

# Coverage Initiation Report

Coverage initiated on July 12<sup>th</sup>, 2016

Aurgalys is contracted by Implanet to provide equity research

# Aurgalys

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## Implanet

Euronext Paris: IMPL [FR0010458729]

July 12<sup>th</sup>, 2016

**Estimated price:** €3.93

Share price (€) 1.27

(as of Jul. 12<sup>th</sup>, 2016)

High/Low (€) 2.28/1.07

(since Jan. 1<sup>st</sup>, 2016)

Market Cap. (€M) 14.0

(as of Jul. 12<sup>th</sup>, 2016)

Estimated Net Cash 1.0

(€M)

Estimated Market Cap. 43.6

(€M)

Number of shares (M) 11.1

Estimated price (€) 3.93

3-month average daily volume 125,000

Free Float 79%

## Implanet, all set to become a key player in spinal fusion surgery

Implanet is a French company specializing in the design, development and commercialization of implantable medical devices for orthopedic surgery. In this high-tech therapeutic area, the company offers a comprehensive range of innovative implants for spine and knee surgery, including the JAZZ band implants, the lead products that could drive the company's growth in the near future. Implants of the JAZZ family can improve surgical procedures in terms of efficacy and safety, reduce the duration of surgery, and also reduce surgery costs. Developing and marketing innovative technologies are necessary to differentiate oneself from competitors in a highly competitive orthopedics market. The JAZZ implant could simultaneously satisfy several important stakeholders in the value chain of the industry: patients, medical personnel, hospitals, insurers and healthcare authorities. Implanet markets its product directly in France and the US, where the company has been focusing its marketing efforts, and created the JAZZ Academy, to accelerate the adoption of the JAZZ technology among spine surgeons. Our target price for Implanet is €3.93 /share.

### JAZZ band product range to drive the company's growth

The JAZZ implant is Implanet's lead product, which is expected to drive the company's growth. This innovative band implant for spinal fusion surgery can be used in support or for the replacement of pedicle screws. The JAZZ implant offers many advantages over traditional pedicle screws and hooks, of which the most significant are: (i) a better quality of stabilization of the rod-vertebrae fixation, (ii) a significant reduction of the surgery time (up to several hours), (iii) and a better correction of spine deformities in 3 dimensions. JAZZ is currently indicated for pathologies on the 3 major segments of reconstructive spine surgery, i.e. large deformities, bone-degeneration of the spine, and injuries (trauma, tumors), a significant market estimated at \$2 billion.

### The United States, key market for Implanet's product

The United States represent the first orthopedic surgery market in size, with more than 60 % of share market in the spinal fusion indication alone. Implanet's aim is to build its growth on this lucrative market where it sells the JAZZ implants via outsourced agents. The company already has

Euronext since Jan. 1<sup>st</sup>, 2016

**Implanet** -44.5%

**Alys France\*** -14.6%

**CAC Healthcare.** -3.3%

**CAC 40** -6.6%

**CAC Small** -6.0%

\* Index of French smallcaps (less than €1B market capitalization at time of inclusion) in the healthcare and life sciences sector, listed on Euronext Paris. See <http://www.aurgalys.com/aurgalys-indices>

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a strong network of specialized partners covering 60 % of the US territory. In the short term, this deployment should strengthen the presence of the company in spinal surgery reference centers, and the company is hoping to accelerate the adoption of its products by hospitals, thanks to the upcoming publication of several clinical and medico-economic studies. Sales in the US accounted for 43 % of the JAZZ turnover in 2015 and should become more important in the next few quarters.

### **Potential revenues of €100M**

For last 2 years, the number of JAZZ implants used in spinal surgery has been growing, particularly in the United States. To date, almost 15,000 have been used worldwide. The JAZZ implants benefits from strong differentiating advantages that could increase their adoption by surgeons. Our peak sales estimate for JAZZ could reach €100 M.

### **Valuation**

Our valuation for Implanet is based on the JAZZ technology. We value the company at €43.6M or €3.93 per share, a 209% upside compared to the price of July 12<sup>th</sup>, 2016.

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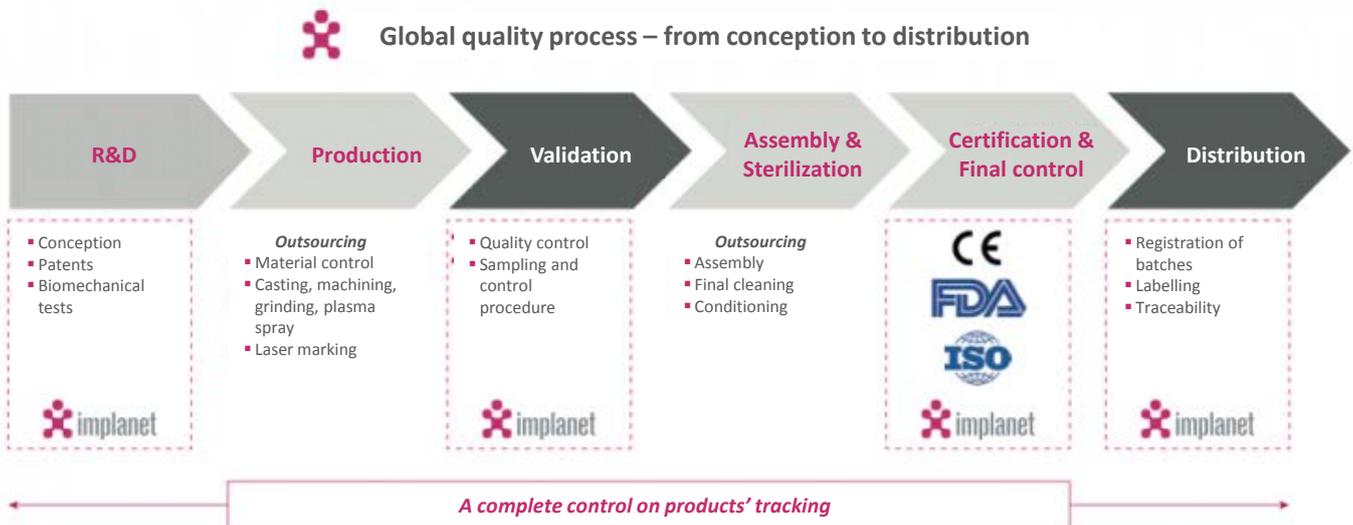
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## 1. Company profile

Implanet was created in 2006, and specializes in the development of implantable medical devices for orthopedic surgery. The company develops and markets several ranges of orthopedic implants, and has marketing authorization in Europe, the United States, and some emerging countries. Thanks to its innovative band implant complementing the instruments available to surgeons, Implanet aspires to become a key player in spinal orthopedic surgery, in the next few years. The company will capitalize on its strong expertise in the design and development of surgical implants, gathered through the extensive experience of its management team in this field. Implanet achieved 2 decisive steps in 2013 with (i) its Initial Public Offering on Euronext Paris (ISIN: FROO10458729), and (ii) the opening of a sales subsidiary in the United States, Implanet's largest market.

Implanet has an integrated business model covering most of the industrialization process of its implants (Figure 1). Proprietary products are designed and developed through the Research and Development department. Although the production of implants is outsourced, Implanet is still responsible for the critical steps such as product validation and quality control. The company also implemented a marketing strategy which combines direct sales in key markets (France and the US) and distribution networks in other territories.

Figure 1. Implanet’s production process (source: Implanet)



## 1.1. Two ranges of innovative products successfully developed by Implanet's R&D team

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*Comprehensive range of band implants approved in the US and Europe*

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After its inception, Implanet rapidly developed two ranges of products for orthopedic surgery, in the fields of spine and knee disorders. Historically, Implanet also distributed a third line of products for hip surgery, but the company decided to divest this activity due to the competitive environment.

- **Spine surgery :**

The first market addressed by Implanet is that of spinal fusion, a major segment of the spine surgery market estimated at \$4.8 B in 2013 (GlobalData). Implanet's spine products include the JAZZ band implant range, and the "Implanet Spine System", a range of traditional implants consisting of pedicle screws, hooks, and orthopedic instruments.

JAZZ is the company's lead product, that could generate up to €100 M per year (Aurgalys estimates). Used in support or replacement of pedicle screws, the JAZZ provides a better attachment of metal rods to vertebrae, during spinal fusion surgery, especially for patients suffering from large deformities of the spine, or from bone-degenerative disorders (osteoporosis). The company received marketing authorization of the JAZZ implant in Europe (CE mark in 2011) and the United States (approval 510(k) in 2012), which was subsequently extended to all products of the JAZZ family. In September 2015, Implanet received another FDA approval extending the use of the JAZZ implant with all of the pedicle screws and rods systems available on the US market (including competitors' devices).

- **Knee surgery:**

Implanet distributes two lines of products for knee surgery. The "Madison" products are indicated for total knee replacement, and the "Twist" products are indicated for surgery of knee ligaments. These products are marketed since 2008 in France and some emerging countries.

## 1.2. «State of the art» validation and quality control tools

As previously indicated, Implanet decided to externalize the manufacturing process of its implants in order to (i) reduce capital expenditure on a large number of manufacturing tools, (ii) fully dedicate its equipment to its R&D activity and increment its range of innovative products.

However, Implanet decided to internalize the validation and control steps since they are critical to ensure the quality of its implants, and that they comply with the requirements of medical regulatory agencies. Therefore, Implanet invested in "state of the art" equipment, and in a dedicated team (almost 20% of Implanet's personnel) for quality control. With such equipment the company can assure that its products comply with Implanet's specifications, and that of regulatory authorities.

The company's supply chain has also been optimized with automated storage carousels for efficient tracking of each product lot, management of inventories, and adequate supply to clients, especially when handling high volumes.

### 1.3. Direct sales in key territories

Implanet has built a strong presence worldwide, and has a network of distribution partners in more than 15 countries. With the exception of France and the US, where Implanet directly markets its products, the company relies on local sales partners. With this dual strategy, the company can maximize its operating margin in the US territory which holds the greatest sales potential, and in France, where Implanet capitalizes on its extensive knowledge of the market. Local distributors in other territories enable the company to benefit from their strong presence and experience with local surgeons. To increase its reputation toward the medical community and to drive JAZZ adoption, Implanet recently launched the JAZZ Academy, a training program for surgeons and vendors.

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*The US territory,  
Implanet's strategic  
market*

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## 1.4. Company history

Date	Main events	Financing
2006	<ul style="list-style-type: none"> <li>Implanet SA is founded in Martillac (Bordeaux), France</li> </ul>	
2007	<ul style="list-style-type: none"> <li></li> </ul>	<ul style="list-style-type: none"> <li>€13 M financing round</li> </ul>
2008	<ul style="list-style-type: none"> <li>CE marking and 1st surgeries with Implanet's hip and knee implants</li> </ul>	
2009	<ul style="list-style-type: none"> <li>Launch of the Madison project (knee implants), and the « Implanet Spine System » (ISS) for spine surgery</li> <li>Implementation of « Beep N Track », to track implants from product manufacturing, to utilization in hospitals</li> <li>CE marking of the Twist products (hip surgery)</li> <li>Distribution agreements in Brazil and Iran for knee implants</li> </ul>	<ul style="list-style-type: none"> <li>€7.6M financing round (historical investors)</li> </ul>
2010	<ul style="list-style-type: none"> <li>Launch of the JAZZ project</li> <li>CE marking of the Implanet Spine System, and Madison implants</li> <li>Distribution agreement in Turkey for spine and knee implants</li> </ul>	<ul style="list-style-type: none"> <li>€8.0M financing round (historical investors)</li> </ul>
2011	<ul style="list-style-type: none"> <li>CE marking and marketing authorization of JAZZ</li> <li>1st surgery with Implanet Spine System</li> <li>Marketing authorization of TWIST in Brazil</li> <li>Distribution agreements in South Africa for spine and knee implants</li> <li>Cession de l'activité Beep N Track à la société américaine GHX, leader mondial de la logistique hospitalière</li> </ul>	<ul style="list-style-type: none"> <li>€5.0M financing round (historical investors)</li> </ul>
2012	<ul style="list-style-type: none"> <li>Oseo Label « Innovative company»</li> <li>Distribution agreement in France for knee implants</li> <li>Launch of JAZZ for scoliosis and spine degenerative disorders</li> <li>Marketing authorization of JAZZ in the US (510 (k))</li> </ul>	
2013	<ul style="list-style-type: none"> <li>Distribution agreement in Italy, Australia, New-Zeland and Russia</li> <li>Marketing authorization for spine and knee implants in India</li> <li>Implanet's US subsidiary is founded in Boston, Massachusetts</li> <li>First distribution agreement in the US</li> <li>First JAZZ surgery in the US</li> </ul>	<ul style="list-style-type: none"> <li>€9.4M raised through bond financing</li> <li>€14.1M Initial public offering on Euronext Paris</li> </ul>
2014	<ul style="list-style-type: none"> <li>End of commercialization of the "hip prosthesis" product line</li> <li>Several distribution agreements concluded : 25 distribution partners in the US covering over 60% of the North American territory</li> </ul>	
2015	<ul style="list-style-type: none"> <li>Marketing approval in Europe and the US, of a range of JAZZ implants, compatible with all metal rods of different diameters</li> <li>Final patent validation for the JAZZ technology in Europe (patent number: EP 2521500), providing IP protection until 2031.</li> </ul>	<ul style="list-style-type: none"> <li>€11.2M follow-on offering</li> <li>€1M Convertible bond financing. Could be brought to a maximum of €5M.</li> </ul>
2016	<ul style="list-style-type: none"> <li>Marketing approval of two new implants : JAZZ Claw and JAZZ Lock, in Europe and the US</li> <li>Initiation of a clinical study with TFS, in bone-degenerative disorders of the spine</li> </ul>	

## 1.5. Management

### **Ludovic Lastennet, Chief Executive Officer**

Ludovic has 21 years of experience in the medical field, capital equipment, reconstructive orthopedics and dental implants. Prior to Implanet, he spent 5 years as General Manager of a French Subsidiary of KaVo Dental, and 6 years as European Sales Manager for Stryker Corporation. Ludovic is graduated from the ISG School of Business, 1990, Paris, France.

### **David Dieumegard, Chief Financial Officer**

David has 15 years of experience in Finance in various industries. He was CFO at KOT laboratory (adult nutrition), Musiwave (leading platform to deliver music content on mobiles, sold to Microsoft e-live) and Corporate Controller at ActivIdentity (network security and authentication software solution, company listed on Nasdaq). David owns a Master and Post Master Degree in Finance – 1993, University of Poitiers, France.

### **Régis Le Couedic, R&D Product Development & Manufacturing Director**

Regis has 24 years of experience in reconstructive Orthopedics and Spinal (Zimmer, Stryker, Abbott Spine). He was founder and R&D Director of Spine Next. Régis has a mechanical Engineering Degree, PolyTech'Lille, 1990, Lille, France.

### **Brian Ennis, President Implanet Inc.**

Brian has more than 30 years of experience in the medical device industry. For 11 years, he held various management positions and presidency at Stryker Corporation in Europe and the US. He is also International President of Wright Medical Group, a firm specializing in orthopedic devices and biotechnologies, and President of Empi, a company specializing in electro-therapeutic medical solutions. Brian was CEO of Etex Corporation for 7 years, and successfully led the transformation of this biomaterial and R&D-focused startup into a profitable business.

### **Nicolas Marin, Chief Marketing Officer**

Nicolas has 15 years of experience in international marketing and product development in spinal, orthopedic and sport medicine implants. He was International Product Manager and EMEA Marketing Manager for 7 years at Stryker. Nicolas holds a Master Degree in Economics (University Bordeaux IV) and Politics of University College Dublin (1995), as well as an International Business Master's degree from the MIB-MACI, KEDGE – (Bordeaux, 1997).

### **Laurent Penisson, Sales Director**

Laurent has 21 years of sales experience of equipment and orthopedic implants (Stryker, Johnson & Johnson, Arthrex), including 12 years as sales director.

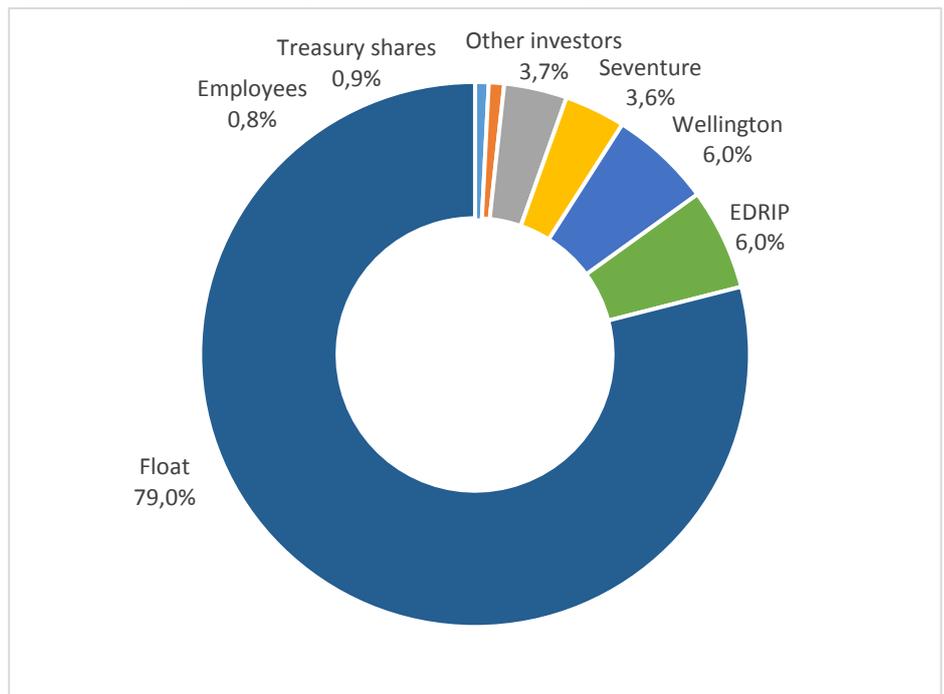
**Franck Laporte**, Chief Operating Officer

Franck has 18 years of experience in orthopedic operations management with industry leaders: Spine Next, Abbott Spine, Zimmer Spine. Franck obtained a University Diploma in logistics, in 1991.

**1.6. Capital structure**

Free float represents 79% of Implanet's capital. Seventure, Wellington and Edmond de Rothschild Investment Partners hold 3.6%, 6.0%, and 6.0%, respectively.

Figure 2. Implanet's Capital Structure (source: Implanet)



## 2. The spinal column and its associated pathologies

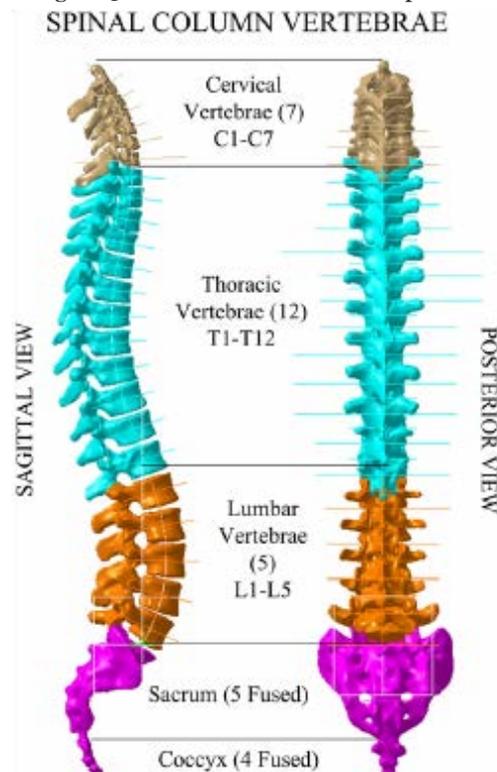
### 2.1. Anatomy of the spine

The spine is a bone structure made of 33 piled-up vertebrae, extending from the base of the skull to the pelvis, and stabilized by a set of intervertebral discs, ligaments and joint apophysis or processes. The spine plays an essential role in vertebrates. It is responsible for the protection of the spinal cord and spinal nerves; it stabilizes bone structure and maintains the stature. In humans, the spine is characterized by 4 main areas (Figure 3):

- the cervical area with 7 cervical vertebrae C1 to C7
- the thoracic area with 12 thoracic vertebrae T1 to T12
- the lumbar area with 5 lumbar vertebrae L1 to L5
- the sacrum and coccyx area, which includes the Sacrum, a bone structure formed from the merger of 5 vertebrae (S1 - S5) corresponding to the posterior part of the pelvis, and the Coccyx, another bone structure formed from the merger of 4 vertebrae, located at the end of the spine.

Some pathological conditions of infectious, inflammatory, traumatic, behavioral or even psychological origins can alter the integrity of the spine, resulting in biomechanical, physiological, neural and psychological disorders, sometimes extremely severe, or potentially life-threatening.

Figure 3. Structure of the spinal column (Lukovic et al, 2016).



## 2.2. Main pathologies of the spine

Back pain is one of the most prevalent disorders worldwide, and one of the leading causes of disability and reduced quality of life, in developed countries. It is estimated that between 60% and 80% of the global population will suffer at least once in their lifetime from back pain, on a permanent or temporary basis (Al-Otaibi, 2015). In addition to its high prevalence, the societal impact of back pain is particularly high, with direct and indirect costs estimated at \$100B annually in the US only (Indrakanti et al, 2012; Boos, 2009). Epidemiological and market studies anticipate an increase in the prevalence of spine diseases in the coming years, with the increase of life expectancy, in particular in the most developed countries.

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*Back pain, a \$100B societal impact in the US*

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Most of spine pathologies affect the thorax, lumbar, and sacral regions of the spine. Although these diseases are often multifactorial, their pathogenesis is often unidentified. Generally speaking, pathologies of the spine can be divided into 3 groups depending on their origins and symptoms: large deformations, degenerative diseases, and traumatic or metastatic spine lesions.

- **Deformities**

Spine deformities are characterized by abnormal spinal curves. In most cases, they are minor distortions, and do not cause severe complications. However in some patients, such deformities increase over time and cause severe complications, sometimes painful.

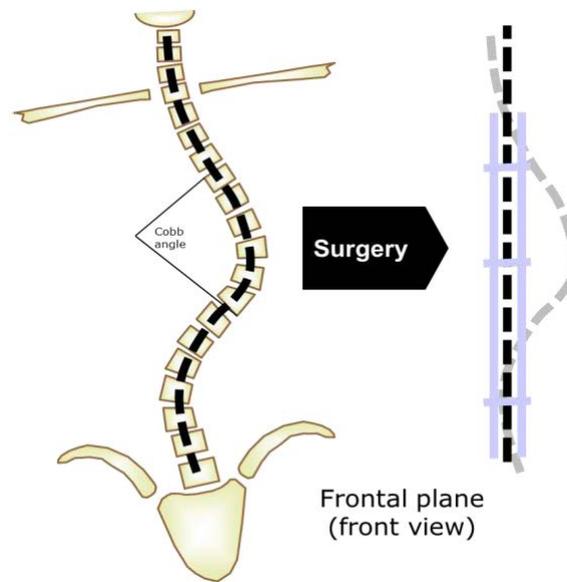
Scoliosis is one of the most common disabling deformities of the spine. Scoliosis is a three-dimensional, permanent and progressive spinal deformity, which, depending on its severity can lead to functional and structural morbidity, including severe cardiopulmonary dysfunctions. From the anatomical perspective, it is characterized by a scoliotic angle (Cobb angle) greater than 10 ° (Figure 4). Several factors may cause scoliosis, but in the vast majority of cases, no cause or no pathological circumstances can be established (idiopathic scoliosis). Idiopathic scoliosis is the most common form of the disease and mainly affects children and teenagers. Its prevalence is estimated between 0.5% and 5.2% of people under 16 years of age (Konieczny, 2013). Scoliosis is said to be non-idiopathic when it is possible to determine its origin, and is more common in adults. For example, neuromuscular diseases, infections, inflammatory diseases, bone-degenerative diseases, bone metastases or congenital malformations are known to cause scoliosis. Some neuromuscular diseases such as the Duchenne muscular dystrophy, spinal muscular atrophy, and some neuropathies are usually associated with scoliosis. In adults, scoliosis often result from asymmetrical and gradual degeneration of the spine that can lead to the compression of the spinal nerves. Except in the most severe cases, the disease is usually painless and does not induce neurological complication.

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*Scoliosis, one of the most common deformity of the spine*

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Figure 4. Scoliotic spinal column with angle of Cobb (Source: Implanet).



Scoliosis can be divided into 4 categories according to the age at onset.

- **Infantile scoliosis** occurs in children of less than 3 years old, and is usually associated with neurodegenerative and congenital disorders. Its prevalence is around 1% and worsening of the scoliotic curve is observed in more than half of the cases (Konieczny, 2013).

- **Juvenile scoliosis** occurs in children between 3 and 10 years old, and can be idiopathic or non-idiopathic. It represents about 10-15% of non-adult idiopathic scoliosis.

- **Adolescent Scoliosis** occurs during puberty (11-18 years old) and is mostly idiopathic (90% of idiopathic scoliosis cases).

- **Adult scoliosis** (> 18 years old) is mainly non-idiopathic, with a prevalence of 8% in the adult population over 25 years. The prevalence increases significantly with age (68% in people above 60) because of the onset of many age-related degenerative diseases, in particular osteoporosis.

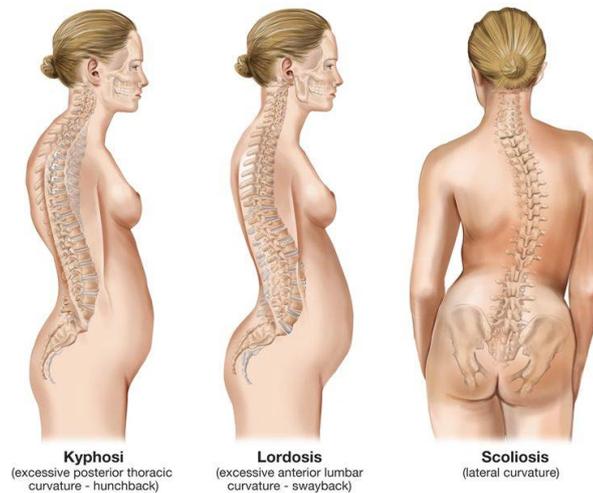
The spine may be subject to other types of deformities. The most common are (Figure 5):

- **Kyphosis**, a convex distortion of the spine resulting in the round appearance of the upper part of the back. Kyphosis occurs at any age, with a higher prevalence in the elderly and occurs in the cervical portion of the spine. Poor posture, aging, or pathological events such as accidents, infections, and inflammation are known causes of kyphosis.

- **Lordosis**, a concave curvature (or anterior convexity) of the spine primarily occurring in the lumbar and cervical regions. The incidence of lordosis is mainly due to bad posture, especially during adolescence. It is usually painless and without serious consequences.

- **Spondylolisthesis**, a deformity of the vertebral column induced by the slipping of a vertebra (forwards or backwards). It can be caused by the degeneration of a component of the spine (vertebrae, intervertebral disc...), or more rarely by trauma.

Figure 5. Main large deformities of the spinal column (source: www.musely.com)



#### • **Degenerative diseases**

The degeneration of the spine is characterized by the deterioration, or the gradual weakening of vertebrae or intervertebral discs. It is above all, a natural process associated with aging of the body. However, some pathological conditions may accentuate this phenomenon leading to serious physiological, anatomical and biomechanical complications such as intense pain, deformities, and fractures. Osteoporosis is one of the most important degenerative pathologies of the bone. Osteoporosis is the progressive demineralization of the bone matrix, leading to the weakening of the bones and their inability to withstand mechanical stress. There is a higher prevalence of osteoporosis among postmenopausal women due to estrogen deficiency, limiting calcium binding to the bones. Osteoporosis is the main cause of vertebral compression fractures (VCF) accounting for 60% of them. It is estimated that the risk of osteoporosis-related fracture in a lifetime is 46.4% in female and 22.4% in males (Old and Calvert, 2004). VCFs can have several consequences including severe back pain, decrease in mobility, reduction of lung function, deformation of the spine. They also increase the risk of developing other fractures, and significantly reduce patients' quality of life. In addition to VCFs, the strong pressure applied on the weakened column can cause chronic pain, affecting 41% of people aged 65-75 years, 48% of people aged 75-84 years, and 55% of people above 85 years (Paolucci et al, 2016).

#### • **Traumatic or metastatic lesions**

The spine can be damaged in accidents or because of underlying conditions (infection, inflammation, cancer...). In addition to the pain, such lesions can be irreversible vertebral fractures or deformities, neurological disorders or even damages to the spinal cord leading to paralysis.

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*Prevalence of osteoporosis will increase with the aging population*

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Metastasis of cancer cells to the bones is a common consequence of malignant tumors, and the spine is one of the main sites of such metastases. Although few tumors are of spinal origin, 97% of tumors of the spine are derived from metastasis. Furthermore, it is estimated that 70% of cancer patients develop metastasis in the spine (Ciftdemir et al, 2016). Such metastases weaken vertebrae and disks, and are at the origin of many complications including fractures (35% of VCF), and neurological damages.

### 2.3. Therapeutic options

- **Physical rehabilitation**

Rest, correction of posture, and adequate physical exercise can solve the vast majority of back pain. This approach relieves efforts on the spine by reducing biomechanical constraints. It is particularly adapted for the least severe cases, for temporary back pain, and rehabilitation after trauma. If necessary, physical rehabilitation can be accompanied by physiotherapy.

- **Drug treatment**

Drug treatment can be used for spine disorders to reduce pain (analgesics, including opioids), or to directly treat the causes of diseases (anti-inflammatory and anti-infective drugs ...). Other drugs may also be used to treat bone demineralization or strengthen muscle plasticity.

- **Conservative treatment**

Conservative treatment can be used to relieve, reduce or correct some diseases of the spine. In the case of deformities, conservative treatment is achieved with a corset that restricts or stabilizes the curves of the spine. It may be effective to prevent worsening of the disease, especially for the least severe cases, but conservative treatment does not restore the anatomy of the spine. Furthermore, it is not effective for the treatment of neuromuscular and congenital scoliosis (Cunin, 2015). This type of treatment may also be accompanied by physical rehabilitation, manipulation of the spine, or electrical stimulation of muscles of the back.

- **Surgical treatment**

Surgery is a last resort solution for the most severe cases of spine disorders. It can be indicated for significant deformities of the spine (scoliosis), bone metastasis, lesion of the spinal column, or pressure on the spinal nerves. The “gold standard” in spinal surgery is minimally invasive surgery. This technique consists in treating patients under general anesthesia, through an incision along the spine. Compared with conventional surgery, minimally-invasive surgery provides equivalent results, and reduces muscle damage, blood loss, post-operative pain, duration of the surgical procedure, as well as risks associated with conventional surgery.

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*Surgical treatment is indicated for the most severe cases of spine disorders*

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Depending on the pathologies treated, and their severity, there are several types of surgeries that can be performed:

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*Spinal fusion, the most common surgical procedure*

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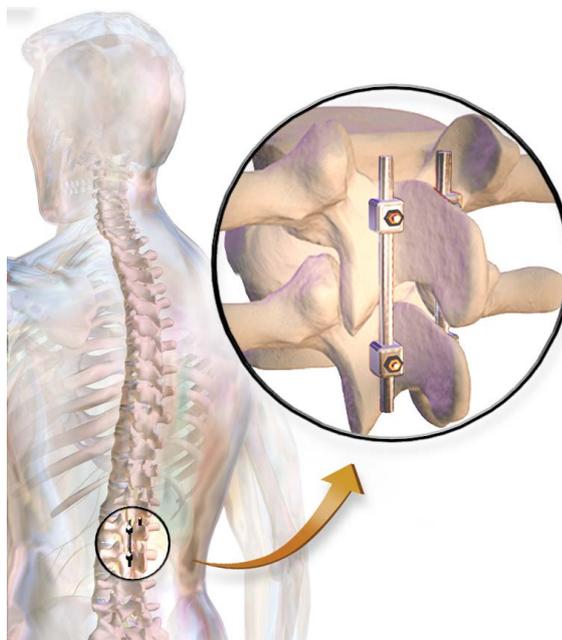
- Spinal fusion consists in artificially connecting 2 or more adjacent vertebrae through orthopedic implants (metal rods, screws, hooks, bands implants). This type of surgery prevents abnormal movements of the spinal column due to the underlying disorder, and can also restore the curvature of the spine.
- Discectomy is performed when spinal nerves are compressed, and consists in partially or totally removing an intervertebral disc, thus reducing compression of the spine, especially to alleviate pain in the case of disc herniation.
- Laminectomy is usually performed in the lumbar region and indicated to reduce pressure on the nerves of the spinal canal by removing part of vertebral bone (lamina), in patients suffering from disc herniation.
- Vertebroplasty is indicated for vertebral fractures. It stabilizes and strengthens one or more weakened vertebrae (fracture, degeneration) with the injection of a special cement.
- Non-fusion surgery consists in replacing a defective intervertebral disc by a prosthetic disc. It is a 'dynamic' spine stabilization technique, equivalent to fusion surgery, except that the mobility of the spinal column is preserved. Its use is however limited to a small number of indications, such as the decompression of the spinal canal.

### 3. The spinal fusion market

#### 3.1. What is spinal fusion ?

Spinal fusion consists in artificially merging 2 or more adjacent vertebrae. During the operation, adjacent vertebrae are maintained together using a bone graft implant, and the entire structure is secured using metal rod implants. Metal rods are attached to the spine by an anchoring system, usually using pedicle screws, pedicle hooks or band implants (Figure 6). The length of the rod and the number of screws to be used depend on the magnitude of the correction. The connected vertebrae merge after a few weeks to form a single bony structure, thus limiting the flexibility of the spine in order to reduce abnormal movements. This technique is also used to correct abnormal spinal curves (scoliosis, etc.), and to strengthen the bone structure of weakened vertebrae.

Figure 6. Example of Spinal Fusion (Source: «Blausen gallery 2014». Wikiversity Journal of Medicine)



Depending on the pathology, its severity and location on the spine, a wide range of instruments can be used. For example, the surgical procedure may require several pedicle screws, associated with other types of implants to restore large deformities such as scoliosis. Orthopedic cages can also be used to facilitate the cohesion of vertebrae. Spinal fusion is an extremely complex surgery performed under general anesthesia, is assisted by imaging (X-Ray or MRI imaging) and requires the use of a large number of instruments and implants. The selection of the instrumentation is extremely critical for the surgeon since its choice can have an impact on the success of the operation, on the duration of the intervention, on the associated risks (bad mounting, infection ...), and on the overall cost of surgery.

### 3.2. Spinal fusion, a \$5 billion market

According to MicroMarket Monitor, spine surgery is a major segment of the orthopedic market, estimated at \$11.6B in 2013, and is expected to grow in the coming years to reach \$15.0B in 2018 (GlobalData). With more than 800,000 surgeries performed each year, spinal fusion is by far the largest segment of spine surgery, with a market estimated at \$4.8B in 2013 (GlobalData). Despite regulatory pressure and the emergence of non-fusion procedures, the spinal fusion market should grow steadily at a compound annual growth rate of 5.6%, and reach \$6.9B in 2020, driven by:

- the increase of the elderly population, in which the spine disorder prevalence is the highest
- the generalization of mini-invasive surgery, particularly in emerging countries

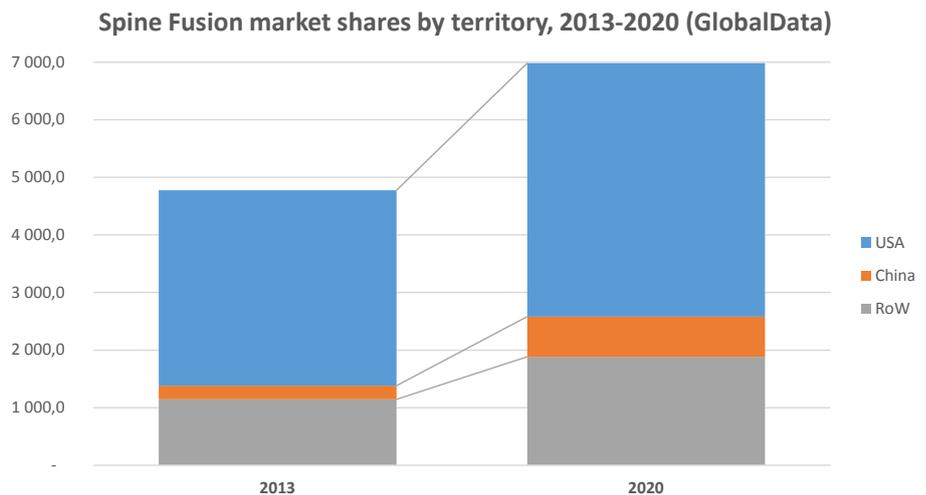
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*Spinal fusion market to reach \$6.9B by 2020*

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- the strong growth of the market in the BRICS area, especially in China where the market is expected to double between 2013 and 2020 (Figure 7)
- the approval of new surgical implants to improve surgical procedures

Figure 7. Spinal Fusion market share between 2013 and 2020 in the US, China, and the rest of the world (Source: according to GlobalData).



*The US territory represents 70% of the spinal fusion market*

The US territory is the largest market for spine surgery, accounting for 70% of the market according to GlobalData. This market benefits from a very strong industrial dynamic, driven by a sophisticated health system, strong expertise of practitioners, a great appetite for innovation, and the highest level of reimbursement of health products. For example, the price difference of a spinal implant can be 3 to 5 times more in the US compared to France.

There are three types of players in the spinal fusion market. The first players are large generalist firms which dominate the market. They are primarily U.S. companies, which market almost all kinds of medical devices. Johnson & Johnson dominates the spinal surgery market with \$3.9B generated on this single segment in 2015 (Table 1). Other companies such as Medtronic (which acquired Covidien), and Stryker also holds significant market share.

Table 1. Large generalist firms 2015 medical device sales (Source: companies reports).

Company	Medical device Sales 2015 (\$M)	Spine sales 2015 (\$M)
Johnson & Johnson	25,137	3,906
Medtronic	20,261	2,971
Stryker	9,946	696
Zimmer	5,990	404

Companies in the second group are “Pure Player” of spinal surgery. They are well established in this market thanks to their specialization in this area, and offer several product lines. Pure player companies include US companies Alphatec, K2M and Globus Medical (Table 2).

Table 2. Pure Players in the spinal surgery market: 2015 sales (Source: companies reports)

Company	Sales 2015 (\$M)
Nuvasive	811
Globus Medical	545
K2M	216
Alphatec	185
LDR Holding	164
SeaSpine Holdings	133

A large number of small size companies are also very active in the spine market. Although much smaller than the previous players cited above, these companies are distinguished by their great capacity for innovation, and have the potential to gain significant market share. In France, several companies are involved in this field and have developed innovative medical devices for spine surgery (Table 3).

Table 3. French Medtech smallcaps involved in spinal surgery: 2015 sales (source: companies reports)

Company	Sales 2015 (€M)
Medicrea	27.8
Vexim	13.8
Implanet	6.7
Spineguard	6.3
Spineway	5.7
Safe Orthopaedics	2.5

## 4. Implanet's product portfolio

### 4.1. JAZZ, innovative band implant

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*JAZZ, an innovative implant for all types of spinal fusion surgery*

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Pedicle screws and hooks remain the main implants used to anchor metal rods to vertebrae during spinal fusion surgery. They have many limitations in terms of ease of use, duration of surgery, risk of injury to the spinal cord, or quality of corrections for large deformations. Sometimes, they may not be adapted to the anatomy of the patient or the quality of the bone. It is estimated that approximately 20% of pedicle screws are poorly positioned (Tian et al., 2010), with 2-7% of them responsible for tragic accidents. This figure is particularly high considering that consequences can be severe (bad correction, break of the screw, screw displacement...), leading in some cases to surgical re-intervention.

Implanet developed JAZZ, an orthopedic band implant designed to overcome the limitations of pedicle screws and hooks during spine surgery. Used in support or replacement of hooks and pedicle screws, JAZZ strengthens the tools available to surgeons, and can be adapted to almost all types of spinal fusions, including the most complex surgeries.

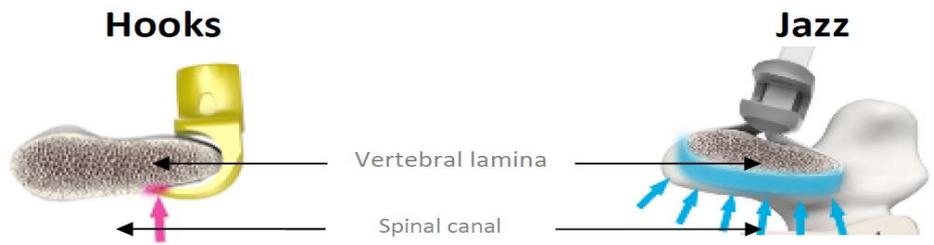
The implant is composed of 2 parts: a metal connector that attaches the entire device to the metal rod, and a flexible, biocompatible and resistant polymer band, which joins the connector/metal rod to the vertebral lamina (Figure 8). To install pedicle screws, surgeons need to perforate vertebrae, which presents several risks of injury to the spinal cord. On the other hand, JAZZ band is attached directly to vertebral lamina with proprietary tools patented by Implanet.

Figure 8. Implanet's JAZZ Band implant (Source: Implanet)



Hooks also have a major disadvantage since surgeons need to have several hooks of different sizes at their disposal, to fit to the anatomy of the patient, and are not always the optimal anchoring system. With its band system, the JAZZ implant suits most types of anatomy (Figure 9). In addition to its ease of use, this innovative system provides a better attachment of the rod to the vertebrae and reduces the duration of surgery, regardless of the quality of the bone.

Figure 9. Comparison between hooks and the JAZZ implant (Source: Implanet)



The JAZZ implant process is illustrated in Figure 10. The JAZZ implant has received marketing authorization in major markets around the world, including Europe (CE marking in 2011) and the United States (510(k) approval in 2012). The JAZZ product line has also been approved to be used with all fixation system of the thorax and the lumbar region (screws, rods, hooks) available on the US market.

Figure 10. JAZZ implant process for scoliosis surgery (Source: Implanet)

<p>1. Rods are attached at the bottom and the top of the spine through traditional implants (screws at the bottom and double square brackets at the top).</p>	<p>2. The band is passed under the vertebral lamina, thanks to Implanet's patented instrumentation system.</p>	<p>3. The band is reintroduced into the connector and inward, in a titanium piece similar to a belt loop.</p>	<p>4. The Jazz is clipped onto the rod with pliers. The implant can be easily moved and positioned at the optimal location without having to take it apart.</p>
			
<p>5. The locking screw is inserted in order to prepare for the stretching of the implant during the reduction phase.</p>	<p>6. The band is then stretched with a reusable tensioner which control the tension on the band, and ensure its proper positioning on the vertebra and rods.</p>	<p>7. Once the wanted correction is reached, the locking screw is tightened, the tensioner is removed, and the band is cut off with a scalpel.</p>	<p>8. The JAZZ system construct</p>
			

## 4.2. JAZZ positioning

Pedicle screws and hooks are to this day, the standard implants for locking the rods to the vertebrae. Although these implants have some disadvantages, it is not possible to exclude their use, especially for the attachments of the rods at the top and bottom ends of spinal fusion construct. JAZZ is not a direct competitor to the screws and hooks, but is positioned as a supportive implant, or for partial replacement of traditional devices.

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*JAZZ could become a reference implant for spinal fusion*

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Implanet intends to make JAZZ a reference implant for all spinal fusion surgery. Thus the JAZZ implants cover the 3 main categories of diseases requiring spinal fusion: large deformities, bone-degenerative diseases, and spine injuries.

### **JAZZ for deformity management: idiopathic scoliosis**

Approximately 160,000 spinal fusion surgeries for large deformities are carried out each year worldwide (GlobalData, iData). Surgery is the treatment option for the most serious cases, including those for which the Cobb angle is greater than 45° (approximately 0.2% of cases). The aim is to restore spine curves so that it is close to the normal curvature (Cobb angle near zero), and to rebalance the spine on the frontal and sagittal plane. To achieve this surgery, 2 metal rods are positioned on each side of the spine, and attached with an “all screw” assembly or with a “screws and hooks” system. At least 4 screws are used for this type of surgery depending on the severity of scoliosis and the importance of correction to be performed.

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*More than 160,000 surgeries for large deformities each year*

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Pedicle screws are efficient for good anchoring of metal rods to the vertebrae, and provide a good frontal correction, but setting them up is complex and risky, and do not offer an optimal sagittal correction (flat back). Using hooks in association with screws, can improve the sagittal correction of scoliosis. This however, makes the surgery more complex and more time-consuming. It also reduces the quality of frontal correction, as well as the strength of the device. In addition, surgeons must have a wide variety of hooks at their disposal to adapt the construct to different patient anatomies.

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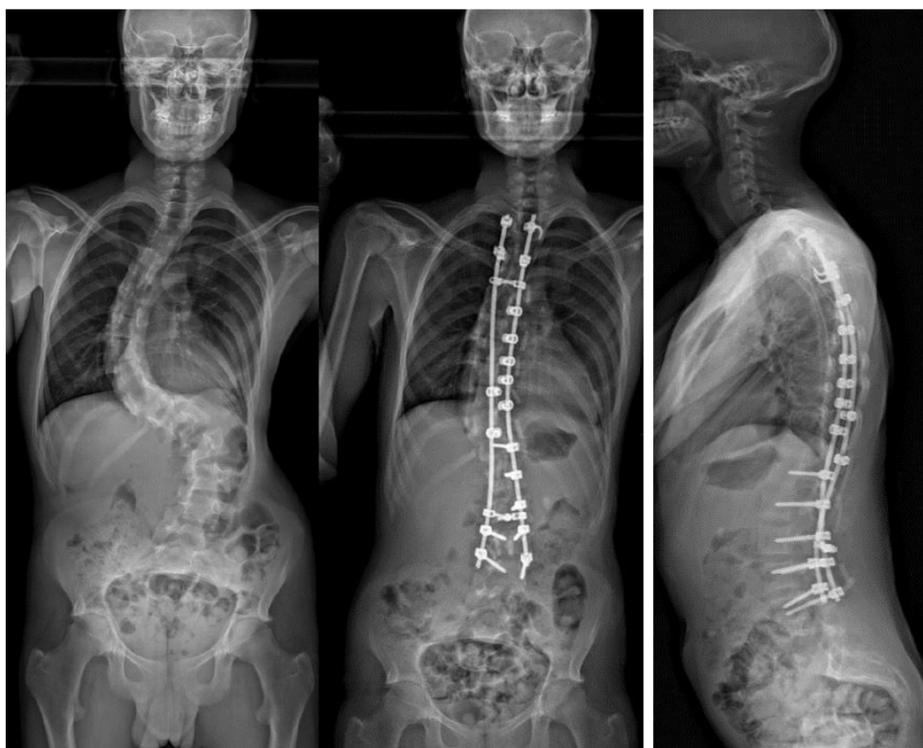
*Significant improvements with JAZZ, compared to other fusion constructs*

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The JAZZ implant can solve a large number of these issues, and Implanet conducted several studies to demonstrate the benefits of its JAZZ system compared to traditional implants. For instance, the duration of surgery was less with the JAZZ implants, the quality of the correction was improved, and the overall cost of the procedure was also reduced (Figure 11 and Figure 12). Two studies carried out in reference centers of spine surgery, with the JAZZ implant (APHP - hospital Robert Debre, the MAHP - Hôpital de la Timone) showed:

- A better recovery of the frontal and sagittal balance in adolescents compared with traditional techniques
- The homogeneity of results with the JAZZ implants, in infantile scoliosis correction
- No additional infectious risks
- A significant reduction in the surgery time and X-Ray exposure

Figure 11. Example of scoliosis correction with the JAZZ implant (Source: Implanet)



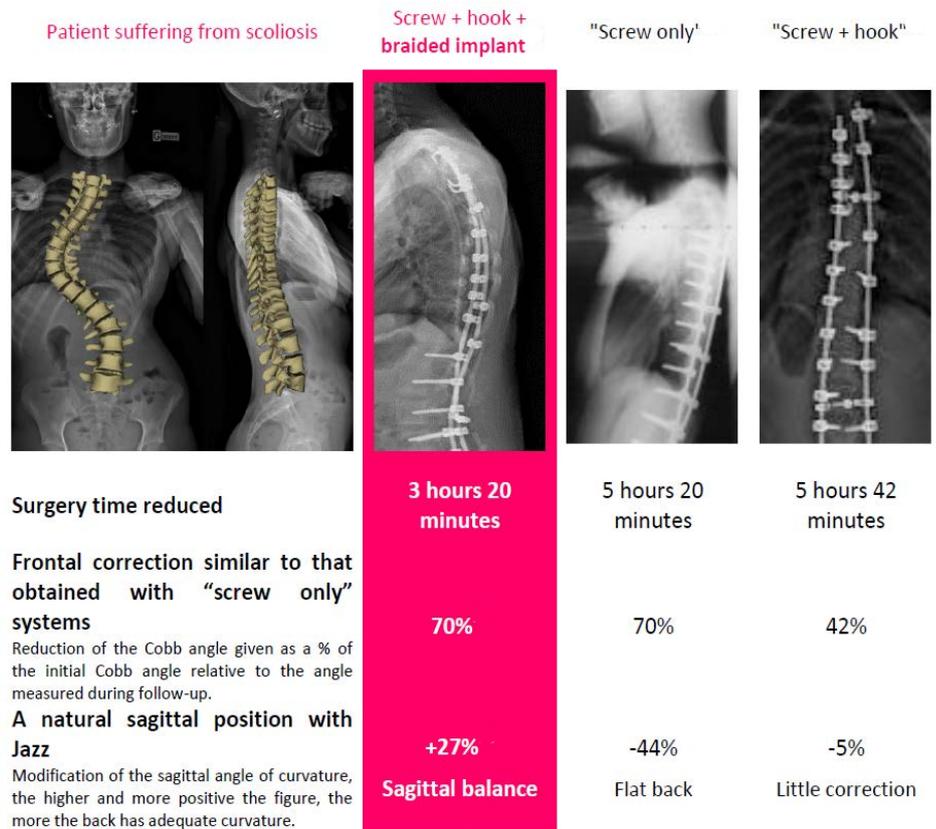

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*13% reduction of surgery costs with JAZZ*

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Furthermore, a medico-economic retrospective study on large deformities and scoliosis correction showed that the JAZZ implant reduces the overall cost of surgery by 13%, thanks to the reduced intervention time, and decreased hospital stays (Health Advances). All of these studies demonstrate that the JAZZ implant has strong clinical and economic advantages, which could make the device a reference implant for major deformities (Figure 12).

Figure 12. Comparison between the JAZZ implant construct compared to «screw only» and screw+ hook» constructs (Source: Implanet)



**JAZZ for management of bone-degenerative disorders**

JAZZ is also indicated for the spinal fusions in bone-degenerative diseases, including osteoporosis. With more than 1.3 million (GlobalData, iData) surgeries performed worldwide each year, the bone-degenerative indication has the greatest market potential for JAZZ, and will become its first indication in terms of number of surgeries.

The deterioration of the bone matrix in bone degenerative pathologies of the spine makes the attachment of pedicle screws difficult. In some cases, the fragile structure of the bone weakens the whole spinal fusion system which can lead to the rupture of the implants. According to a study published in 2010, the failure rate of spinal fusion increases by more than 40% in degenerative pathologies of the spine (Yadla et al, 2010), and may require additional surgery in 60% of cases (Burneikiene et al, 2012).

A biomechanical study performed at the Mayo Clinic in the US (Rochester, Minnesota, USA) showed that the JAZZ implant could secure the attachment of pedicle screws. The study also demonstrated that a force of more than 60% higher would be necessary to disconnect the JAZZ mounting system, compared to traditional implants. These results have been confirmed in 2015 in a 15-patient study, showing that a hybrid JAZZ-screw construct could efficiently correct degenerative scoliosis after a follow-up period of 30 months (Dr. Cavagna, Clinique mutualiste de la porte de l’Orient, Lorient, France).

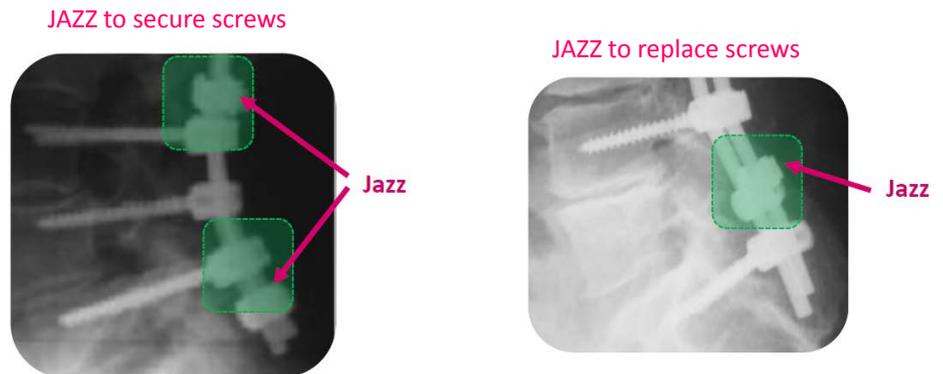
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*More than 1.3 million surgeries for bone degenerative disorders each year*

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There are 2 strategic positioning for the JAZZ implant: securing screws and replacing intermediate screws (Figure 13). The company believes that these two indications represent more than 60% of spine fusion surgeries related to degenerative disorders, with approximately 430,000 operations performed worldwide each year. Implanet has already received marketing authorization from the European and US healthcare authorities to use the JAZZ implant for these 2 indications.

Figure 13. Examples of JAZZ to secure screws (left picture) and to replace pedicle screws (right picture), source: Implanet.

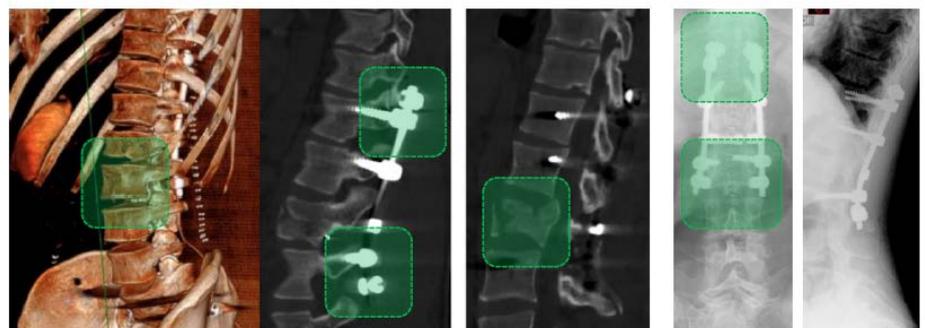


**Trauma and tumors, another market opportunity for JAZZ**

Damages to the spine during trauma or after patient suffered from tumors make spinal fusion difficult. Similar to spinal fusion in osteoporotic vertebrae, bone quality is also an important factor to take into account when dealing with trauma or tumors, and surgeons require a very wide range of instruments and implants to secure the mounting system. Because the JAZZ band implant can be adapted to all types of anatomy regardless of bone quality, it offers a real solution to surgeons, by simplifying and securing the anchoring system, while reducing intervention time (Figure 14). About 160,000 (GlobalData, iData) surgeries are performed worldwide each year, and Implanet claims that it can address all of these procedures with its implant.

Figure 14. Example of JAZZ implants used for the treatment of tumors to the spine (Source: Implanet)

Post-op imagery (3D reconstruction)



### 4.3. JAZZ: a wide product range addressing the whole spinal fusion market

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*JAZZ, compatible with all implantable devices available in the US*

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The JAZZ medical device is an innovative band implant that provides significant improvement to spine surgeries, whether they are used for large deformity indications or degenerative disorders. Due to large differences in pathologies and patient anatomies, there are numerous implants available on the market. A challenge for Implanet was to develop implants compatible with existing technologies, in order to increase the adoption of the JAZZ medical device. The JAZZ band implant was originally developed to fit metal rods of 5.5 mm in diameter. To increase market adoption, the company extended its product line with JAZZ implants compatible with metal rods of 3.5, 4.0, 4.5 and 6.35 mm in diameter (Figure 15). In May 2015, the company was granted marketing authorization in Europe and the US, for the new JAZZ implants compatible with all rod diameters. With this range of products, the company has a comprehensive offer of innovative implants.

The company also obtained FDA clearance to use the JAZZ implant with any other implantable device available on the US market, such as pedicle screws, hooks and rods (other than its proprietary “Implanet Spine System”). This authorization is a critical selling argument to penetrate the US market. Last April, Implanet obtained marketing approval of the new JAZZ Lock implant in Europe with CE marking, and in the US after getting 510(k) clearance. JAZZ Lock is indicated for spine surgery of the cervical region that can be affected during bone-degenerative disorders. It eliminates the use of traditional locking system with metal rods and screws, thus reducing its associated risks. A month later, Implanet subsequently received marketing authorization in the same regions for the JAZZ Claw implant. JAZZ Claw is indicated for both adolescent scoliosis, and degenerative diseases such as kyphosis, whose prevalence increases with the aging population. The implant is a hybrid system with the innovative band and pedicle hook. JAZZ Claw improves the attachment of the rods to the vertebrae in the upper end of a spinal fusion construct.

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*Implanet will release new versions of the JAZZ implants*

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The recent marketing approval of both JAZZ Claw and JAZZ Lock is the demonstration that Implanet intends to build a comprehensive range of band implants for spine surgery. The company is constantly investing in Research and Development of new implants to address the needs of the surgeons. As illustrated in Figure 16, the company intends to bring several new version of the JAZZ implant to the market, such as the JAZZ Autostable, JAZZ MIS or JAZZ EVO devices. This new generation of JAZZ is intended to extend the use of band implants to difficult surgeries of the spine, and facilitate the work of surgeons. The JAZZ implants currently cover 70% to 80% of the spine surgery market (Figure 15). Implanet’s development strategy consists in investigating and identifying all possible ways of using band implants to treat and improve spine surgery (Figure 16).

Figure 15. Implanet’s band implants of the JAZZ family. (Source : Implanet)

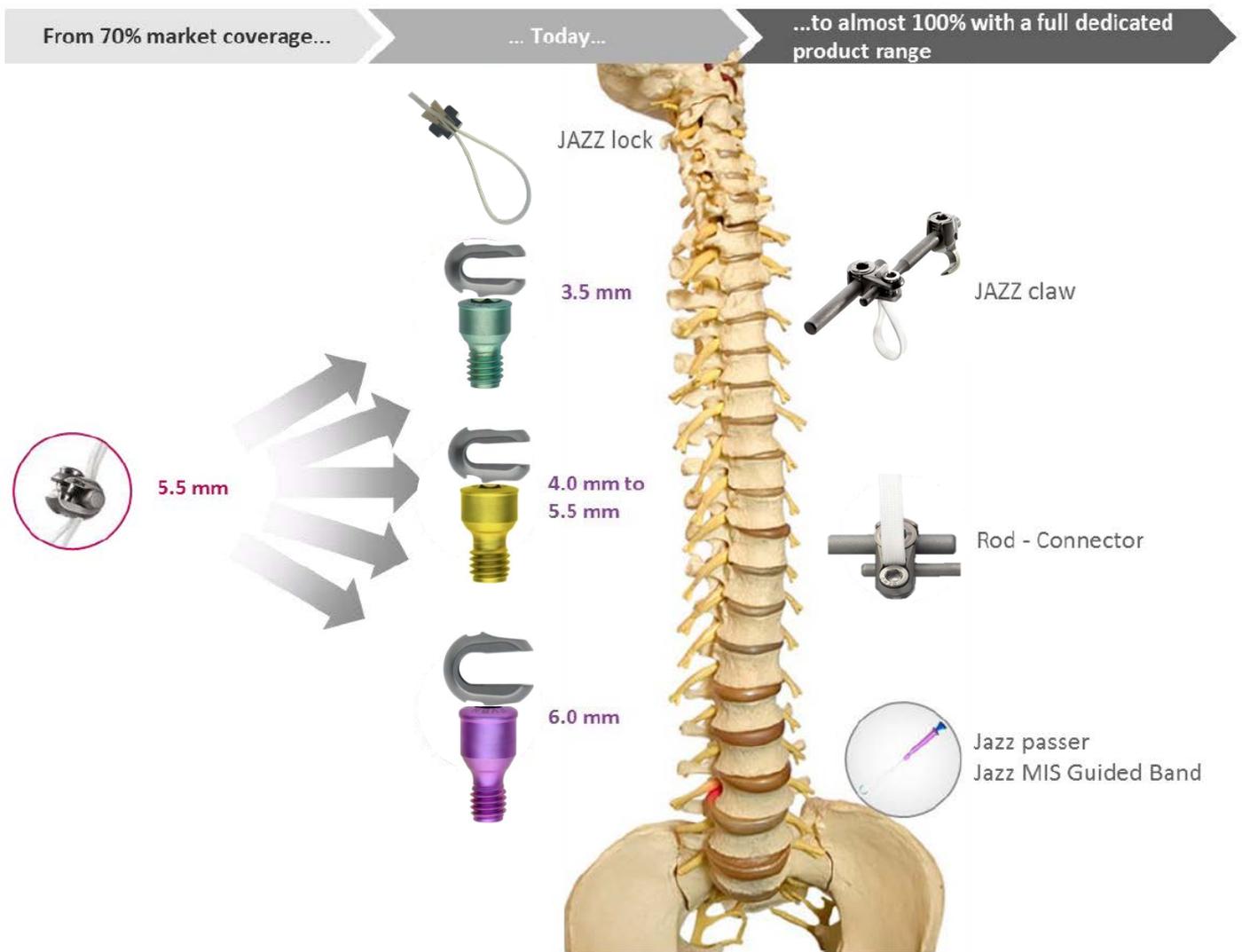
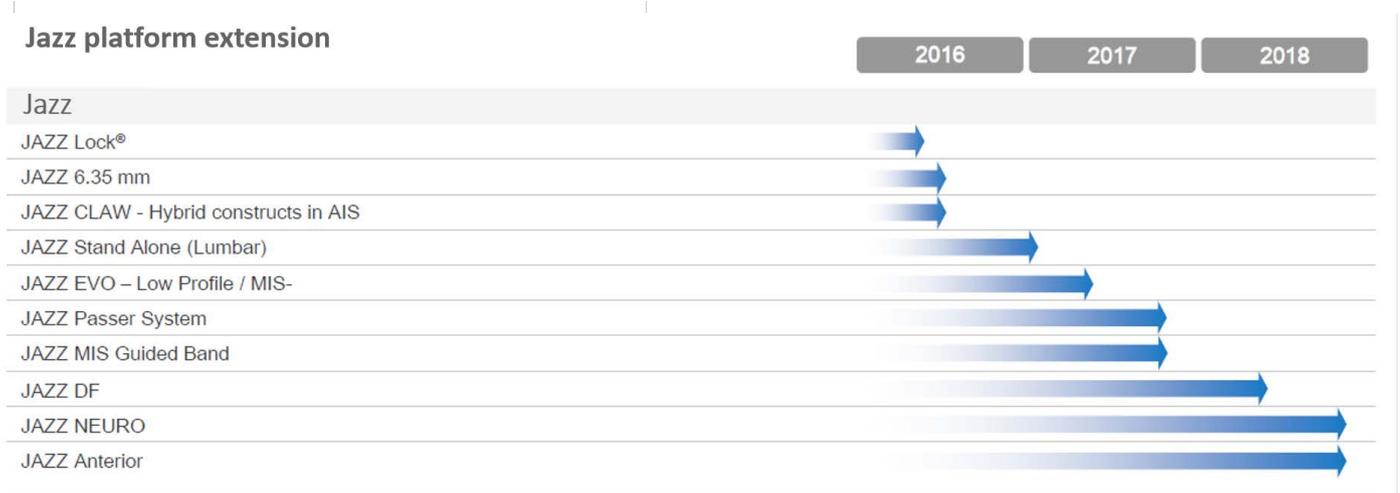


Figure 16. Implanet’s products under development and timeline (Source: Implanet)



#### 4.4. Other products for spine surgery

In addition to its JAZZ range of implants, Implanet markets a range of implants, also for spinal surgery, the “Implant Spine System”. These traditional implants consist of pedicle screws, titanium rods, hooks, cages, and tools necessary to use them during spine surgery. These products are primarily intended for the European and emerging markets, providing Implanet additional recurring revenues (Figure 17). The strategy was adopted by Implanet to ensure its independence from other implant manufacturer.

Figure 17. Implanet’s other products for spine surgery (Source : Implanet). Left picture: pedicle screws. Right picture: cages.



#### 4.5. Competitors of the JAZZ band implant

There are 5 band implants for spine surgery available on the market: JAZZ (Implanet), Universal Clamp (Zimmer), Ligapass (Medicrea), NILE (K2M), and SILC (Globus Medical). Régis Le Couëdic, head of Implanet’s R&D department, originally developed Spinext’s Universal Clamp (SpineNext is now part of Zimmer) before cofounding Implanet. When Implanet developed the JAZZ implant, the R&D team improved the Universal Clamp system, while making sure that Zimmer’s patents were not infringed. An 18-month comparative study on 115 patients demonstrated JAZZ’s equivalence to the Universal Clamp system, in correcting the sagittal alignment in adolescent idiopathic scoliosis, but offered better tensioning capabilities.

#### 4.6. Products for knee surgery

Implanet markets a range of prostheses and implants for knee surgery. The company has 2 lines of products:

- **The Madison product line** is a complete range of total knee replacement tools developed by Implanet, for all conventional types of knee surgery. Implanet also provided an optimal design for its instruments that simplify surgical procedures and reduce the learning curve for surgeons to less than 5 surgeries (Figure 18).

- **The Twist product line** is a range of implants for knee ligament surgery. Products include screws and an external band fixation system, and are compatible with all conventional surgical techniques to repair ruptures of knee ligament.

Implanet’s products for the knee are designed to be compatible with all conventional types of surgery and do not require any specific tools. To date, more than 60,000 surgeries of the knee have already been conducted with Implanet’s products. Implanet plans to expand its offer with new implants and tools specially designed for re-intervention of knee surgeries. These new devices could be marketed by 2017.

Figure 18. Implanet’s knee implants (Madison products). Source: Implanet




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*Implanet, all set for strong market adoption of the JAZZ implant*

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## 5. Implanet’s business strategy

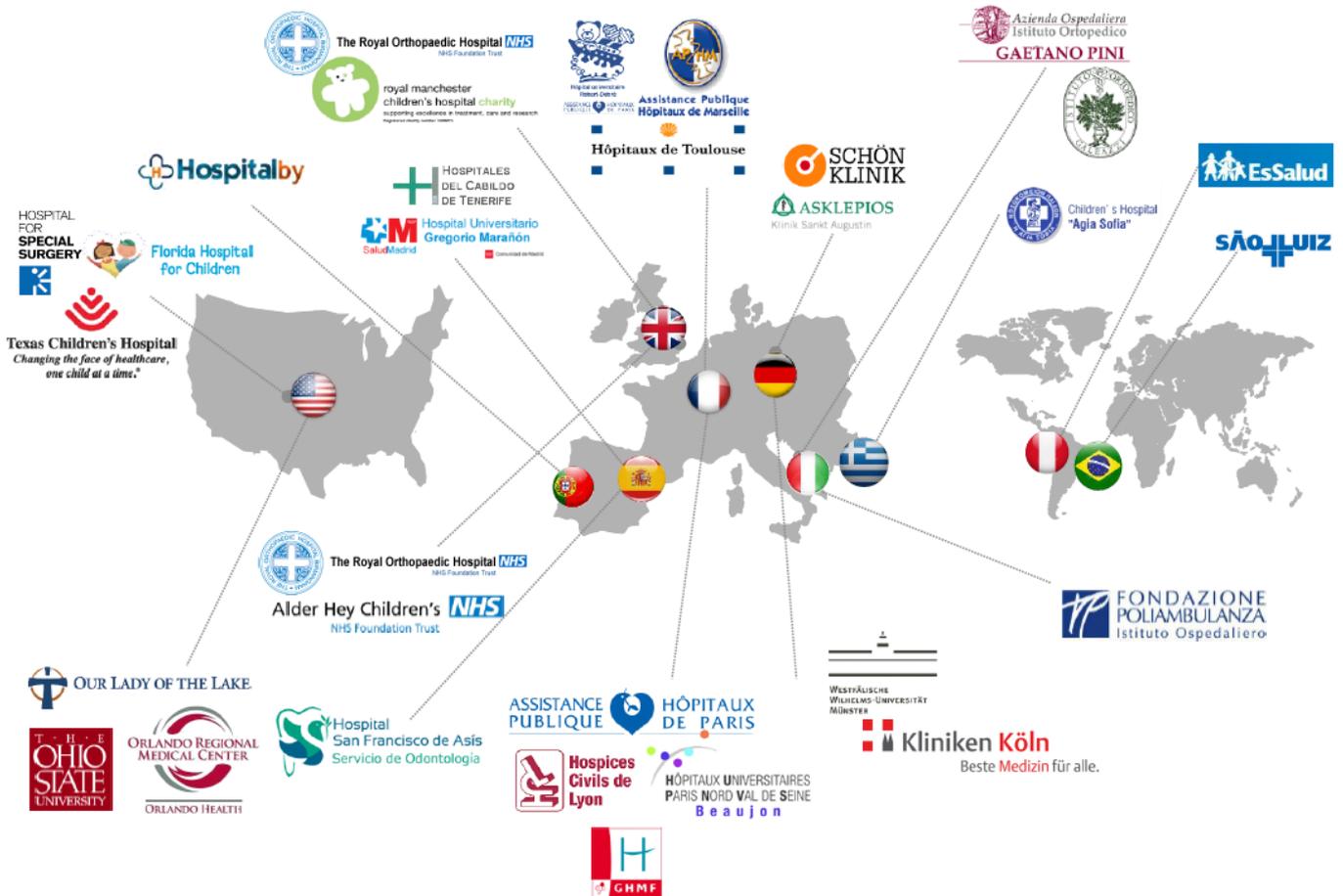
Implanet has demonstrated it can successfully develop and bring to the market innovative medical devices for orthopedic surgery, although the company faces strong competition in a highly lucrative market, dominated by large players. Implanet has successfully passed regulatory hurdles to market new medical devices in Europe and in the US, and currently needs to convince surgeons to use its technology, and increase its revenue. The company has invested a lot of its resources to accelerate the adoption of the JAZZ implant.

### 5.1. Maximize product margins in key territories

Implanet’s business strategy consists in selling its products directly in key markets (US and France) while contracting distributors in other territories. Implanet has already received marketing authorization in 18

countries including the US, France, Germany, the UK, Spain, Italy, and Brazil . Before going to other markets such as China or Japan, the company will focus its marketing efforts in countries where it already has marketing authorization. Implanet has been collaborating with prestigious reference centers for orthopedic surgery, which largely contributes to the adoption and visibility of Implanet’s technology (See Figure 19). Implanet clearly indicated that its short-term priority is to accelerate adoption of the JAZZ implant in the US.

Figure 19. Spine surgery reference centers using JAZZ implants (Source: Implanet)



### 5.1.1. Direct sales

#### United States

The US is the largest market in terms of healthcare expenditure, and is very opened to innovative solutions. Therefore, Implanet decided to open a subsidiary (Implanet America Inc.) in Boston, Massachusetts in 2013, to reinforce its presence in this territory. By the end of 2015, Implanet has secured 30 agreements with commercial partners to promote the JAZZ implant, covering more than 60% of the US territory. The partners are selected based on their experience in spine surgery, their track record in the promotion of innovative technologies, and implantation in spine reference centers.

*JAZZ, available in 60% of the US territory*

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*Management team  
with strong experience  
of the US market*

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There are 7 employees in the US subsidiary, dedicated to sales and marketing. The US sales team represents half of the company's sales force. Implanet recently recruited Brian T Ennis, as President of Implanet America, to accelerate the adoption of the JAZZ implant. Mr Ennis has extensive knowledge of the US medical device and healthcare market, and his experience will facilitate discussions and coordination of the company's US partners. Moreover, Mary E. Shaughnessy and Paula Ness Speers joined Implanet's board of directors as independent administrators. They both have extensive experience in strategic consulting for innovative companies. Mary E. Shaughnessy has a strong expertise in healthcare financing and reimbursement in the US territory, while Paula Ness Speers has supported several international companies in implementing their business development, marketing and financing strategies in the US. This is the clear demonstration that Implanet is putting a lot of resources to facilitate market penetration in the US.

Implanet directly bills its implants to US hospitals and reference centers, helping the company to adequately monitor market adoption and financial performance in the US. With an average price of €1,400 per implant (see comparison between countries in Table 4), Implanet can benefit from high margins. The high selling price can also motivate the company's commercial partners thanks to attractive incentives (commission between 40% and 45%).

### **France**

In France, Implanet adopted a similar strategy, with implants directly billed to French hospitals and clinics. The company capitalizes on its experience and strong implantation in the local spine surgery field. Although the average price of 4 times lower than that of the US price (average price of €350 in France), Implanet still enjoys comfortable margins as commissions to its sales agents are also lower compared to the US. Implanet estimated that they have already taken 10% of the French market for large pediatric and adolescent deformities.

### **Indirect sales**

For other territories<sup>1</sup>, Implanet relies on the expertise of local distributors. The company has already secured distribution agreements in all territories for which it has marketing authorization. The average price of the JAZZ implant in Europe and the rest of the world is €300. The company has recruited a dedicated team for the promotion of Implanet's products (marketing, training and product directors for Europe).

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<sup>1</sup> Germany, Australia, Benelux, Brazil, Cyprus, Spain, Greece, Iran, Italy, Mexico, Peru, Portugal, United Kingdom, Switzerland

Table 4. Average price, margins and commission for the JAZZ implant, according to territories (Source: Implanet 2015 reference document)

	United States	France and other territories
Average price	€1,400	€300
Gross Margin	91%	52%
Commissions	41%	7%
Instruments/Log.	10%	11%
Other	6%	10%

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*High gross margins in the US*

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## 5.2. A complete range of JAZZ product, a critical advantage for market adoption

Providing a comprehensive package for hybrid spine surgery brings a strong marketing advantage, given that numerous implants are currently available on the market. Implanet created a complete range of JAZZ implants that can be used with the company's proprietary fixation system (Implanet Spine System) consisting of pedicle screws, metal rods and hooks. Implanet also provides the ancillary surgical instruments to hospitals necessary for the JAZZ system. Moreover, the compatibility of the JAZZ implants with other fixation systems also addresses the needs of surgeons, who can use Implanet's JAZZ products with the fixation system they prefer. Future implants of the JAZZ family currently under development will provide additional solutions to facilitate spine surgery. This competitive advantage is essential for strong product adoption in this field.

## 5.3. Clinical trials and medico-economic studies to convince spine surgeons

The performance of the JAZZ implant is definitely a strong argument to promote the use of this implant in spine surgery. Clinical studies provide evidence that a particular medical device is efficient in treating disorders, or that it improves surgical procedures. On the other hand, medico-economic studies can show what the financial impact would be for hospitals or payers (national healthcare systems, insurers, patients...).

The company has already demonstrated the clinical and economic benefits of the JAZZ implants in large deformities and degenerative disorders (see section 4). Conducting additional clinical and medico-economic studies could increase the visibility of the JAZZ implant among clinicians and also provides more evidence supporting the utilization of the device in spine surgery. US clinicians are particularly sensitive to clinical data generated in US centers. It is therefore important for Implanet to conduct such analyses in the US territory.

Moreover, with the increasing pressure from national healthcare systems to lower healthcare expenses, and the growing pressure from patients asking for better treatments, adopting innovative technologies can be a strong factor of differentiation for hospitals and surgeons.

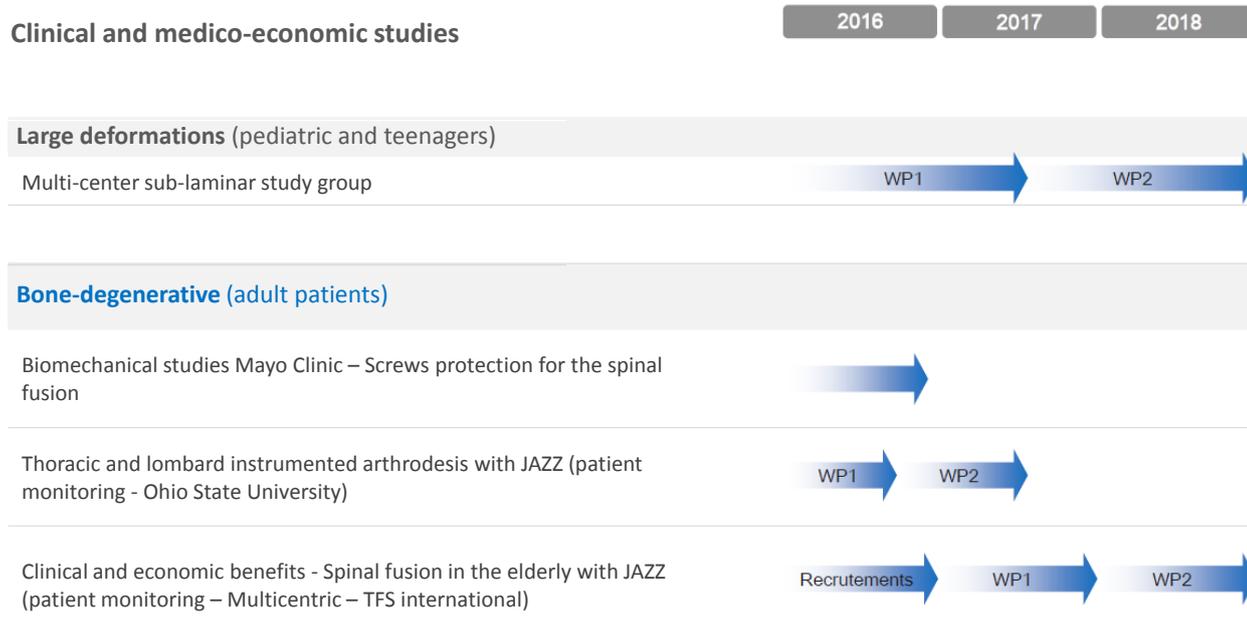
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*Implanet conducts several studies to demonstrate the advantages of JAZZ*

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### On-going clinical et medico-economic studies

Figure 20. JAZZ on-going clinical and medico-economic studies (Source: Implanet)



- **Large deformities**

The “International sub-laminar study group”, is an international, multi-centric study of large pediatric deformities. Implanet aims at providing clinical evidence on large patient cohorts, using a unique surgery protocol. This study would support existing clinical results that the company has already communicated. First results are expected in mid-2017.

- **Bone degenerative disorders**

In March 2016, the company initiated a study with TFS International to demonstrate the clinical and economic benefits of spinal fusion with the JAZZ implant, in elderly patients (sagittal balance). This study is a multi-centric trial conducted in the US on 100 patients aged between 50 and 80 years old, who suffer from degenerative disorders or adult deformities of the spine. Patients will be followed-up for a maximum of 2 years. Preliminary results are expected at the end of 2017.

Implanet also initiated in collaboration with the Ohio State University a study evaluating the efficacy of the JAZZ implants in securing pedicle screws in spinal arthrodesis surgery (type of spinal fusion). According to [clinicaltrials.gov](http://clinicaltrials.gov), 30 patients will be enrolled and data collected at regular intervals, up to 60 months post-surgery. Data collected will include surgical information, physiological data, and neurological assessments. Implanet expects to publish preliminary results at the beginning of 2017.

Moreover, the company is expecting results at the end of 2016, of a biomechanical study evaluating the performance of the JAZZ implant when securing pedicle screws used in vertebrae of poor quality (osteoporotic vertebrae). This study has been conducted in collaboration with the Mayo Clinic.

## 5.4. The JAZZ Academy to increase surgeons' awareness

In order to improve market adoption of its technology, Implanet created the “JAZZ Academy” in 2015, a training and education program for the JAZZ product line. These sessions consists in training surgeons and especially Key Opinion Leaders that could use the JAZZ platform in their clinical practice, for large deformity and bone-degenerative disorders. The program is organized by Implanet in reference centers in the US, at the headquarters in France, or by its commercial partners in other territories.

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*The JAZZ Academy, strong marketing tool for rapid surgeon adoption*

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Although Implanet's technology has already been supported by numerous clinical studies, the JAZZ Academy is a strong additional marketing tool to convince surgeons of the advantages of the JAZZ implants. During those sessions they can directly try the JAZZ implants, and see for themselves the relevance of such devices for spine fusion surgery. These sessions are also intended to train vendors and distributors as they would understand better the specificities and advantages of the JAZZ technology. In 2015, the company already trained 32 surgeons and 26 vendors during 10 training sessions. Table 5 shows the adoption of the JAZZ implant in the US and in France. At the end of the first half of 2016, 111 surgeons had been using the JAZZ implant in the last 12 months.

Table 5. Number of surgeons who have used the JAZZ implant in the last 12 months (Source: Implanet)

	2013	2014	2015	H1-2016
# of surgeons (France, US)	16	38	82	111

## 6. Sales forecast and valuation

### 6.1. Historical performance

Implanet has been marketing its products since 2009 for hip and knee implants, and since 2011 for the innovative JAZZ implant. Figure 21 shows the historical performance of the company by product line. As already stated above, the company decided in early 2014 that it would discontinue its activity in the hip implant market due to strong competition in this field, which negatively impacted the company's revenue. In the last few years, the company increased its investments in R&D and marketing, which negatively impacted the Implanet's profitability, but that should promote future sales in the short- mid-term.

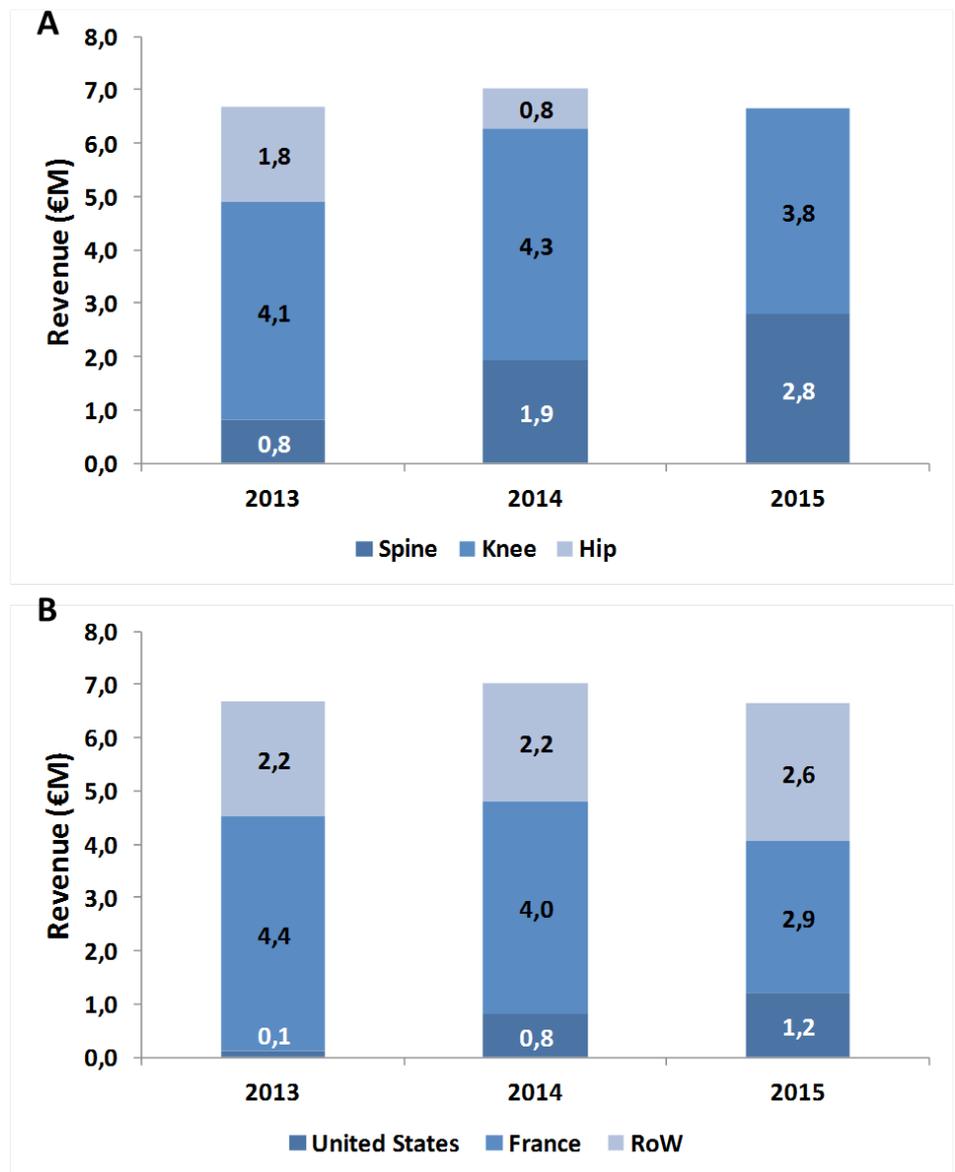
In 2015, sales in the knee surgery field represented 58% of Implanet's revenue with €3.8M. The company reported strong sales of the spine surgery products with a 45% increase compared to 2014, to €2.8M. All product lines combined, Implanet generates most of its revenue in France (43%) while the US represents 18% of the company's sales. In the first quarter of 2016, the company recorded a 24% increase of its revenues compared to Q1-2015 (€1.9 M in Q1-2016 vs €1.6 M in Q1-2015). Implanet confirmed this dynamic with strong Q2-2016 sales which increased by 24% compared to Q2-2015 (€2.1 M vs €1.7 M).

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*H1-2016 sales reached €4.1 M, +101% in the US territory*

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Figure 21. Implanet's historical sales (2013-2015). A, sales by type of implants. B, sales by territory (Source: Implanet)

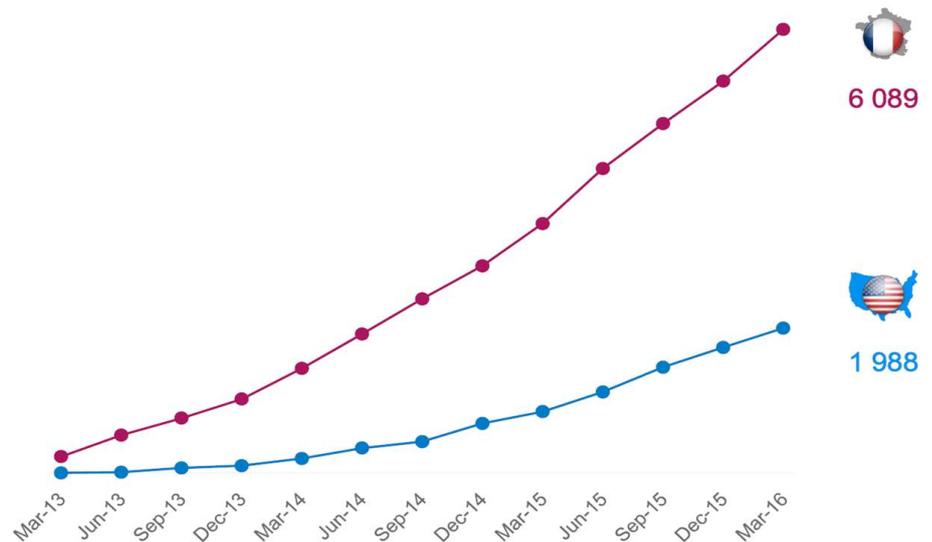


• **JAZZ implants**

In 2015, the US was the company's largest market for the JAZZ implants where Implanet generated 43% of its sales, followed by France (34%) and the rest of the world (23%). To date, almost 15,000 JAZZ implants have been used in spine surgery (Figure 22), with the strongest growth observed in the US in terms of numbers of implants used in spine surgery (+124% in the US, in 2015). This is further demonstrated in the H1-2016 sales figure, whereby Implanet more than doubled its JAZZ sales in the US (+101%, €1,099 k).

Figure 22. Cumulated number of JAZZ used in spinal fusion surgery by territory  
(Source: Implanet)

*Almost 15,000 JAZZ implants used in spinal fusion surgery to date*



### • Knee implants

Knee implants represent the majority of the Implanet's revenue. The company recorded an 11% decrease of its sales in this field in 2015, but expects in 2016 to reach the same level of revenue of 2014 (~€4.3M). Implanet is also developing new implants for knee surgery which could contribute to the company's short- and mid-term revenue.

## 6.2. Implanet's revenue model

Implanet's generates revenues from its spine surgery and knee surgery products. The company has recorded strong growth of its JAZZ implant sales and is expected to accelerate the adoption of its technology. The company's revenue were forecasted for the JAZZ implant and the knee implants. For instance, although the "Implanet Spine System" still generates recurring revenues to the company, their contribution is minimal compared to the growth prospects of the JAZZ implant.

### 6.2.1. JAZZ Implants

The JAZZ implant has been approved in more than 15 countries around the world. In the short term, Implanet intends to intensify its marketing efforts in the US territory and the countries where it already has marketing authorization.

Our revenue model was based on spinal fusion surgery indications where Implanet's JAZZ implant could be used: large deformities, bone-degenerative disorders and trauma/tumors. According to iData (2010), large deformities account for 10% of spinal fusion surgery, whereas bone-degenerative diseases and trauma/tumors account for 80%, and 10%, respectively, and these figures are not expected to vary significantly in the coming years. A more recent study from GlobalData (2015) estimated

that there are 1.64 million spinal fusion surgeries performed worldwide (low estimate).

According to US Healthcare Cost and Utilization Project (HCUP), there are 500,000 spinal fusion surgeries performed each year in the US. We decided to extrapolate this figure to other developed countries where Implanet has marketing authorization (France, and selected countries in Europe, Australia). The number of spinal fusion surgery for this territory would be 560,000 interventions. GlobalData estimated that 27,000 surgeries were performed in Brazil in 2015. We therefore extrapolated this figure to other emerging countries (Mexico and Peru). For these 3 territories, our spinal fusion surgery estimate is 47,000.

Addressable surgeries were estimated according to the company’s hypotheses. For instance, the company believes that 80,000 surgeries for large deformities can be addressed by the JAZZ implant worldwide, which represent less than 50% of the global estimate of 164,000 large deformity surgeries (Source: GlobalData and iData). Because we believed that such figures were quite conservative, we applied the same methodology for other indications. In replacement or in support of pedicle screws for bone-degenerative disorders, addressable surgeries would be 18%, and 15% respectively, whereas for trauma/tumor indications, it would be 48%. Table 6 summarizes the total number of surgeries for JAZZ by indication, using these hypotheses. The number of JAZZ implants for each type of surgery is different and can vary between patients. According to Implanet the average number of implants for large deformities is six, four to secure pedicle screws or for the trauma/tumor indication, and two when band implants are used in replacement of pedicle screws

Table 6. Number of surgeries by indication and number of JAZZ implants that could address the market (Source: Global Data, Implanet, Aurgalys).

Implanet Territory	Population (M)	# Spine Fusion	# Large deformities	# Degenerative Spine		# Trauma/Tumors
USA	324	500 000	50 000	398 500		51 000
FR	67	92 829	9 283	73 985		9 469
Rest of Europe + Australia	339	470 447	47 045	374 946		47 986
Lat. America (Brazil, Mexico, Peru)	360	46 765	4 676	37 272		4 770
<b>Implanet territory</b>	<b>1090</b>	<b>1 110 041</b>	<b>111 004</b>	<b>884 703</b>		<b>113 224</b>
		# Spine Fusion	# Large deformities	# Osteoporosis	#Support of Screws	# Trauma/Tumors
<i>Adressable Surgeries (%)</i>		36%	49%	18%	15%	48%
<i>Adressable Surgeries (#)</i>		399 889	54 130	156 302	135 326	54 131
<b>Number of JAZZ implants</b>		<b>1 395 212</b>	<b>324 783</b>	<b>312 603</b>	<b>541 304</b>	<b>216 522</b>

In the US, the company can benefit from higher price and margins but the company also relies on local partners, to which Implanet pays commissions from 30 to 40% of net sales. In our revenue model, we used a price of €1,400 per implant for the US territory. We believe that the publication of medico-economic and clinical studies in the following years will promote market adoption in the US. The largest segment is that of bone-degenerative disorders which could represent 60% of our peak sales estimates of €100 M (see Table 7). For the French market, and for the

other territories where Implanet is present, we used similar hypotheses except for the price of the implants (Average price of €350, instead of €1,400 per implant). Sales forecast are presented in TablesTable 8, Table 9, andTable 10, for France, Europe, and the rest of the world, respectively.

We believe that Implanet could capture 10% of the spine surgery market in the US, France and European countries. For emerging countries, we were more conservative and estimated that Implanet could claim a 7.5% market share.

Table 7. JAZZ Sales forecast in the US (Aurgalys estimations)

Jazz - United States	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Population (M)	324,0	326,4	328,8	331,3	333,7	336,2	338,7	341,2	343,8	346,3	348,9	351,5	354,1	356,7	359,4
# of surgeries/year ('000)	499,5	503,2	507,0	510,7	514,5	518,3	522,2	526,1	530,0	533,9	537,9	541,9	545,9	550,0	554,1
Adressable for Jazz ('000)	180,1	181,5	182,8	184,2	185,5	186,9	188,3	189,7	191,1	192,5	194,0	195,4	196,9	198,3	199,8
Jazz Mkt Penetration ('000)	0,5	0,8	1,3	2,2	3,6	5,5	7,8	10,3	12,8	14,9	16,5	17,7	18,5	19,1	19,5
Jazz Units ('000)	1,8	3,1	5,2	8,6	13,7	20,5	28,8	37,7	46,2	53,5	59,2	63,4	66,3	68,4	69,8
Jazz Sales (M€)	2,5	4,3	7,3	12,1	19,2	28,2	38,8	49,7	59,7	67,7	73,4	77,0	79,0	79,8	79,8

Table 8. JAZZ Sales forecast in France (Aurgalys estimations)

Jazz - France	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Population (M)	66,8	67,0	67,2	67,4	67,6	67,8	68,0	68,2	68,4	68,6	68,8	69,0	69,2	69,4	69,6
# of surgeries/year ('000)	92,7	93,0	93,3	93,5	93,8	94,1	94,4	94,6	94,9	95,2	95,5	95,7	96,0	96,3	96,6
Adressable for Jazz ('000)	33,4	33,5	33,6	33,7	33,8	33,9	34,0	34,1	34,2	34,3	34,4	34,5	34,6	34,7	34,8
Jazz Mkt Penetration ('000)	0,6	0,8	1,1	1,5	1,9	2,3	2,6	2,8	3,0	3,2	3,3	3,3	3,4	3,4	3,4
Jazz Units ('000)	2,8	3,6	4,6	5,8	7,0	8,2	9,3	10,1	10,7	11,3	11,6	11,9	12,1	12,2	12,3
Jazz Sales (M€)	1,0	1,3	1,6	2,0	2,5	2,9	3,2	3,5	3,8	3,9	4,1	4,2	4,2	4,3	4,3

Table 9. JAZZ Sales forecast in selected countries in Europe and Australia (Aurgalys estimations)

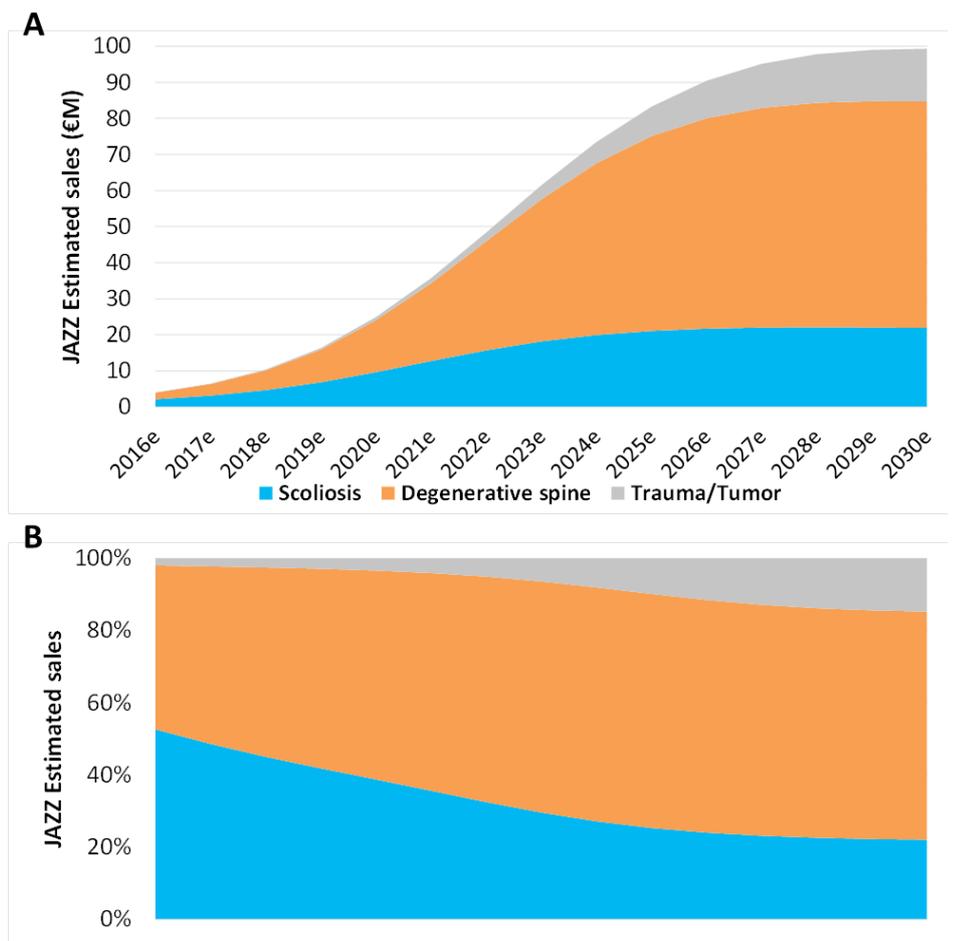
Jazz RoE + Australia	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Population (M)	338,7	339,5	340,3	341,0	341,8	342,6	343,4	344,2	345,0	345,8	346,6	347,5	348,3	349,1	350,0
# of surgeries/year ('000)	470,0	471,0	472,1	473,2	474,3	475,4	476,5	477,6	478,7	479,8	481,0	482,1	483,3	484,4	485,6
Adressable for Jazz ('000)	169,5	169,9	170,2	170,6	171,0	171,4	171,8	172,2	172,6	173,0	173,4	173,8	174,3	174,7	175,1
Jazz Mkt Penetration ('000)	0,4	0,6	1,0	1,5	2,3	3,4	4,8	6,5	8,1	9,6	10,8	11,7	12,2	12,6	12,8
Jazz Units ('000)	1,7	2,7	4,2	6,3	9,4	13,4	18,4	24,1	29,8	34,9	39,0	42,0	44,0	45,3	46,2
Jazz Sales (M€)	0,5	0,8	1,2	1,9	2,8	4,0	5,5	7,2	8,9	10,5	11,7	12,6	13,2	13,6	13,9

Table 10. JAZZ Sales forecast in the rest of the world (Aurgalys estimations)

Jazz - RoW	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Population (M)	365,0	367,7	370,4	373,1	375,8	378,6	381,3	384,1	386,9	389,8	392,6	395,5	398,4	349,1	350,0
# of surgeries/year ('000)	46,9	47,0	47,2	47,3	47,5	47,6	47,8	48,0	48,1	48,3	48,5	48,6	48,8	47,6	47,7
Adressable for Jazz ('000)	16,9	17,0	17,0	17,1	17,2	17,2	17,3	17,4	17,4	17,5	17,6	17,6	17,7	17,1	17,1
Jazz Mkt Penetration ('000)	0,1	0,1	0,2	0,3	0,4	0,6	0,7	0,9	1,0	1,1	1,2	1,2	1,3	1,3	1,3
Jazz Units ('000)	0,3	0,5	0,8	1,1	1,6	2,2	2,7	3,2	3,6	4,0	4,3	4,5	4,6	4,5	4,5
Jazz Sales (M€)	0,1	0,1	0,2	0,3	0,5	0,6	0,8	1,0	1,1	1,2	1,3	1,3	1,4	1,3	1,4

Figure 23 shows estimated sales of the JAZZ implant in territories where Implanet has marketing authorization, and the contribution of each indication to Implanet's revenue.

Figure 23. JAZZ estimated sales (Aurgalys estimations). A, estimated sales by indication; B, contribution of each indication to JAZZ's revenue stream.



### 6.2.2. Knee surgery

The Madison and Twist knee implants have historically generated more than half of the company's revenues. Although Implanet recorded a 11.6% reduction of its 2015 sales compared to 2014, 2016 sales could reach the 2014 level (~€4.3M), as demonstrated by strong Q1-2016 sales. The knee surgery implants are currently marketed in France and selected territories (Europe, and emerging countries). We anticipate that sales of the knee surgery product line would contribute less to the company's revenues, but would still grow in the coming months/years, thanks to the company's marketing efforts and approval of new products (Madison EVO in 2016, Madison Revision in 2018). Sales forecast are presented in Table 11.

Table 11. Knee Implants Sales forecast (Aurgalys estimations)

Knee implants	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Sales - France (M€)	2,1	2,1	2,2	2,2	2,2	2,3	2,3	2,4	2,4	2,5	2,5	2,6	2,6	2,7	2,7
Sales - RoW (M€)	2,2	2,2	2,2	2,3	2,3	2,4	2,4	2,4	2,5	2,5	2,6	2,6	2,7	2,8	2,8
<b>Total Sales (M€)</b>	<b>4,3</b>	<b>4,3</b>	<b>4,4</b>	<b>4,5</b>	<b>4,6</b>	<b>4,6</b>	<b>4,7</b>	<b>4,8</b>	<b>4,9</b>	<b>5,0</b>	<b>5,1</b>	<b>5,2</b>	<b>5,3</b>	<b>5,4</b>	<b>5,5</b>

## 6.3. Valuation of Implanet

### 6.3.1. Hypotheses

For the valuation of Implanet, we used a Discounted Cash Flow model, with a discount rate of 12%. We included a terminal value with a 0.5% growth rate.

Sales were projected over the next 15 years (see Table 7, Table 8, Table 9, and Table 10). We only considered the territories where Implanet has marketing authorization. The gross margin in 2015 was around 38% but should increase in the following years. Cost of goods includes purchase of materials and merchandise, but also amortization of ancillary surgical instruments that Implanet lends to the hospitals using its technology (knee or JAZZ implants). For the JAZZ implant, the amortization charges account for 10%-12% of sales and the company is expecting to reduce their contribution to the level of industry standards (5%).

As already indicated, Implanet could benefit from higher prices in the US territory for the JAZZ implant compared to France, but commissions on sales are also higher (~40% in the US compared to ~13% in France. Source: Implanet's January 2016 corporate presentation). However, with increasing sales volume in the coming years in the US and a better adoption of Implanet's technology, the company could reduce the level of these commissions. In our forecast model, we progressively reduce the level of commission over the forecast period, to reach 30% in 2030. We maintained the level of commission at 13% for France and did not consider that the company would change its business model for other territories, and therefore would still market its product via distributors. In our model, EBIT margin would reach 20-22% by 2030.

The company also intends to target other territories than those included in our valuation model, such as Asian countries (China, India or Japan). Should Implanet make progress on market authorization and adoption of its JAZZ technology in these countries, it would significantly contribute to the company's profitability and value.

### 6.3.2. DCF model

According to our DCF model (Figure 24), the value of Implanet is €42.7M. Including an estimated net cash of €1.0M, our target price for Implanet's stock is €3.93/share.

Figure 24. Discounted Cash Flow Model (Aurgalys Estimations).

Free Cash Flow (€M)	2016e	2017e	2018e	2019e	2020e	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
EBIT	-6,3	-5,4	-3,9	-1,5	2,1	6,1	9,3	11,8	14,8	17,4	20,0	21,1	22,5	22,7	23,5
(+) DA	1,0	1,2	1,6	2,1	2,8	3,4	4,5	5,4	6,1	6,3	6,4	6,6	6,8	6,9	7,1
(-) Taxes	0,0	0,0	0,0	0,0	-0,7	-0,7	-1,1	-1,4	-1,8	-2,2	-2,5	-2,7	-7,4	-7,5	-7,7
(-) Investment	-0,6	-1,4	-2,1	-2,8	-3,6	-4,1	-6,0	-6,3	-6,2	-6,4	-6,6	-6,8	-7,0	-7,1	-7,2
(-) Change in WCN	0,9	-0,9	-1,4	-1,7	-2,0	-3,5	-3,4	-3,7	-3,4	-2,8	-2,1	-1,4	3,7	-0,4	-0,1
<b>FCF</b>	<b>-4,9</b>	<b>-6,5</b>	<b>-5,8</b>	<b>-3,9</b>	<b>-1,4</b>	<b>1,3</b>	<b>3,3</b>	<b>5,7</b>	<b>9,5</b>	<b>12,3</b>	<b>15,1</b>	<b>16,8</b>	<b>18,5</b>	<b>14,6</b>	<b>15,4</b>

### 6.3.3. Comparison with other French Medtech SmallCaps

There are numerous French Medtech companies developing medical devices for spine surgery. Although other French Medtech companies, do have products for spine surgery, their business model and the positioning of their products is different, which explains why we chose not to use the comparable valuation method. For informative purposes only, Table 12 presents Implanet in comparison with other French Medtech smallcaps.

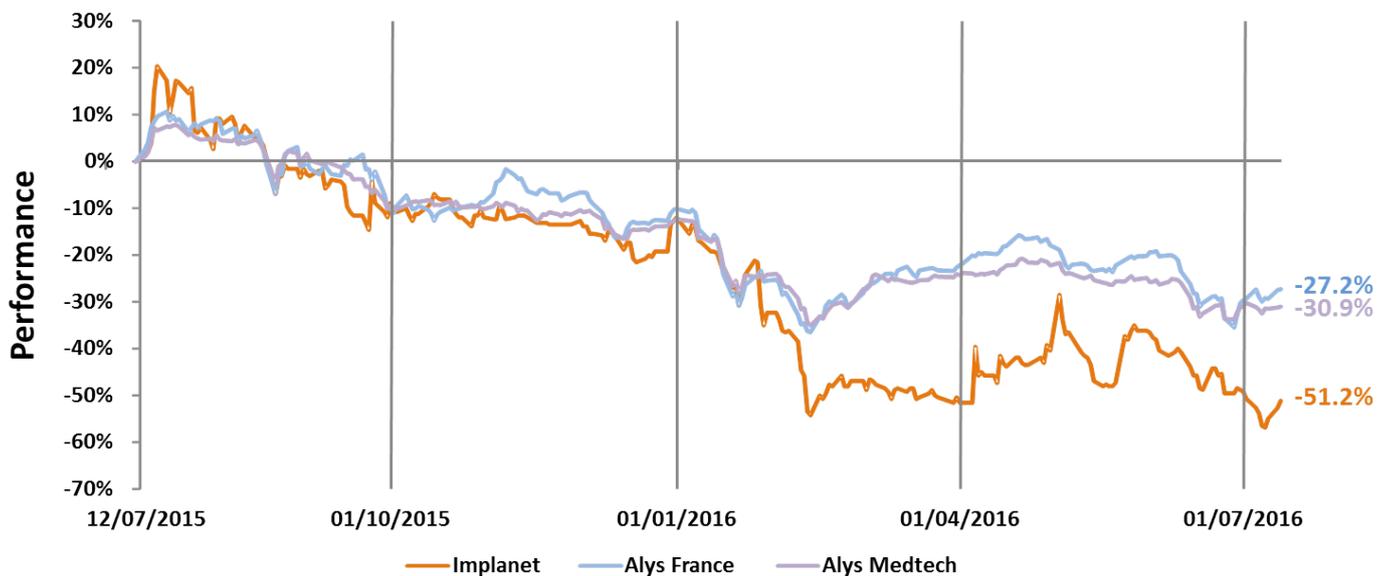
Table 12. Comparison of Implanet with other French Medtech smallcaps,

Company	Market Cap. (20/06/16)	Revenue (€M), 2015	Net Debt (€M), 2015	EV (€M)	EV/ Revenue 2015
<b>Implanet</b>	<b>15.8</b>	<b>6.7</b>	<b>-3.5</b>	<b>12.3</b>	<b>1.8x</b>
ICeram	21.5	2.4	-6.2	15.3	6.4x
Medicrea	44.2	27.8	8.3	52.5	1.9x
Safe Orthopaedics	22.3	2.5	-2.5	19.8	7.9x
Spineguard	25.9	6.3	-0.2	25.7	4.1x
Spineway	9.9	5.7	2.7	12.6	2.2x
Vexim	61.9	13.9	-2.5	59.4	4.3x

## 7. Stock performance

Implanet went public on Euronext on November 25<sup>th</sup>, 2013 at a price of €7.20 per share. Since then, Implanet's stocks have lost 82% as of July 12<sup>th</sup>, 2016. The company's share price was negatively impacted by its financial performance (end of its activity in the hip surgery field) and by macroeconomic events, and especially when the company announced a follow-on offering in March 2015. Over the last year, Implanet's performance was correlated with that of other French Medtech smallcaps (Figure 25), but plummeted more in early 2016. However, in recent months, Implanet's share reacted positively to strong S1-2016 sales, and to the marketing approval of both JAZZ Lock and JAZZ Claw (+7%, +25%, and +19%, respectively) in high trading volumes. Since January 1<sup>st</sup>, 2016, Implanet's share price has lost 44.5%.

Figure 25. One-year Performance of Implanet as of July 12<sup>th</sup>, 2016, compared to other French Biotech/Medtech Smallcaps (Alys France), and Medtech Smallcaps (Alys Medtech).



## Financial Data

Source: Implanet and Aurgalys estimates

<b>EARNINGS PER SHARE (€)</b>						
	2013	2014	2015	2016e	2017e	2018e
EPS	-2,1	-1,3	-0,8	-0,6	-0,4	-0,3
<b>INCOME STATEMENT (€M)</b>						
	2013	2014	2015	2016e	2017e	2018e
Revenue	6,7	7,0	6,7	8,4	10,9	14,8
EBIT	-6,5	-6,6	-7,6	-6,3	-5,4	-3,9
<b>Net Income</b>	<b>-6,8</b>	<b>-6,9</b>	<b>-8,0</b>	<b>-6,5</b>	<b>-5,6</b>	<b>-4,2</b>
<b>CASH FLOW STATEMENT (€M)</b>						
	2013	2014	2015	2016e	2017e	2018e
Cash Flow from operating activities	-5,4	-5,3	-7,5	-4,6	-5,3	-4,0
Cash Flow from investment activities	-10,9	7,5	-0,2	3,9	0,5	-0,8
Cash Flow from financing activities	19,5	-3,0	0,2	0,1	10,8	-1,0
<b>Net change in cash</b>	<b>3,1</b>	<b>-0,9</b>	<b>-7,5</b>	<b>-0,6</b>	<b>6,0</b>	<b>-5,8</b>
<b>BALANCE SHEET (€M)</b>						
<b>ASSETS</b>						
Non Current Assets	11,4	5,8	3,0	2,6	2,5	2,6
Current assets	12,6	8,8	13,2	7,4	13,7	9,8
<i>Including cash &amp; cash equivalent</i>	<i>5,0</i>	<i>2,4</i>	<i>6,5</i>	<i>1,5</i>	<i>6,6</i>	<i>0,8</i>
<b>Total Assets</b>	<b>23,9</b>	<b>14,6</b>	<b>16,3</b>	<b>10,0</b>	<b>16,2</b>	<b>12,4</b>
<b>LIABILITIES AND SHAREHOLDER'S EQUITY</b>						
Total Equity	13,9	7,2	9,7	5,1	11,9	7,9
Total Debt	4,3	7,3	6,6	5,0	4,3	4,5
<b>Total Liabilities and Shareholder's Equity</b>	<b>18,1</b>	<b>14,6</b>	<b>16,3</b>	<b>10,0</b>	<b>16,2</b>	<b>12,4</b>

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<b>Detection of potential conflicts of interest</b>	Aurgalys	SLBP
1. SwissLife Banque Privée (SLBP) or Aurgalys participated or participates, either as leader or member of a syndicate or guarantee to a financial transaction, either as counsel or presenter in a public offering in the last twelve months..	<b>No</b>	<b>No</b>
2. SwissLife Banque Privée and/or Aurgalys holds/hold a greater than or equal to 5% participation in the capital of the company analyzed.	<b>No</b>	<b>No</b>
3. The issuer subject to the analysis has a greater than or equal to 5% participation in SwissLife Banque Privée or Aurgalys.	<b>No</b>	<b>No</b>
4. SwissLife Banque Privée and/or Aurgalys is/are liquidity provider or market maker for financial instruments of the issuer.	<b>No</b>	<b>No</b>
5. SwissLife Banque Privée or Aurgalys agreed with the issuer to provide analysis production and distribution services on the said issuer.	<b>Yes</b>	<b>No</b>
6. SwissLife Banque Privée or Aurgalys altered its conclusions following the communication to the company prior to the release of this analysis.	<b>No</b>	<b>No</b>
7. The author of the analysis, a director or a member of the board of administration of SwissLife Banque Privée or Aurgalys is an officer, director or member of the board of directors of the company.	<b>No</b>	<b>No</b>

## Notes

## Notes

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## About Aurgalys indices

Aurgalys launched on October 2013, the Alys France index measuring the performance of the 40 French smallcap companies (less than €1B of market capitalization) listed on Euronext/Alternext Paris. Three other indices also measure the performance of companies dedicated to the development of therapeutic molecules (Alys Therapeutics), diagnostic tests (Alys Diagnostics), medical devices (Alys Medtech) and Greentech (Alys Greentech). You can find our reports on our website at <http://www.aurgalys.com/aurgalys-indices>



## About Aurgalys

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