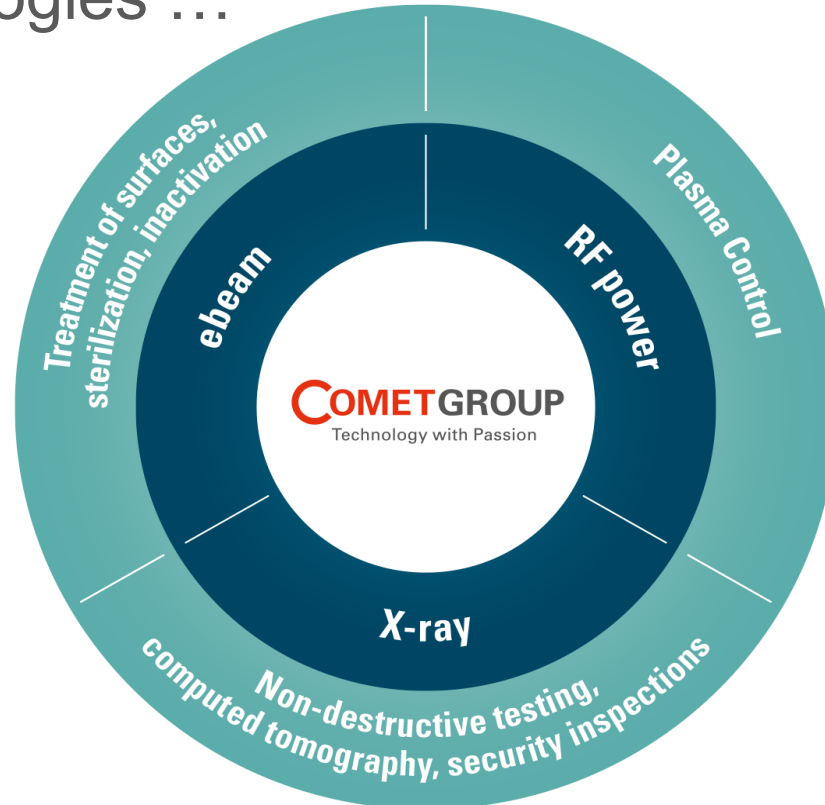




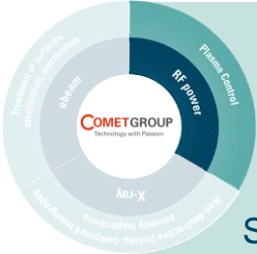
Play on strengths. Improve. Perform

Dr. René Lenggenhager, CEO Comet Group

We are a Swiss company with high competency in three leading technologies ...




... enabling faster, more efficient processes and safer products in many industries



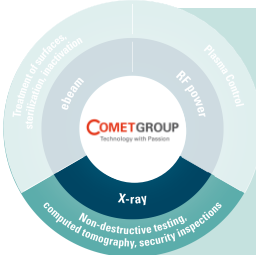
RF Power

53%
of H1 2018
Group sales

Semiconductors
Microchips & Sensors
Displays




COMET



X-Ray

43%
of H1 2018
Group sales

Electronics
Automotive/Foundries
Aerospace
Security



COMET / YXLON



ebeam

4%
of H1 2018
Group sales

**Food
Printing**



ebeam

Positive prospects

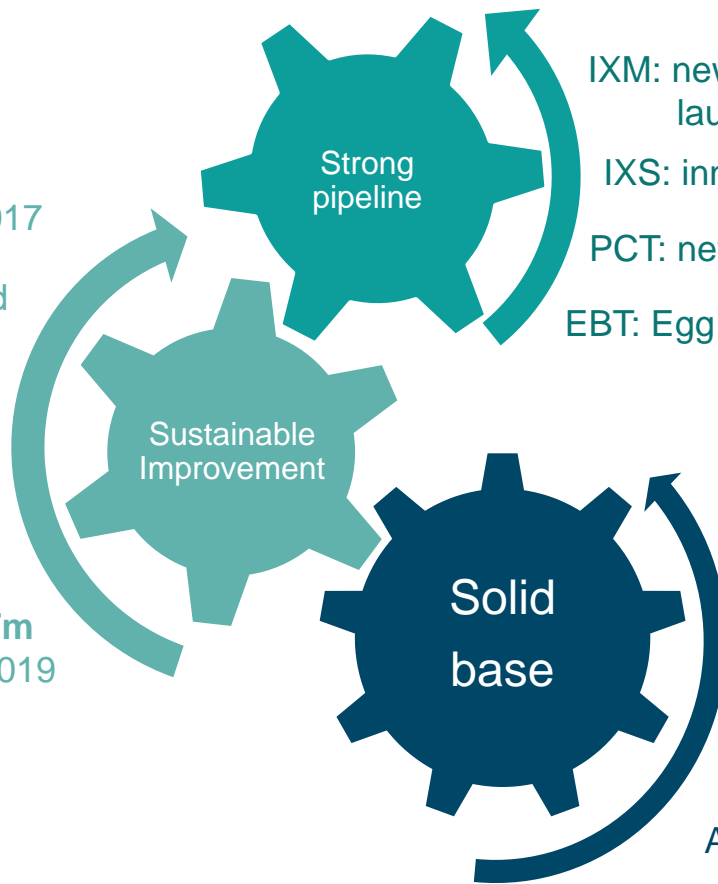
+ 20 % investments in R&D vs. 2017

Production building expansion FLA completed as enabler of further lean initiatives

Profit improvement addressed in IXS and EBT

Improvement in operational efficiency

Non-recurrence of 17 CHFm at EBITDA level in 2019



IXM: new iVario/tube bundle, launches for security market

IXS: innovations for Industry 4.0

PCT: new RF generator

EBT: Egg Case

Core competencies

Flexible capacities

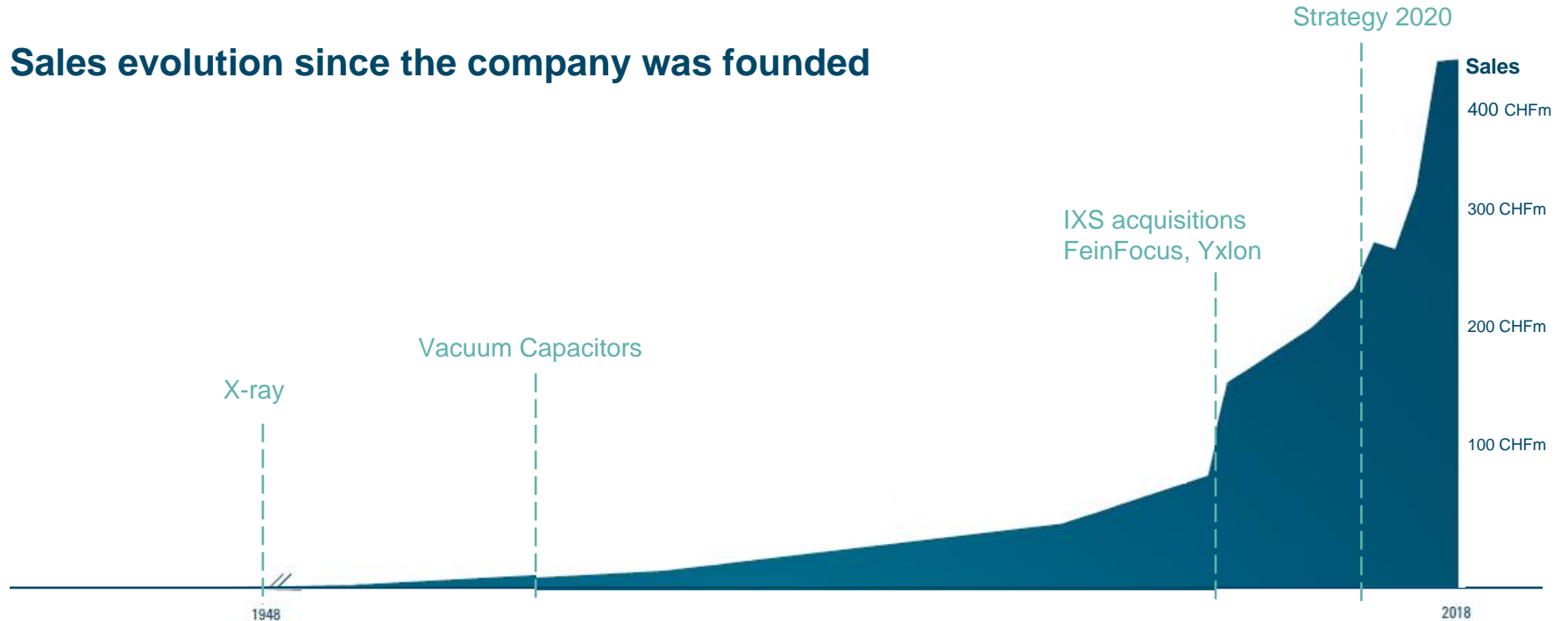
Strong balance sheet

Attractive growth drivers

Clear strategy & business model

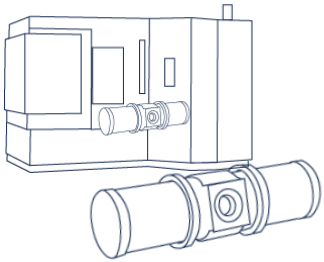
Thanks to its core competencies, the Comet Group has grown into an important partner to key customers in various industries

Sales evolution since the company was founded




Common core competencies are instrumental for the leading solutions in all three technologies

Technologies



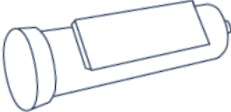
X-ray

Non-destructive testing
Computed tomography
Security inspection



RF Power

Plasma control



ebeam

Treatment of surfaces
Sterilization
Inactivation

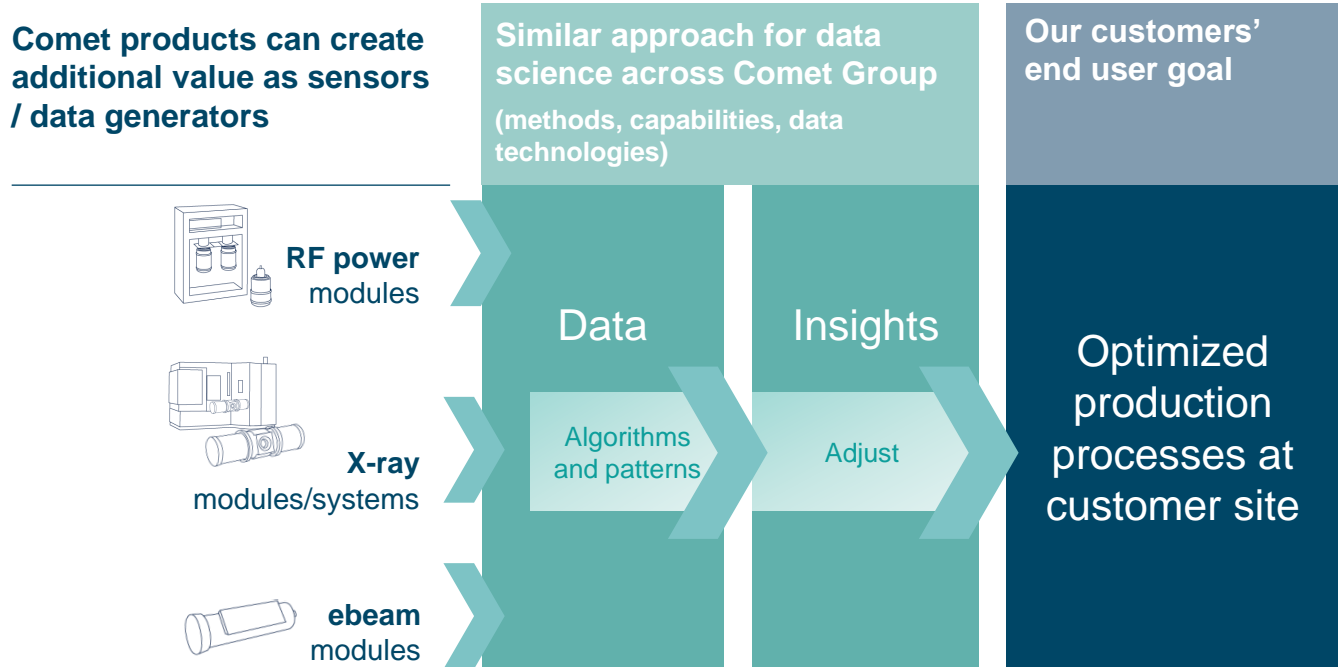
Core competencies



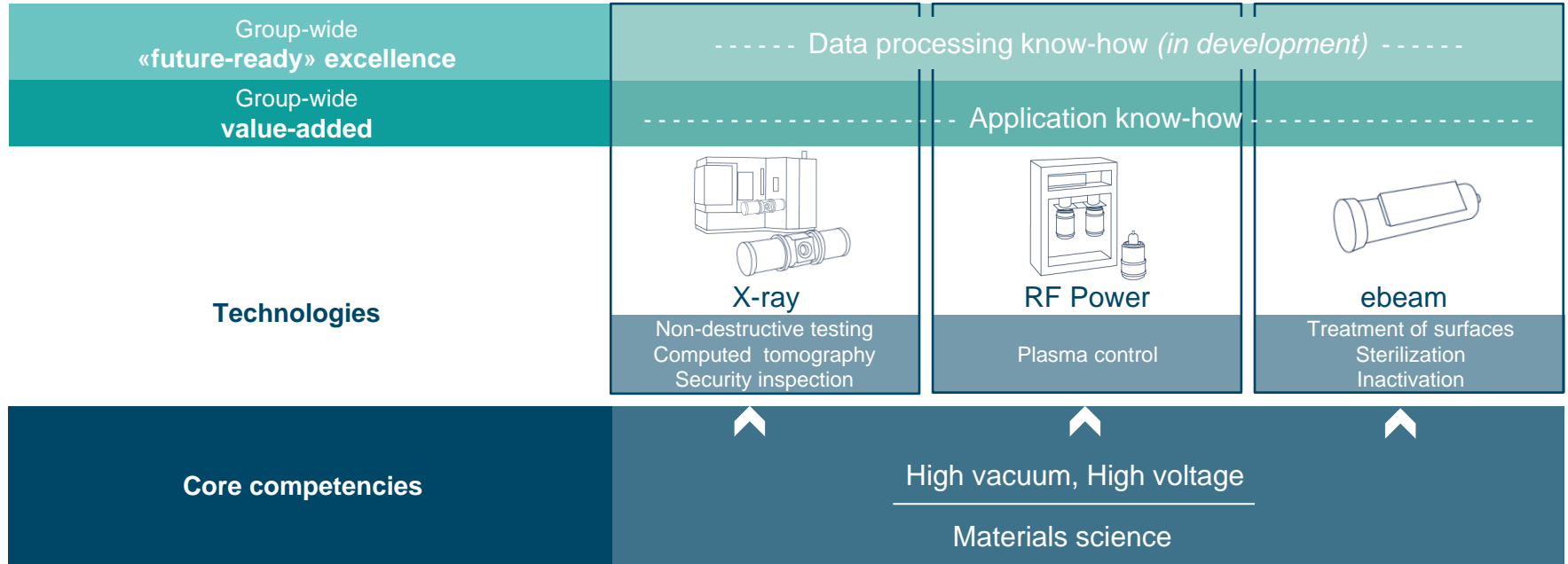
High vacuum, High voltage

Materials science

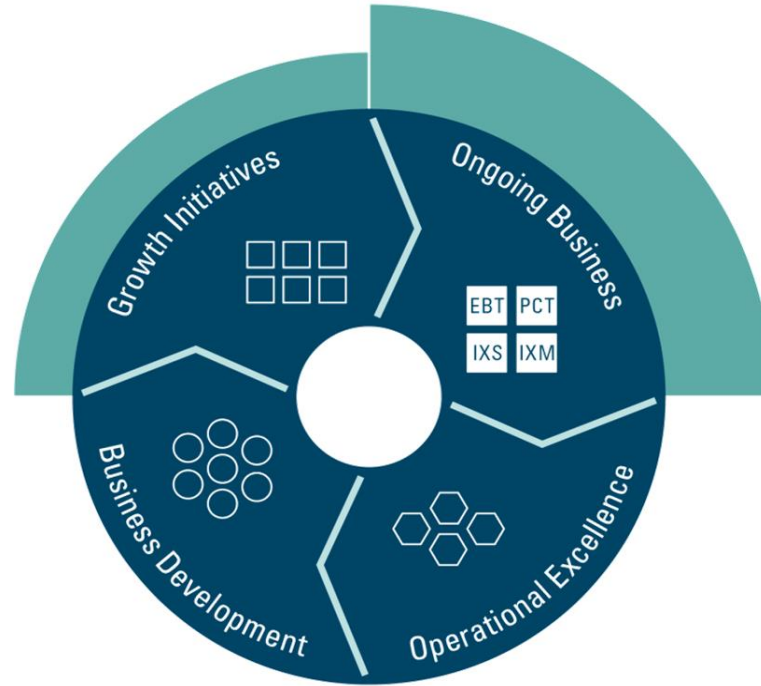
Digitalization of products, processes and services will offer even more synergies tomorrow



Similar data processing methods / algorithms will create even more value and learning experience between the businesses



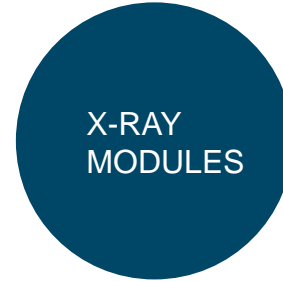
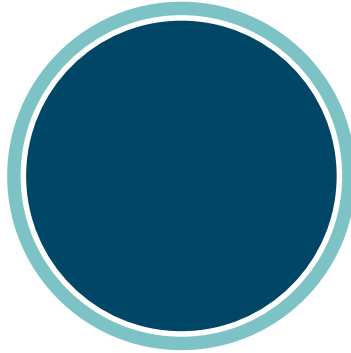
The Comet Group growth engine: Strong and diversified on-going business



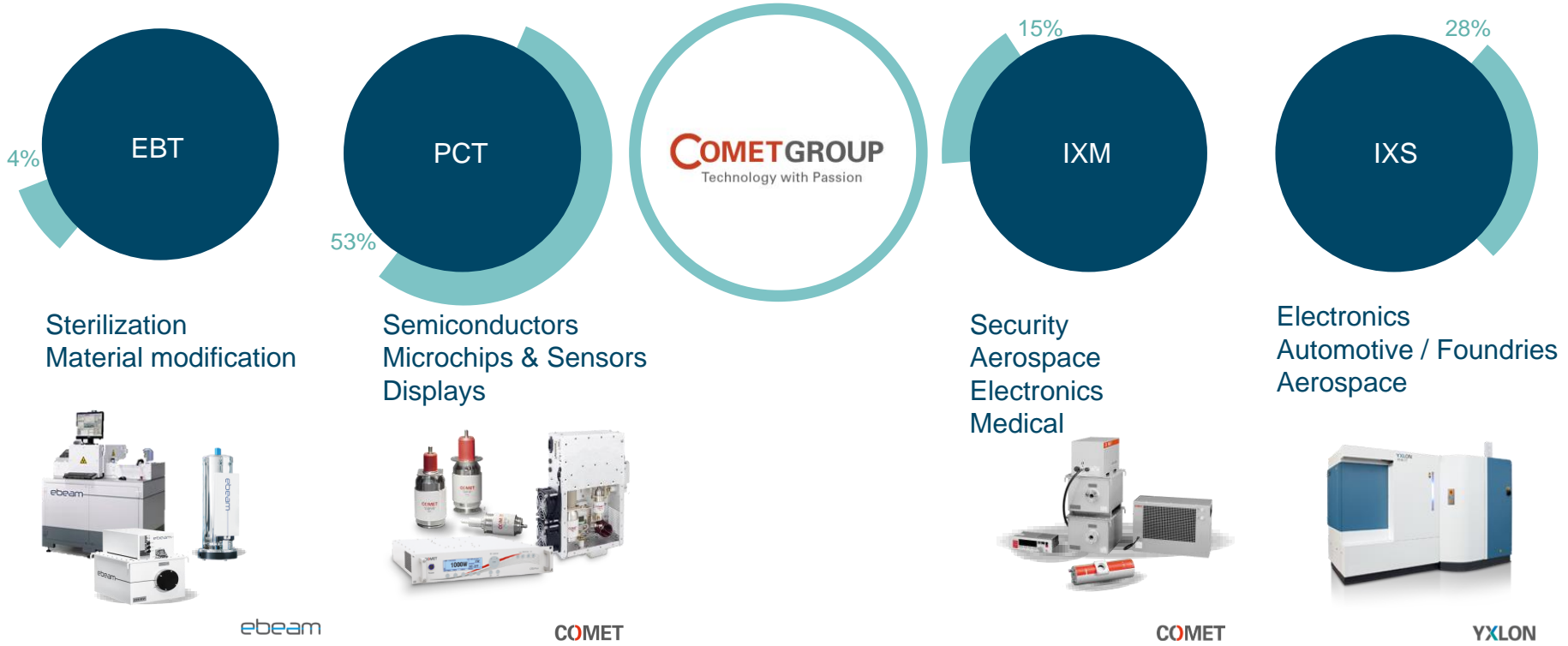
Our additional levers for growth beyond 2020



Working on the growth engine we have made progress across all divisions

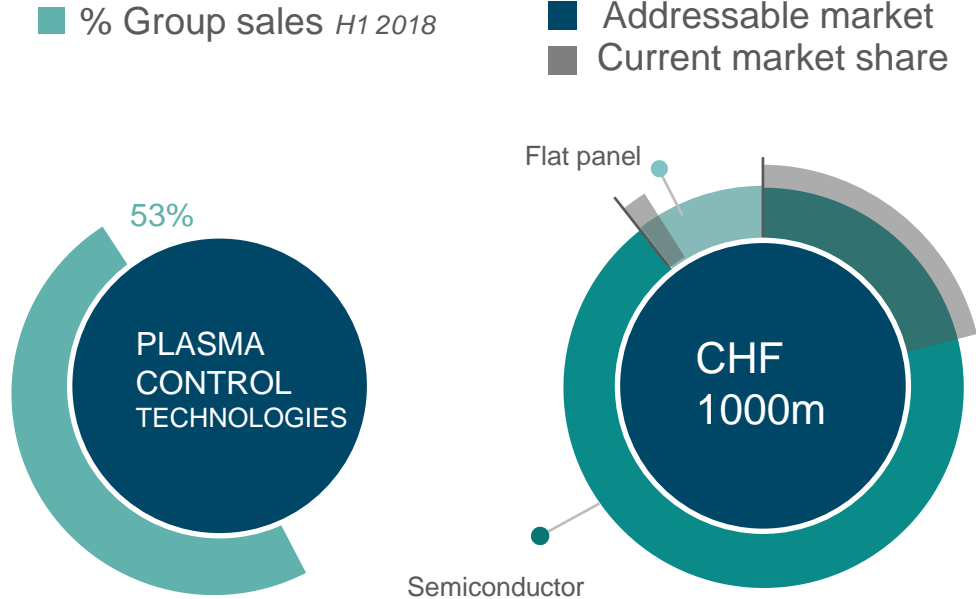


Working on the growth engine we have made progress across all divisions



PCT: Current slowdown – But continued high demand for joint development projects; strong drivers based on growing data storage and processing demand

Position	One of the leading suppliers of RF power technology globally
Strengths	<ul style="list-style-type: none">✓ The only manufacturer worldwide to develop and produce all core components of the RF Delivery System✓ Over 50 years of expertise in the field of VacCaps, heart of the RF matchbox✓ Flexible cost structure
Potential	Attractive potential by expanding RF generator portfolio, and on track with generator ⇒ broaden application and customer base



19m/9 % of sales from other markets (niche markets like broadcast, amplifiers etc.)

Manage Profitability

Current postponement of fab capex projects caused a slow-down in the semi industry

Comet with flexible cost base to adapt to market



PCT manages the current cycle

Costs:

Reduction of variable costs, e.g. up to 50 % in Flamatt

Operations: Quick wins with lean/Kaizen projects

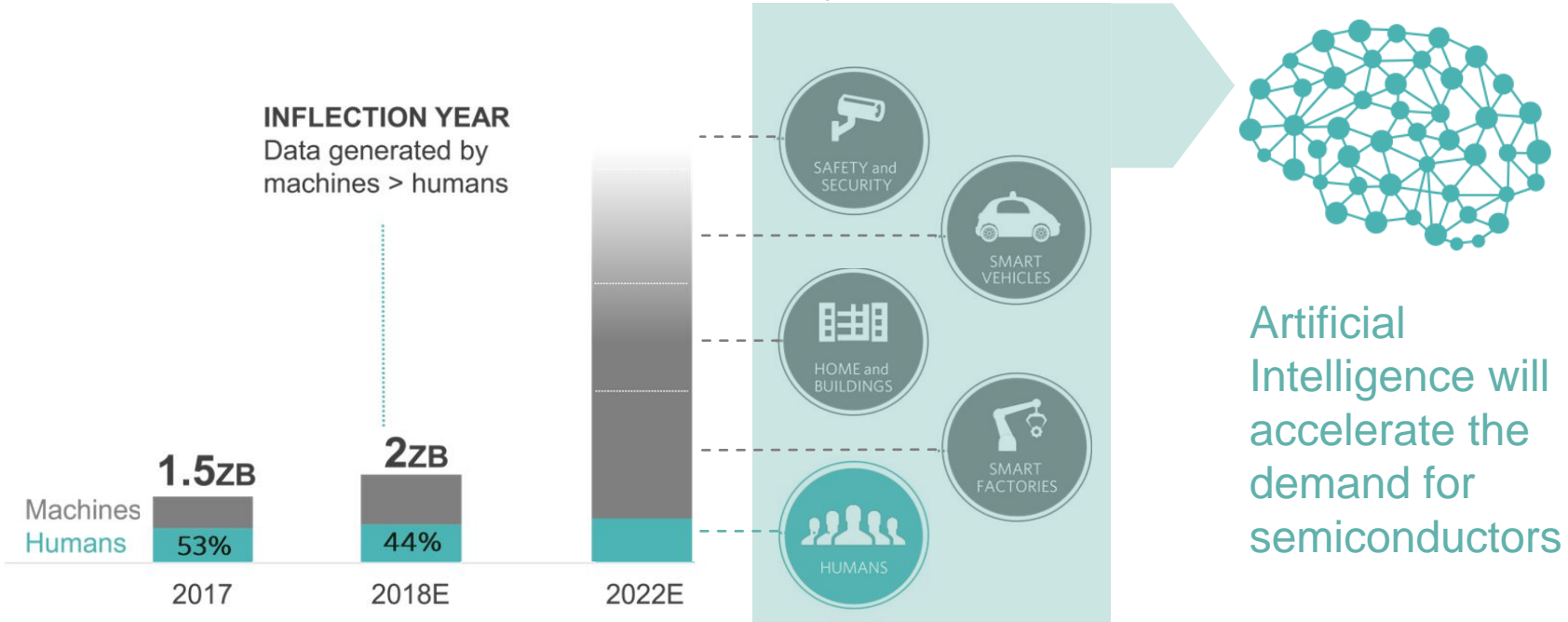
Be ready for the next ramp

After the ramp of the last three years, PCT is now able to pursue postponed projects

Billings SEMI North America, 3 months average

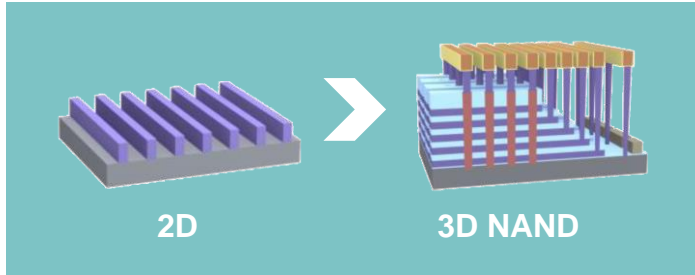
Growth of data continues

Despite current attenuation in the market,
demand for semiconductor is basically robust



Source: Applied Materials model based on forecasts published by Cisco, Intel, Western Digital

➤ Example: Expanding RF power portfolio from 2D to 3D NAND



Multiple patterning and 3D NAND high-volume manufacturing have significantly increased the number of deposition and etch processing steps.

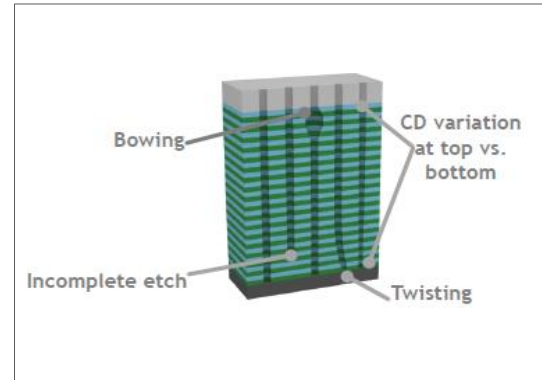
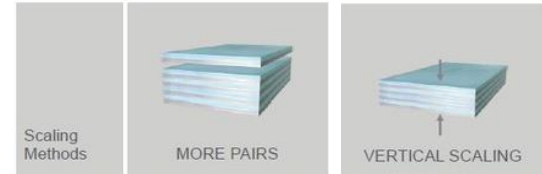
3D NAND: longer and more difficult etch processes are requiring a **wider range of power solutions.**

➤ **140 layer 3D NAND will become a reality by 2021**

➤ **Opportunity: Technology will spur the demand for tools**

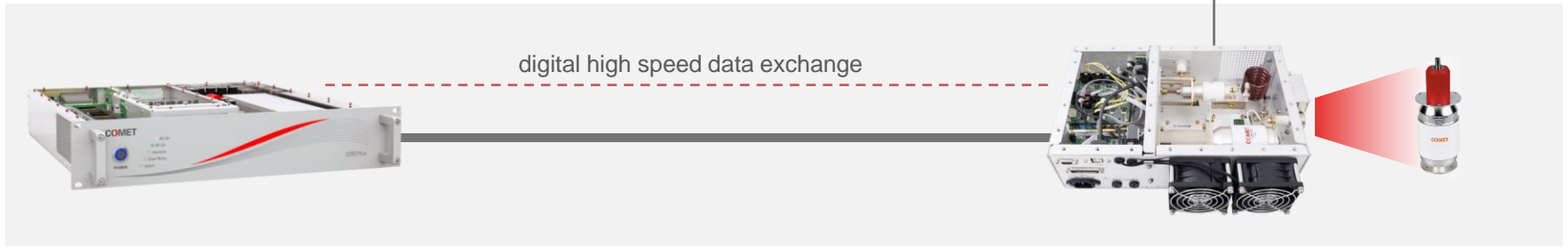
➤ **Challenges rise with number of layers**

	Layers	Pair Thickness (nm)
2015	32 / 36	~70
2016	48	~62
2017	64 / 72	~60
2018	>90	~55
2020	>120	~50
2021	>140	45-50



Source Graphics: Applied Materials / Lam Research

Interconnected RF unit to solve future challenges



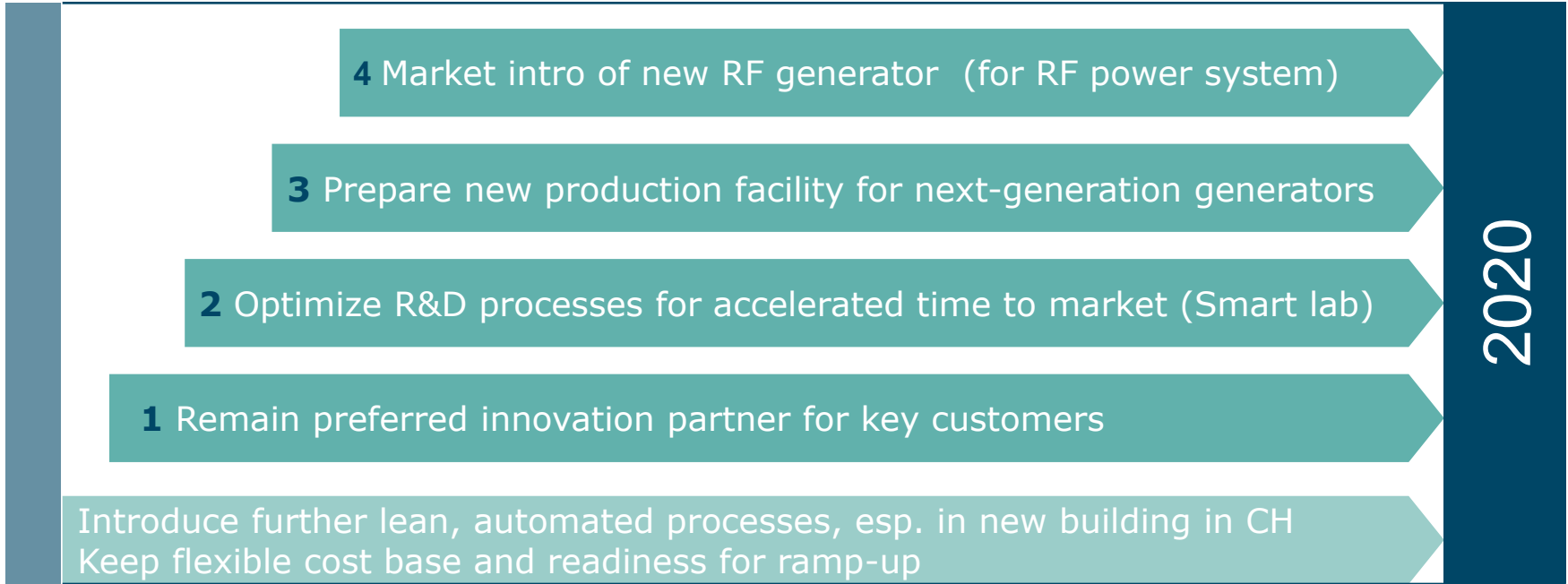
Future processes in SEMI will require:

- advanced RF control systems
- higher measurement accuracy
- increased repeatability

Integrated RF systems from COMET will offer:

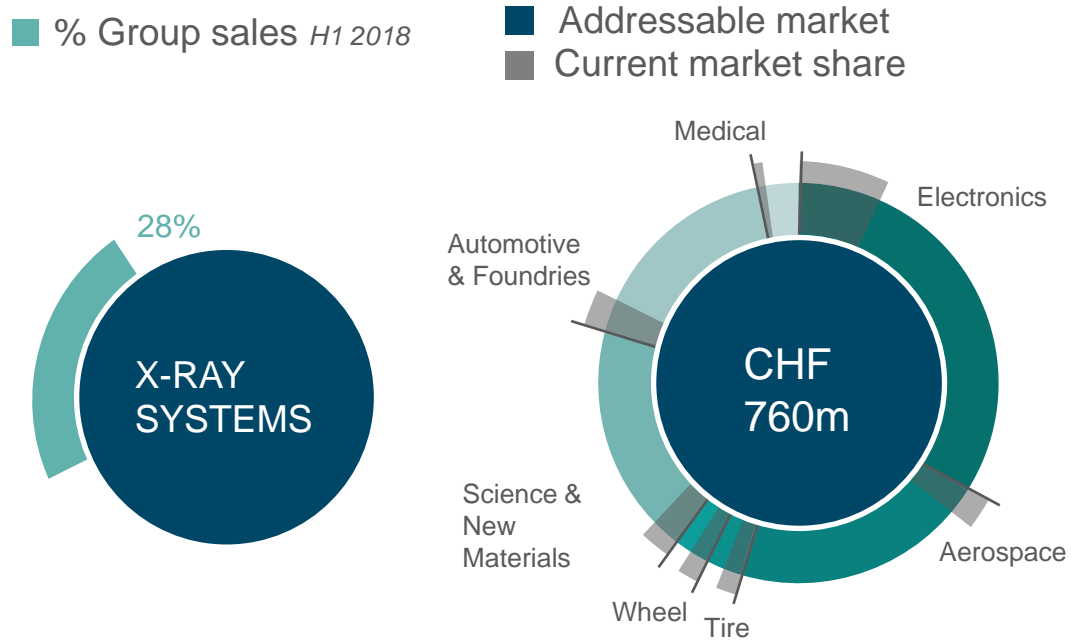
- Data driven process analysis and optimization
- New features for advanced RF plasma process control
- Flexible and quickly customizable RF solutions

PCT priorities to 2020



On-going business IXS: Exciting business with attractive potential

Position	One of the leading suppliers of industrial x-ray systems globally
Strengths	<ul style="list-style-type: none">✓ In-depth expertise in complex industrial applications✓ Best end data✓ Large global service and distribution network
Potential	⇒ Leverage x-ray as sensor with highest information density in combination with machine & deep learning to expand to new applications

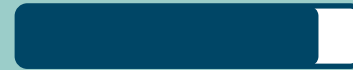


IXS profit improvement program on track, increasing agility and strengthening organization for growth from 2020 onwards

1. Reprioritization

Reprioritization and acceleration of projects to renew product portfolio

Status of implementation to achieve EBITDA margin of 6% in 2019



2. Workforce reduction

27 positions in Germany

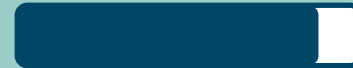
Contractors



3. Increase in efficiency

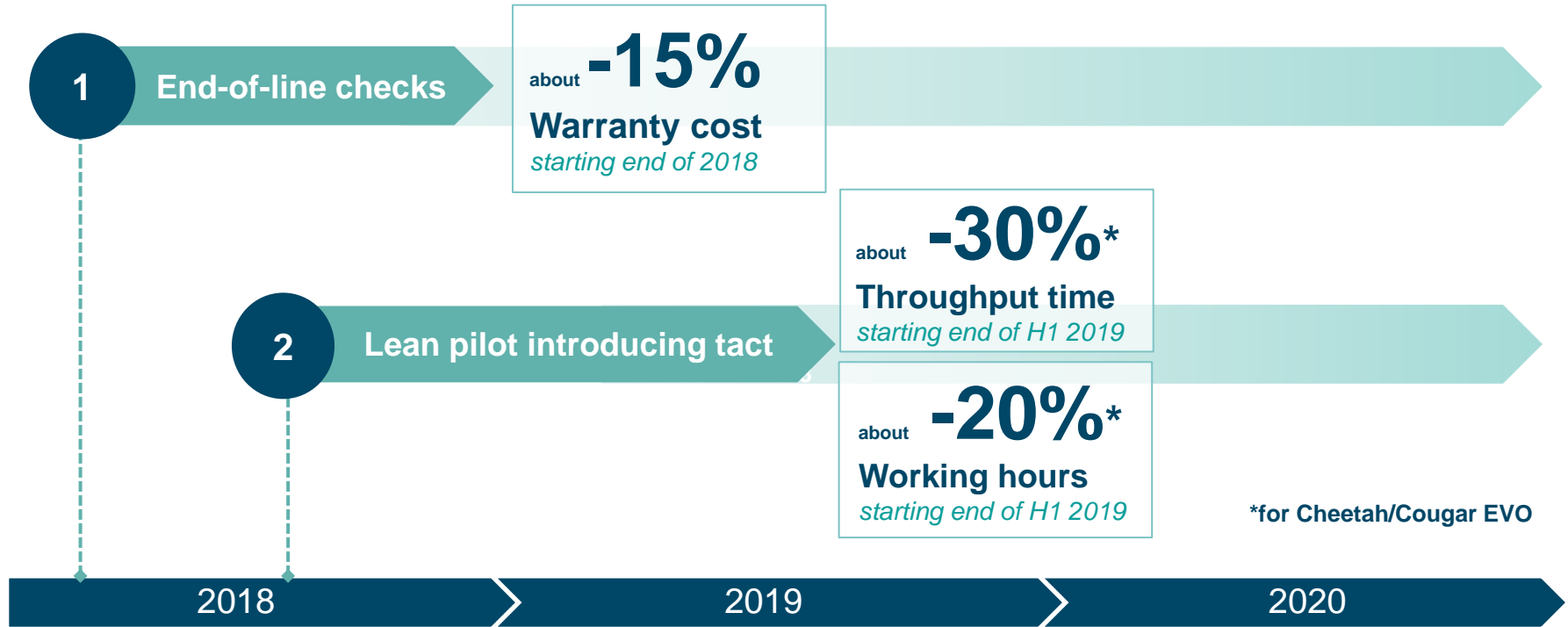
Optimized organization and adjustment of processes

Further saving in operations



} On-going mid-term program

Increase efficiency: Two examples of important groundwork done to strengthen operations and speed up time to market



*for Cheetah/Cougar EVO

Portfolio renewal on track, first positive effects, focused pipeline

+80% oI
compared to 2017

+2
Global Technology
Awards

+10% oI
vs. old systems

First
orders

4
new releases
for Industry 4.0
scheduled for
2019

Substantial
additional new
orders from 2020
onwards

2018

2019

2020



FF 20/35 CT



Cheetah / Cougar
EVO



WI26G



Example: Digitalization, Big Data and Data Science push for extension of competencies in software

DATA IS THE NEW OIL
AND INTELLIGENT INFORMATION
IS THE NEW CURRENCY



Extract



Refine



Monetize



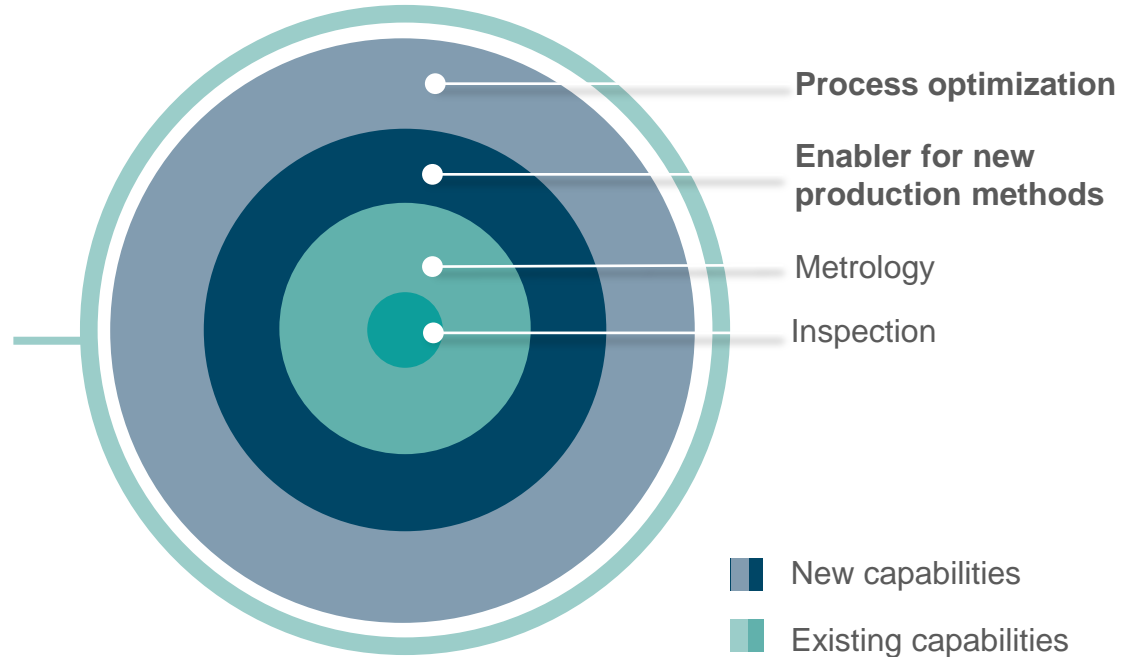
Hardware
(Sensor)



Software
(Intelligent data)

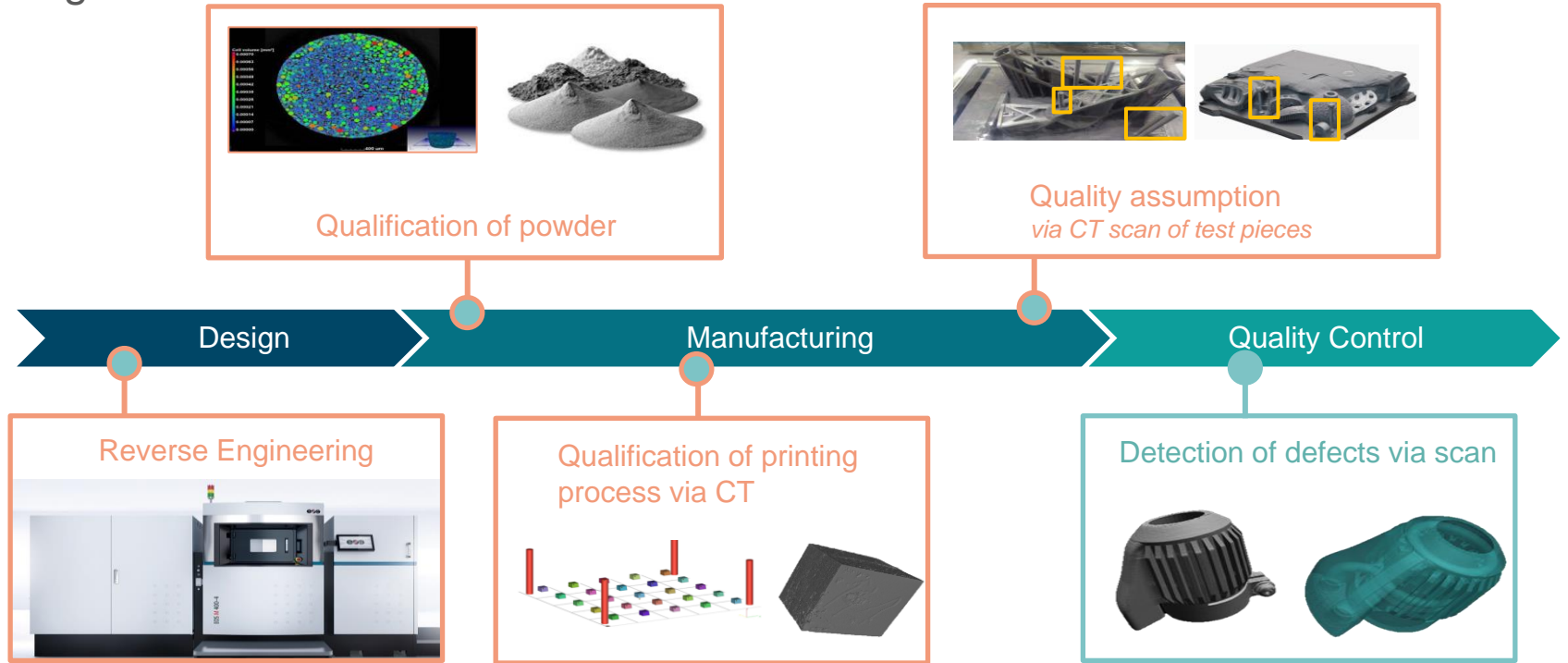
Creating value from data analysis will allow IXS to expand its business in future

IXS | System Business



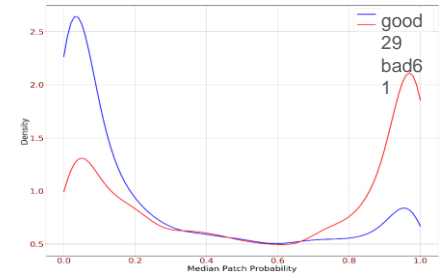
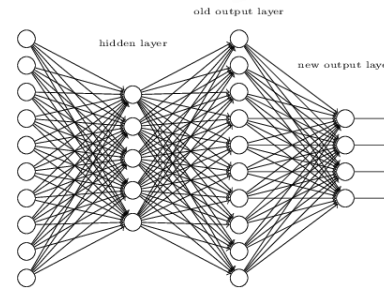
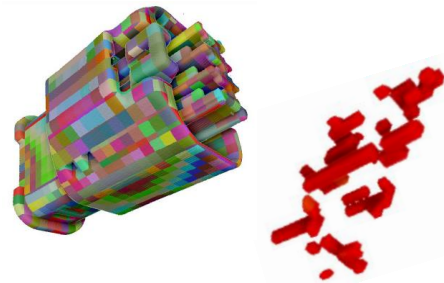
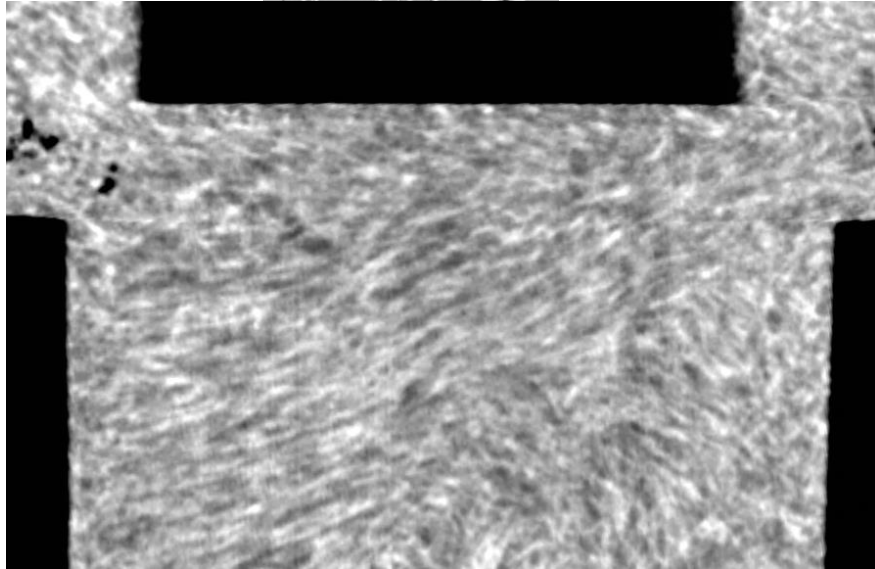
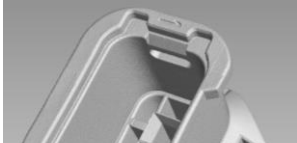
IXS: Enabler for new production methods

Additive Manufacturing: Support along the process chain → CT enables 3D printing



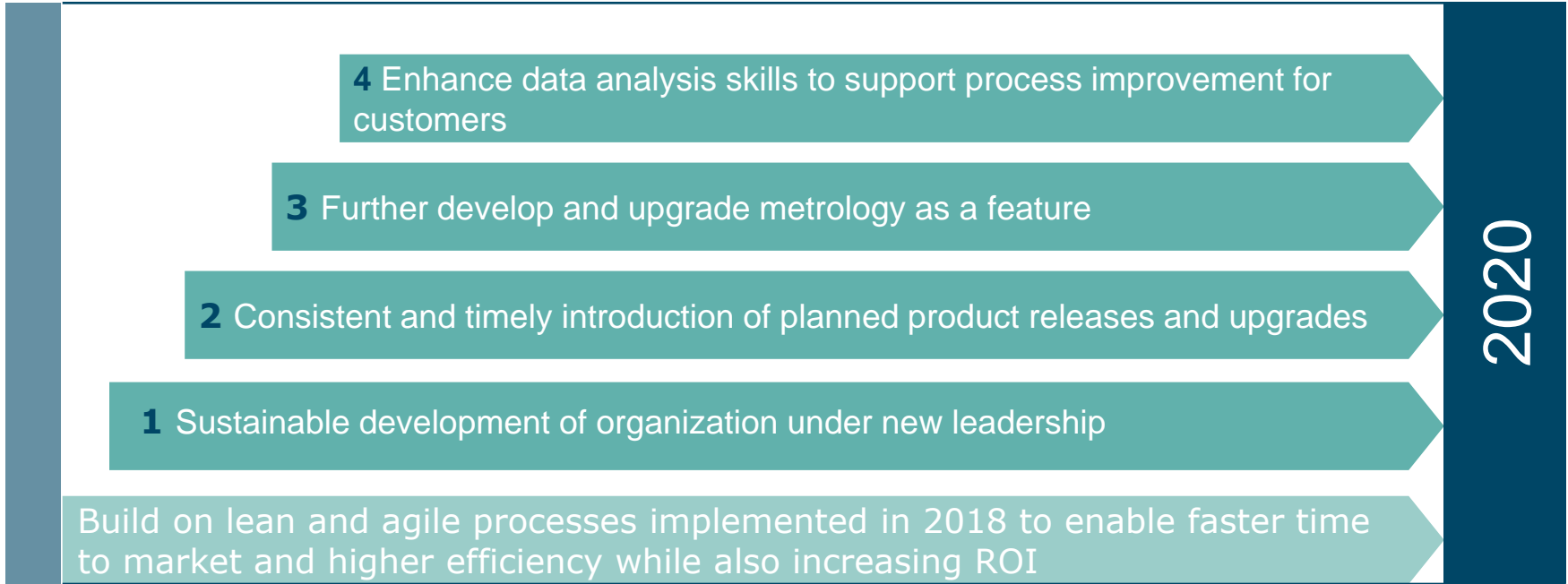
Optimizing customers' processes

Prediction of production process behavior: Artificial intelligence prevents defective parts before production



Trend pattern analysis

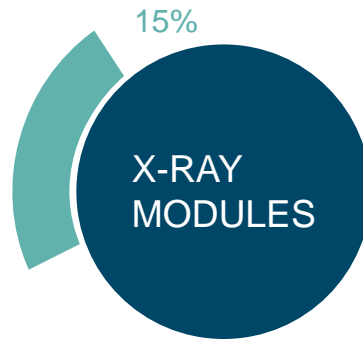
IXS priorities 2020



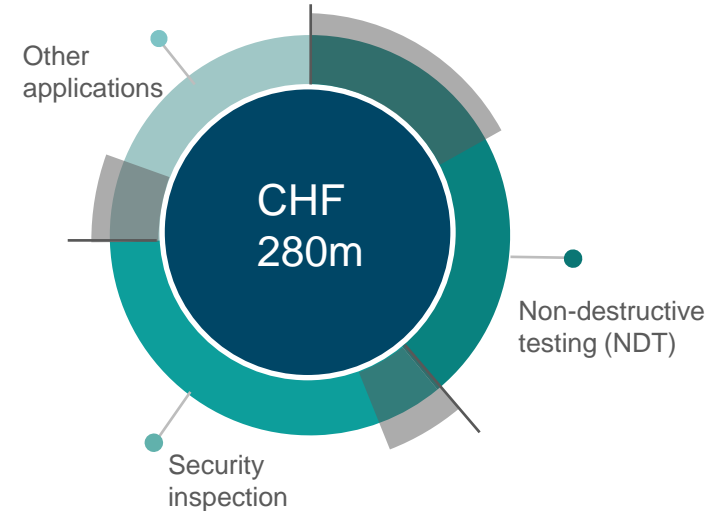
On-going business IXM: Well-positioned for continued growth, advancing business under new management since January 2018

Position	Clear market leader in non-destructive testing and security with tubes
Strengths	<ul style="list-style-type: none">✓ Superior industrial metal-ceramic X-ray tubes✓ In-depth, unique process know-how and ability to deliver tailor-made solutions to OEM customers✓ Deep understanding of OEM needs, thanks to IXS business
Potential	⇒ Expand into adjacent markets based on product portfolio expansion

■ % Group sales H1 2018

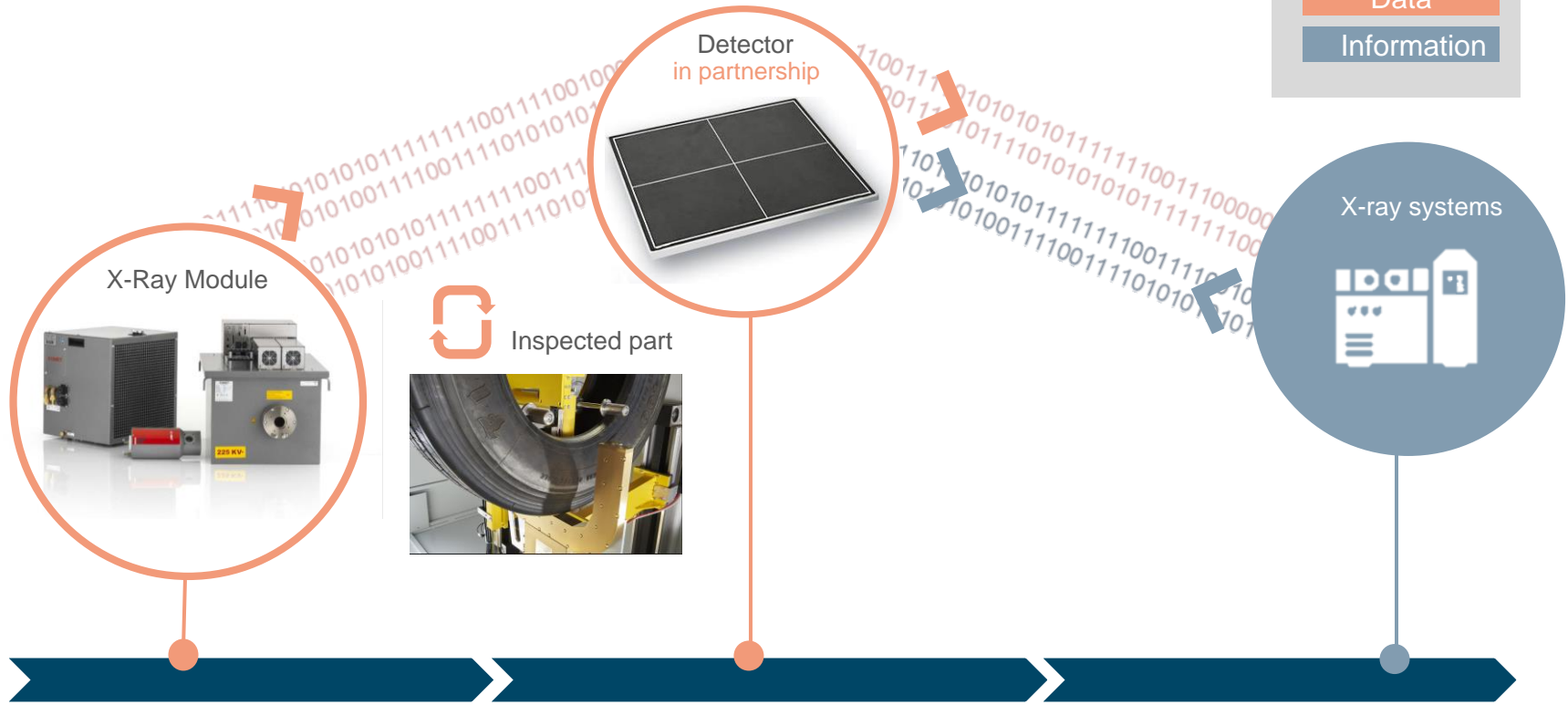


■ Addressable market (modules)
■ Current market share

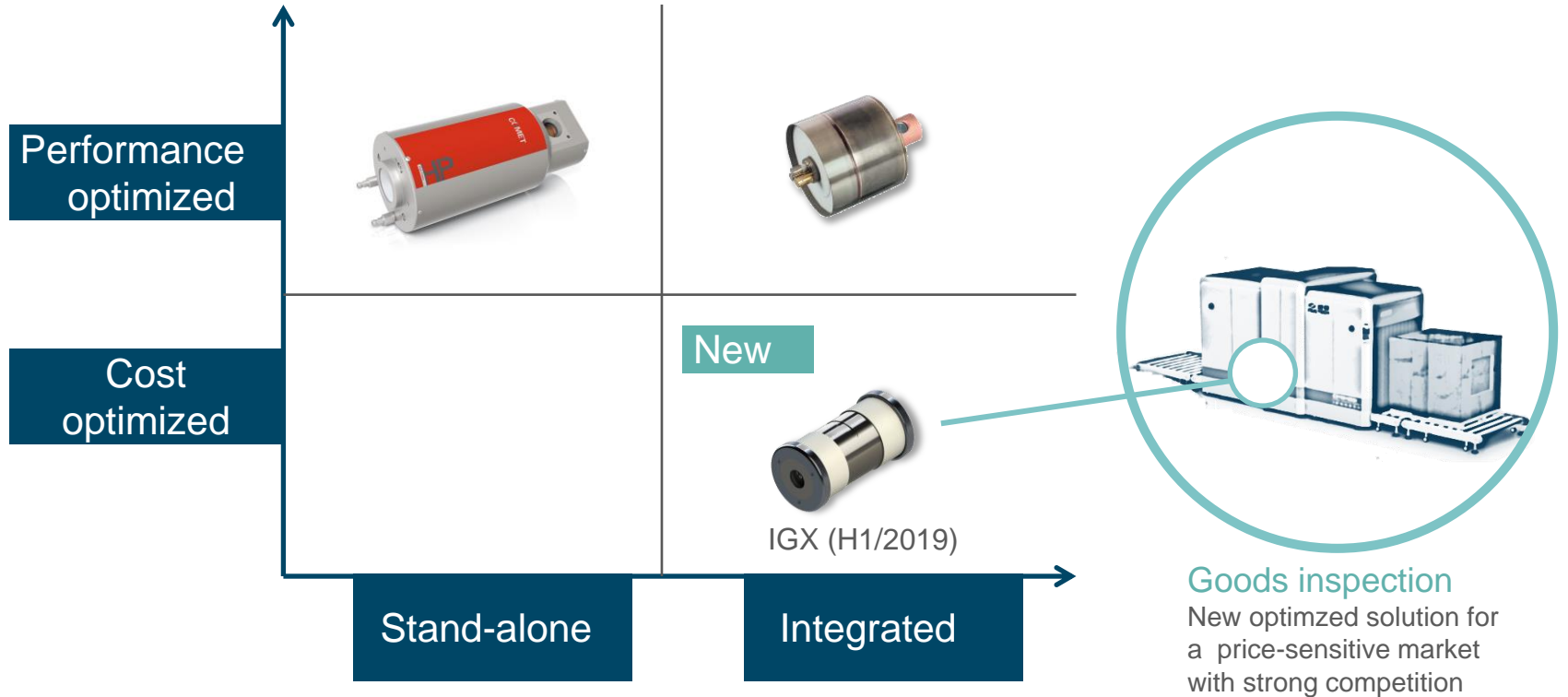


Source: Comet

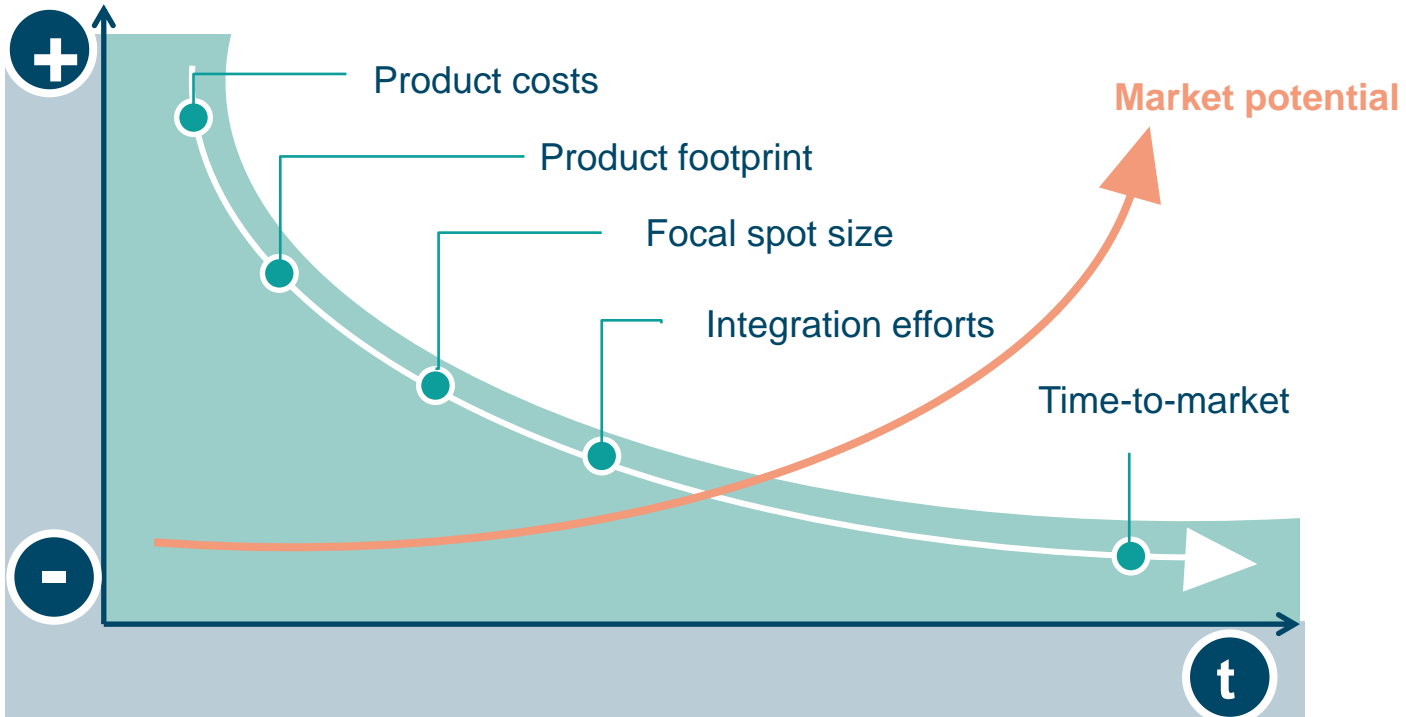
Opportunities by exploring the x-ray data chain



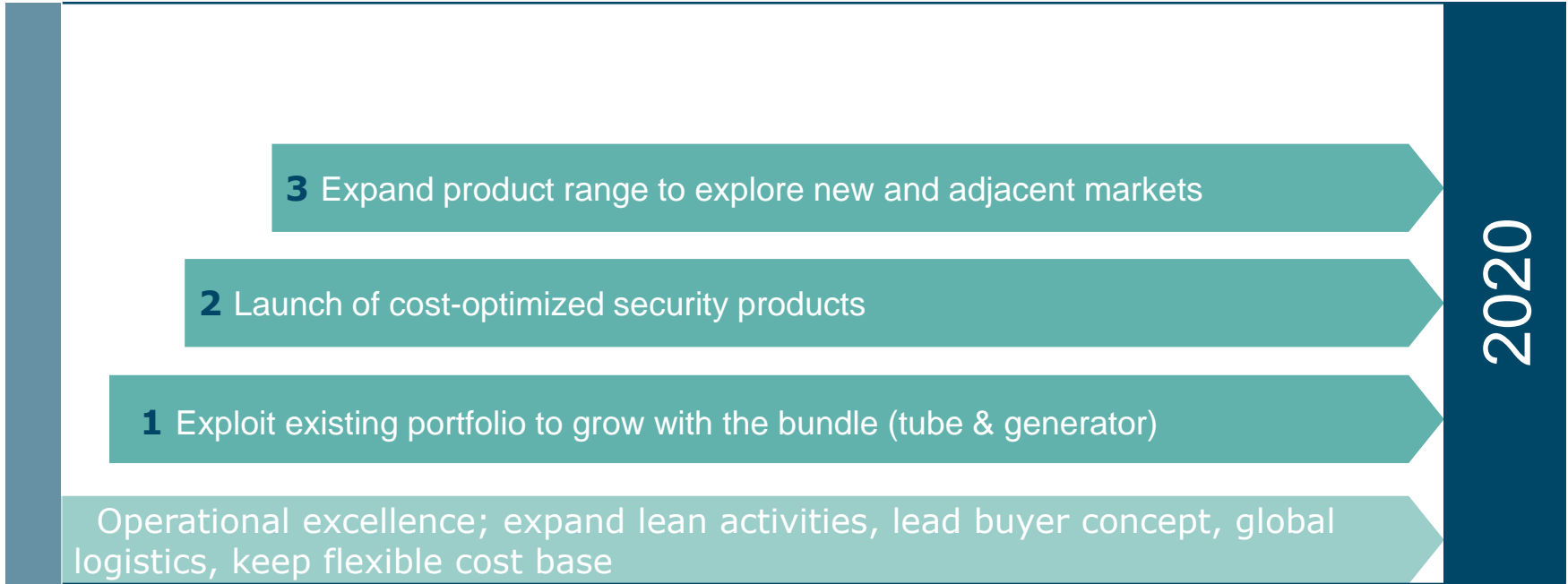
The perfect x-ray tube portfolio for security applications



Our success formula for the Future – “Less is More”

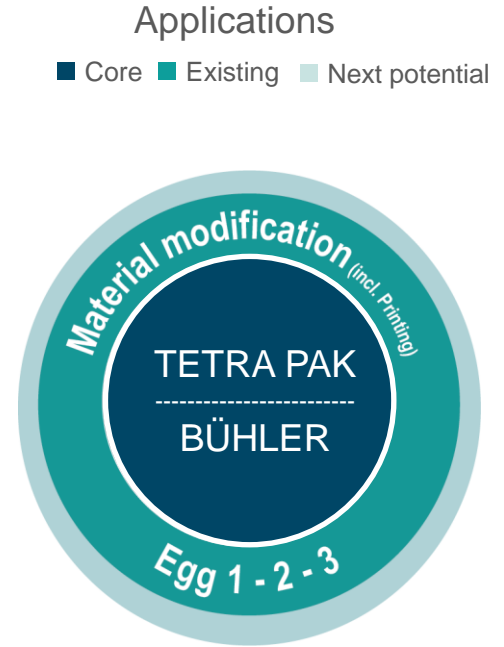
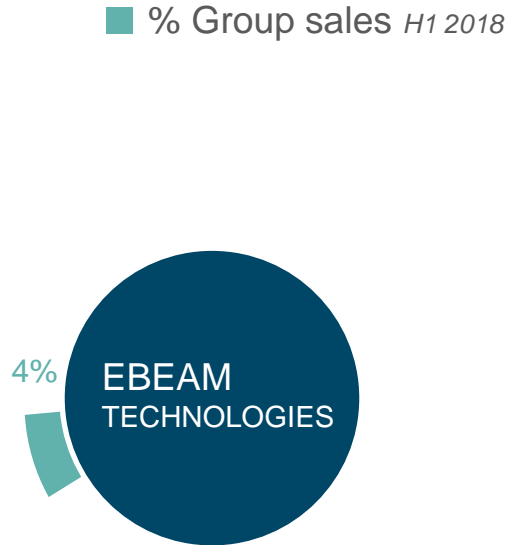


IXM priorities to 2020



Realigned EBT business: Start-up business based on strong strategic customers and attractive further long-term potential

Position	Future-oriented technology based on solid know-how
Strengths	<ul style="list-style-type: none">✓ Only supplier of compact sealed lamp to be integrated✓ In-depth expertise in complex industrial applications✓ Energy-efficient and resource-saving, allowing more sustainable processes for its partners
Potential	⇒ Implement new cost-optimized operating model, expand to next applications identifying strong global partners (e.g. Egg).



EBT: New model with focus on promising ebeam engines



Addressing OEMs and end customers

Development of completely new markets

Sizeable advance investments for developing new applications

Systems and engines

Addressing OEMs only

Scaling of existing market access, know-how and products into adjacent applications

Risk-adjusted, sustainable financing

Focus on strong, promising engine portfolio

Strong collaboration with partners

Reducing losses

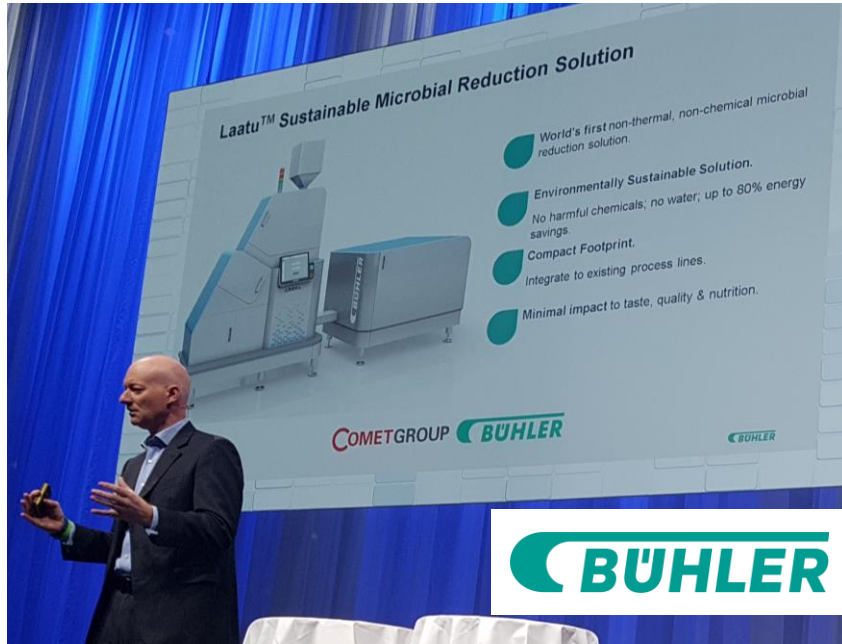


New Focus

EBT
ebeam Engines
produced in Flamatt



Strong partners: Bühler - Laatu™, sustainable microbial reduction on dry food using ebeam technology

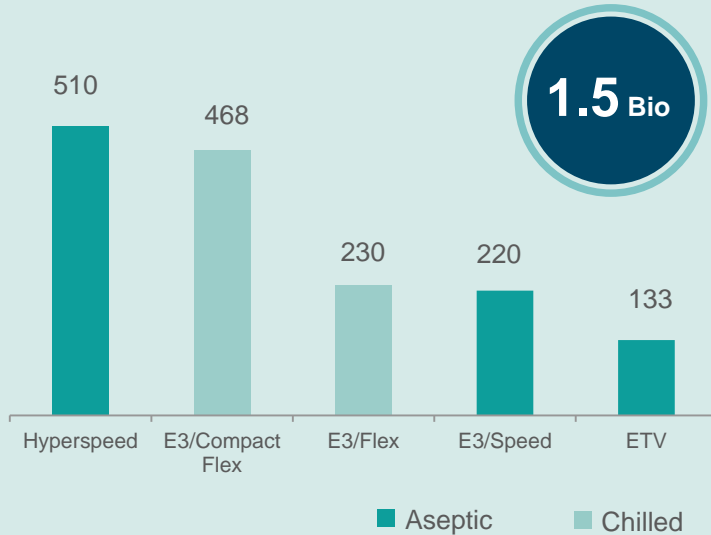


What makes Laatu™ stand apart?

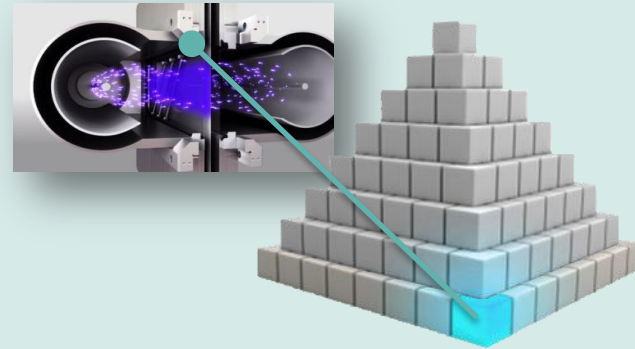
- World's first non-thermal, non-chemical microbial reduction solution
- Preserves food quality better than any other technology
- Environmentally friendly
- Affordable

Source: Bühler

Commercial liquid food packages produced with ebeam technology



Cornerstone for the future equipment platform



New promising case: Egg shell sanitation with first positive results

Field tests with Bell Food Group

- ✓ Very high bioburden reduction (4-5Log)
- ✓ Spore inactivation (4Log)
- ✓ Indication of lower embryo mortality
- ✓ Indication of improved hatching success
- ✓ Slight indication of improved body weight gain

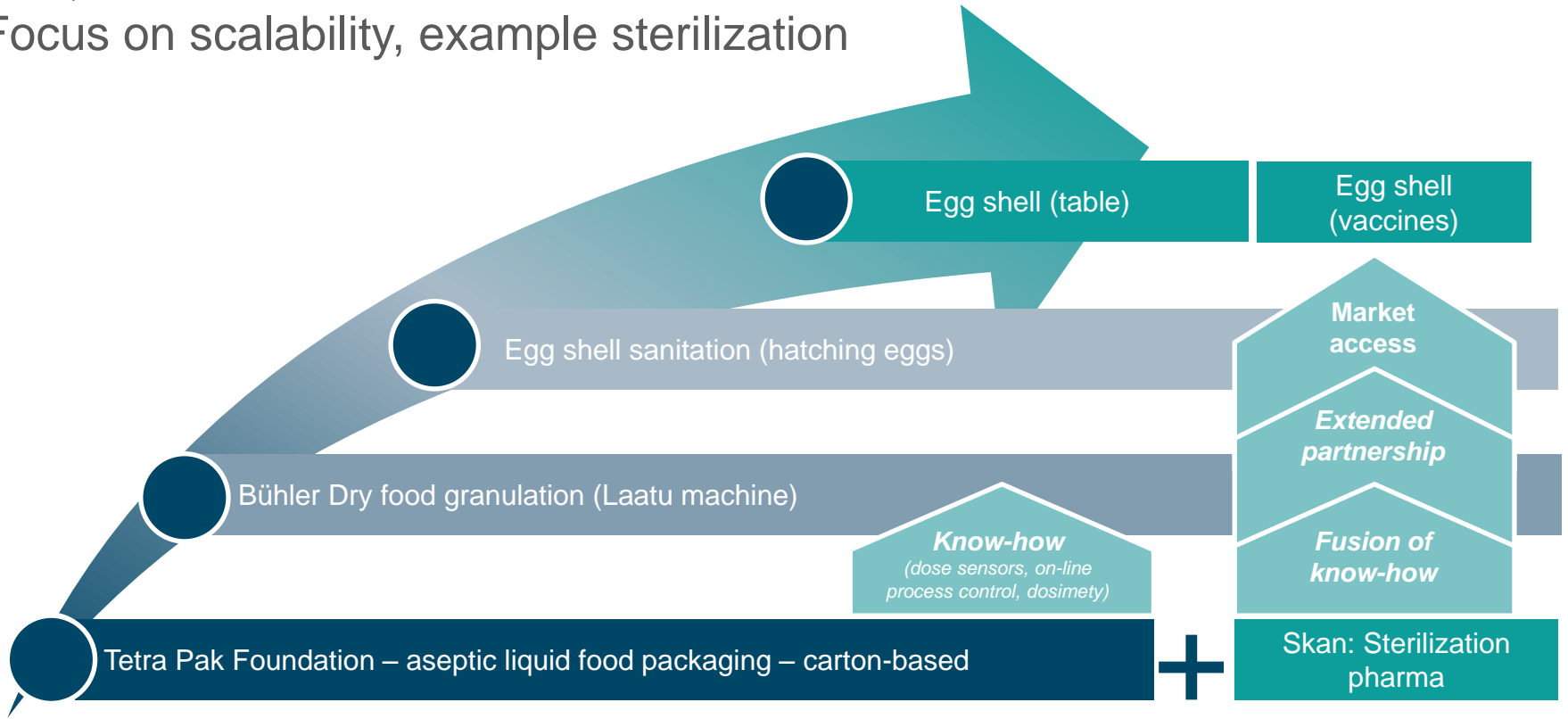


Next steps

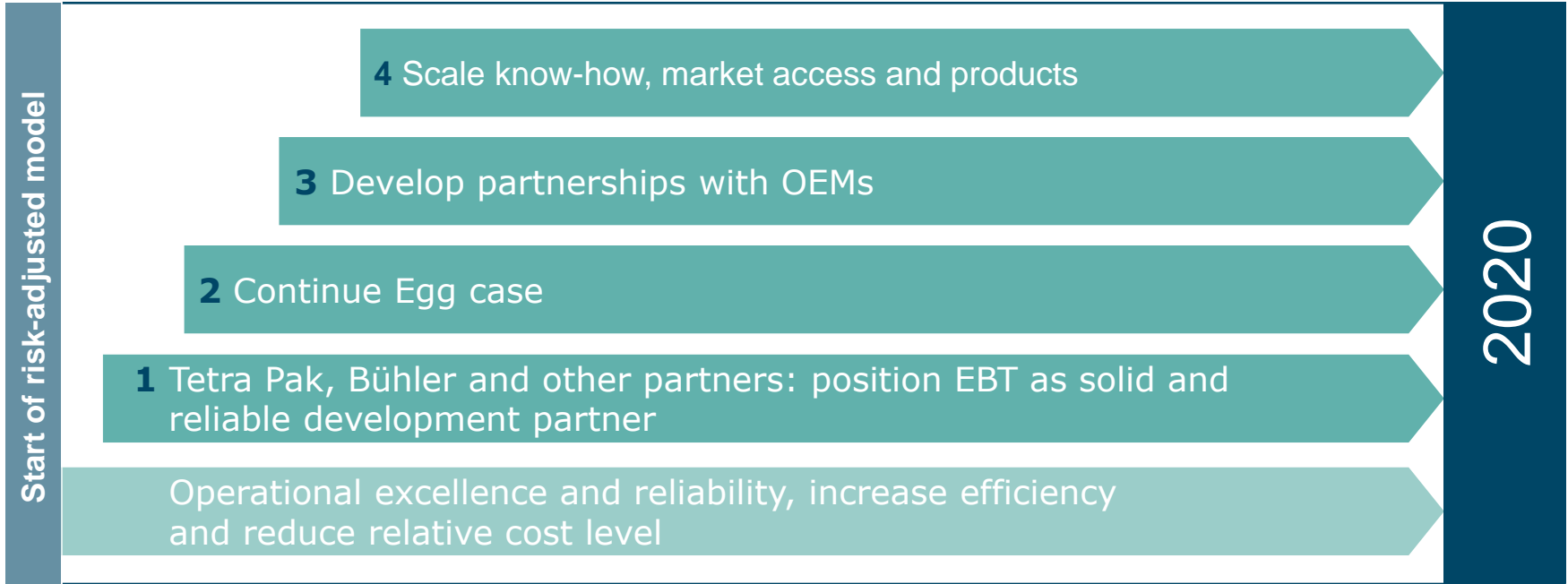
- Further tests with other partners in preparation
- Choosing OEM for manufacturing and engineering
- Use high interest of end customers to engage in closer collaboration



Focus on scalability, example sterilization



EBT priorities to 2020



Summary and Outlook



Summary

Strong base; right priorities to 2020



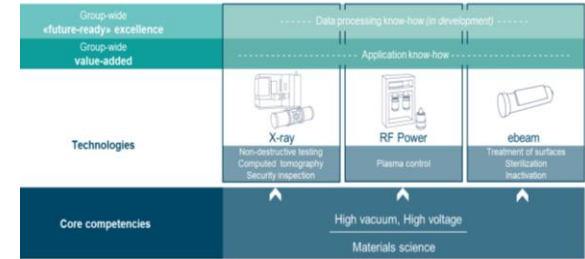
Strong base of shared core competencies



Strategy 2020 on track;
actions taken to address challenges

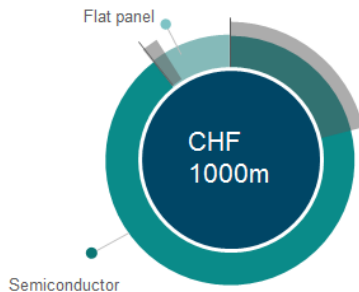
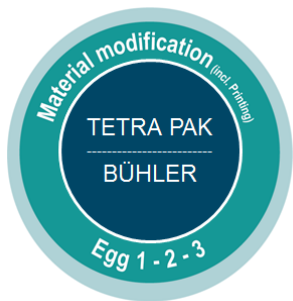


Clear priorities to deliver to deliver on 2020
strategy for each division

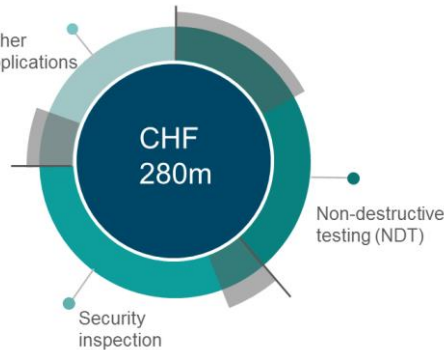


Summary

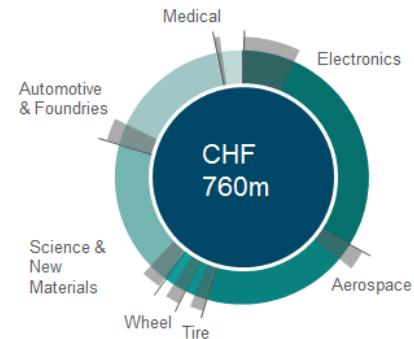
Comet group well positioned to address attractive market potential



COMET



COMET



YXLON

EBT

■ Core/ existing applications ■ Future potential

PCT / IXM / IXS

■ Addressable market ■ Current market share

Outlook

2018

Net sales between 430 to 440 and an EBITDA margin between 7 and 9%

2019 and 2020

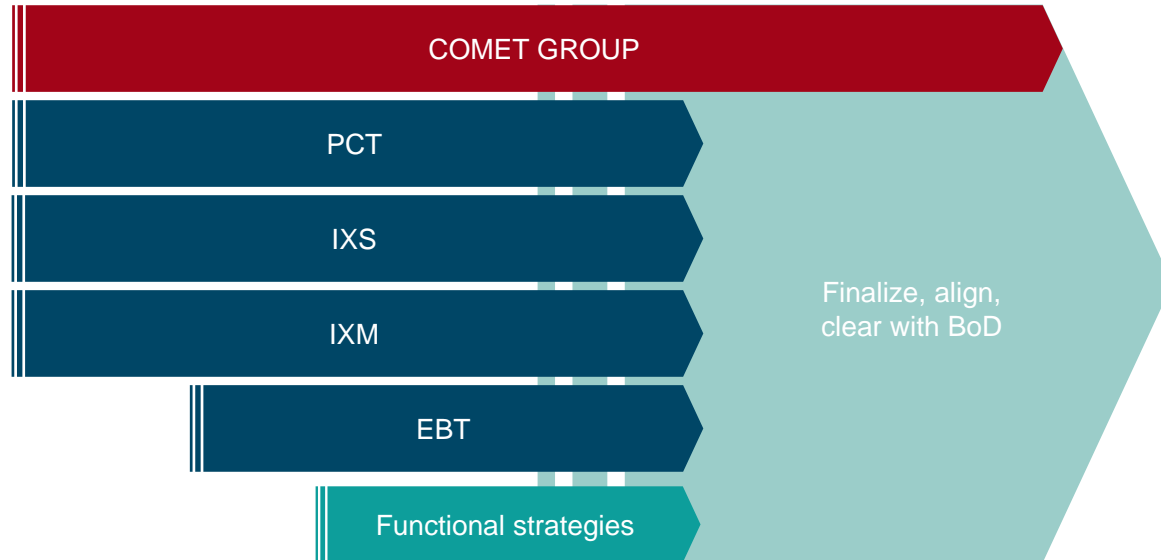
For 2019 and 2020 the Comet Group is not publishing revenue and EBITDA targets, in view of

- the geopolitical uncertainty
- the lack of visibility especially in the semiconductor market
- the structural changes in the ebeam business

Comet Group enters fiscal year 2019 on a more robust base

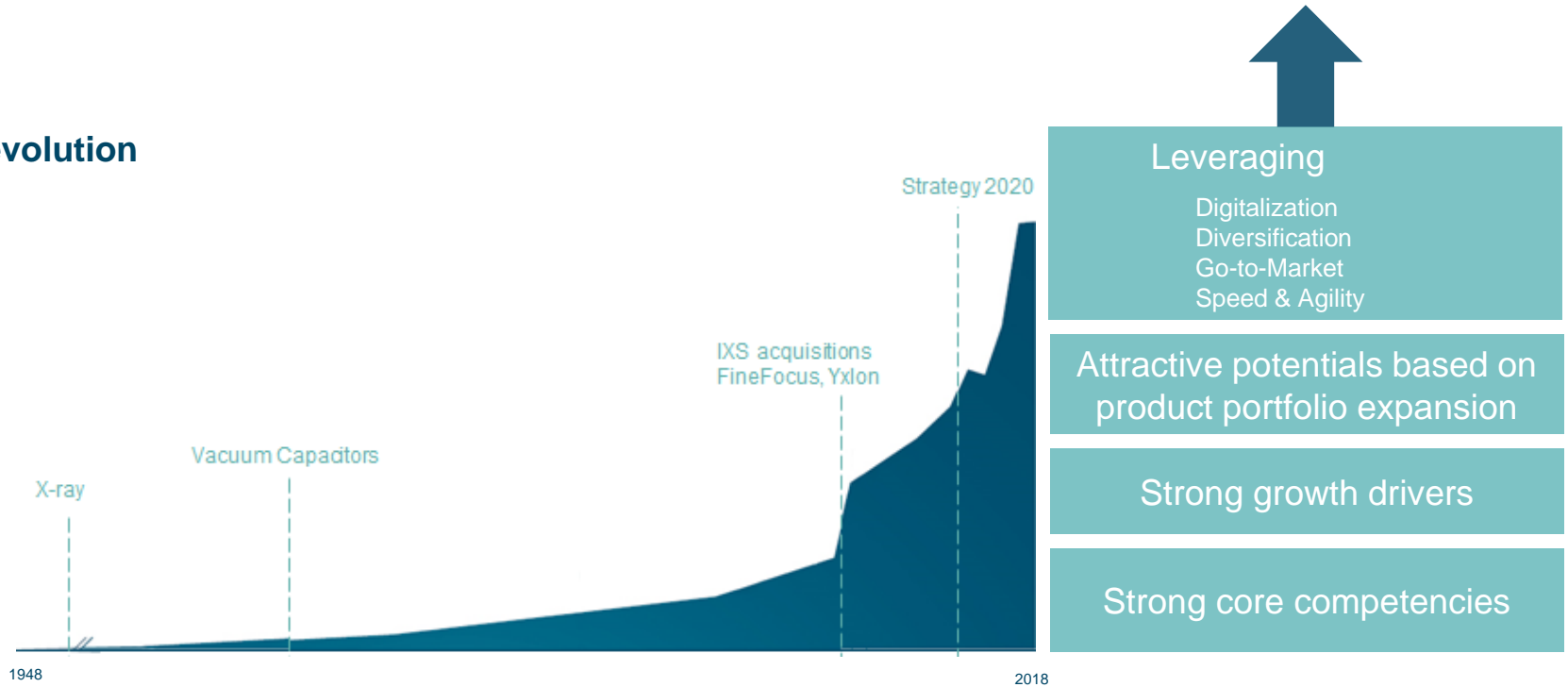
Strategy process

Within the usual process in regard to the next period, Comet is working on the longer-term strategy both at the Group level and at the divisions level, both linking closely



Create value-added to 2020 and beyond

Sales evolution





Thank you for your interest.