INVEST SECURITIES

MEDTECH

INTRASENSE

BUY

TARGET PRICE : 1,02€ +85%

INITIATION OF COVERAGE

NEW GROWTH PROSPECTS WITH MYRA®

We are initiating coverage of Intrasense with a TP of €1.02, pointing to upside potential of +85% and a BUY rating. The company is specialised in medical imaging software created around an advanced multi-modality and multi-constructor visualisation tool, Myrian®. We expect the company to enter a period of robust growth (2020-26e CAGR of +32%) driven by: further penetration of Myrian® and above all, the launch of Myra®, a genuinely disruptive solution in monitoring cancer patients. At the current valuation, the market seems to completely ignore a prospective acceleration in growth and margin recovery driven by Myra®.

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A software specialist in a rapidly expanding market

With the rising use of medical imaging, radiologists are increasingly solicited. Software solutions enabling archiving, organisation and analysis have rapidly become essential. Radiology has been a pioneer in introducing software to medicine and is likely to remain so. The medical imaging software market is set to grow at an average annual pace of +15% out to 2024 to reach $3bn. Since its IPO in 2012, Intrasense has penetrated the market through its Myrian® advanced visualisation solution that is comprehensive, multi-modality and multi-constructor. The software has been installed at more than 1,000 sites. After getting off to a rocky start in terms of growth, the group worked efficiently on turning around its revenues by repositioning Myrian® in favour of a B2B approach.

Myra®, a figurehead in the new growth phase

Over the coming years, the group is set to enter a period of robust growth driven by: (i) the ongoing penetration of Myrian®, which should continue to make the most of its B2B positioning with a vast network of partners and better visibility during the Covid period, and (ii) the launch of Myra®, a genuinely disruptive solution for monitoring cancer patients. The first version of Myra® is set to be rolled out in June 2022 initially in France, then in Europe and in China. The solution aims to de-partition oncology services. The smart business and decision-making processes embedded in Myra®, enhanced by Artificial Intelligence, should help radiologists, oncologists and radiotherapists gain in efficiency. With Myra® as the leading source of leverage (2022-26e CAGR: +60%), we expect growth of +32% out to 2026 with sales of €18m, combined with strong margin expansion (company EBITDA in 2026e: 24.2%). Meanwhile, in absolute terms, the group has set a 2026 sales target of €30m, for a margin of 30%.

Ultra-low valuation, TP of €1.02/share, BUY rating.

At the current valuation, the market seems to totally ignore a prospective ramp-up in growth driven by the Myra® launch. Our DCF valuation with (i) WACC of 11.3% reflecting significant execution risk, and (ii) more cautious forecasts than management's targets, works out to €1.02, pointing to upside of +85% relative to the last closing price. We are initiating coverage with a BUY rating.

in € / share	2021e	2022e	2023e
Adjusted EPS	-0,03	-0,03	-0,02
chg.	*non créé*	*n.s.*	*n.s.*
estimates chg.	*n.s.*	*n.s.*	*n.s.*

au 31/12	2021e	2022e	2023e
PE	n.s.	n.s.	n.s.
EV/Sales	3,3x	2,7x	2,0x
EV/Adjusted EBITD	n.s.	n.s.	n.s.
EV/Adjusted EBITA	n.s.	n.s.	n.s.
FCF yield*	n.s.	n.s.	n.s.
Div. yield (%)	0,0%	0,0%	0,0%

* After tax op. FCF before WCR

key points	
Closing share price 05/11/2021	0,54
Number of Shares (m)	31,3
Market cap. (€m)	17
Free float (€m)	17
ISIN	FR0011179886
Ticker	ALINS-FR
DJ Sector	Technology Services

	1m	3m	Ytd
Absolute perf.	-1,1%	-16,6%	-45,4%
Relative perf.	-6,3%	-19,6%	-54,2%

Source : Factset, Invest Securities estimates

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FINANCIAL DATA

Share information	2016*	2017*	2018*	2019	2020	2021e	2022e	2023e
Published EPS (€)	-0,17	-0,18	-0,08	-0,05	-0,03	-0,03	-0,03	-0,02
Adjusted EPS (€)	**-0,17**	**-0,18**	**-0,08**	**-0,05**	**-0,03**	**-0,03**	**-0,03**	**-0,02**
Diff. I.S. vs Consensus	*n.s.*	*n.s.*	*n.s.*	*n.s.*	*n.s.*	*n.s.*	*n.s.*	*n.s.*
Dividend	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Valuation ratios	2016*	2017*	2018*	2019	2020	2021e	2022e	2023e
P/E	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
EV/Sales	3,35x	3,71x	n.s.	2,0x	5,6x	3,3x	2,7x	2,0x
EV/Adjusted EBITDA	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
EV/Adjusted EBITA	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Op. FCF bef. WCR yield	n.d.	n.d.	n.d.	n.s.	n.s.	n.s.	n.s.	n.s.
Op. FCF yield	n.d.	n.d.	n.d.	3,1%	n.s.	n.s.	n.s.	n.s.
Div. yield (%)	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

NB : valuation based on annual average price for past exercise

Entreprise Value (€k)	2016*	2017*	2018*	2019	2020	2021e	2022e	2023e
Share price in €	*0,8*	*0,6*	*0,4*	*0,3*	*0,8*	*0,5*	*0,5*	*0,5*
Market cap.	8 332	6 637	7 778	4 982	18 578	16 273	16 273	16 273
Net Debt	1 776	1 617	1 405	1 653	638	-3 103	-2 638	-1 860
Minorities	0	0	0	0	0	0	0	0
Provisions/ near-debt	0	0	0	0	0	0	0	0
+/- Adjustments	0	0	0	0	0	0	0	0
Entreprise Value (EV)	**10 107**	**8 254**	**9 183**	**6 635**	**19 216**	**13 170**	**13 635**	**14 413**

Income statement (€k)	2016*	2017*	2018*	2019	2020	2021e	2022e	2023e
Sales	3 015	2 222	3 063	3 318	3 441	4 019	4 983	7 246
chg.	*n.s.*	*n.s.*	*n.s.*	*+8,3%*	*+3,7%*	*+16,8%*	*+24,0%*	*+45,4%*
Adjusted EBITDA	-1 528	-1 826	-580	-1 103	-542	-1 064	-1 208	-1 082
adjusted EBITA	**-1 754**	**-2 331**	**-1 265**	**-1 001**	**-869**	**-1 261**	**-1 277**	**-1 144**
chg.	***n.s.***	***n.s.***	***n.s.***	***n.s.***	***n.s.***	***n.s.***	***n.s.***	***n.s.***
EBIT	-1 937	-2 311	-1 275	-792	-628	-957	-779	-480
Financial result	-159	-103	-141	-48	-51	-66	-66	-45
Corp. tax	531	349	310	0	0	0	0	0
Minorities+affiliates	0	0	0	0	0	0	0	0
Net attributable profit	-1 565	-2 065	-1 105	-840	-679	-1 023	-845	-525
Adjusted net att. profit	**-1 565**	**-2 065**	**-1 105**	**-840**	**-679**	**-1 023**	**-845**	**-525**
chg.		***+32%***	***-46%***	***-24%***	***-19%***	***+51%***	***-17%***	***-38%***

Cash flow statement (€k)	2016*	2017*	2018*	2019	2020	2021e	2022e	2023e
EBITDA corrigé	n.d.	n.d.	n.d.	-1 103	-542	-1 064	-1 208	-1 082
Theoretical Tax / EBITA	n.d.	n.d.	n.d.	0	0	0	0	0
Capex	n.d.	n.d.	n.d.	-48	-51	-38	-46	-62
Operating FCF bef. WCR	**n.d.**	**n.d.**	**n.d.**	**-1 151**	**-593**	**-1 102**	**-1 254**	**-1 144**
Change in WCR	n.d.	n.d.	n.d.	1 359	-404	155	-145	-340
Operating FCF	**n.d.**	**n.d.**	**n.d.**	**208**	**-997**	**-947**	**-1 399**	**-1 484**
Acquisitions/disposals	n.d.	n.d.	n.d.	7	45	0	0	0
Capital increase/decrease	n.d.	n.d.	n.d.	455	2 284	4 873	1 000	750
Dividends paid	n.d.	n.d.	n.d.	0	0	0	0	0
Other adjustments	n.d.	n.d.	n.d.	-39	-317	-66	-66	-45
Published Cash-Flow	**n.d.**	**n.d.**	**n.d.**	**631**	**1 015**	**3 861**	**-464**	**-778**

Balance Sheet (€k)	2016*	2017*	2018*	2019	2020	2021e	2022e	2023e
Assets	1 301	1 361	1 245	1 958	2 102	2 367	2 842	3 506
Intangible assets/GW	1 076	1 094	1 088	930	1 176	1 517	2 061	2 787
WCR	2 302	938	1 832	522	897	742	886	1 226
Group equity capital	1 755	620	1 454	573	2 151	6 001	6 156	6 381
Minority shareholders	0	0	0	0	0	0	0	0
Provisions	76	61	217	256	208	208	208	208
Net financial debt	**1 776**	**1 617**	**1 405**	**1 653**	**638**	**-3 103**	**-2 638**	**-1 860**

Financial ratios	2016*	2017*	2018*	2019	2020	2021e	2022e	2023e
EBITDA margin	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
EBITA margin	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Adjusted Net Profit/Sales	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
ROCE	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
ROE adjusted	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Gearing	101,2%	260,7%	96,6%	288,5%	29,7%	n.s.	n.s.	n.s.
ND/EBITDA (in x)	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.

Source : company, Invest Securities Estimates

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INVESTMENT CASE

We are initiating coverage of Intrasense with a TP of €1.02 and a BUY rating, reflecting upside potential of +85%. The company is specialised in medical imaging software created around an advanced multi-modality and multi-constructor visualisation tool, Myrian®. We expect the company to enter a period of robust growth (2020-26e CAGR of +32%) driven by: further penetration of Myrian® and above all, the launch of Myra®, a genuinely disruptive solution in monitoring cancer patients. At the current valuation, the market seems to totally ignore a prospective ramp-up in growth driven by the Myra® launch.

SWOT ANALYSIS

STRENGTHS

- Recognised expertise in imaging software
- Comprehensive and multi-modality applications
- Extensive presence in China (34% of 2020 sales)
- A huge network of partnerships

WEAKNESSES

- Weak presence in the US
- Outlook dependent on Myra®

OPPORTUNITIES

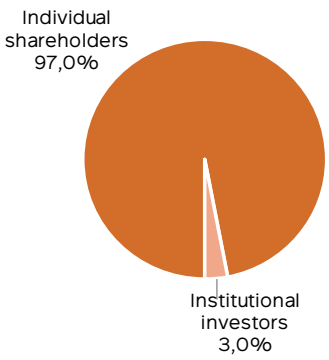
- Rapid adoption of Myra®
- Contribution from partnerships
- Development of new applications
- Potential acquisitions and a potential M&A target

THREATS

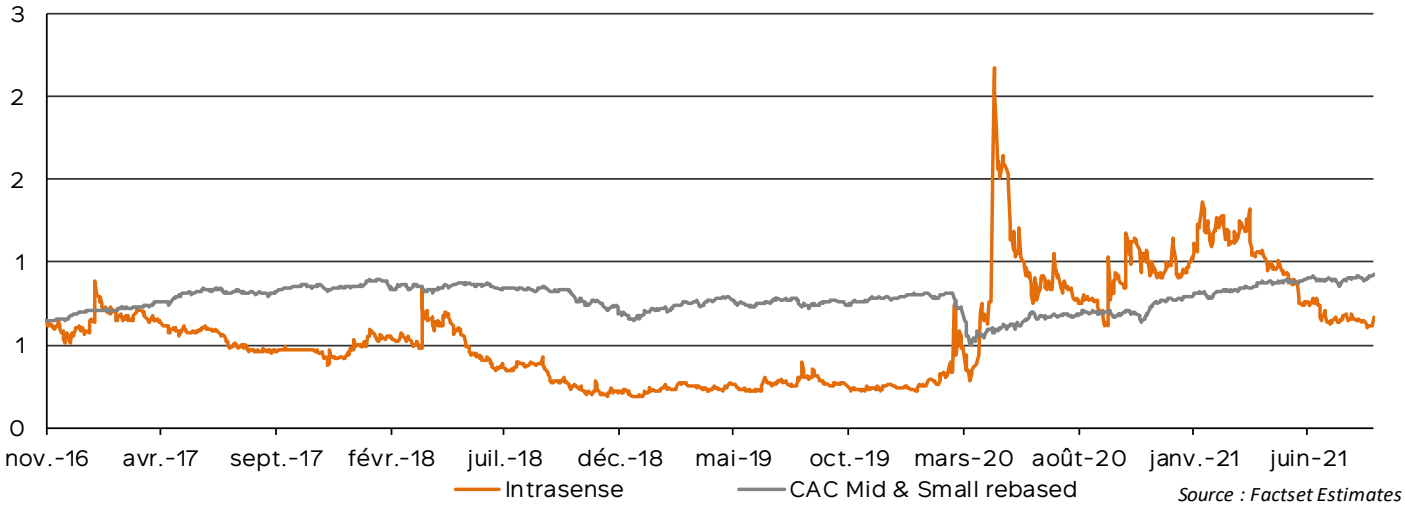
- Sharp competition from modalities manufacturers
- Regulatory and execution risk
- Dilution to finance acquisitions

ADDITIONAL INFORMATION

Shareholders



CHANGE IN SHARE PRICE OVER 5 YEARS



Source : Factset Estimates

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CONTENTS

1 – Cancer offer rounded out with Myra® p.5

1.1 Myrian®, an advanced multi-modality, multi-constructor visualisation tool p.5
1.2 From Myrian® to Myra®: a disruptive offer in cancer p.8

2- Medical imaging and software: shared destinies p.10
2.1 The increasingly fundamental role of medical imaging p.10
2.2 Three major medical imaging software categories p.22
2.3 Consolidation in the software offer p.24
2.4 The software: the great unknown in medical imaging p.26
2.5 Artificial intelligence serving medical imaging p.29
2.6 Robust growth in the medical imaging software market p.31

3- Myra® to start a new period of growth p.33
3.1 A difficult start leading to a strategic change in 2017 p.33
3.2 China and France: key markets p.34
3.3 All systems go: 2020-27 CAGR: +34% p.35
3.4 Profitable at the adjusted EBITDA level in 2025 p.42
3.5 Ambitious guidance, a more cautious stance p.43
3.6 A new stage of financed growth p.44

4 -Valuation of €1.02 per share, BUY rating. p.45
4.1 DCF valuation of €1.02/share p.45
4.2 A potential M&A target further out p.46

Warning p.48

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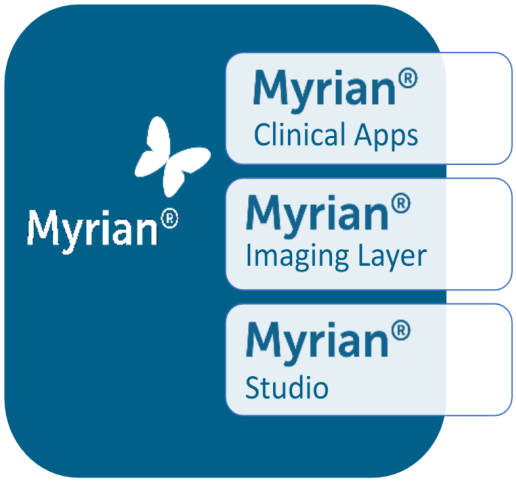
1 – Cancer offer rounded out with Myra®

Since its creation, the group has marketed the advanced multi-modality visualisation tool, Myrian®, and is set to round out its portfolio with the launch in June 2022 of a dynamic platform that aims to orchestrate the various radiological workflows, Myra®. These two product lines target radiology centres: Myrian® generally indirectly via partnerships and Myra® directly, with the aim of offering state-of-the-art solutions to support the work of radiologists who suffer from limited resources. The two products lines are complementary.

1.1 Myrian®, an advanced multi-modality, multi-constructor visualisation tool

Myrian® is based on three modules: Myrian® Imaging Layer, the visualisation platform, Myrian® Clinical Apps, covering the various clinical applications, and Myrian® Studio, the development tool enabling medical imaging industrialists, including those developing Artificial Intelligence algorithms, to build their own visualisation and post-treatment applications on the Myrian® platform.

The main feature of the Myrian® offer is that the solution is compatible with the modalities of all constructors and meets DICOM (Digital Imaging and Communications in Medicine) standards. Myrian® is also a multi-modal software, such that images from all modalities (MRI, scanners, PET-scan, etc.) can be visualised and clinical applications specific to each organ are available. Myrian® is easy to use and helps improve productivity for radiologists.



Source: Intrasense

✓ **A constantly improving software suite**

Intrasense has been marketing its multi-modal (MRI, scanners etc.) medical imaging analysis solution Myrian® since 2006. The current version of Myrian® on the market is the 2.9 version, launched in March 2021, with the 2.10 version due out in December 2021. Over the years, the medical imaging analysis solution has been improved with new functionalities and applications added to the initial software. The current version (Myrian® 2.9) has been improved with new clinical features and in workflow enabling users to gain time in analysing examinations.

Intrasense makes regular and continuous improvements to its offer to be able to provide the best post-treatment software, always compliant with international standards in medical imaging. The next updates to Myrian® are planned for 2023 with the launch of Myrian® V3.0 and then in 2024 and 2025 with versions 3.1 and 3.2 respectively.

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1 – Cancer offer rounded out with Myra®

✓ **Myrian® Clinical Apps/Imaging Layer: a comprehensive analysis offer**

Myrian® Clinical Apps is destined for healthcare professionals and industrial imaging partners. The offer includes a portfolio of around 15 clinical applications breaking down by organ or disease such as Myrian® XP-Liver and Myrian® XP-Lung (see table below). These various Myrian® Clinical Apps are divided into two distinct categories. On the one hand, the XP modules, which are tools for the automatic detection of anatomical tissues and pathological tissues. XP modules have groups of analytical functions specific to each organ or disease. On the other hand, XL modules, which offer advanced post-treatment capacities such as the fusion of images acquired through different modalities, image calibration (for comparison and combination purposes), and specialised analysis tools to monitor cancer patients. In the following table, we set out the modules that have been assigned the CE marking. Note that a new application is generally launched with each new version of Myrian®.

Clinical applications included in the Myrian® software

Module	Organe/pathologie	Modalité	Caractéristiques principales
XP	Sein	IRM	Lecture structurée Cartes paramétriques avancées Protocoles adaptables Rapport dédié au scoring des lésions
	Prostate	IRM	Cartes paramétriques avancées Rapports structurés incluant le scoring des lésions Outils multiphases et volumiques
	Foie	IRM, Scanner	Outils semi automatisés de planification chirurgicale Visualisation 3D avancée Segmentation rapide en 1 clic
	Mammographie	Mammographie	Visualisation optimisée et multimodalités Analyse comparative des examens Changements de vue en 1 clic
	Poumon	Scanner	Segmentation et quantification des tissus à faible atténuation Visualisation CPR des voies aériennes Planification chirurgicale Protocole Covid-19
	Colon	Scanner	Coloscopie virtuelle Calcul automatique de la distance au rectum de la lésion Synchronisation automatique des vues en MPR, endoscopique et déplié
	Vessie	IRM, Scanner	Segmentation de vaisseau en 1 clic Masquage automatique des parties osseuses Calcul automatique de la ligne centrale
	Cerveau	Scanner	Décisions rapide de traitement en cas d'examen ou de suspicion d'AVC Accélère la prise de décision et réduit la durée de prise en charge
	Cardiaque	Scanner	Workflow & Rapports intuitifs Outil de segmentation progressive des vaisseaux Quantification de la sténose et planification de pose de stent
	Pelvis féminin	IRM	Visualisation d'examens IRM Analyse multiparamétrique
XL	Oncologie	-	Scoring des lesions Suivi précis et sécurisé des lésions Sélection automatique des examens

Source: Invest Securities

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1 – Cancer offer rounded out with Myra®

Each clinical application is designed for a specific organ or disease and offers a post-treatment solution, especially with the immediate availability of exams, with no charging time required. The Myrian® solution is therefore based on these various clinical apps built into the Myrian® Imaging Layer multi-modal visualisation platform. Intrasense's clients can therefore choose the model to include in their licence, depending on their specific needs and their budget.

Myrian® Imaging Layer is a comprehensive visualisation tool with connectors enabling the integration of Myrian® into the client's IT eco-system for radiology-based testing, diagnosis and monitoring. Since it is a neutral system, the solution is destined for all medical imaging industrialists (e-health, PACS, VNA, RIS publishers etc.) and is compatible with the modalities of all manufacturers. The applications are also compatible with the DICOM standard, thereby facilitating their usage for professionals. Myrian® Imaging Layer enables instantaneous visualisation of images in 2D or 3D and helps optimise the workflow for radiologists by assisting them in their analyses of medical images and thereby helping them to save time.

Since the Myrian® Imaging Layer platform is highly integrated with client solutions, it enables the consolidation of long-term partnerships. This near-native integration of basic visualisation functions also provides access to the wealth of advanced Clinical Apps that can be activated by the partner to specialise or diversify their imaging offer, enabling them to better treat their patients while strengthening their capacities and clinical expertise. The various Myrian® Clinical Apps are also sold directly depending on the needs and specific aspects of the hospitals and radiology centres.

✓ **Myrian® Studio: a tool for stimulating innovation in imaging**

After the clinical applications and the visualisation platform, Myrian® has a third tool. This is Myrian® Studio, which aims to offer a development platform to stimulate the ramp-up of the integration of AI into the Myrian® offer. Through Myrian® Studio, Intrasense provides access to its software for academic institutions or companies to facilitate the development of new functionalities in medical imaging. The tool offers a comprehensive environment for application development, helps develop R&D and strengthen the medical imaging solution. Indeed, development with Myrian® Studio is free for research purposes only. Intrasense could then leverage the research efforts of university and industrial partners and benefit from early access to innovative tools in medical imaging that could then be integrated into the commercial version of Myrian®, on condition that the two parties agree on the licence conditions. Myrian® Studio enables Intrasense's R&D team to easily integrate new technologies and new applications into the Myrian® platform and enhance current applications with algorithms and artificial intelligence with the contributions from partner companies specialised in AI such as Quantib.

Myrian® Studio is a means of exploiting the power of the partnership, with the aim of integrating R&D works of its partners, such as university centres and imaging industrialists specialised in development of AI algorithms in the clinical world. Through Myrian® Studio, Intrasense contributes its entire clinical know-how in imaging and makes a full development environment available that provides its partners with rapid access to the market. These partner applications are directly integrated into the Myrian® Imaging Layer platform and thereby enhance the catalogue of Clinical Apps.

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1 – Cancer offer rounded out with Myra®

1.2 From Myrian® to Myra®: a disruptive offer in cancer

✓ **Omnipresence in cancer imaging**

Medical imaging is omnipresent in the care path for cancer sufferers. Imaging helps establish a diagnosis (mammography for breast cancer, MRI for prostate cancer, CT scan for lung cancer etc.). Imaging also plays a dominant role in characterising the cancer (stage of lung cancer, tumour mass etc.), its treatment (MRI for radiotherapy treatment, guiding for resection etc.) and also throughout the patient's follow-up care (response to treatment, development of the cancer etc.). Medical imaging in cancer is currently facing a number of challenges. Some of these are inherent in medical imaging as a whole, such as a lack of radiologists, while others are more specific to oncology, such as the increase in the number of patients suffering from cancer, for which diagnosis is now better and earlier.

Technological innovations in imaging modalities that produce an increasing amount of images and hence data to interpret add a mental and intellectual load for radiologists in addition to the number of patients to treat during their session. Radiologists in cancer imaging not only face these challenges concerning productivity and treating large amounts of information, but also the need to consult essential yet fragmented information accessible in different hospital IT systems. Technological innovation including digital archiving of images and digitalised exchange of medical information have already provided a first level of technical response, but with no optimisation of access to this information in the business approach for those involved in treating cancer patients. Recent innovations related to the potential of artificial intelligence must also be integrated into the treatment routine. Myra® should help provide answers to these challenges.

Cancer treatment requires the intervention of pluri-disciplinary teams with radiologists and oncologists playing essential roles. Oncology concerns various departments, but these are still very compartmentalised. This compartmentalisation is a disadvantage for patients and healthcare professions in a backdrop of high growth in cancer incidence and an increasingly regular use of medical imaging.

✓ **Myra® to decompartmentalise the cancer care path**

In June 2022, Intrasense is due to launch the first version of a platform that aims to steer the needs of healthcare professionals along the cancer patient care journey. The software has been named Myra®. It is a dynamic dashboard that can meet the needs of all the various teams involved in the care path. The aim is to decompartmentalise the various departments and optimise decision-making. Myra® is to be integrated across the entire hospital IT system (RIS, PACS etc.). Myra® aims to offer patients a care path that its supervised and structured by the oncologists and radiologists who are also part of the journey. It will provide healthcare professionals with a unique platform to monitor their patients, as well as a means of coordinating and structuring exchanges between professionals.

The decision-making and smart business processes embedded in Myra®, augmented with artificial intelligence, should help radiologists, oncologists and radiotherapists to gain in efficiency, serenity and availability for their patients, while making them fully confident in their diagnosis and thereby optimising decision-making during the patient's treatment. At the end of this value proposal chain, Myra® should provide patients with greater chances of surmounting and recovering from their cancer.

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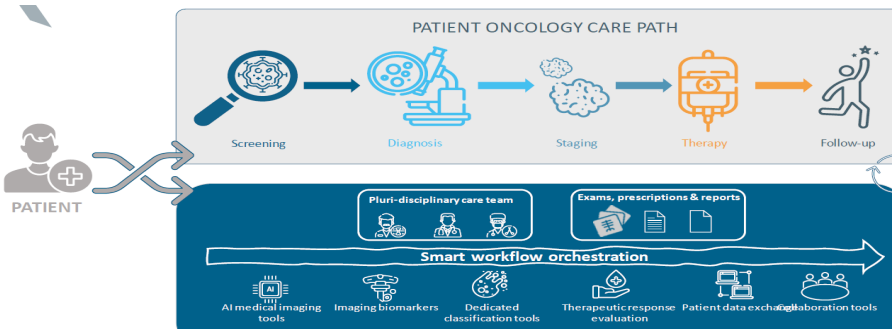
1 – Cancer offer rounded out with Myra®

Myra® positioning



Source: Intrasens

- **For oncologists**, Myra® should thus facilitate collaboration with radiologists by making patient data available to them in a secure way (current treatment, follow-up method, previous imaging data for comparison) and also providing them with results of patient imaging exams instantly with key images and rapid access to the entire therapeutic history.

- For **radiologists**, Myra® will allow access to the patient's prescription and oncology file (previous imaging data for comparison, assistance in compliance with guidelines, automated tumour evaluation report).

At the same time, beyond its integration into hospital systems, with the additional quality control functions embedded, Myra® can provide solutions for clinical trials and CROs that are poorly covered at present. Myra® could presumably be used by CROs to enable them to manage multi-centric clinical trials remotely and provide them with supervised follow-up of the patient's progress and therapeutic response, as well as monitoring and securing patient inclusions in clinical trials.

✓ **A collaborative development**

The development of Myra® is taking place in close collaboration with end-clients so as to propose a solution that is perfectly suited to all needs. Intrasense has thus undertaken blind interviews with 30 opinion leaders in China and Europe to establish real market needs and the most suitable business model. These interviews helped define the outlines of the solution and establish a business model, which is set to be a subscription costing an average of €80k a year.

In October 2021, the group also signed a partnership agreement with medical imaging and radiology group I-SERIS. I-SERIS is a member of the Vidi network (52 centres and 900 radiologists) and includes the clinics in Clementville, Clermont Hérault and the scanner centre of the Pasteur de Pézenas clinic. The agreement plans for I-SERIS to help with functional definitions and validations and for Intrasense to make the first versions available with the aim of validating and promoting the platform. The signing of this partnership is a structuring phase in the development of Myra®. The group could announce two new similar agreements by the end of 2021.

It also aims to develop a cloud version of Myra® in order to offer a hybrid solution both in the cloud and as an on-site installation. The cloud version could help penetrate the market more rapidly with potentially higher margin levels. The group plans to launch new versions of Myra® including new functionalities on an annual basis.

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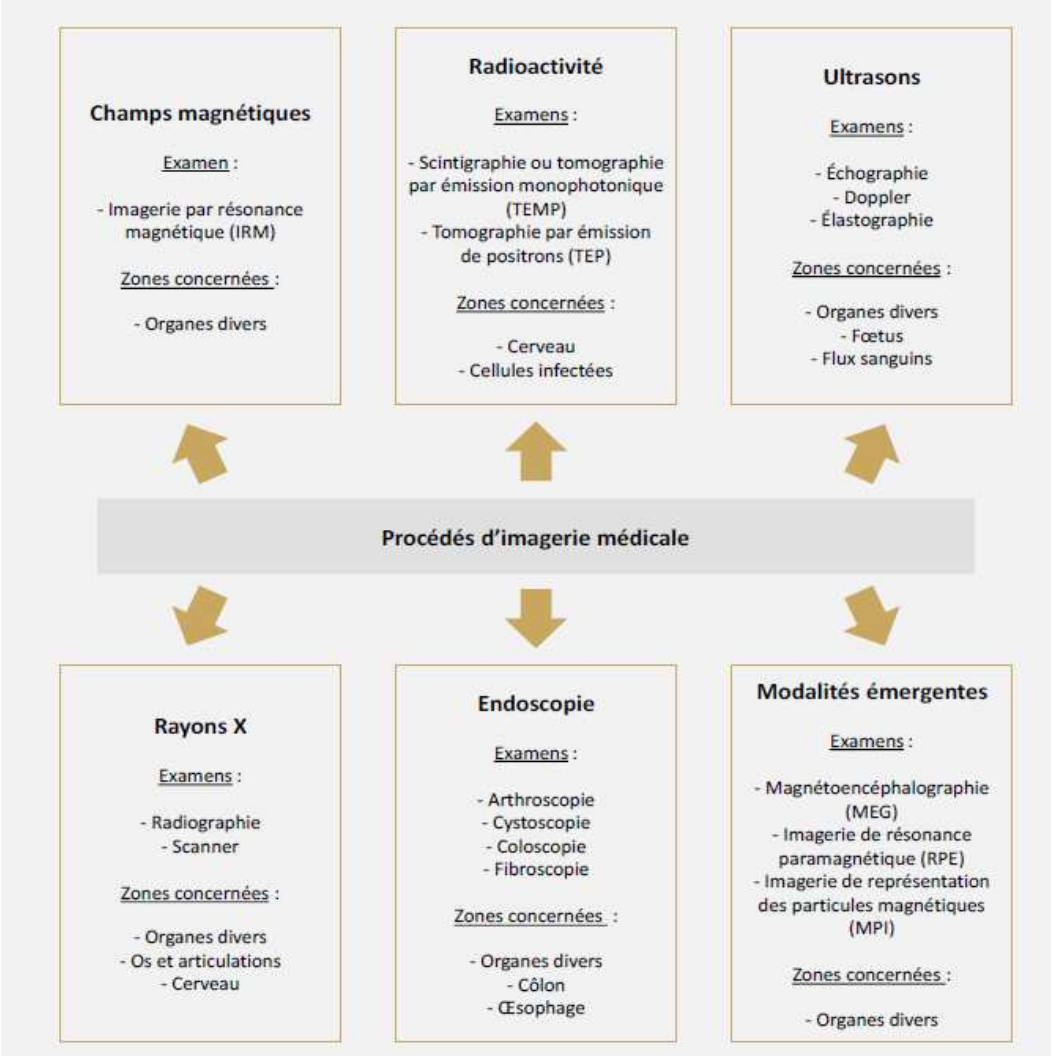
2- Medical imaging and software: shared destinies

2.1 The increasingly fundamental role of medical imaging

Imaging plays an essential role in terms of both diagnosis through continuous progress by acquisition systems (modalities) and interpretation (software) and the convergence towards a transdisciplinary medicine, and therapeutically by guiding acts and their assessment by offering safe and less costly alternatives to invasive procedures. These innovations in medical imaging have often been the fruit of unique multidisciplinary efforts, exploiting biomedical science with physical and engineering science. The software has rapidly become a tool that cannot be dissociated from medical imaging modalities and will necessarily need to capitalise on and participate in strengthening the role of imaging.

❖ The main modalities of medical imaging

Medical imaging covers various procedures according to a number of physical phenomena such as absorption of X-rays, nuclear magnetic resonance, ultrasound waves and radioactivity. These phenomena give rise to several modalities with different clinical applications that are nevertheless complementary.



Source: Xerfi

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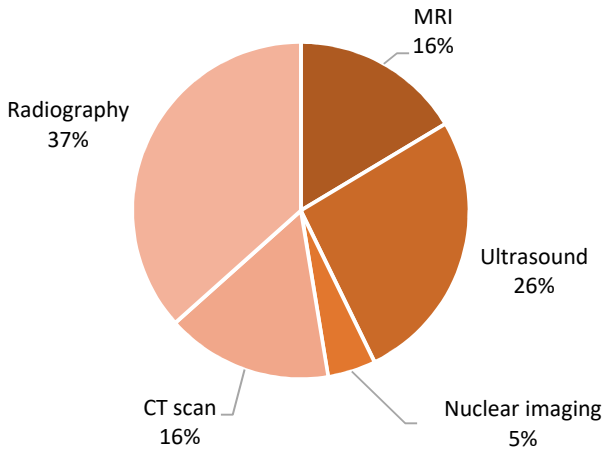
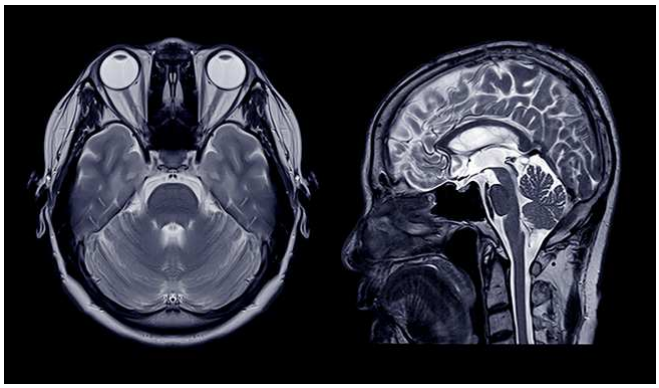
Among the numerous modalities (see below) stemming from these physical phenomena, some use similar energy sources but from very different clinical applications. To simplify, we can resume imaging modalities into five major categories: radiography, echography, scanner, MRI and nuclear imaging (positron emission tomography or PET). Note that technological progress means that these modalities are sometimes combined within a same instrument (e.g.: PET scan).

Breakdown of market by modality (% of number of acts in the US)



Source: Omnia Health

- ✓ **MRI:** Magnetic resonance imaging (MRI) is a technology that uses radio wages and a magnetic field to provide detailed images of organs and tissues. The type of radiation for this imaging technique generates images of soft tissues and leaves out bones. This feature is very efficient for diagnosis of a certain number of diseases by showing the difference between normal tissues and diseased tissues. MRI is often used to assess: large organs, the brain and the neurological system, the spine and the musculoskeletal system, joints, soft tissues, breasts, blood vessels, abdominals and heart defects. MRI is carried out with magnetic fields of varying intensities. Imaging using a magnetic field of more than 1.5 Tesla is known as high-field and that below 1.5 low-field. Among the latest technological progress, we could mention open MRI, visualisation software and supra-conductor magnets. However, recent progress primarily concerns software. These help accelerate contrast scans and simplify imaging workflows.



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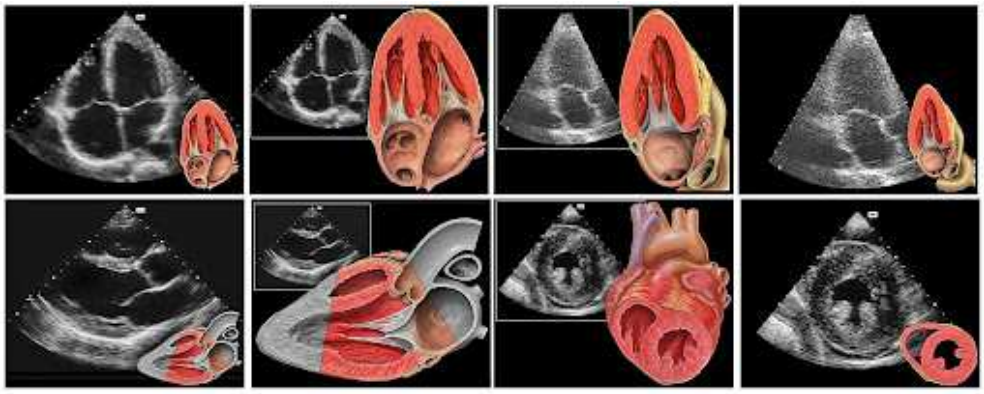
- **Ultrasound:** Diagnostic ultrasound, also known as medical echography or sonography, uses high-frequency sound waves to create images from inside the body. The ultrasound device sends sound waves into the body and is capable of converting the return sound, the echoes, into an image. Two types of ultrasound techniques exist: 2D and 3D.



- **Radiography** X-rays are the oldest and most widely used medical imaging technique. Radiography consists of printing the differences in density of an organ on a radiographic film. The film comes out more or less black depending on the organ examined. X-rays can generate three types of medical images: conventional radiological imaging, angiography and fluoroscopy.

- **Computed tomography scan (CT scan):** Tomography is an imaging technique that combines several radiographic images taken from different angles. This helps obtain detailed cross-sectional internal images. The images created provide more information than ordinary X-rays, enabling doctors to exam individual slices in 3D images. Contrast agents are often used in combination with CT scans to undertake angiographies and other specific tissue exams. There are currently three types of technology: the conventional CT scan, the double-energy CT scan (DECT or spectral) helping to distinguish specific tissues and concentrations of contrast agent, and the photon counting CT scan (PCD-CT), which helps detect individual X-ray photons and to measure their energy. The first PCD-CT, the Naeotom Alpha by Siemens Healthineers, was recently obtained 510(k) approval from the FDA for clinical uses.

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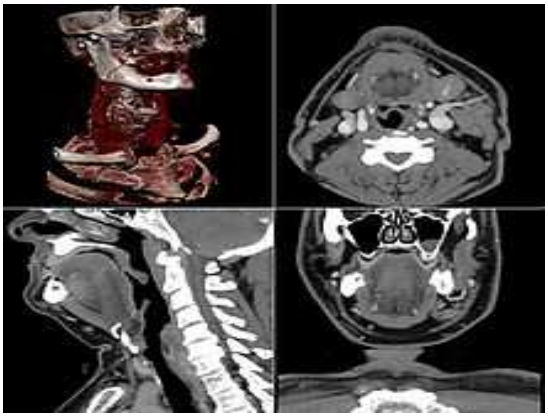
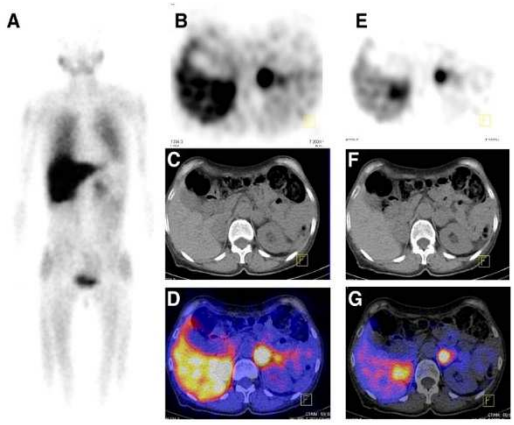


- ✓ **Nuclear imaging (PET scan):** Molecular or nuclear imaging is a diagnosis tool that helps visualise metabolic processes in the body by administering small quantities of radioactive pharmaceutical products to patients. These accumulate in a specific part of the body in a controlled manner. There are two types of specific technologies: positron emission tomography (PET) and single photo emission computed tomography (SPECT). Contrary to other ionising radiation techniques that can only generate anatomical images, this technique can generate functional images. By combining molecular imaging with computed tomography and MRI images, clinicians can obtain higher quality images.



The various modalities defined above often have a complementary role. They are regularly used in combination depending on the radiologist's needs and according to various price or speed constraints.

❖ A growing need for medical imaging driven by several levers

The medical imaging market is set to expand at around +5.9% a year out to 2026, excluding the negative impact of Covid-19 over 2020/2021, which has generally disrupted the use of medical imaging modalities. This growth is underpinned by three levers: (i) demographic growth and chronic diseases associated with population ageing, (ii) more recurring use of imaging thanks to technological progress, and (iii) renewal of the ageing installed base.

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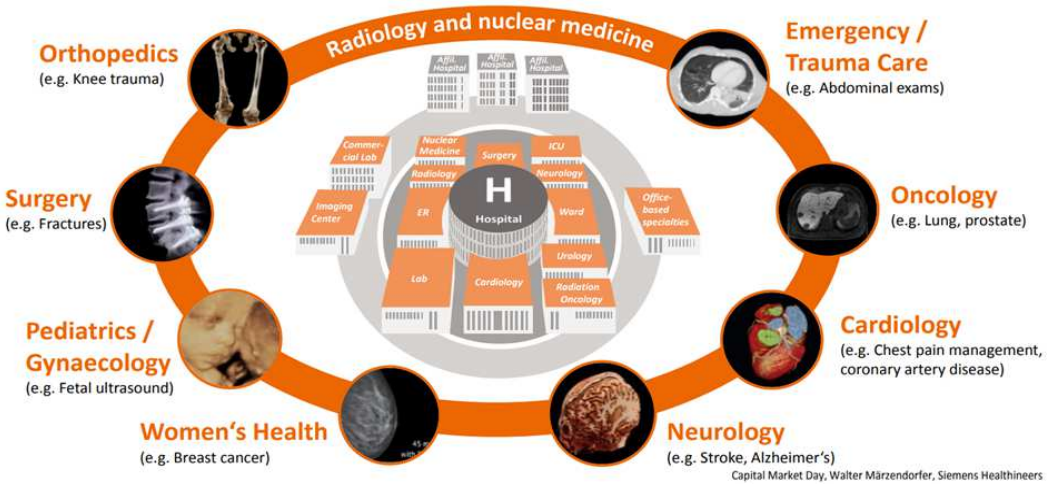
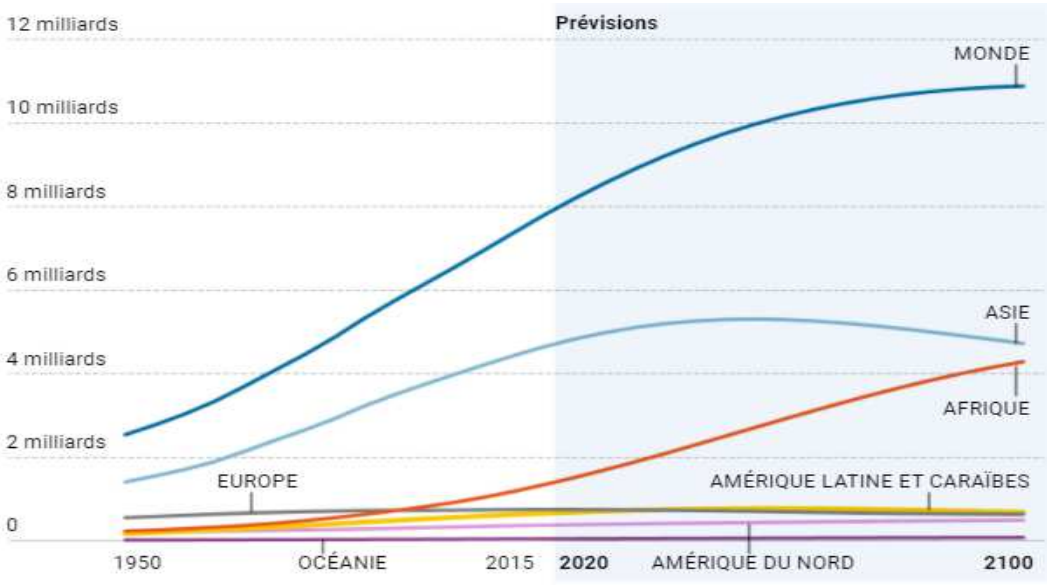
Demographic growth and chronic diseases

From a global perspective, demographic growth combined with population ageing is likely to prompt a sharp increase in the prevalence of chronic diseases and long-term conditions. Given its contribution to diagnosis and treatment of chronic diseases, medical imaging is set to become increasingly important in our daily lives. For example, radiology enables precise monitoring of progress of cancer cells in many cancer cases, without the patient having to undergo surgery each time.

Imaging at the heart of the hospital ecosystem



The UN estimates that the current global population of 7.7bn is set to rise to 11bn by 2100.



Source: UN

In all countries, life expectancy is increasing for both men and women. At present, life expectancy worldwide stands at 72.6, or eight years more than in 1990. The UN expects this life expectancy to reach 77.1 years by 2050.

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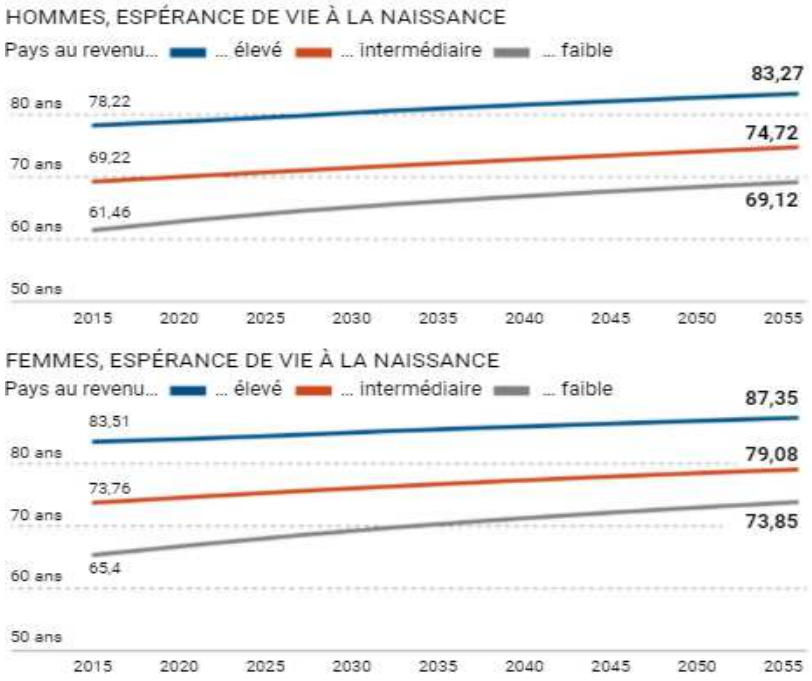
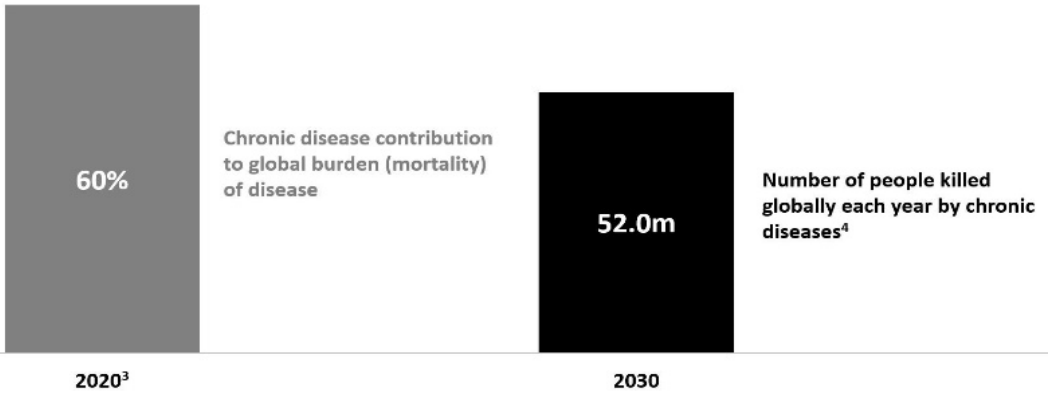


Source: UN

There are more people over the age of 65 than children under the age of 5. UN forecasts indicate that in 2050, for the first time, there will be more people over the age of 65 than those aged between 15 and 24. The number of people over the age of 80 - 143 million at present - is set to triple to 426m in 2050.

This increase in the global population combined with its ageing is inevitably set to prompt a surge in the amount of chronic diseases requiring long-term care underpinned by medical imaging. Siemens Healthineers estimates that chronic diseases represented almost 60% of deaths in 2020 and are set to represent 52m deaths a year in 2030, hence the need to strengthen capacity in medical imaging.



Source: Siemens Healthineers

In France, estimates by Xerfi based on CNAMTS data indicate that the population suffering chronic disease rose from 9m to almost 12m between 2009 and 2020, representing annual growth of 3%. This relentless growth represents significant new sources of growth for the imaging market.

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Development of non-invasive early diagnosis

The second source of leverage for medical imaging is technological progress allowing the more recurrent use of medical imaging processes in patient diagnostics and follow-up.

Since the commercial introduction of ultrasound in B mode (in the US) during the 1960s and conventional tomography at the start of the 1970s, the arsenal of clinical imagery has been extended to include positron emission tomography (PET), single photon emission computed tomography, magnetic resonance imaging (MRI) and additional US methods such as the M mode and Doppler imaging. Over the following years, all these methods, as well as former methods based on X and gamma rays, witnessed outstanding improvements with reduced imaging times, better spacial resolution and, as appropriate, reduced radiation doses. The tendency towards faster and better resolution imaging with lower exposure to radiation is set to continue in the future for all methods, enabling radiologists to improve all the key aspects characterising imaging processes.

Beyond innovation in modalities aiming for better precision and quality of the image, the contribution from software, and especially artificial intelligence, is a significant factor for facilitating the non-invasive diagnosis of diseases. Guidelines for many illnesses include medical imaging at an increasingly early stage in combination with invasive diagnosis methods such as biopsy. As the quality of the image and support from artificial intelligence improves, so does the sensitivity of the diagnosis, thereby avoiding the still-high number of false positives that require more invasive biopsies for confirmation. The example of Covid-19 shows that imaging, in this case the CT scan, combined with advanced visualisation software solutions such as Intrasense's Covid-19 solution, based on the Myrian® XP-Lung application, can be an efficient diagnosis solution.

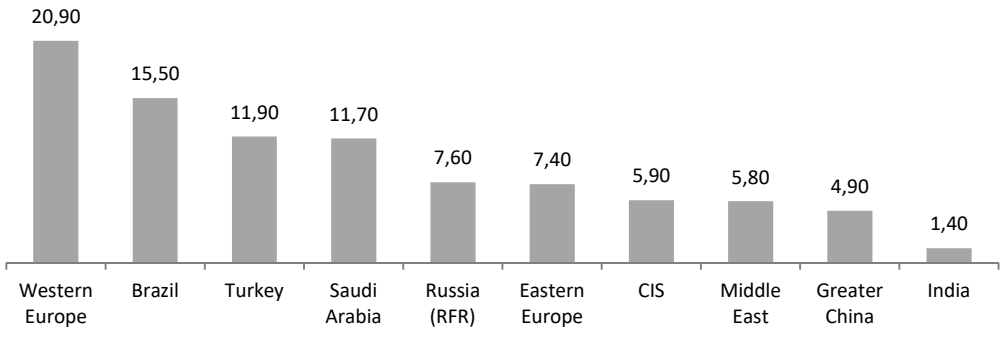
Low equipment penetration and ageing installed base

The third source of future growth in medical imaging stems from the need for equipment in emerging countries and the ageing installed base already in place in western countries.

- Emerging markets under-equipped

Emerging markets represent a substantial pool of future growth for the medical imaging market. Density of the various modalities per million inhabitants is indeed far lower than in western countries. The gap will nevertheless be difficult to fill given the significant investments required for medical imaging, although the emergence of Point Of Care medical imaging technologies that are less expensive and more suited to the needs of these countries should help reduce the gap over the long term.

Density per million inhabitants for MRI



Source: COCIR

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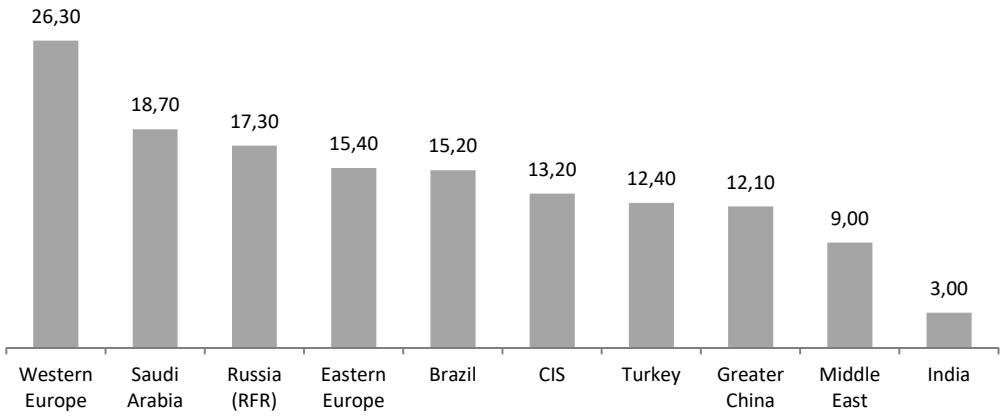
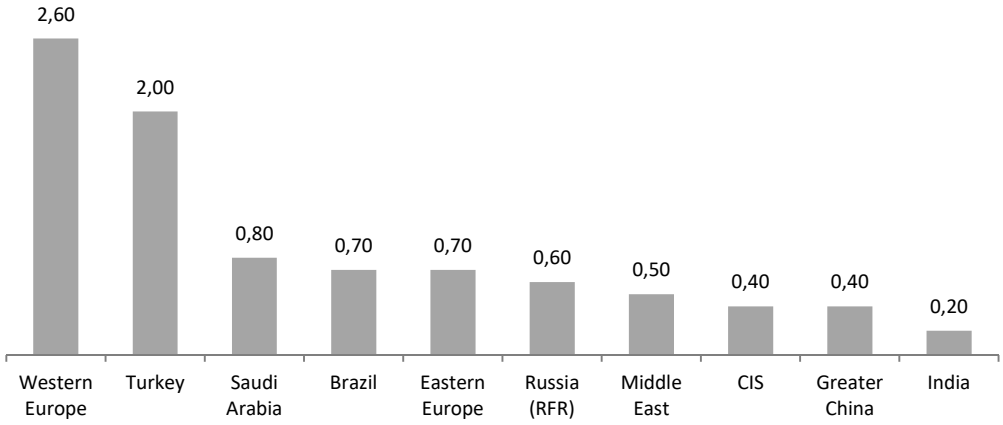
Density per million inhabitants for CT scan



Source: COCIR

Density per million inhabitants for nuclear imaging



Source: COCIR

The low equipment penetration rate in China validates the group's strategy to focus on high-potential countries, especially since the government there has been investing massively over recent years to extend its medical imaging possibilities. However, China favours local manufacturing of modalities and hefty entry barriers. For example, recent circulars sent to Chinese hospitals by the government impose the purchase of MRI equipment exclusively from local manufacturers. In terms of artificial intelligence, China is ahead of Europe and the US.

- **An ageing installed base**

Medical imaging is also a replacement market, especially in European countries where equipment penetration levels are close to satisfactory levels. To comply with the golden rule defined by the COCIR (the European Trade Association representing the medical imaging market), imaging modalities must be renewed in order to keep up with technological progress.

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The golden rule assumes:

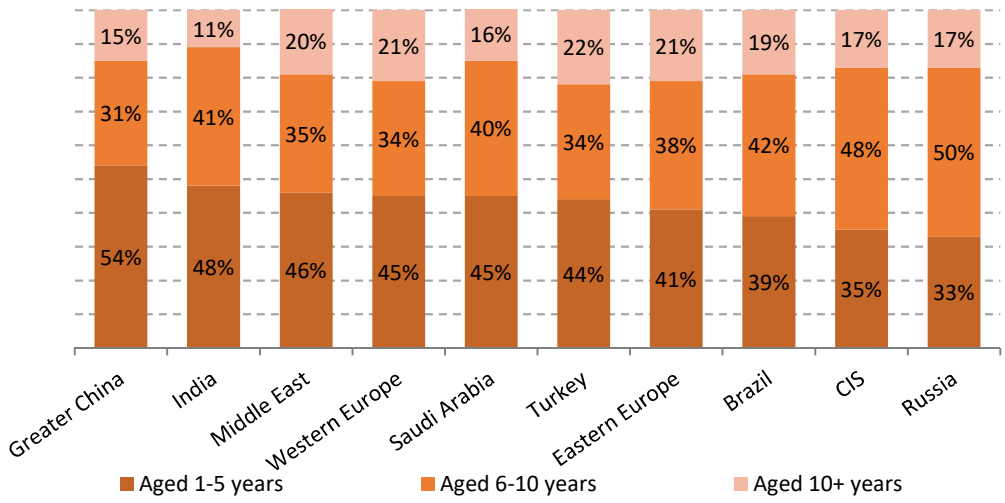
- That at least 60% of the installed network of equipment should be less than five years old. Average lifecycles of medical technologies suggest that equipment of up to five years old reflects well the current state of technology and offers possibilities for economically reasonable updating measures.

- That no more than 30% of installed base should be between six and 10 years. Medical technology that is between six and 10 years old is still usable, but still requires the development of replacement strategies for the systems to benefit from the efficiency gains offered by current technologies.

- That no more than 10% of the age profile should exceed 10 years. Medical technologies that are older than 10 years are outdated, difficult to maintain and repair and can be considered obsolete and unsuited to carrying out certain procedures relative to current directives and best medical practices; their replacement is essential.

The COCIR data, which do not include the US, clearly show that, over the past 10 years, the number of countries respecting the COCIR's golden rule did not improved significantly. Indeed, the situation in terms of CT scan and MRI has continued to deteriorate. The ageing population means that health systems are faced with major economic and societal challenges, that can be met through increasingly rapid yet gradual innovation. However, the delay in its roll-out is worrying. The charts below show trends in four modalities.

Age of installed CT scan base



Source: COCIR

In terms of CT scanners, we note that no region respects the rule of 60% of equipment of less than five years. The countries the most up to date are Greater China and India, which arrived in the market much later. Western Europe does not comply with the golden rule either. At the same time, equipment that is more than 10 years old represents an average of 18% of the installed base, almost double the threshold set by the COCIR. In Europe, the figures are even more alarming with 21% of the CT scan installed base over the age of 10. Renewing this ageing base is therefore necessary.

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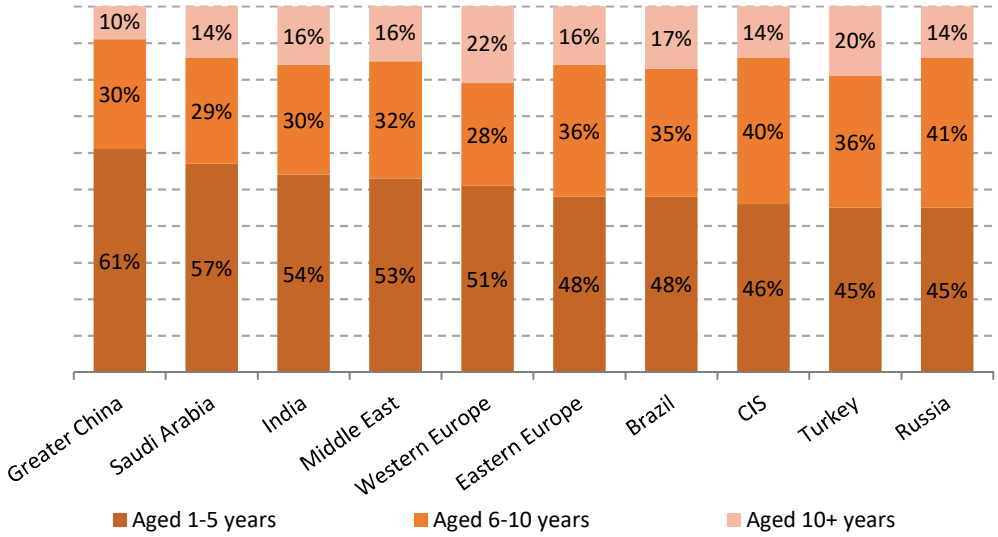
2- Medical imaging and software: shared destinies

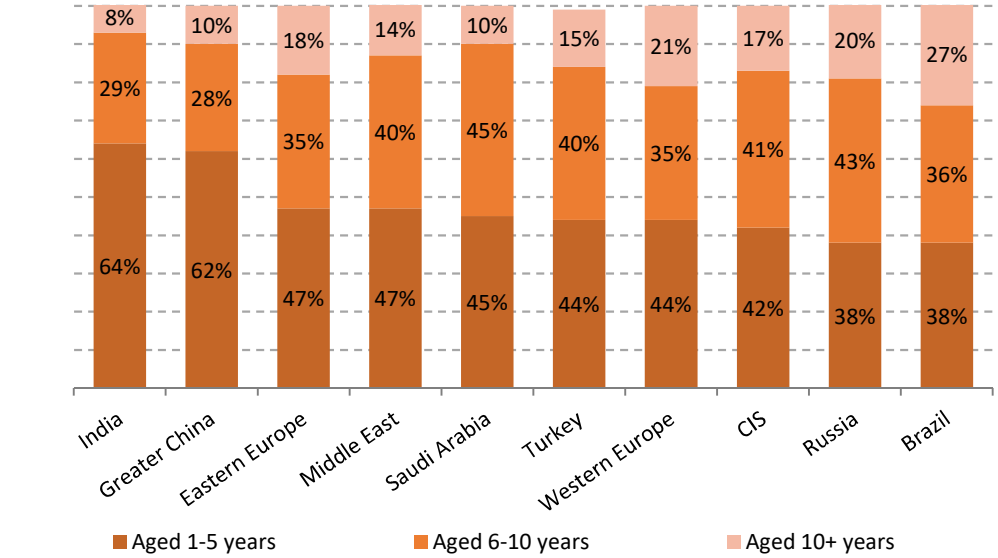
Age of MRI installed base



Source: COCIR

In terms of MRI, apart from Grand China which has a coherent network, the same can be said as for the CT scan with Europe lagging well behind.

Age of Radiography installed base



Source: COCIR

In terms of X-ray scanners, Europe and especially eastern European countries, are late in renewing their base.

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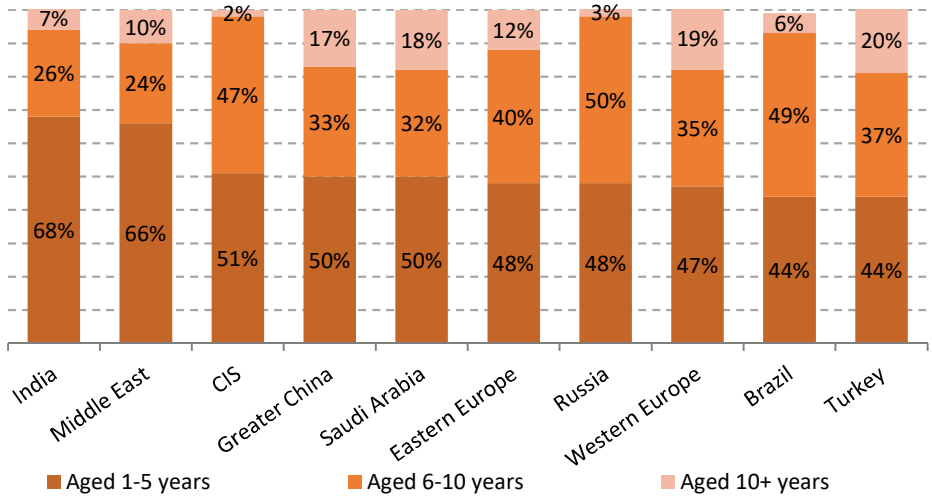
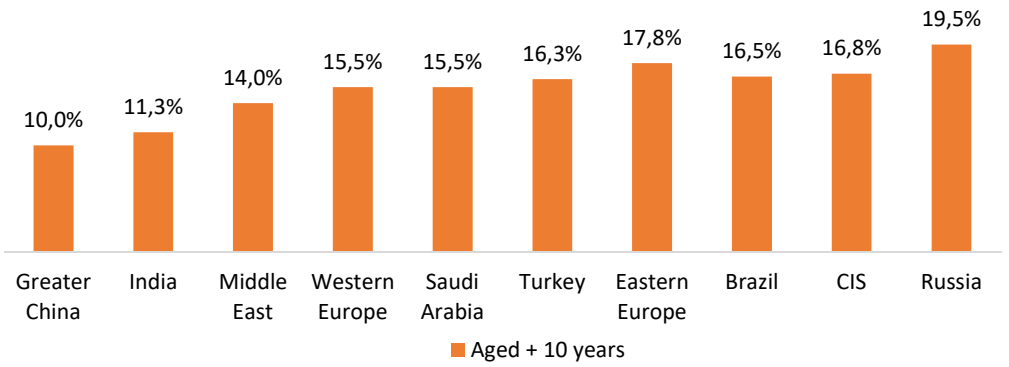
Age of nuclear imaging installed base



Source: COCIR

The network of the various regions shows that nuclear imaging is younger than the other modalities. This is due to the fact that the technology is more recent.

Average – 4 modalities combined - percentage of the network over 10 years of age



Source: COCIR

In western Europe, we note that around 16% of the installed base, for the four modalities of products measured, is now more than 10 years old. Greater China is generally spared by renewal requirements, although the region needs to massively strengthen the number of instruments in place to reach penetration rates that ensure faster and more efficient treatment. China is currently implementing this densification strategy and this is driving the Chinese medical imaging market.

An expanding market dominated by four players

Underpinned by (i) demographic growth, (ii) the ageing population favouring growth in long-term illness, (iii) increased penetration of modalities in emerging markets, and (iv) replacement of the ageing stock of equipment in developed countries, the imaging market boasts robust long-term growth prospects. By comparing data from various research institutes, we value the market in 2020 at around $38bn, with annual growth of +5.9%, pointing to a value of around $53bn in 2026.

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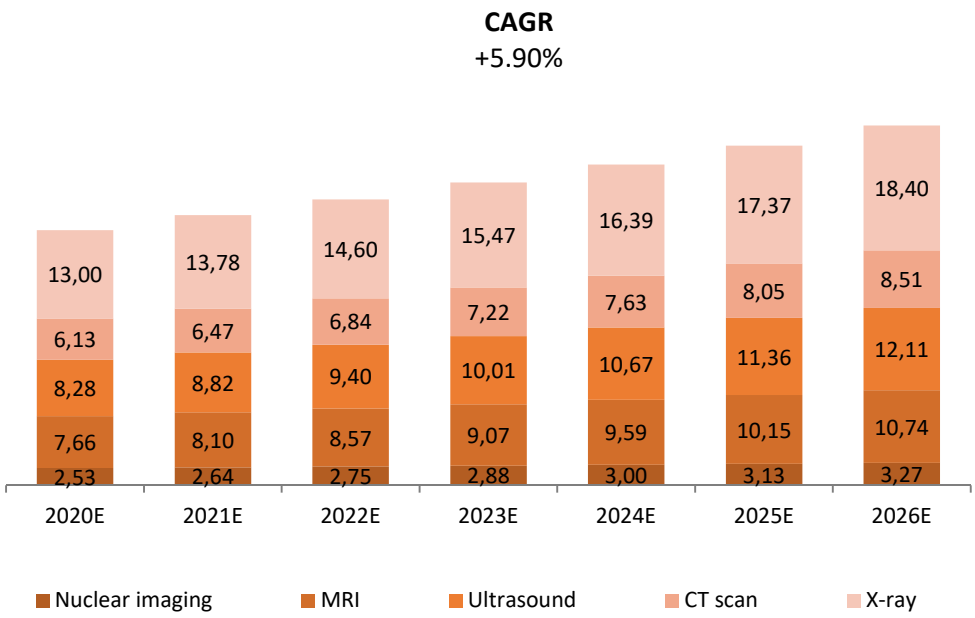
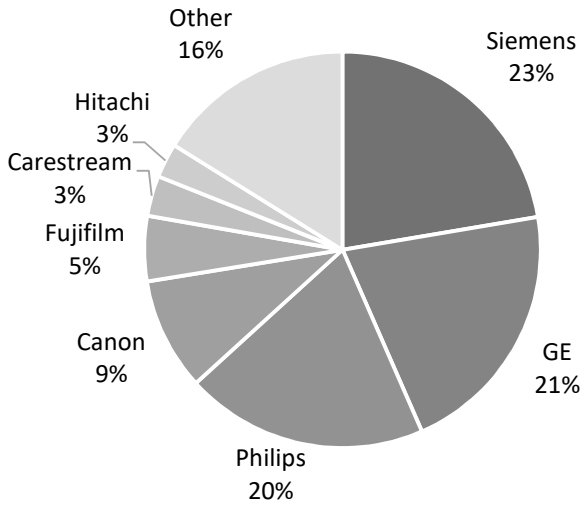
The highest growth segments are likely to be ultrasound (+6.5%/year) followed by X-ray (+6%/year) and MRI (+5.8%/year).



Source: Statista, Grandviewresearch, Medgaget, Marketsandmarkets

The medical imaging market is dominated by three players: Siemens Healthineers, GE Healthcare and Philips which house almost 65% of the market.



Source: Evaluate

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2- Medical imaging and software: shared destinies

2.2 Three major software categories in medical imaging

In many respects, radiology has brought the rest of the medical world into the digital era, with the early adoption of electronic files (radiology information systems - RIS), the drawing up of digital imaging and medical communication standards, the roll-out of archiving systems (PACS) and image communication systems, as well as the conversion of analogical systems to advanced visualisation solutions. Innovation underway in IT systems, communication systems and computing power underpin new approaches in knowledge creation, knowledge management and image analysis. Medical imaging was the pioneer in introducing software to medicine, and should remain so. Below, we described the main software packages used in radiology centres.

❖ PACS

Digitalisation of medical images and IT needs in order to centralise, archive and share them has resulted in the development of PACS software specialised in medical imaging. The Picture Archiving and Communication System (PACS) enables archiving and communication of radiology images. The system allows images to be transferred through a network and hence the comparison of medical exams, thereby providing better effectiveness in diagnosis. PACS software acquire digital images from different modalities (ultrasound, MRI, radiography etc.) then store them in the Digital Imaging and Communications in Medicine (DICOM) file format, to send them to computers to be consulted and examined by radiologists. The DICOM format enables the standardisation of medical image data, making them readable on all compatible IT equipment. PACS are developed by specialised companies or medical equipment companies such as Siemens Healthineers, which markets a PACS software under the name of syngo.plaza.

The PACS software integrates into radiology information systems located in hospitals and radiology centres. A report by HIMSS Analytics indicates that the percentage of hospitals equipped with PACS software exceeds 90% in US and that this proportion should continue to increase in the future especially with the development of cloud computing and increasing demand for medical images.

❖ VNA (Vendor Neutral Archive)

The Vendor Neutral Archive (VNA) is a medical imaging software designed to resolve problems created by the various PACS specific to suppliers. As its name suggests, the VNA is neutral relative to all medical imaging equipment suppliers. The application stores medical images in a standard format with a standard interface while maintaining the integrity of DICOM tags. Note that the DICOM format (Digital Imaging and Communication in Medicine) corresponds to a file standard used by medical imaging equipment manufacturers, which conserves the quality of the image coded in binary format, and enables integration of patient data. Consequently, the images stored in VNA are accessible from any computer, irrespective of the PACS software supplier used. This archiving method improves data flows within hospitals and radiology centres by centralising interfaces, storage and data management.

The VNA overcomes drawbacks linked to PACS by enabling medical images to be stored and visualised from many devices and locations.

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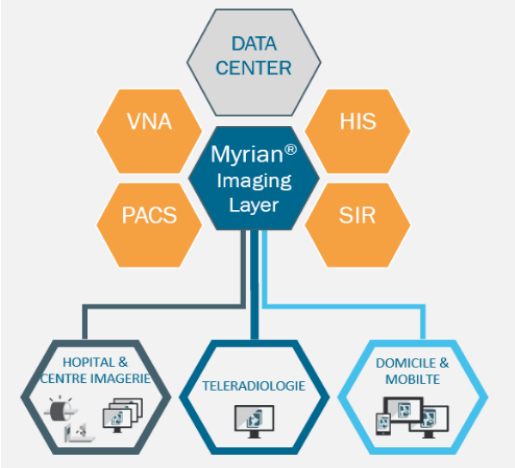
As indicated previously, once an image is stored in a PACDS, several DICOM tags are added. The tag addition method varies depending on the supplier, such that the final medical image file may not be compatible with other applications. The VNA separates the DICOM image from the rest, thereby guaranteeing the normalisation and compatibility of the images with all work stations. The VNA allows healthcare services providers to migrate from one supplier to another without worrying about losing imaging data. As for PACS software, VNA software is developed by specialised companies or medical equipment companies such as Siemens Healthineers, which markets a VNA software under the number of syngo.share.

❖ Advanced visualisation and analysis software

Post-treatment or advanced visualisation software refer to interventions applied to diagnostic medical images after acquisition of the patient's images. Post-treatment techniques are generally undertaken with the help of an advanced diagnostic medical imaging programme. They provide the radiologist with information that is not available by simply looking at the original images. Visualisation and analysis software are multi-modal platforms that include several components in order to provide a comprehensive software package for hospitals and radiology centres. These platforms have several specialised clinical applications in the various pathologies and organs (heart, lungs, prostate, etc.). The software aims to bring together in a unique application the various medical imaging analysis tools to provide a comprehensive system that helps optimise efficiency and reliability, especially for complex cases. **The Myrian® Imaging Layer software by Intrasense with its numerous applications (Myrian® Apps) belongs to this segment of advanced visualisation platforms.**



Examples of offers by Siemens Healthineers, GE Healthcare and Philips

	Siemens Healthineers	GE Healthcare	Philips
PACS	syngo.plaza	Centricity™ Universal Viewer	Enterprise Imaging PACS
VNA	syngo.share	Centricity™ Clinical Archive	Philips IntelliSpace Universal Data Manager (PACS/VNA (solution)
Visualisation platform	syngo.via	AW workstations (CardiacVX, BRAIN View…)	IntelliSpace Portal

Source: Companies

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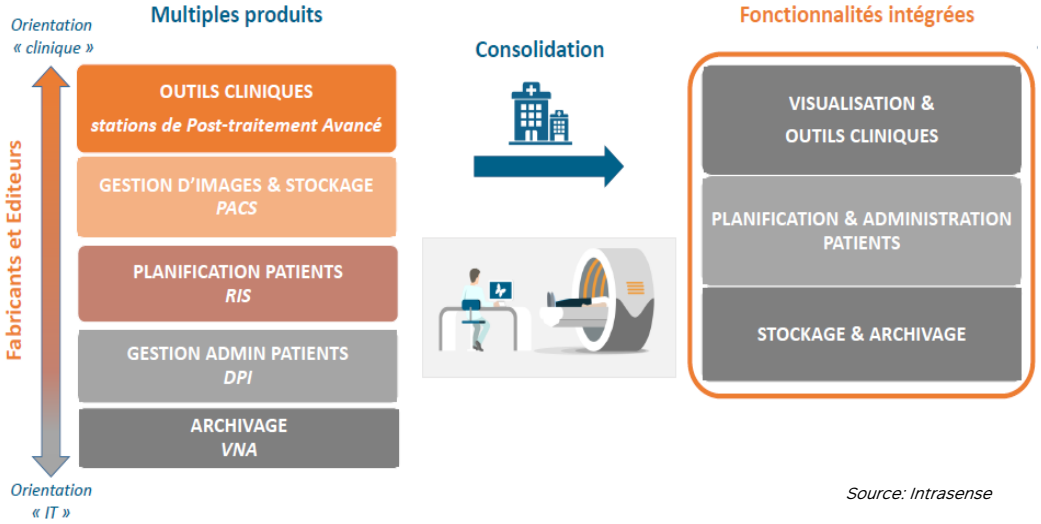
2- Medical imaging and software: shared destinies

2.3 Consolidation among software offers

To begin with, software manufacturers and publishers proposed multiple and diverse solutions for hospitals. These solutions covered clinical tools, image management and storage software such as PACS, patient planning, administration and management software as well as archiving software such as VANA. However, since this software offer is no longer adapted to client needs, the traditional software offer therefore underwent a consolidation phase in order to meet the requests of hospitals and radiology centres. As with medical biology, imaging has many features that should favour consolidation. Indeed, it is a highly capital-intensive business where potential productivity gains and economies of scale are significant. Indeed, to enable hospitals to manage ever-greater pressure on prices and increasing demand, they have effectively consolidated in the bid to reach more comfortable critical mass. The hospital and radiology centre consolidation trend is unlikely to end now, thereby justifying at the same time, further consolidation in the software offering. **In view of this, Intrasense revised its strategic approach as of 2017 to favour partnerships enabling it to address the market indirectly through modality sellers or other players in the imaging segment.**

The aim of consolidation in the medical imaging software offering is to provide a more comprehensive and more integrated solution for clients of software manufacturers and vendors. This has resulted in the creation of a network of interactions between the various software packages to pool the functionalities that were previously marketed individually. For example, this pooling can result in a regrouping of software for clinical tools, image management and storage within one and the same solution. The ultimate aim of consolidation is to offer a single software package using a multi-modal platform model that contains all the functionalities necessary for the hospitals described above (PACS, VNA etc.).

Consolidation of the software offering



Source: Intrasense

The consolidation of medical imaging software also enables the transition of software manufacturers and vendors towards a new offer for their solutions, thereby guaranteeing them recurring revenues. Indeed, traditional clients of these companies are hospitals and radiology centres and the development of an integrated offering enables them to generate regular revenues by setting up multi-year partnerships rather than single sale offerings.

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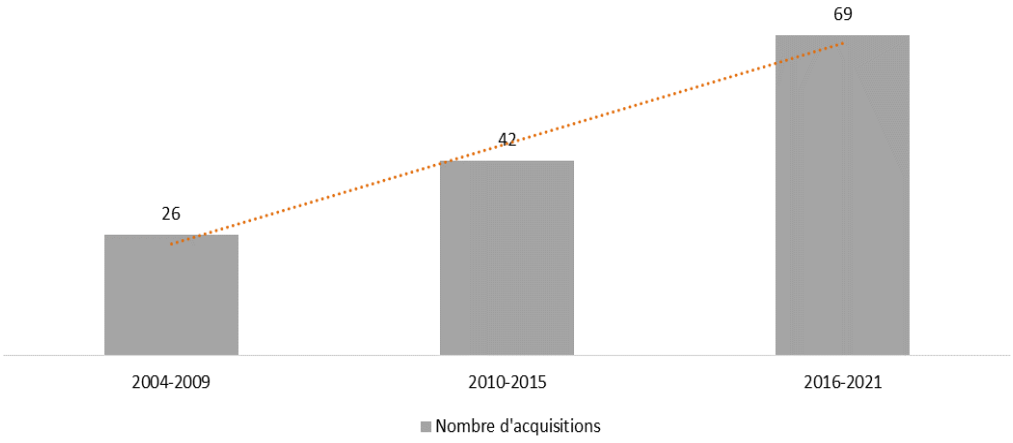
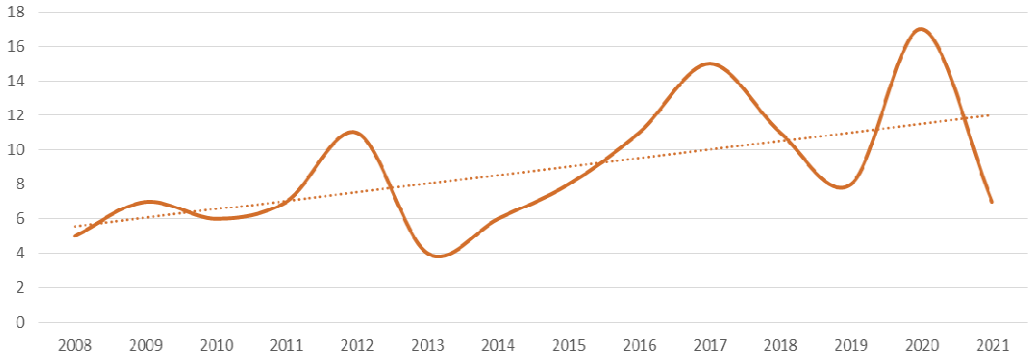
The new offering of medical imaging software de facto will require closer ties between software developers and other innovative companies in the artificial intelligence sector since this technology is at the heart of the integration of functionalities within a single platform. These collaborations result in partnerships or mergers and acquisitions and contribute to consolidating medical imaging software players, in the form of strategic partnerships (setting up new distribution channels), new product integration (a solution from a non-rival company in the value chain) or technical collaborations (using the expertise of a specialised company) between companies for example. Merger deals between companies involving modality sellers and software specialists have increased in recent years (see chart below) in order to better meet client needs.

Consolidation among sector players to address the needs of radiology centres



Nombre d'opérations M&A sur le segment "logiciel d'imagerie médicale"



Source: Invest Securities using mandasoft data

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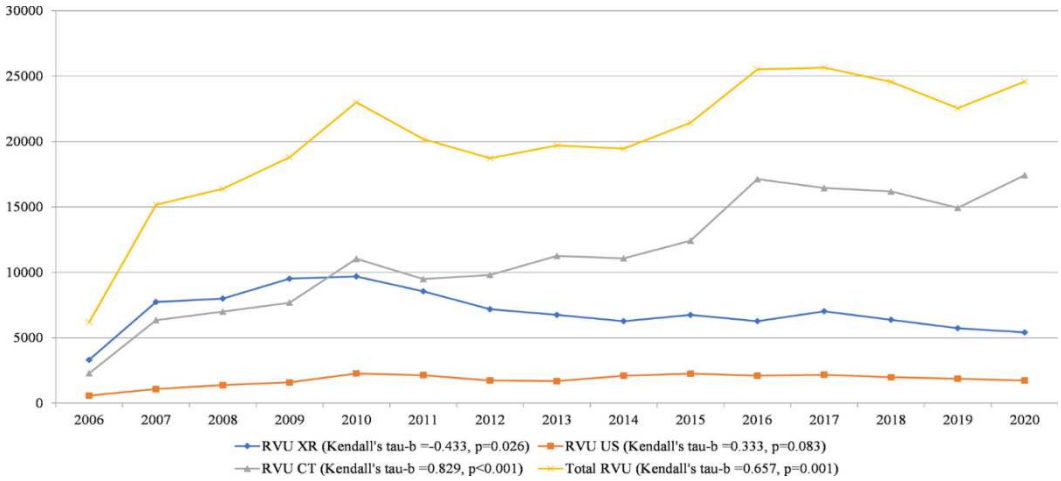
2- Medical imaging and software: shared destinies

2.4 The Software: a key part of medical imaging

❖ A dominant role making up for a lack of human resources

With the rising use of medical imaging, radiologists are increasingly solicited and managing workflows has become a major issue. The number of images to assess is growing exponentially, while the number of radiologists remains more or less steady.

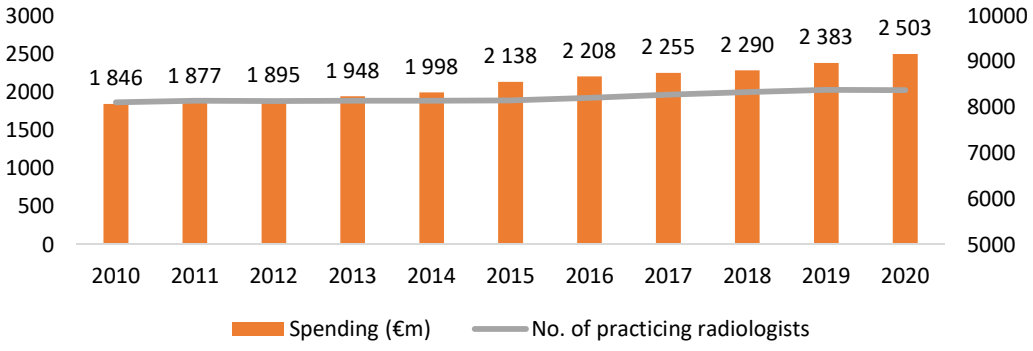
According to a study undertaken by a major western European hospital, the number of images exploded between 2006 and 2020, especially for scans, thereby affecting the number of night-time hours worked by radiologists. "Night-time" hours are those between 6 pm and 7 am on weekdays as well as hours worked at the weekend and on bank holidays. The total number of night-time hours undertaken by radiologists for images using scans, X-rays and ultrasounds has increased since 2006, especially due to the higher quantity of screening undertaken. This has resulted in an increase in both the number of images processed in the sector and a lack of staff to carry out the tests.



Source: Insights into Imaging

The amount of screening undertaken by radiologists in France surged between 2010 and 2020, with expenses reimbursed by the social security system rising from €1,846.2m in 2010 to €2,502.8m in 2020, or an increase of 35.6% in spending over 10 years. At the same time, the number of active radiologists in France has remained almost stable since 2010. This comparison reflects an increase in the workload for radiologists to meet the rising demand for medical images. Radiologists are overwhelmed and care for patients requiring diagnosis via medical imaging is reaching saturation point, especially for scanners.

Medical imaging expenses compared with no. of active radiologists



Source: Xerfi

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2- Medical imaging and software: shared destinies

There were 8,111 practicing radiologists in France in 2010, and 8,378 in 2020, implying an increase of +3.3% over 10 years. Radiologists are facing a massive workload that is not set to decrease without the help of innovation to help them save time with lengthy tasks and reduce the risk of error. Studies showed that interpretation mistakes exist in around 4% of diagnoses, with an error rate that varies according to the individual and is clearly dependent on the procedures in place. For example, in abdominal and pelvic scans, the error rate is higher (Radiology Quality Institute 2012 ; Berlin 2007). When radiologists are obliged to work more quickly, their interpretation error rate also increases significantly (Sokolovskaya et al.2015). It is also well-known that interpretation differences can arise not only between two different radiologists, but also for a same radiologist reaching a different conclusion when looking at an exam for a second time. If we only take into account images that highlight a change in pathology, the error rate stands at 30%, which means that in three cases out of 10, pathological structures are interpreted wrongly or simply neglected (false-negatives). Applying artificial intelligence can help substantially increase the sensitivity of medical imaging and reduce the risk of false positives. This can either enable a diagnosis far earlier, or avoid further medical intervention (biopsy for example) to establish a diagnosis. A study showed that use of the low dose CT scan (LDCT) to diagnose lung cancer resulted in a over-diagnosis of +18% relative to X-rays.

As such, practicing radiologists clearly cannot meet rising demand for screening with the means currently available. To avoid mistakes and improve workflow for radiologists, it seems clear that software solutions enabling greater efficiency need to be put in place.

❖ Longer waiting times despite higher amount of equipment

The average waiting time for a medical imaging exam is long and is not improving despite the higher number of machines installed. Indeed, according to the CEMKA study, the average waiting time for an MRI appointment between 2004 and 2017 was 30 days whereas the 2014-2019 Cancer plan recommended a maximum period of 20 days.

The *Euro Health Consumer Index 2018* study undertaken in 350 European countries concluded that the waiting time for a scan was over seven days in 12 countries, more than 14 days in 13 countries; more than 17 days in eight countries, and even more than 21 days in Croatia and Slovenia. On a European scale, no country can offer a scan appointment in less than a week, which demonstrates the need not only for more practitioners and instruments, but also to optimise workflows for radiologists and hospitals in order to treat more patients in shorter time-frames than today. Furthermore, with the number of scans undertaken set to increase (see above), the contribution of new tools for radiologists is even more important to avoid a surge in waiting times for a scan or MRI appointment.

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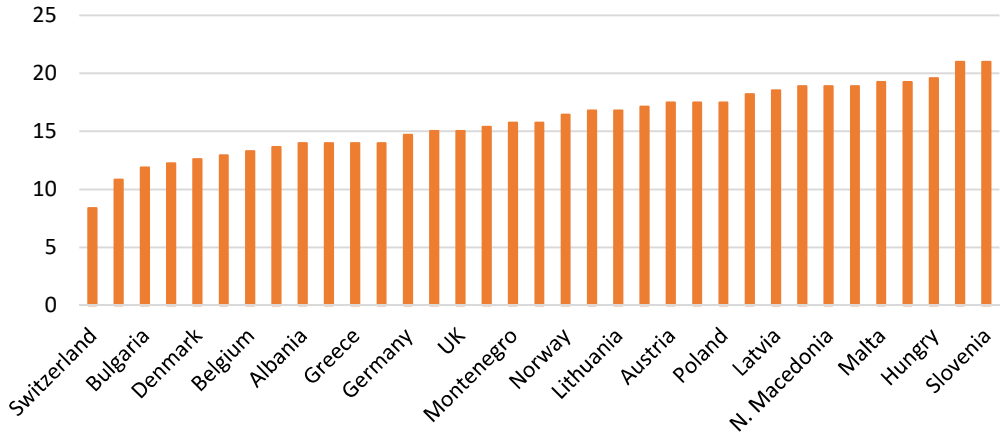
2- Medical imaging and software: shared destinies

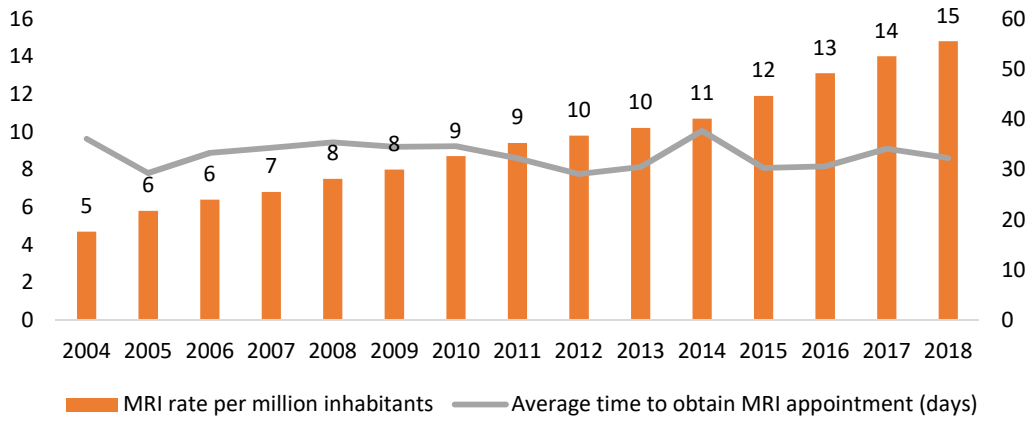
Waiting time for CT scan appointment in Europe (no. of days)



Source: EHCI

Longer waiting times for medical imaging tests should be compared with the amount of equipment installed. The stock of equipment installed in France has risen steadily from 230 MRI machines in 2003 to 960 in 2018. Relative to the population, these figure show a rise in the number of MRI machines per million inhabitants rising from 3.9 in 2003 to 14.8 in 2018.

Average waiting time (d) for an MRI appointment and MRI rate per million inhabitants in France



Source: Snitem

Finally, we note that the number of radiologists is unlikely to increase in the near future while the amount of instruments has been rising steadily over the past 10 years. As such, the levers that would help reduce waiting times for screening appointments lie more in the means of improving the efficiency of radiologists and optimising their workflow. Medical imaging software focuses precisely on these two levers aimed at freeing up time for practitioners and enabling them to treat more patients, and is thus a vital tool for the future.

Following the Covid-19 crisis, which has exacerbated the shortfalls of health systems, Siemens Healthineers estimates the prospective lack of healthcare workers in the world at 15m by 2030. For the moment, Siemens estimates that around half of the global population cannot obtain adequate medical care. These shortfalls are set to become the main engine behind the adoption of software and especially artificial intelligence in coming years.

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❖ A response to pressure on prices in medical imaging

The decline in reimbursement of medical imaging tests has resulted in a decline in revenue for radiologists that could be limited thanks to the contribution of medical imaging software. Indeed, reimbursements are the main revenue source for self-employed specialised practices. In the US, reimbursement of screening tests fell by -4.9% a year for a CT scan between 2007 and 2019 and -8.2% for an MRI test over the same period. Ultrasound and radiography exams are also concerned with reimbursements dropping by 2.1% and 1.3% a year respectively. The trend is set to last over coming years and reimbursements are set to continue to decline. In order to offset this loss of revenue, medical imaging software can help radiologists cut their costs and gain in efficiency. This implies higher spending on acquiring IT equipment by radiology centres, enabling them to make efficiency gains, such as improving the speed of the exams and information transfer, reducing labour costs for administrative tasks (that can account for 25% fo the global costs), improving patient safety, confidentiality and access to information.

2.5 Artificial intelligence at the service of medical imaging

Over the coming years, artificial intelligence (AI) is set to radically transform diagnostic and interventional medical imaging.

Although professionals in the medical imaging field have been using smart algorithms for some time now, new advanced methods of machine learning are emerging based on deep learning. Far more powerful, several studies indicate that they offer concrete prospects in quantitative imaging, as well as for standardisation and personalisation of protocols and reports.

Artificial intelligence cannot replace healthcare professionals. In contrast, it provides tools to assist diagnosis and therapeutic decisions to meet the rising demand for screening tests. Based on data, it is a means of developing radiology towards a research discipline. Further out, artificial intelligence ought to strengthen the quality of care, improve the relevance of the exams and improve efficiency. With more precise results, more significant prognosis factors and risk factors, artificial intelligence strengthens the position of radiology within the results-oriented clinical decision-making process.

Similarly, in a survey published in The Economist in 2017, more than 50% of opinion leaders in the health sector foresaw a greater role of artificial intelligence in follow-up and diagnosis. Whereas using AI is common practice in some fields of medical imaging, market analysis show genuine growth in advanced artificial intelligence applications.

Testifying to momentum in AI, academic research has rocketed over recent years. Whereas around 100-150 research studies were carried out each year in 2007/2008, the amount had risen to 700-800 in 2016/2017. The research primarily concerns application of AI in MRI or computed tomography.

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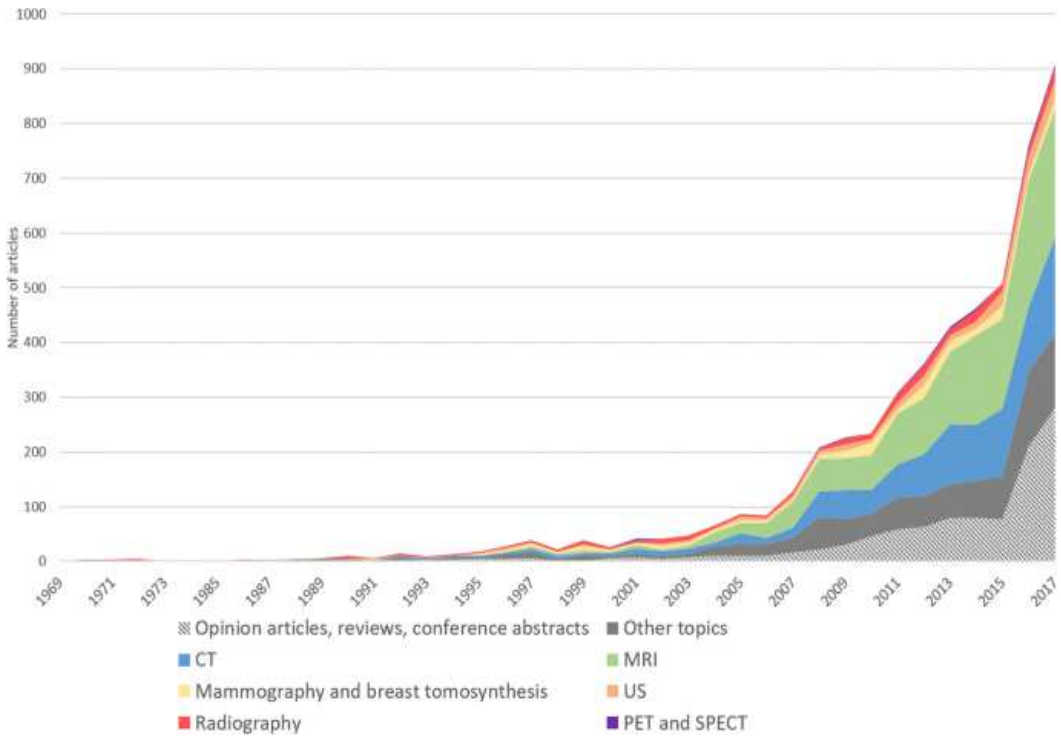
2- Medical imaging and software: shared destinies

Number of scientific articles concerning medical imaging integrating AI research



Source: European Radiology Experimental

The contribution from artificial intelligence is based on the notions of automation, standardisation and productivity, as well as the unprecedented use of quantitative data. New tools should help fuel the trend in favour of diagnostics and more targeted therapies. At present, artificial intelligence plays a significant role in the radiologist's daily life with the acquisition, processing and interpretation of images. In this context, Siemens Healthineers developed a shape recognition algorithm for its advanced visualisation software syngo.via. The Siemens Healthineers portfolio already has more than 60 solutions enhanced by AI and almost 600 patients in the machine learning field.

Today, the acceleration in certain workflows thanks to artificial intelligence is already a reality in diagnostic imaging. For example, algorithms make possible the automatic detection of anatomical structures, smart recalibration of images and reformatting. This type of efficiency gain is becoming extremely important given the rising demand for diagnostic imaging and greater pressure from costs.

Over the long-term, analysis of images based on artificial intelligence, with reproducible measurements in terms of characteristics, indices and results "as in a laboratory" should be favoured, especially in fields similar to cardiac imaging which is already focused on quantitative results. This should also favour the writing (semi-automated) of radiology reports and transforming radiology into a research discipline focused on data (radiomics).

As such, artificial intelligence is set to reshape the entire workflow in radiology.

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2- Medical imaging and software: shared destinies

2.6 Robust growth in the medical imaging software market

❖ Main players and segments

The medical imaging market breaks down into several segments. Note that with the M&A trend prevailing in the sector, the market is increasingly less fragmented. Companies capturing the essential of the market are modality manufacturers (Philips, Siemens Healthineers, Canon, GE Healthcare…) which have comprehensive portfolios of PACS, VNAs and advanced visualisation software. These groups capitalise on direct access to the market with an installed and comprehensive base of imaging modalities. There is also a segment that houses specialists in radiological image analysis to which Intrasense belongs with Myrian®. Other players are active in the market through VNA, PACS and EHR software. This segment was the target of numerous acquisitions by modality manufacturers from an integration perspective (e.g. Carestream, Merge Healthcare). Finally, companies marketing display systems are also present in the medical imaging software market (Dell, NEC, Sony) through IT branches specialised in healthcare.

A segmented market

Source: Wispro

❖ Market valued at $3bn in 2024, 2019-24 CAGR of +15%

Given the extensive needs for medical imaging modalities and the crucial contribution of software to assist in radiological diagnoses all along the patient care path, the medical imaging software market integrating advanced visualisation and artificial intelligence solutions is set to grow at an average annual rate of +15% out to 2024 to reach $3bn, according to data from Signify. This market estimate does not include software solutions such as PACS, RIS and VNA. The market is growing at a faster pace than modality sales. Growth is driven by solutions integrating an AI component (2019-24 CAGR: +34%) whereas growth in the traditional advanced visualisation segment is relatively weak (CAGR: +4%) due to the extent of competition in a market highly focused on modality manufacturer solutions, the segment's maturity and the gradual transition of the market towards solutions based on AI.

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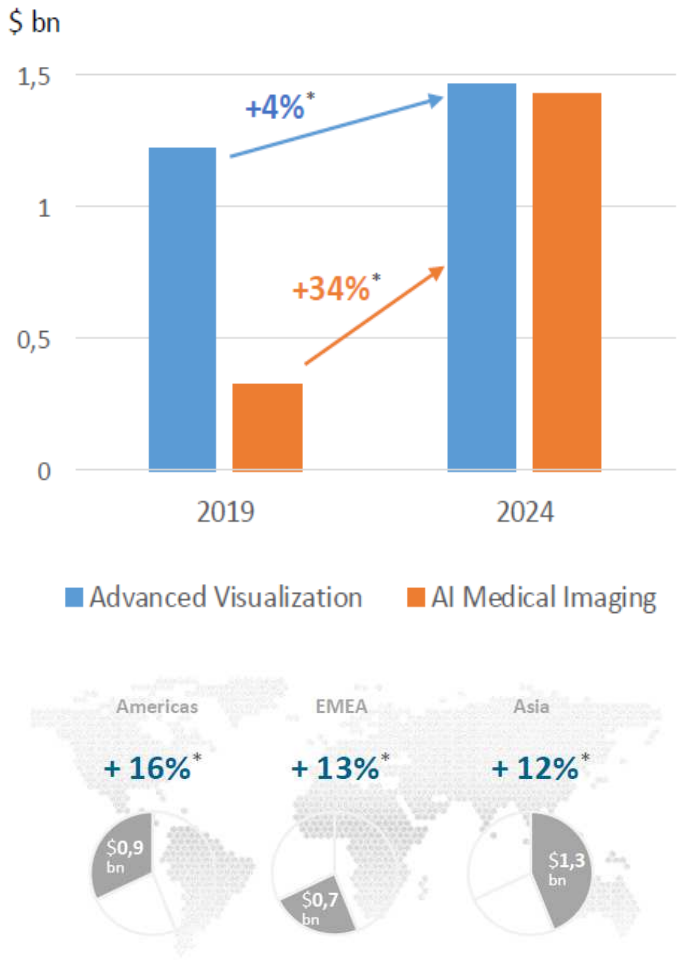
In 2019, advanced visualisation software accounted for 80% of the market. In 2024, the market should gradually balance itself out with an AI market of almost $1.5bn. In geographical terms, the Americas are set to be the most dynamic (+16%/year) to reach at target market of $900m whereas Europe and Asia are set to grow by 13%/year and 12%/year respectively for a total market of $2bn.

Change in medical imaging software market



Source: Signify by Intrasense

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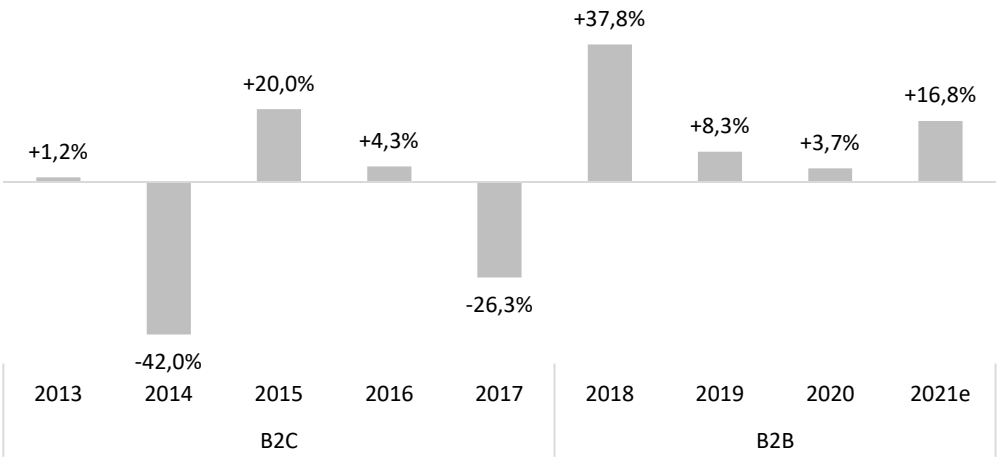
3- Myra® to start a new period of growth

3.1 A difficult start leading to a strategic change in 2017

Since its IPO in 2012, Intrasense has shifted its positioning to adapt to changes in the medical imaging market.

Before 2017, the group primarily addressed the imaging market by targeting end clients, namely radiology centres and hospitals. Given the group's lack of critical mass with a portfolio limited to Myrian® and in a very competitive landscape, this strategy was not an efficient response to changes in the market given significant consolidation in the software offering of radiology centres and hospitals. In this difficult environment, between 2013 and 2016, revenue was declining at a CAGR of -10% a year.

Historical change in group sales



Source: Invest Securities

In 2017, in order to penetrate the medical imaging market more efficiently, the group decided to reposition itself by favouring B2B partnerships with industrial groups while capitalising on multi-year agreements to continue the clinical enhancement of the advanced visualisation software platform Myrian®. This repositioning in the B2B segment also strengthened the share of recurring revenues.

In 2017 (-26%), the group therefore witnessed a plunge in direct sales to hospitals due to the deployment of the new B2B marketing development model chosen. This strategic refocusing on B2B also coincided with the launch of the Myrian® Studio offering in 2016. Myrian® Studio is a software development tool that helps promote the Myrian® platform with industrial groups and universities in order to increase visibility and then capitalise on the potential development of new visualisation tools. The idea is therefore to sell Myrian® to other industrialists in a more comprehensive software suite in an integrated approach. The latest agreements signed for Myrian® Studio (eg: Quantib) help gain market time for partners. Other types of agreement (eg: Evolucare in 2018) consist of integrating clinical solutions into the partner portfolio to have easier access to the market. Between 2018 and 2021, the group is set to post sales CAGR of +10%, more in line with market growth and thereby confirming the soundness of the strategic refocusing on the B2B segment.

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A huge network of partners favouring an indirect approach to the market

Date	Partner	Product	Country	Type
October 2021	I-SERIS	Myra®	France	Radiology centres
April 2021	Vidi	Myrian®	France	Radiology centres
February 2021	MeVis	Myrian®	Germany	Software distributor
April 2019	Radboud University Medical Center	Myrian®	The Netherlands	Radiology centre
April 2019	Braincarta	Studio	The Netherlands	Software distributor
February 2019	12 Sigma	Studio + Myrian®	USA	Software distributor
December 2018	Apollo	Myrian®	USA	Software distributor
November 2018	Kangda	Myrian®	China	Modalities distributor
September 2018	Institut Sainte-Catherine	Myrian®	France	Radiology centre
September 2018	Dismeval	Myrian®	Spain	Modalities distributor
September 2018	Saint-IvanRilski University Hospital	Myrian®	Bulgaria	Software distributor
June 2018	Evolucare	Myrian®	France	Software distributor
February 2018	MinFound (second partnership)	Studio	China	Modalities distributor
November 2017	Quantib	Studio + Myrian®	The Netherlands	Software distributor
November 2017	Mc Gill university	Studio	Canada	Research
October 2017	MinFound	Myrian®	China	Modalities distributor
October 2017	City People Hospital Lhassa	Myrian®	China	Radiology centre
October 2017	CGTR	Myrian®	France	Software distributor
January 2017	H.Lee Moffitt Cancer & Research Institute	Myrian®	USA	Radiology centre
January 2017	PAXERAMED, Saudi German Hospital	Myrian®	Dubai	Radiology centre
June 2016	Can Tho hospital	Myrian®	Vietnam	Radiology centre
June 2016	Merge Healthcare (IBM Watson Health group)	Myrian®	USA	Software distributor
January-April 2016	2 hospitals, 1 university, 1 health centre	Myrian®	Turkey	Radiology centres
January 2016	Biomedical Systems	Myrian®	USA	Software distributor
January 2016	*PACS supplier*	Myrian®	Japan	Software distributor
October 2015	*Imaging core lab*	Myrian®	USA	Software distributor
April 2015	OEM distribution contract	Myrian®	Europe and North America	Software distributor

Source: Invest Securities on Intrasense data

3.2 China and France: key markets

At this stage, the group only markets one platform: Myrian® through a licence sales model. Revenues therefore break down into licence sales whereas service sales correspond to the maintenance business necessary for upkeep and updating of software.

In regional terms, given the difficulty in penetrating the US market, the group has prioritised its resources on Europe, more specifically France, and China as the main geographical targets. These markets are rapidly expanding and are easily accessible for Intrasense. The second largest market behind the US, the Chinese health market has witnessed unrivalled growth and represents a massive opportunity. With 26,000 hospitals and 700 new establishments built each year, and social coverage now widespread (98% of the population vs. 20% in 2021), Chinese healthcare spending has rocketed. China now makes up for 37% of the installed base and 34% of 2020 sales while France accounts for 28% of the installed based of Myrian® software and 19% of 2020 sales.

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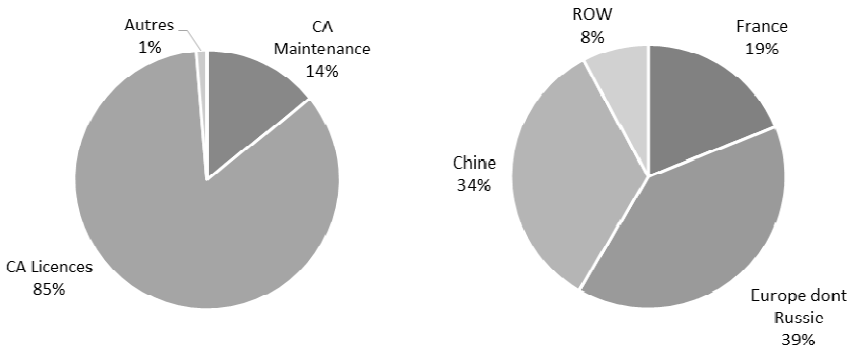
3- Myra® to start a new period of growth

Breakdown of 2020 sales



Source: Intrasense

3.3 All systems go: 2020-27 CAGR: +34%

After getting off to a rocky start on the stockmarket (2012-2017) in terms of growth, the group worked efficiently on turning around its revenues by repositioning its business. The coming years should see the group enter a period of robust growth driven by: i) the ongoing penetration of Myrian®, which should continue to make the most of its B2B positioning and better visibility during the Covid period, and ii) the launch of Myra®, a genuinely disruptive solution for monitoring cancer patients.

❖ **Myrian®: acceleration in growth as of 2021**

A solid base of growth thanks to Myrian® Imaging Layer/Clinical Apps

Continuing on from 2017-21e (CAGR of 16%), Myrian® should continue to capitalise on its B2B positioning with new partnership signings and the contribution from partnerships already signed, for which the average duration of five years provides a recurring revenue stream. This indirect approach is paying off as shown by the number of partnerships signed for Myrian® Imaging Layer/Clinical Apps in recent years with cardiology centres, modalities manufacturers and PACS distributors. Since the end of 2017, excluding the agreements signed for Myrian® Studio, which could generate revenues over the medium term, the group has signed 10 partnerships for Myrian®, or an average of more than two per year.

As an example, in June 2018, the agreement signed with Evolucare, a software publisher for hospitals with an RIS-PACS offering, plans to integrate Myrian® Imaging Layer into the IT systems sold by Evolucare over a five-year period. Recurring revenues on this contract are set to end in 2023. The group also announced the signing of several contracts in Europe in 2018. First, it signed an agreement with the Sainte-Catherine Institute in Avignon by integrating an Imaging Layer to the Osiris PACS. At the same time, the group signed a partnership with Dismeval for its Myrian® XP-Liver app in Spain and also integrated Imaging Layer into the Software Comany PACS in a hospital in Sofia (Bulgaria).

We could also highlight the five-year contracts signed with Kangda, which markets modalities in China with a provisional volume of more than 320 units, and Apollo Enterprise Imaging Corp, specialised in PACS, which opens up potential to several hundred clinicains throughout the US and Canada. More recently, in 2019, Intrasense won a multi-year contract with Radboudumc to deploy the Myrian® XP Prostate app, providing access to 20 expert centres already trained and potentially more than 100 centres in years to come.

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3- Myra® to start a new period of growth

Finally, in 2021, the group announced the referencing of the Myrian® platform with Vidi, the leading cooperative network of medical imaging groups in France. The agreement was signed on 30 January 2021 and opens the door to 52 medical imaging centres housing almost 900 radiologists. The multi-modal nature of the Myrian® platform in addition to the many clinical applications is beneficial since imaging centre networks such as Vidi have a very mixed stock of equipment.

Thanks to a vast network of partnerships in Myrian® Imaging Layer and Clinical Apps, the group is generating recurring revenues, has strengthened its visibility and extended its market opportunities. The many agreements provide a robust base of growth for the future.

Geographical targets streamlined and better addressed

The group focuses on two region: Europe and especially France, and China. This targeted strategy enables it to more efficiently allocate its marketing resources. These markets are also less competitive than the US. The streamlined geographical positioning seems better suited to the features of the company and should help the group ramp-up its growth.

Innovation: a lever for long-term growth

The ability to innovate is also a substantial source of leverage for Myrian®'s growth. Intrasense not only exploits its innovation resources internally through hefty R&D spending, but also externally by making the most of the partnerships signs in Myrian® Studio.

- ✓ Internal innovation

Intrasense spent more than €15m on R&D to develop the Myrian® platform, providing itself a comprehensive software solution in terms of clinical applications and addressing a very varied client base. The group also invests 30% of its revenues in R&D. The platform is constantly updated and new analysis bricks are added regularly as shown by the Covid CT Scan, which obtained CE marking in May 2020, just a few months into the crisis. The next updates to Myrian® are planned for 2023 with the launch of Myrian® V3.0 and then in 2024 and 2025 with the versions 3.1 and 3.2 respectively. The group should continue to invest in Myrian® with new clinical functions soon to be added in artificial intelligence.

- ✓ Research collaborations: Myrian® Studio

Since the launch of Myrian® Studio in 2016, the group has multiplied partnership agreements that could massively contribute to long-term growth. Among these, we would note the agreements signed with Quantib and Braincarta in the Netherlands, MeVis in Germany and Minfound in China. These multiple agreements testify to the platform's strong assets.

Quantib and Intrasense signed a partnership agreement in 2016 for the development of its new imaging applications. By using Myrian® Studio, the team was able to step up the creation of Quantib™ ND destined for neurodegenerative diseases. Quantib™ ND is approved by the FDA and has CE marking, and provides practitioners rapid and reliable access to automated cerebral segmentation. The approval resulted in a distribution agreement for Quantib™ ND in 2017.

Myrian® Studio was also chosen by Braincarta to industrialise Elonav, an app for the specific needs of neurology. Elonav obtained CE marking in September 2018.

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3- Myra® to kick off a new period of growth

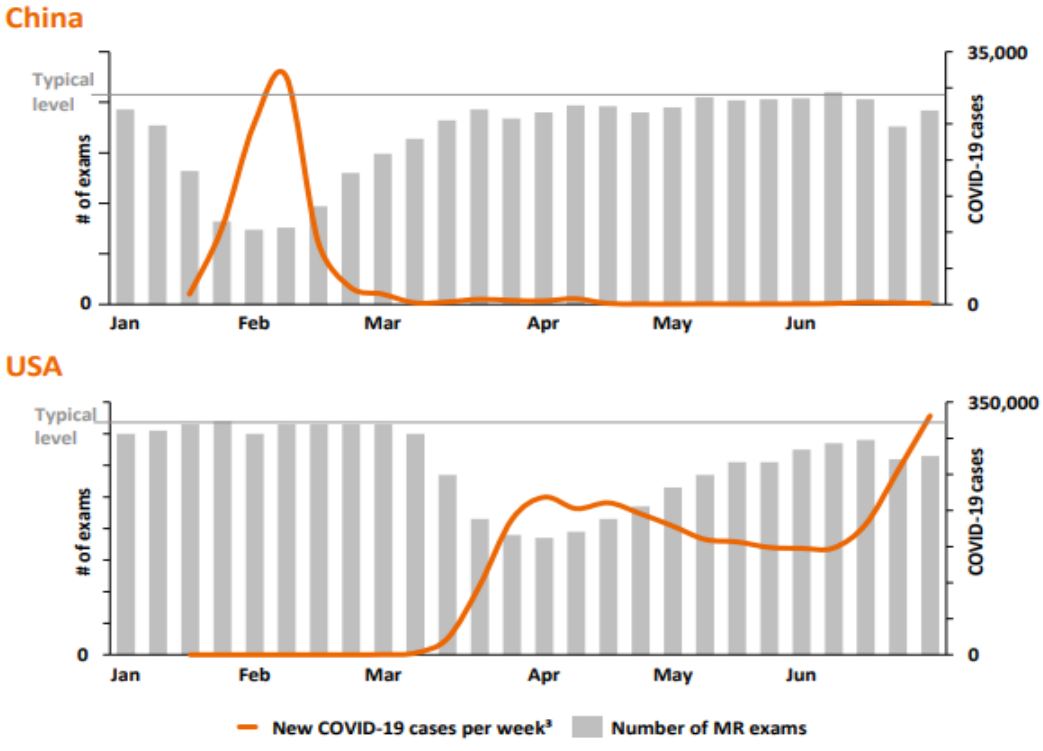
The agreement concluded with Mevis in 2021 provides for the joint development of clinical applications including artificial intelligence in the field of lung diseases. This agreement enables Intrasense to strengthen its offer beyond the clinical apps Myrian® XP-Lung and XP-Lung Nodule. The capacities of the Myrian® platform mean Veolity® LungCAD is perfectly integrated into the Myrian® clinical workflow. The solution has been available since H1 2021. The partnership is focused on integrating and marketing the solution by Intrasense in European markets.

The agreement with Minfound signed in China in 2017 aimed to develop new advanced visualisation software for scan images. This agreement is a stepping stone in China given that Minfound covers almost 220 reference hospitals in 31 Chinese provinces.

The Covid windfall

The Covid pandemic has seriously disrupted the medical imaging market. Given the lockdown measures implemented around the world, the number of procedures fell sharply, especially during H1 2020. With the reopening of hospitals and imaging centres, business picked up gradually throughout H2 2020 (see chart). The most harshly penalised modality was MRI whereas routine use of the CT scan and ultrasound for Covid-19 testing helped offset the decline.

MRI examinations undertaken by Siemens during the Covid-19 crisis



Source: Siemens Healthineers

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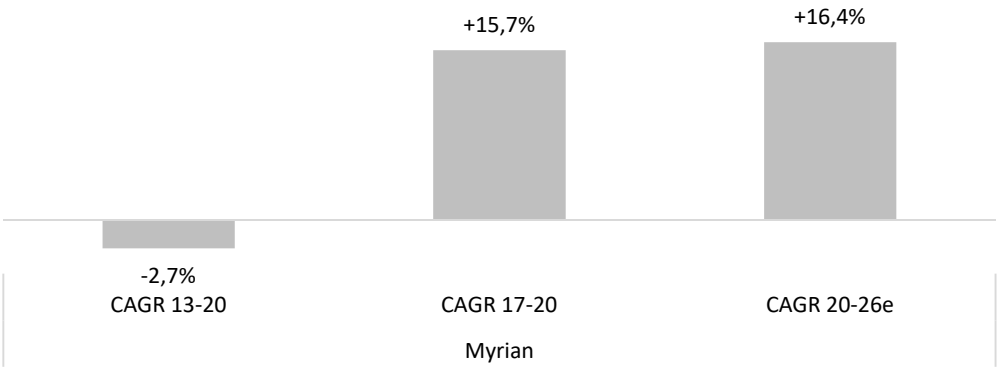
3- Myra® to kick off a new period of growth

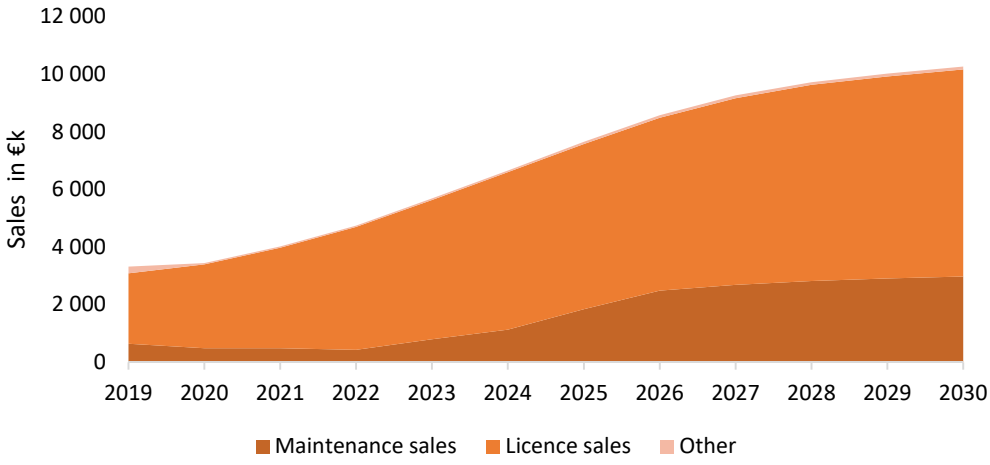
In a particularly difficult backdrop, the main modality providers underperformed. Intrasense generated satisfactory growth of +4% in 2020, reflecting its solid positioning.

The Covid-19 pandemic also served as a showcase for the group's technology with the launch of the Covid-19 protocol for CT scans. The solution was distributed free of charge throughout the entire first peak of the pandemic before being added to the sales catalogue. The operation enabled a sharp increase in visibility with more than 600 temporary licences distributed free of charge (valid for three/six months). In the short term, the group could capitalise on this situation by converting its Covid-19 clients to other clinical applications in its portfolio.

Myrian®: momentum set to continue, 2020-26e CAGR: +16%

Underpinned by a solid base of partnerships, constant innovation in the Myrian® platform and the windfall related to Covid-19, we expect the positive momentum started three years ago with Myrian® to continue, with average annual growth of 16% between 2020 and 2026.





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3- Myra® to kick off a new period of growth

❖ Myra®: the main source of new growth

Whereas the group should continue its penetration with Myrian®, the main source of additional growth for the next decade is set to stem from the new solution for monitoring cancer patients, Myra®. The first version of the product is due to be launched in June 2022. Growth is now set to focus on two product lines with different maturity levels. Myra® is set to drive the new growth phase. **For this product line, we expect annualised growth between 2022 and 2030 of 74% for 2030 sales of €20.8m, with an installed base of 288 centres.**

Heading for rapid adoption of Myra®

The group is likely to launch Myra® according to a structured market access strategy to facilitate rapid adoption by radiology and oncology centres, hospitals and contractual research organisations (CRO). The group should initially install its solution in the reference centres that contributed to its development in order to strengthen its visibility and then extend the scope of its marketing.

✓ **France first, then Europe and China**

In geographical terms, Intrasense is likely to start marketing in France in 2022, before extending marketing across Europe in 2023, starting with Germany, and then moving to China in 2024. At the same time as radiology centres, the group aims to penetrate the CRO market. Note that with Myra®, Intrasense could offer a turnkey formula including medical services for partner radiologists and a unique platform to secure and centralise imaging data. The group plans to launch a new version of Myra® with new functionalities every year.

As opposed to the strategy undertaken with Myrian®, the group is directly targeting end-clients with its marketing strategy for Myra®. This difference in positioning is explained by the less intense competitive backdrop for a breakthrough technology. With the gradual extension in the marketing scope with the help of reference centres, the adoption of Myra® should be quite fast.

✓ **Commercial synergies with Myrian®**

Adoption of Myra® should be facilitated by Myrian®'s market visibility. At this stage, Myrian® is used by more than 1,000 health establishments throughout 40 countries.

✓ **Targeting large centres to ensure recurring revenues**

To facilitate the rapid adoption of Myra® while guaranteeing recurring revenues, Intrasense is planning to target major radiology centres. This approach seems coherent for a collaborative workflow platform monitoring cancer assessment by providing structured imaging data in real time as soon as it is produced in the establishments.

In France, among the 3,065 hospitals, the National Cancer Institute estimates that just 865 are authorised to treat cancer patients. Among these, there are around 300 large centres likely to install Myra®. The group has set a five-year target (2026) of 50 recurring clients, or 17% of the major French centres, which seems ambitious but feasible in view of the potential contribution from Myra® in managing cancer patients at the centres, which are lacking human resources.

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3- Myra® to kick off a new period of growth

In China, the group intends to target class III hospitals, namely those with more than 500 beds and which treat cancer patients, or around 2,749 hospitals. The five-year target is to install Myra® in 150 centres, or in 5% of class III hospitals.

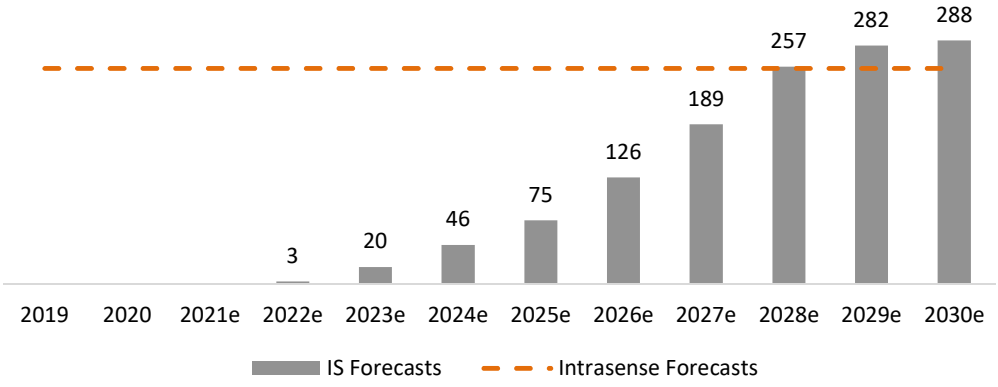
By 2026, in Europe, the group has set a target to install the platform in 50 centres, starting with Germany. Compared with the target in France, this threshold seems feasible.

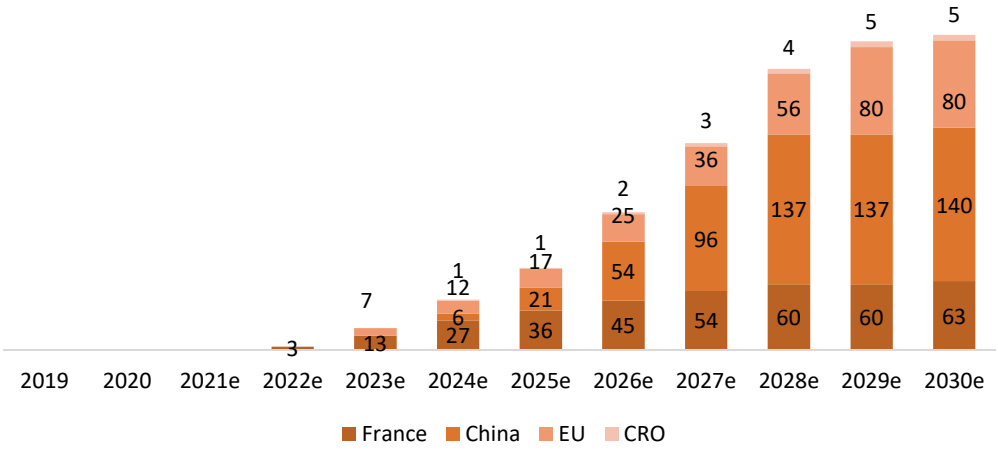
Finally, within five years, Intrasense estimates it is capable of signing five major Myra® contracts with CROs. Note that in France, almost 300 companies operated in the CRO sector.

Group target set to be reached in 2028

The combination of the targets by region indicate that the group expects Myra® to be installed at 255 centres by 2026. Given the lack of visibility on the speed of adoption of Myra®, we have taken a more cautious stance. At this stage, the target seems ambitious in terms of maturity whereas the volume seems feasible. As such, we expect the target to be reached in 2028 (vs. 2026 expected by Intrasense). Further out, we are forecasting 288 centres using Myra®, which in view of the Myrian® installations (>1,000) seems reasonable.

Change in Myra® installed base





Source: Invest Securities

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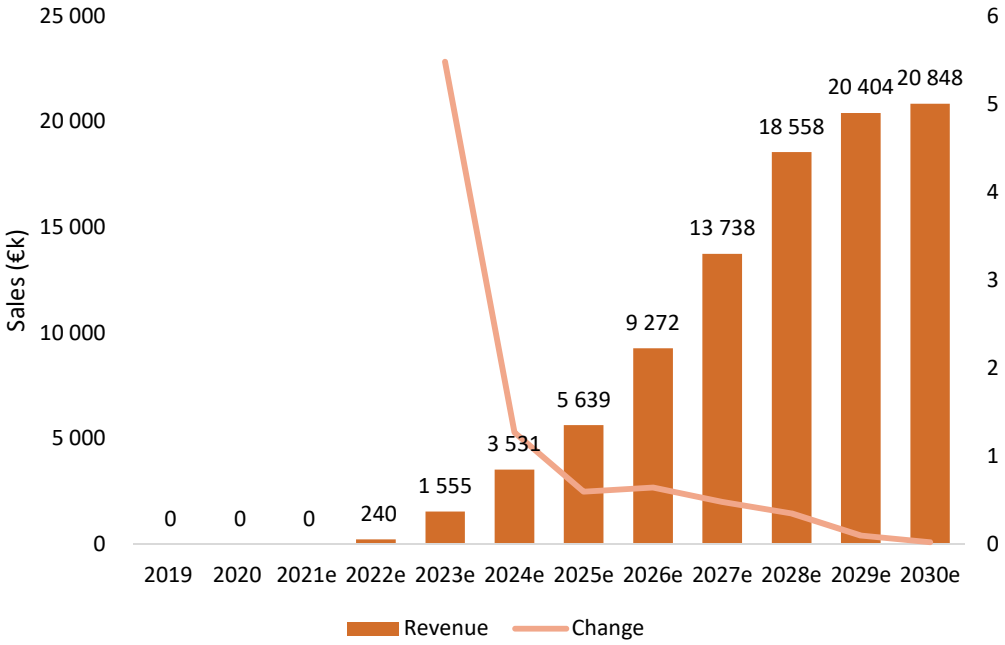
3- Myra® to kick off a new period of growth

Myra® revenue forecasts

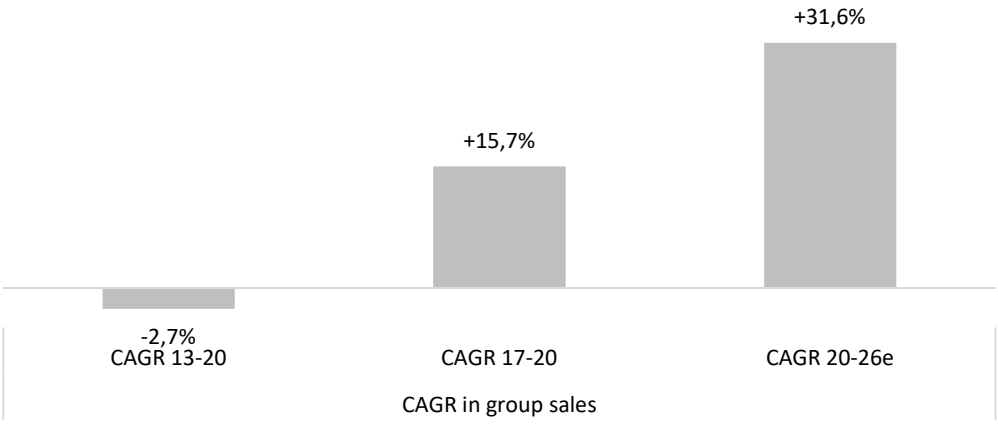
The group is set to charge an average of €80k per year for the Myra® licence. This price includes installation and maintenance of the platform. At this stage, we are factoring in a 25% discount in China and 8% in European countries other than France. The price seems justified since Myra® could generate significant cost savings. We will adjust our installed base and average price estimates as developments are made. For the moment, we expect peak sales for Myra® of €20.8m.



Source: Invest Securities

❖ Entering a new growth phase

Under the combined impact of the consolidation of Myrian® sales and the launch of Myra® in June 2022, the group is entering a new phase of growth. We expect a sharp acceleration in growth between now and 2026.



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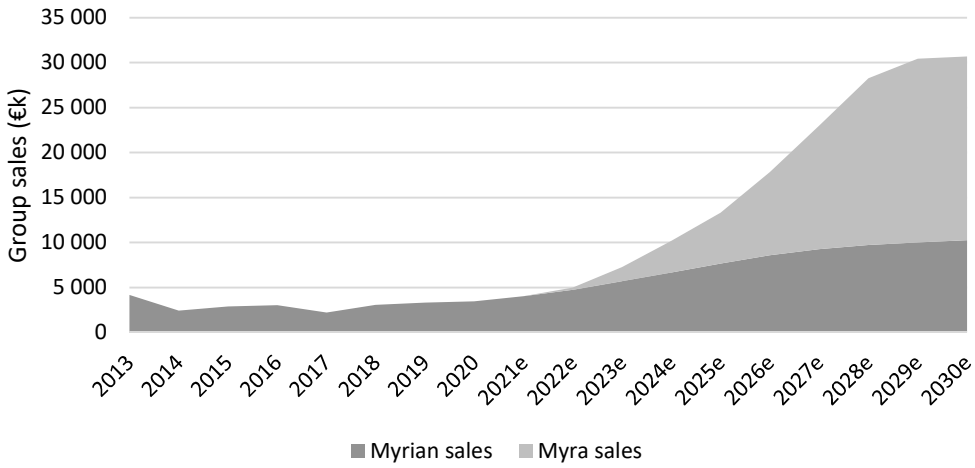
3- Myra® to kick off a new period of growth

	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Myrian® sales	4,019	4,743	5,691	6,659	7,657	8,576	9,262	9,725	10,017	10,268
% chg.	*+16.8%*	*+18.0%*	*+20.0%*	*+17.0%*	*+15.0%*	*+12.0%*	*+8.0%*	*+5.0%*	*+3.0%*	*+2.5%*
Myra® sales		240	1,555	3,531	5,639	9,272	13,738	18,558	20,404	20,848
% chg.			*+548%*	*+127%*	*+59.7%*	*+64.4%*	*+48.2%*	*+35.1%*	*+9.9%*	*+2.2%*
Total sales	**4,019**	**4,983**	**7,246**	**10,190**	**13,297**	**17,848**	**23,000**	**28,283**	**30,421**	**31,116**
% chg.	*+16.8%*	*+24.0%*	*+45.4%*	*+40.6%*	*+30.5%*	*+34.2%*	*+28.9%*	*+23.0%*	*+7.6%*	*+2.3%*



Source: Invest Securities

3.4 Profitable at the adjusted EBITDA level in 2025

Note that the H1 publication reflected the beginning of the new growth phase initiated after the capital increase associating robust sales growth and a substantial rise in operating expenses. The group generated sales growth of 16.6% in H1 2021, the strongest first half in its history. Gross profit totalled €1,579k, or 87% of sales and the EBITDA loss deepened to -€284k following the investments made to finance growth. In terms of operating expenses, personnel expenses grew 26% to €1,384k, with the recruitment of sales staff during H2 2020. At the same time, external expenses were up 31% to €506k, related to non-recurring expenses in strategic and marketing consulting. Given the surge in operating expenses, the net loss deepened to -€659k.

Over the medium term, the period of high growth on the cards is set to prompt a surge in the adjusted EBITDA margin. Between 2021 and 2025, we are factoring in average growth in opex of 25% a year to finance further penetration of the market with Myrian® and the launch of Myra® in Europe and China. At this stage, we are forecasting a terminal gross margin of 90%, up 650bp relative to the gross margin in 2020. This margin expansion is set to be driven by sales of Myra® which should carry higher margins according to a subscription sales model with a hybrid positioning (deployment on-site or in the cloud), whereas Myrian® is marketed under a traditional licence model. In all, we expect breakeven at the adjusted EBITDA level (restated for capitalised R&D) in 2025.

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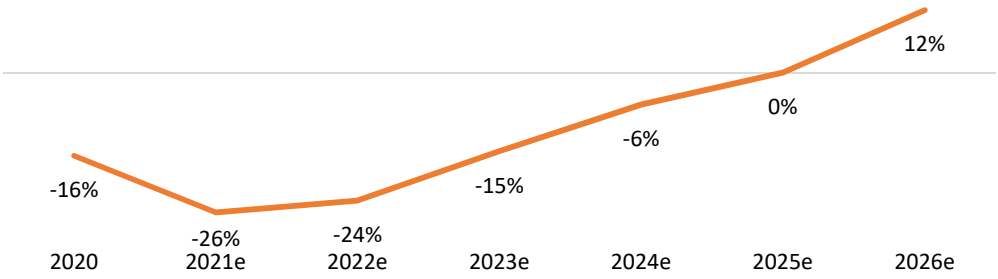
3- Myra® to kick off a new period of growth

Estimated change in adjusted EBITDA margin



Source: Invest Securities

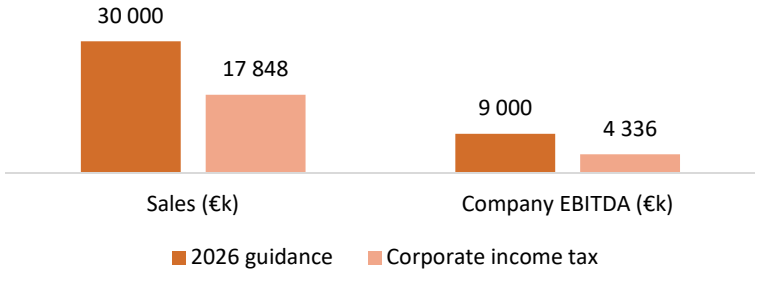
Simplified provisional P&L statement

Profit and loss statement (€ thousand)	2019	2020	2021e	2022e	2023e	2024e	2025e	2026e
Revenue	3,318	3,441	4,019	4,983	7,246	10,190	13,297	17,848
change	*+8.3%*	*+3.7%*	*+16.8%*	*+24.0%*	*+45.4%*	*+40.6%*	*+30.5%*	*+34.2%*
Adjusted EBITDA	-1,103	-542	-1,064	-1,208	-1,082	-622	-6	2,107
Adjusted EBITA	**-1,001**	**-869**	**-1,261**	**-1,277**	**-1,144**	**-678**	**-56**	**2,062**
change	***n.m.***	***n.m.***	***n.m.***	***n.m.***	***n.m.***	***n.m.***	***n.m.***	***n.m.***
EBIT	-792	-628	-957	-779	-480	156	909	3,099
Financial result	-48	-51	-66	-66	-45	-45	-45	-45
Corporate income tax	0	0	0	0	0	-28	-216	-764
Equity associates+Minorities	0	0	0	0	0	0	0	0
Reported net attributable income	-840	-679	-1,023	-845	-525	84	648	2,291
Adjusted net attributable income	**-840**	**-679**	**-1,023**	**-845**	**-525**	**84**	**648**	**2,291**
change	***-24%***	***-19%***	***+51%***	***-17%***	***-38%***	***-116%***	***+675%***	***+253%***

Source: Invest Securities

3.5 Ambitious guidance, a more cautious stance

Within the framework of the €4.9m capital increase undertaken in June 2021, the group provided its five-year targets. Intrasense is expecting 2026 sales of €30m and a margin of 30%. For the moment, we are forecasting sales of €18m for a normative company EBITDA margin of 25%. Note that these ambitious targets factor in potential acquisitions that make comparison with our estimates difficult.



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3- Myra® to kick off a new period of growth

Note that the new resolutions approved at the Extraordinary General Meeting on 30 August 2021 allow the company to offer its shareholders complementary projects in terms of acquisitions or organic growth in new growth areas.

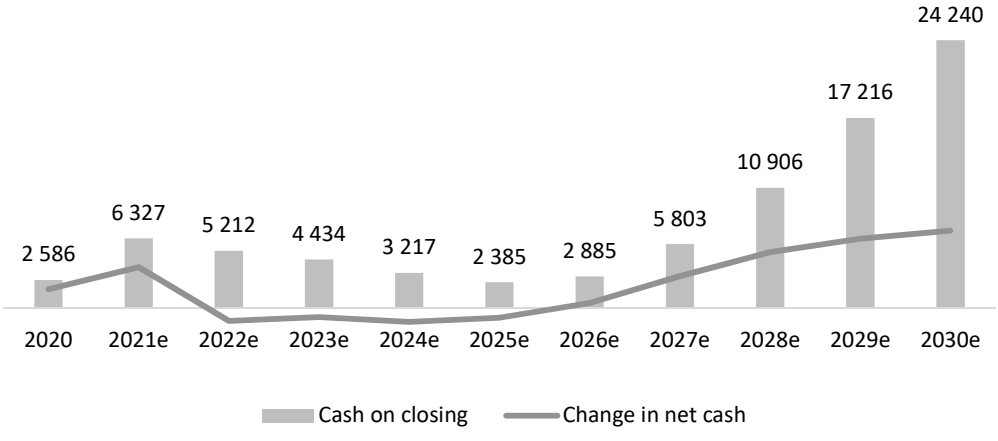
3.6 A new stage of financed growth

On our estimates, given the high growth in sales (2020-26e CAGR: +32%) and the recovery in margins (2026 adjusted EBITDA margin: 13%), the €4.9m capital increase undertaken in June should help finance the new phase of growth. Our estimates also include the reimbursement of the €650k state-backed loan in 2022 as well as the exercise of dilutive instruments (€1,750k for approximately 2.3m new shares created), expiring in 2022/23 and which should be in the money given our target price.

To recap, the group announced the success of its capital increase with preferential subscription rights last June. The gross amount of the operation was €4.9m and resulted in the creation of 6,961,647 new shares at a unit subscription price of €0.70. The proceeds of the issue will fund the following investment areas: (i) R&D development for Myra® (47% of total); (ii) R&D development for Myrian® (13% of total), (iii) strengthening the sales and marketing team (28%), and (iv) the portfolio's commercial launch in Germany (12%).

Adjusted FCF forecasts

Cash flow statement (€k)	2020	2021e	2022e	2023e	2024e	2025e	2026e
Adjusted EBITDA	-542	-1,064	-1,208	-1,082	-622	-6	2,107
Theoretical tax/EBITDA	0	0	0	0	0	0	-516
Total capex	-51	-38	-46	-62	-81	-99	-117
Net operating cash flow before tax and WCR	**-593**	**-1,102**	**-1,254**	**-1,144**	**-703**	**-105**	**1,475**
Change in WCR	-404	155	-145	-340	-442	-466	-683
Operating cash flow before tax and after WCR	**-997**	**-947**	**-1,399**	**-1,484**	**-1,144**	**-571**	**792**
Acquisitions/disposals	45	0	0	0	0	0	0
Change in equity	2,284	4,873	1,000	750	0	0	0
Net dividends paid	0	0	0	0	0	0	0
Other including tax adj.	-317	-66	-66	-45	-72	-261	-293
Reported cash flow	**1,015**	**3,861**	**-464**	**-778**	**-1,217**	**-832**	**499**



Source: Invest Securities

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4- Valuation of €1.02/share, BUY rating

4.1 DCF valuation of €1.02/share

We value Intrasense on a DCF approach over a 10-year horizon with WACC of 11.3% and growth to perpetuity of a growth rate +1.5%. Our valuation works out to €33m for a fully diluted number of shares of 32.2m, corresponding to a target price of €1.02/share and upside potential of 85% relative to the most recent share price.

Our DCF valuation is based on:

- The sales and margin forecasts presented previously assuming 2020-30 sales CAGR of +25% and an adjusted EBITDA margin of 32% in 2030. Our estimates highlight two growth periods: 2020-2026, driven by the launch of Myra® and its rapid adoption, for which we expect average annual sales growth of 32%, whereas over 2026-2030, average annual growth should automatically slow to 15%, in line with growth in the medical imaging software market. Our estimates do not factor in potential acquisitions and are consequently more cautious than the group's guidance for 2030, which is an absolute target. The group has provided guidance for 2030 sales of €30m (vs. €17.8 forecast) and EBITDA margin of 30% (vs. 25% forecast).

- Like our EBITDA forecasts, our capex figures are adjusted for capitalised R&D. We have included a corporate tax rate of 25% and deduct the research tax credit from expenses. We forecast WCR of 16% of sales on average.

- Our discount rate is WACC of 11.3% based on (i) a 10-year synthetic European government bond yield of 0.11% (weighted average 10-year government bond according to weight of each country in the Eurostoxx index), (ii) an equity risk premium of 5.61% calculated as the difference between the inverse prospective P/E of the CAC Mid & Small and the risk-free rate, and (iii) a beta of 2.0x to represent execution risk with high dependence on growth of Myra® which should be launched shortly and a mixed track record in growth since the IPO. We have applied a growth rate to perpetuity of 1.5% corresponding to inflation.

- We have adjusted our valuation for net debt at end-2020 of €638k and include the capital increase of €4.9m carried out in June as well as the exercise of dilutive financial instruments for €1.75m.

- **Our valuation therefore works out to €33m on a fully diluted basis of 32.2m shares, i.e. a target price of €1.02/share.**

Forecast free cash flow

€m	2021e	2022e	2023e	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Revenue	**4,019**	**4,983**	**7,246**	**10,190**	**13,297**	**17,848**	**23,000**	**28,283**	**30,421**	**31,116**
% change	*17%*	*24%*	*45%*	*41%*	*30%*	*34%*	*29%*	*23%*	*8%*	*2%*
Adjusted EBITDA	-1,064	-1,208	-1,082	-622	-6	2,107	5,442	8,408	9,359	9,943
EBITDA margin	*-26%*	*-24%*	*-15%*	*-6%*	*0%*	*12%*	*24%*	*30%*	*31%*	*32%*
Adjusted capex	-38	-46	-62	-81	-99	-117	-128	-143	-151	-152
Capex/sales	*-1%*	*-1%*	*-1%*	*-1%*	*-1%*	*-1%*	*-1%*	*-1%*	*0%*	*0%*
Adjusted D&A	-77	-69	-62	-56	-50	-45	-41	-37	-33	-30
D&A/sales	*-2%*	*-1%*	*-1%*	*-1%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
WCR/sales	*18%*	*18%*	*17%*	*16%*	*16%*	*16%*	*16%*	*15%*	*15%*	*15%*
Adjusted EBITDA	-1,064	-1,208	-1,082	-622	-6	2,107	5,442	8,408	9,359	9,943
Tax	0	0	0	-28	-216	-764	1,578	-2,324	-2,532	-2,618
Adjusted capex	-38	-46	-62	-81	-99	-117	-128	-143	-151	-152
Change in WCR	155	-145	-340	-442	-466	-683	-773	-792	-321	-104
Operating FCF	**-947**	**-1,399**	**-1,484**	**-1,172**	**-787**	**544**	**2,962**	**5,148**	**6,354**	**7,068**

Source: Invest Securities

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4- Valuation of €1.02/share, BUY rating

Valuation of €1.02/share

Weighted average cost of capital	
10-year synthetic rate	0.1%
Risk premium	5.6%
Beta	2.0x
Cost of capital	**11.3%**
Cost of debt	0.0x
Financial leverage	0%
Tax rate	25%
WACC	**11.3%**

Valuation	€m	€/share
Operating free cash flow from 2021e to 2030e	4,422	€0.14
Terminal value, LT growth rate of 1.5%	22,408	€0.69
Enterprise value	**26,829**	**€0.83**
-ND end-2020	-638	€0.02
-Other (capital increase June 2021, dilutive instruments)	6,623	€0.21
Equity value	**32,814**	**€1,02**

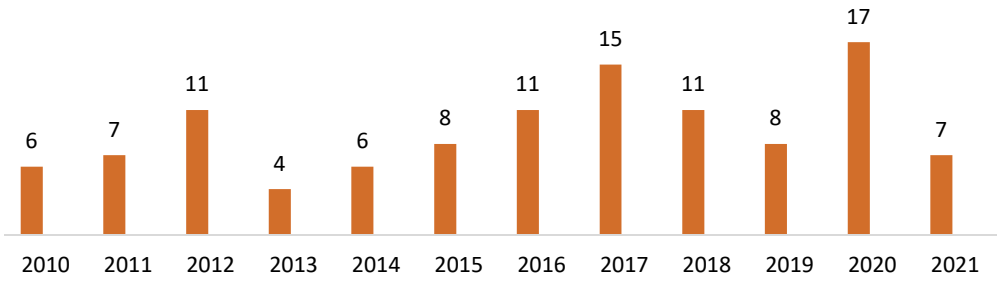
Source: Invest Securities

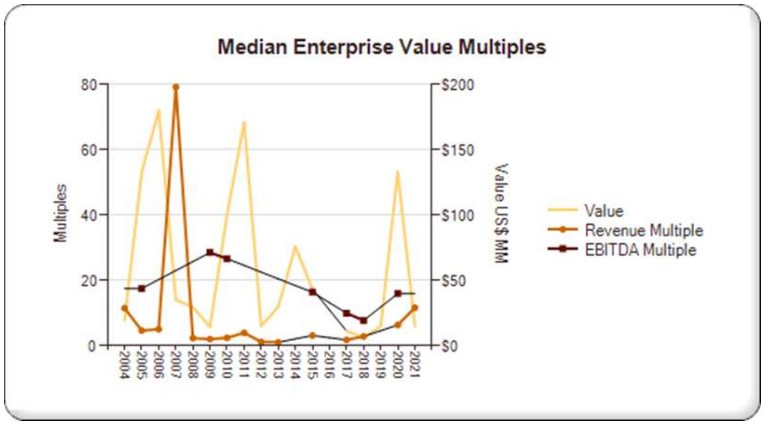
The current valuation of €17m, or a share price of €0.56, reflects a pessimistic growth scenario, that does not fully integrate the contribution from Myra® and continued growth for Myrian® at the same pace seen since 2017. We are initiating coverage of Intrasense with a BUY rating, and a target price reflecting upside potential of 85% relative to the most recent share price.

4.2 A potential M&A target further out

The medical imaging software market has consolidated considerably with many acquisitions carried out to integrate the value chain. More than 110 deals have taken place since 2010, with very active players such as Merge Healthcare (six deals), which was bought by IBM Watson Health in 2015 for $1.03bn. Philips was also very active with five acquisitions including Tomtec in 2017 and Carestream in 2019.

Number of M&A operations in the medical imaging software segment





Source: mandasoft

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4- Valuation of €1.02/share, BUY rating

In the medical imaging software segment as a whole, average acquisition multiples stand at 3.5x for EV/sales and 16.6x for EV/EBITDA.

Over the long term, with its positioning as a medical imaging software specialist, Intrasense could attract interest. The group nevertheless requires critical mass and faces high execution risk given its lofty ambitions for Myra®.

As an example, we calculate an M&A valuation for Intrasense based on previous valuation multiples and our 2026 estimates that end the cycle of strong growth related to Myra®. As such, we have discounted our 2026 EV estimate to obtain a 2021 value using a WACC equivalent to 11.3%.

Valuation by transaction multiples	
Sales multiple (sample of 137 transactions)	
Median EV/sales	3.5x
2026 sales	17,848
2026 EV	62,066
2021 EV	36,288
TP	€1.13
EBITDA multiple (sample of 137 transactions)	
Median EV/EBITDA	16.6x
Adjusted 2026 EBITDA	2,107
2026 EV	72,284
2021 EV	42,262
TP	€1.31
Average TP	€1.22

Source: Invest Securities

By calculating the average between EV/sales and EV/EBITDA multiples, we obtain an M&A valuation of €39m, or €1.22 per share.

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TARGET PRICE AND RECOMMENDATION

Our analyst ratings are dependent on the expected absolute performance of the stock on a 6- to 12-month horizon. They are based on the company’s risk profile and the target price set by the analyst, which takes into account exogenous factors related to the market environment that may vary considerably. The Invest Securities analysis office sets target prices based on a multi-criteria fundamental analysis, including, but not limited to, discounted cash flows, comparisons based on peer companies or transaction multiples, sum-of-the-parts value, restated net asset value, discounted dividends.

Ratings assigned by the Invest Securities analysis office are defined as follows:

- BUY: Upside potential of more than 10% (the minimum upside required may be revised upward depending on the company’s risk profile)
- NEUTRAL: Between -10% downside and +10% upside potential (the maximum required may be revised upward depending on the company’s risk profile)
- SELL: Downside potential of more than 10%
- TENDER or DO NOT TENDER: Recommendations used when a public offer has been made for the issuer (takeover bid, public exchange offer, squeeze-out, etc.)
- SUBSCRIBE or DO NOT SUBSCRIBE: Recommendations used when a company is raising capital
- UNDER REVIEW: Temporary recommendation used when an exceptional event that has a substantial impact on the company’s results or our target price makes it impossible to assign a BUY, NEUTRAL or SELL rating to a stock

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12-MONTH HISTORY OF OPINION

Le tableau ci-dessous reflète l'historique des changements de recommandation et d'objectif de cours réalisés par le bureau d'analyse financière d'Invest Securities au cours des 12 derniers mois.

Company Name	Main Author	Release Date	Rating	Target Price	Potential

DETECTION OF CONFLICTS OF INTEREST

	Intrasense
Invest Securities was lead manager or co-lead manager in a public offer concerning the financial instruments of this issuer during the last twelve months.	Yes
Invest Securities has signed a liquidity contract with the issuer.	No
Invest Securities and the issuer have signed a research service agreement.	Yes
Invest Securities and the issuer have signed a Listing Sponsor agreement.	No
Invest Securities has been remunerated by this issuer in exchange for the provision of other investment services during the last twelve months (RTO, Execution on behalf of third parties, advice, placement, underwriting).	No
This document was sent to the issuer prior to its publication. This rereading did not lead the analyst to modify the valuation.	No
This document was sent to the issuer for review prior to its publication. This rereading led the analyst to modify the valuation.	No
The financial analyst has an interest in the capital of the issuer.	No
The financial analyst acquired equity securities of the issuer prior to the public offering transaction.	No
The financial analyst receives remuneration directly linked to the transaction or to an investment service provided by Invest Securities.	No
An executive officer of Invest Securities is in a conflict of interest with the issuer and was given access to this document prior to its completion.	No
Invest Securities or the All Invest group owns or controls 5% or more of the share capital issued by the issuer.	No
Invest Securities or the All Invest group holds, on a temporary basis, a net long position of more than 0.5% of the issuer's capital.	No
Invest Securities or the All Invest group holds, on a temporary basis, a net short position of more than 0.5% of the issuer's capital.	No
The issuer owns or controls 5% or more of the capital of Invest Securities or the All Invest group.	No

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