

EXPERT SYSTEM

Initiation of coverage

Buy

25 July 2016 - 5:30PM

MARKET PRICE: EUR1.80

TARGET PRICE: EUR2.55

IT services

Data

Shares Outstanding (m): 27.7 *

Market Cap. (EURm): 49.8

Enterprise Value (EURm): 62.4

Free Float (%): 64.6%

Av. Daily Trad. Vol. (m): 0.001

Main Shareholder: Founders 32.9%

Reuters/Bloomberg: EXSY.MI EXSY IM

52-Week Range (EUR) 1.8 2.3

Source: Factset, UbiBanca estimates

Performance

| | 1m | 3m | 12m |
|--------------|-------|--------|--------|
| Absolute | -4.7% | -15.4% | -14.7% |
| Rel. to FTSE | -1.6% | -6.4% | 17.4% |

Source: Factset

Graph area Absolute/Relative 12 M



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Investing in the future

We initiate coverage of Expert System, a provider of cognitive computing and text analytics software, with a Buy rating and a target price of EUR2.55 per share. In our view, the company has one main strength: innovative proprietary technology that makes Expert System a leading company in this fast growing IT niche. We believe Expert System this could make it an attractive prey for larger IT groups that could acquire the company in order to exploit the accuracy of Expert System's platform as well as its wide client base. For the same reason, the main threat for the company is a technological breakthrough which could make the platform of Expert System obsolete. The company is investing heavily to improve its products and to develop its commercial network and penetrate new markets. Therefore, its financial figures remained weak last year (EUR3.5 million of operating losses on a pro-forma basis and net debt of EUR10.5 million) while upcoming investments required a right issue of EUR4.7 million currently underway. Our forecasts imply that the company will reach breakeven only in 2017 and generate a positive bottom line only in 2018.

- > Expert system is a leading supplier of IT cognitive technology, thanks to its patented product "Cogito", with a wide customer base that encompasses companies ranging from media to Government companies all over the world and includes strategic partnerships (e.g. with Google).
- > The company grew substantially in 2015 (VoP +75% on a pro-forma basis) thanks to the acquisition of Temis, which increased revenues outside Italy to 58%. However, it reported a lower EBITDA margin (8.2% on pro-forma basis vs. 19.6% in 2014). Expert system is 33% controlled by its founders (expected to fall below 30% following the capital increase underway) who also manage the company. It was listed on the AIM market at EUR1.80 per share in February 2014.
- > We forecast 25% CAGR in the value of production in the next three years and an EBITDA margin that should improve to over 20% in 2018, leading to a bottom line of around EUR1 million. Net debt should stabilize at around EUR10 million.
- > Assuming full subscription of the right issue underway, our target price of EUR2.55 per share is based on the average of a DCF analysis (70% weight) and a relative valuation (30% weight) and offers over 40% upside.

| Financials | pri | ced on 22 J | uly 2016 | | Ratios | ŗ | oriced on 22 | July 2016 | |
|---------------------|------------|-------------|----------|-------|-------------------|-----------|--------------|-----------|-------|
| | 2015 | 2016E | 2017E | 2018E | | 2015 | 2016E | 2017E | 2018E |
| Revenues (EURm) | 16.4 | 26.2 | 30.8 | 35.3 | P/E(x) | nm | nm | nm | 44.8 |
| EBITDA (EURm) | 1.2 | 2.3 | 5.5 | 7.5 | P/CF(x) | 27.0 | 19.0 | 9.0 | 7.3 |
| EBITDA margin (%) | 7.3% | 8.9% | 17.8% | 21.1% | P/BV(x) | 2.5 | 2.2 | 2.2 | 2.1 |
| EBIT (EURm) | -4.0 | -3.2 | -0.1 | 1.7 | Dividend Yield | 0.0% | 0.0% | 0.0% | 0.0% |
| EPS (EUR) | -0.13 | -0.10 | 0.00 | 0.04 | EV/EBITDA(x) | 53.7 | 26.8 | 11.3 | 8.2 |
| CFPS (EUR) | 0.08 | 0.04 | 0.23 | 0.23 | Debt/Equity (x) | 0.5 | 0.5 | 0.5 | 0.4 |
| DPS (EUR) | 0.0 | 0.0 | 0.0 | 0.0 | Debt/EBITDA (x) | 8.7 | 4.8 | 2.0 | 1.3 |
| Source: Company Dat | a. UBI Bar | nca Estima | tes | | Source: Company I | Data. UBI | Banca Estin | nates | |

^{*} Assuming the full subscription of the ongoing right issue



| KΔV | Fina | ncia | lc |
|-----|------|------|----|

| (EURm) | 2015 | 2016E | 2017E | 2018E |
|------------------------|-------|-------|-------|-------|
| Revenues | 16.4 | 26.2 | 30.8 | 35.3 |
| EBITDA | 1.2 | 2.3 | 5.5 | 7.5 |
| EBIT | -4.0 | -3.2 | -0.1 | 1.7 |
| NOPAT | -4.0 | -3.2 | -0.1 | 1.2 |
| Free Cash Flow | -15.1 | -5.3 | 0.4 | 1.0 |
| Net Capital Employed | 31.2 | 33.7 | 33.2 | 33.3 |
| Shareholders' Equity | 20.7 | 22.5 | 22.4 | 23.5 |
| Net Financial Position | 10.5 | 11.1 | 10.8 | 9.8 |

Source: Company data, UBI Banca estimates

Key Profitability Drivers

| | 2015 | 2016E | 2017E | 2018E |
|--------------------------|--------|--------|-------|-------|
| Net Debt/Ebitda (x) | 8.7 | 4.8 | 2.0 | 1.3 |
| Net Debt/Equity (x) | 0.5 | 0.5 | 0.5 | 0.4 |
| Interest Coverage (%) | nm | -12.1 | -0.5 | 6.4 |
| Free Cash Flow Yield (%) | -28.6% | nm | 0.7% | 2.0% |
| ROE (%) | -15.9% | -12.8% | -0.5% | 4.7% |
| ROI (%) | -16.2% | -9.3% | -0.4% | 4.9% |
| ROCE (%) | -10.8% | -6.2% | -0.3% | 3.3% |

Source: Company data, UBI Banca estimates

Key Valuation Ratios

| | 2015 | 2016E | 2017E | 2018E |
|--------------------|------|-------|-------|-------|
| P/E (x) | nm | nm | nm | 44.8 |
| P/BV (x) | 2.5 | 2.2 | 2.2 | 2.1 |
| P/CF (x) | 27.0 | 19.0 | 9.0 | 7.3 |
| Dividend Yield (%) | 0.0% | 0.0% | 0.0% | 0.0% |
| EV/Sales (x) | 3.2 | 2.1 | 1.8 | 1.5 |
| EV/EBITDA (x) | 53.7 | 26.8 | 11.3 | 8.2 |
| EV/EBIT (x) | nm | nm | nm | 35.2 |
| EV/CE (x) | 2.1 | 1.9 | 1.9 | 1.8 |

Source: Company data, UBI Banca estimates

Key Value Drivers

| (%) | 2015 | 2016E | 2017E | 2018E |
|-------------|--------|-------|-------|-------|
| Payout | 0.0% | 0.0% | 0.0% | 0.0% |
| NWC/Sales | 35.8% | 28.3% | 22.0% | 20.5% |
| Capex/Sales | 103.7% | 25.0% | 19.2% | 15.0% |





Investment Case

Expert system is a leading provider of cognitive computing and text analytics software based on its proprietary, patented and multilingual platform "Cogito", which covers 14 languages including Chinese, Japanese and Korean. It operates worldwide (through 18 subsidiaries/offices and 7 Labs in seven countries) with 58% of revenues outside Italy and has 230 employees. Its wide client base includes leading companies such as Bloomberg BNA, Thomson Reuters, Chevron, ENI, Intesa Sanpaolo, Ely Lilly, Biogen, Il Sole 24 Ore plus several federal agencies and government entities while its partnerships with Google and many others should support future revenue growth.

Our investment case is based on its well-reputed innovative technology (the company was included among the ten most significant big data text analytics platform providers by Forrester) that makes Expert System an attractive target for large IT providers and which should drive up margins as soon as its commercial network is at regime.

2015 was a year of transition due to the acquisition of Temis in France (for an EV of EUR12 million) with value of production increasing by 75% on a pro-forma basis. The EBITDA margin dropped to 8.2% (vs. 19.6% in 2014). We expect further heavy investments this year that should be supported by the capital increase (EUR4.7 million, 2 new shares every 19 old shares at EUR1.80 plus free warrants) currently underway. The increase implies dilution of 9.4% based on our estimates. The completion of the commercial network, expected by the end of this year, coupled with a rise in revenues generated abroad (namely in the US, where the company has ongoing initiatives with federal agencies, Germany and Spain) should allow Expert System to improve significantly its fundamentals. We believe that operating breakeven could be reached in 2017 while the bottom line should be positive for >EUR1 million in 2018.

We believe investors should look at Expert System for its long term potential rather than for short term results.

In addition, there could be other potential catalysts for Expert System that are not included in our forecasts:

- The company is upgrading and widening its product range entering new high-profitability niches. An example is the recent "Cogito Risk Watcher" for monitoring third party risks. In 2016 the company aims to develop new products specific for the intelligence industry, financial institutions, media and pharmaceutical industry;
- Expert System is scouting to acquire some competitors in order to penetrate new markets and to extend its technology to new niches. We estimate a fire power of >EUR11 million that could be invested in M&A deals while maintaining gearing at 50%, excluding potential share swaps.

Our EUR2.55 per share target price, which offers 39% upside, is based on the average of a DCF valuation (EUR2.65 per share with a weight of 70%) and a relative valuation (EUR2.30 per share with a weight of 30%), which in our view is less significant as Expert System is still in a transition phase due to the acquisition of Temis and its sizeable investments to develop the commercial network that will bear fruit only in the long run. Therefore, a valuation based on the multiples of peers (that are not available after 2017) fail to catch the potential of the company, wrongly penalising Expert System's valuation

In our view, the main risk to the investment case is a technological breakthrough that would make "Cogito" obsolete, strongly impacting the value of the company and causing a write down of existing intangible assets (EUR18.5 million, or over 40% of the current market cap).



Company profile

Founded in 1989 as an IT service company by Mr. Spaggiari, Mr. Varone and Mr. Lombardi, who still manage the company, Expert System is one of the leading companies in cognitive computing. In particular, Expert System has developed a patented semantic software platform, called "Cogito", able to read, comprehend and answer, resolving disambiguation (for example, is *Jaguar* a predatory cat or a luxury car?). In other words, this technology is able (thanks to artificial intelligence algorithms) to extract meaning from unstructured texts (around 80% of all the available data) thereby simplifying research of useful information by companies, public entities and citizens. The applications of this technology are extremely wide and, in fact, the customers of the company range from media (Corriere della Sera, Thomson Reuters, Bloomberg etc.) to energy companies (Shell, Chevron, Eni and others), financial companies (banks, insurance companies, the International Monetary Fund etc.), pharmaceutical companies (Sanofi, Eli Lilly etc.) and public entities (both public administrations and defence & intelligence, such as federal agencies in the US and in Italy, mostly for security purposes).

Following the acquisition of Temis, finalised in September 2015 for an EV of EUR12 million (1.5x 2014 revenues), Expert System increased significantly its presence abroad and is now present in Italy, France, UK, Spain, Germany, Canada and the US with around 58% of its revenues generated outside Italy (on a pro-forma basis) and with around 230 employees (up from 108 when the company was listed) working for the company in 18 subsidiaries and offices and seven R&D laboratories.

| Figure 1 – Short histor | ry of the company |
|-------------------------|-------------------|
|-------------------------|-------------------|

| 1989 | Founding – IT services |
|-----------|---|
| 1992 | Launch of "Errata Corrige", the first semantic software |
| 1999 | First release of "Cogito" |
| 2007 | "Cogito" patented in the US |
| 2010 | Foundation of ADmantX, semantic software for advertising on line |
| 2012 | Group's structure reorganized |
| Feb-2014 | Listing on the Italian Stock Exchange AIM market at EUR1.80 (EUR9.8 million cash-in) |
| 2014 | Acquisition of ICM and iLab departments from iSOCO in Spain |
| Feb-2015 | Google Cloud Platform Technology Partner |
| May-2015 | Acquisition of Temis and consequent expansion in Europe and the US |
| July-2015 | Bond issue for EUR5 million (maturity 2024, fixed rate 4%) |
| Sept-2015 | Capital increase of EUR2.2 million in ADmantX |
| Oct-2015 | Google for Work-Search – Technology Premier Partner |
| Nov-2015 | Launch of the new product "Cogito Risk Watcher" (management of risk profiles) |
| Mar-2016 | Opening of two new R&D Labs in the US Ranked as a strong performer by Forrester within the most 10 companies in big data text |
| May-2016 | analytics |
| July-2016 | Approval of the capital increase of EUR5 million |

Source: Company data

In addition, the company has improved its partners network which include also top players (for example, Google, Cloudera, MongoDB, Wand, MarkLogic, Quantic Research, Onix, Accenture, Systran, ICTeam, Esri, Wabion, Palestra, Genesys, Fraunhofer, MarkLogic, Sopra Steria, Sword, Atex, Deloitte, Atos etc.) and several technology integrations (including Alfresco and Salesforce) to increase its revenues through indirect sales channels with vendors and system integrators. This is a critical issue in our view: because vendors cannot be experts in every sector, solution providers, such as Expert System, fulfil this need.

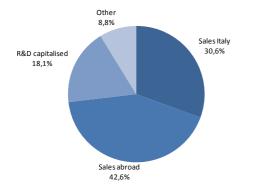
The company operates with a mix of perpetual and recurring licenses but it is progressively moving toward a SaaS (software as a service) business model where software is licensed on a subscription basis and is centrally hosted. SaaS is typically accessed by users using a thin client via a web browser. In this way the client can reduce IT support costs by outsourcing software maintenance and support to the SaaS provider.

Expert system also controls 60.7% of ADmantX, a semantic advertising technology company that specialises in smart data for brand planning and targeting applying the "Cogito" technology to online advertising solutions with an extensive linguistic coverage (21 languages). The function of semantic advertising technology is to analyze semantically every web page in order to properly understand and classify the meaning of a web page and accordingly ensure that the web page contains the most appropriate advertising, increasing the chance that the viewer will click-through because only advertising relevant to what they are viewing, and therefore their interests, should be displayed.

This company (not consolidated by Expert System) is still in a start-up phase, with recurring operating losses (net loss of EUR1.4 million in 2015). Even if this company has strong growth potential in our view, it could be difficult for Expert System to exploit ADmantX know-how in the advertising industry since the latter follows different logics. Therefore, the management is currently looking for a strategic partnership to develop this business or is considering selling the entire company.

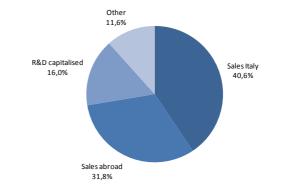
Finally, Expert System has a 30% shareholding in CY4Gate (70% is owned by Elettronica, a company with >EUR200 million sales active in the defence industry), a global player in the cyber defence electronics field. CY4Gate is still in a start-up phase but has already signed some important contracts.

Figure 2 – 2015 Value of production breakdown on a proforma basis (including the consolidation of Temis for the whole of 2015)



Source: UBI Banca using company data

Figure 3 – 2015 Value of production breakdown



Source: Company data



Shareholder structure

Expert System was listed on the Milan Stock Exchange, in the AIM segment, in February 2014 at EUR1.80 per share raising EUR10 million of fresh financial resources. The company is controlled and managed by the founders Mr. Paolo Lombardi R&D Director, Mr. Stefano Spaggiari CEO and Mr. Marco Varone CTO (and creator of the Cogito platform), who together control 32.92% of Expert System. After the founders, the second largest shareholder is Luxid, a company that groups together the previous shareholders of Temis, acquired in 2015. Expert System owns 0.27 million treasury shares, equal to 1.1% of the share capital (before the ongoing right issue).

The board of directors is composed of seven members of which one is independent, generally active in managing the company. The total remuneration of the board is EUR1.1 million p.a. Stripping out this remuneration EBITDA would have reached EUR2.3 million with a 13.9% margin.

The company is currently holding a right issue, which will be concluded on 3 August. Assuming that the founders and Luxid do not subscribe to their rights, the free float would grow to 64.01% (from the current level of 60.61%).

Figure 4 – Current shareholder structure

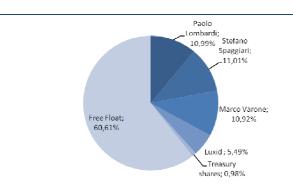
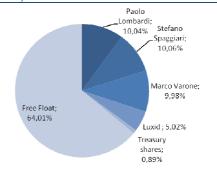


Figure 5 – Shareholder structure post right issue (assuming 100% subscription)



Source: UBI Banca estimates

Source: Company data



25 July 2016

Strategy

2015 was a year of transition for Expert System, with huge investments made to expand outside Italy in order to exploit its "Cogito" platform in the most important market for Big Data: the US. However, strategic investments have not borne fruit as yet leading to disappointing 2015 results. Expert System will continue to invest, developing its commercial network and increasing the visibility of its proprietary technology.

The company's strategy may be summarised as follows:

- ➤ Development of the commercial network: while Expert System has a solid product base, recognized by the market as best in class in semantic technology (it was included among the 10 most significant companies in Big Data text analytics by Forrester), the company is still building up its commercial network, in particular in the US where, last year, it reorganised its presence into two different subsidiaries and in March 2016 opened two R&D centres. This market is by far the most important worldwide (according to the research consultancy IDC, the US market represent 28% of the worldwide total IT market) for both cognitive computing and security and therefore having an efficient commercial network in the US, with native highly skilled personnel, is essential to increase revenues. Therefore, we believe Expert System will continue to invest heavily also this year and in 2017:
- ➤ Product range expansion: Expert System aims to widen its product range and enter new high-profitability niches while increasing complementary applications. Last year, the company extended to 14 the number of languages supported by "Cogito" including Korean and Chinese and launched a new product "Cogito Risk Watcher" for risk profiles of vendors, suppliers and third parties. In 2016 the company aims to develop new products specifically for the intelligence industry, financial institutions, media and the pharmaceutical industry;
- ➤ New clients: Expert System will continue to bid for new contracts and/or to expand existing ones. In particular, the management aims to increase the number of contracts with the Public sector in the US, including federal agencies. Our estimates do not include any new contract;
- ➤ Product standardization: to date, Expert System has usually supplied customised software to satisfy different customer needs (thereby reducing profitability). The offer of more standardized solutions could help to increase profitability. To purse this target, the company needs to reduce the custom development work while increasing the number of its clients and the proportion of revenue generated from standardised solutions, third-party and SaaS offering. A wider client base would also help to reduce significantly the volatility of its revenues, which has been very high in the past few years;
- ➤ Potential acquisitions: Expert System could acquire some competitors (mostly system integrators) in order to penetrate new markets and extend its technology in new niches. Following the capital increase currently underway (EUR4.7 million cash in if fully subscribed), we estimate a fire power of >EUR11 million that could be invested in M&A deals, while maintaining gearing at 50%. In addition, the company could use a share swap (or a mix of cash and shares as it did with the acquisition of Temis last year) that could significantly increasing the number and the size of potential acquisitions.



Reference market

The reference market of Expert System is the global text analysts market which is estimated to reach USD6.5 billion by 2020 with a CAGR of 25.2% since 2014 (source: Allied-Market Research 2015). Other sources are more optimistic and for example Verint Systems, a US company active in Actionable Intelligence Solutions forecasts a global market of USD8 billion in 2016, of which 50% represented by cyber security. The market is driven by the size of the global Big Data market, which has grown significantly in the past few years (CAGR 40% in 2012-15 according to Wikibon), and which should continue to grow impressively in future (Wikibon forecasts >USD60 billion by 2020 compared with USD33.3 billion last year).

By definition, Big Data exceeds the processing capacity of conventional relational database management systems. The amount of the information stored worldwide topped 2.8 zettabytes of data in 2012; by 2020, this is expected to be 50 times greater than it is today (source: The Global Information Technology Report 2015). As a result, there is renewed interest in gaining insights from data and making data-based decisions. The competitive advantage gained from intelligent use of data has separated early adopters from their counterparts, and everyone wants to quickly follow suit, making semantic analytics the most performing tool to analyze Big Data.

70% 60,91 12 90 70% 80 60% 70 50% 60 55,22 49,28 40% 43,40 37,97 33,31 50 40 30% 30 27.36 20% 19.60 20 12.25 10% 10 7,60 0% Market size (LH) Growth rate (RH)

Figure 6 – Big Data market trend (USD billion)

Source: Wikibon

As a result, investments in artificial intelligence, particularly in natural language processing, are rapidly growing and we believe this trend will continue in future.





Competition

Many companies, particularly in the US, are developing software applications for cognitive computing and artificial intelligence, often integrated in larger IT platforms. In our view, the largest player is currently IBM: in Jan-14, it launched the IBM Watson Group, a new business unit dedicated to developing and commercializing cloud-delivered cognitive advisors. IBM is investing USD1 billion into the Watson Group, employing approximately 2.000 professionals. HPE is also investing heavily in this specific industry. These companies have an all-purpose mining/text analytics platform and huge financial resources to support R&D. Nuance Communications (a leading provider of speech and imaging solutions with >USD500 million sales in 2015 and >6.000 employees), Clarabridge (with revenues estimated by Factset at USD43 million), Open Text (a listed Canadian independent software providers with USD2.3 billion sales), Digital Reasoning (which, similar to Expert System, is based on cognitive computing technology and not on a combination of linguistic and statistical rules), Cambridge Semantics, and Attivio (a US software company specialized in enterprise search solutions with 150 employees) are smaller but global players and there are several other micro players (with revenues below USD10 million) for a total of over 200 vendors. All in all, there is a lot of room for consolidation.

We highlight that Forrester (source: the Forrester Wave™: Big Data Text Analytics Platforms, Q2 2016) has identified the 10 most significant providers in the Big Data text analytics industry, including Expert System

Contrary to most players, Expert System is a pure-play text semantic search platform and therefore is not the best fit for all enterprise scenarios, such as classification of large documents. Consequently, "Cogito" platform could be considered as an add-on to the platform of other competitors and therefore could be extremely attractive for large players, such as IBM or HPE.



SWOT Analysis

| Figure | 7 - | SWC | OT A | Inal | ysis |
|--------|-----|-----|------|------|------|
|--------|-----|-----|------|------|------|

| Strengths | Weaknesses |
|--|--|
| Unique knowledge in cognitive computing | Commercial network still to be developed with high investments |
| Fast growing addressable market | Low visibility on existing and future contracts |
| Solid partnerships with major IT players (for example Google) | Growing capex could stress financial structure |
| Wide customer base with leading companies | Huge net invested capital (EUR32.9 million at Dec-15) with a limited capital turnover (0.67) |
| Opportunities | Threats |
| Expansion outside Italy, particularly in the US and in Europe | Current capital increase could jeopardize share performance |
| Expert System could be an attractive prey for | New breakthrough technology in the cognitive |
| large IT developers | computing developed by a competitor |
| Penetration in the security intelligence business in the US and Europe | computing developed by a competitor Increasing competition |

Source: UBI Banca estimates



2015 results

2015 was a transition year for Expert System: value of production increased by 32% (and by 84% on a pro-form basis consolidating Temis for the full year) but profitability dropped with an EBITDA of EUR1.2 million (EUR1.8 million on a proforma basis), or a margin of 5.3% on Value of Production compared with the margin of 13.6% in 2014. It should be noted that Expert System does not consolidate ADmantX (60.7% controlled).

Figure 8 - 2015 results (consolidated and on a pro-forma basis)

| (EURm) | 2014A | 2015A | % Chg. | 2015E pro-forma | a % Chg. |
|-----------------|--------|--------|--------|-----------------|----------|
| Sales total | 11.97 | 16.39 | 36.9% | 22.0 | 83.8% |
| VoP | 17.17 | 22.65 | 31.9% | 30.0 | 74.7% |
| EBITDA | 2.34 | 1.20 | -48.5% | 1.80 | -23.1% |
| % margin on VoP | 13.6% | 5.3% | | 6.0% | |
| D&A | (1.73) | (5.24) | 202.8% | (5.30) | 206.4% |
| EBIT | 0.61 | (4.03) | nm | (3.50) | nm |
| % margin | 3.6% | -17.8% | | -11.7% | |
| Pre tax profit | 0.70 | (3.56) | | | |
| Net profit | 0.09 | (3.29) | | (2.30) | nm |
| Net debt (cash) | (1.33) | 10.51 | nm | | |

Source: Company data

Despite the growth in value of production, Expert System was hit by rising costs, mainly labour costs that exceeded 50% of VoP vs. 38% in 2014. This was due to the rapid expansion of Expert System abroad, namely the opening of new subsidiaries in the US, investments in the commercial network and rising R&D costs (+79%).

After D&A of EUR5.2 million (EUR5.3 million on a pro-forma basis), the EBIT was negative for EUR4 million, which gave a negative pre-tax result of EUR3.6 million. The net loss was EUR3.3 million.

Net debt was EUR10.5 million (vs. EUR1.3 million net cash at Dec-14) due to the acquisition of Temis (around EUR4 million in cash) and higher capex. We highlight that Expert System retained a huge amount of cash (EUR13.2 million at Dec-15) to meet its short term financial needs while gross financial debt exceeded EUR23.7 million, of which EUR5 million are bonds (9.5 years duration, 4% fixed rate).

Operating NWC reached EUR9.2 million (or 40.5% of value of production), with trading receivables at 225 days, trade payables at 63 days and inventories equal to 40 days.

Fixed assets totalled over EUR25.7 million, of which EUR18.5 million of intangible assets: these are made up of EUR6.3 million of capitalized R&D costs (to be amortized over 5 years), EUR1.2 million of goodwill (arising from the acquisition of one business unit of Isoco in Spain) and EUR9 million of differences arising on consolidation (related to Temis) that will be amortized over 5 years.

Total net invested capital was EUR31.2 million, more than double the figure of EUR15.6 million reported at Dec-14.



Capital increase

The company is currently having a rights issue (that started on 18 July), which will be concluded 3 August. The terms are the followings:

- 2 new shares every 19 old shares at EUR1.80 per share (equal to the IPO price);
- The issue price is 10% below the average price of the last six months and 5.3% below the average price before the announcement of the rights issue:
- 1 warrant for every new share. 4 warrants give the right to subscribe to one new share at EUR2.40 in October 2017 and at EUR2.70 in October 2018;
- If the right issue is totally subscribed, Expert System would raise EUR4.7 million. The full subscription of the shares from the conversion of the warrants would imply a further cash in of EUR1.6 million in 2017 (or EUR1.8 million in 2018);

Without taking into account the potential conversion of the warrants (that are currently deeply out of the money) and assuming the right issue is fully subscribed, the shares in issue would reach 27.7 million (vs. 25.1 million shares before the right issue), therefore implying a dilution of 9.4%, partially offset by lower financial charges of around EUR0.2 million p.a.);

We believe that the founders (who currently control 32.9% of the company) and Luxid will possibly not subscribe to the right issue: in this case, the free float would grow to 64.01% (from the current level of 60.61%).

Considering that the rights issue price is bang in line with the current market price, we see some risk that the capital increase may not be entirely subscribed; however, the warrants should increase the appeal of the offer, making the success of the rights issue probable.



Financial projections

It is very difficult to give reliable estimates for Expert System as the company does not provide a breakdown of product revenues (perpetual and recurring licence fees, professional activities, maintenance), nor a detailed geographical breakdown while many contracts, particularly for security products, cannot be disclosed. In addition, the global text analysts market is growing rapidly but remains volatile and somewhat unpredictable. We highlight that Expert System uses Italian GAAP accounting and, therefore, R&D costs are capitalized (and amortized over 5 years) and recognized in the value of production when the related assets are amortized. Furthermore, goodwill and differences arising on consolidation (a combined total of EUR10.2 million at Dec-15) are amortized (over 5 years).

In 2016, we expect organic growth of around 20% from higher sales in the US, Germany and Spain. In addition, with the impact of the full consolidation of Temis (vs. 3 months in 2015), consolidated sales should increase to >EUR26 million (+60%) of which around 50% should be perpetual and recurring licence fees and 50% professional activities). The value of production should reach EUR32.9 million with other income mostly coming from increases in production for internal use (mostly R&D, which we assume to be ca. 15% of sales) and grants. For 2017-18, we have assumed organic growth of around 15%, which should allow the company to exceed EUR35 million of revenues in 2018 with a value of production of EUR44 million.

However, we expect labour costs to continue to grow due to the rapid expansion of the company, particularly in the US (we estimate an average of 300 employees in 2016 compared with 230 in 2015) reaching 47% of the value of production in 2016 (50% in 2015). For 2017-18, we expect a gradual reduction in labour costs as a percentage of VoP (43.5% in 2017 and 39% in 2018) as higher revenues are spread over a stable fixed cost base and the integration of Temis is completed. Assuming service costs of around 45% of value of production we calculate an EBITDA margin on sales of 8.9% for this year (vs. 7.3% in 2015 and 8.2% on a pro-forma basis) that grows rapidly to 17.8% in 2017 and 21.1% in 2018, a number not far from that of 2014 (19.6%).

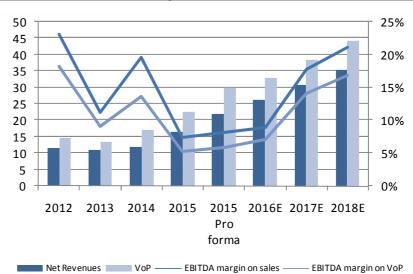


Figure 9 - Revenues and EBITDA margin trend



D&A costs, which include depreciation of the capitalized R&D costs and goodwill amortization, should remain well above EUR5 million p.a. causing an operating loss of about EUR3.2 million this year, breakeven in 2017 and an operating profit of EUR1.7 million in 2018.

Below the operating line, Expert System is expected to report EUR0.15 million p.a. of financial charges in coming years. The tax rate should decline thanks to the higher percentage of revenues generated outside Italy (in areas where the corporate tax rate is lower) and the reform of IRAP that makes labour costs deductable for permanent workers (previously equal to 3.9% of the pre-tax profit plus the labour costs). As a result, the bottom line is expected to remain negative for EUR2.9 million in 2016, reach breakeven in 2017 and exceed EUR1 million in 2018. We believe a dividend distribution is unlikely in our forecast period.

Expert System reported net debt of EUR10.5 million at Dec-15, with gearing of 0.51x and a net debt/EBITDA ratio of 8.7x. In coming years, operating cash flow generation should improve substantially but capex should remain at around EUR6 million p.a. Assuming the current rights issue is fully subscribed, we estimate net debt of EUR11.1 million at Dec-16, declining slightly in 2017-18 when gearing should decline to 0.41x, and the net debt/EBITDA ratio is expected to be 1.3x.

Figure 10 – Financial structure (EURm)

Net debt should remain broadly stable but gearing and the Net debt/EBITDA ratio should improve due to the current capital increase and to EBITDA growth.

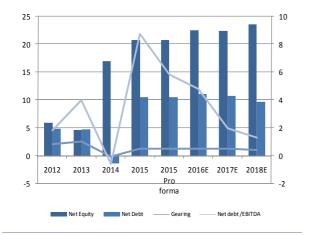
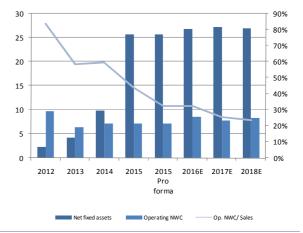


Figure 11 – Net fixed assets and operating NWC

Following the acquisition of Temis, net fixed assets should remain stable at around EUR27 million while operating NWC is expected to decline gradually.



Source: Company data, UBI Banca estimates

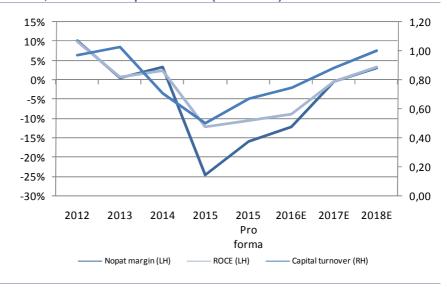
Source: Company data, UBI Banca estimates

Expert System's operating net working capital has always been high (>200 trade receivables days in 2014-15 vs. around 60 trade payables day) but we expect progressive improvement that should lower operating net working capital to around 25% of sales compared to 43.7% in 2015 (on a pro-forma basis). However, net fixed assets have grown significantly in the past two years to over 85% of the value of production in 2015 due to the presence of significant goodwill (>EUR10 million) and the capitalized R&D costs (EUR6.3 million at Dec-15). This resulted in average capital turnover (sales / invested capital) of 0.84x in the past four years. This figure deteriorated in 2015 (to 0.67x on a pro-forma basis) due to the acquisition of Temis. We forecast a gradual improvement in capital turnover in 2016-18 to 1.0x in 2018 mainly due to higher revenues.



In 2015, ROCE was negative as NOPAT was strongly impacted by the fall in EBITDA coupled with the sharp growth in D&A expenses (linked to the acquisition of Temis and to increased R&D). We believe the ROCE could reach breakeven in 2017 and could be positive in 2018 (at 3.3%). Clearly, ROCE would remain well below WACC (estimated at 5.6%) in 2016-18, and therefore Expert System would continue to destroy value but, in the long term, we believe the company could be a strong value creator.

Figure 12 – Nopat margin, Capital Turnover and ROCE trend
The negative NOPAT margin in 2015 resulted in negative ROCE. In coming years, the recovery in the NOPAT margin, coupled with the expected increase in capital turnover, should lead to a positive ROCE (3.3% in 2018).



25 July 2016

Valuation

Assuming the full subscription of the right issue underway (but without considering any conversion of warrants, currently out of the money) our target price of EUR2.55 per share is based on the average of a DCF analysis (70% weight) and a relative valuation (30% weight). We gave a higher weight to DFC as Expert System is still in a transition phase following the acquisition of Temis and its huge investments to develop the commercial network (mainly in the US) that would bear fruits only in the long run. Therefore, a valuation based on the multiples of peers (that are not available after 2017) fail to catch the potential of the company, wrongly penalising Expert system's valuation.

Our valuation does not include ADmantX, which is not consolidated but has a book value of EUR4.2 million. This company, which was valued around EUR11.1 million by an independent chartered accountant, had a EUR2.2 million share capital increase in Sept-2015 had that was subscribed by new shareholders who took a 12.6% stake in the company. This implies a value of EUR17 million for 100% of the company (EUR10.3 million for the 60.7% stake held by Expert System, or EUR0.37 per share). However, ADmantX reported net equity of EUR1.9 million at Dec-15 and a net loss of EUR1.4 million for the full year and, therefore, we prudently decided not to include ADmantX in our valuation.

Figure 13 – Valuation summary

| (EUR) | | Weight | |
|--------------------|------|--------|-------|
| DCF Valuation | 2.65 | 70.0% | 1.86 |
| Relative Valuation | 2.30 | 30.0% | 0.69 |
| Fair value | | | 2.55 |
| Current price | | | 1.80 |
| Potential upside | | | 41.4% |

Source: UBI Banca estimates

DCF

To calculate the company's WACC, we used the following assumptions:

- > a risk-free rate of 2.0%, which is our long-term assumption for the interest rate on Italian bonds (2% inflation target of ECB);
- a market risk premium of 4.5%;
- ➤ a levered beta of 1.17 (0.89 unlevered), based on the average beta of Computer Services and Information Services as calculated by Damodaran (source: damodaran.com Jan-16);
- ➤ a terminal growth rate of 2% and an operating margin of 8% at terminal value, which is above our estimated EBIT margin for 2016-18 (being years of transition);
- A debt/equity ratio of 34/66, which was the figure at December 2015.



Figure 14 - WACC and embedded DCF assumptions

| WACC assumptions | | Embedded DCF assumptions | |
|-------------------------|-------|-------------------------------------|-------|
| Risk-free rate | 2.0% | Revenue CAGR 2016-2024 (%) | 9.3% |
| Debt spread (%) | 1.5% | Target EBIT margin 2024 (%) | 8.0% |
| Cost of debt [net] (%) | 2.3% | D&A. on sales (avg. 2016-2024) (%) | 15.0% |
| Market risk premium (%) | 4.5% | Capex on sales (avg. 2016-2024) (%) | 15.1% |
| Beta (x) | 1.17 | | |
| Cost of equity (%) | 7.3% | | |
| Weight of Debt | 34% | | |
| Weight of Equity | 66% | | |
| WACC | 5.62% | | |

Source: UBI Banca estimates

We estimate a WACC of 5.62%, obtaining a theoretical value of EUR2.65 per share.

Figure 15 – DCF Valuation

| Our DCF valuation implies an EV/EBITDA of 7.2x at terminal value | | | | | |
|--|-------------------|----------|-----------------|--|--|
| | Valuation (EUR m) | % Weight | Per share (EUR) | | |
| Sum of PV 2016-24 FCF | 8.0 | 9% | 0.29 | | |
| Terminal value | 77.2 | 91% | 2.79 | | |
| Total Enterprise value | 85.3 | 100% | 3.08 | | |
| - minorities | 0.0 | | 0.00 | | |
| - Pension Provision | (1.4) | | (0.05) | | |
| - Net cash (debt) | (10.5) | | (0.38) | | |
| Total Equity value | 73.3 | | 2.65 | | |
| Number of shares outstanding (m) | 27.7 | | | | |
| Fair value per share (EUR) | 2.65 | | | | |

Source: UBI Banca estimates

Our valuation shows limited sensitivity to the terminal growth rate and WACC although a lower beta and/or stronger growth would increase our DCF fair value.

Figure 16 – Sensitivity analysis

| | ,, | | | | |
|--------|-------|-------|-------|-------|-------|
| g/WACC | 1.00% | 1.50% | 2.00% | 2.50% | 3.00% |
| 7.00% | 1.50 | 1.66 | 1.85 | 2.08 | 2.38 |
| 6.50% | 1.66 | 1.85 | 2.09 | 2.38 | 2.76 |
| 6.00% | 1.85 | 2.09 | 2.38 | 2.75 | 3.25 |
| 5.62% | 2.03 | 2.30 | 2.65 | 3.11 | 3.75 |
| 5.00% | 2.38 | 2.75 | 3.25 | 3.94 | 4.98 |
| 4.50% | 2.75 | 3.24 | 3.93 | 4.97 | 6.70 |
| 4.00% | 3.24 | 3.93 | 4.96 | 6.68 | 10.11 |

Source: UBI Banca estimates



Relative valuation

Expert System has no pure comparable peers that are listed, although there are several listed companies active in cognitive computing and text analytics software, generally with a market capitalization of over EUR1 billion. Our sample is composed of: 1) Nuance Communications, a leading provider of speech and imaging solutions for businesses and consumers around the world, 2) OpenText, the largest independent software provider of Enterprise Information Management, 3) Trend Micro, a global security software company founded in Los Angeles, with global headquarters in Tokyo, 4) Verint Systems, which provides actionable intelligence solutions and is also active in the security market, 5) Splunk, a marketleading platform that powers Operational Intelligence with more than 11,000 customers in over 110 countries, 6) Teradata, a provider of Big Data analytics solutions and services and data warehousing solutions with >10,000 employees in 40 countries 7) CommVault systems, a leading provider of data protection and information management solutions, and 8) PRGX Global, a leading provider of recovery audit services with over 1,400 employees in more than 30 countries providing its services to over 75% of the top 20 global retailers.

Based on a relative 2016-17 EV/EBITDA, Expert System would be valued at EUR1.97 per share (however, in our view, this multiple is less significant as the company is in the midst of a transition year following the acquisition of Temis) while on EV/Sales it would be EUR2.63 per share. The average of these two valuations gives EUR2.30 per share. A valuation based on P/E is meaningless as Expert System is expected to have a negative bottom line in both 2016 and 2017 based on our forecasts.

Figure 17 – Peer comparison and valuation based on multiples priced on 22 July 2016

Based on a simple average of diversified peers, Expert System has a valuation of EUR2.30 per share. We highlight that the company is currently trading at an average 35.2% discount to the EV/Sales of our peer sample.

| Company | Market Cap | P | /E | EV/E | BITDA | EV/ | Sales |
|-----------------------------------|------------|--------|---------|--------|--------|--------|--------|
| | (EURm) | 2016E | 2017E | 2016E | 2017E | 2016E | 2017E |
| Nuance Communications | 4.118 | 10.6 x | 9.7 x | 9.0 x | 8.3 x | 3.15 x | 2.86 x |
| Open Text Corporation | 6.779 | 17.3 x | 15.4 x | 12.5 x | 10.9 x | 4.55 x | 3.96 x |
| Trend Micro Incorporated | 4.588 | 26.9 x | 24.0 x | 10.8 x | 9.0 x | 3.09 x | 2.74 x |
| Verint Systems | 1.947 | 11.4 x | 10.5 x | 8.8 x | 7.3 x | 2.14 x | 1.86 x |
| Splunk | 7.190 | nm | 123.3 x | 92.5 x | 58.6 x | 7.70 x | 5.76 x |
| Teradata Corporation | 3.341 | 11.7 x | 11.4 x | 5.6 x | 5.6 x | 1.48 x | 1.44 x |
| CommVault Systems | 1.959 | 52.5 x | 43.1 x | 22.0 x | 16.2 x | 2.76 x | 2.44 x |
| PRGX Global | 107 | 31.6 x | 21.5 x | 5.6 x | 4.4 x | 0.73 x | 0.62 x |
| Average | | 23.1 x | 32.4 x | 20.8 x | 15.0 x | 3.20 x | 2.71 x |
| Median | | 17.3 x | 18.4 x | 9.9 x | 8.6 x | 2.93 x | 2.59 x |
| Expert System at market price | 50 | nm | nm | 26.8 x | 11.3 x | 2.07 x | 1.75 x |
| Premium (discount) to Average | | | | 26.8% | -24.5% | -35.4% | -35.2% |
| Safe Bag valuation based on multi | iples | | | 1.35 | 2.58 | 2.63 | 2.62 |

Source: Factset, UBI Banca estimates

If we consider a sample of IT service companies listed on the Italian market (TXT e-solutions, CAD IT, Piteco and Reply), which, however, do not provide cognitive computing and text analytics software, we would come to a valuation of EUR1.44 per share.



At our EUR2.55 per share target price, Expert System would trade at 2.34x 2017 EV/Sales, which is still below the average multiple of our sample of peers (2.10x) and at 15.1x EV/EBITDA (vs. an average of 15.0x).

Figure 18 – Implicit multiples based on our EUR2.55 target price

| (x) | 2016 | 2017 | 2018 |
|----------------------|--------|--------|--------|
| P/E | nm | Nm | 63.5 x |
| EV/EBITDA | 35.7 x | 15.1 x | 11.0 x |
| EV/EBIT | Nm | Nm | 47.2 x |
| EV/Sales | 2.76 x | 2.34 x | 2.02 x |
| P/BV | 3.1 x | 3.1 x | 3.0 x |
| P/CF | 57.1 x | 11.3 x | 11.2 x |
| EV/ Capital employed | 2.35 x | 2.37 x | 2.32 x |

Source: UBI Banca estimates



| Income | Statement |
|--------|-----------|
|--------|-----------|

| (EURm) | 2015 | 2016E | 2017E | 2018E |
|--------------------------------|--------|--------|-------|-------|
| Net Revenues | 16.4 | 26.2 | 30.8 | 35.3 |
| EBITDA | 1.2 | 2.3 | 5.5 | 7.5 |
| EBITDA margin | 7.3% | 8.9% | 17.8% | 21.1% |
| EBIT | -4.0 | -3.2 | -0.1 | 1.7 |
| EBIT margin | -24.6% | -12.1% | -0.4% | 4.9% |
| Net financial income /expense | 0.2 | -0.2 | -0.2 | -0.1 |
| Associates & Others | 0.3 | 0.0 | 0.0 | 0.0 |
| Profit before taxes | -3.6 | -3.3 | -0.3 | 1.6 |
| Taxes | 0.3 | 0.4 | 0.2 | -0.5 |
| Minorities & discontinuing ops | 0.0 | 0.0 | 0.0 | 0.0 |
| Net Income | -3.3 | -2.9 | -0.1 | 1.1 |

Source: Company data, UBI Banca estimates

Balance Sheet

| (EURm) | 2015 | 2016E | 2017E | 2018E |
|---------------------------|------|-------|-------|-------|
| Net working capital | 7.2 | 8.5 | 7.8 | 8.3 |
| Net Fixed assets | 25.7 | 26.8 | 27.2 | 26.9 |
| M/L term funds | -1.6 | -1.7 | -1.8 | -1.9 |
| Capital employed | 31.2 | 33.7 | 33.2 | 33.3 |
| Shareholders' equity | 20.7 | 22.5 | 22.4 | 23.5 |
| Minorities | 0.0 | 0.0 | 0.0 | 0.0 |
| Shareholders' funds | 20.7 | 22.5 | 22.4 | 23.5 |
| Net financial debt/(cash) | 10.5 | 11.1 | 10.8 | 9.8 |

Source: Company data, UBI Banca estimates

Cash Flow Statement

| (EURm) | 2015 | 2016E | 2017E | 2018E |
|----------------------------------|-------|-------|-------|-------|
| NFP Beginning of Period | -1.3 | 10.5 | 11.1 | 10.8 |
| Group Net Profit | -3.3 | -2.9 | -0.1 | 1.1 |
| Minorities | 0.0 | 0.0 | 0.0 | 0.0 |
| D&A | 5.2 | 5.5 | 5.6 | 5.7 |
| Change in Funds & TFR | 0.0 | 0.0 | 0.0 | 0.0 |
| Gross Cash Flow | 2.0 | 2.6 | 5.5 | 6.8 |
| Change In Working Capital | -0.1 | -1.4 | 0.7 | -0.5 |
| Other | 0.0 | 0.0 | 0.0 | 0.0 |
| Operating Cash Flow | 1.9 | 1.2 | 6.2 | 6.3 |
| Net Capex | -17.0 | -6.6 | -5.9 | -5.3 |
| Other Investments | 0.0 | 0.0 | 0.0 | 0.0 |
| Free Cash Flow | -15.1 | -5.3 | 0.4 | 1.0 |
| Dividends Paid | 0.0 | 0.0 | 0.0 | 0.0 |
| Other & Chg in Consolid. Area | -3.3 | 0.0 | 0.0 | 0.0 |
| Chg in Net Worth & Capital Incr. | 6.6 | 4.7 | 0.0 | 0.0 |
| Change in NFP | -11.8 | -0.6 | 0.4 | 1.0 |
| NFP End of Period | 10.5 | 11.1 | 10.8 | 9.8 |



| nan | | |
|-----|--|--|
| | | |
| | | |

| (%) | 2015 | 2016E | 2017E | 2018E |
|--------------------------|--------|--------|-------|-------|
| ROE | -15.9% | -12.8% | -0.5% | 4.7% |
| ROI | -16.2% | -9.3% | -0.4% | 4.9% |
| Net Fin. Debt/Equity (x) | 0.5 | 0.5 | 0.5 | 0.4 |
| Net Fin. Debt/EBITDA (x) | 8.7 | 4.8 | 2.0 | 1.3 |
| Interest Coverage | nm | -12.1 | -0.5 | 6.4 |
| NWC/Sales | 43.7% | 32.6% | 25.3% | 23.6% |
| Capex/Sales | 103.7% | 25.0% | 19.2% | 15.0% |
| Pay Out Ratio | 0.0% | 0.0% | 0.0% | 0.0% |

Source: Company data, UBI Banca estimates

Per Share Data

| (EUR) | 2015 | 2016E | 2017E | 2018E |
|-----------|-------|-------|-------|-------|
| EPS | -0.13 | -0.10 | 0.00 | 0.04 |
| DPS | 0.0 | 0.0 | 0.0 | 0.0 |
| Op. CFPS | 0.08 | 0.04 | 0.23 | 0.23 |
| Free CFPS | -0.60 | -0.19 | 0.01 | 0.04 |
| BVPS | 0.83 | 0.81 | 0.81 | 0.85 |

Source: Company data, UBI Banca estimates

Stock Market Ratios

| (x) | 2015 | 2016E | 2017E | 2018E |
|--------------------------|--------|-------|-------|-------|
| P/E | nm | nm | nm | 44.8 |
| P/OpCFPS | 27.8 | 40.3 | 8.0 | 7.9 |
| P/BV | 2.5 | 2.2 | 2.2 | 2.1 |
| Dividend Yield (%) | 0.0% | 0.0% | 0.0% | 0.0% |
| Free Cash Flow Yield (%) | -28.6% | nm | 0.7% | 2.0% |
| EV (EURm) | 64.7 | 62.4 | 62.1 | 61.2 |
| EV/Sales | 3.2 | 2.1 | 1.8 | 1.5 |
| EV/EBITDA | 53.7 | 26.8 | 11.3 | 8.2 |
| EV/EBIT | nm | nm | nm | 35.2 |
| EV/Capital Employed | 2.1 | 1.9 | 1.9 | 1.8 |

Source: Company data, UBI Banca estimates

Growth Rates

| (%) | 2015 | 2016E | 2017E | 2018E |
|------------------------|--------|-------|--------|-------|
| Growth Group Net Sales | 36.9% | 60.1% | 17.3% | 14.6% |
| Growth EBITDA | -48.5% | 93.3% | 135.2% | 36.2% |
| Growth EBIT | nm | nm | nm | nm |
| Growth Net Profit | nm | nm | nm | nm |



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Distribution of ratings

| Equity rating dispersion in the past 12 months | | | |
|--|-------|------|-----------|
| Buy | Hold | Sell | No Rating |
| 88.2% | 11.8% | 0.0% | 0.0% |

Proportion on issuers to which UBI Banca has supplied investment banking services relating to the last 12 months

| Buy | Hold | Sell | No Rating |
|------|------|------|-----------|
| 100% | 100% | - | - |

For further information regarding yearly and quarterly rating statistics and descriptions, please refer to www.ubibanca.com/equity-research.