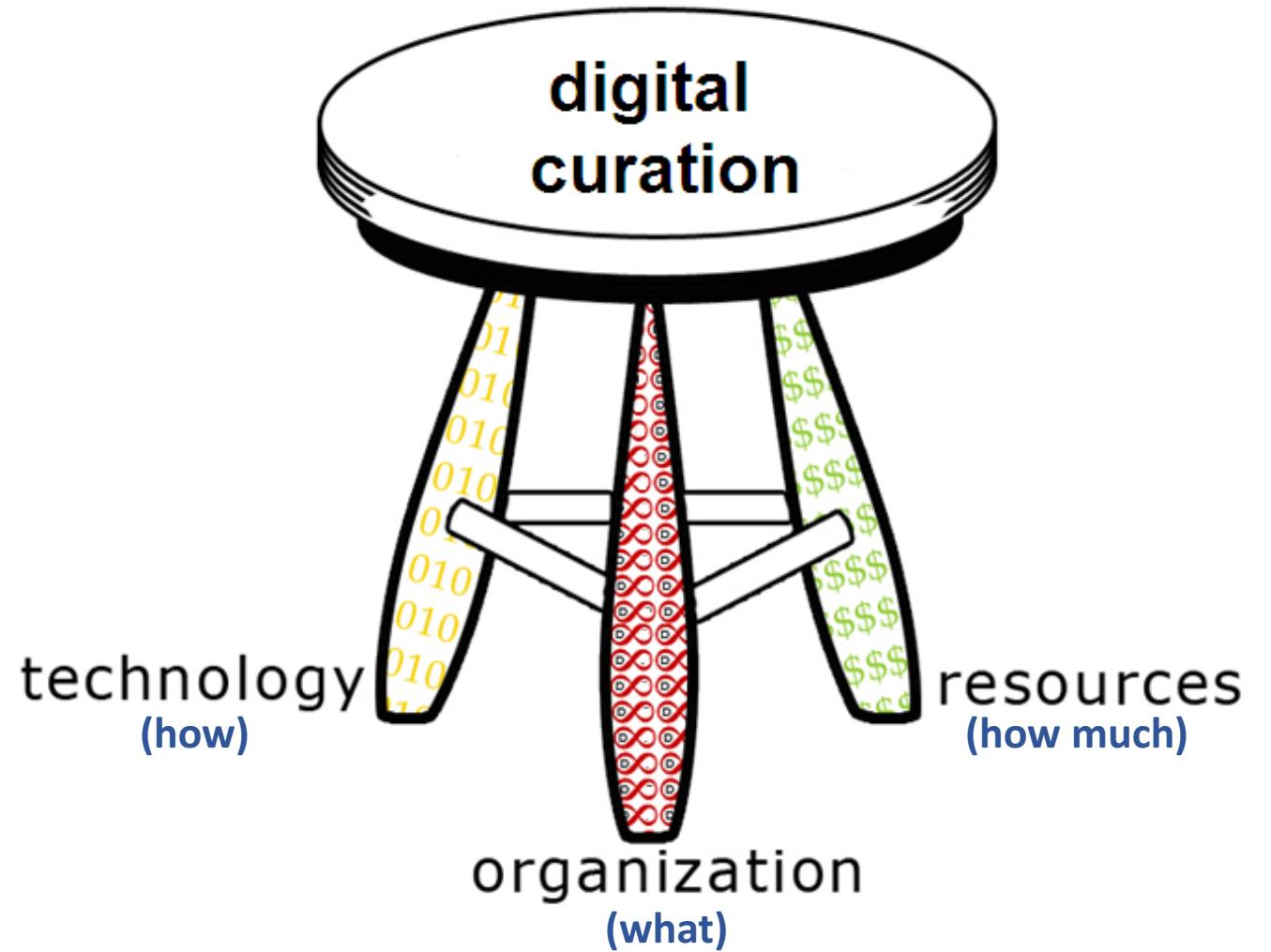# DPM "Stack":
A Management Infrastructure Frame for Digital Preservation that Parallels Technical Infrastructure

Nancy Y McGovern

Director, Digital Preservation, MIT Libraries

Director, DPM Workshops

DataOne webinar, December 2016

Good Practice

Research +
Instruction +
Practice

digital
curation

technology
(how)

organization
(what)

resources
(how much)

DPM Workshop model: an organizational maturity model, Kenney and McGovern, 2003

IT "Stack"

- Tendency to treat digital preservation as a technology-only or mostly problem

- References to infrastructure tend to focus only on technical infrastructure

- Common references to IT stack look like this image

What would/should/could the "stack" look like for digital preservation management?

Applications
Middleware
Database
Operating System
Infrastructure - Virtual
Infrastructure - Physical
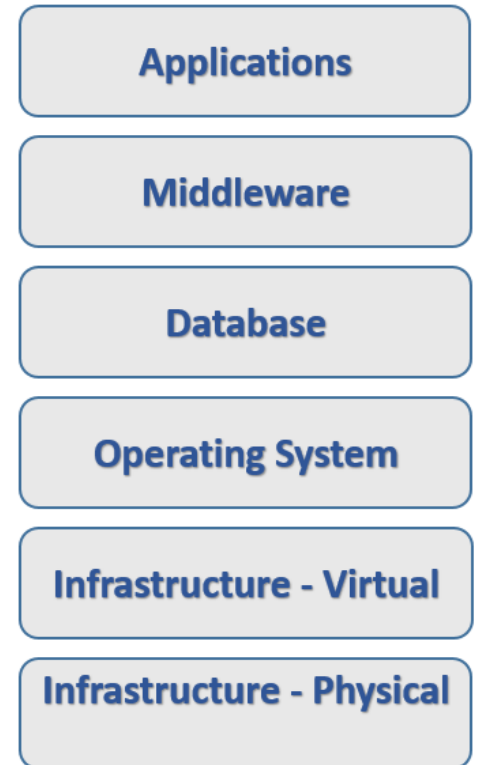
DPM "Stack": Governance

Governance

Governance includes:
- decision-making and policies
- strategic priorities
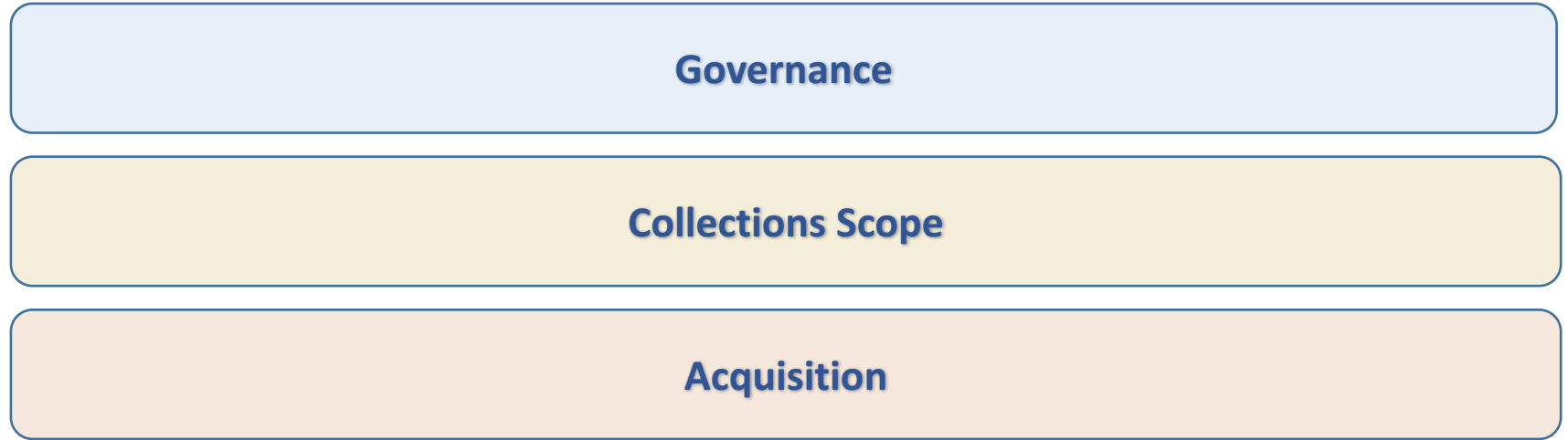- determining investments
- managing DP program ...

DPM "Stack": Collections Scope

Governance

Collections Scope

Collection Scope includes:
- determining what to keep
- establishing criteria
- evolving the scope
- ensuring content is acquired

DPM "Stack": Acquisitions

Acquisitions includes:
- bringing in content
- aligning with policies
- making/following practices
- secure/controlled intake

Governance

Collections Scope

Acquisition

DPM "Stack": Workflows
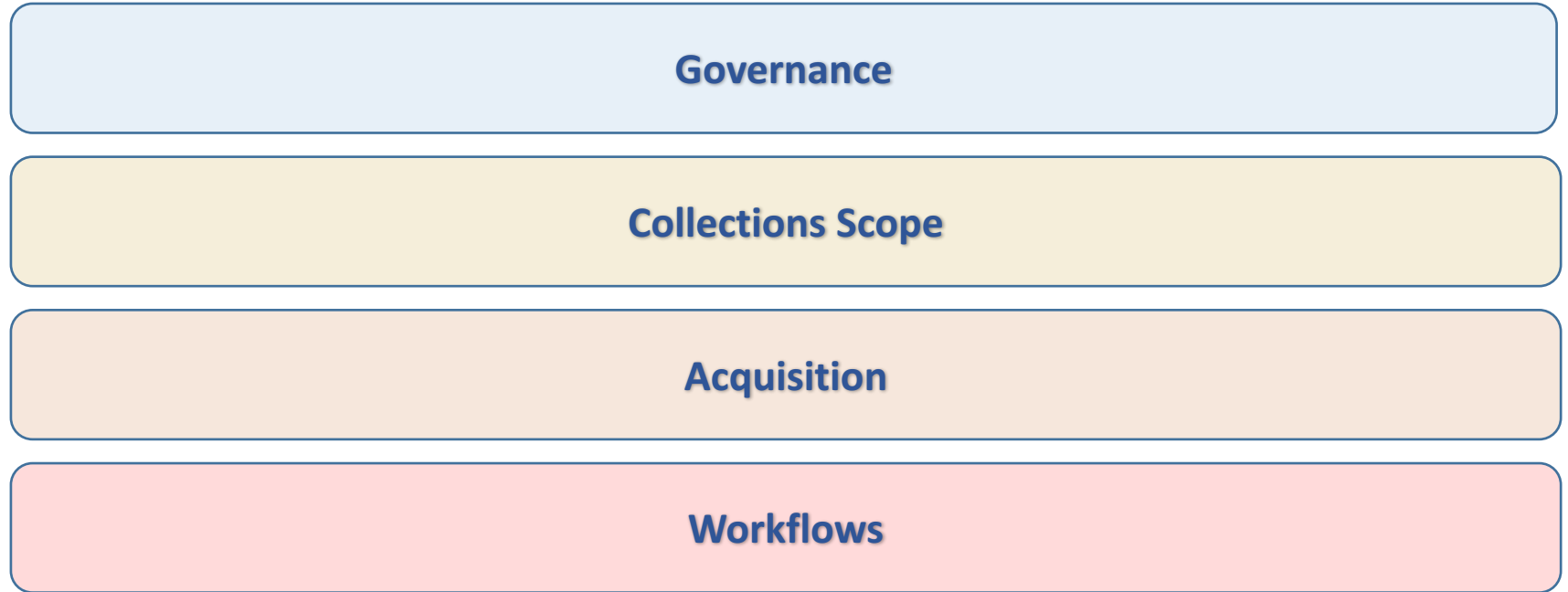
Workflows includes:
- human-based sequences
- tool-enabled actions
- human-tool integration
- responsive evolution

Governance

Collections Scope

Acquisition

Workflows

DPM workshops, 2016

DPM "Stack": Lifecycle Storage
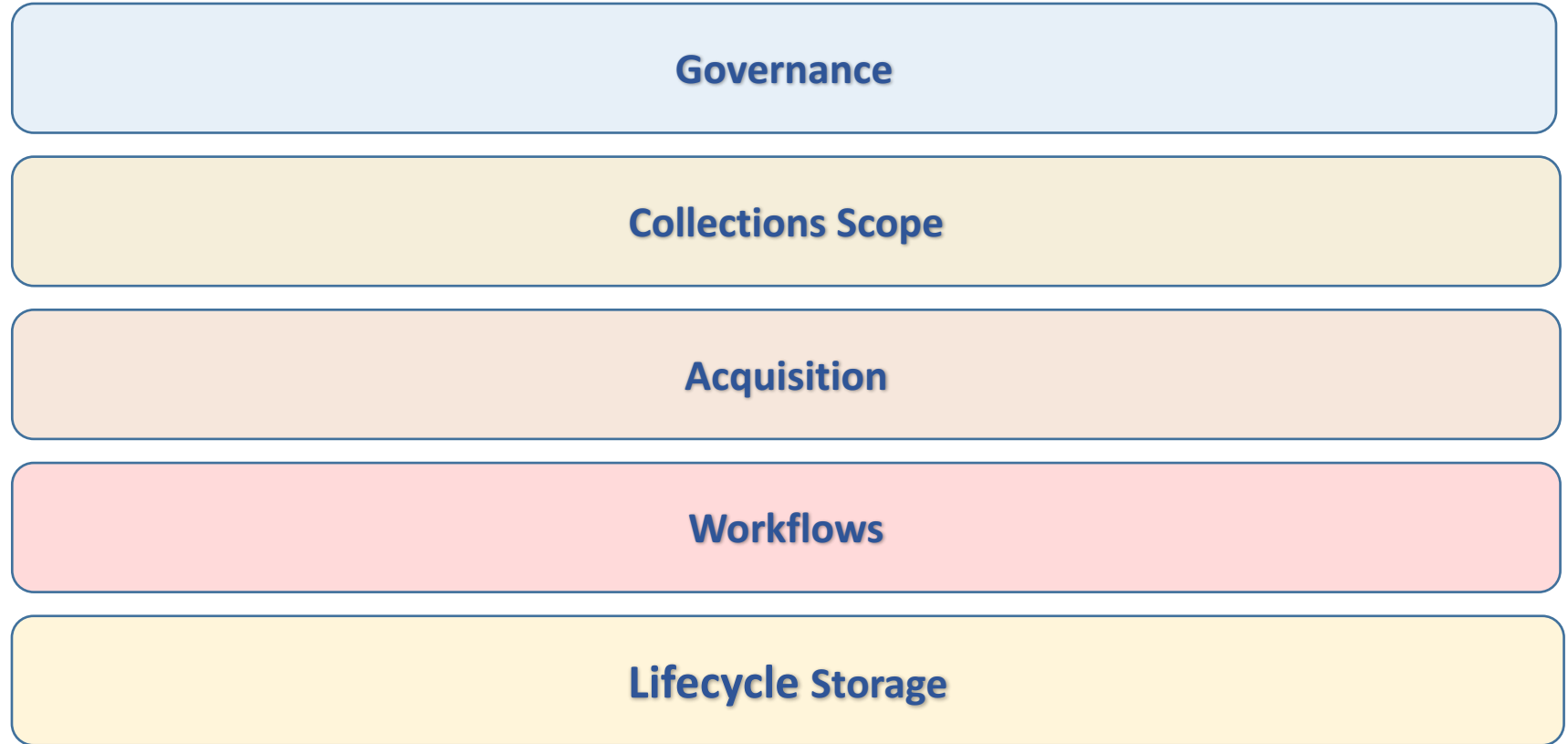
Lifecycle Storage includes:
- planning for long-term access
- everyday protection
- emergency preparedness
- ongoing: optimal options ...

Governance

Collections Scope

Acquisition

Workflows

Lifecycle Storage

DPM "Stack": Monitoring
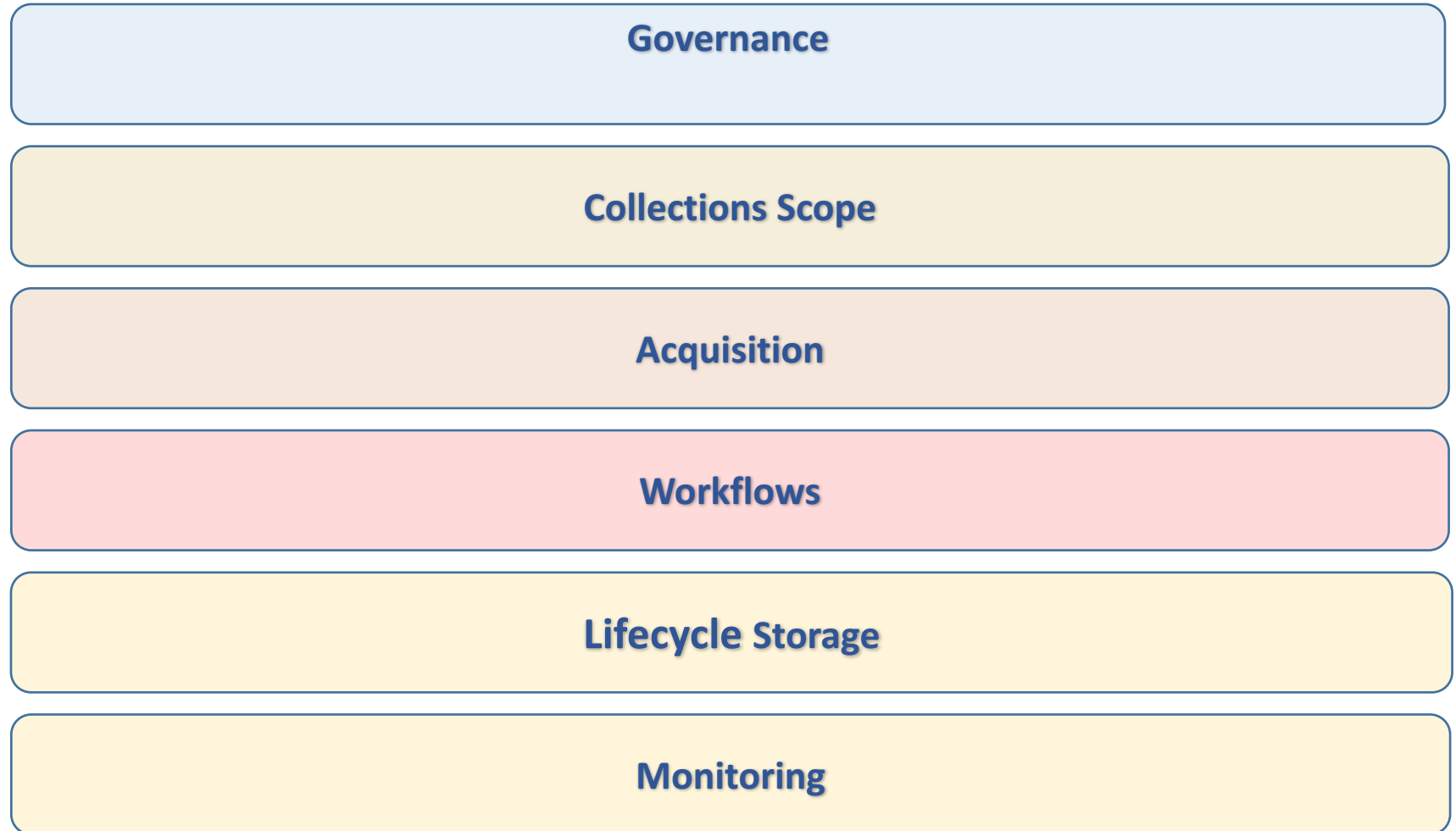
Monitoring includes:
- self-assessment and audit
- incremental improvement
- demonstrating good practice
- harnessing technology ...

Governance

Collections Scope

Acquisition

Workflows

Lifecycle Storage

Monitoring

DPM workshops, 2016

DPM "Stack": roles

	over-time	layer	real-time
	DP program, policies…	**Governance**	Collections, policies, …
	how to preserve	**Collections Scope**	what to preserve
	compliance, audit	**Acquisition**	quality control
	compliance, packaging	**Workflows**	quality assurance
	preservation objects	**Lifecycle Storage**	dissemination objects
	respond, anticipate	**Monitoring**	metadata, content

Roles include:
- creator: stewards
- real-time: e.g., digital archives
- over-time: digital preservation
- users: current and future …

DPM workshops, 2016

DPM "Stack": partnering humans and technology

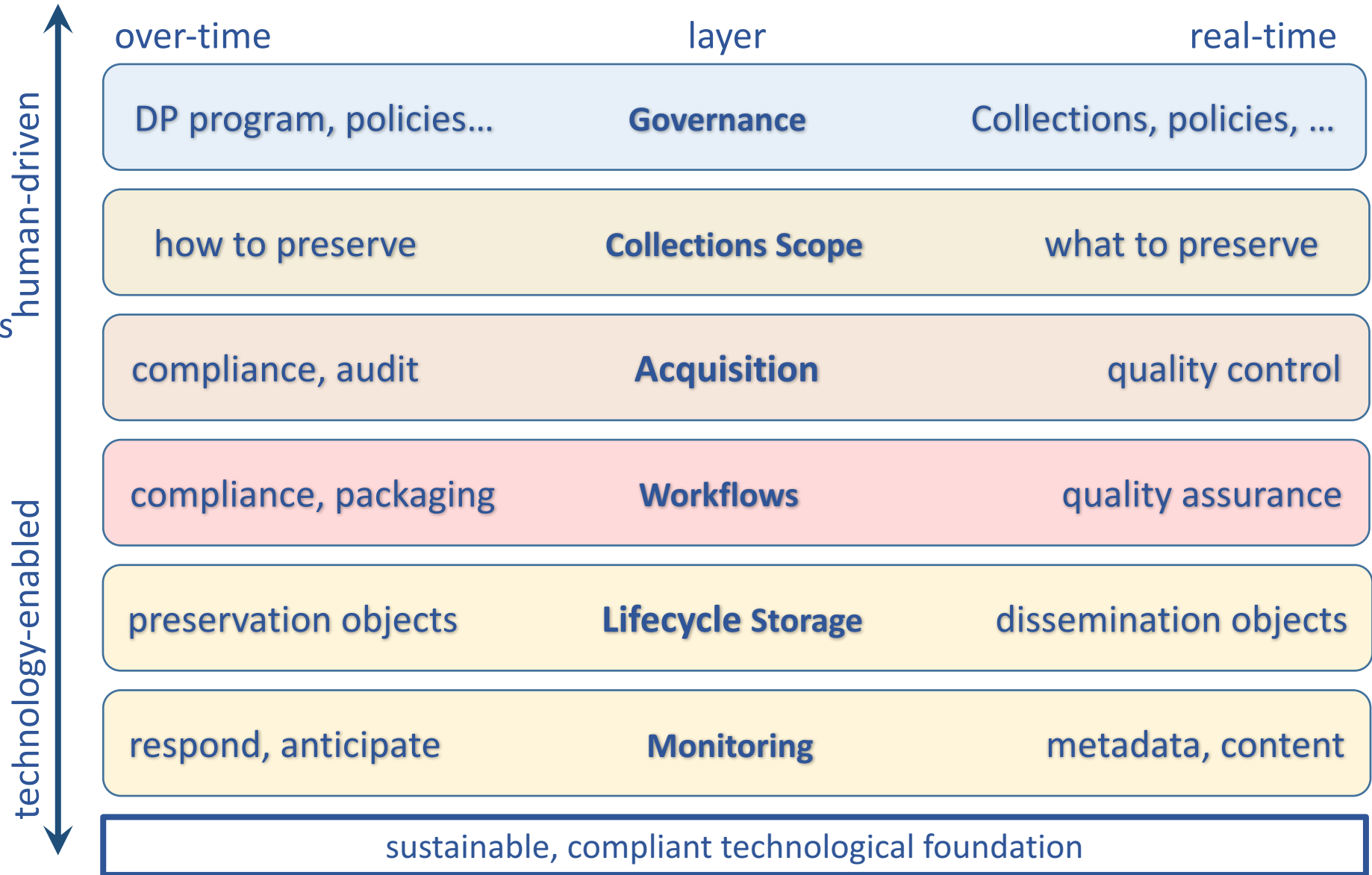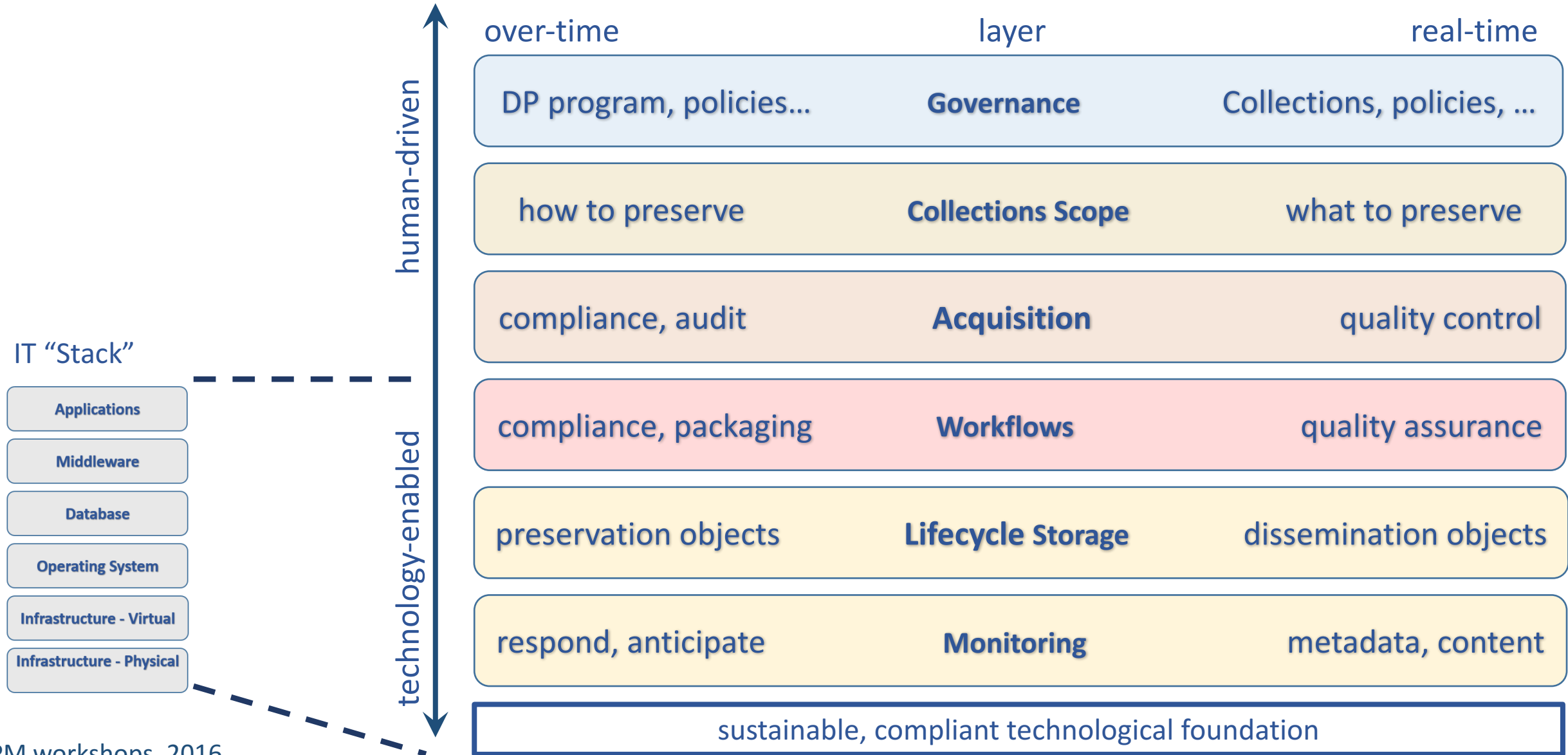| over-time	layer	real-time
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respond, anticipate	**Monitoring**	metadata, content

human-driven

technology-enabled

Human-tool continuum:
- top-down: policies, decisions
- bottom-up: solutions
- rules: both directions
- cumulative documentation
- show decisions applied

sustainable, compliant technological foundation

DPM workshops, 2016

Policy Continuum

- First presented at iPres in 2008
- Illustrates requisite organizational and technological leg partnership
- Policy enforcement & DPM model

Organizational

High-level organizational policies

reflect the intentions of the organization

Lower-level organizational policies

document the decisions of the organization

Individual policy statements

regulate the actions of the organization

Encoded policy statements

translate organization's policies into actions

Technological

DPM "Stack": partnering the stacks ...

human-driven

technology-enabled

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sustainable, compliant technological foundation

IT "Stack"

- Applications
- Middleware
- Database
- Operating System
- Infrastructure - Virtual
- Infrastructure - Physical

DPM "Stack"

collaborative services (current and long-term discovery, access, use)

over-time   layer   real-time

human-driven

DP program, policies…	**Governance**	Collections, policies, …
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technology-enabled

sustainable, compliant technological foundation

Collaborative Services
- for creators/users
- long-term access/re-use
- build on DPM & IT stacks
- should leverage strengths …

DPM workshops, 2016

"Technology makes it possible
for people to gain control over everything,
except over technology."

— John Tudor