



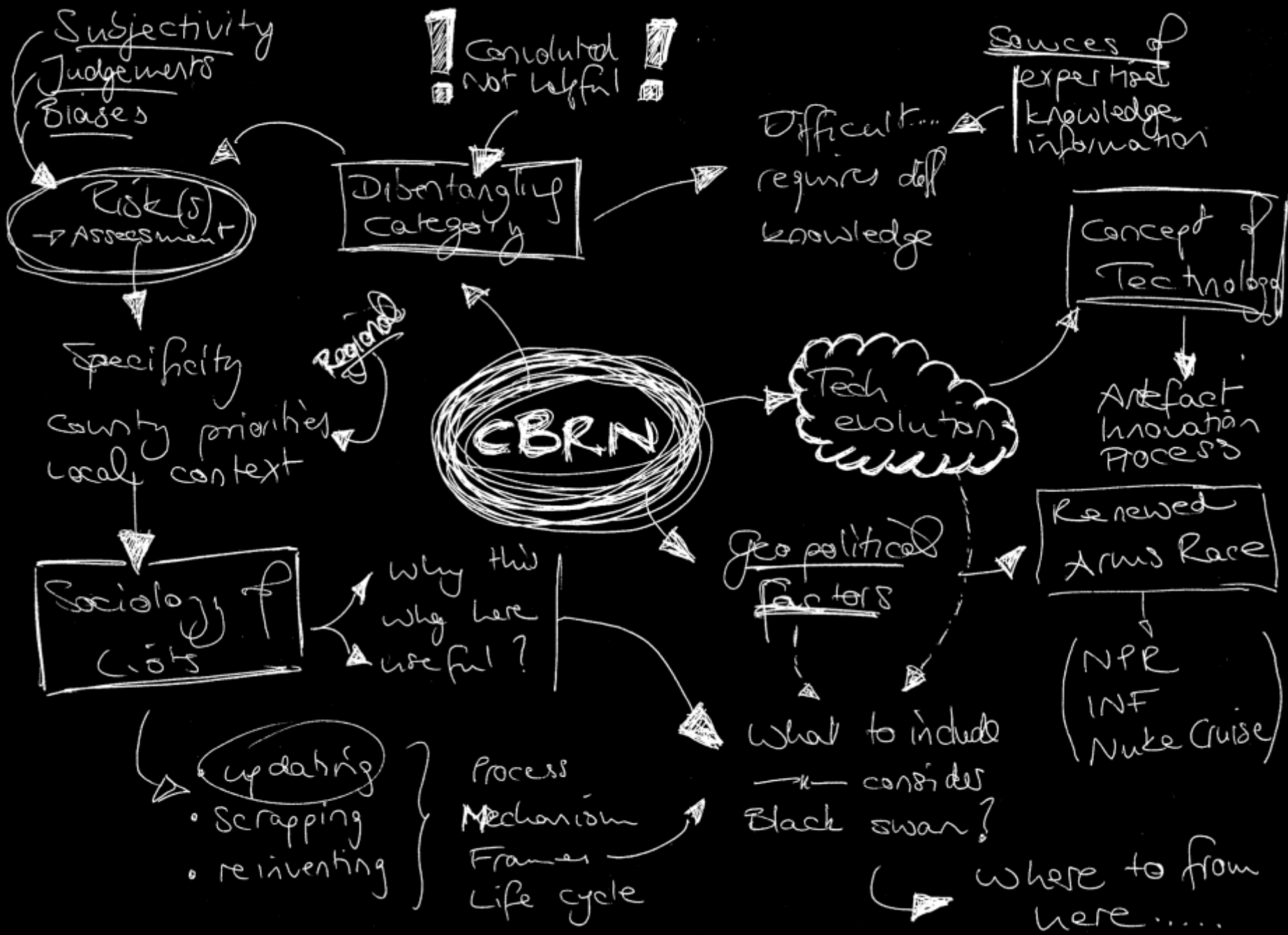
Technology Evolution and CBRN

Workshop on the Export Control of Dual-use Materials
and Technologies in GUAM Countries

Kyiv, Ukraine, 14 March 2018

Dr Kai ilchmann

Independent Arms Control Consultant



Subjectivity
Judgements
Biases

Convoluted
not helpful

Sources of
expert level
knowledge
information

Risk(s)
→ Assessment

Disentangling
Categories

Difficult...
requires diff
knowledge

Concept of
Technology

Artfact
Innovation
Process

Specificity
country priorities
local context

Regional

CBRN

Tech
evolution

Renewed
Arms Race

(NPR
INF
Nuke Cruise)

Sociology of
Crises

Geo political
Factors

Why this
why here
useful?

What to include
→ considers
Black swan?

Where to from
here.....

updating
• Scrapping
• re-inventing

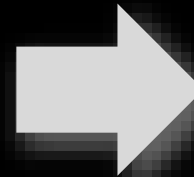
Process
Mechanism
Frames
Life cycle

CBRN - Categorisation

CBRN Categorisation historical and not sensical

– as covered by **Jean Pascal Zanders**

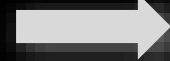
Vastly different systems
knowledge
materials
applications



Legal framework / politics
Responsibility institutionally
Stakeholder communities

Evolution?

Innovation
process



Notions of
technology



Socio-technical regime

“Progress”

Policy dilemma: How to design policies that can simultaneously...

- successfully suppress weapons development, whilst
- accommodating and encouraging the spread of dual use technologies for legitimate technical and scientific reasons

FOSTER

Regime against CBRN

The treaties are not outpaced by technological change ?

BWC & CWC prohibitions are defined by purpose and sufficiently broad to accommodate evolving technology - others....?

Implementation is problematic

What is proliferation relevant?

What needs to be export controlled?

What requires attention?

No labels

Changes in 'technology' require awareness !!!



Export control and lack of knowledge

Knowledge of tech change

Four states

Spaces for exchanges

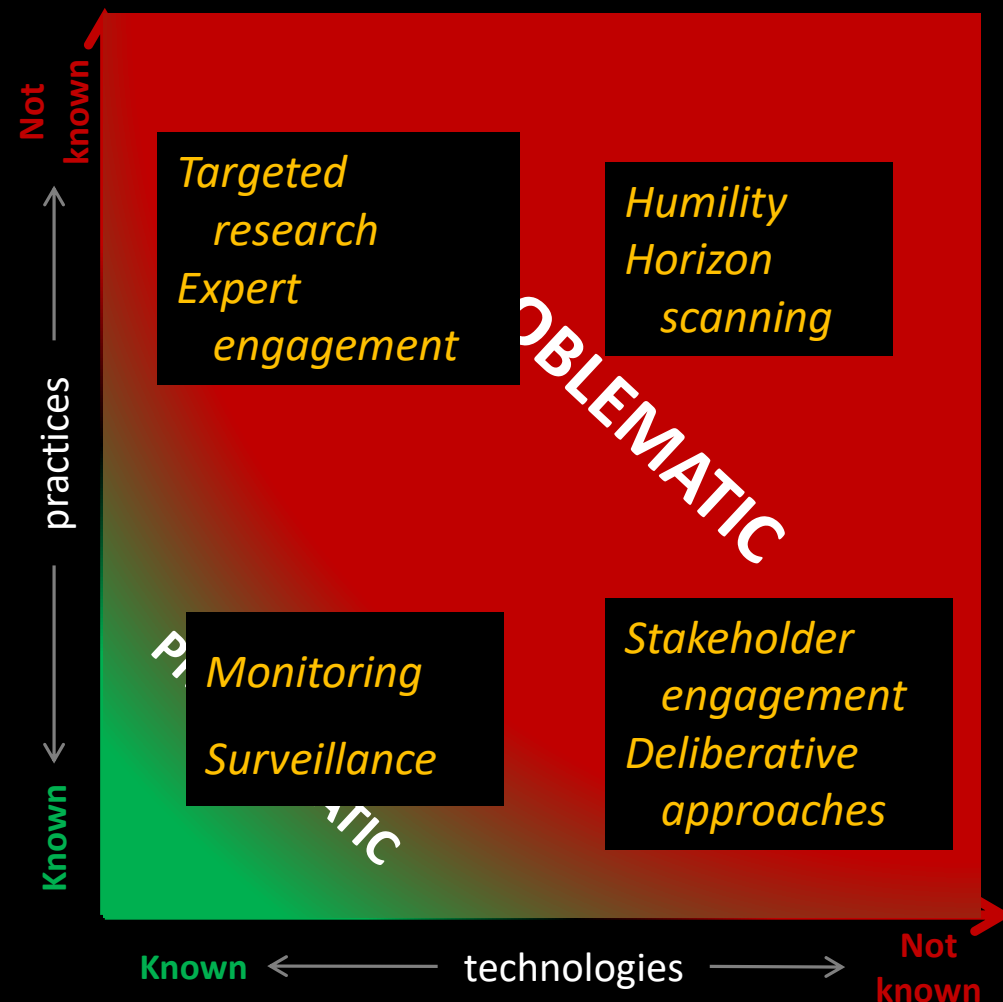
Intra institutionally, inter institutionally

National, regional, international

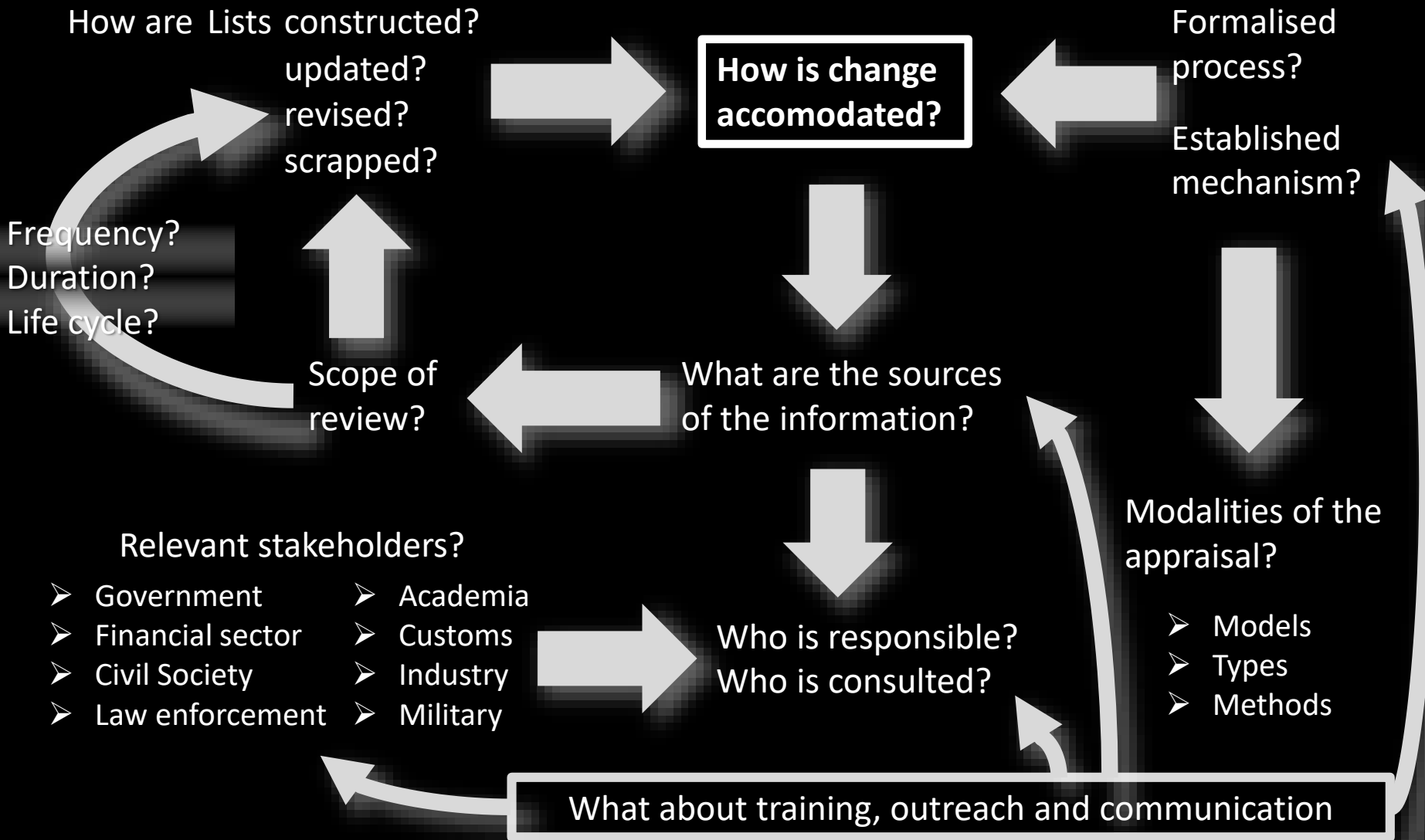
... with wide variety of **actors and stakeholders, enablers and facilitators**

In academia, industry, government, civil society, financial sector, law enforcement, customs

Requires space, dedication, resources, collaboration, time, and active engagement...



Technology evolution and Export controls



Technology evolution and Export controls (*ordered...*)

**How is change
accomodated?**

*Scope of
review?*

*Frequency?
Duration?
Life cycle?*

**What are the sources
of the information?**

**Who is responsible?
Who is consulted?**

*Relevant
stakeholders?*

- *Financial sector*
 - *Government*
 - *Customs*
 - *Academia*
 - *Law enforcement*
 - *Civil Society*
 - *Military*
 - *Industry*
-

**Modalities of the
appraisal?**

*Established
mechanism?*

*Formalised
process?*

- *Models*
 - *Types*
 - *Methods*
-

How is change communicated?

updated?

revised?

scrapped?
