

## SME Tech<sup>©</sup>

Technology Equity Research  
Platform



## INVESTING IN TECHNOLOGICAL SMEs – ISSUES AND OPPORTUNITIES

The European and in particular Italian industrial base of technological SMEs is **very interesting, undervalued and relatively known**.

The value of these SMEs with a high level of innovation is largely due to the quality and potential of technological assets (know-how, patents, innovation capacity).

**The problem for the investor is to evaluate this new class of assets, the strategies in place and the possible additional methods of valorization often not considered.**

Technological assets have a significant value both in-business use and stand-alone as well. Experience shows both excessive evaluations of target companies compared to their development potential and undervaluation of the assets as well.

**40% of the technology-based companies listed at AIM Italia have a business model strongly dependent on the product/process and digital platform technology and their intellectual property.**

**The technologies and the patents quality can influence the shares' value positively** in cases of launching new innovative products, presence of important licensing quotas, IP-based business model, **but also negatively** in presence of: high intensity innovation from the competition, litigation with inventors, technology substitution.

Many of the investments in SMEs are *Patient Capital*, investors must assure that the company in which they have invested has a technology/application roadmap that allows it to maintain the competitive advantage.

**The analysts' coverage of AIM listed SMEs is currently limited.** Coverage in general and especially on technological aspects is costly for lack of information and sophisticated intelligence. **This causes an informational asymmetry that leads to *Equity Stories* often incomplete.** Moreover, to attract international investors it is necessary to significantly improve the communication of the value of these assets.

ICM Advisors, to meet the above-mentioned needs of investors and companies, has developed a dedicated services platform for listed Companies on the AIM Italia of Borsa Italiana called SME Tech<sup>®</sup>. The platform is based on concrete cases and experiences of ICM matured in hundreds of valuations, technology due diligence and advanced market and technology intelligence activities at international level in different industrial sectors.

## WHAT ARE THE KEY QUESTIONS FOR INVESTORS?

The main technology business related questions from investors are:

- What are the major technology trends?
- Where competitors are innovating and patenting?
- The company research and innovation is focusing on the right technologies and end-markets?
- How technology innovation reduces product costs/differentiation?
- How to reduce time-to-market?
- Can the technology be licensed or used to build JVs around it?
- What technology acquisition can improve the competitiveness?
- How competitive is the company technology portfolio (know-how, patent, in-process R&D)?
- How strong is the patent portfolio?
- Is there the right technology skills mix and resources?
- How the revenue forecast depends from new product/technology introduction pipeline?
- How the company funds R&D? Does it have the resources from cash flows?
- How the technology risks are managed (people leave, freedom-to-operate, ...)?
- Is there a specific job role devoted to technology exploitation?
- What is the technology potential for new applications/market segments?

Equity research for SME frequently do not have answer for the above questions, technology risks are hidden and can jeopardize business plans.

## WHAT IS THE SME Tech<sup>©</sup> PLATFORM?

SME Tech<sup>©</sup> is a Technology Equity Research and Intelligence platform of innovative services for companies listed on the AIM Italia of Borsa Italiana, MTF dedicated to small and medium-sized Italian companies that want to invest in their growth.

## WHO IS IT ADDRESSED TO?

SME Tech<sup>©</sup> address the qualification and valuation needs of:

- Institutional Investors
- Entities involved in the listing process (Investors, Advisors, Nomad, Specialist, Other)
- Listed companies and potentially ones
- Investor Relations

## WHAT ARE THE OBJECTIVES?

SME Tech<sup>©</sup> aims to enrich the availability of relevant information and evaluations on medium/high-Tech SMEs for the following objectives:

- to identify the relevant technology elements necessary for the economic and financial evaluation in the IPO process;
- to further qualify the opportunities and risks associated with technological assets (know-how, patents, technologies, in-process R&D, software, ...) that are critical to the competitiveness and business plan sustainability;
- effectively communicate the value of technological assets to the market by integrating the existing Equity Research;
- monitoring valorization opportunities with integrated market information, competitors, technologies and IP;
- evaluating the strength, risks and potential of technological assets and their impact on performance.

## WHAT ARE THE TECHNOLOGY RISKS AND OPPORTUNITIES?

Evaluating an investment in an SME where technology, know-how and intellectual property determine the competitive advantage and the expected performance of industrial plans requires an accurate analysis of risks and opportunities.

Among the main risks we underline the following:

- technology and patents impact on development plans (revenues, costs, time-to-market);
- innovation level;
- competitive positioning threats (substitute technologies, time-to-market, lack of know-how);
- strengths/weaknesses of the patent portfolio;
- competitors innovation (head-to-head and hidden) in company-specific technologies;
- presence of IP-based contracts terms & conditions;
- cash flow sustainability for the R&D investments necessary to compete;
- market clearance (Freedom-To-Operate);
- loss of know-how caused by exit of key inventors;
- adequacy of Technology/IP management processes.

At the same time opportunities are not always well identified or are off the radar of the company's core business, for examples the:

- technology uniqueness;
- possible applications outside the target market;
- possible implementation of an IP Business Model;
- use of technology and IP assets value as equity in Joint Ventures and Partnerships;
- technology licensing-out as additional source of revenues;
- licensing-in to reduce the time-to-market;
- licensing-in to build a competitive patent portfolio;
- technology assets as collateral for financial operations.

### WHAT SERVICES ARE AVAILABLE?

The platform provides the following professional and intelligence services:

- Technology Equity Research Report
- Technology/IP opportunities monitoring

### WHAT IS THE TECHNOLOGY EQUITY RESEARCH REPORT?

The Technology Equity Research report is a document that contains information, insights and valuation elements of the technological assets needed for the investment management process from identifying and evaluating the opportunity, listing and investors communication.

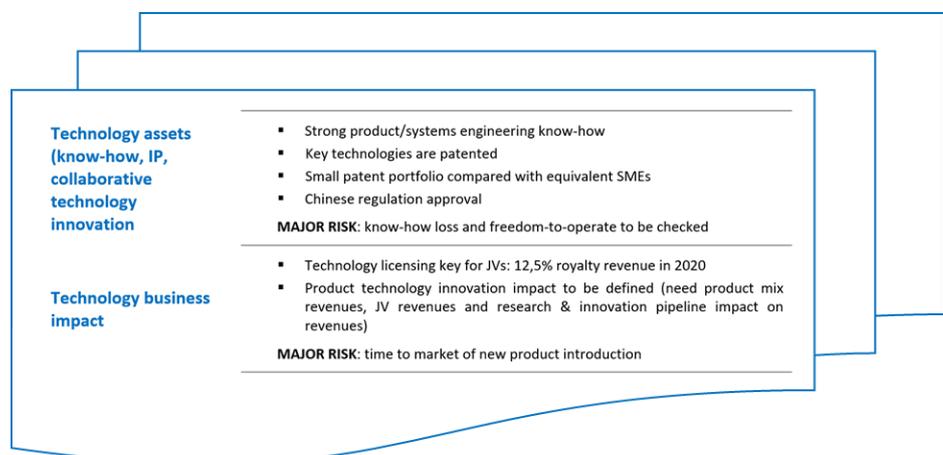
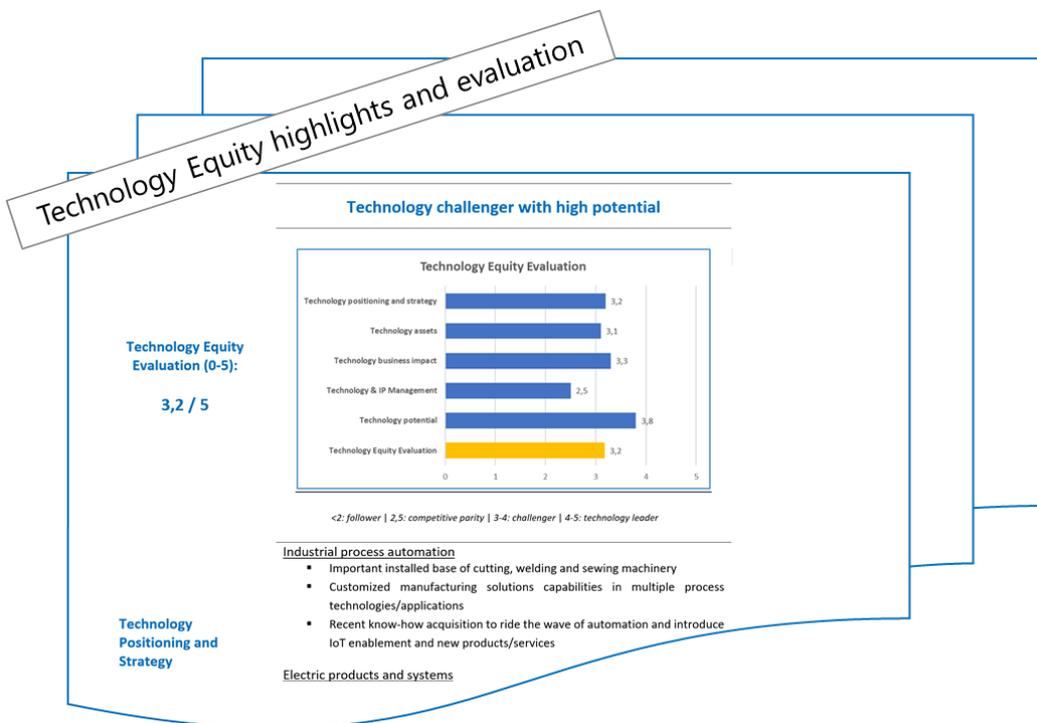
The report is structured in the following sections:

- Technology Equity highlights and evaluation
- Company profile: activities, strategies, financials, performance
- Technology positioning and strategy: product / technology portfolio, markets, competitors
- Technology assets (know-how, IP, collaborative technology innovation): analysis of the technological and IP portfolio
- Technology business impact: impact of technology on strategy and business plans
- Technology and IP management
- Technology potential: valorization opportunities

The information used comes from public sources, corporate documents and ICM intelligence and evaluations data bases.

Technology and industrial property must be effectively communicated in business terms from the IPO document and then to investors. Particularly in technology-based SMEs where the development strategy is centered around technological capabilities and the patent portfolio.

The Technology Equity Research Report is a document that highlights asset value elements in terms of strength, potential and risk mitigation and their impact on development strategies and economic-financial outcomes.



# Technology positioning and strategy

## Technology positioning and strategy

### Key questions

- What are the major technology trends?
- Where competitors are innovating and patenting?
- The company research and innovation is focusing on the right technologies and end-markets?

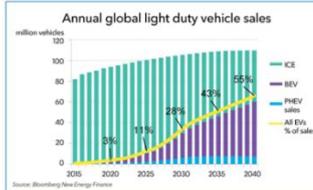
### Industrial process automation

The industrial process automation business unit competes in the cutting, welding and sewing machinery market for different materials (non-metal such as: technical fabrics, plastic, composites, PVC, leathers, ...) and end-market applications/products.

# Market

## MARKET

- The global electric vehicle market was valued at \$119 billion in 2017, and is projected to reach \$567 billion by 2025, growing at a CAGR of 22.3% from 2018 to 2025
- In 2040 55% of global light-duty vehicles sold will be electric: by that time electric vehicles will represent 33% of the global car fleet

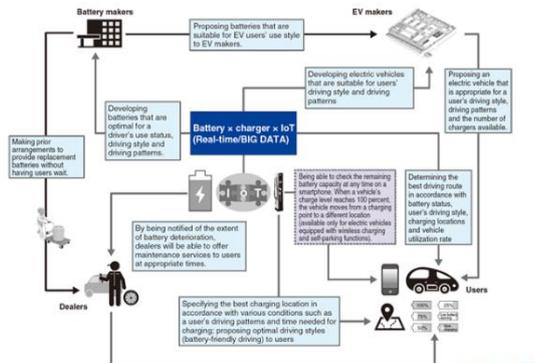


### Industrial and commercial vehicles

- Industrial and commercial electric vehicles (heavy lifting, as with forklifts) today represent 60% of the value of the electric vehicle market
- This market segment is set to grow 4,5 times in the next decade.
- Among the growth drivers:
  - Regulation in favour of sustainable mobility
  - Investments in R&D
  - Improved component performance (especially batteries)
  - Increasingly numerous and widespread charging infrastructures
  - Decrease in buying prices for consumers
  - Tax incentives

# Technology trends

## Ecosystem IoT implementation for charging stations requires the integration of the whole ecosystem:



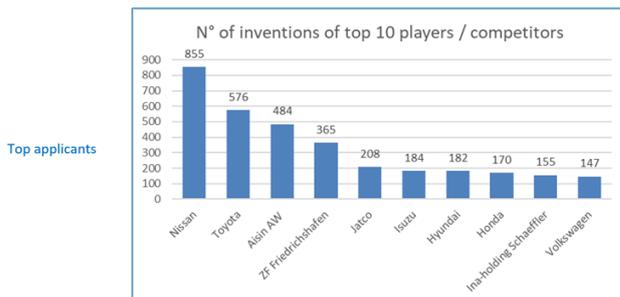
## Competitors' activities

**China** Several Tier-1 companies are expanding their presence in China to develop green mobility solutions, both directly and through JVs and partnerships:

Company	Activities
Bosch	<ul style="list-style-type: none"> <li>Started construction of new Nanjing plant to manufacture its iBooster for HVs and EVs</li> <li>Plans to produce lithium-ion batteries for HVs at its existing plant</li> <li>Partnered with Baidu, AutoNavi, and NavInfo to develop high-precision street maps for automated driving</li> <li>Supplies BAIC Motor (BAIC) with key parts for autonomous driving and advanced driver-assistance system (ADAS) technologies</li> <li>Partnered with Aiways in technology areas such as EV systems and autonomous driving</li> <li>Partnered with Xpeng Motors in the area of autonomous driving</li> </ul>
Continental	<ul style="list-style-type: none"> <li>Started construction of its Chongqing R&amp;D centre for the development of NEV-related products, etc.</li> <li>Alliance with Baidu for autonomous driving, connected cars, etc.</li> <li>Formed a joint venture with China Unicom Smart Connection to operate as a provider of Intelligent Transportation Systems (ITS) solutions, products and services.</li> <li>Formed a JV with CITC (Sichuan Chengfei Integration Technology Co., Ltd.) to develop and produce 48V battery systems</li> <li>Partnered with FAW Jiefang Auto to launch a new platform for operating telematics services for commercial vehicles</li> <li>Partnering with NIO on EVs and autonomous driving, etc.</li> </ul>
ZF	<ul style="list-style-type: none"> <li>Chery's production vehicle with Level 3 automation capability will be equipped with ZF's ProAI processor</li> </ul>

## Innovation activity

**Trend in the same technology:**  
 Patenting intensity 2.850 inventions in last 5 years (from 2013)



**Other relevant applicants**

Other automotive companies:

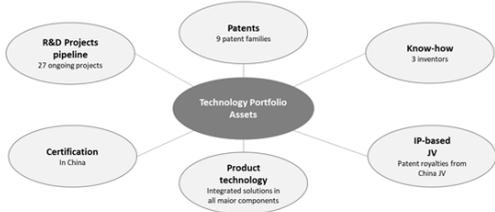
Subaru	109
Renault	102

# Analysis of technology assets portfolio

## Technology assets (know-how, IP, collaborative technology innovation)

### Key questions

- How competitive is the company technology portfolio (know-how, patent, in-process R&D)?
- How strong is the patent portfolio?
- Is there the right technology skills mix and resources?



### R&D projects pipeline

Business Unit	Project	End Markets	Year of start
	Machine customization project	Hydraulic pipes	

## Portfolio strengths – KPI analysis

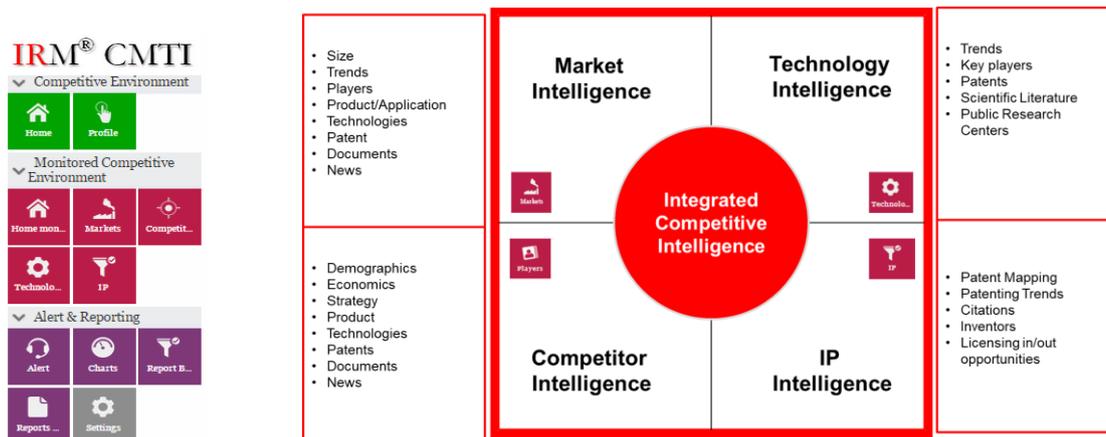
<b>Portfolio structure</b>	Size (N° of inventions)	▪ 9
	Size (N° of patents)	▪ 51
	% granted (families with at least 1 granted patent)	▪ 100%
<b>Technology</b>	Specialization (% of inventions with the first 3 technological areas IPC 4 digit)	▪ 44,4%
	Concentration (% of inventions with the first technological areas IPC 8 digit)	▪ 11,1%
	Relevance (3rd parties' forward citations on the first IPC 8 digit)	▪ 3
<b>Innovation activity</b>	New filings last 3 years	▪ 33,3%
	Trend (CAGR of portfolio in last 3 years)	▪ 14%
	Average time to expiration (years)	▪ 12,8
<b>Geography</b>	Main countries (% of inventions with at least one patent in main patent offices)	▪ EPO: 22,2%
		▪ USA: 22,2%
		▪ CN: 11,1%
<b>Quality</b>	Forward citations (% of inventions with forward citations)	▪ 33,3%
<b>Transferability</b>	High on selected patents	

## WHAT IS TECHNOLOGY RISKS/OPPORTUNITIES MONITORING?

The activity of investment management and asset valorization requires a continuous availability of updated information and early warning. This to improve the responsiveness of investors and companies to seize opportunities, reduce risks and improve the selectivity of investments.

ICM maintains the information bases and analyses of the Technology Equity Research Report through a technology risks/opportunities monitoring process implemented on the cloud computing proprietary application **CMTI (Competitive Market & Technology Intelligence)** that integrates market, competitors, technologies and IP information of the listed companies and target potentially quotable.

CMTI focuses on the technological dimensions of competitiveness, such as markets and technology trends, competitors R&D strategies and technology and IP portfolio, licensing and acquisition opportunities.



## HOW THE SERVICES ARE PROVIDED?

ICM provides services both on-demand and recurring mode.

In on-demand mode the Technology Equity Research Report is provided one-time to investors for the valuation of the investment.

In the recurring mode, the Technology Equity Research Report and its update is provided on a periodic basis (typically quarterly). The on-line access to updated information and the alerting service concerning the selected technologies and competitors are also provided.

## WHAT IS THE ICM ADVISORS TRACK RECORD IN TECHNOLOGY ASSET VALUATION AND MANAGEMENT?

INDUSTRY	PROJECTS
DIGITAL & ICT	<ul style="list-style-type: none"> <li>▪ Customer Communication Management SaaS platform valuation for PE/IPO</li> <li>▪ SaaS Platform Technology &amp; IP Valuation for funding strategy</li> <li>▪ E-commerce platform valuation for start-up</li> <li>▪ R&amp;D project assessment for blockchain technology</li> <li>▪ E-Logistics Industry and technology briefing for assessing licensing / cooperation partnership</li> <li>▪ Printing technology platform competitive intelligence for product development</li> <li>▪ Digital TV Services and Technology strategy</li> <li>▪ Set-top box and smart card technology licensing</li> <li>▪ Smart City landscape and visioning</li> </ul>
TELECOM	<ul style="list-style-type: none"> <li>▪ R&amp;D Unit Technology Know-how Assessment</li> <li>▪ Intangible and IP Assets Valuation</li> </ul>
MEDIA	<ul style="list-style-type: none"> <li>▪ Event study for stock trend analysis</li> <li>▪ R&amp;D project assessment</li> </ul>

INDUSTRY	PROJECTS
PHARMA/BIOTECH	<ul style="list-style-type: none"> <li>▪ Reproductive genetics <ul style="list-style-type: none"> <li>▪ IP assessment &amp; Strategy</li> <li>▪ Accelerator JV design with leading USA University</li> </ul> </li> <li>▪ Cell based therapy oncology <ul style="list-style-type: none"> <li>▪ In-process R&amp;D Due diligence</li> <li>▪ Valuation for fund raising</li> <li>▪ Licensing contract design &amp; closing with Big Pharma</li> </ul> </li> <li>▪ Patent and technology monitoring for patent strategy formulation</li> </ul>
MEDTECH	<ul style="list-style-type: none"> <li>▪ In-process R&amp;D projects portfolio for partnership</li> <li>▪ R&amp;D and Technology know-how valuation for partnership</li> <li>▪ Early-stage R&amp;D project valuation for transfer</li> <li>▪ World Wide Licensing Strategy</li> <li>▪ Licensee target &amp; assessment</li> <li>▪ Licensing royalty valuation</li> <li>▪ Patent portfolio valuation for start-up</li> <li>▪ Licensing T&amp;Cs and standard contract design</li> </ul>
	<ul style="list-style-type: none"> <li>▪ IP Landscape for licensing</li> <li>▪ Wearable technology &amp; IP landscape</li> <li>▪ Technology and patent assessment for acquisition</li> <li>▪ Technology commercialisation processes design and set-up for a TTO</li> </ul>

INDUSTRY	PROJECTS
ADVANCED MATERIALS  NANOTECHNOLOGY COMPOSITES PLASTICS	<ul style="list-style-type: none"> <li>Market scouting, technology licensing of adhesive superhydrophobic and self-cleaning films</li> </ul>
	<ul style="list-style-type: none"> <li>Technology and IP due diligence and risk analysis</li> <li>Patent FTO (Freedom-To-Operate) for acquisition</li> <li>IP assessment for Patent strategy</li> <li>Patent Transferability Assessment</li> </ul>
	<ul style="list-style-type: none"> <li>Separation of plastic from complex waste products competitive technology intelligence for Private Equity investment</li> <li>Bio-plastic market &amp; technology analysis for funding</li> </ul>

INDUSTRY	PROJECTS
ENERGY	<ul style="list-style-type: none"> <li>Smart Grid technology data bank for IP strategy</li> <li>Fusion Technology Patent Portfolio Valuation for IP holding setup</li> <li>Technology &amp; IP Monitoring, Tech Strategy, Competitive Landscape monitoring for target acquisition</li> <li>National Energy Cluster strategy</li> </ul>
CLEANTECH	<ul style="list-style-type: none"> <li>Waste Management assets and company valuation for sale</li> <li>Environmental Dredging Technology and patent valuation</li> <li>Cleantech cluster Technology &amp; IP assessment</li> <li>Green Building - Economic Valuation of Intangible Assets/IP and patent portfolio build-up to activate technology transfer</li> </ul>

INDUSTRY	PROJECTS
INDUSTRIAL  ELECTRONICS PACKAGING STEEL AUTOMOTIVE MECHATRONICS INDUSTRY 4.0	<ul style="list-style-type: none"> <li>M&amp;A EMS listed company</li> <li>Technology &amp; know valuation for licensing</li> <li>Electronics manufacturing business valuation for shareholder exit</li> <li>EMS Market analysis for M&amp;A targeting</li> </ul>
	<ul style="list-style-type: none"> <li>Patent portfolio assessment, benchmark and economic value contribution</li> <li>Patent portfolio landscape for investors</li> </ul>
	<ul style="list-style-type: none"> <li>Market and technology scouting for patent licensing-out</li> </ul>
	<ul style="list-style-type: none"> <li>Industrial &amp; IP assessment</li> <li>IP Strategy</li> <li>Industrial plan</li> </ul>
	<ul style="list-style-type: none"> <li>Technology know-how and IP valuation for licensing</li> <li>Technology valuation for vehicle tracking application</li> </ul>
	<ul style="list-style-type: none"> <li>SME Cluster technology/application strategy</li> <li>Collaborative R&amp;D project valuation</li> <li>Recurrent Targeting for collaborative R&amp;D</li> <li>I4.0 Technology licensing-in for Industrial Vending</li> <li>I4.0 Advanced remote maintenance application valuation</li> </ul>

INDUSTRY	PROJECTS
<p style="text-align: center;"><b>AEROSPACE &amp; DEFENSE</b></p>	<ul style="list-style-type: none"> <li>▪ Analysis &amp; structuring of technology/patent portfolio for large aerospace &amp; defense corporation (civil &amp; military aircraft, avionics and space)</li> <li>▪ Multi-year licensing initiative (transferability assessment, technology marketing, licensing deal management of IP portfolio for large aerospace &amp; defense corporation)</li> <li>▪ Technology assessment to identify commercialization potential of the Self-healing of and Recycling Composites technology</li> <li>▪ Technology and IP related monitoring of technology and competition for Aircraft Maintenance Service providing company</li> <li>▪ Technology and IP competitive intelligence services for carbon composite manufacturing company</li> <li>▪ Development of the strategic plan national aerospace industry including mapping of OEM, suppliers, R&amp;D centers, universities and collaborative R&amp;D projects for national platform (ACARE and ESA)</li> <li>▪ Technology valuation (Technology Equity Score) of an aerospace engineering company</li> <li>▪ Technology assessment to identify commercialization potential of the Three-dimensional virtual Space Simulation technology</li> <li>▪ Valuation of the technology capabilities of 34 mechatronics SMEs suppliers in the aerospace market</li> <li>▪ Assessment of IP Portfolio of a special aircraft manufacturer to identify technology clusters for commercialization</li> <li>▪ Value proposition and technology transfer of a high performance welding technology for aerospace light weight materials</li> <li>▪ Identify value proposition of aerospace technologies for automotive applications Technology transfer brokerage for testing device of aerospace coating resistance tests</li> <li>▪ Transferability study for aerospace electrical connector technology. Initiate and management of licensing deal</li> </ul>

INDUSTRY	PROJECTS
<p><b>INVESTORS</b></p> <p>PRIVATE EQUITY VENTURE CAPITAL FAMILY OFFICE CORPORATE BANKING</p>	<ul style="list-style-type: none"> <li>▪ Technology Equity Research for Health Digital services listed company</li> <li>▪ Technology Valuation for several M&amp;A deals</li> <li>▪ Technology and IP Due diligence</li> <li>▪ Technology Intelligence for M&amp;A scouting</li> <li>▪ Technology &amp; IP Risk assessment for M&amp;A deals</li> <li>▪ Freedom-To-Operate FTO for investment decision</li> <li>▪ IP Loan product design and pilot</li> <li>▪ Intangible assets &amp; IP Valuation for debt restructuring</li> <li>▪ Industrial &amp; Technology Score for lending</li> <li>▪ R&amp;D project assessment for automated platform for private investments</li> </ul>

## ICM Advisors Profile

ICM Advisors is an international independent firm specializing in valuation, valorization strategy and finance of intangible assets (brand, technologies, patents, know-how, R&D, software) and associated businesses. ICM Advisors is a member firm of ICM International leading European professional services network specialized in valuation, valorization, finance of intangible assets, equity research, competitive intelligence and technology transfer.

The firm is focused on the industrial-financial value of the assets both in use in the business and stand-alone as well. The financial know-how is a core competence of ICM that has been integrated with a deep know-how and specialization of Technology & IP Asset Management and market. The mix of skills present in ICM has allowed a unique positioning on the European market of high specialization professional services. ICM Advisors is one of the first European firm that provides integrated professional services with industrial and financial solutions that use IP and intangible assets as collateral.

The high seniority of its advisors with international experience in many industries and with multi-disciplinary skills such as marketing, technology, business strategy, economic-financial valuation, corporate finance and development of international markets enables comprehensive valuation of businesses and the core IP and intangible assets.

ICM owns a proprietary advanced Competitive Market & Technology Intelligence (CMTI) platform in order to support sophisticated analysis and valuation.

For investors (Asset Managers, Private Equity, Venture Capital, Investment Banks and Family Offices) our services cover the entire investment process from the identification of opportunities, risk assessment, valuation and investment valorization.

For listed technology SMEs we deliver an innovative Technology Equity Report that integrates the usual equity research with technology positioning, insights, impact on competitiveness and expected financial performance.

Our specialization is often used in the field of investment management, M&A and IPO for industrial assessments of the brand, technologies, R&D portfolio and know-how as well as to identify opportunities for monetizing assets with extraordinary financial operations or licensing.

ICM counts among its clients investors and companies (large, mid-cap, SMEs, startups). Clients choose ICM for its highly specialized expertise, innovative services, advanced research units and the high service quality. Our network operates at pan-European level with offices in Germany, Switzerland, Italy and partners in USA and APAC.

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