

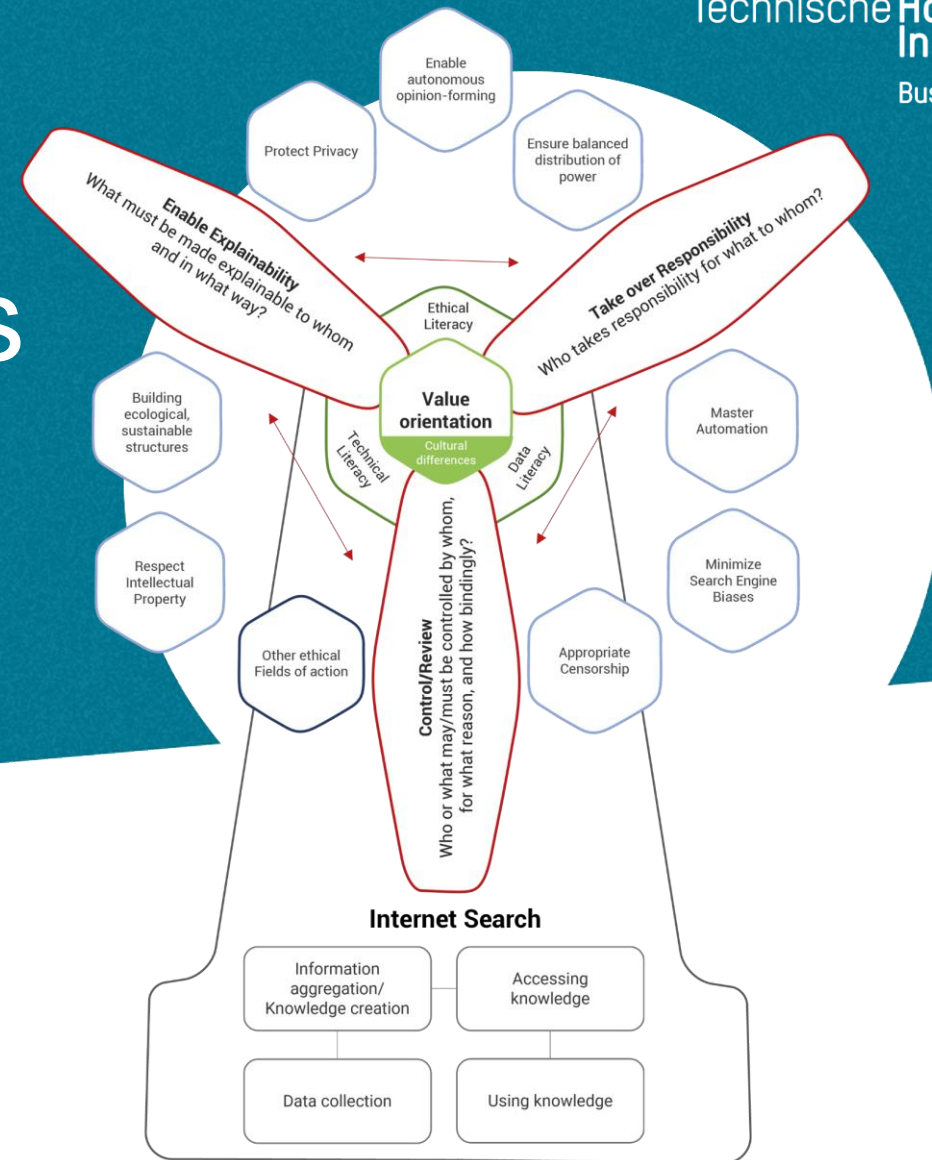
Ethics in Search Engines

The Development of the Ethics Mill of Internet Search

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Ethical
Internet Search

Extensive ethical
consideration &
reflection

Where do we start?

Problem: on ethics
specifically in the internet search
there are hardly any scientific publications

Scientific Basis



DATA ETHICS



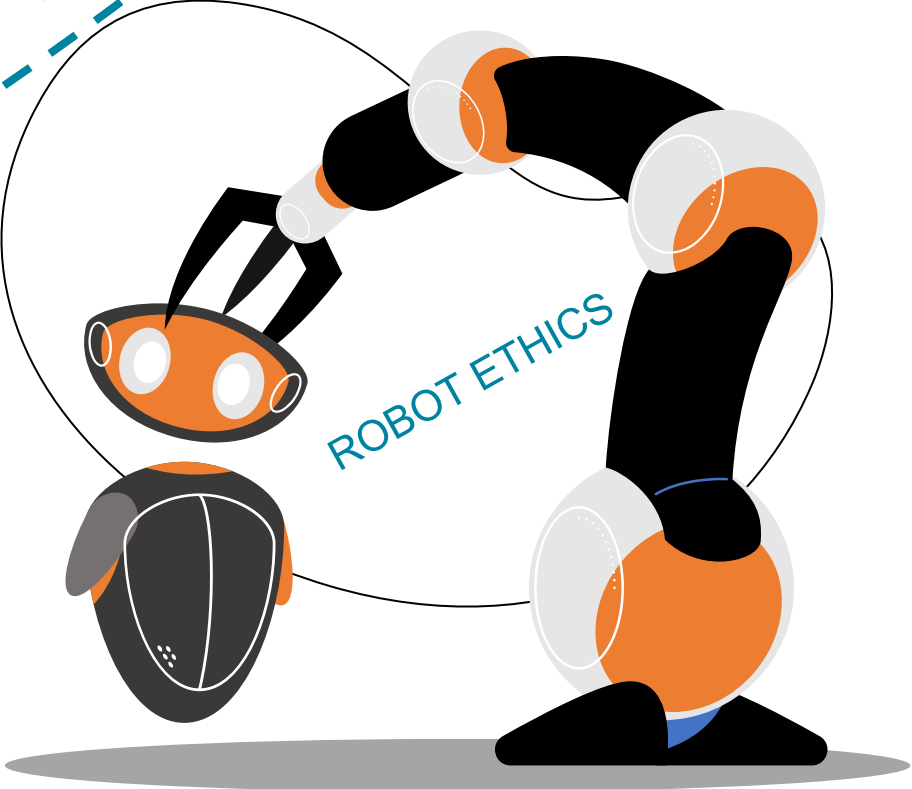
SOCIAL-MEDIA ETHICS



ALGORITHM ETHICS



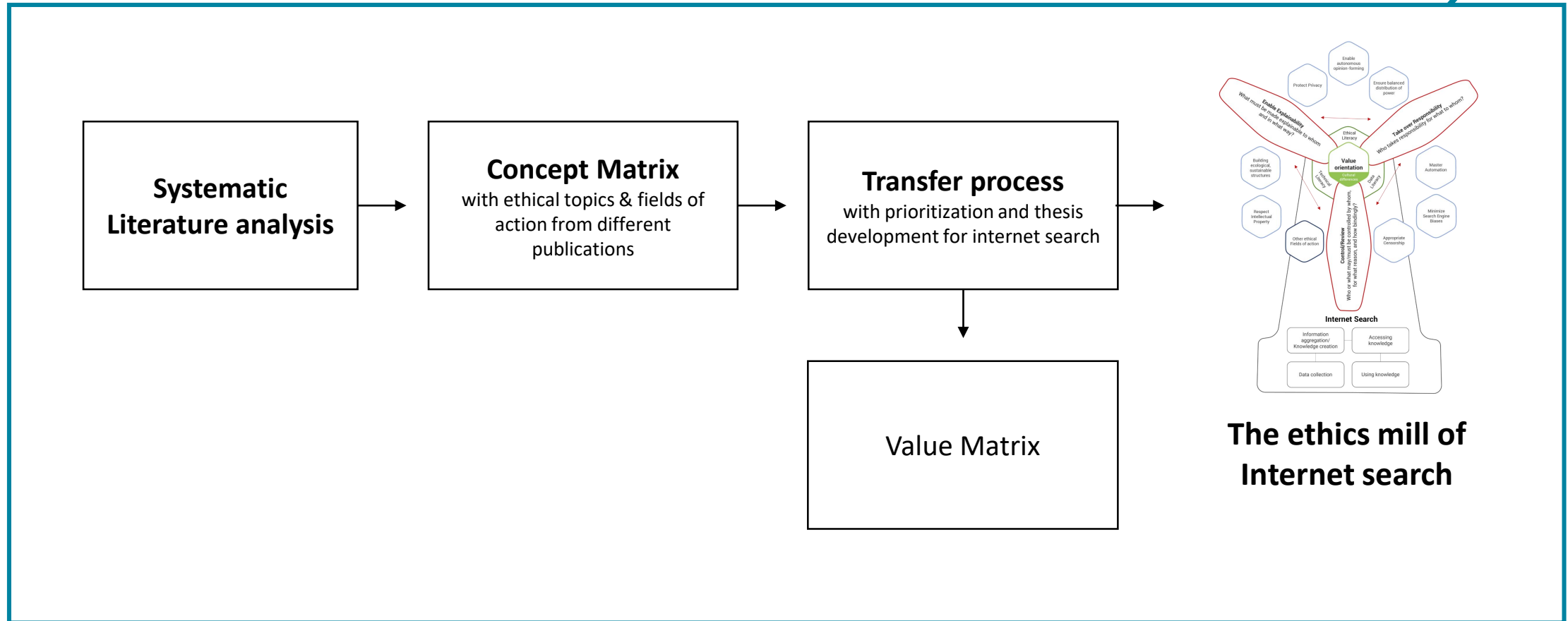
AI ETHICS



ROBOT ETHICS

MEDIA ETHICS

Scientific Method



Scientific method



1. Universal reasoning

General validity

2. Direct reference

Direct reference to the internetsearch

3. Indirect reference

Indirect connection with the Internet search

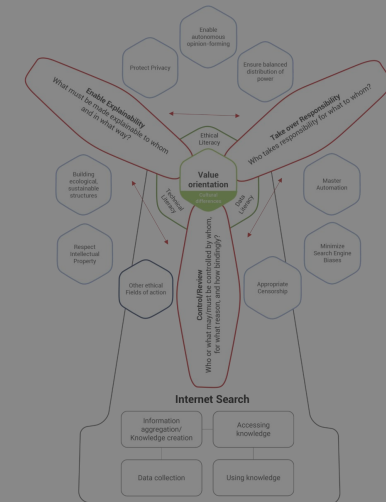
4. Comparison

Similar contexts

(quantity and quality of the fields of action were also taken into account)

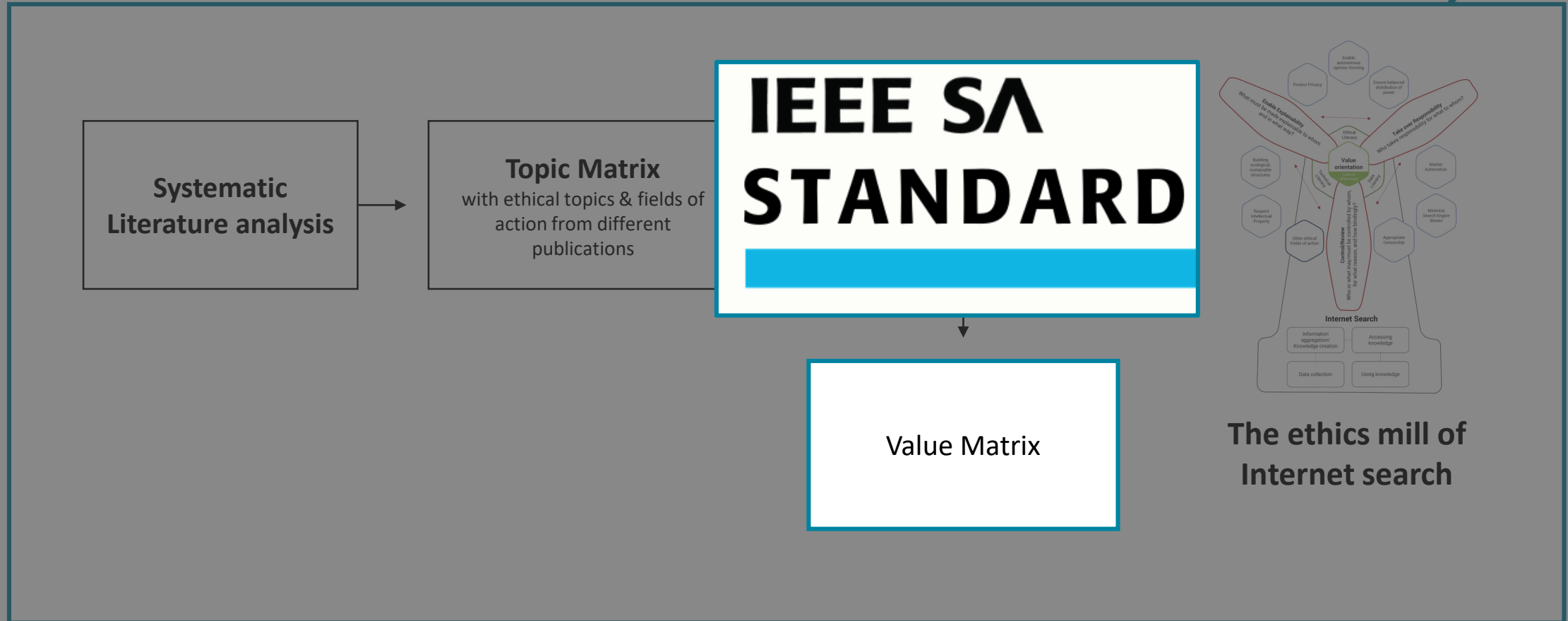
Transfer process
with prioritization and thesis
development for internet search

Value Matrix

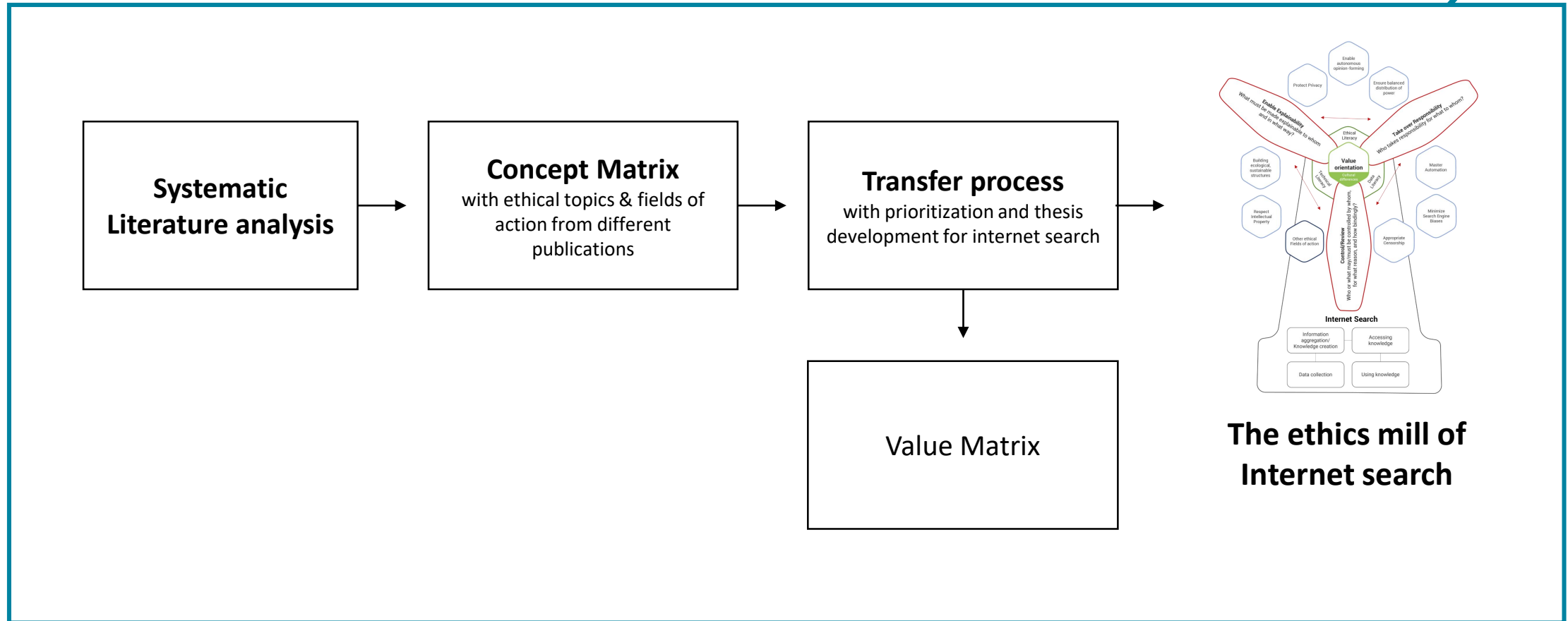


**The ethics mill of
Internet search**

Scientific method

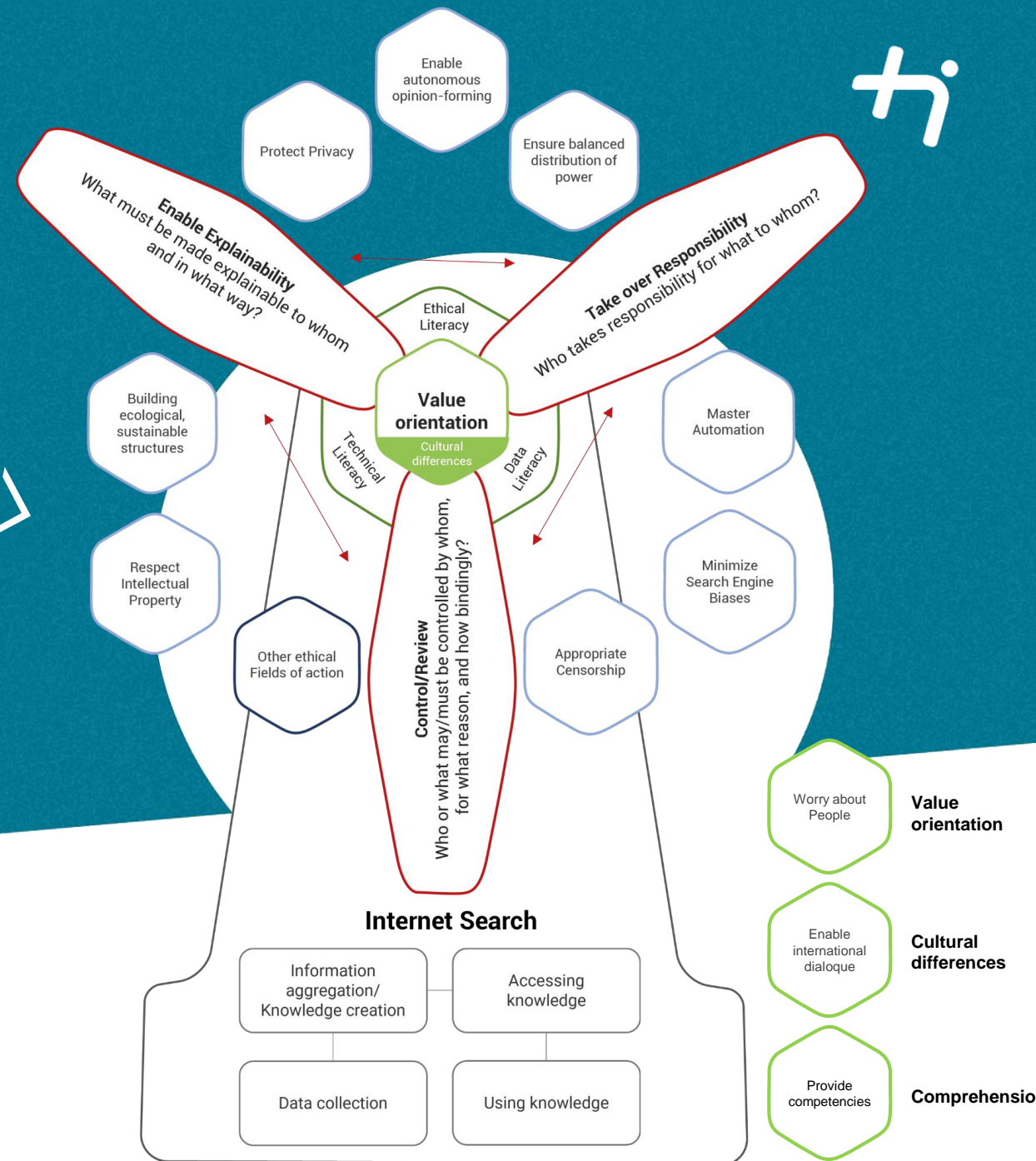


Scientific method





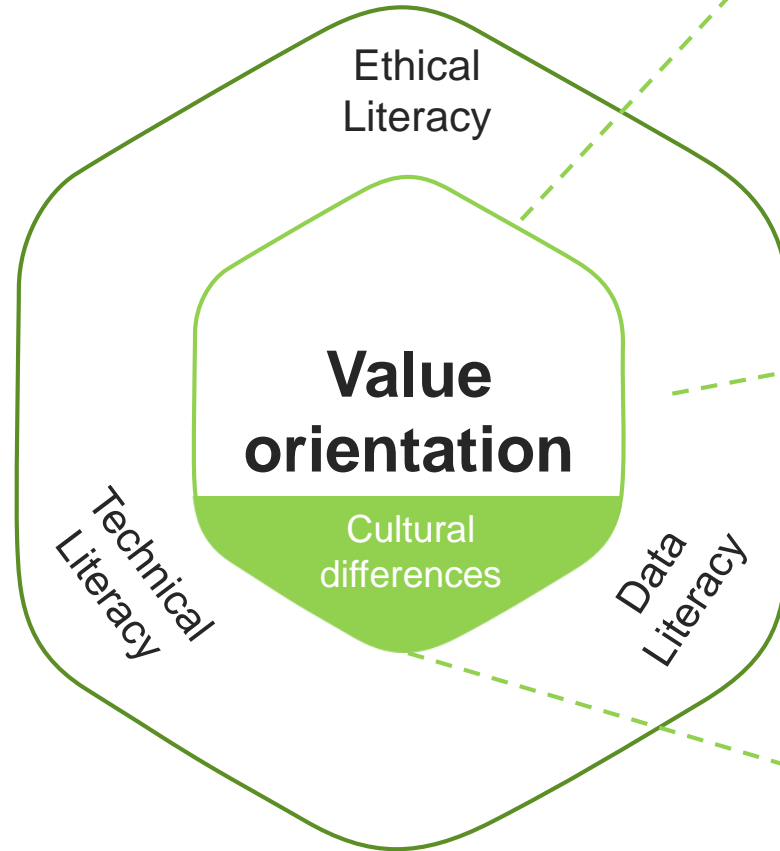
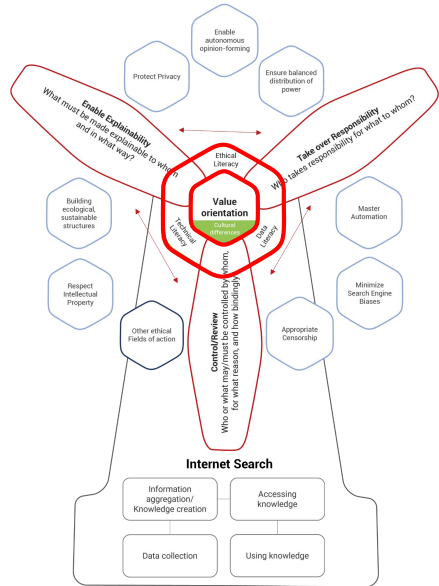
The Ethics Mill of Internet Search



The Ethics Mill of Internet Search



The Core



Concern about people

Not every person/organization cares about other people or acts ethically....

Comprehension

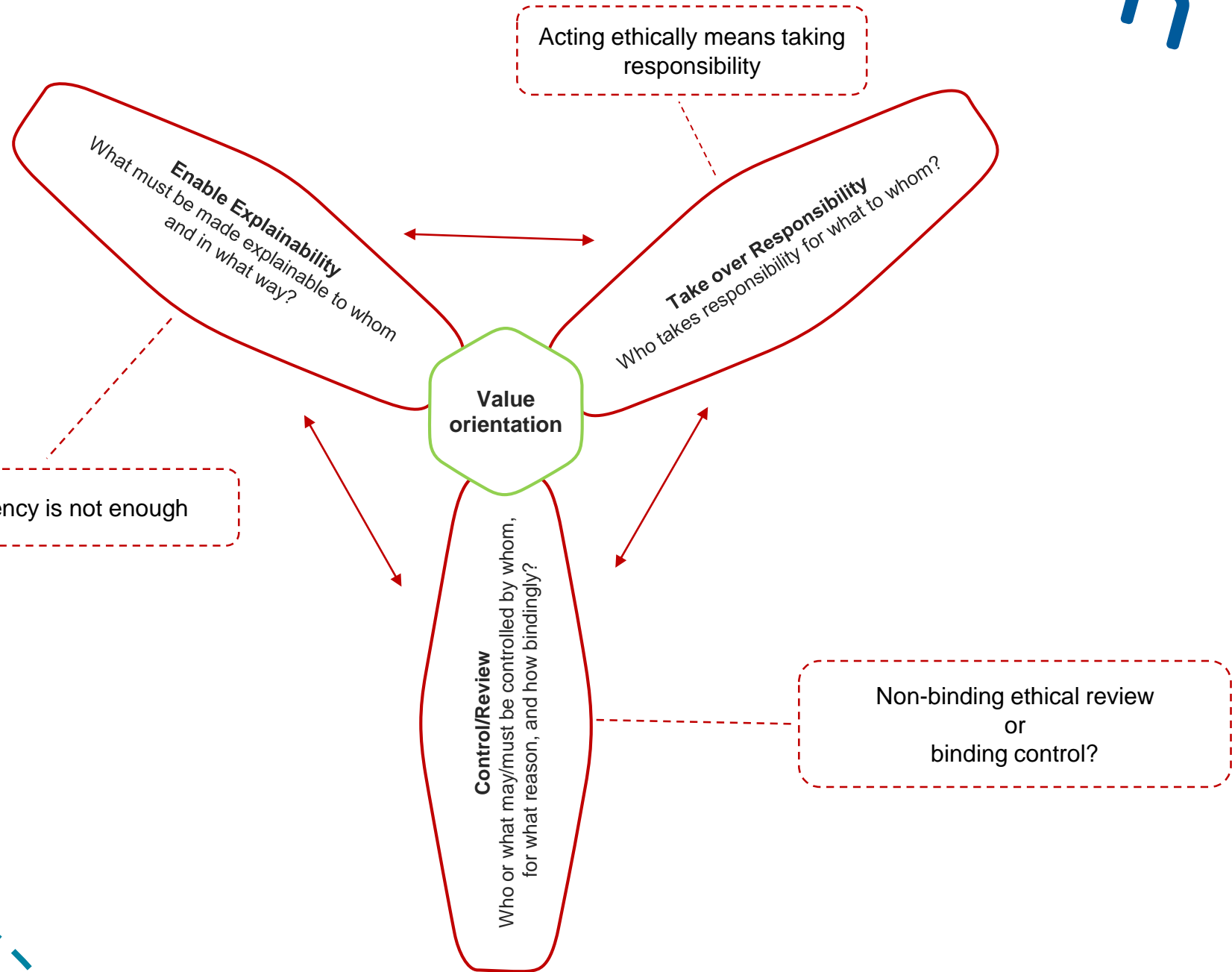
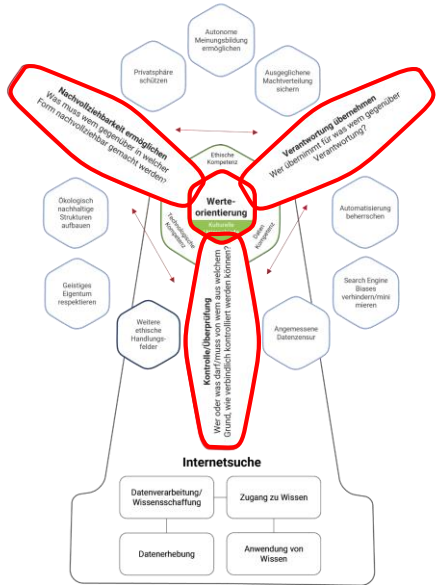
What level of detail is required for different actors to receive further training in the three areas of competence so that they are able to make ethical decisions independently?

There is not only one value system

Enabling international dialogue on values

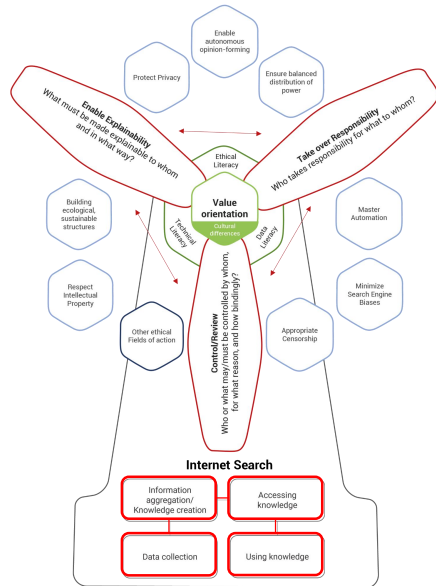
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The Rotor Blades

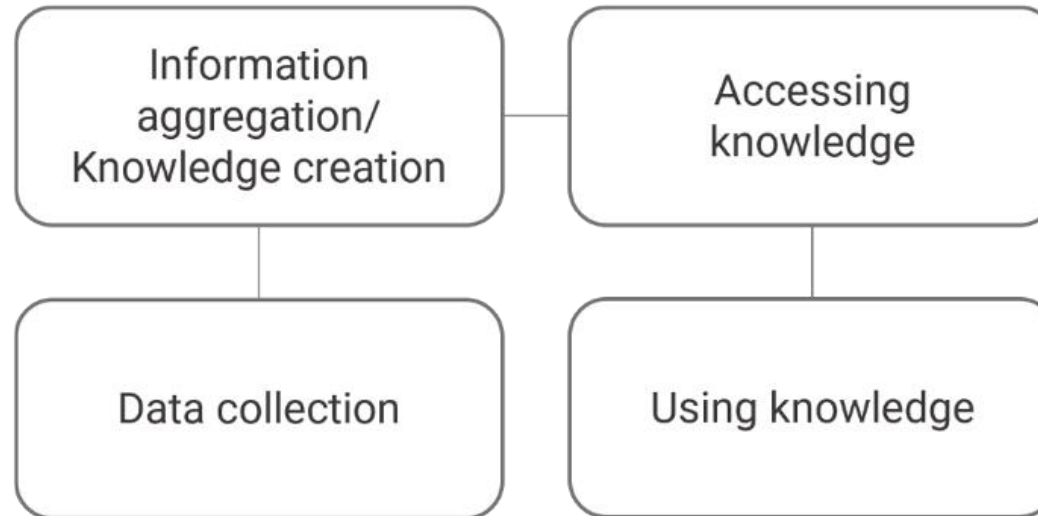


The Ethics Mill of Internet Search

The Basis

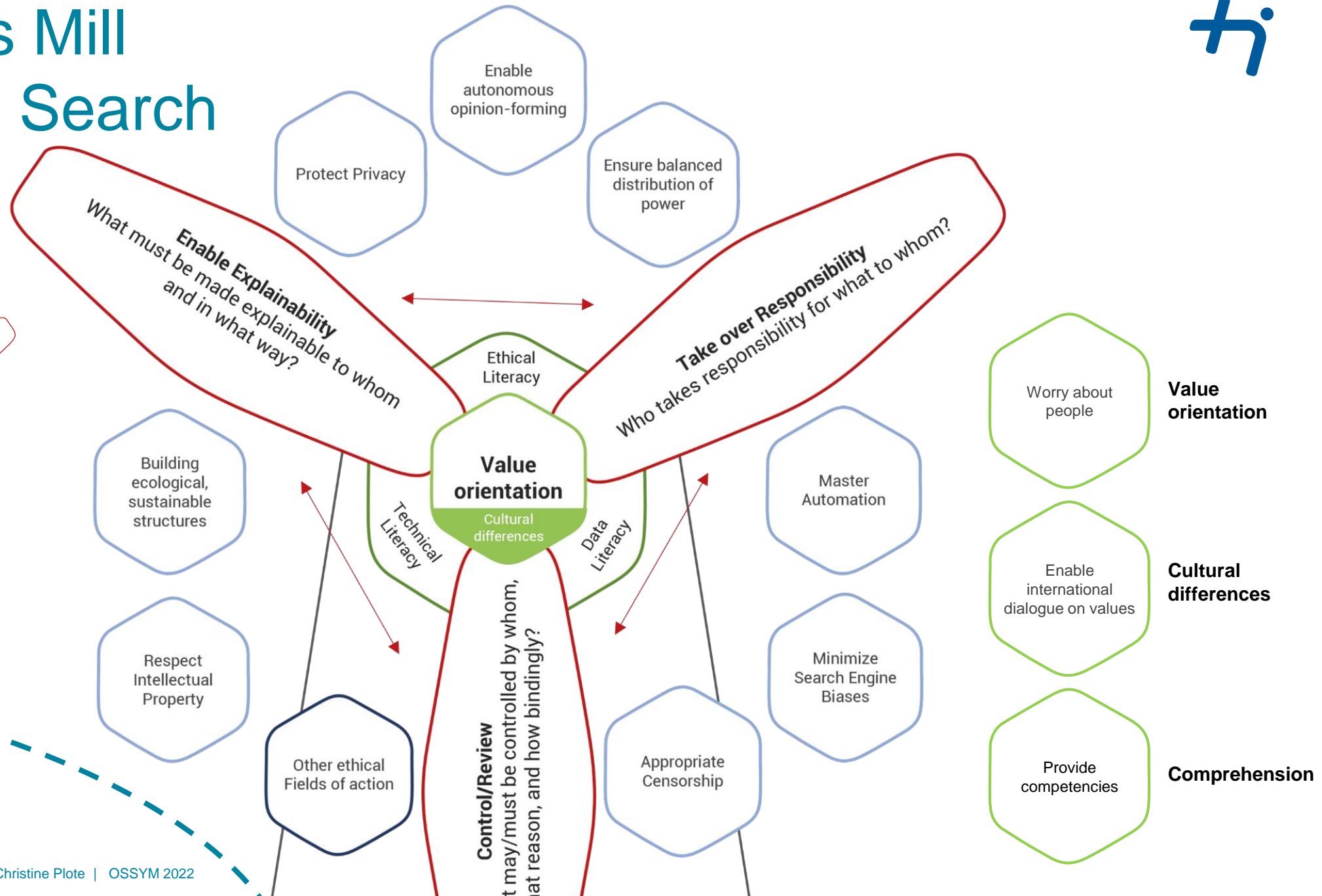
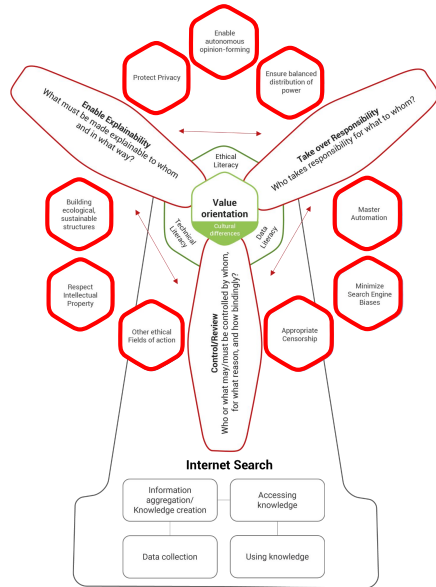


Internet Search

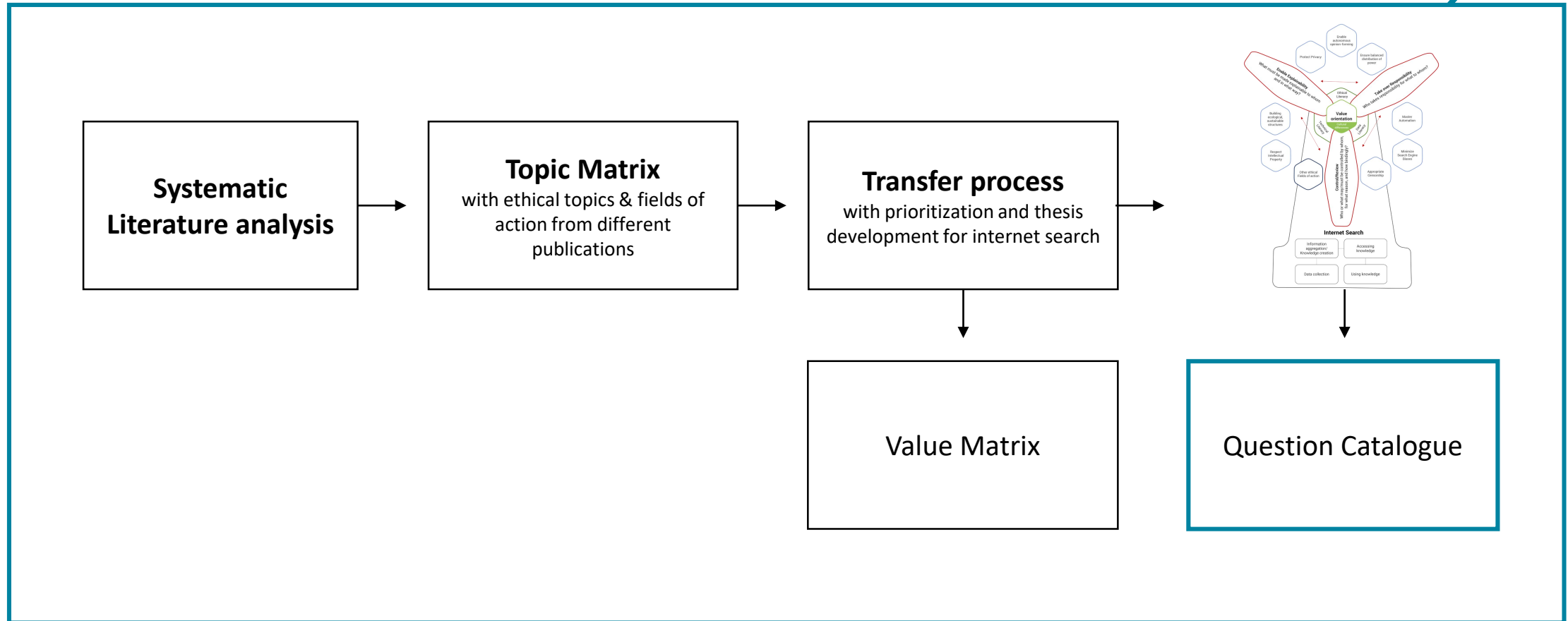


The Ethics Mill of Internet Search

Guiding Principles



Scientific method



Structured Question Catalogue



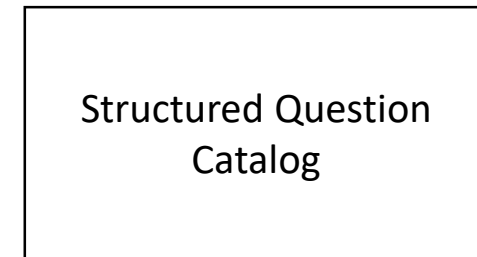
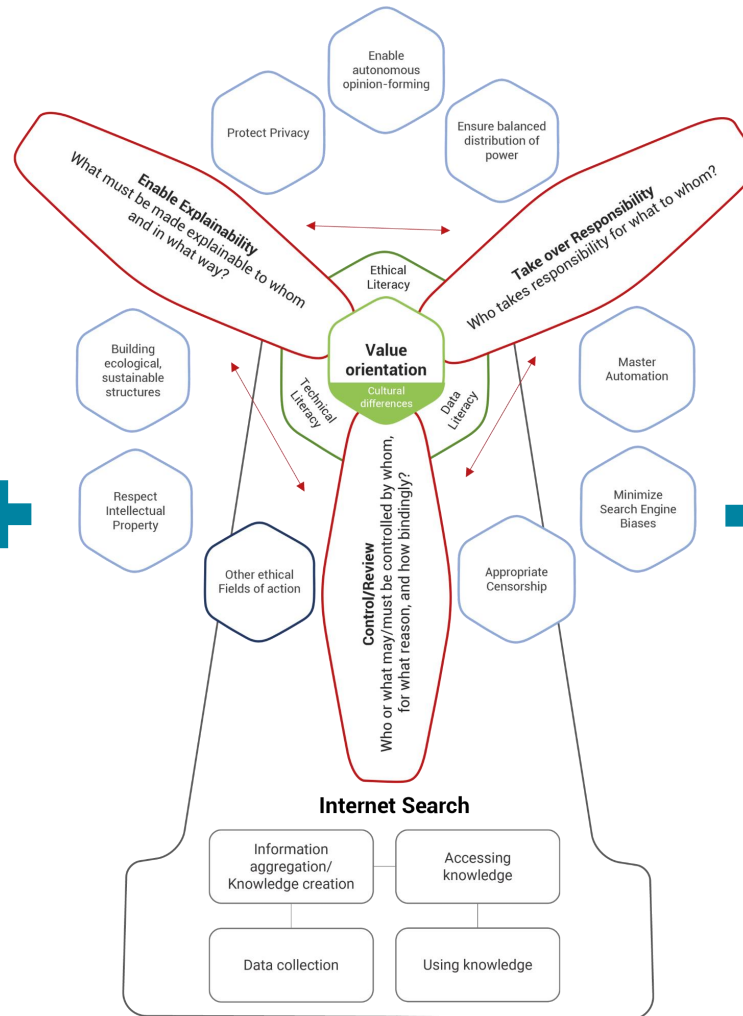
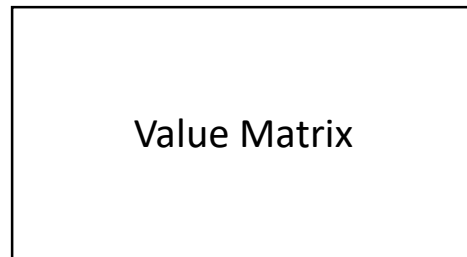
Value	Guiding Principle:	Questionnaire
1) Value orientation and the ends-means dilemma	Worry about people	<ul style="list-style-type: none"> - How can actors (users, search engine providers, governments, etc.) who do not want to act ethically be persuaded to act in the interest of the common good? - How can internet search companies pursue a value strategy and still be profitable? - How can the tension between value strategy and cost pressure be resolved in a capitalist system? - How can it be ensured that internet search technologies are ethically considered from the outset?
	Empathy	
2) Public awareness and understanding	Value	Questionnaire
3) Cultural Differences	5) Discrimination and prejudice	<p>Guiding Principle: Minimize search engine biases</p> <p>Core Value: Fairness</p> <ul style="list-style-type: none"> - How can data selection procedures be influenced to minimise bias and technically generated discrimination? - How can search algorithms be optimised to avoid erroneous correlations? - To what extent do individualised search results actually systematically lead to disadvantages for different users? - What responsibility do search engine providers have to offer search results equally everywhere in the world?
	6) Censorship and the exclusion of content by search engine operators	<p>Guiding Principle: Appropriate censorship</p> <p>Core Value: Safe Guarding</p> <ul style="list-style-type: none"> - What data may be stored for censorship processes? - How can Internet searches be comprehensibly censored so that freedom of information or opinion are not restricted? - To what extent do search engine providers have to guarantee that third parties and control institutions have insight into their processes? - To what extent should censorship by search engines be dependent on the laws of individual countries?
	7) Knowledge Graph results and copyright	<p>Guiding Principle: Respect intellectual property</p> <p>Core Value: Fairness</p> <ul style="list-style-type: none"> - To what extent may search engines use third party content to make internet search more user-friendly? - How could third parties make their content available for a more efficient internet search without disadvantages for themselves?
	8) Ecological sustainability	<p>Guiding Principle: Building ecological, sustainable structures</p> <p>Core Value: Sustainability</p> <ul style="list-style-type: none"> - How can environmentally sustainable data centres for internet search be ensured?

Value	Guiding Principle:	Questionnaire
1) Privacy and data protection	Protect privacy	<ul style="list-style-type: none"> - How can it be ensured that personal data do not leave the informally protected framework? - How can data protection regulations and laws be adapted to the current data processing methods of Internet search providers? - How can control and traceability over one's own data and its use be guaranteed? - To what extent can the algorithmic analysis of user data in internet searches be made comprehensible for the user? - How can the use of data for personalisation possibly be controlled by the user him/herself? - Does absolute control over one's own data also go hand in hand with absolute anonymity in the use of internet search? - What are the ethical grounds on which a state or an organisation can access personal data in internet search?
	Privacy	
2) Knowledge creation and opinion formation	Enable autonomous opinion-forming	<ul style="list-style-type: none"> - How and for whom must processes/factors of digital knowledge creation (crawling, indexer, searcher, etc.) by search engine providers be made comprehensible? - What approaches are needed to prevent one-sided influence on opinions? - Should there be a possibility in future to switch off personalisation or to apply it only to certain search results? - Can personalisation also be ensured independently, e.g. by filter systems? - Should advertisements be part of the search result display, and if so, in what way? - What responsibility do search engines have in their role as mediators of disinformation? - Can the spread of misinformation through search engines be restricted?
	Autonomy	
	Ensure balanced distribution of power	<ul style="list-style-type: none"> - How can more diversity be ensured in the search engine market? - Which institutions can ethically control the distribution of power in internet search in the most unbiased way possible? - How can data-related economies of scale be minimised in order to prevent monopolies? - For whom must power relations be made comprehensible? - How can end users be empowered in their use of internet search? - How can it be ensured that mechanisms of internet search are not abused by third parties? How transparent can internet search processes be for the
	Autonomy/Fairness	

	Questionnaire
	<ul style="list-style-type: none"> - In internet search, for what must responsibility be assumed by whom towards whom?
ibility	<ul style="list-style-type: none"> - What must be made comprehensible to whom and in what form? - What must be made transparent to ensure traceability? - How can good documentation and logical structuring of internet search processes be ensured?
g	<ul style="list-style-type: none"> - What or who may/must be controlled or checked by whom for what reason and how bindingly? - Which processes/actors of Internet search must be controlled? - Who should be authorised to control Internet search processes and how and, in case of doubt, to regulate them? - How can processes of internet search be designed to enable an ethical exchange and to review applicable ethical norms again and again in the in the specific context?

Application

The Model



The Model...

..links the ethical values with the specific practical relevance in internet search

...enables logical chains of reasoning.

...provides structure for ethical discourse in Internet search

Why do we act, how we act?

...is flexibly expandable

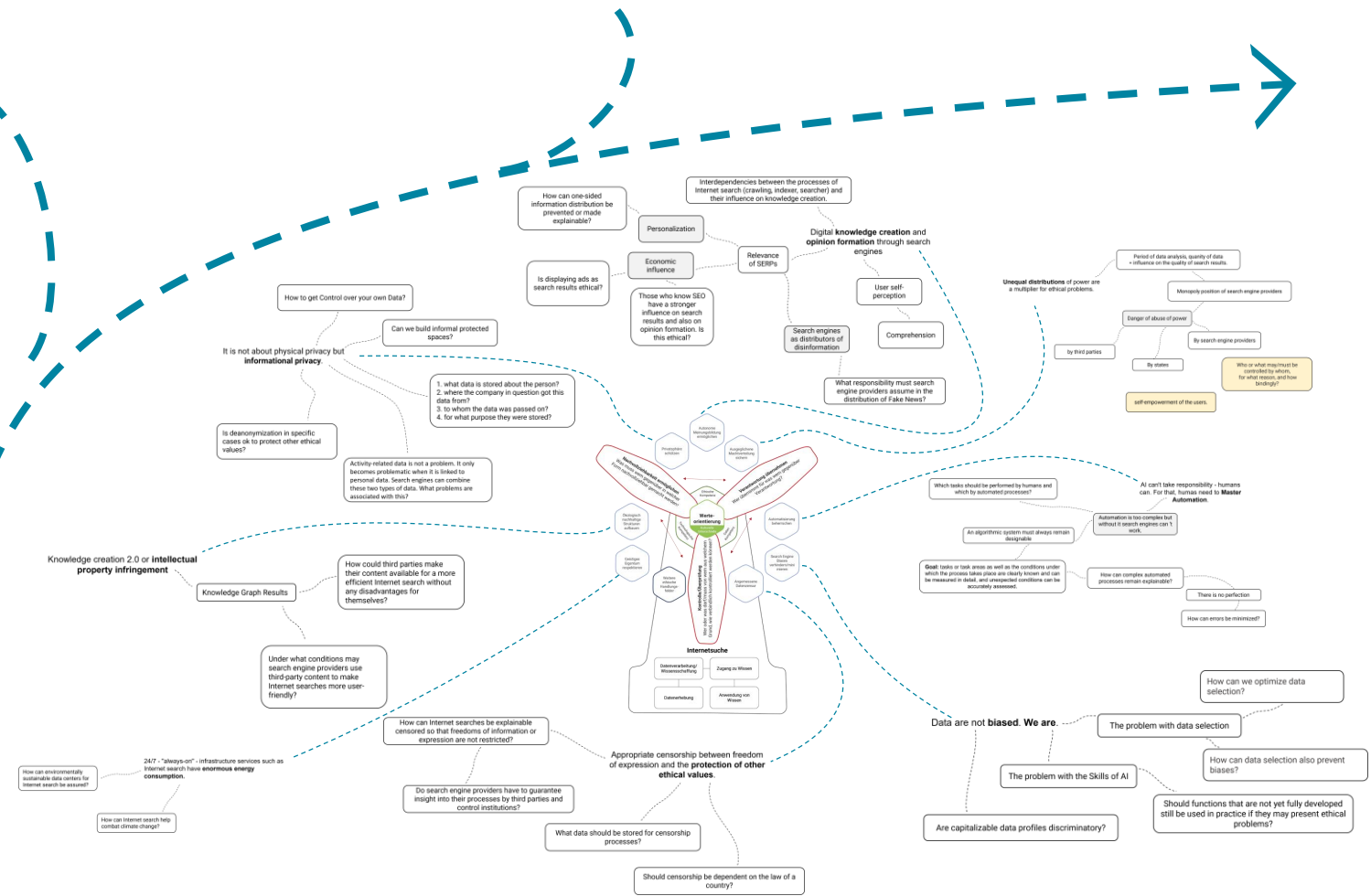
Application

Use Cases



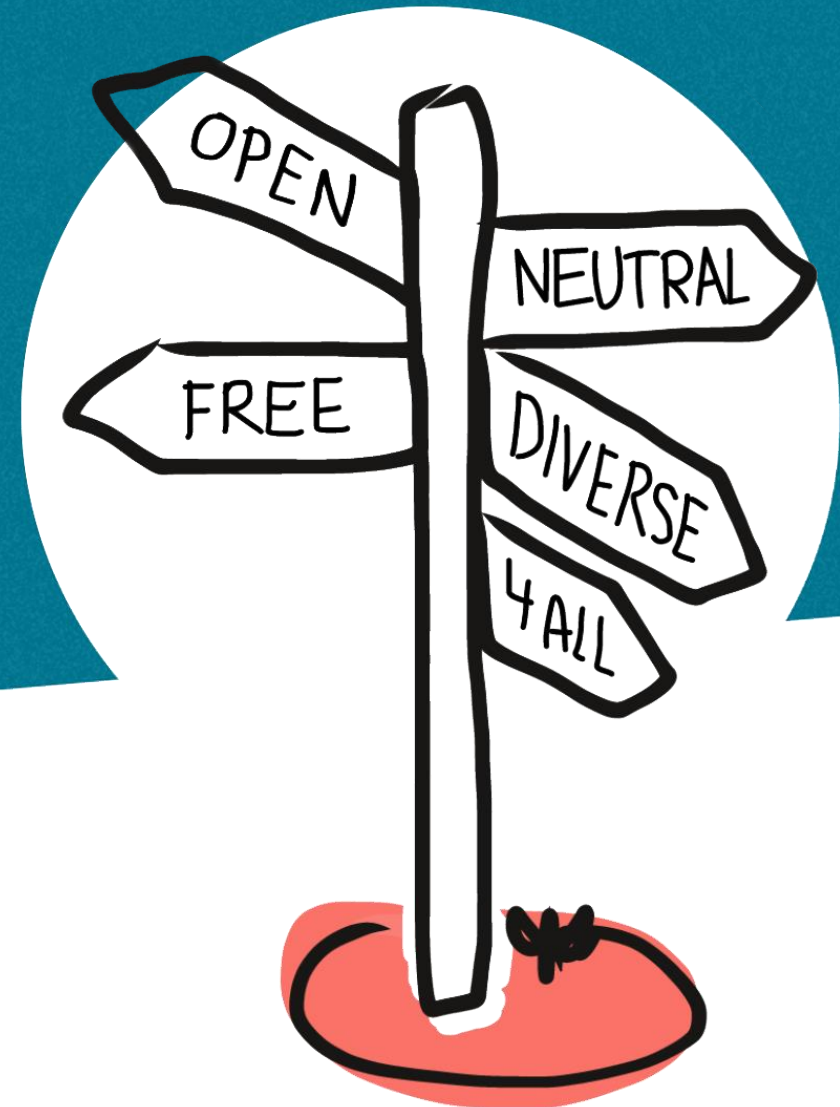
Find answers and put them into practice

Check completeness: Must certain guiding principles be supplemented or be changed?



Expand question catalog: Which questions arise in your own context within the individual fields of action/guiding principles?

Thank you for your attention!



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