Norwegian Centre for
E-health Research

Measuring Perceptions of Openness in Health Information Technology Platforms

Results from Pilot Testing Proposed Survey Framework

Kristian Malm-Nicolaisen[a,b], Rune Pedersen[a,b], Asbjørn J. Fagerlund (presenting)[a]

[a]Norwegian Centre for E-health Research

[b]Telemedicine and E-health Research Group, The Arctic University of Norway

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asbjorn.johansen.fagerlund@ehealthresearch.no

Presenter bio:
Asbjørn J. Fagerlund (b.1983) is senior researcher at the Norwegian centre for e-healthresearch. Background from clinical and experimental research in biologic psychology. Practicing clinical psychologist. The recent research interests revolves around HIT-plaforms, digital services for citizens (patient accessible EHR in particular, and patients reported outcomes in chronic pain.

Team present research activites

- Evaluation and assessment of large scale EHR implementations (prospective and retrospective)
- Definitions and operationalization of concepts.
- The effects of platform aspects on perceived usability in clinicians (and ultimately clinical outcomes).

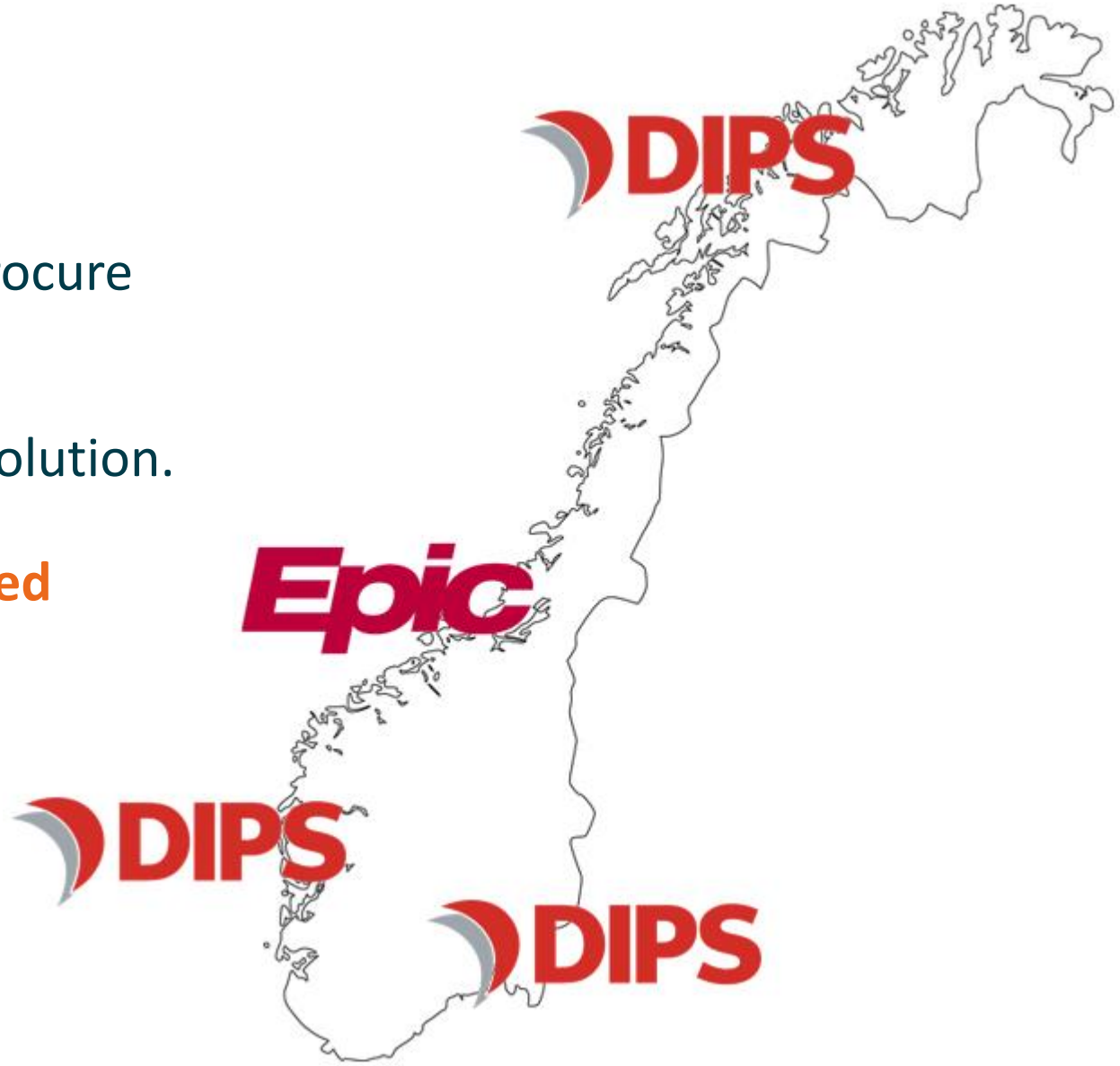
Background

Four Norwegian health regions are to procure **new EHR** for hospital level health care.

One region opt for a **one-vendor suite** solution.

Three regions procure an **OpenEHR-based** solution.

OPEN vs CLOSED platform?

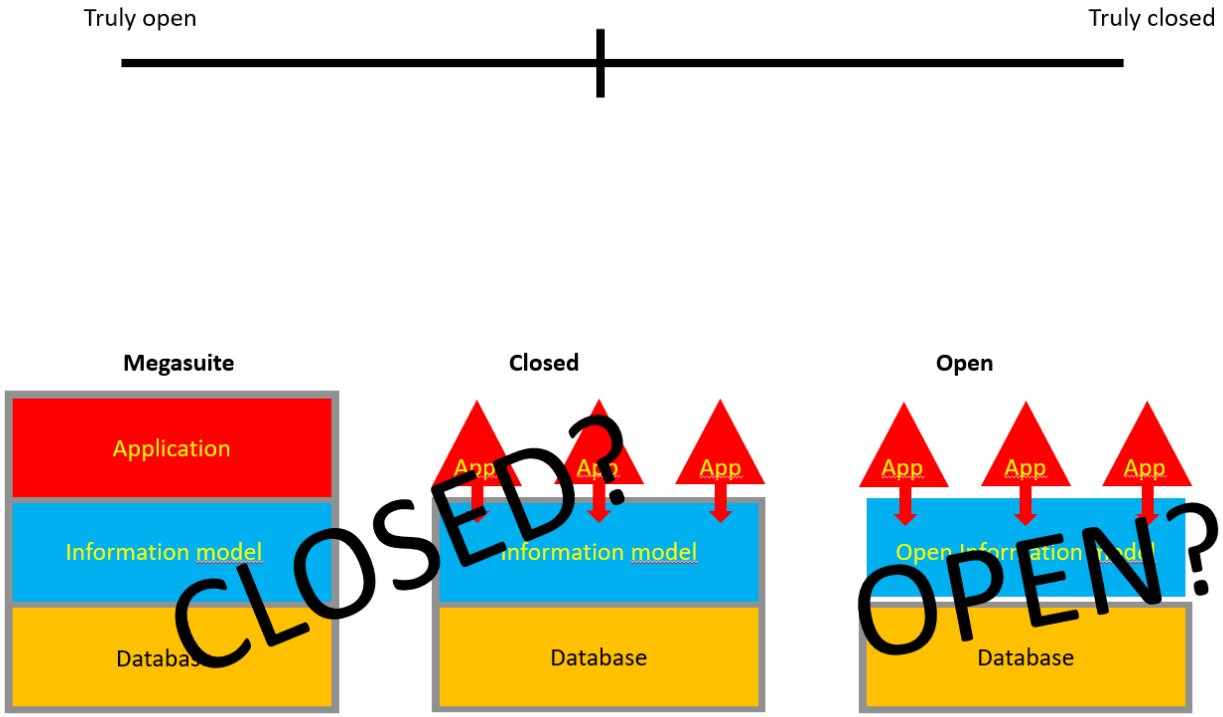


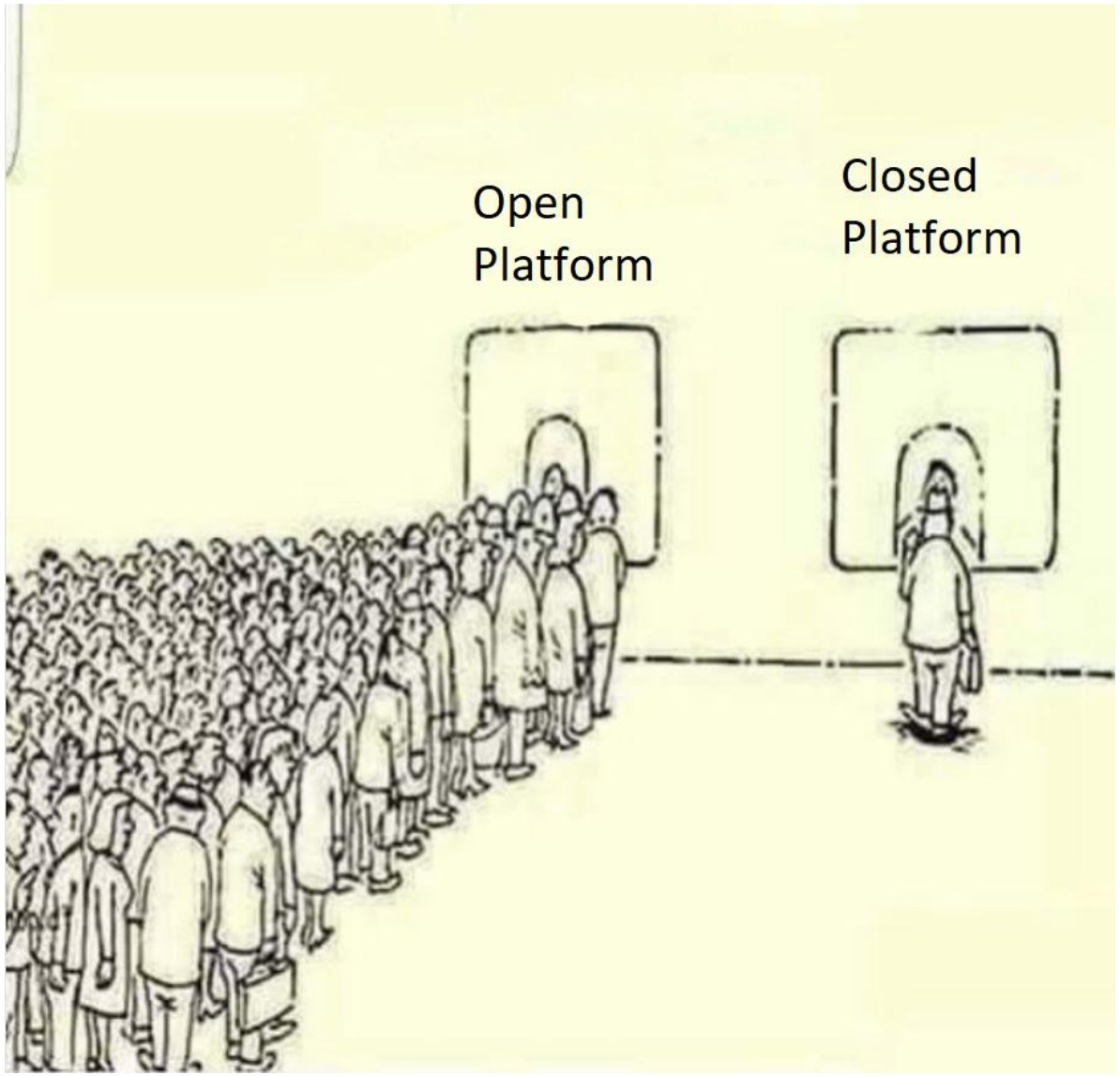
We tried to identify sites in Europe that recently had done a **large scale implementation** of a EHR with similarities to either of the planned Norwegian systems.

We investigated whether the type of system was determinant to how the system were **perceived by users**.

Qualitative findings indicated that the concept of open vs closed platform did not much matter on clinical level. **The clinicians experiences were similar** across implementations.

Open vs. Closed- a false dichotomy





Challenges

The research field lack an authoritative definition of Open Platform

The concept of Open Platforms is not operationalized

The ambiguity of “openness”

Aim of the present work

To propose an **early step** towards establishing a tool that can be used to evaluate a platform's degree of conformity with generally accepted principles of Open Platforms.

Flexibility of system portfolio

Open Platform facilitates flexibility and adaptability over time.

Open data

Open Platforms should present all data in a usable and open format.

Clinical information models

Common data models are used to provide an unambiguous description of the clinical content.

Vendor neutrality

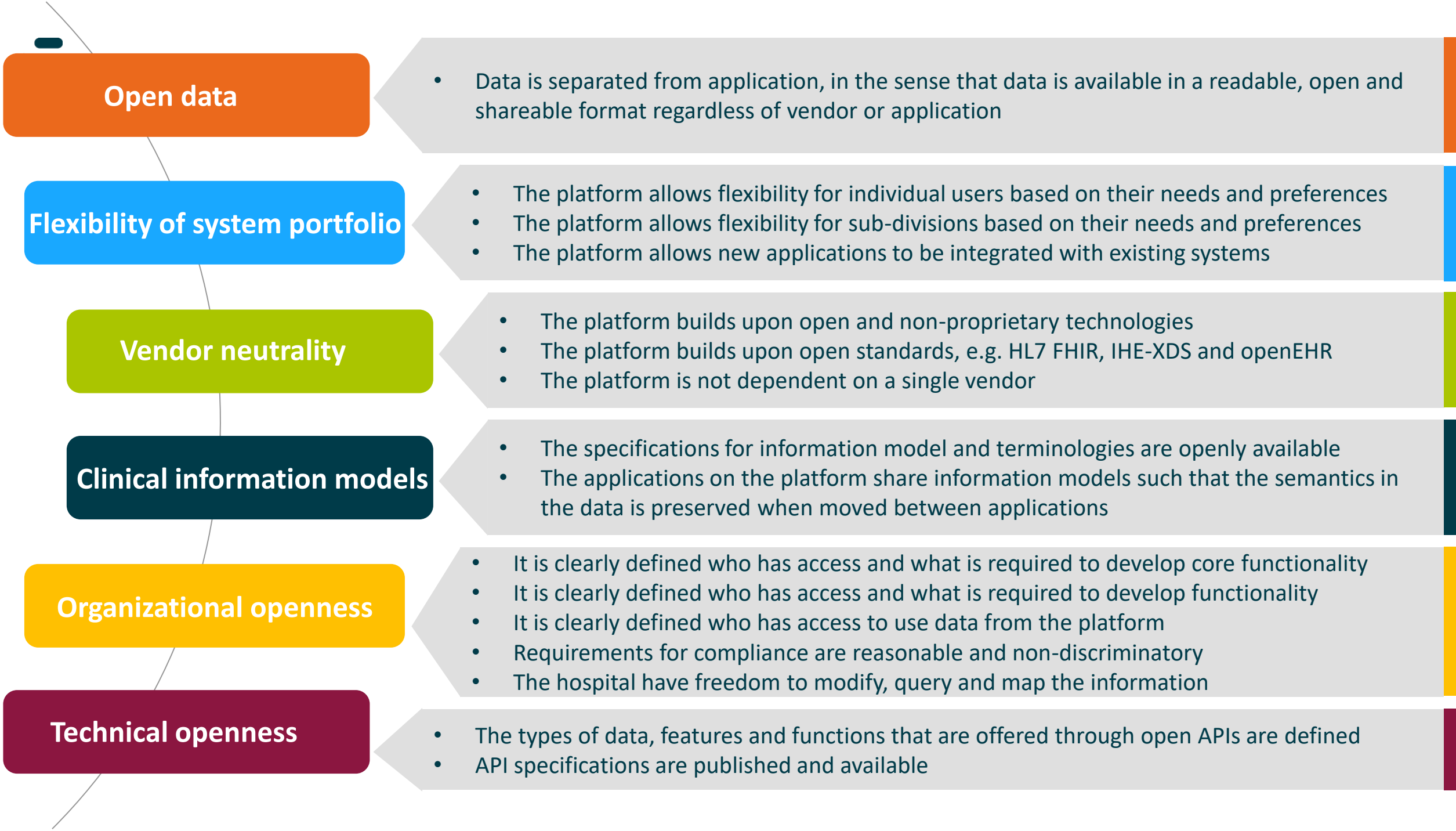
Open Platforms are designed to reduce reliability on single systems and vendors.

Technical openness

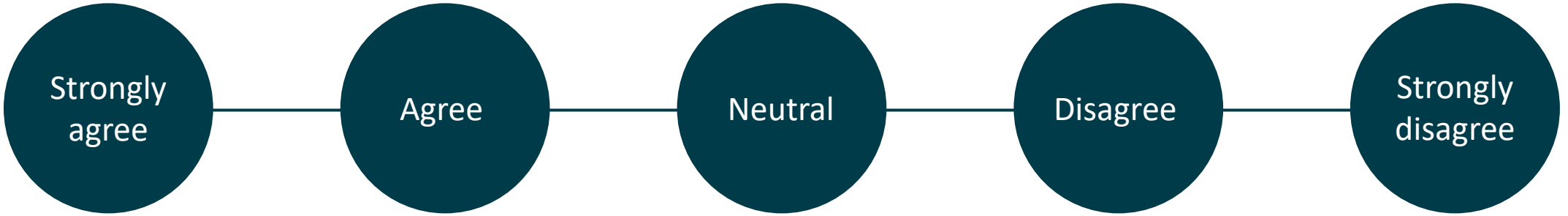
In Open Platform the full specifications of the APIs should be published and freely available.

Organizational openness

Organizational, financial and legal frameworks does not prevent third-party suppliers.


Open data
Data is separated from application, in the sense that data is available in a readable, open and shareable format regardless of vendor or application
Flexibility of system portfolio
The platform allows flexibility for individual users based on their needs and preferences
The platform allows flexibility for sub-divisions based on their needs and preferences
The platform allows new applications to be integrated with existing systems
Vendor neutrality
The platform builds upon open and non-proprietary technologies
The platform builds upon open standards, e.g. HL7 FHIR, IHE-XDS and openEHR
The platform is not dependent on a single vendor
Clinical information models
The specifications for information model and terminologies are openly available
The applications on the platform share information models such that the semantics in the data is preserved when moved between applications
Organizational openness
It is clearly defined who has access and what is required to develop core functionality
It is clearly defined who has access and what is required to develop functionality
It is clearly defined who has access to use data from the platform
Requirements for compliance are reasonable and non-discriminatory
The hospital have freedom to modify, query and map the information
Technical openness
The types of data, features and functions that are offered through open APIs are defined
API specifications are published and available

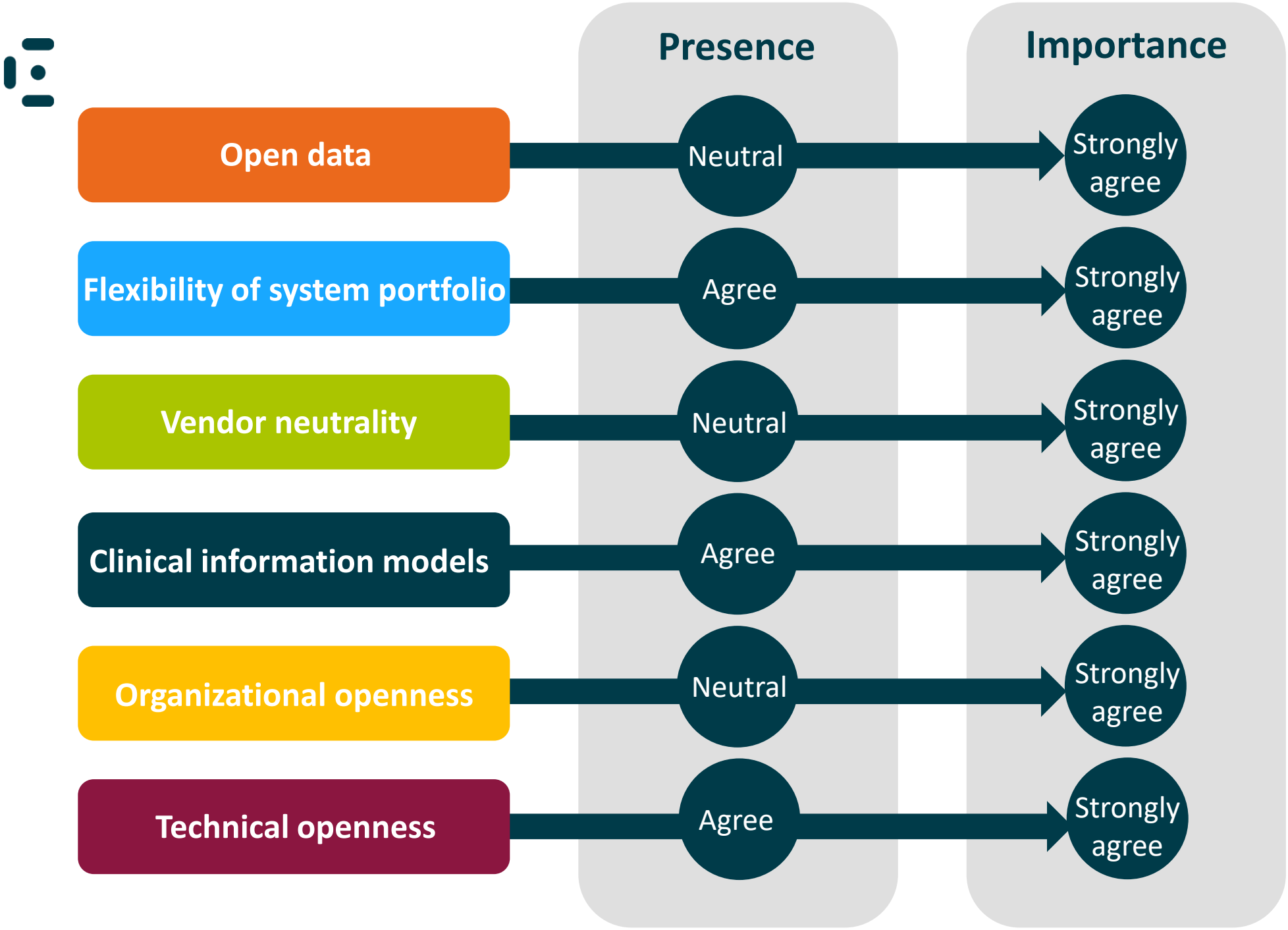
Framework and scope



The platform allows flexibility for individual users to use applications based on their needs and preferences

To measure the respondent’s perception of the extent to which the Open Platform principles where **present** their HIT platform

To measure the expert's perception of the Likert items’ **relevance** for Open Platforms in general


Presence
Importance
Open data
Neutral
Strongly agree
Flexibility of system portfolio
Agree
Strongly agree
Vendor neutrality
Neutral
Strongly agree
Clinical information models
Agree
Strongly agree
Organizational openness
Neutral
Strongly agree
Technical openness
Agree
Strongly agree

Topic	Code	Presence			Importance		
		Mdn	Min	Max	**Mdn**	Min	Max
Vendor neutrality	V1	**3**	2	4	**5**	4	5
	V2	**4**	3	5	**5**	4	5
	V3	**2**	1	4	**3.5**	3	5
Flexibility in system portfolio	F1	**3.5**	2	4	**4.5**	2	5
	F2	**3.5**	3	4	**5**	4	5
	F3	**3.5**	2	4	**4.5**	4	5
Clinical information models	I1	**4**	2	5	**5**	4	5
	I2	**4**	2	4	**5**	4	5
Open data	OD1	**3**	1	5	**5**	4	5
Technical openness in the platform	T1	**4**	2	4	**4.5**	4	5
	T2	**4**	2	4	**4.5**	4	5
Organizational openness in the platform	O1	**2.5**	2	4	**4**	4	5
	O2	**3**	1	4	**4**	4	5
	O3	**3.5**	3	5	**5**	4	5
	O4	**4**	3	5	**4.5**	4	5
	O5	**4**	1	5	**5**	4	5

Challenges?

- Identifying and recruiting experts – preferably with no or little allegiance to a specific system.
- Gatekeepers to conduct research on ongoing implementations.

Next steps

- (ongoing) Qualitative work – how does a sample of domain experts asses a specific real world case.
- (ongoing) Work towards a definition of “open platform”.

Implications for further research

Concept clarity and common terminology

Guiding principles for designing open platforms

Real-world assessment of large-scale platforms

Thank you!

QR to project page

kristian.nicolaisen@ehealthresearch.no asbjorn.johansen.fagerlund@ehealthresearch.no