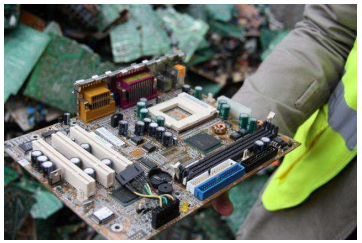
Best of two Worlds
– moving towards a (global) circular economy



Christian Hagelüken
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cobalt
awareness . learning . dialogue

Closing Conference,
Brussels, 23.3.2015

Best of Two Worlds approach

conceptual foundation

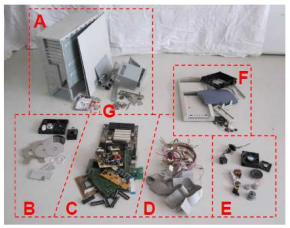
The Bo2W approach combines the strengths of recycling systems in developing countries with those of industrialized countries.

- Local treatment is used whenever appropriate, other fractions are exported to state of the art facilities.
- Sound solutions for all fractions from e-waste are developed.
- Creation of jobs according to international labour standards.
- Fair and transparent pricing of recycling fractions.

Practical needs & transition to be addressed

Learned hands-on from activities over the past years

- need for intensive training and coaching of small entrepreneurs and (govt.) stakeholders
  - Dismantling practices
  - Business practices
  - Transboundary movement of materials
  - Recycling chain



- techno-economic issues to be overcome:
  - small volumes of material per enterprise initially, especially of critical, hazardous fractions
  - finding sustainable solutions for all fractions from e-waste
  - financing & organisational obstacles associated with business between small and large enterprises in international context

- need for stakeholder interaction
  - Building trust
  - Awareness raising

The transition takes time

Umicore has been involved for many years in many domains

2005 – Creation of the Best of Two Worlds idea & expression at StEP meeting

2006 – 2009 India with EMPA

2006 – 2010 China with StEP and its members.

2009 – Interaction WorldLoop starts

2009 ff – StEP e-waste academy / summer school for scientists (o.a. Belgium)

2010 – Crystal project India with EMPA/GIZ

2012 – Co-authored Publication Best of Two Worlds concept

2012 – Formal partnership with WorldLoop
Start Best of Two Worlds project, lead Öko Institute, Ghana & Egypt.

2013 – Step E-waste Academy for practitioners (Ghana) & scientists (Switzerland)

2014 – Step E-waste Academy for practitioners (El Salvador)

2015 – End Best of Two Worlds project, lead Öko Institute

solving the e-waste problem

Step E-waste Academy

Umicore hosts, co-sponsors, and transfers knowledge

- Separate editions for scientists and managers / practitioners
- Looking at the e-waste issue in its entirety,
- Platform to young scientists to share their knowledge, interact with experts and develop collaborative partnerships
- Forum for stakeholders in system design as well as implementing solutions to share their knowledge, interact with experts and develop collaborative partnerships

http://www.step-initiative.org/index.php/ewas.html

R3* project “global circular economy for strategic metals – Best of two worlds”

SPONSORED BY THE
Federal Ministry of Education and Research

*German funding program

- Activities in Ghana and Egypt

  1. Stakeholder involvement **2.** Market analysis **3.** determine optimal dismantling depth
  4. outlets for fractions with negative value **5.** analysis of structural barriers **6.** recommendations

- Key observations

  1. “profit dilemma” – how to cope with solely economics based approaches?
     recovery of valuables & externalisation of environmental and social costs for the rest.
  2. Informal practices rewarded as obtained materials can be traded / transported without notification.
  3. Formal, sound practices discouraged → generated materials need to be notified before going to internationally recognized sound recyclers.
  4. Notification process is long, complex and expensive process for SMEs

- Solutions

  1. Fast track procedure for export to certified recyclers in OECD countries.
  2. Taylor-made solutions involving local (market) situation & existing players

Future focus

We would like to see things moving…

….not waste shipments into Ghana!

….but sound dismantling & recycling in Ghana!

….Interlinked with international recycling networks!

Global circular economy – resolving local and international challenges

- Circular economy is team work between wide range of stakeholders
- Creating trustful, lasting relationships between actors & stakeholders
- Bridging knowledge and experience gaps

- Removing systemic disadvantages for compliant actors, solve the “profit dilemma”
- Supporting actors by setting social environmental technical business standards and make good actors recognizable via certification

- Facilitation of transboundary movement of waste to duly certified recycling facilities in other countries (fast track procedure)
- Support legitimate import and export, not dubious export

Umicore's efforts have been recognized

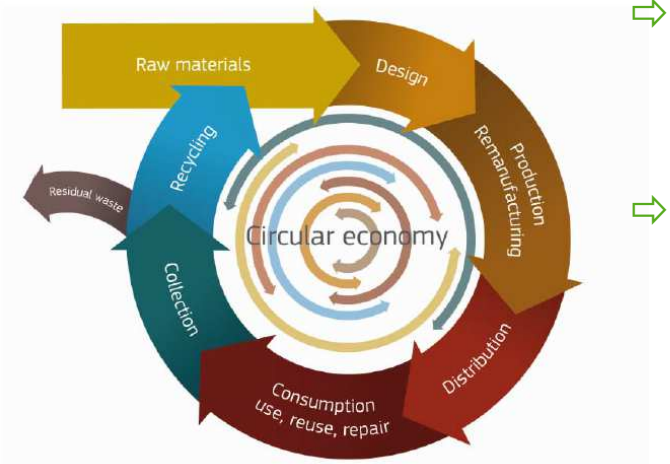
Winner (2014) – Entrepreneurs for Entrepreneurs for Umicore's efforts over many years as illustrated by the cooperation with WorldLoop.

ondernemers voor ondernemers
Duurzame samenwerking met het Zuiden

Finalist (2014) - European Business Awards for the Environment – International cooperation for the WorldLoop – Umicore collaboration

Winner (2013) – Belgian Business Awards for the Environment for the partnership WorldLoop – Umicore

Excursion - Circular Economy for metals



Source: EU-COM (2014) 398, Towards a circular economy, 2.7.2014

No downcycling / no quality issue for metals

→ ideal for a circular economy, reusable raw material

- ⇨ A circle is only closed if metals physically find their way into new product lifecycles

  secure high quality recycling along the entire chain

- ⇨ Economic viability is prerequisite: recyclers cannot close the physical circle unless revenues match recycling costs all along the chain

  Focussing on costs without adequate consideration of quality criteria prohibits a circular economy

- ⇨ Recycling cannot entirely fulfil metal needs

  Mining & recycling are complementary for supply

  Innovative materials, product design & resource efficient use are essential to optimise material demand

- ⇨ Circular economy = recovering metals/materials comprehensively at product EoL, when ever and where ever this will take place

  → *global dimension*

Thanks for your attention

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For more background::

UNEP (2013): Metal Recycling: Opportunities, Limits, Infrastrutcure

Hagelüken, C.: Recycling of (critical) metals, in: Gunn, G. (ed): Critical Metals Handbook, Wiley & Sons, 2014