

Investor Relations 2021

2021. 07. 07~09 (with NH투자증권)

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I. Company Overview

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1-1. Corporate Information

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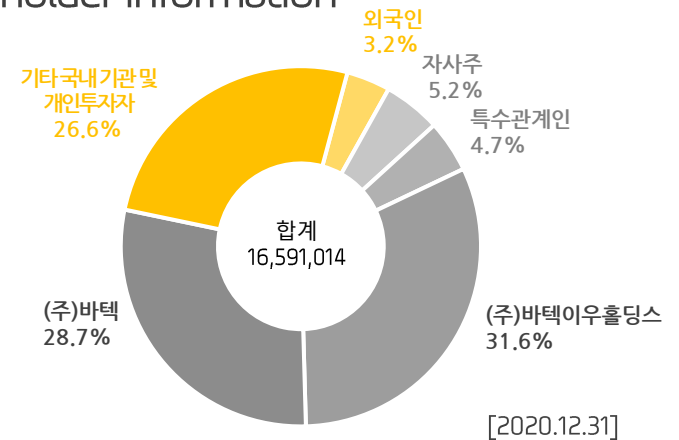
Korea No.1 Digital X-ray Detector Maker

Corporate Data

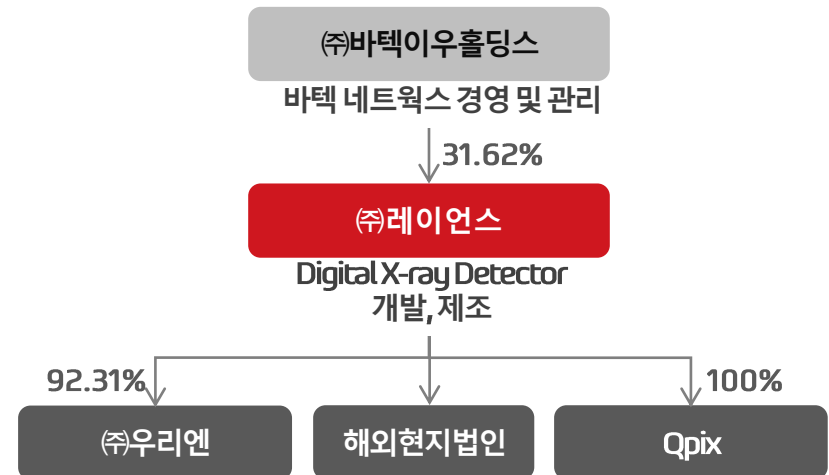


회사명	(주)레이언스
설립일 / 상장일	'11. 05. 02 / '16. 04. 11
대표이사	김 태 우
임직원수	234명
자본금	8,296백만원
주요제품	TFT-CMOS 디텍터, I/O 센서 등
본사위치	경기도 화성시 삼성1로 1길 14

Shareholder Information



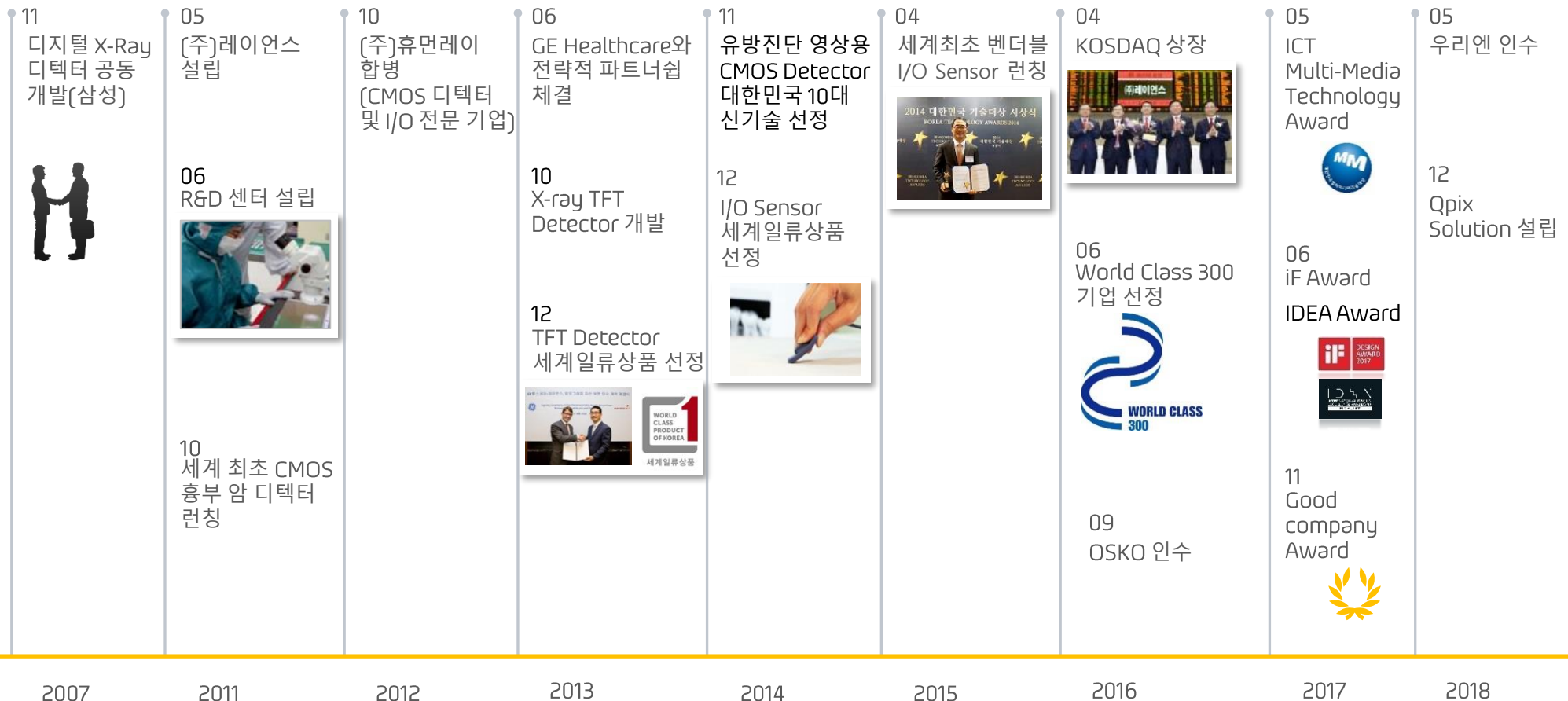
Organization



1-2. Company History

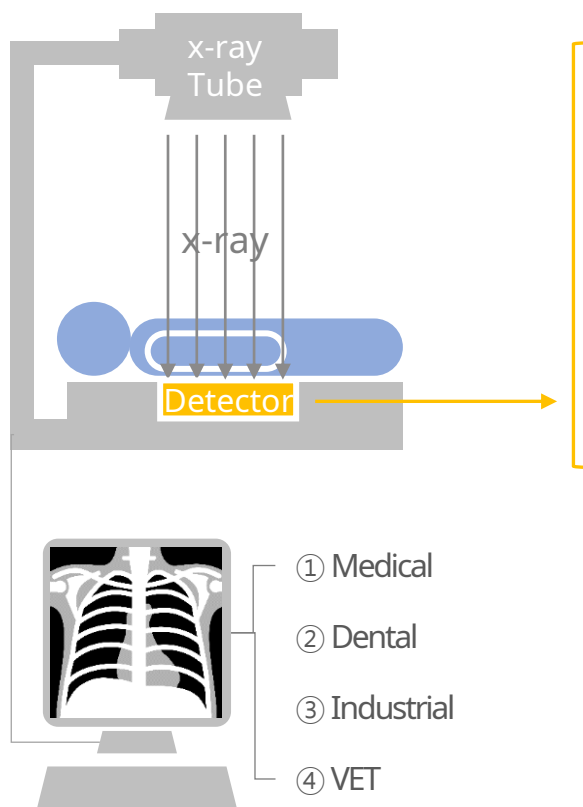
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From Digital X-ray Detector To material



기술 내재화 및 수직 계열화로 원천 기술 및 원가 경쟁력 확보

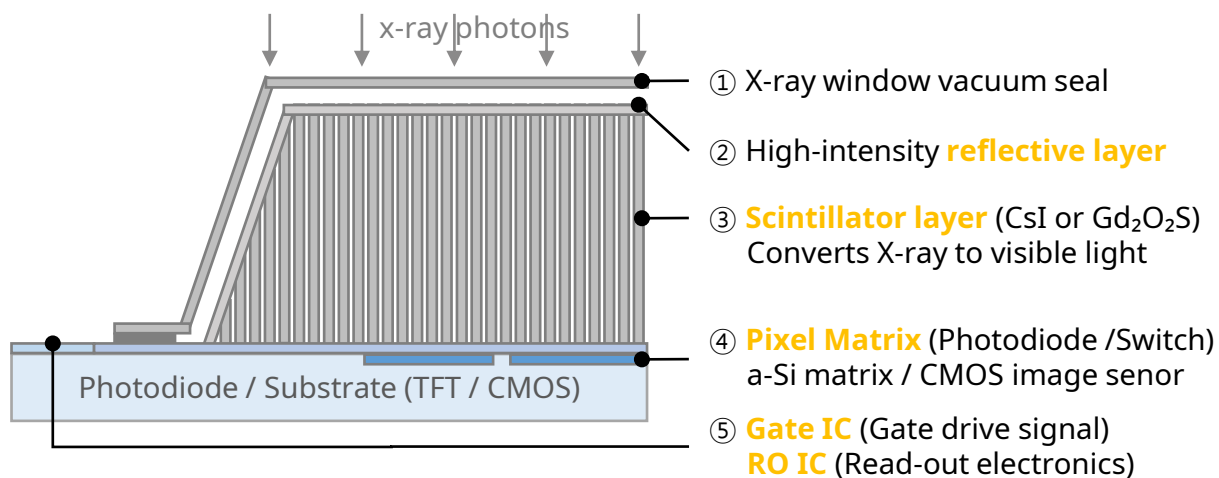
[Digital X-ray System]



- ① Medical
- ② Dental
- ③ Industrial
- ④ VET

[Technologies of Digital X-ray Detector]

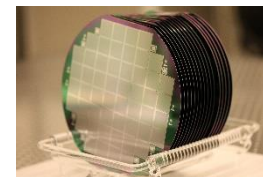
Rayence has Internalized All Technologies for FPD



a-Si matrix array : passive pixel
Photodiodes convert light into electrons
+ **one TFT switch per pixel**








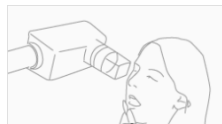





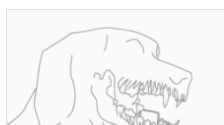


CMOS image sensor : active pixel
Photodiodes convert light into electrons
+ **several transistor per pixel**



1-4. Products & Applications

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	TFT Detector [박막트랜지스터 기반 디텍터]	CMOS Detector [Crystalline 실리콘 웨이퍼 기반 디텍터]	Domestic Market No.1 / Only 1	
Strengths	Very Large Panel / Simple / Economical	High Speed & Resolution / No Image Lag		
Weaknesses	Low Resolution / Image Lag / Slow	Limited Size (Needs Sensor tiling) / Expensive		
Products				
Applications				
Medical	 General Radiography	 Mobile X-Ray	 Surgical/c-arm	 Mammography
Dental			 Dental 2D/3D	 Dental IOS
Industrial	 NDT Portable	 Security/EOD	 Automatic X-ray Inspection(SEMI/Battery/Die-Casting)	
VET	 Small Animal	 Equine	 VET IOS	

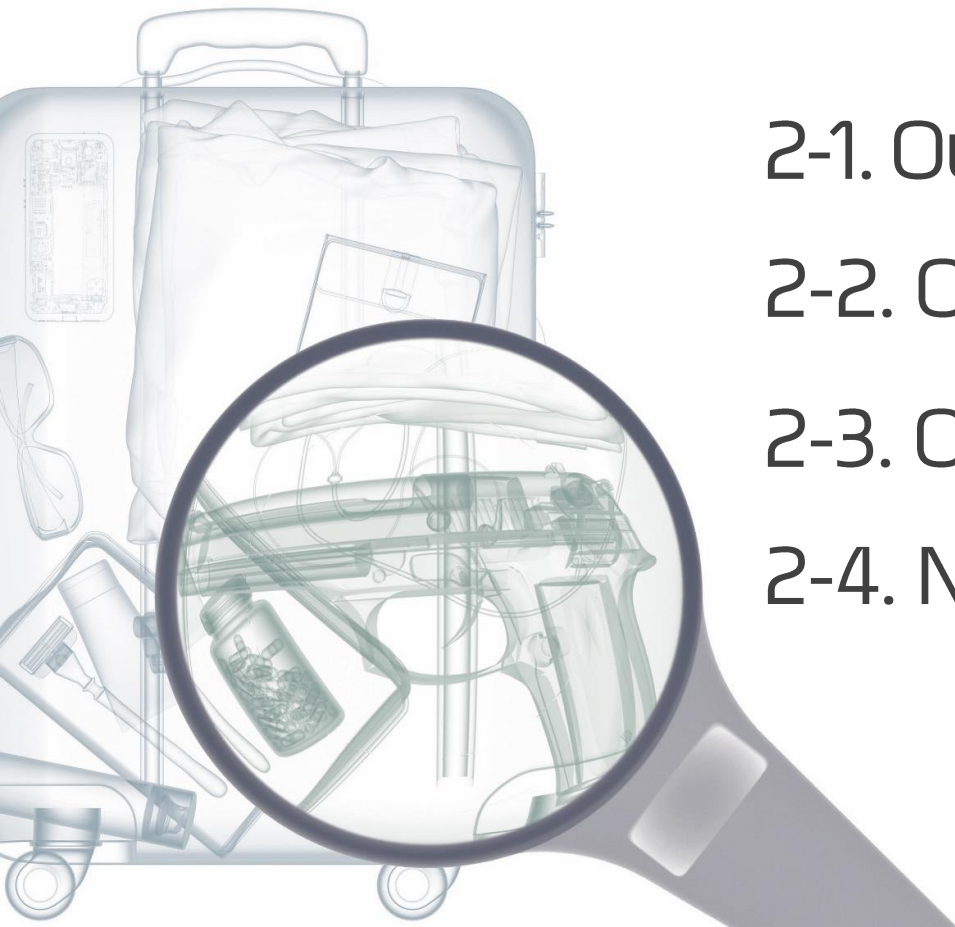
II. Market Trend & Competitiveness

2-1. Our Sustainable Market

2-2. Our Strengths

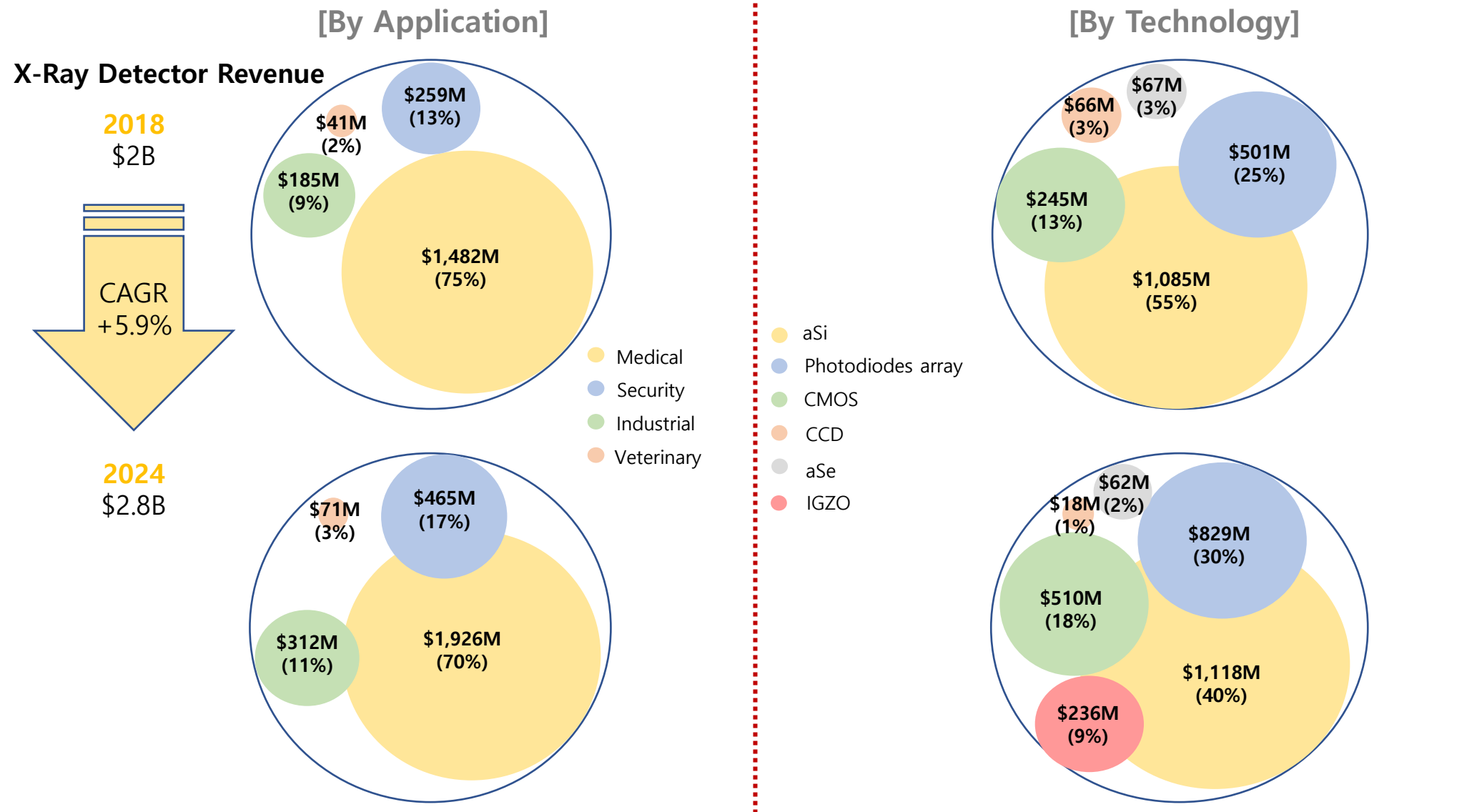
2-3. Our Growth Driver

2-4. New Business : Zirconia Powder



2-1. Our Sustainable Market : X-Ray detector level

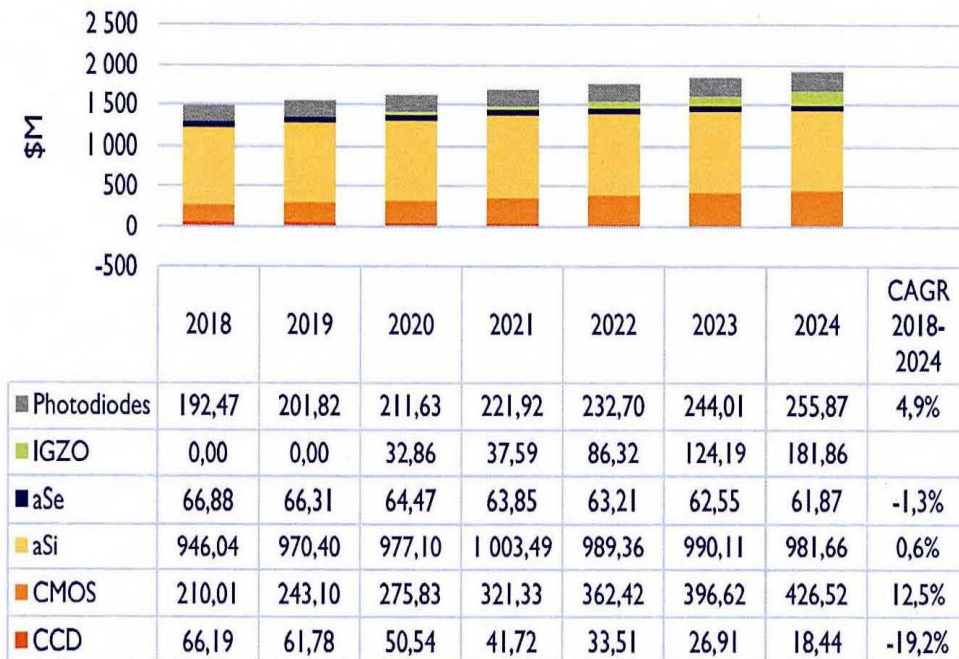
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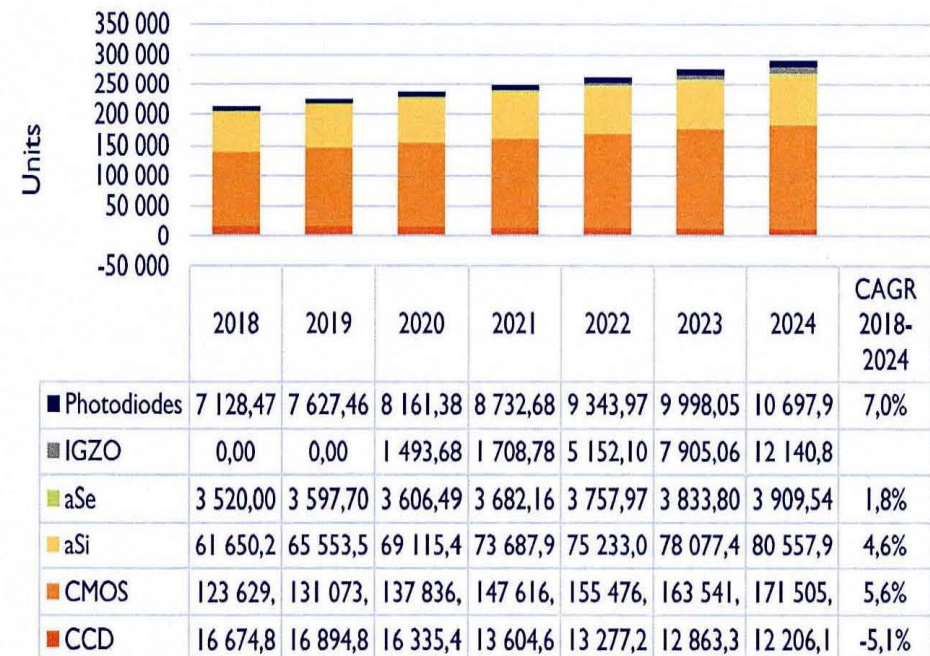
2-1. Our Sustainable Market (Medical)

- The first IGZO flat panels will be integrated as early as 2020
- CMOS market share is expected to grow fast (CAGR₂₀₁₈₋₂₀₂₄ of 12%, in value)
- As a cheaper solution with good technical features, aSi will remain the main sensor technology in the x-ray imaging field, but beginning in 2020 aSi will suffer from IGZO's arrival.

Global digital medical x-ray detector market - data and forecasts 2018 - 2024 (in \$M)



Global digital medical X-ray detectors market data and forecasts 2018-2024 (in volume)

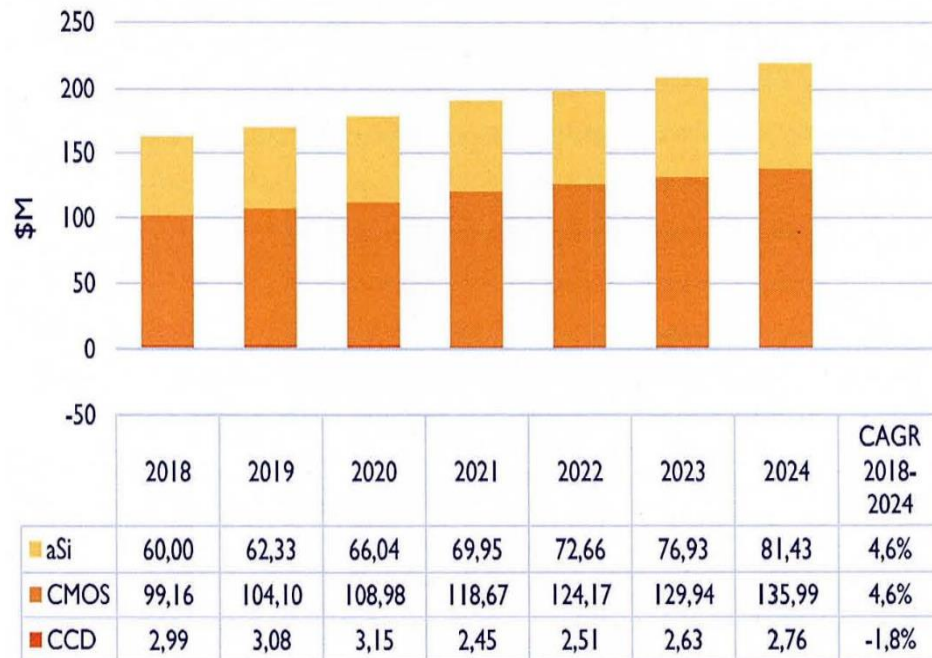


2-1. Our Sustainable Market (Dental)

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- Dental applications represent the biggest market for CMOS flat panels, with about \$100M worth of CMOS flat panels sold in dental in 2018
- aSi is still represented in this market for larger panels in 2D, and in 3D

Global digital dental X-ray detectors market data and forecasts 2018-2024, per technology (in \$M)



Global digital dental X-ray detectors market data and forecasts 2018-2024, per technology (in units)



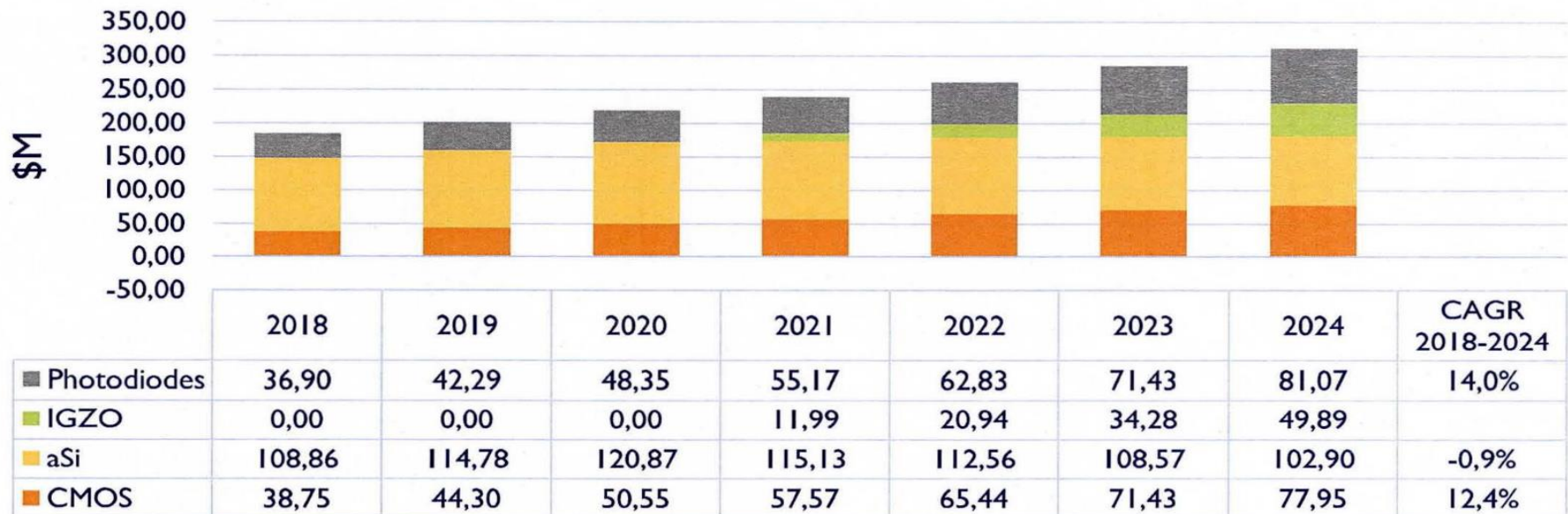
Source: X-Ray Detectors for Medical, Industrial and Security Applications 2019 (YOLE Développement)

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2-1. Our Sustainable Market (Industrial)

- Until a few years ago, x-ray for NDT was too expensive and restricted to niche markets. However, with the increasing popularity of x-ray in NDT, the market is expected to grow faster - especially in automotive and electronics
- Flat panels represent a large share of NDT market value because industrial x-ray flat panel detector ASP is quite high(usually \$30k+)
- IGZO will enter this market as early as 2021 for large panels, taking share from the aSi market

**Global digital industrial x-ray detector market - data and forecasts
2018 - 2024 (in \$M)**

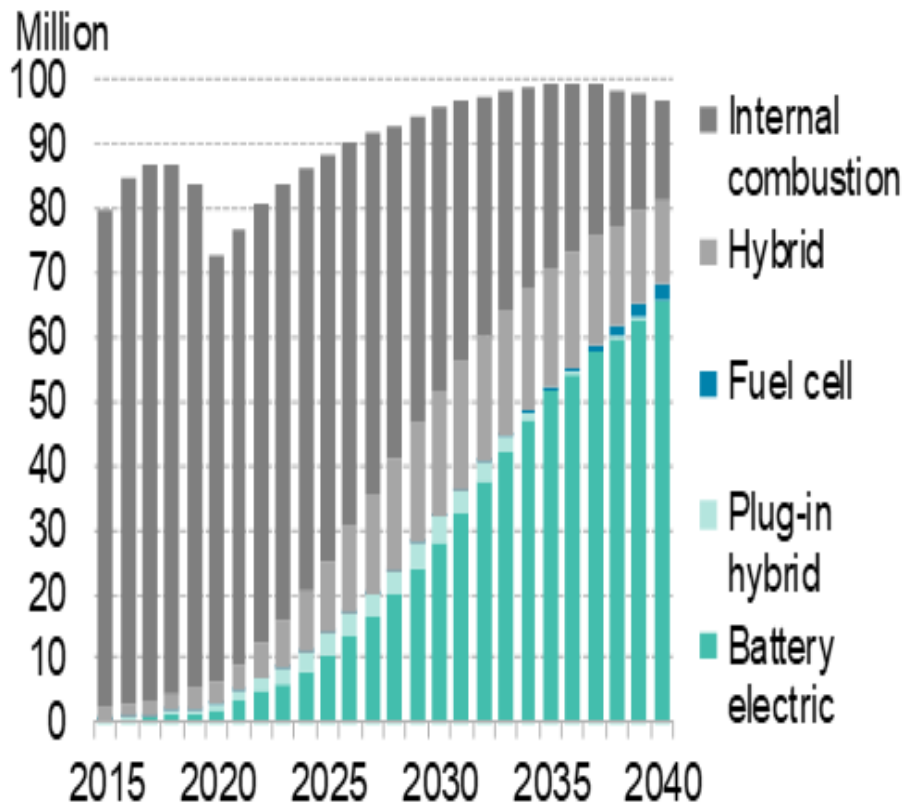


2-1. Our Sustainable Market (Industrial)

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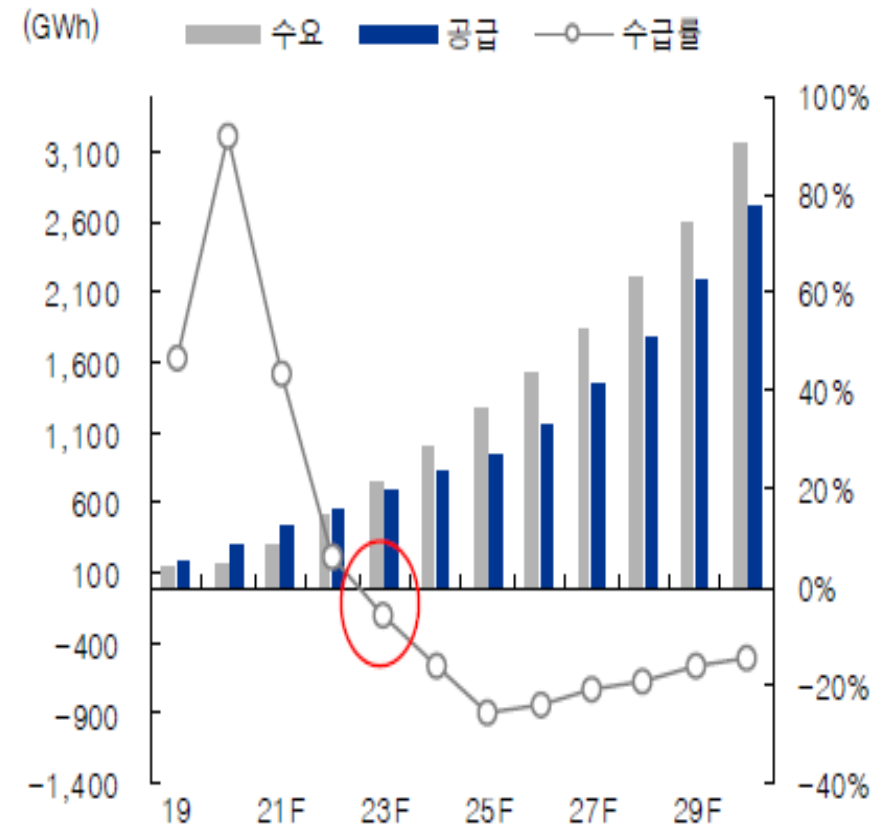
- 전기차의 경우, 2030년까지 10년간 7조달러에 달하는 성장폭을 보일 것으로 예상.
2050년까지 30년간 46조달러 확대될 전망.

Global passenger vehicle sales outlook by drivetrain - Economic Transition Scenario



Source : BNEF

Trend and Outlook in Global Battery Supply and Demand



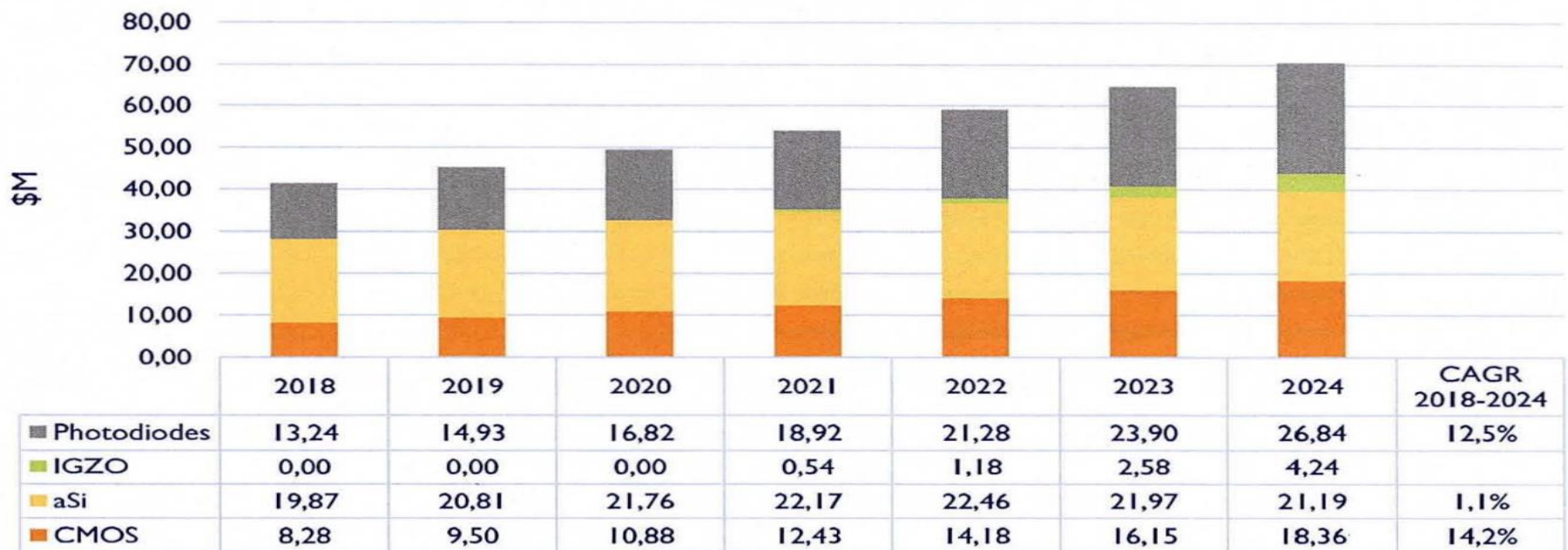
Source : SNE Research, IBK Securities

2-1. Our Sustainable Market (Veterinary)

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- The high cost of veterinary imaging instruments and a lack of skilled professionals are restraining this segment's growth
- However, the development of portable veterinary radiography devices is expected to offer opportunities for market expansion

Global digital veterinary x-ray detector market - data and forecasts 2018 - 2024 (in \$M)



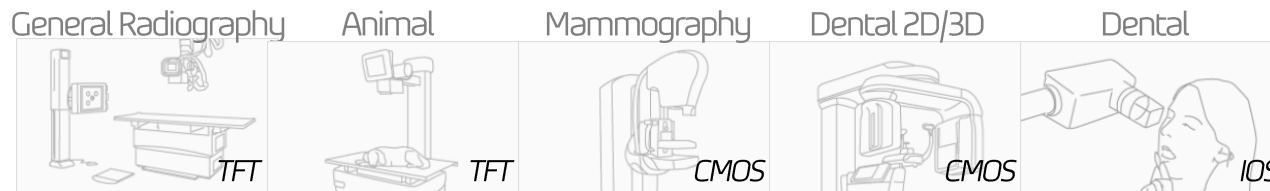
2-2. Our Strengths

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Only One Manufacturer

TFT / CMOS 디텍터
및 IOS

고객의 다양한 니즈에 **맞춤형 토털 서비스 제공** 가능



버티컬 인터그레이션 & 내재화

Design & Material
processing

기술 및 생산의 수직적 통합 및 **내재화를 통한 원가 경쟁력** 보유





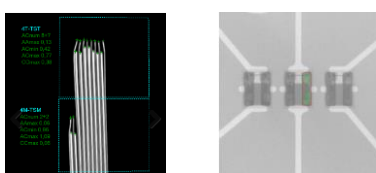
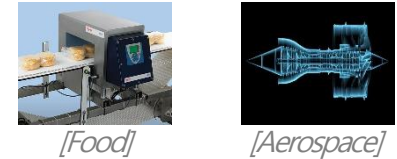
IOS (Intra Oral Sensor) M/S 세계 1위

생산 능력 및 매출규모

고객 및 제품 다변화를 통한 지속 성장



신수종 전략 사업을 통한 지속 성장동력 마련

Medical	Dental	Industrial
고부가가치 CMOS 라인업 확대	EOS/IOS 센서 신규 고객 발굴	신제품 개발 및 시장침투
1. CMOS 의료 특화 시장 진출 <ul style="list-style-type: none"> - 수술용 C-arm 시장 신규 진입 [C-arm] '18y → '20y Global 수술용 c-arm Market Forecasting (483m\$ → 507m\$) - Mammo Retrofit 시장 개척 [Mammo] * '18y → '20y Global Mammo Market Forecasting (1,207m\$ → 1,338m\$) 2. 고부가가치 Medical TFT 사업 추진 <ul style="list-style-type: none"> - 방사선 치료기기 [Radiotherapy] (Radiotherapy) 신시장 개척 3. OSKO를 통한 중남미 Retrofit 시장 공략 <ul style="list-style-type: none"> - 현지 생산기반 중남미 Medical 공략 	1. CMOS 디텍터 바텍외 고객 확대 <ul style="list-style-type: none"> - 중국 신규 Dental System社 확보 완료 (CMOS 디텍터 중국내 M/S 1위 목표) - 중국외 신규 Digital Sys.社 발굴  2. Global IOS 시장 지배력 강화 <ul style="list-style-type: none"> - Global Big 2 Market (USA&China) 공략 강화 - 유럽 지역 Local System사 등 Major 경쟁사 시장 침투 	1. Electronic M/S 1위 달성 <ul style="list-style-type: none"> - Tier1 업체 High Class 반도체 검사 진입 (고감도/고해상도/고관전압) - TDI 제품 출시 (2차전지 및 Mobile 검사 진입)  2. Die casting 용 CMOS 시장 개척 <ul style="list-style-type: none"> - 3D CT Full Size lineup 확보 - 2D 검사 시장 확판 3. New Application 개발 및 시장 진입 

2-4. New Business : Zirconia Powder

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고성장 중인 Digital 보철 시장 진출, 기술 공백 분야 Covering

Dental Digital 보철 Workflow

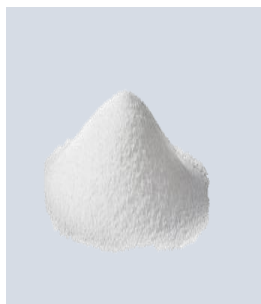
[3D Pano]



[Ez Scan]



[ZrO₂ Powder]



[ZrO₂ Discs]



[CAD]



[CAM]



3D 인상채득 in 치과

vatech

인공치아 제작 in 치과 기공소

vatech mcis

Rayence process : Precursor → 반응 → 여과 → 건조 → 하소 → Spray dry

Powder 제조 공정 (RY)



[Precursor]



[Reaction]



Filtration



Drying



Calcination



Milling



Spray dry

신수종 사업, 지르코니아를 통한 지속 성장동력 마련

시장 현황

- 국내 도입 **2008년** 국내 시장 도입
- 시장 현황 시장 성장추세
 - 금값 상승
 - CAD/CAM 시스템 보급 확대

시장 규모

- 지르코니아 전체 시장규모 : 7.5조원
- 지르코니아 덴탈용 시장 규모 : 약 9천억원
 - 국내 300억원 ('18년) : USD 30M
 - 해외 8,500억원 ('17년 추정) USD 850M

출처 : Maximize – Global Zirconia Market (2018-2026)

지르코니아

• 지르코니아 도입 이전

금

- 장점: 생체 적합, 강도 우수
- 단점: 높은 수가, 낮은 심미성

PFM (Porcelain Fused Metal)

- 장점: 저렴
- 단점: 잇몸경계선 노출

두 재료의
장점 결합

• 지르코니아 도입 후

지르코니아

- 밀링머신을 이용한 가공

- ① 우수한 강도
- ② 뛰어난 생체적합성
- ③ 우수한 심미성
- ④ 낮은 열전도율
- ⑤ 인건비 절감
- ⑥ 생산성 확대
- ⑦ 작업 공정 단순화

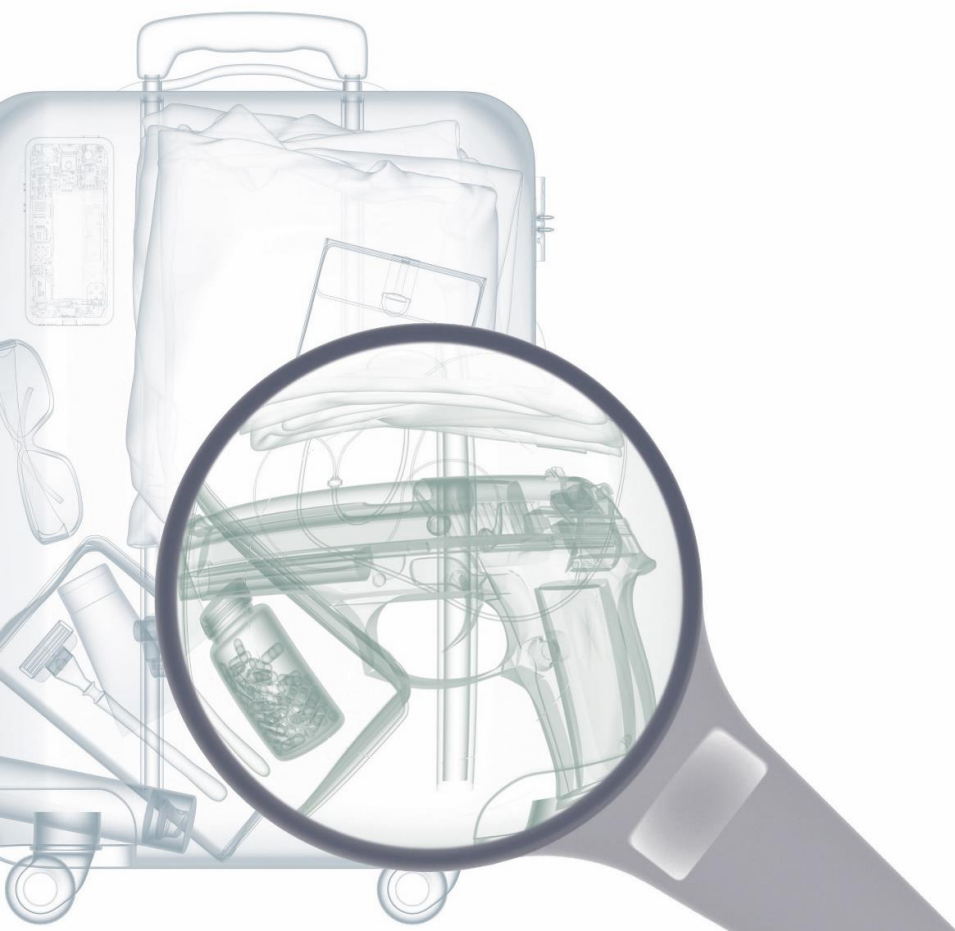
- CAD/CAM 시스템과 함께 성장

III. Financial Status

3-1. Business Performance

3-2. 1Q '21 Financial Highlights

3-3. Sales Breakdown

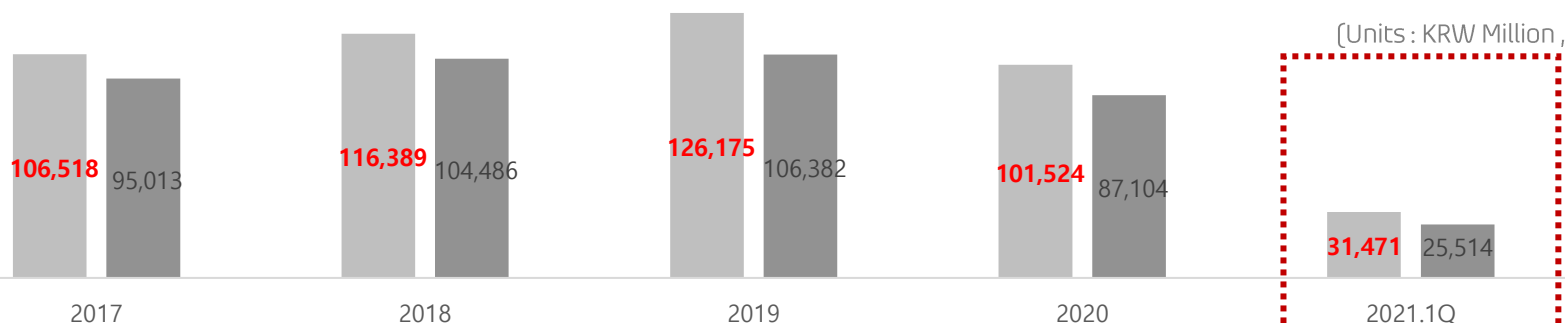


3-1. Business Performance

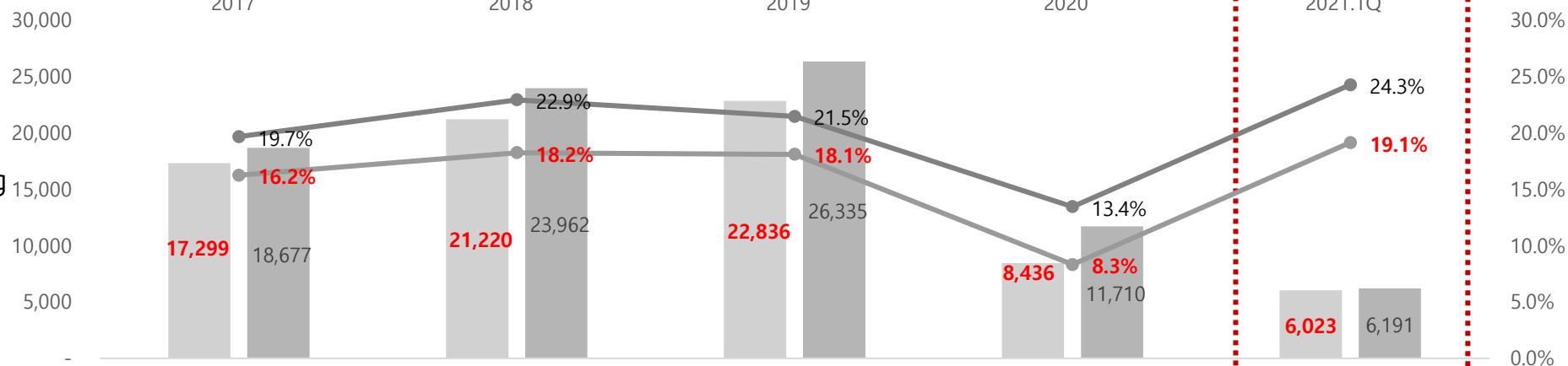
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(Units : KRW Million , %)

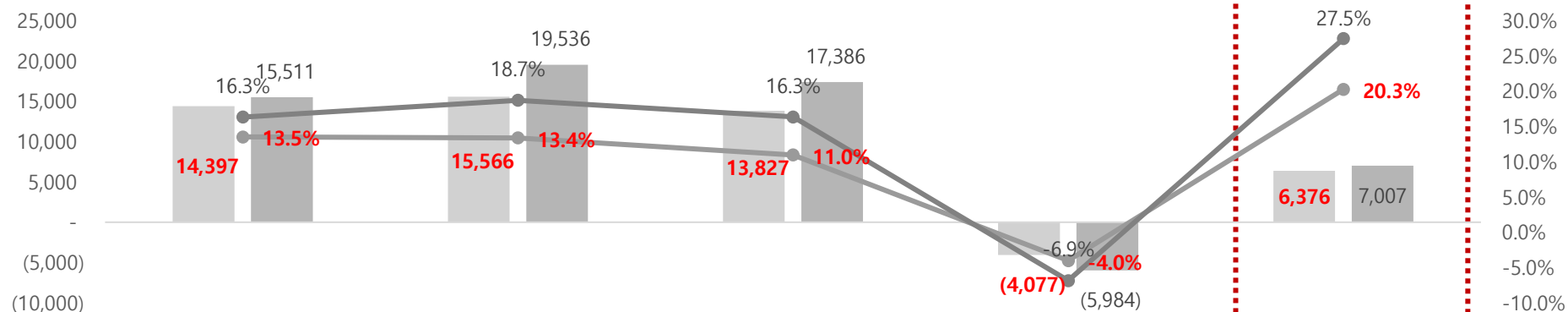
Sales



Operating Profit



Net Profit



consolidated separate consolidated separate

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3-2. Q1 '21 Financial Highlights

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[Units : KRW Million, %]

	1Q '21		4Q '20		1Q '20		QoQ (%)	YoY (%)	1Q '19		YoY (%)
Sales	31,471	100.0%	28,096	100.0%	27,249	100.0%	12.0%	15.5%	28,304	100.0%	11.2%
COGS	18,832	59.8%	17,186	61.2%	15,486	56.8%	9.6%	21.6%	16,927	59.8%	11.3%
Gross Profit	12,639	40.2%	10,910	38.8%	11,764	43.2%	15.9%	7.4%	11,378	40.2%	11.1%
SG&A	6,616	21.0%	7,989	28.4%	7,588	27.8%	-17.2%	-12.8%	6,399	22.6%	3.4%
Operating Income	6,023	19.1%	2,921	10.4%	4,176	15.3%	106.2%	44.2%	4,979	17.6%	21.0%
Other gains	1,162	3.7%	219	0.8%	1,985	7.3%	431.4%	-41.5%	594	2.1%	95.7%
Other losses	283	0.9%	10,265	36.5%	687	2.5%	-97.2%	-58.8%	31	0.1%	811.8%
Finance income	743	2.4%	103	0.4%	878	3.2%	624.5%	-15.4%	688	2.4%	7.9%
Finance Costs	281	0.9%	1,148	4.1%	258	0.9%	-75.5%	9.0%	107	0.4%	161.4%
Income Before Tax	7,364	23.4%	- 8,170	-29.1%	6,094	22.4%	흑자전환	20.8%	6,122	21.6%	20.3%
Income Tax Expense	988	3.1%	- 73	-0.3%	1,666	6.1%	-	-40.7%	1,407	5.0%	-29.8%
Net Income	6,376	20.3%	- 8,098	-28.8%	4,428	16.2%	흑자전환	44.0%	4,715	16.7%	35.2%

3-3. Sales Breakdown

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[Units : KRW Million, %]

Biz	FY2019						FY2020						FY2021	
	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	3Q	4Q	Annual	%	1Q	%
TFT	11,124	13,102	13,478	15,321	53,026	42.0%	12,854	16,411	9,795	9,374	48,434	47.7%	11,771	37.4%
CMOS	10,501	10,875	10,262	9,952	41,589	33.0%	8,385	3,256	8,403	10,959	31,004	30.5%	10,715	34.0%
IO	4,267	6,442	6,236	5,494	22,439	17.8%	4,966	1,285	3,071	6,239	15,560	15.3%	7,003	22.3%
Others	2,413	2,274	2,122	2,311	9,120	7.2%	1,044	2,030	1,927	1,525	6,526	6.4%	1,982	6.3%
Total	28,304	32,694	32,098	33,079	126,175	100.0%	27,249	22,982	23,196	28,096	101,524	100.0%	31,471	100.0%

[Units : KRW Million, %]

App.	FY2019						FY2020						FY2021	
	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	3Q	4Q	Annual	%	1Q	%
Medical	10,627	11,266	11,821	12,708	46,422	36.8%	9,982	14,459	8,174	6,786	39,401	38.8%	9,797	31.1%
Dental	13,053	15,893	14,994	13,864	57,804	45.8%	11,508	3,394	10,400	15,941	41,243	40.6%	15,405	49.0%
Industrial	1,669	3,259	2,373	2,311	9,612	7.6%	2,382	1,190	1,074	1,376	6,022	5.9%	2,035	6.5%
VET	2,956	2,275	2,910	4,195	12,336	9.8%	3,239	3,618	3,488	3,957	14,302	14.1%	4,117	13.1%
Others	-	-	-	-	-	-	138	321	60	37	556	0.5%	116	0.4%
Total	28,304	32,694	32,098	33,619	126,175	100.0%	27,249	22,982	23,196	28,096	101,524	100.0%	31,471	100.0%

3-3. Sales Breakdown @ Region

► **Asia**

- Sales was increased yoy 33.8%

► **E.U**

- Sales was decreased yoy 12.7%

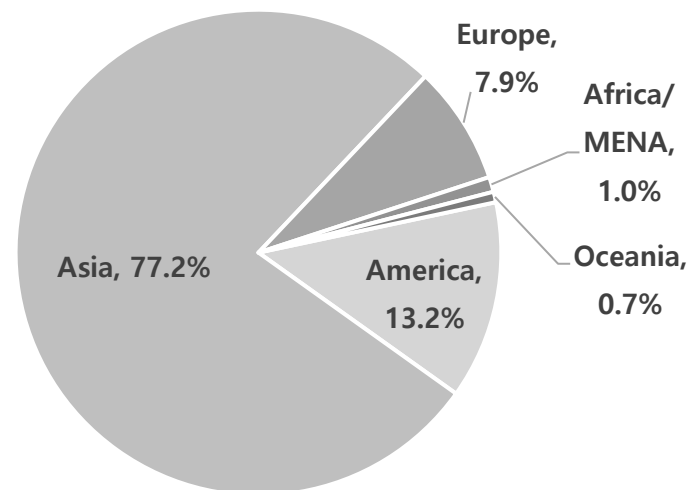
► **America**

- Sales was decreased yoy 23.6%

► **MENA / Africa, Oceania**

- Sales was and decreased yoy 58.9% and increased 256.7%

2021. 1Q



(Units : KRW Million, %)

Region	FY2019						FY2020						FY2021	
	1Q	2Q	3Q	4Q	Annual	%	1Q	2Q	3Q	4Q	Annual	%	1Q	%
America	6,505	7,378	5,984	9,731	29,598	23.5%	5,430	3,853	3,422	2,227	14,933	14.7%	4,149	13.2%
Asia	19,521	22,518	21,883	20,105	84,027	66.6%	18,163	14,026	16,887	22,610	71,685	70.6%	24,302	77.2%
Europe	1,853	1,905	3,388	2,434	9,580	7.6%	2,861	4,884	2,593	3,010	13,348	13.1%	2,499	7.9%
Africa/MENA	334	794	733	690	2,551	2.0%	733	54	204	132	1,123	1.1%	302	1.0%
Oceania	91	99	110	119	418	0.3%	62	166	90	117	434	0.4%	220	0.7%
Total	28,304	32,694	32,098	33,619	126,175	100.0%	27,249	22,982	23,196	28,096	101,524	100.0%	31,471	100.0%

Appendix. Balance Sheet Summary

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(KRW Million)

Account	FY 2021(1Q)	FY 2020	FY 2019	FY 2018
Current assets	176,874	167,867	169,360	147,450
Cash and cash equivalents	47,512	42,455	27,476	25,980
Short-term deposits not classified as cash equivalents	59,000	59,000	61,700	60,290
Short-term trade Receivable	38,512	35,362	46,217	25,972
Inventories	27,533	27,595	28,858	30,723
Other current assets	4,316	3,455	5,109	4,485
Non-current assets	55,554	56,852	63,328	53,682
Property, plant and equipment	32,169	32,772	36,139	32,693
Intangible assets	17,958	18,421	23,266	19,248
Other non-current assets	5,427	5,660	3,923	1,741
Total assets	232,428	224,720	232,688	201,132
Current liabilities	22,659	19,379	23,049	16,935
Short-term trade Payables	6,928	5,539	6,646	5,935
other current payables	4,740	2,707	3,248	2,510
Short-term borrowings	4,740	4,674	5,071	1,617
Other current liabilities	6,195	6,459	8,084	6,873
Non-current liabilities	17,584	17,802	14,749	1,870
Long-term borrowings, gross	-	-	-	-
Post-employment benefit obligations	2,196	1,966	1,364	387
Other Non-current liabilities	15,388	15,836	13,385	1,483
Total liabilities	40,244	37,182	37,798	18,805
Equity				
Equity attributable to owners of parent	192,934	188,167	194,814	181,864
Issued capital	8,296	8,296	8,296	8,296
Share premium	107,298	107,298	107,298	107,298
Elements of other stockholder's equity	- 17,627	- 17,627	- 15,651	(15,404)
Other Comprehensive income/loss accumulated amount	647	792	121	104
Retained earnings	94,321	89,409	94,750	81,571
Non-controlling interests	- 750	- 629	76	463
Total equity	192,185	187,538	194,889	182,327
Total equity and liabilities	232,428	224,720	232,688	201,132

Appendix. X-Ray Imaging Supply Chain

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Sensor design

Front-end

Detectors

OEM

CMOS



aSi



IGZO





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