ITU Green standards week

Innovating today for a sustainable tomorrow

Designing Products for End-Of-Life

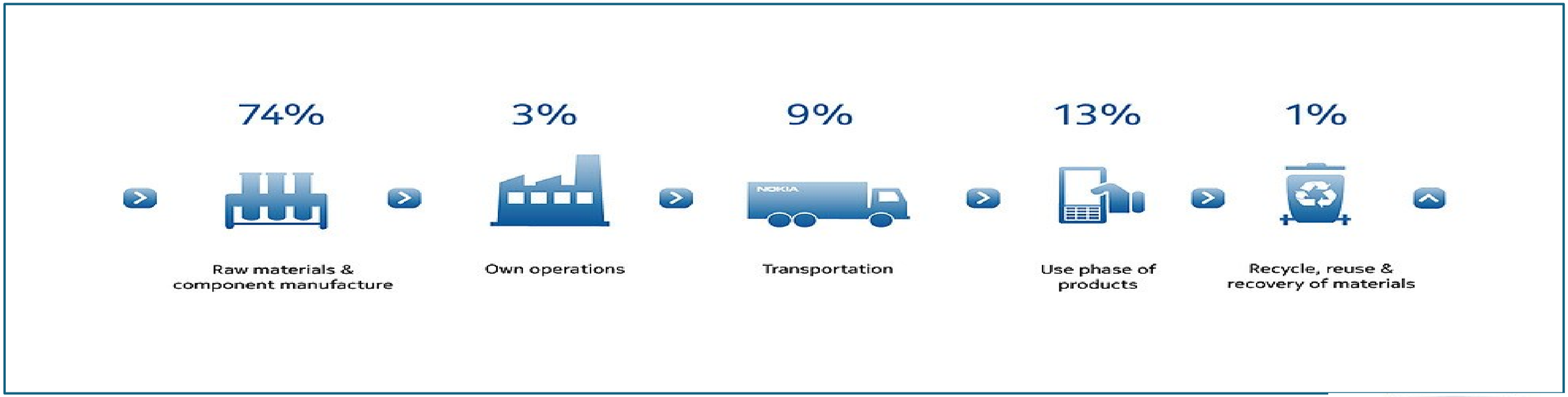
Markus Terho, Head of Sustainability, Nokia

DELIVER GREAT MOBILE PRODUCTS THAT....

...enable people to improve their lives

...are made with best environmental and social practices

We consider the environment during the entire life cycle of all our products
- Life Cycle Thinking -



We create every device with the environment in mind

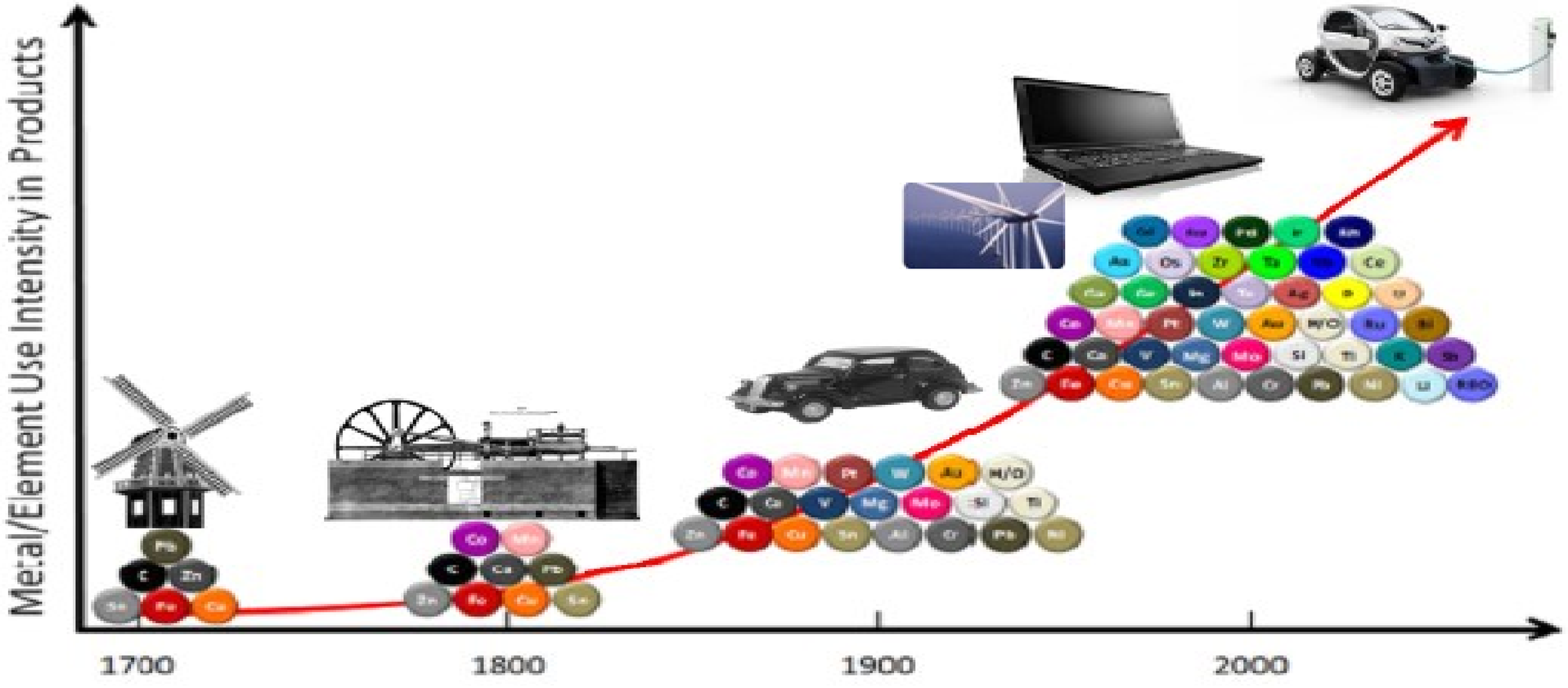
Dematerialization

- Converging several devices into one single small device
- Mobile technologies are also continuously helping to dematerialize the economy by replacing physical products with services

Navigation

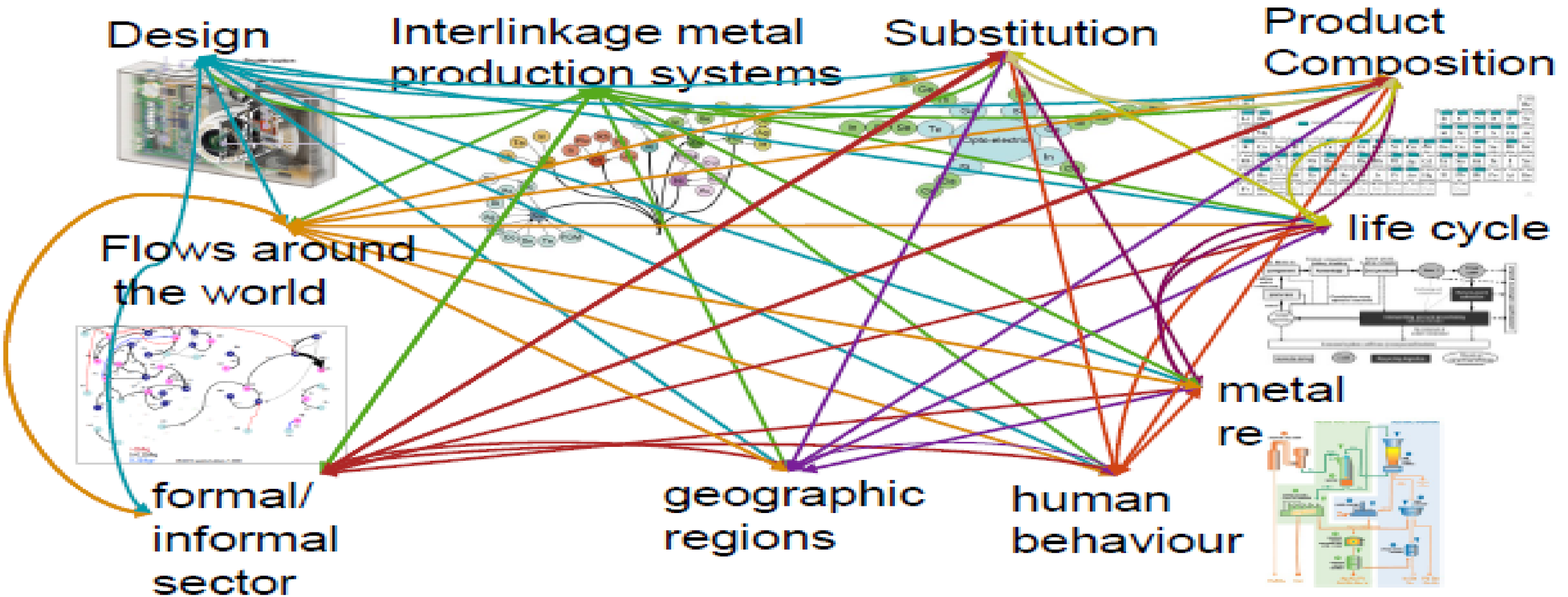
Potential to reduce fuel consumption by up to 10-12 % by optimizing driving routes

Products become increasingly complex…



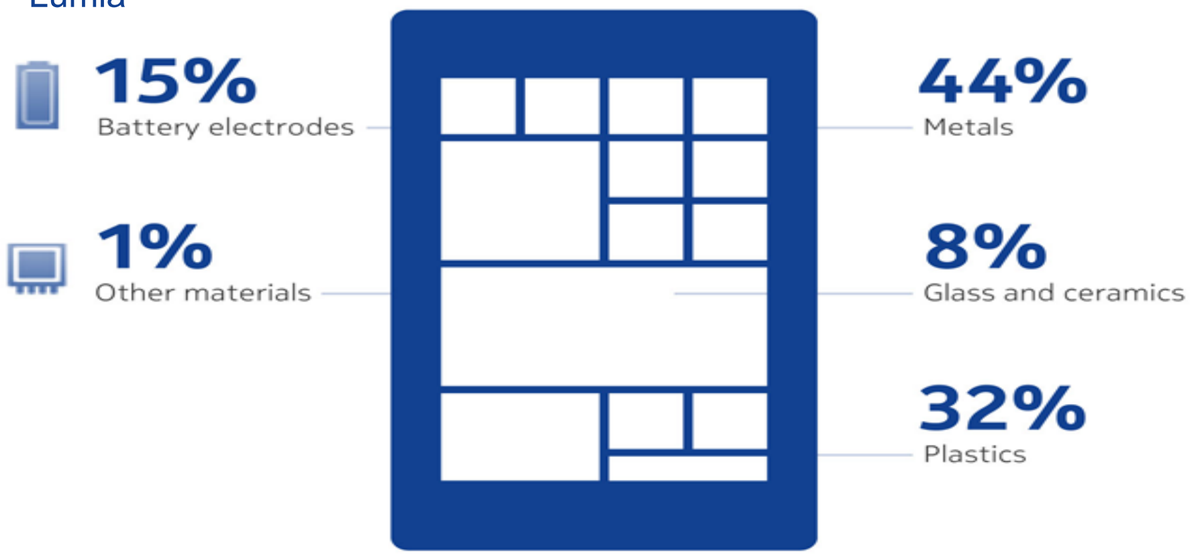
Based on: Achzet et al., Materials critical to the energy industry, Augsburg, 2011

Everything is connected…and complex

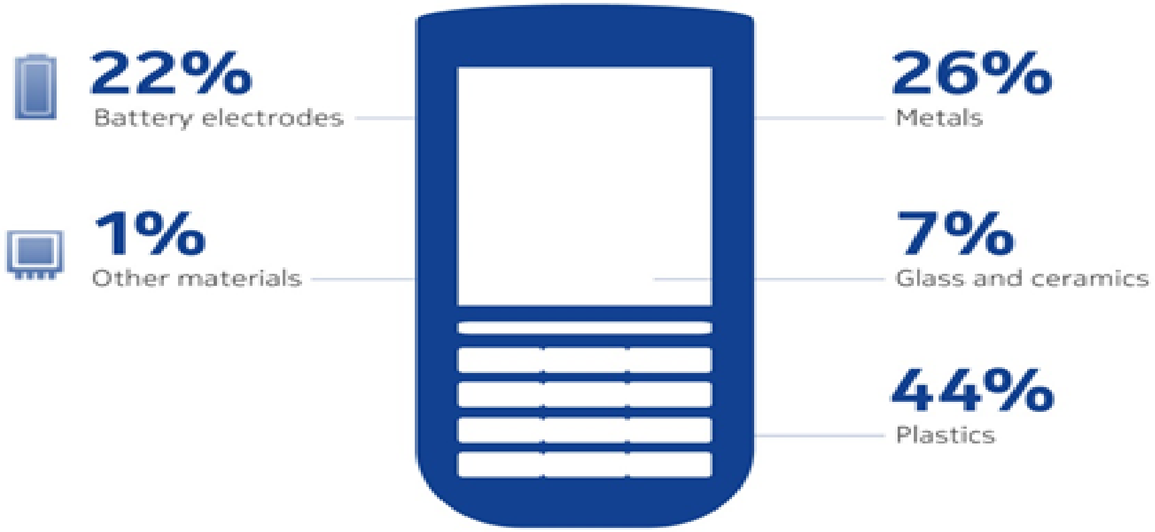


INGREDIENTS OF A NOKIA PHONE

Lumia



Asha



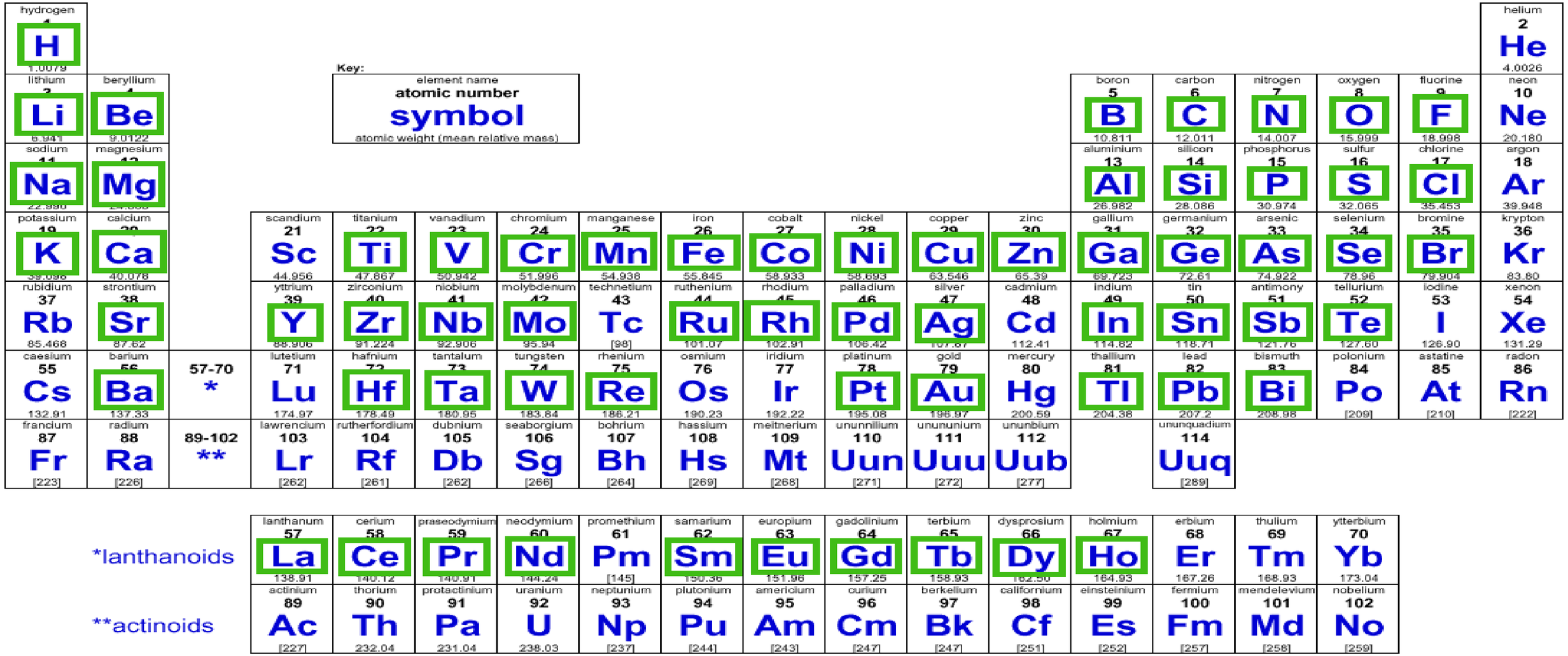
We are the first mobile manufacturer to manage full list of substances used in our phones.

Some of our products include bio plastics, bio paints, recycled metals and recycled plastics.

Our products do not include PVC, brominated flame retardants (BFR) nor chlorinated and brominated compounds.

Every Nokia product comes with an Eco profile, which tells you about its materials, energy efficiency, packaging, environmental impact and recycling.

Elements typically used in a mobile devices



This periodic table does not take into account in what quantities and concentrations the elements have been used (only the smallest impurities are excluded). Neither does it take into account the form the element in question has been used in.

Mobile phone take-back and recycling phases

Consumer facing

Collection /Take back

1. Nokia own collection
2. Partnerhips (operator, NGO etc)
3. Producer associations

E-waste recycling company

Sorting/ Pretreatment

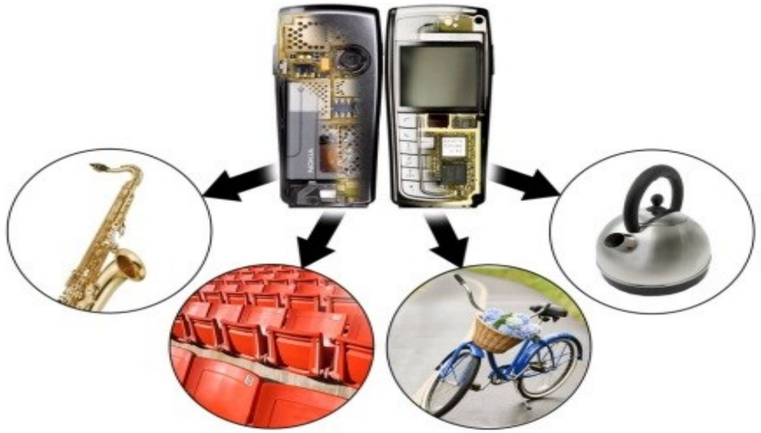
1. Manual
2. Mechanical

Recycling companies separate materials and sell them as secondary raw material to downstream

Downstream companies

Material recycling

1. Aluminum smelter
2. Ferrous smelter
3. Integrated Cu smelter
4. Plastic compounding
5. Cobalt chemistries



NOKIA

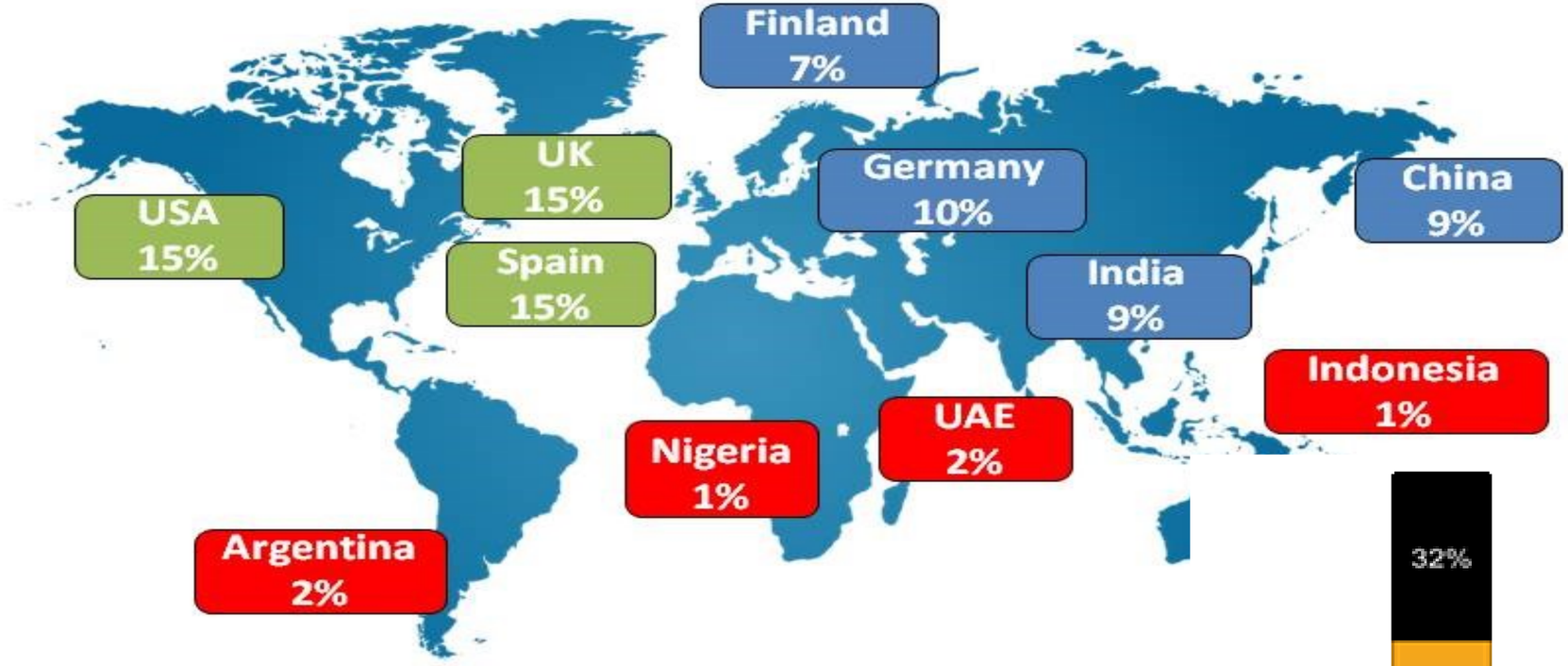
THE MATERIALS IN YOUR OLD PHONE CAN BE RECOVERED AND USED to make new products or generate energy

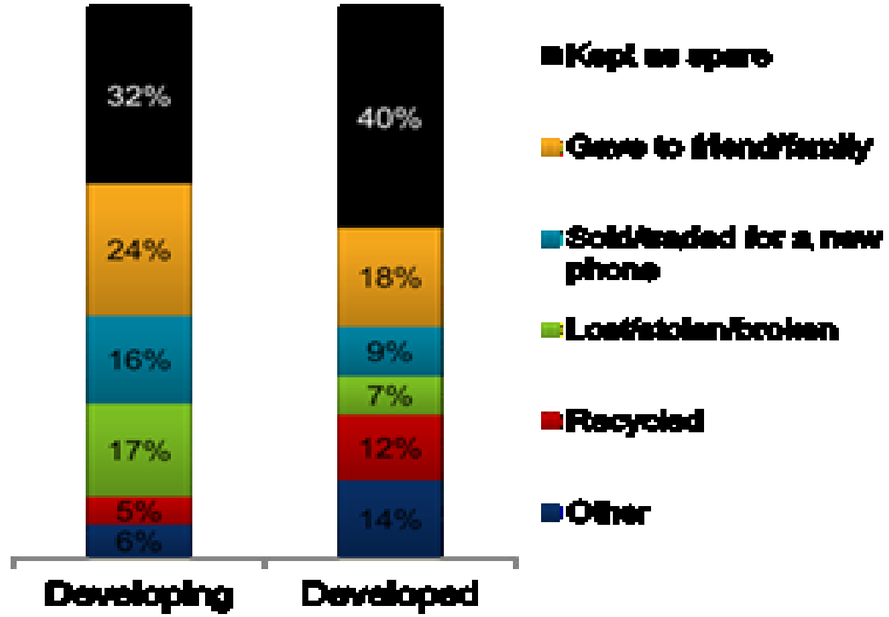
You can drop off your old phone at any local electronics recycling point. Nokia has also own recycling points around the world.

Mobiles E-waste problem? Resource?

E-waste … efficient Collection of the End-of-Life e-waste is key!

Recycling behauviour-mobile phones





RECYCLING IS THE WAY FORWARD

RECOVER THE MATERIALS IN OLD PHONES to make new products or generate energy.

Nokia to collect fake handsets for recycling

Posted by MARGARET WAHITO on September 19, 2012

NAIROBI, Kenya, Sept 19 – Nokia h
partnered with local mobile servic
providers and retail outlets to coll
and dispose off counterfeit phone
ahead of the planned switch-off of
these devices by the Communicat
Commission of Kenya (CCK).

The handsets manufacturer has
partnered with Safaricom, Airtel,
Nakumatt, Naivas, Phonelink, and

Ditch your old phone for recycling and save a turtle

Recycle your old mobile devices at any Nokia Care Centre in the UAE, Oman, and Qatar and get a chance to 'adopt' one of 200 endangered Hawksbill turtle

By Janice Ponce de Leon, Staff Reporter
Published: 15:53 November 23, 2011

Nokia's Recyclimpics Adds Some Fun To Recycling

6 Jul 2011 / 2:34pm / By Daniel Goh

Malaysia – **Nokia** recently held a three-day **Nokia Recyclimpics** event at the east court of M
continued effort of its **'Recycle a Phone & Adopt a Tree'** program.

Conclusions

- Designing for Recycling is a broad topic for Product Design
  - Functionality, technology, materials
  - Technically products are challenging, they contain almost every element from the periodic table

- Circular Economy need across-industries dialogue and a global view
  - Product use patterns and WEEE/EPR
    - People do not know that you can recycle electronics -> collection amounts are low
  - recyclers need to introduce advanced recycling technology to get all possible materials from mobile phone in an environmentally sound manner

- Better Solution:
  - All stakeholders work together (government, manufacturer, retailer, operator, recycler, consumer)

Thank you