What I am about to tell you
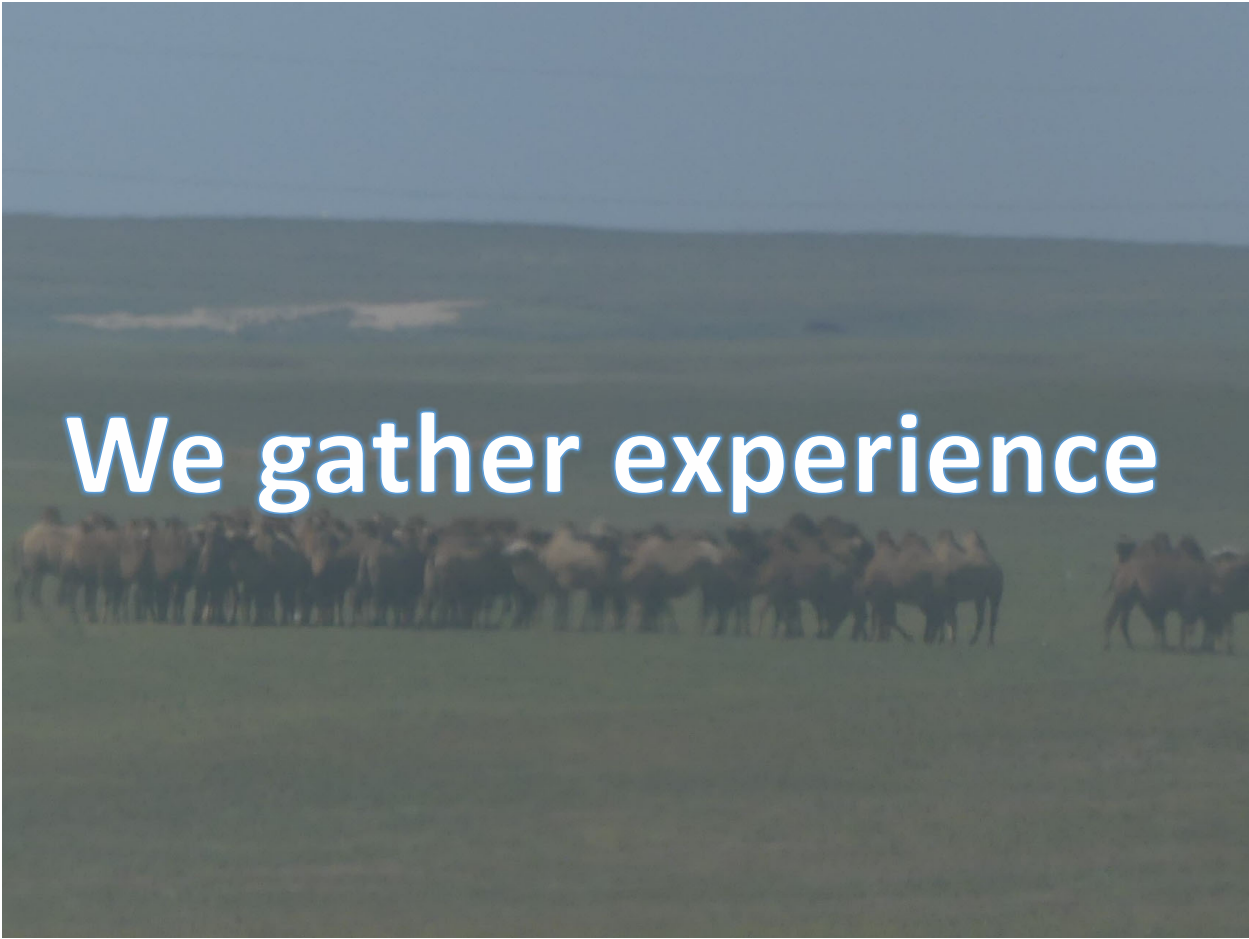
We start a long journey

We gather experience

We build and build

We achieved structures

Bridging Nanotechology

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Your research enables you to produce information that can be used directly in regulatory systems to support predictability and coherence in policymaking

This information can affect millions (or billions) of people's lives

Communication between stakeholders is essential for the advancement of society

Translation between different geographical areas and cultures is equally critical

Trust in fundamental issues of scientific integrity, reproducibility, knowledge and data-sharing, governance, and broader communication as they relate to nanotechnology

Community of Research

Scientific methods

Data sharing and computation

Policy issues

Broader communication

Scientific methods – relevance, reliability and repeatability

Test-systems … exposure, uptake and effects of … along the **life cycle of the NM/-product**

Guideline developments …relevant **transparent protocols that ensure reproducible and repeatable** results

Models that combine physicochemical modelling with exposure, bioavailability and hazard information on key nano-properties

Little consensus on models for bioavailability and exposure assessment

More "ecological" focus in US and easier adaptation of "simpler measures" test in EU

In the U.S. the responsibility is **distributed across** several federal agencies and in the EU it is **distributed between** different Directorate-Generals within EU commission and in the independent member states

Data sharing and computational modelling

Data compilation that are amenable to **computational analysis**, **modelling**, and **theory development**

Common ontologies, access criteria, formats, and standards for data curation and completeness

Adaption of the **ISA-TAB-nano** file format

General and specific "**read-across**" models that reduce the need for testing and case-by-case evaluation

Common Road Map developed

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Policy issues

Many similarities in laws governing the use in commerce of toxic or hazardous substances

Both represent a **coherent body of unified legislation** and are beholden to protect from risk while promoting public trust

They have **mature infrastructure** to examine new rules, enforce compliance with law, and make use of **global harmonization**

However, US and EU have generally adopted **differing outlook policy** prescriptions for how NMs should be governed

The EU's legal concept presumes that materials are unsafe, but this is a rebuttable presumption, while the US considers a chemical for NM safe until it is proven harmful

Regulation has begun to narrow the difference between the EU and US systems

Broader communication

The approaches to **risk communication are broadly convergent**

Communication to authorities, professional users and consumers is based on the best knowledge, with an **emphasis on independence**, **competence**, **quality** and **transparency**

There **are rules and guidance relating to conflicts of interest, transparency, stakeholder involvement, regulatory impact assessment**… within the governmental structure

Control-banding has been identified as a suitable risk control method for managing nanoparticle exposure

New ways to communicate help to build trust along supply chains and reassure both professional users and consumers

Way forward

Communicate that we have come a long way and **know a lot**

Further **methods on nano-specific effects**, with emphasis on novel hazard methods **e.g. AOPs, long term effects.**

Focus on relevant and robust **analytical** methods that can be **easily available**

A common understanding of how to include NM **uncertainty** parameters into the **risk assessment models**

Accepted **cyber-infrastructure and tools** to support data compilation, targeting developing of **nanoinformatics tools**

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Nano-informatics with tool for **safer by design development**

Development in policy areas to ensure **good and agreed governance of nano**

Continuous sharing of information with **ALL stakeholders** to have a transparent and **broadly (global) accepted governance**

Communicate progress into other areas such as **advanced materials, nano-medicine and general nano-manufactoring**

TRUST