



### THE DAWN OF THE RESOURCE REVOLUTION

### THE CHALLENGE:

THE OPPORTUNITY:

3 billion more middle-class

consumers expected to be in the

global economy by 2030

Up to \$1.1 trillion spent annually on resource subsidies

\$2.9 trillion of savings in

2030 from capturing the resource productivity potential

At least \$1 trillion

more investment in the resource system needed each year to meet future resource demands







RESOURCE PRODUCTIVITY MUST INCREASE TO ENSURE SUSTAINABLE DEVELOPMENT



TOMRA creates sensor-based solutions for optimal resource productivity





# LEADING THE RESOURCE REVOLUTION



# FROM PURPOSE INTO PROFITS AND PROFITS INTO PROGRESS, TOMRA IS **TRANSFORMING** WHAT IT MEANS TO BE RESOURCEFUL.

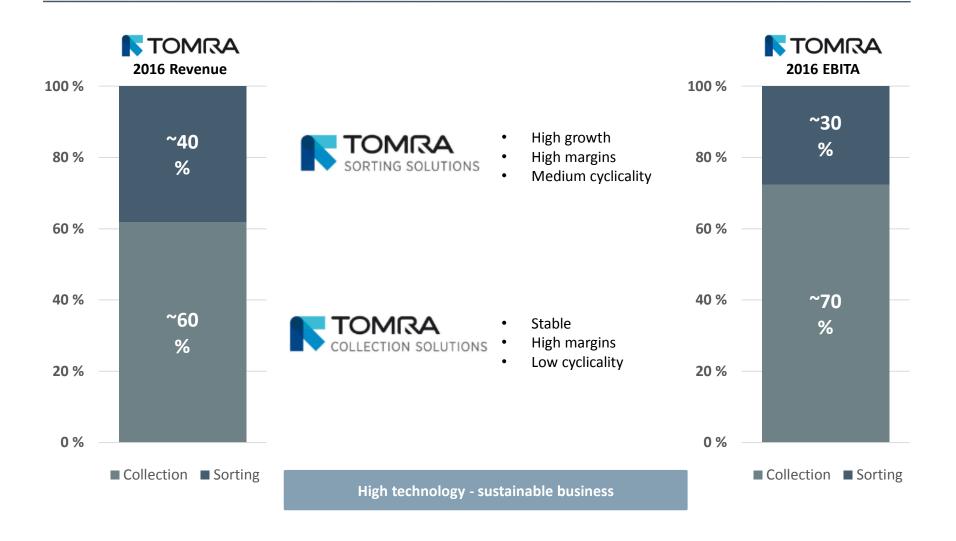


- Our solutions, in use around the globe, helped keep ~25 millions of tons of CO<sub>2</sub> from being released into the atmosphere in 2016
- ~35 bn used beverage containers are captured every year through our reverse vending machines
- Our steam peelers process ~15
  million tons of potatoes per year
  with a 1% yield improvement
  over other alternatives

 ~715,000 tons of metal are recovered every year by our metalrecycling machines

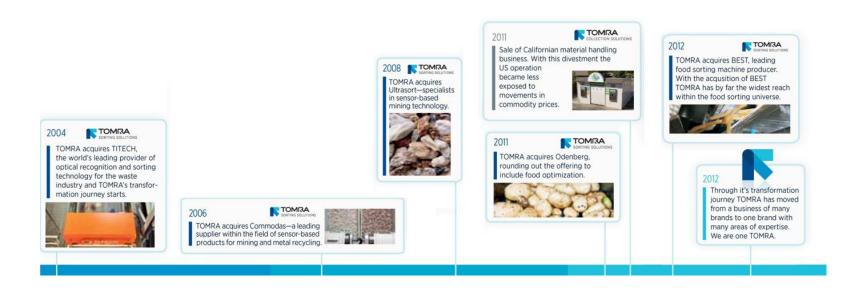


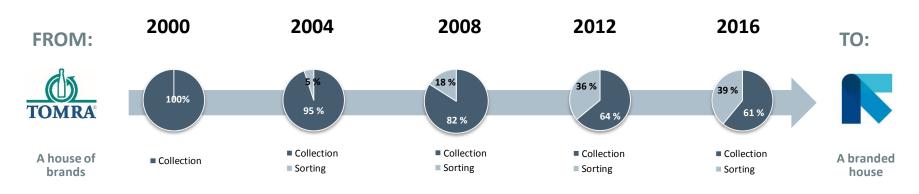
# CREATING VALUE THROUGH TWO STRONG BUSINESS AREAS\*





### THE TOMRA TRANSFORMATION JOURNEY







### TOMRA WORLDWIDE



### TOMRA'S TWO BUSINESS AREAS



FOOD\*

Share of '15 sales ~25%

Employees 580

Customers Food growers, packers and processors

Market share ~25%

**RECYCLING** 

Share of '15 sales ~12%

Employees 175

Customers Material recovery facilities, scrap dealers, metal shredder operators

Market share ~55-65%

MINING

Share of '15 sales ~

~3%

Employees

60

Customers

Mining companies

Market share

~40-60%

**TOMRA SORTING GROUP FUNCTIONS & SHARED STAFF** 

**Employees** 

140



#### **REVERSE VENDING**

~45%

1,310

**Grocery retailers** 

~75%

#### **MATERIAL RECOVERY**

~15%

500

Grocery retailers and beverage manufacturers

~60% in USA (markets served)





### TOMRA INSTALLED BASE







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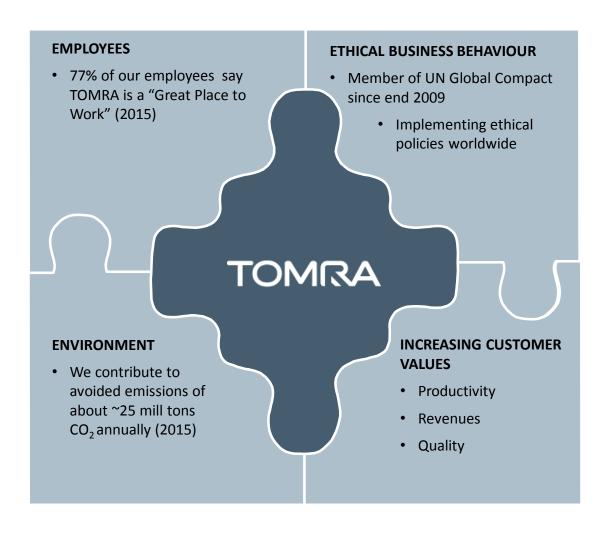
REVERSE VENDING			
Nordic	~15,300		
Germany	~29,500		
Other Europe	~14,200		
North America	~15,900		
Rest of the world	~3,500		
TOTAL	~78,400		

RECYCI	ING	MINING	3	FOO	D*
EMEA Americas Asia Other	~3,500 ~700 ~600 ~20	Europe US / Canada Australia South Africa Other	~10 ~30 ~5 ~25 ~30	EMEA Americas Asia	~2,900 ~2,700 ~600
TOTAL	~4,820	TOTAL	~100	TOTAL	~6,200

Not including machines sold on OEM agreements. 2016 recount of TSS portfolio



### USING THE POWER OF BUSINESS TO DO GOOD







# **TOMRA Collection Solutions**









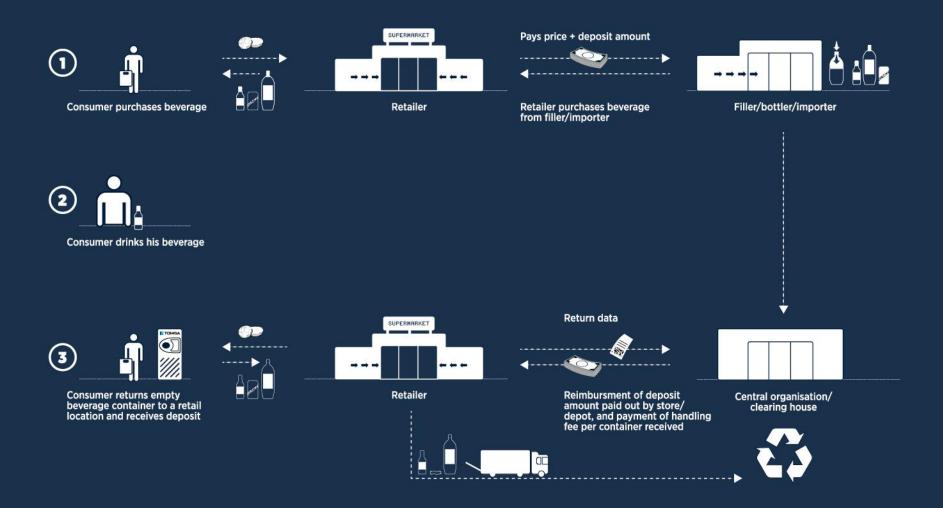


### **REVERSE VENDING ADVANTAGES**





# RECYCLING OF BEVERAGE PACKAGING IN A DEPOSIT SYSTEM

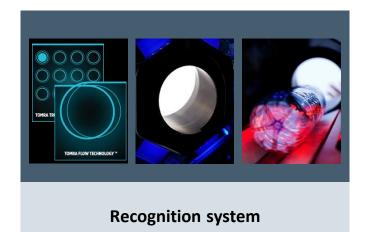


### **ELEMENTS OF A MODERN REVERSE VENDING SYSTEM**













# THE USED BEVERAGE CONTAINER RECYCLING VALUE CHAIN

### Generic used beverage container (UBC) recycling value chain



### **RVM-based UBC recycling value chain**



### T-9: THE FIRST OF A NEW GENERATION OF MACHINES

- In fourth quarter 2013, TOMRA presented the first machine of the new generation of machines to come
- T-9 features the first 360 degree recognition system applied in an RVM and a completely new industrial design
- The machine is faster, cleaner and takes all types of beverage containers
- The launch has been successful.
  - Several machines already installed in core markets
  - Key product for replacement sale in e.g. Germany
- 2014 installations: ~1,200 machines
- 2015 installations: ~4,000 machines
- 2016 installations: ~4.600 machines

TOMRA is setting the standard for reverse vending for the next decade







# A COMPLETE TRANSFORMATION OF THE PRODUCT PORTFOLIO IN PROGRESS

#### 2012 Portfolio

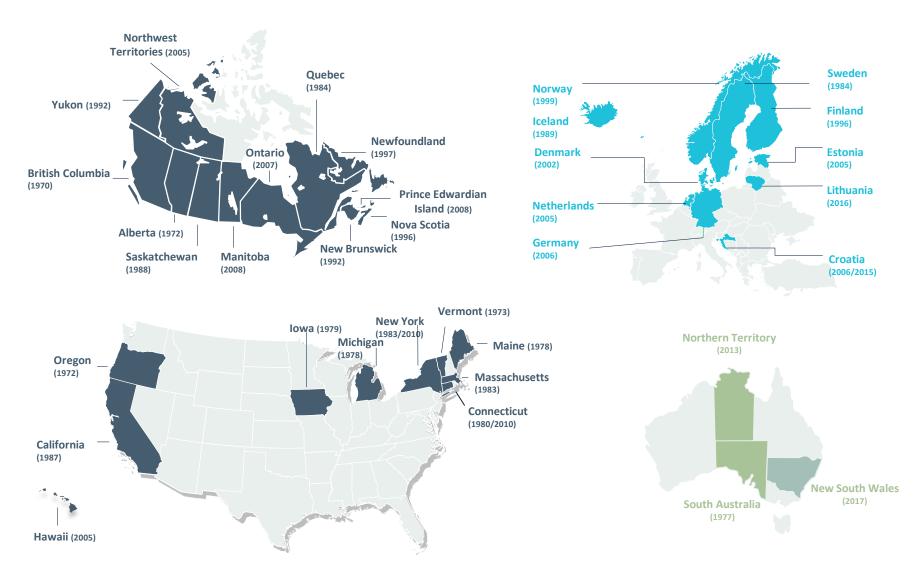


### 2017 Portfolio





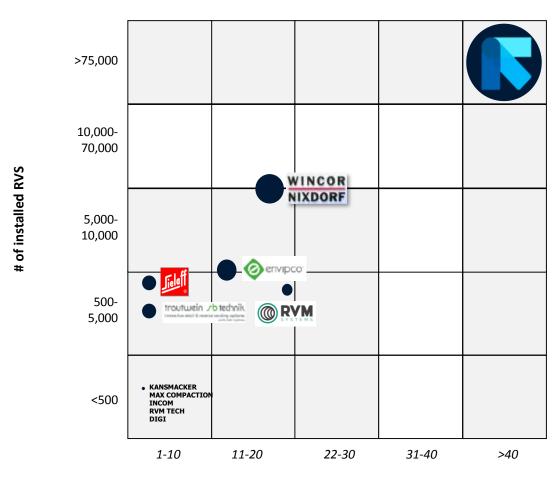
### **CURRENT DEPOSIT MARKETS**



In addition, Tomra has some activity in markets with refillable deposit systems like: Austria, Belgium, Chile, Czech Republic, France, Hungary, Poland and South Korea.



### **COMPETITIVE LANDSCAPE\***



**Number of RVS markets** 

Annual revenue from RVS sales

Source: TOMRA estimates and analysis \* Estimates



### RVM: OUR STRATEGY 2013 -2018

- Defend and nurture core deposit market business
- Increase differentiation towards competition
- Further reduce the cost of reverse vending systems

- Ensure continued relevance of deposit systems
- Increase scope of existing deposit markets
- Assist in developing new deposit markets

- Embrace new business models
- Capture new volume by entering new segments
- Create new revenue streams from Software/IT

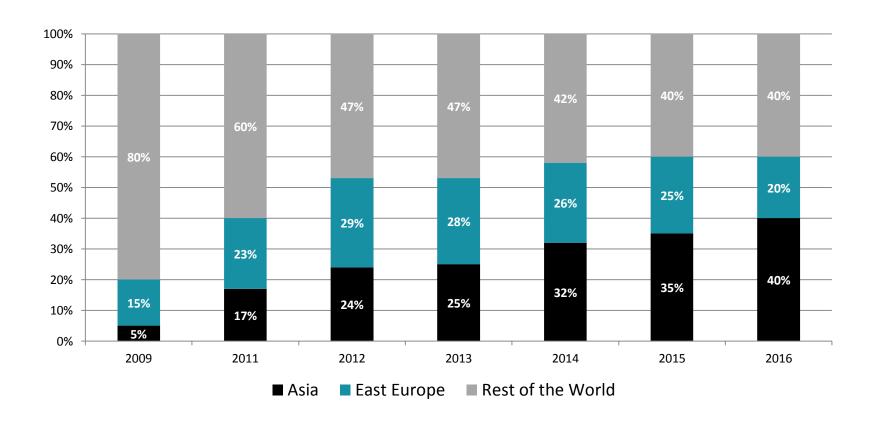
- 4 Expand scope of business
- Target new material streams



# A NEW SOURCING SETUP IS THE MAIN DRIVER FOR ACHIEVED COGS SAVINGS

### **COGS** stribution by region (sourcing)

Percent of total

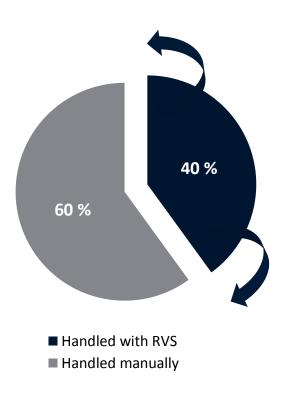


Source: TOMRA analysis

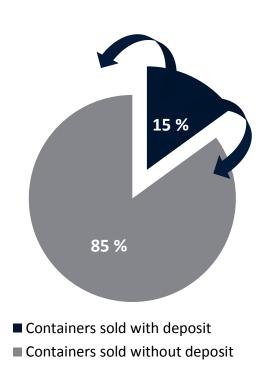


# ENSURE CONTINUED RELEVANCE OF AUTOMATED DEPOSIT SYSTEMS

# Handling method for deposit containers Percent of total



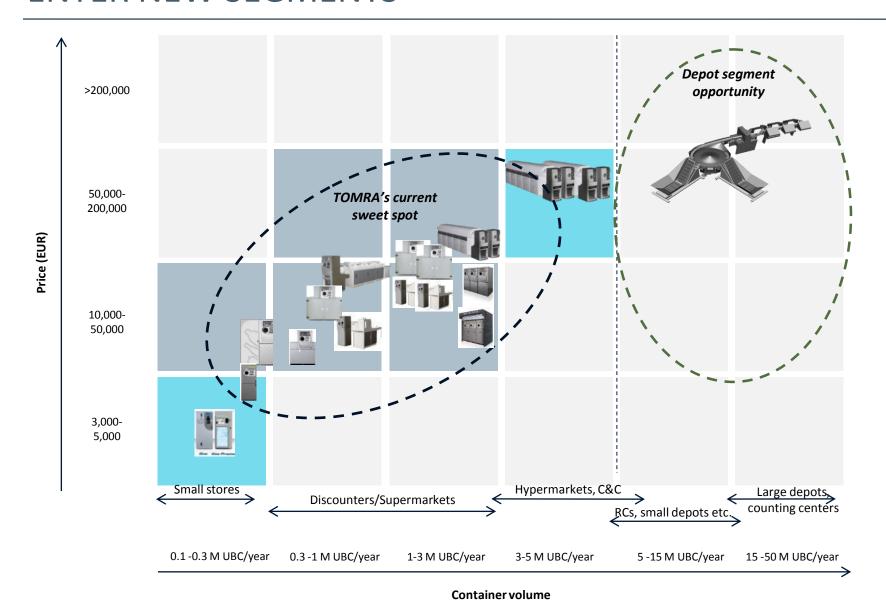
# Share of containers sold with deposit Percent of total



Source: TOMRA analysis



### **ENTER NEW SEGMENTS**





## CREATE NEW REVENUE STREAMS FROM SW/IT

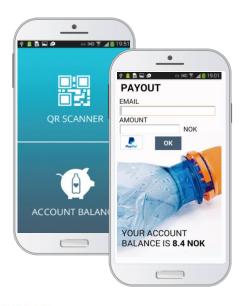
#### **TOMRAPlus**

#### **TOMRA ReAct/PANTO**









**IN-STORE MARKETING** 



Transform reverse vending machines into customer dialogue tools.

#### RECEIPT CONTROL



Validate and devaluate deposit refund receipts in real-time through POS.

#### RVM INSIGHT & ANALYSIS



Operational metrics, performance monitoring, fleet management, business intelligence and analysis.

#### CONSUMER ENGAGEMENT

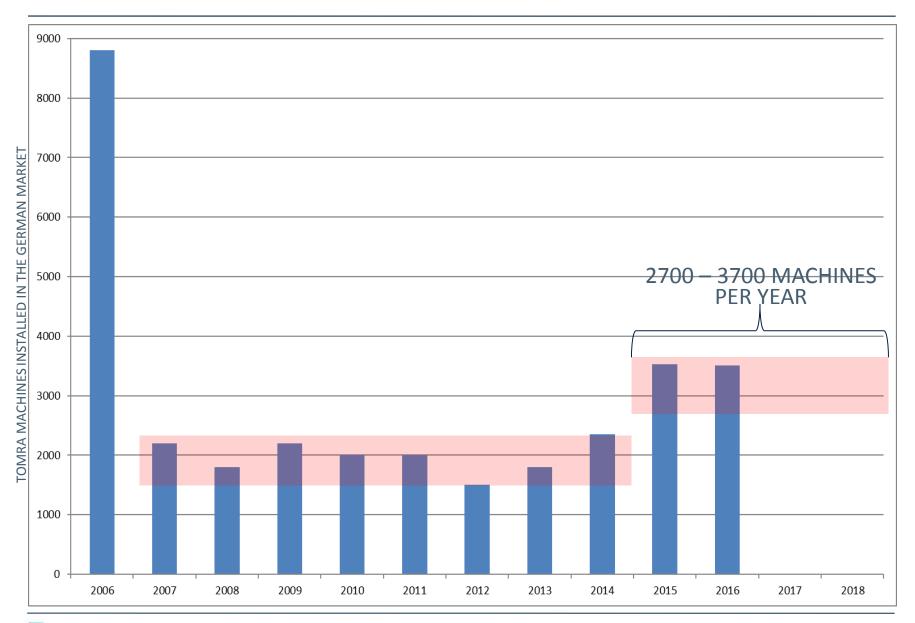


Innovative solutions for customer loyalty and engagement with customer identification.

Integrating hardware and software into attractive and engaging combos



### **GERMANY REPLACEMENT UPDATE**



### POTENTIAL NEW DEPOSIT MARKETS





# COLLECTION SOLUTIONS – FINANCIAL DASHBOARD

Material Material **RVM RVM** Recovery Recovery **Industry growth Market share** 0-3% 75% 0-10% 60% Geographical diversity Recurring revenue ~75% 90-100% 20-30 markets 10 markets Profitability (ROCE)\* Cyclicality 30-40% ~15% Low Low

#### **TARGETS 2013 -2018**

Yearly growth 4 – 8%

EBITA-margin 18% - 23%



# **TOMRA Sorting Solutions**





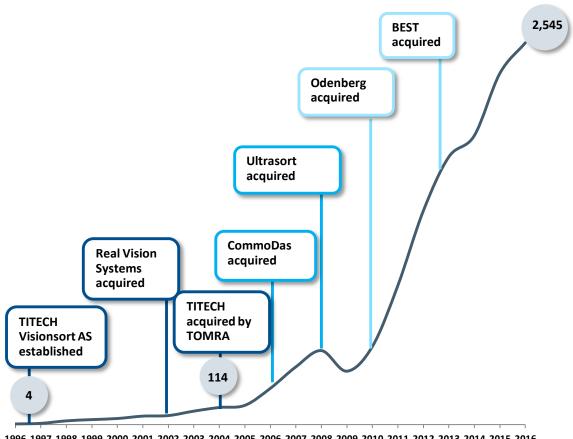






### STRONG REVENUE GROWTH SINCE INCEPTION IN 1996

### Revenue development and key milestones MNOK



- Total revenue growth (organic plus inorganic) CAGR of ~30% per year from 2004-2016
  - Average annual organic growth for the same period was ~17%
- Technology base and segment/application knowledge expanded both through acquisitions and inhouse ventures

1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

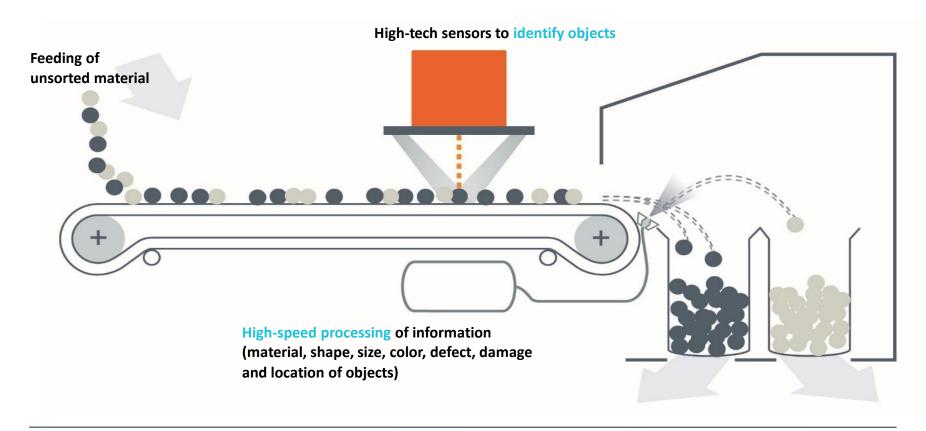


### SORTING VALUE PROPOSITION



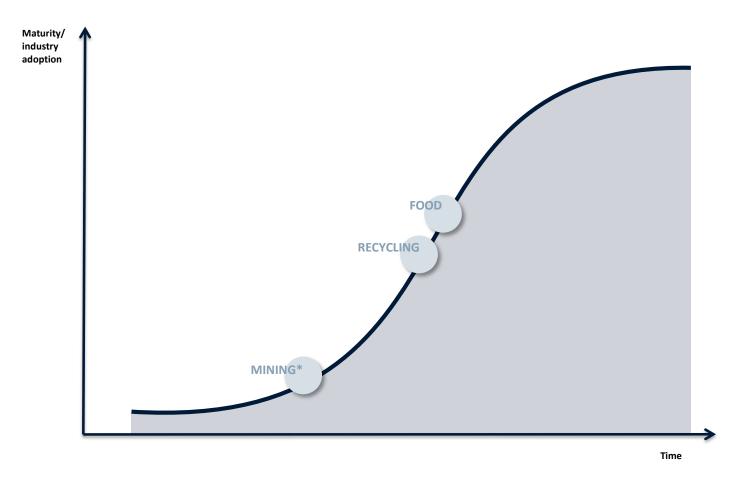
### HOW DOES SENSOR BASED SEPARATION WORK?

- High-tech sensors to identify objects
- High speed processing of information (material, shape, size, color, defect, damage and location of objects)
- Precise sorting by air jets or mechanical fingers
- Product specific equipment design often including multiple technologies to maximize sorting efficiency





# ADOPTION OF SENSOR-BASED SORTING AT DIFFERENT MATURITY LEVELS



<sup>\*</sup> In certain mining sub-segments, such as industrial minerals and diamonds, sensor-based sorting is a more mature technology.



### A COMMON SENSOR BASED TECHNOLOGY PORTFOLIO

	[m]
Gamma-	10 <sup>-12</sup>
radiation	10-11
	10 <sup>-10</sup>
X-ray	<b>10</b> -9
	10-8
Ultraviolett (UV)	<b>10</b> <sup>-7</sup>
, ,	<b>10</b> <sup>-6</sup>
Visible light (VIS)	<b>10</b> -5
Near Infrared (NIR)	10-4
Infrared (IR)	10 <sup>-3</sup>
ililialed (iiv)	10-2
Microwaves	10 <sup>-1</sup>
	10 <sup>1</sup>
Radio waves	10 <sup>2</sup>
	10 <sup>3</sup>
Alternating current (AC)	<b>10</b> <sup>4</sup>
(. 10)	

Sensor/ Technology	Material Property	Segment
RM (Radiometric)	Natural Gamma Radiation	Mining
XRT (X-ray transmission) Low Energy X-ray	Atomic Density	Recycling, Mining, Food
XRF	X ray fluorescence (Elemental Spectroscopy)	Recycling, Mining
COLOR (CCD Color Camera)	Reflection, Absorption, Transmission	Recycling, Mining, Food
Laser attenuation and PM (Photometric)	Monochromatic Reflection / Absorption of Laser Light Scattering analysis of Laser Light	Mining, Food
NIR / MIR (Near/Medium Infrared Spectrometry)	Reflection, Absorption (Molecular Spectroscopy)	Recycling, Mining, Food
LIBS	Laser induced breakdown spectroscopy	Recycling, Mining
EM (Electro- Magnetic sensor)	Conductivity, permeability	Recycling, Mining, Food



## ...TO DEVELOP PRODUCTS SERVING A WIDE RANGE OF DETECTION PARAMETERS



#### Color

Removal of discolorations in monoand mixed-color material



#### **Blemishes**

Objects with spots or other (small) blemishes are removed



#### **Defects**

Removal of visible and invisible small and substantial defects



#### Structure

Removal of soft, molded or rotten food



#### Density

Detection of density differences



#### Damage

Broken, split and damaged objects are detected and removed



#### Shape & Size

Sort on length, width, diameter, area, broken-piece recognition, ...



#### **Biometric Characteristics**

Sort based on water content and removal of micotoxyn contaminations



#### Foreign Material

Removal of foreign material in a material stream, e.g. insects, worms, snails or plastics in food applications



#### Fluo

Based on the chlorophyll level present in produce defects are removed



#### X-RAY

Analysis of objects based on their density and shape



#### Detox

Removal of produce contaminated with aflatoxin



Visible



Invisible



**Both** 



### CROSS UTILIZING OUR PORTFOLIO TECHNOLOGIES



## TITECH NIR + ODENBERG platform

#### **Field Potato Sorter**

- The NIR technology allows efficient removal of rocks, dirt and rotten potatoes before the potatoes are stored
- The solution opens up sorting of unwashed potatoes in a way that previously was not possible



## BEST LASER + TOMRA mining platform

#### **PRO Laser Duo**

- The LASER technology allows detection of quartz of all colors. This opens for sorting of quartz itself, and gold bearing quartz mineralization
- The solution is unique in the market and further underlines our technological leadership



#### TITECH NIR + BEST LASER

#### Nimbus BSI

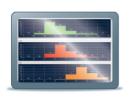
- An NIR sensor has been added to the NIMBUS machine platform
- The new machine increases our competitiveness in the nuts segment

Several more projects on combining technologies into new products in the pipeline

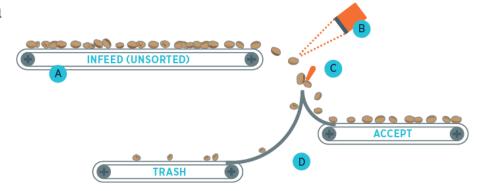


### SORTING UNWASHED POTATOES: WORKING PRINCIPLE

The product is spread uniformly onto the infeed belt and will be scanned by cameras in the different inspection zones. A few milliseconds later one type of material will be rejected by intelligent finger ejectors, positioned at the end of the conveyor belt, while the good products continue their way along the sorting line.



- A Infeed (unsorted)
- Full width NIR and Color Vision sensors
- Intelligent finger ejectors
- Gentle handling convey chutes (optional)



#### DEFECTS & BLEMISHES REPORTING



Dirt Clod





Stones



Golf Ball

#### Reports can be generated with the following data:

#### Product Data

- + Average Length & Width mm(ins)
- + Length and Width distribution (size bins) mm(ins)
- + Total potato count #
- + Total reject count #
- + Stone, soil clod, rot, other %

#### Sorter Operation Data

- + Belt speed, average belt fill %
- + Object counts/second
- + Program running

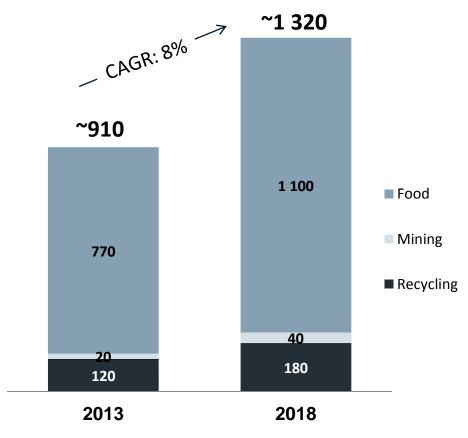
- The Field Potato Sorter is ODENBERG's first venture into the unwashed potato market
- The machine uses unique near infra-red technology to remove soil clods, stones and rotten potatoes, in addition to the foreign material commonly found in fields such as golf balls, plastics, wood etc
- The FPS sorter should be used after a soil remover and is designed to fit existing grading equipment or be used as a standalone unit and can operate on harvested potato crop before and after storage
- The system also provides online potato size data for logging, plus sorter operating information



### MARKET SIZE AND POTENTIAL

#### Total annual market size

#### **EUR** million



#### Market growth

- Market expected to grow at rate of around 7-9% per year
- A large part of growth from unlocking of dormant potential – only possible by developing new applications and technologies
- Some growth in "old world", but faster growth in "new world"

Source: TOMRA estimates and analysis

<sup>\*</sup> Market size for food includes peeling, meat/process analytics, virgin materials and tobacco.

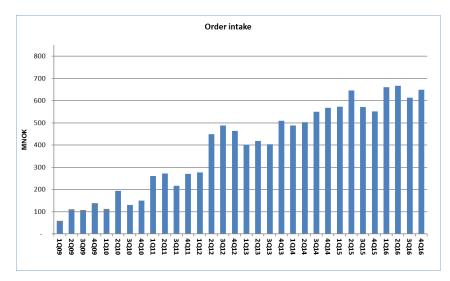


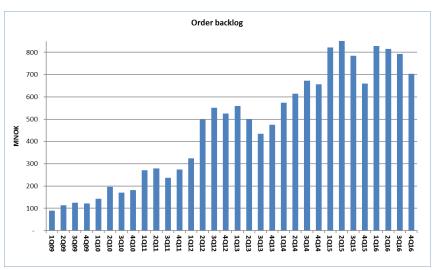
## SORTING SOLUTIONS: OUR STRATEGY

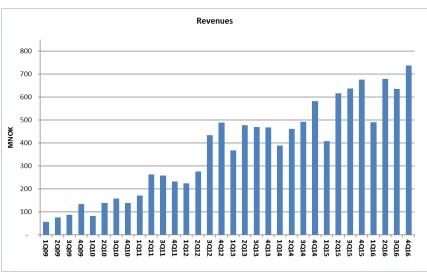
Recycling Food Mining More than doubling of emerging markets revenue (but North America and Europe still 60% of business in 2018) New applications representing Significant expansion of sales Revenue growth 15 M€ growth in new segments 25% of revenue in 2018 network of 10-15% over **New segments** representing Succeed in high volume 50% growth in service revenue the period 10% of revenue in 2018 segments Grow with existing customers and double service revenue **Common sorting platform** for all new product developments **Extend** technology Cross-utilization of sensor portfolio, e.g. NIR/BSI in food and laser in mining **leadership** Extend current leadership in core NIR and laser technologies, and develop new cutting edge sensors Design changes, economies of scale and purchasing power to lower COGS **Improve** Consolidation of manufacturing and sourcing; increased sourcing from low cost countries operational Streamlining of organization and processes to take out synergies across business units efficiency Target to **grow profits** at several percentage points faster than revenue



## BACKLOG DEVELOPMENT AND MOMENTUM







- Order intake of 649 MNOK in the quarter (up from 551 MNOK same quarter last year)
- Revenues were 738 MNOK (compared to 677 MNOK in 4Q16)
- Order backlog of 704 MNOK, up from 659 MNOK at the end of fourth quarter 2015
- Estimated backlog conversion ratio in 1Q17: 70-75%\*
- NOTE: Figures do not include Compac, which will be consolidated starting 1 February 2017

<sup>\*</sup> Based upon current production and delivery plans, the revenues in 1Q17 (ex Compac) are estimated to be approximately 70-75% of order backlog at the end of 4Q16



## FINANCIAL DASHBOARD -**SORTING SOLUTIONS**





Recurring revenue



**Profitability** (ROCE)\*



#### **TARGETS 2013 -2018**

Yearly organic growth 10-15%

Geographical expansion

EBITA-margin 18-23%

(i) In markets served. Total food sorting (incl. rice and lane sorting\*) 12-15%















## GROWTH IN GLOBAL FOOD DEMAND WILL SPUR INVESTMENTS IN AUTOMATION



#### **Drivers and trends**

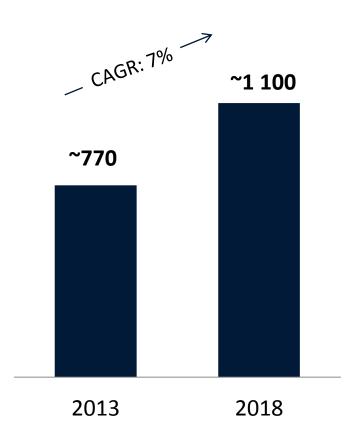
- Increasing food consumption in emerging markets, more mid-class consumers
- Industry focus on increased productivity and reducing costs through automation & quality control
- Higher quality demands from the consumers
- Stricter regulations from governments concerning food safety, health & traceability
- Shift towards packaged convenience food and fast food
- Risk of claims & recalls
  - Social media snowball effect (Twitter, Facebook, etc.)
- Globalization of brands and sourcing set up
- Scarcity & expense of (seasonal) manual labor
- Consolidation in the retail and processing sectors
- Adoption of technology in emerging markets



### MARKET SIZE FOOD SORTING\*

#### Total annual market size

**EUR** million

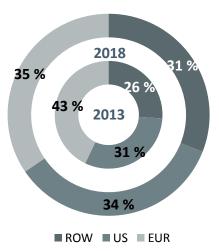


<sup>\*</sup> Market sizes shown include peeling, meat/process analytics, virgin materials and tobacco.

#### Market growth

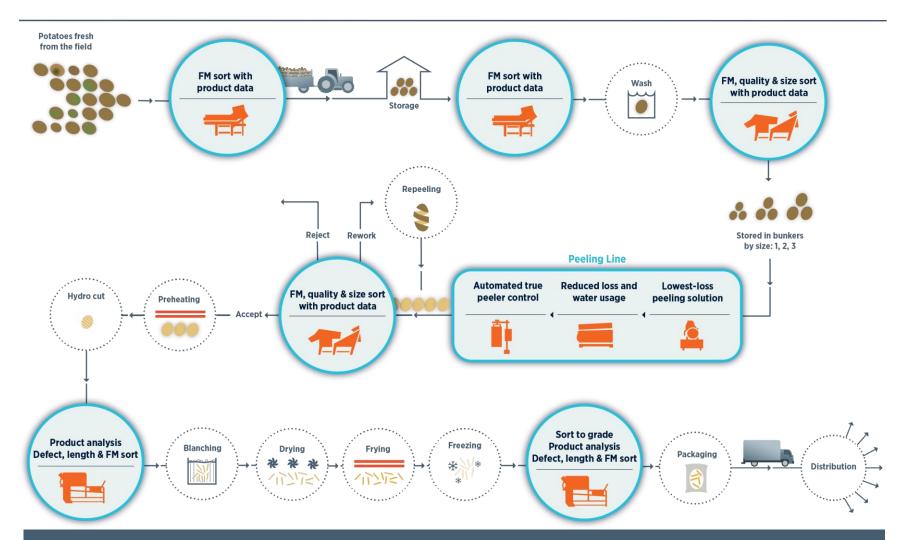
- Total market for food sorting growing around 6-8% per year
- Approximately a third of total growth is dormant potential
  - only unlocked by development of new applications and technologies
- New world share grows but the two old world champions (Europe & Americas) remain strong

## **Expected development in geographical revenue** contribution





# WE ARE UNIQUELY POSITIONED TO SERVE THE ENTIRE VALUE CHAIN WITH OUR PRODUCT PLATFORM



Sales of potato-related products account for about 25% of the sales in the food division

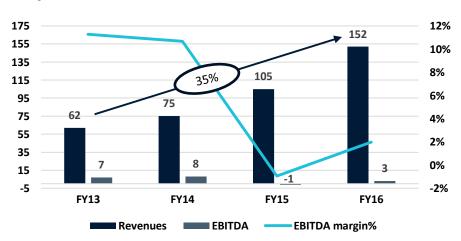


## INTRODUCTION TO COMPAC (ANNOUNCED 12.10.16)

#### Introduction

- Compac is a New Zealand-based provider of post-harvest solutions and services to the global fresh produce industry
- Founded in 1984 by Hamish Kennedy with HQ in Auckland NZ and has around 700 employees
- Compac has a leading position within sorting of apples, kiwifruit, cherries, citrus, stonefruit, avocados and tomatoes
- The company designs, manufactures, sells and services packhouse automation systems that sort produce based on their weight, size, shape, colour, surface blemishes and internal quality
- Fruit handling equipment singulates fruits into lanes, in-feeds (wash and wax), inspects, sorts/grades and partly packages
- About 6,000 Compac sorting lanes have been sold worldwide in over 40 markets

#### Key Financials (NZDm)<sup>1</sup>



#### **Spectrim: Compac's latest sorter**

- The sorter was launched in 2015
- Represents an unmatched capability of external defect detection and an advanced 3D imaging and modelling
- For sorting of apples, citrus, stone fruit and kiwi fruit
- Uniform lighting that minimizes shadows and reflections
- Sensors and cameras generate up to 500 images of every piece of produce, creating an accurate 3D model of each fruit
- Three different wavelengths that can be configured to target specific defects: color, blemishes, bruising





### TRANSACTION RATIONALE ELABORATED

#### Attractive Market

- Lane sorting is a fast-growing adjacent segment with a ~8% historical CAGR and strong future outlook
- **Key market trends drive further growth**, especially in the developing markets as a substitute for manual labor as we see wages increase
- The industry is **yet to mature** and fully industrialize

## Complimentary geographical footprint

- Geographic expansion: Utilizing the different footprint and strengths in certain markets
- Stronger in **China** together

## Application fit expansion

• TOMRA is currently present in processed fruit and vegetables, Compac serves as a "natural" **expansion** also into fresh fruit

## Confirming our leading position in food

- Lane and Bulk Sorting cater to same client needs, but offers complimentary functionality
- Possibility to create a comprehensive Food Sorting solution provider
- **First mover advantage in combining Lane and Belt sorting**: TOMRA to be the first company, which is active in all technology platforms used for sensor-based sorting of Food

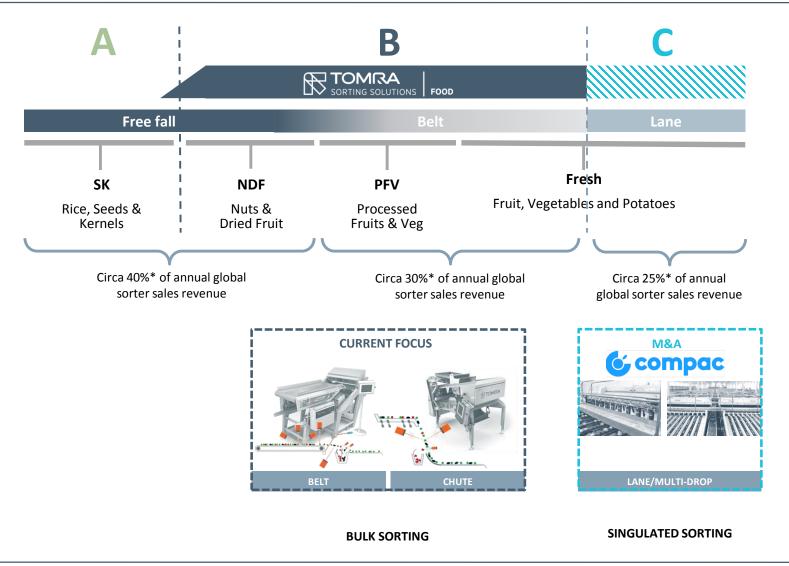
#### Mutual benefits

- Potential in data capability, IoT and solution development
- · Combine current offering: Bulk presorter in front of lanes
- Potato business: Utilizing TSS strength in potatoes and the upcoming demand for sizing
- Complimentary fit within food traceability and food safety (emerging demand)

#### **Why Compac**

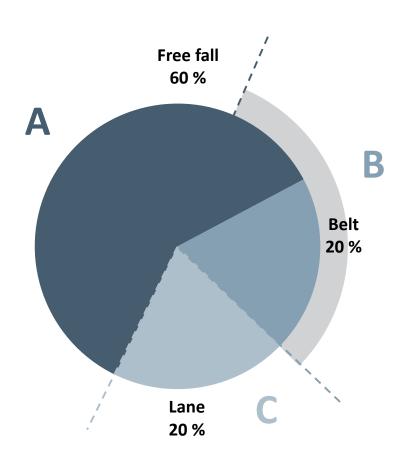
- · Strong potential. Ongoing and planned business improvement initiatives and funding to get in shape
- Strong brand name, recognized as the technology leader (Spectrim)
- Established complimentary footprint in the US, NZ, Australia and Latin America
- · Good platform for growth

# TOMRA HAS THE BROADEST FOOTPRINT WITHIN THE FOOD SORTING UNIVERSE



TOMRA

## THREE WAYS OF SORTING WITHIN THE FOOD SEGMENT



Free fall (Channel / Chute)				
Application	Seeds, rice, grains			
Companies	Buhler, Key, <b>Best</b> , Satake, Daewon, Hefei, Orange			
Sensor tech.	Camera (simple)			

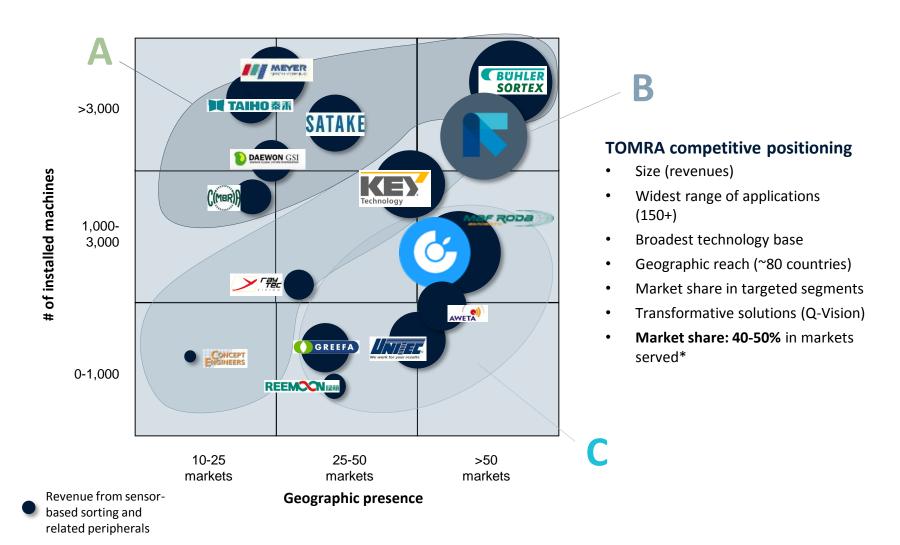
Belt	
Application	Prepared /preserved veg. and fruit
Companies	Best, Key, Odenberg, Raytec
Sensor tech.	Several (complex)

Lane	
Application	Fresh produce
Companies	MAF, Aweta, Greefa, Compac
Sensor tech.	Several (medium)

Note: Piechart showing estimated total revenue within the food sorting segment



### FOOD COMPETITIVE LANDSCAPE



Source: TOMRA estimates and analysis

<sup>\*</sup> Total Food sorting (also including rice and lane sorting): 12-15%



# OUR BROAD COVERAGE AND TECHNOLOGY BASE IS SETTING US APART IN BULK SORTING

	DRIED FRUIT	NUTS	FRESH CUT	FRUIT	VEGETABLES	MEAT	POTATOES	SEAFOOD
FOOD	<ul><li>Apricots</li><li>Craisins</li><li>Figs</li><li>Prunes</li><li>Raisins</li></ul>	<ul> <li>Almonds</li> <li>Cashews</li> <li>Hazelnuts</li> <li>Macadamias</li> <li>Peanuts</li> <li>Pecans</li> <li>Pistachios</li> <li>Seeds</li> <li>Walnuts</li> </ul>	<ul> <li>Baby leaves</li> <li>Iceberg lettuce</li> <li>Spinach</li> <li>Spring mix</li> </ul>	<ul> <li>Apples</li> <li>Blackberries</li> <li>Blueberries</li> <li>Cherries</li> <li>Citrus</li> <li>Cranberries</li> <li>Peaches &amp; pears</li> <li>Raspberries</li> <li>Strawberries</li> <li>Tomatoes</li> </ul>	<ul> <li>Beans</li> <li>Beet</li> <li>Broccoli</li> <li>Carrots</li> <li>Corn</li> <li>Cucumbers</li> <li>IQF</li> <li>vegetables</li> <li>Jalapenos/ Peppers</li> <li>Onions</li> <li>Peas</li> <li>Pickles</li> </ul>	<ul> <li>Bacon bits</li> <li>Beef</li> <li>IQF meat</li> <li>Pork</li> <li>Pork rind</li> </ul>	<ul> <li>Washed</li> <li>French fries</li> <li>Unpeeled</li> <li>Peeled</li> <li>Potato chips</li> <li>Specialty products</li> <li>Sweet</li> </ul>	<ul><li>Mussels</li><li>Scallops</li><li>Shrimps</li></ul>
SENSOR TECHNOLOGY	LASER ' NIR VIS X-RAY	LASER CAMERA X-RAY	LASER CAMERA	LASER CAMERA NIR VIS	LASER CAMERA NIR VIS	LASER CAMERA NIR	LASER CAMERA NIR VIS	LASER CAMERA NIR VIS X-RAY





### **OUR CUSTOMERS**



## We are active in five continents and 80 markets

- 6 of the 10 largest, global food companies are our customers
- We have ~2,000 customers globally

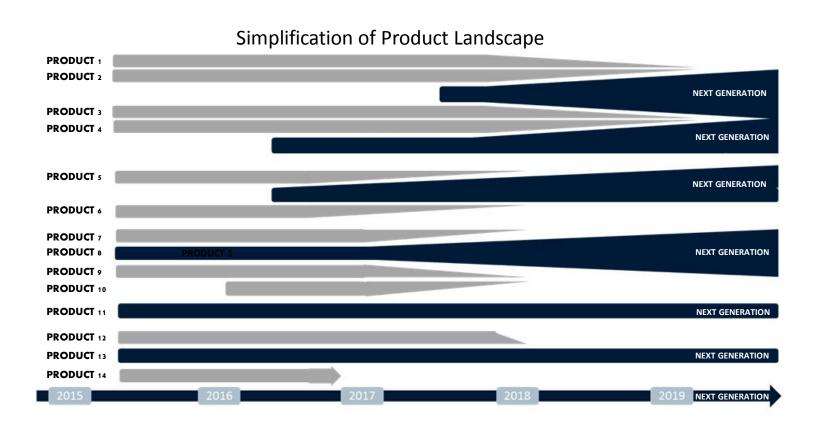
#### TSS Food provides sorting solutions for:

- Growers: Harvester mounted tomato, onion and garlic sorters
  - ~5% of our customers
- Packers: Sorting of many different types of fruit and vegetables by color, size, shape, defect, blemish, damage or foreign objects
  - ~30% of our customers
- Processors: Sorting of processed potatoes (French fries, chips), fruits and vegetables
  - ~65% of our customers



## REDUCING COMPLEXITY: MERGING PLATFORMS FOR OUR NEXT GENERATION MACHINES

#### **High-Level Product Roadmap FOOD (Illustrative)**

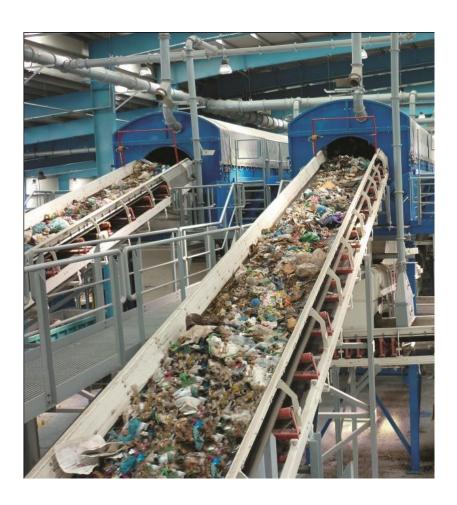


14 platforms today will be reduced to 6 platforms over the next five years





### GLOBAL DRIVERS FOR THE RECYCLING SEGMENT



#### **Drivers and trends**

- Consumption and industry production level increase
- Favorable changes in regulatory framework (DSD, WEEE, ELV, etc)
- Commodity price levels and fluctuation
- Access to financing
- Demand for recycled raw materials
- Increasing **labor costs** in emerging world drive adoption of automatic sorting technologies
- Some countries in Western Europe partly saturated
- Pre-sorted (plastics) still door opener in new markets
- Municipal Solid Waste (MSW) important in emerging countries
- More aggressive pricing from competitors affect market



# ONLY A FRACTION OF THE WASTE VOLUME IS HANDLED BY SENSOR BASED SORTING

Sensor based sorting is competing with different technologies













### LEGISLATIVE FRAMEWORK - PROMOTING RECYCLING



#### Description

#### **Target**

## Packaging Directive

- Rules on the production, marketing, use, recycling and refilling of containers of liquids for human consumption and on the disposal of used containers
- 2014 review included new targets
- 2015 revision includes lightweight plastic carrier bags

- Recycling and reuse of municipal waste: 70% by 2030
- Recycling and reuse of packaging waste: 80% by 2030
- Phasing out landfilling by 2025 of recyclable waste in non hazardous landfills



# Waste Electrical and Electronic Equipment (WEEE) Directive

- Collection, recycling and recovery targets for all types of electrical goods
- 10 categories: Large household appliances, Small household appliances, IT and telco equipment, Consumer equipment, Lighting equipment, Electrical and electronic tools, Toys, Leisure and sports equipment, Medical devices, Monitoring and control instruments, Automatic dispensers
- The overall aim is for the EU to recycle at least 85% of electrical and electronics waste equipment by 2016



## Landfill Directive

- The objective of the Directive is to prevent or reduce as far as possible negative effects on the environment
- In particular: surface water, groundwater, soil, air, and on human health from the landfilling of waste by introducing stringent technical requirements for waste and landfills.
- Amount of biodegradable municipal waste reduced to 50% in 2009 and to 35% in 2016 (compared to 1995 levels)



#### End of Life Vehicle (ELV) Directive

- Aims at reduction of waste arising from end-of-life vehicles
- The scope of the directive is limited to passenger cars and light commercial vehicles
- Reuse and recycling: 85%
- Reuse and recovery: 95%



Source: www.ec.europa.eu, www.Eurometrec.org, wastemanagementworld.com,



### MARKET SIZE RECYCLING

#### Total annual market size

**EUR** million



#### Market growth

- Market expected to grow at around 7-9% per year, lower than previous expectations due to economic slowdown
- Demand in old world flattening, while new markets expected to drive growth
- Existing segments will serve as a base, whilst the majority of growth will come from:
  - New geographies
  - New applications
  - New products



## RECYCLING: APPLICATIONS AND SENSOR TECHNOLOGY



	HOUSEHOLD WASTE	PACKAGING	C & D	AUTOMOBILE SHREDDER	ELECTRONIC SCRAP
MATERIAL	<ul> <li>Hard plastics</li> <li>Plastic film</li> <li>Mixed paper</li> <li>RDF</li> <li>Metals</li> <li>Organics/</li> <li>Biomass</li> </ul>	<ul> <li>Plastics</li> <li>Plastic film</li> <li>Cardboard</li> <li>Mixed paper</li> <li>Deinking paper</li> <li>Metal</li> </ul>	<ul> <li>Inert material</li> <li>Plastic film</li> <li>Metals</li> <li>Wood</li> <li>Paper &amp; Cardboard</li> <li>Plastics</li> </ul>	<ul> <li>NF metal</li> <li>Stainless steel</li> <li>Copper cables</li> <li>Copper</li> <li>Brass</li> <li>Aluminum</li> <li>Meatball sorting</li> </ul>	<ul> <li>Printed circuit boards</li> <li>Non-ferrous metal concentrates</li> <li>Cables</li> <li>Copper</li> <li>Brass</li> <li>Stainless steel</li> <li>Meatball sorting</li> </ul>
SENSOR TECHNOLOGY	NIR EM VIS XRT	NIR VIS EM	NIR VIS XRT EM	NIR VIS XRT EM COLOR XRF	XRT EM NIR COLOR XRF

**Cleaned wood** 

**Copper Wire** 

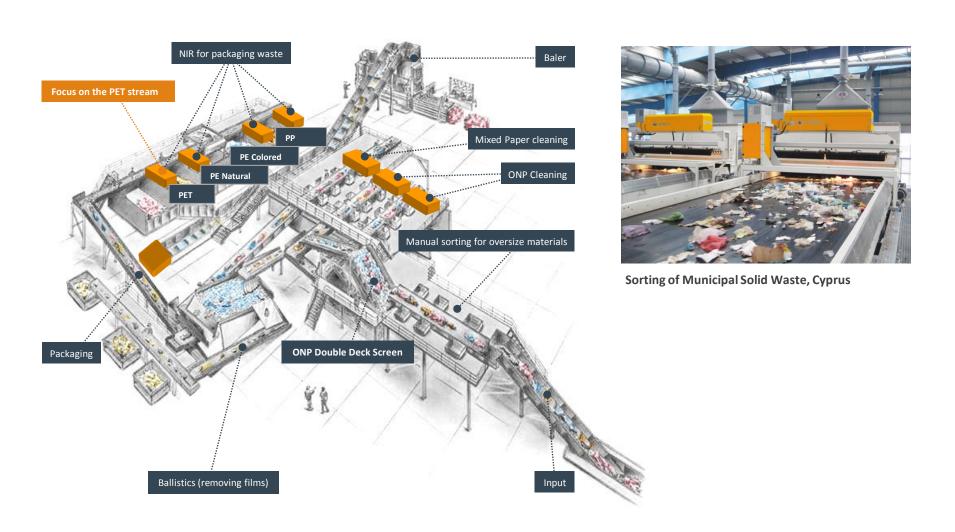
**Brass** 

PE/PP flakes



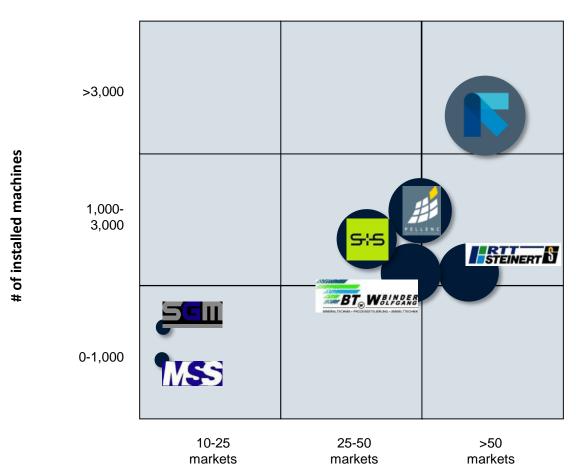
Mixed paper

## **AUTOMATED WITH TOMRA SORTING UNITS**





## RECYCLING COMPETITIVE LANDSCAPE



#### **TOMRA** competitive positioning

- Largest installed base
- Highest revenues
- Broadest technology platform
- Highest number of applications and markets served
- Leading brand
- Market share: 55-65%

Revenue from sensorbased sorting

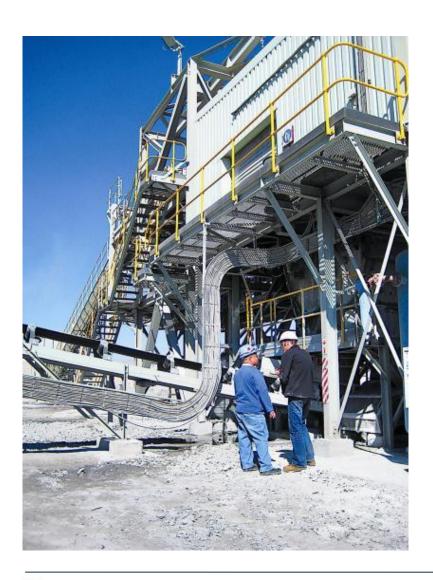
**Geographic presence** 

Source: TOMRA estimates and analysis





## GLOBAL DRIVERS FOR THE MINING SEGMENT



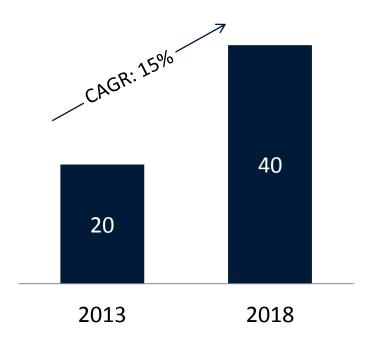
- Energy costs and water stress are major drivers
- Demand of all commodities is expected to grow with increased population and urbanization in the drivers seat
- Increasing labor costs in emerging world drive adoption of automatic sorting technologies
- Mining companies capex impact the investment sentiment
- Sensor based sorting is considered to be a future solution
  - Hardest competition comes from alternative well proven technologies



## MARKET SIZE MINING

#### Total annual market size

**FUR** million



#### Market growth

- Capex has declined recent years
- Sensor based machines sales expected to grow at around 15% per year
  - Growth is however conditional on new applications and technologies being developed
- Sensor based sorting is still a technology to be accepted and growth in this niche has been limited in recent years



## MINING: APPLICATIONS AND SENSOR TECHNOLOGY

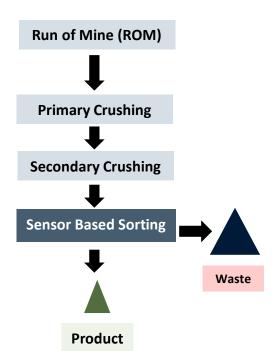


	INDUSTRIAL MINERALS	BASE & Fe METALS	FUEL/ ENERGY	PRECIOUS METALS	DIAMONDS & GEMS	METAL SLAG
CONANAODITY	• Calcite	•Copper	• Coal	• Gold	• Diamonds	• Stainless steel
COMMODITY	• Quarts	• Zinc	Uranium	• Platinum	Tanzanite	• Copper
	• Feldspar	• Nickel			• Colored	• Chrome
	Magnesite	• Tungsten			gemstones	
	• Talcum	• Iron				
	• Dolomite	Manganese				
	• Salt	Chromite				
SENSOR TECHNOLOGY	COLOR XRT NIR XRF	XRT COLOR EM NIR	XRT RM	XRT COLOR XRF NIR	COLOR XRT XRF NIR	XRT XRF EM
	Calcite	Copper	Coal	Gold	Diamonds	Ferro Silica Slag



## THE CONCEPT OF SENSOR-BASED SORTING IN MINING

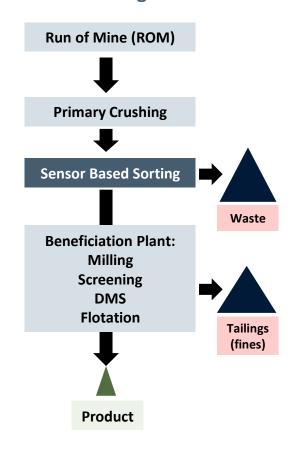
## Mining process: Industrial minerals





- 15% to 50% of the ROM can be rejected in an early stage of the process (application dependent)
- These low grade waste rocks don't need to be transported, crushed, grinded or further treated

## Mining process: Metal mining

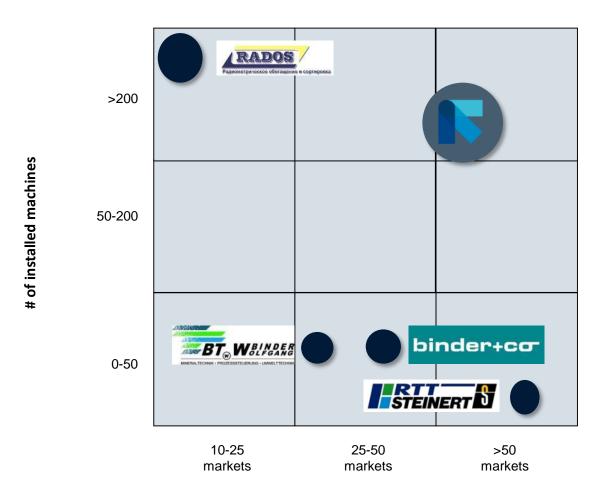


**Current segment** 

**Potential new segment** 



## MINING COMPETITIVE LANDSCAPE



#### **TOMRA** competitive positioning

- Wide geographical coverage
- Broadest technology platform
- Leading brand
- Pioneering in developing high volume sorter in corporation with Rio Tinto
- Market share: 40-50%

Revenue from sensorbased sorting

**Geographic presence** 

Source: TOMRA estimates and analysis

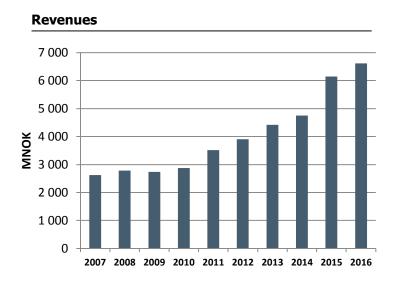


## Historical financial performance

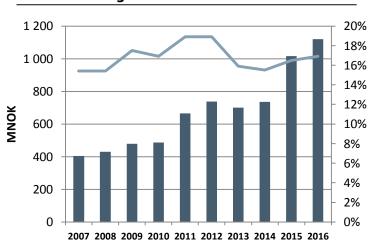




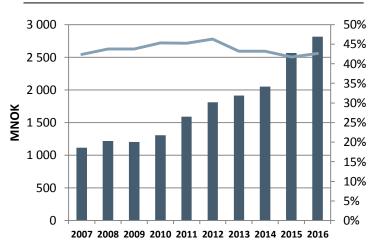
## KEY FINANCIALS DEVELOPMENT



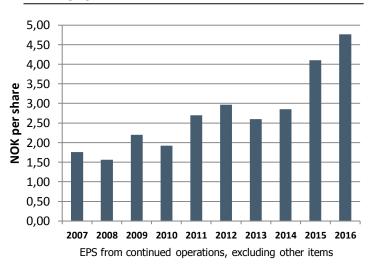




#### **Gross Contribution and margin**



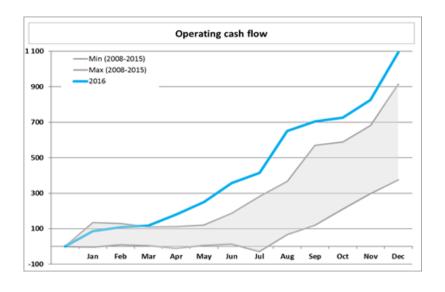
#### **Earnings per share**





## FINANCIAL HIGHLIGHTS BALANCE SHEET, CASH FLOW AND CAPITAL STRUCTURE

Amounts in NOK million	31 Dec 2016	31 Dec 2015
ASSETS	7,115	7,318
Intangible non-current assets	2,750	2,816
Tangible non-current assets	801	721
Financial non-current assets	342	309
• Inventory	1,127	1,158
<ul> <li>Receivables</li> </ul>	1,696	1,918
Cash and cash equivalents	399	396
LIABILITIES AND EQUITY	7,115	7,318
• Equity	4,192	3,648
Minority interest	178	136
Interest bearing liabilities	760	1,439
Non-interest bearing liabilities	1,985	2,095



#### **Ordinary cashflow from operations**

• 390 MNOK (343 MNOK in 4Q 2015)

#### Solidity

- 59% equity
- NIBD/EBITDA = 0.3x (Rolling 12 months)



## **CURRENCY**



Some negative impact from currencies in 4Q16 vs 4Q15

**NOTE: Rounded figures** 

**Including CNY** 

#### Revenues and expenses per currency;

EUR\*\* USD NOK SEK **OTHER TOTAL** 5 % Revenues 45 % 30 % 10 % 10 % 100 % **Expenses** 45 % 25 % 10 % 10 % 10 % 100 % **EBITA** 45% 50 % - 15 % 10 % 10 % 100 %

\*\* EUR includes DKK



## **CURRENCY EXPOSURE**

#### Revenues and expenses per currency;

	EUR*	USD	NOK	SEK	OTHER	TOTAL
Revenues	45 %	30 %	5 %	10 %	10 %	100 %
Expenses	45 %	25 %	10 %	10 %	10 %	100 %
EBITA	45%	50 %	- 15 %	10 %	10 %	100 %

<sup>\*</sup> EUR includes DKK

#### 10% change in NOK towards other currencies will impact;

	Revenues	Expenses	EBITA
EUR*	4.5%	4.5%	4.5%
USD	3.0%	2.5%	5.0%
SEK	1.0%	1.0%	1.0%
OTHER	1.0%	1.0%	1.0%
ALL	9.5%	9.0%	11.5%

<sup>\*</sup> EUR includes DKK

#### **HEDGING POLICY**

 TOMRA hedges B/S items that will have P/L impact on currency fluctuations

**NOTE: Rounded figures** 

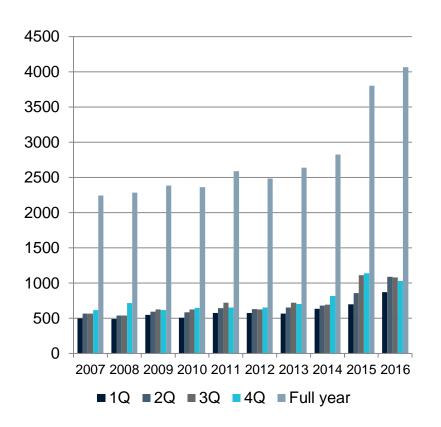
 TOMRA can hedge up to one year of future predicted cash flows. Gains and losses on these hedges are recorded in the finance line, not influencing EBITA



# COLLECTION SOLUTIONS – SEGMENT FINANCIALS

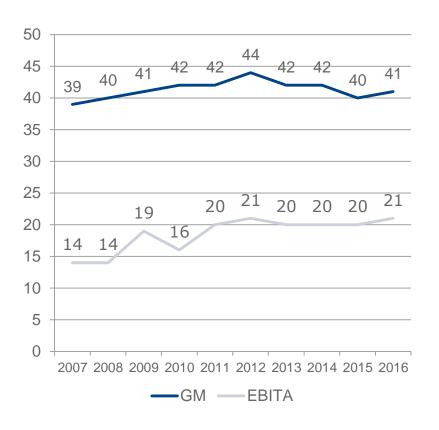
#### Revenue development

**NOK** million



#### **Gross and EBITA margin development**

Percent

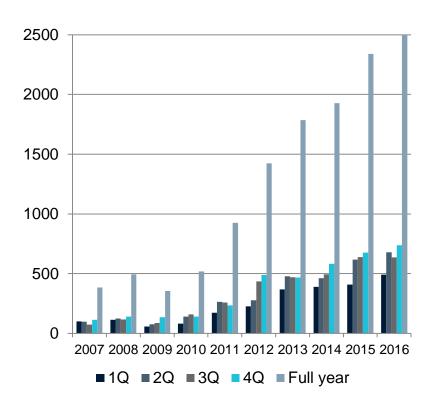




# SORTING SOLUTIONS – SEGMENT FINANCIALS

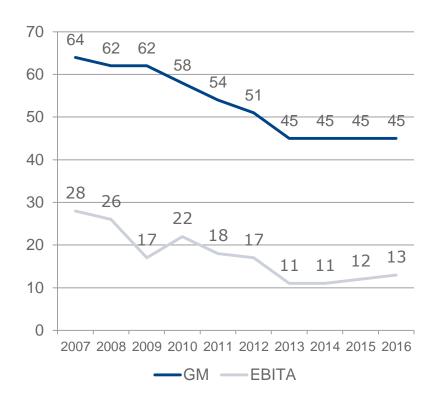
#### Revenue development

**NOK** million



#### **Gross and EBITA margin development**

Percent

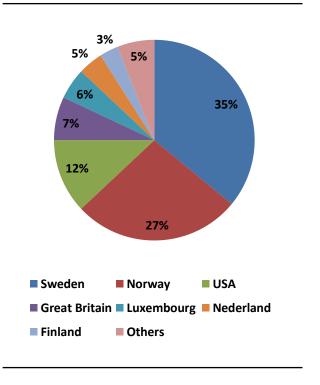




## TOMRA SHAREHOLDER STRUCTURE

1	Investment AB Latour	38 130 000	25.8%	
2	Folketrygdfondet	9 529 819	6.4%	
3	The Bank of New York BNYM, Stitching Dep	7 845 000	5.3%	(NOM)
4	Skandinaviska Enskilda A/C Clients account	4 055 568	2.7%	(NOM)
5	Goldman Sachs & Co	3 395 592	2.3%	(NOM)
6	Clearstream Banking	2 751 495	1.9%	(NOM)
7	The Bank of New York BNYM	2 612 603	1.8%	(NOM)
8	Nordea Nordic Small	2 349 276	1.6%	
9	Odin Norge	2 280 188	1.5%	
10	Danske invest Norske C/O Danske Capital A	2 219 530	1.5%	
	Sum Top 10	75 169 071	50.8%	
	Other shareholders	72 851 007	49.2%	
	TOTAL (5,595 shareholders)	148 020 078	100.0%	
Course	NO.	<del></del>		

#### **Shareholders by country**



Source: VPS





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