibility that, in the case of Expert System, allows the time horizon to be extended through 2023F, when the profitability of the investment projects will be fully visible. For this reason, the DCF method allows us to capture some aspects of the business that the multiples analysis would not be able to approximate.

Wacc calculation	
Risk Free Rate (Bank of Italy - average	1,26%
Market Premium (Damodaran)	8,40%
Beta Unlevered	0,82
Tax Rate (Ires + IRAP)	27,90%
D/E (average)	40,34%
Beta Relevered	1,22
Alpha (specific risk)	2,50%
Ке	14,01%
Wacc	9,23%
с	

Source: Integrae SIM

Fig. 8 – I	OCF Model
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Cash Flow	2018	2019	2020	2021	2022	2023	TV
EBIT	- 3.255	- 543	1.318	3.543	6.185	8.041	
Operating Taxes	908	152	(368)	(989)	(1.726)	(2.243)	
NOPLAT	(2.347)	(392)	951	2.555	4.460	5.797	
Depreciations	7.550	8.202	8.727	9.286	9.880	10.275	
ΔNWC	(1.199)	(945)	(842)	(1.935)	(2.167)	(1.500)	
Investments	(4.500)	(4.500)	(4.000)	(3.500)	(3.500)	(3.500)	
FCFO	(496)	2.365	4.836	6.406	8.673	11.073	81.065
Discounted FCFO	(454)	1.982	3.711	4.500	5.578	6.520	47.733
FCFO actualized	21.837						
TV actualized DCF	47.733						
Enterprise Value	69.570						
NFP (2017)	(8.789)						
Equity Value	60.781						

Source: Integrae SIM

The above data and assumptions results in an equity value of € 60.8 million.



				WAC	C			
		7,73%	8,23%	8,73%	9,23%	9,73%	10,23%	10,73%
	2,5%	96,1	86,4	78,3	71,4	65,5	60,3	55,7
	2,0%	89,0	80,6	73,5	67,4	62,0	57,4	53,2
	1,5%	83,0	75,7	69,4	63,9	59,0	54,8	51,0
TV	1,0%	77,9	71,4	65 <i>,</i> 8	60,8	56,4	52,5	48,9
	0,5%	73,5	67,7	62,6	58,1	54,0	50,4	47,1
	0,0%	69,7	64,4	59,8	55,6	51,9	48,5	45,5
	-0,5%	66,3	61,5	57,3	53,4	50 <i>,</i> 0	46,8	44,0

Source: Integrae SIM

### 3.2 Ratio valuation

Our sample is made up of companies operating in the same sector as Expert System, but with a higher capitalization.

We excluded all four indicators for 2017 from the calculation of equity value, as they are meaningless in terms of financial value.

Company		EV/Sa	les			EV/Ebi	tda			EV/E	bit			P,	/E	
	2017F	2018F	2019F	2020F	2017F	2018F	2019F	2020F	2017F	2018F	2019F	2020F	2017F	2018F	2019F	2020F
Ellie Mae Inc.	6,9	5,7	4,8	4,1	23,4	22,0	16,5	13,4	33,3	37,3	24,5	18,2	55,3	52,7	36,6	31,4
Imperva Inc.	3,5	3,0	2,6	2,4	24,6	15,9	13,0	10,4	32,2	19,3	15,7	12,5	40,8	29,2	24,9	23,9
Splunk Inc.	8,5	6,7	5,4	4,4	68,4	46,5	33,6	22,9	92,3	57,9	38,8	26,2	137,4	85,2	59,6	42,2
Proofpoint Inc.	8,7	6,5	5,1	4,0	64,5	53,2	35,2	22,2	97,5	83,7	48,4	28,8	nm	108,2	64,2	40,3
Qualys Inc.	9,2	7,6	6,5	5,5	24,9	21,4	17,9		32,7	27,6	22,7		57,9	44,5	37,5	30,8
Adobe Systems Incorporated	12,2	10,1	8,6	7,4	28,8	22,6	18,9	16,6	32,2	24,6	20,3	17,0	43,9	29,3	25,8	21,3
salesforce.com, inc.	7,2	6,0	5,0	4,2	33,4	26,7	22,1	17,5	49,9	37,9	29,0	22,7	80,5	53,3	41,5	32,3
Open Text Corporation	4,1	4,0	4,0	3,4	11,2	10,6	10,1	9,0	12,1	11,3	11,4		13,4	12,3	11,7	9,9
Alphabet Inc.	7,0	5,8	5,0	4,3	14,4	12,1	10,4	9,2	23,9	18,2	15,5	12,8	29,8	25,7	22,1	18,4
Oracle Corporation	4,9	4,8	4,6	4,6	10,6	10,1	9,7	8,9	11,3	10,8	10,3	11,5	16,0	14,7	13,8	13,8
Average	7,2	6,0	5,2	4,4	30,4	24,1	18,7	14,4	41,7	32,8	23,7	18,7	52,8	45,5	33,7	26,4
Source: Integrae SIM																

#### Fig. 10 – Comparables

Expert System's average equity value, calculated using the multiples methodology, is € 103.9 million. At this value, we applied a 25% discount to account for lower liquidity, reaching an average value of € 77.9 million.

The average equity value of the two methods amounts to  $\notin$  69.3 million, or  $\notin$  1.94 per share. Thus, our target price is  $\notin$  1.94 per share (from  $\notin$  1.58 in the note of 9/10/2017). Our BUY rating and MEDIUM risk assessment are unchanged.

We note that at the average value indicated ( $\notin$  69.3 million), Expert System trades with a 56% discount compared to the 2018 industry average EV/Sales (2.6x versus 6.0x for the sector) and a 50% discount to the 2018 industry average EV/EBITDA (12.1x versus 24.1 sector average).



## 3.3 Final considerations

The results of the last two financial years are indicative of a company strongly committed to significant investments aimed at completely changing the future. The strong demand in digital text processing / understanding and artificial intelligence, increasingly generated from various production sectors, we believe will enable Expert System in the next few years to increase the profitability of what has become the largest European group operating in cognitive computing.

We are convinced that the growing understanding of mass phenomena in an increasingly digital and connected world will be a key success factor for those companies that focus their strategic investments in cognitive computing and artificial intelligence.

Artificial intelligence is now everywhere, due to the expansion of machines that take advantage of deep learning skills. Deep learning promises to become ubiquitous in all areas of human life, even in the scientific sphere. For example, future radio astronomers will need to find useful signals in their otherwise unmanageable data; gravity wave detectors will use it to identify and eliminate the smallest sources of noise; and publishers will use it to sift and "tag" millions of scientific articles and books.

We believe that Expert System will be able not only to take advantage of the growing expected demand but also to act as aggregator for companies in the industry.



# Disclosure Pursuant to Article 69 Et seq. of Consob (Italian Securities Exchange Commission) Regulation No. 11971/1999

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Date	Recommendation	Target Price	Risk	Comment
4/5/2017	Buy	2,28	Medium	FY16 Results
3/8/2017	Buy	2,28	Medium	Innovative SME
9/10/2017	Hold	1,58	Medium	1H17 Results

The table below shows INTEGRAE SIM's recommendation, target price and risk issued during the last 12 months:

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The BUY, HOLD and SELL ratings are based on the expected total return (ETR – absolute performance in the 12 months following the publication of the analysis, including the ordinary dividend paid by the company), and the risk associated to the share analyzed. The degree of risk is based on the liquidity and volatility of the share, and on the rating provided by the analyst and contained in the report. Due to daily fluctuations in share prices, the expected total return may temporarily fall outside the proposed range

Equity Total Re	turn (ETR) for different risk categories	S	
Rating	Low Risk	Medium Risk	High Risk
BUY	ETR >= 22.5%	ETR >= 25%	ETR >= 30%
HOLD	-20% < ETR < 22.5%	-20% < ETR < 25%	-15% < ETR < 30%
SELL	ETR <= -25%	ETR <= -20%	ETR <= -15%
U.R.	Rating e/o target price Under I	Review	
N.R.	Stock Not Rated		

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