



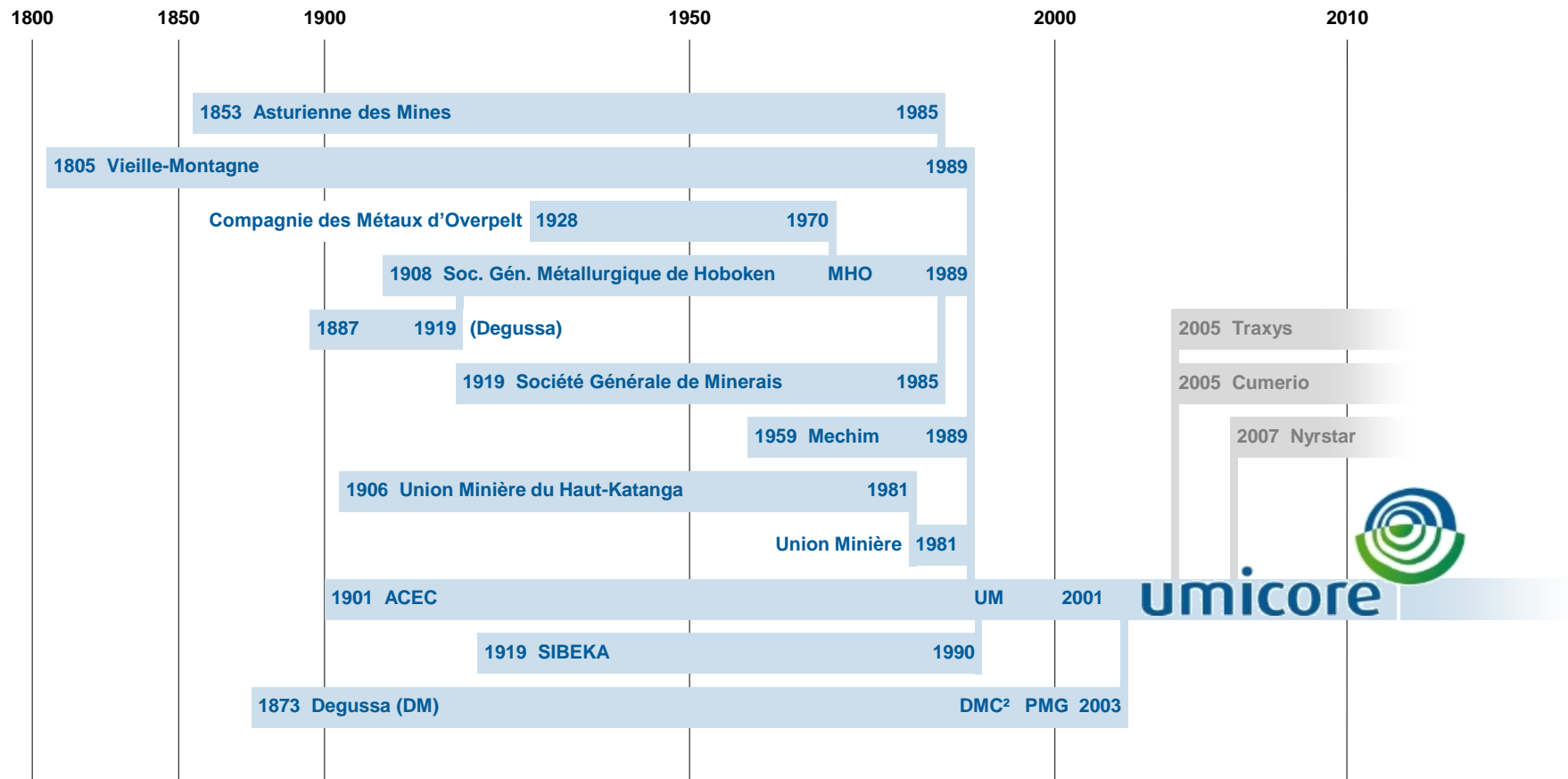
Welcome to the world of
Umicore



Introducing Umicore



Introducing Umicore History



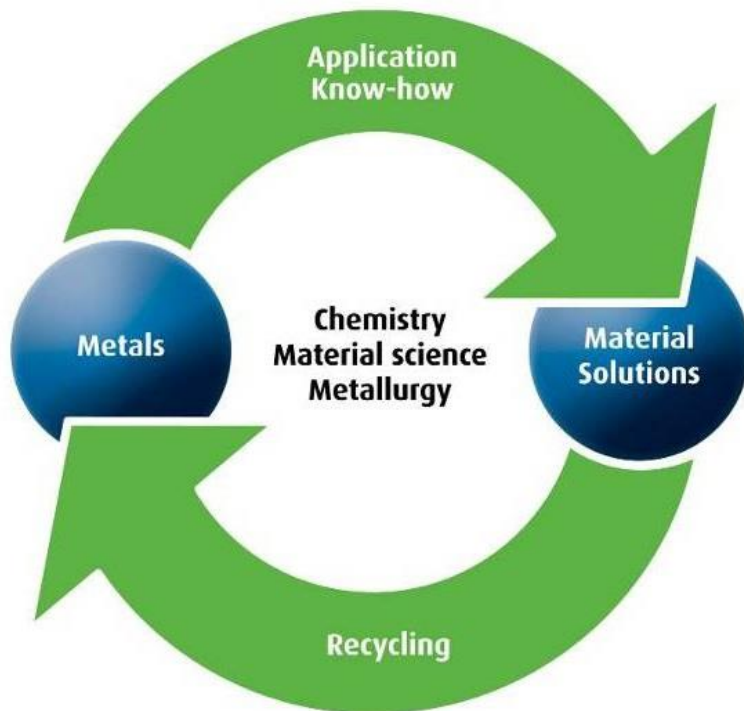
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Introducing Umicore

Business model



We are a **global materials technology** and **recycling** company.

We focus on application areas where our expertise in **chemistry**, **materials science**, **metallurgy** and **recycling** makes a real difference.



Introducing Umicore

Serving a wide range of industries



Automotive



Recycling



Energy



Chemicals



Electronics



Construction



Optics and
displays



Precious metals



Introducing Umicore

The pillars of our strategy



Resource scarcity

Umicore is the world's leading recycler of more than 20 precious and other metals



More stringent emission control

Umicore technologies reduce vehicle emissions around the world



Electrification of the automobile

Umicore is a leading producer of materials for rechargeable batteries for laptops, mobile phones as well as electrified vehicles



Introducing Umicore

Group structure



Recycling

Jewellery & Industrial Metals
Platinum Engineered Materials
Precious Metals Management
Precious Metals Refining
Technical Materials



Catalysis

Automotive Catalysts
Precious Metals Chemistry



Energy & Surface Technologies

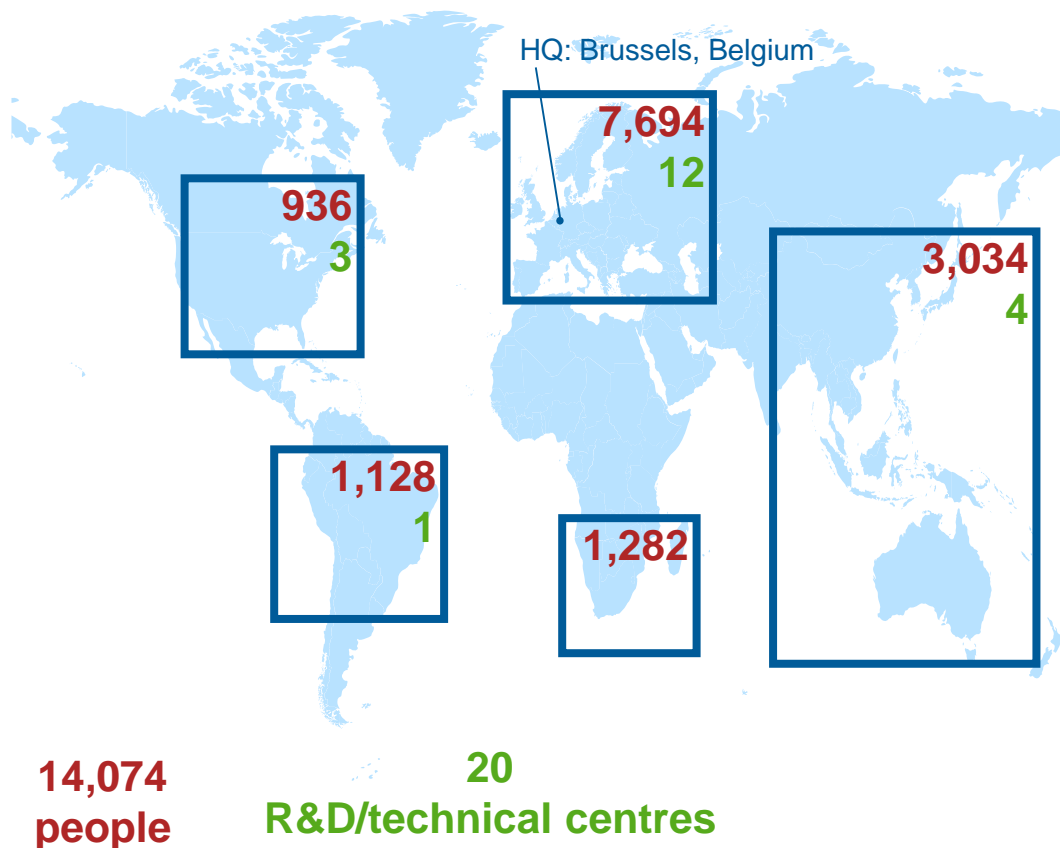
Cobalt & Specialty Materials
Electroplating
Electro-Optic Materials
Rechargeable Battery Materials
Thin Film Products



Introducing Umicore

Umicore in figures

Global positioning



Key financials

	2014	
Turnover	8.8	€ bn
Revenues	2.4	€ bn
Recurring EBITDA	442	€ m
Recurring EBIT	274	€ m
ROCE	12.2	%



A large, colorful brain shape composed of various icons representing technology, nature, industry, and communication. The icons include a sun, solar panel, wind turbine, car, house, globe, recycling symbol, Wi-Fi signal, smartphone, speech bubble, gear, leaf, water drop, and many others. The brain is filled with these icons, creating a dense and vibrant pattern.

Introducing Umicore Precious Metals Refining

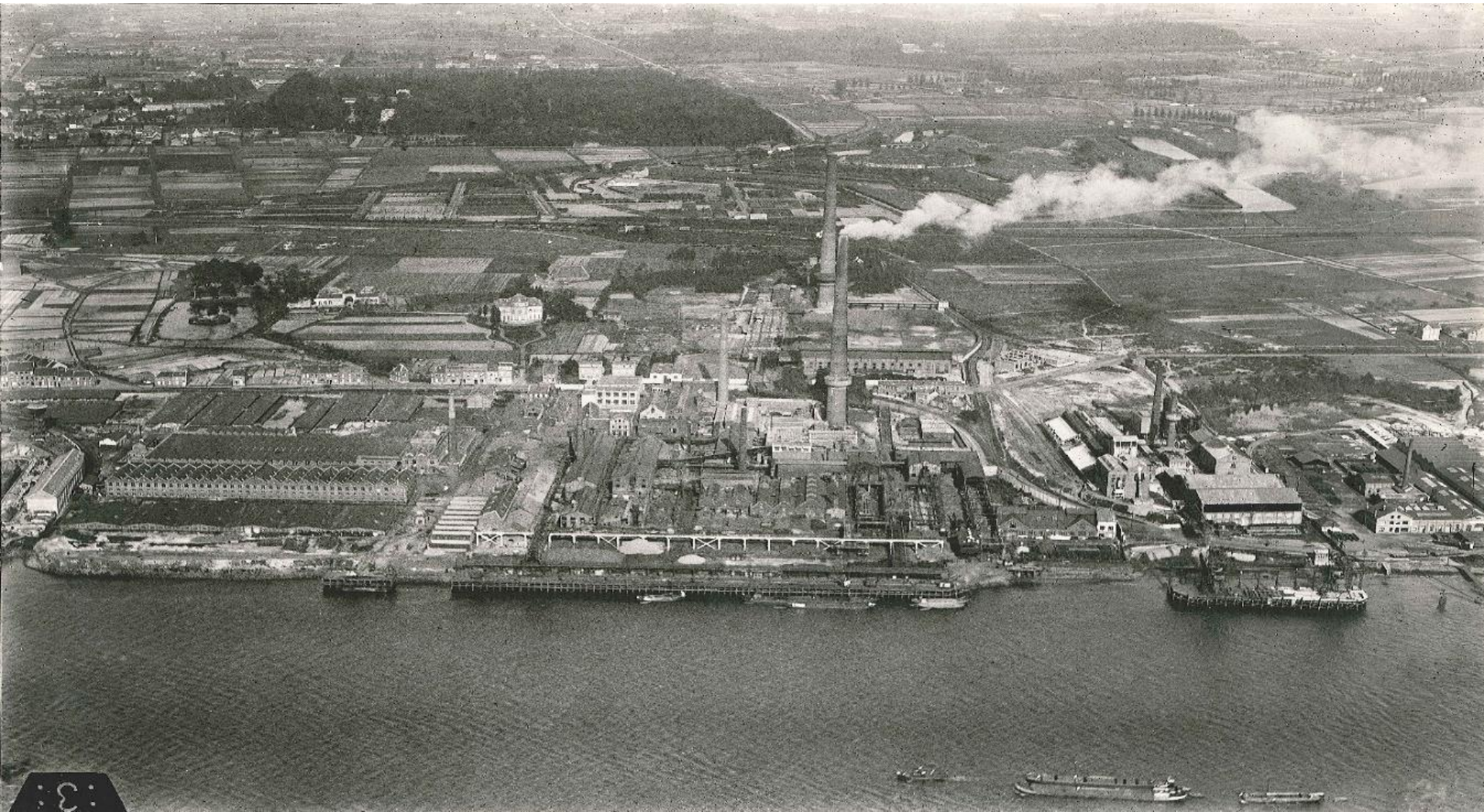


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Precious Metals
Refining



Introducing Umicore

Hoboken (Antwerp) plant in the 19th century

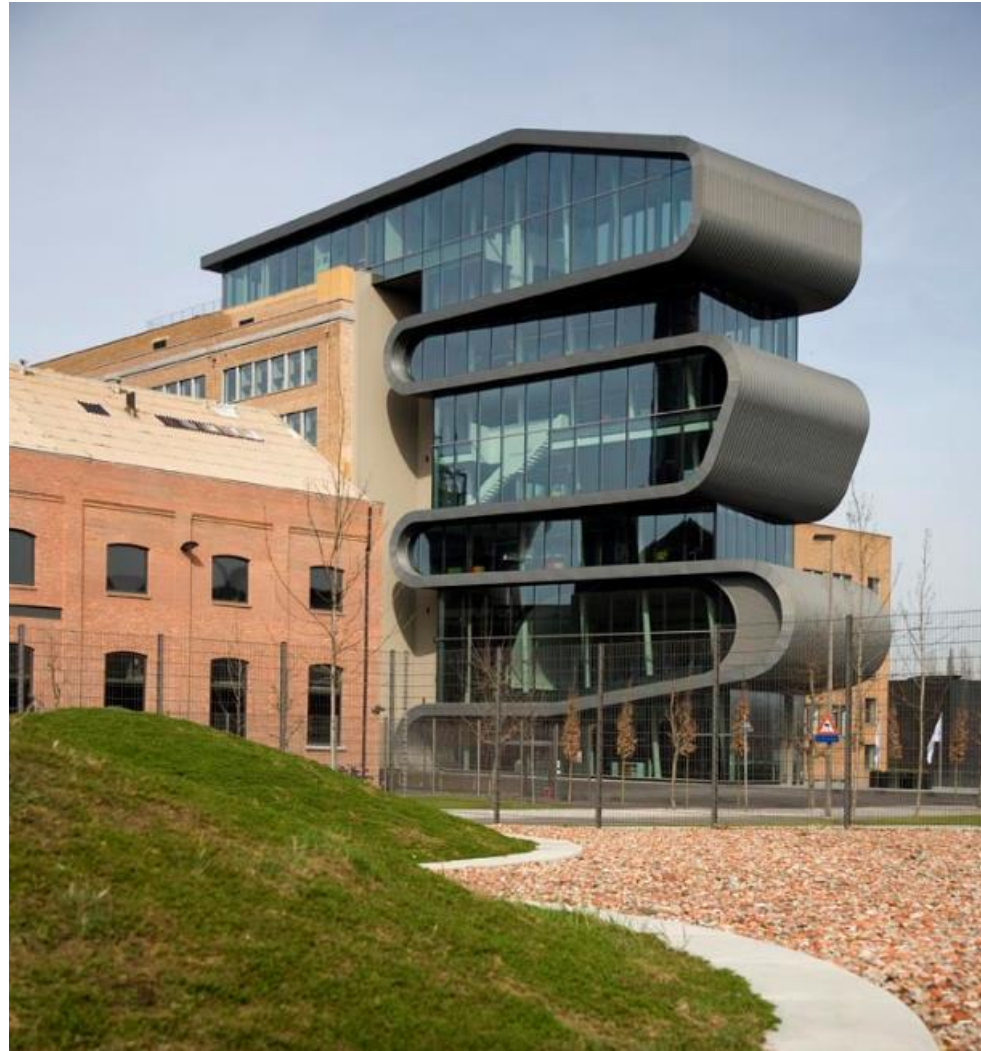




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Precious Metals
Refining



Introducing Umicore Hoboken now





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Precious Metals
Refining



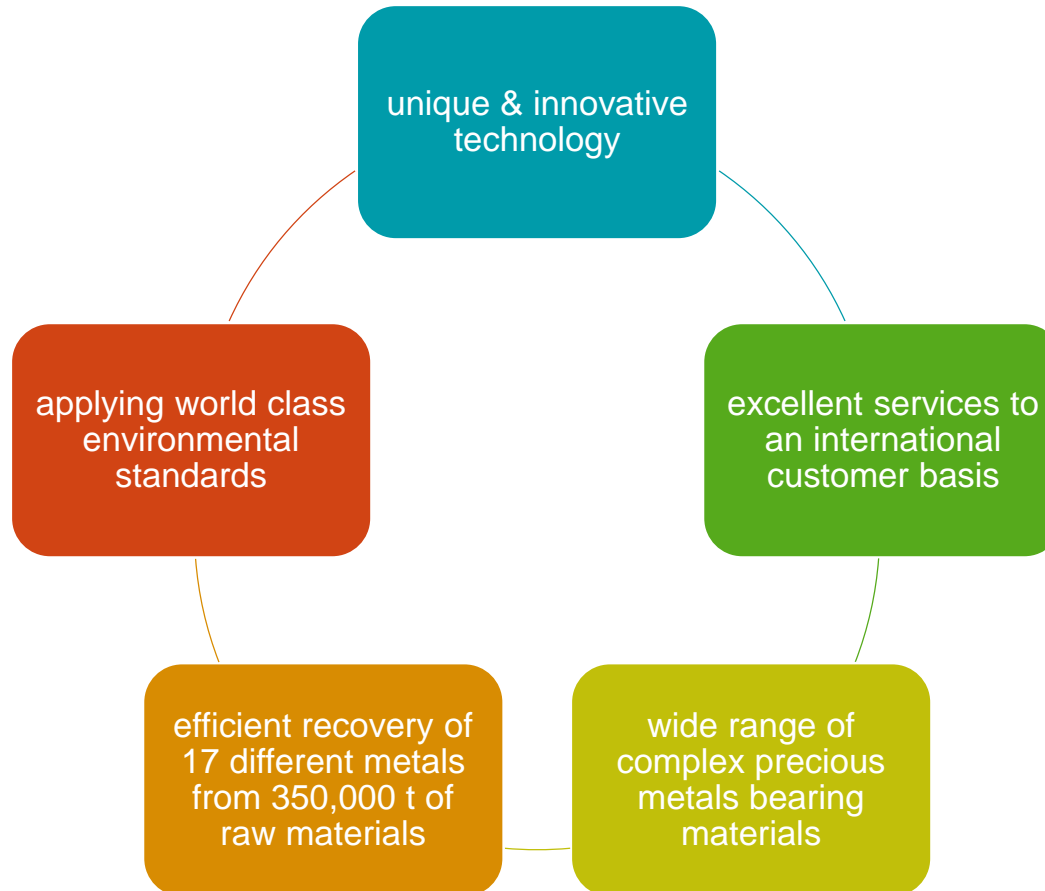
Introducing UPMR





Introducing UPMR

The leading precious metals recycler





Refining @ UPMR

Core business components



Raw
materials
supply



Sampling &
assaying



Smelting &
refining



Metal sales

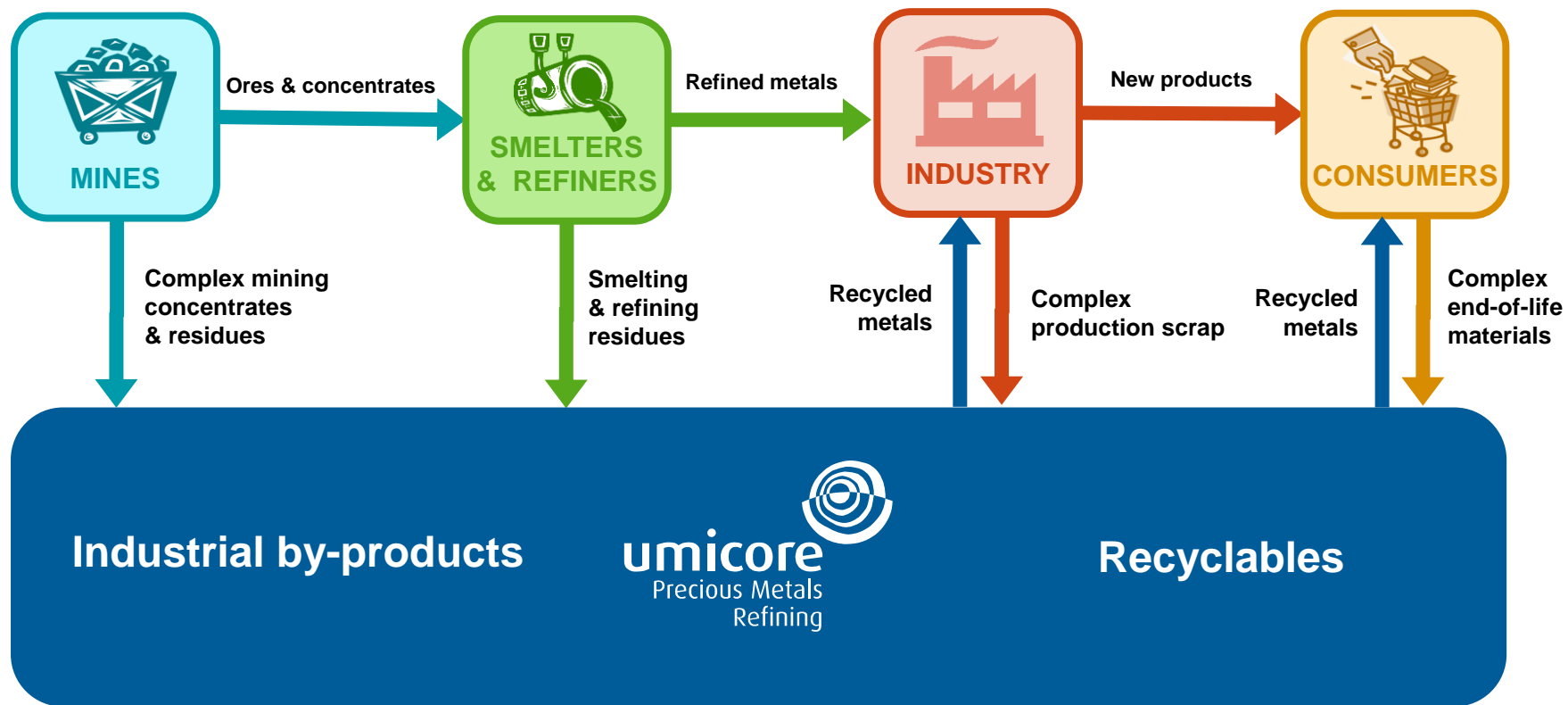


Customer support



Refining @ UPMR

Closing the materials loop





Refining @ UPMR

Industrial by-products

Lead/zinc

Copper

Nickel/PGM

Precious Metals

Wet



e.g. lead sulphate



e.g. electrolysis slimes



e.g. hydroxide



e.g. filter cake

**Lumpy/
metallic**



e.g. drosses



e.g. mattes



e.g. slags



e.g. impure bullion

**Dusty/
free-flowing**



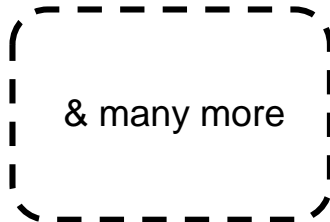
e.g. fine drosses



e.g. complex concentrate



e.g. flue dust



& many more



Refining @ UPMR

Recyclables

Electronic Scrap

e.g. mobile phones,
printed circuit
boards



**Au, Ag,
Pd, Cu**

Spent Automotive Catalysts

end-of-life
car catalysts



**Pt, Pd,
Rh**

Spent Industrial Catalysts

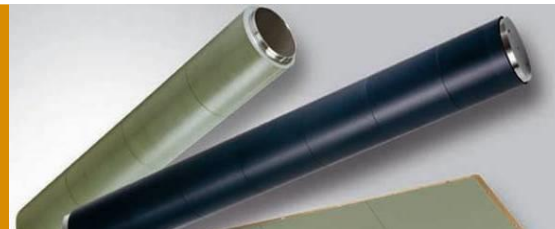
industrial catalysts
from oil refining &
petrochemical
industry



**Pt, Pd,
Rh**

Other precious metal bearing materials

e.g. fuel cells,
photographic
residues



**Ag, In,
Se...**



Refining @ UPMR

Products

Precious
metals

Ag Silver	Au Gold	Pt Platinum	Pd Palladium	Rh Rhodium	Ru Ruthenium	Ir Iridium
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Special
metals

Te Tellurium	Se Selenium	In Indium	As Arsenic	Bi Bismuth	Sb Antimony	Sn Tin
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Base
metals

Pb Lead	Cu Copper	Ni Nickel
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Other
products

Aggre -gates	H_2SO_4
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Refining @ UPMR

Not all recycling is the same



Umicore = high tech

- high precious metals yields
- special & base metals recovered
- high environmental standard, safe elimination of hazardous substances

Back-yard recycling = low tech

- low Au-recovery efficiency
- virtually no recovery of other metals
- dramatic impact on health & environment



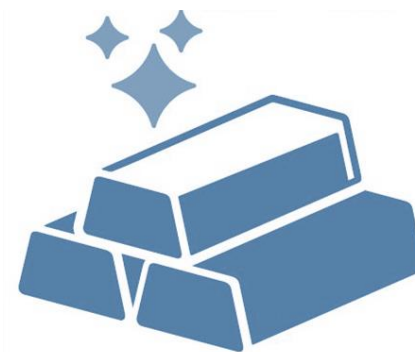
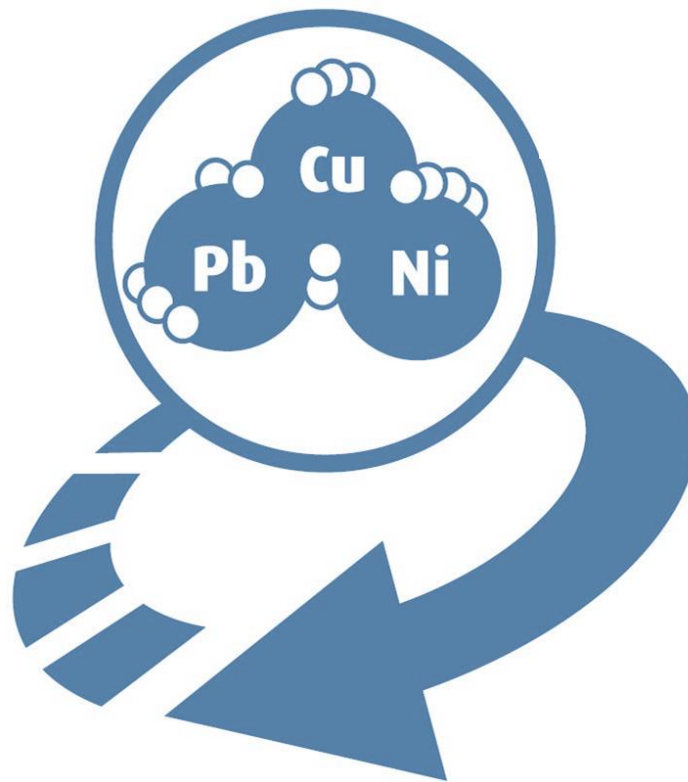
Introducing UPMR

Excellence in refining services

Recyclables



Industrial by-products



17 different metals



Sustainability@ UPMR

Environmental and social responsibility



Great place to work

**Stakeholder
engagement**



Eco-efficiency



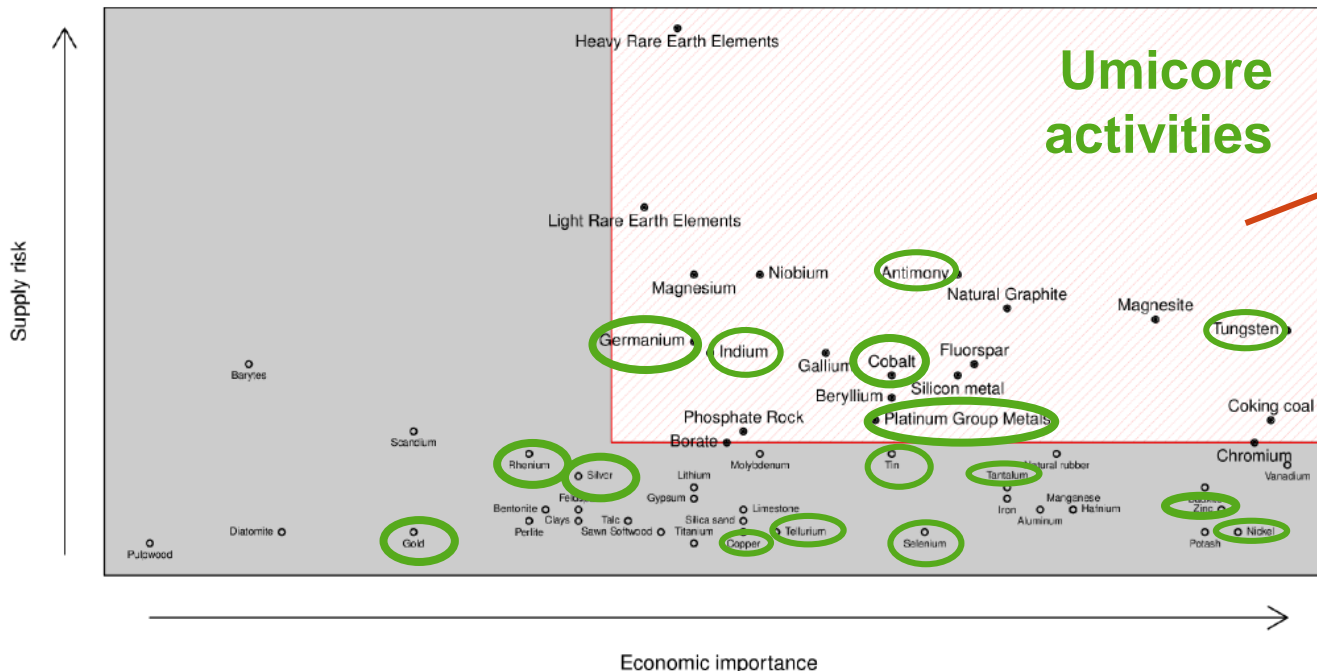
Umicore and the Circular Economy



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29 metals and materials

Co Cobalt	Ni Nickel	Cu Copper	Zn Zinc	Ga Gallium	Ge Germanium	As Arsenic	Se Selenium	S Sulfur	
Ru Ruthenium	Rh Rhodium	Pd Palladium	Ag Silver	In Indium	Sn Tin	Sb Antimony	Te Tellurium	Ta Tantalum	W Tungsten
Re Rhenium	Ir Iridium	Pt Platinum	Au Gold	Pb Lead	Bi Bismuth	La Lanthanum	Ce Cerium	Pr Praseodymium	Nd Neodymium



Critical metals (EU):
Be, Co, Ga, Ge, In, Mg,
Nb, PGM, Sb, Si, W...



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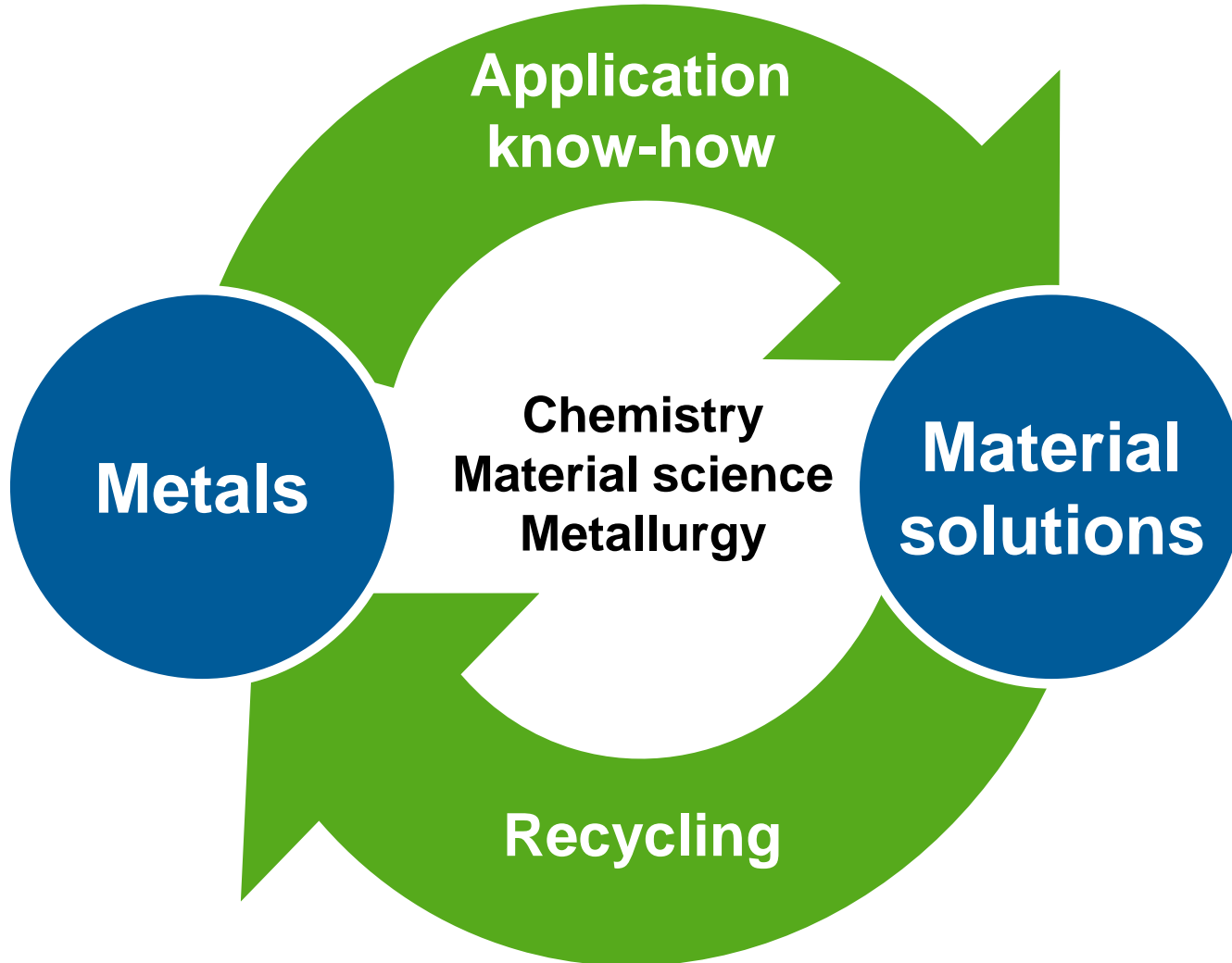
Old business model





Introducing Umicore

New business model





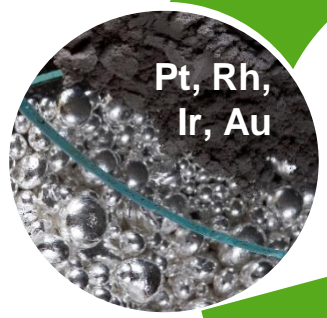
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Umicore PGMs and their recycling



Alloys



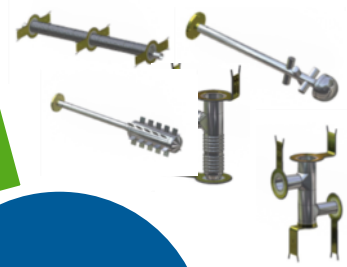
Pt, Rh,
Ir, Au



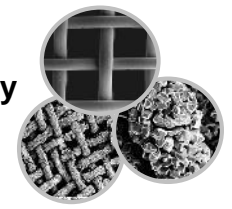
Engineered
solutions



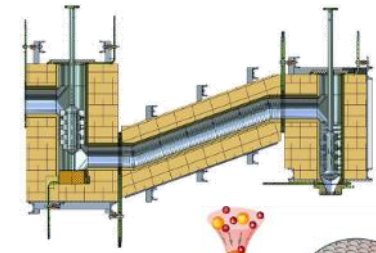
Used components
Secondary RM



PGM Components
Special glass industry



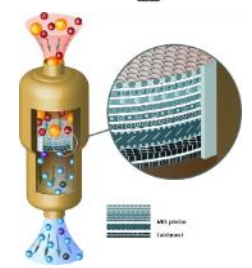
PGM gauzes
Chemical industry



Glass industry



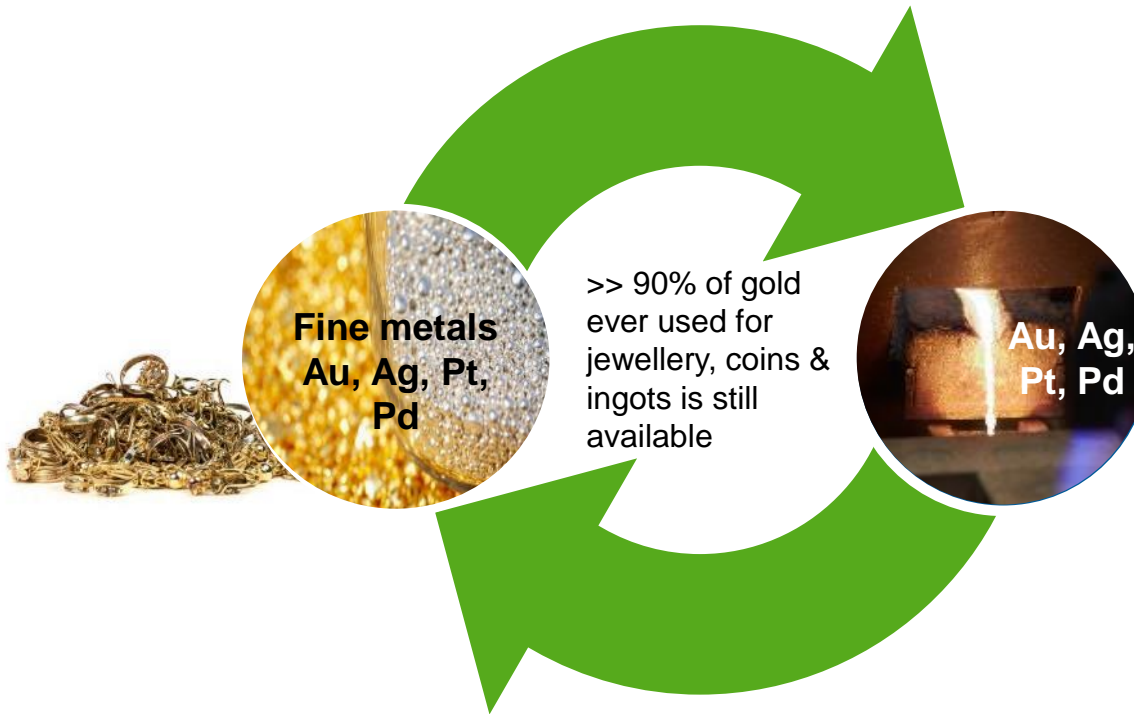
End-user markets





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Au, Ag, Pt, Pd and their recycling

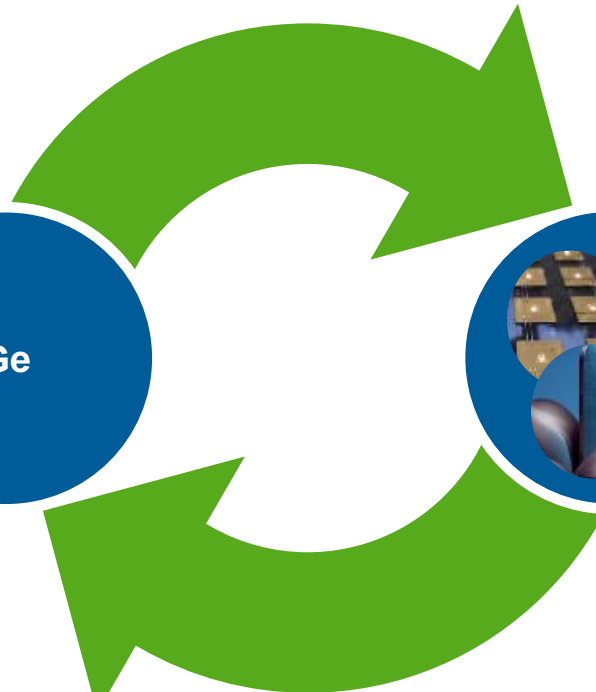
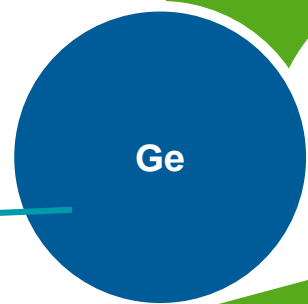




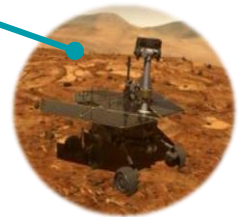
Umicore Ge and its recycling



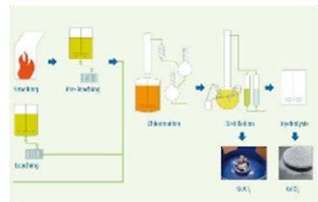
**By-products
from Zn-mining
& coal fly ashes**



**Optical fibres
Solar Cells and LEDs
Infrared & optics**



**NASA Mars
Exploration Rovers
Spirit and
Opportunity**





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Co applications and their recycling

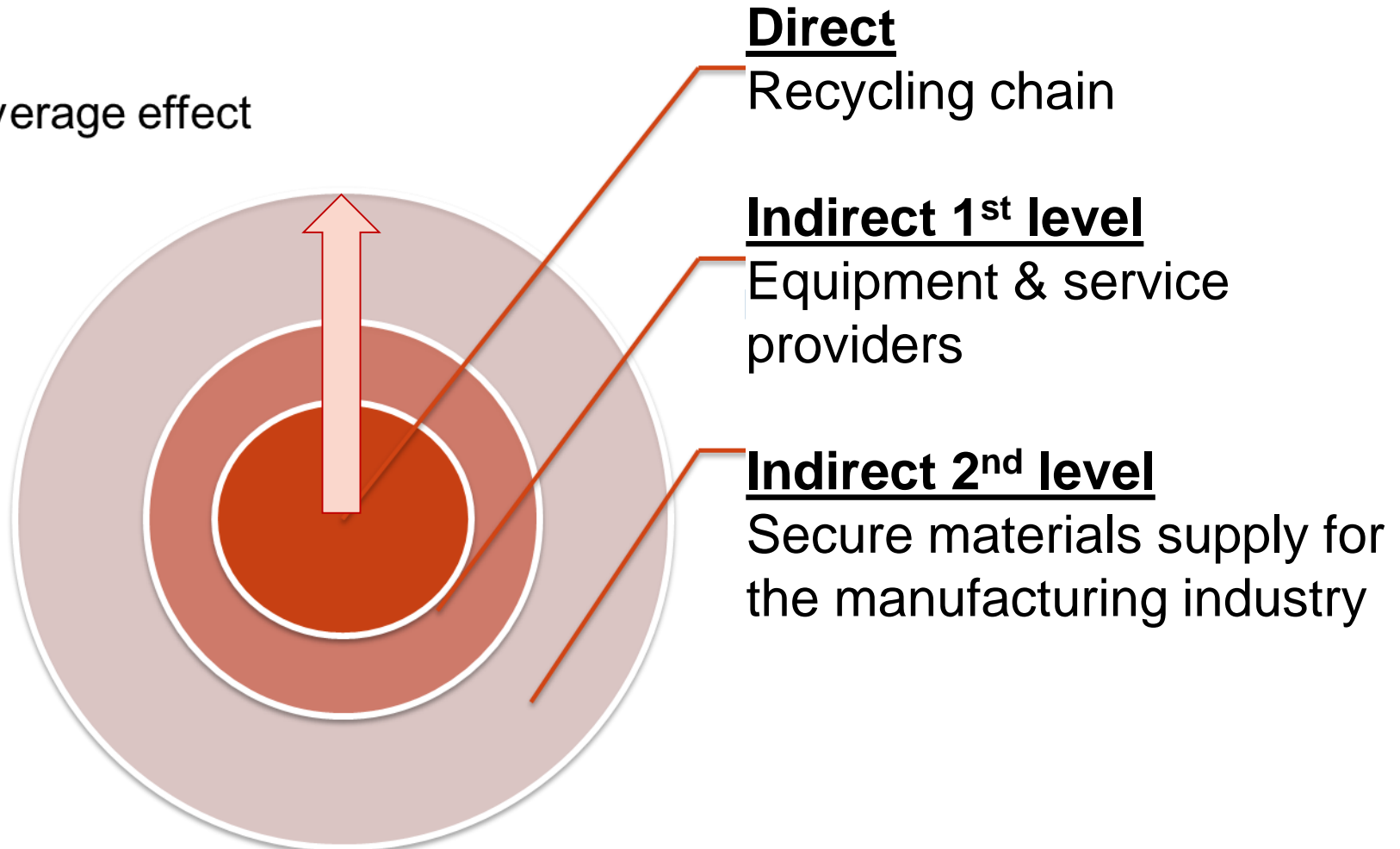




Message to policy makers 1

Circular economy helps growth & jobs

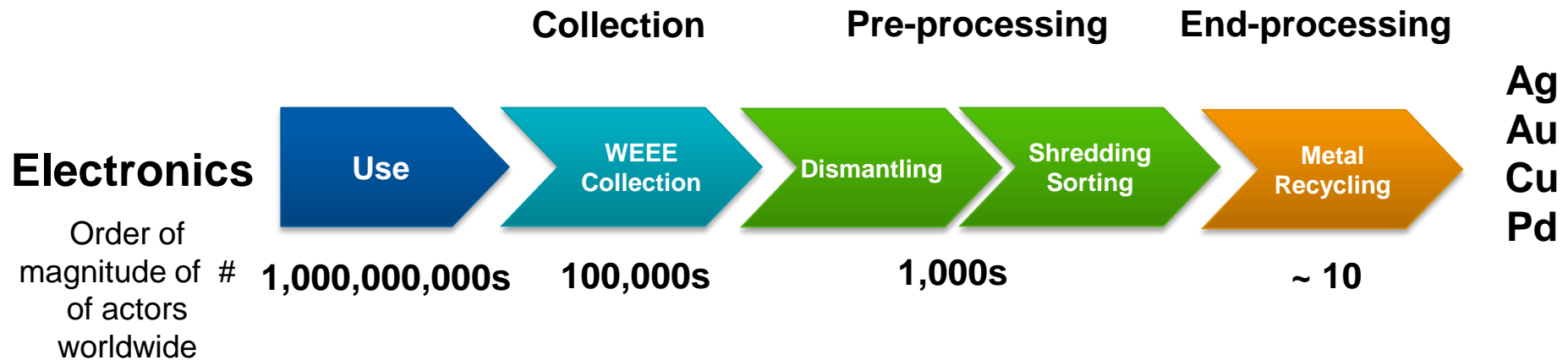
Leverage effect





Message to policy makers 2

Recycling is a global value chain



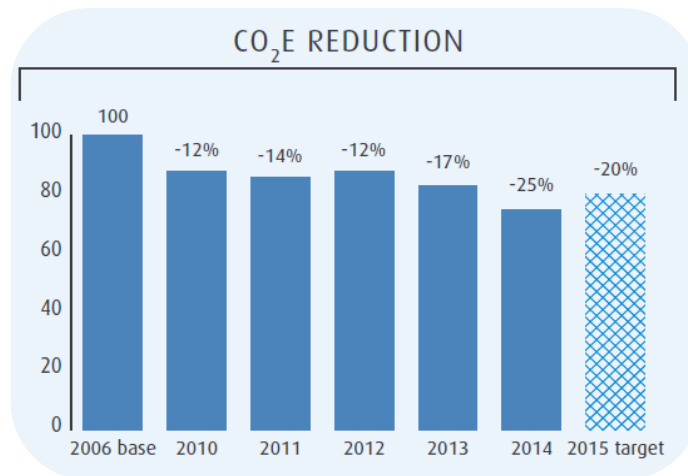
Efficient and fast global deployment of high quality recycling activities

- needs structured local + regional + national + global collaborations
- focus of the stakeholders will speed up the transition
- transboundary shipment to good providers needs facilitation



Message to policy makers 3

Nurture high quality recycling



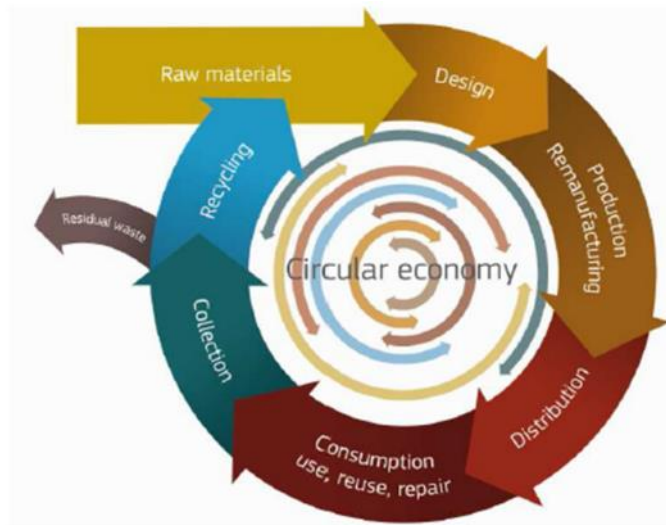
Nurture high quality recycling by:

- Applying Best Available Technology (BAT) and Best Available Practices (BAP) in the definition of legislation and standards
- Supporting it through public procurement
- Enforcing legislation on a global scale to reach level playing fields



Message to business 1

Circular economy creates business opportunities



Circular economy business opportunities creation is supported by

- **Value chain dialogue and cooperation**
- **Embracing Public – Private Partnerships**
- **Accepting that the transition from “waste” to “raw material” is a societal process that will take its time to reach full deployment**



Message to business 2

Environmental responsibility and business success compatible



Award for Best Belgian Sustainability Report





Message to business 2

Environmental responsibility and business success compatible



Award for Best Belgian Sustainability Report





Message to business 3

Integrate sustainability in strategic thinking

The most successful enterprises in the 21st century will be those that:

- **think most carefully about sustainable development issues**
- **anticipate the constraints rather than react to them**
- **look for opportunities to innovate and to differentiate from a sustainability perspective**
- **participate pro-actively in the regulation process**

because they will:

- **have the most sustainable strategies**
- **have the ability to attract the best people**

You always overestimate how much you can change in one year but you always underestimate how much you can change in 10 years

Bill Gates

