

Service Oriented Architectures in Virtual Organizations

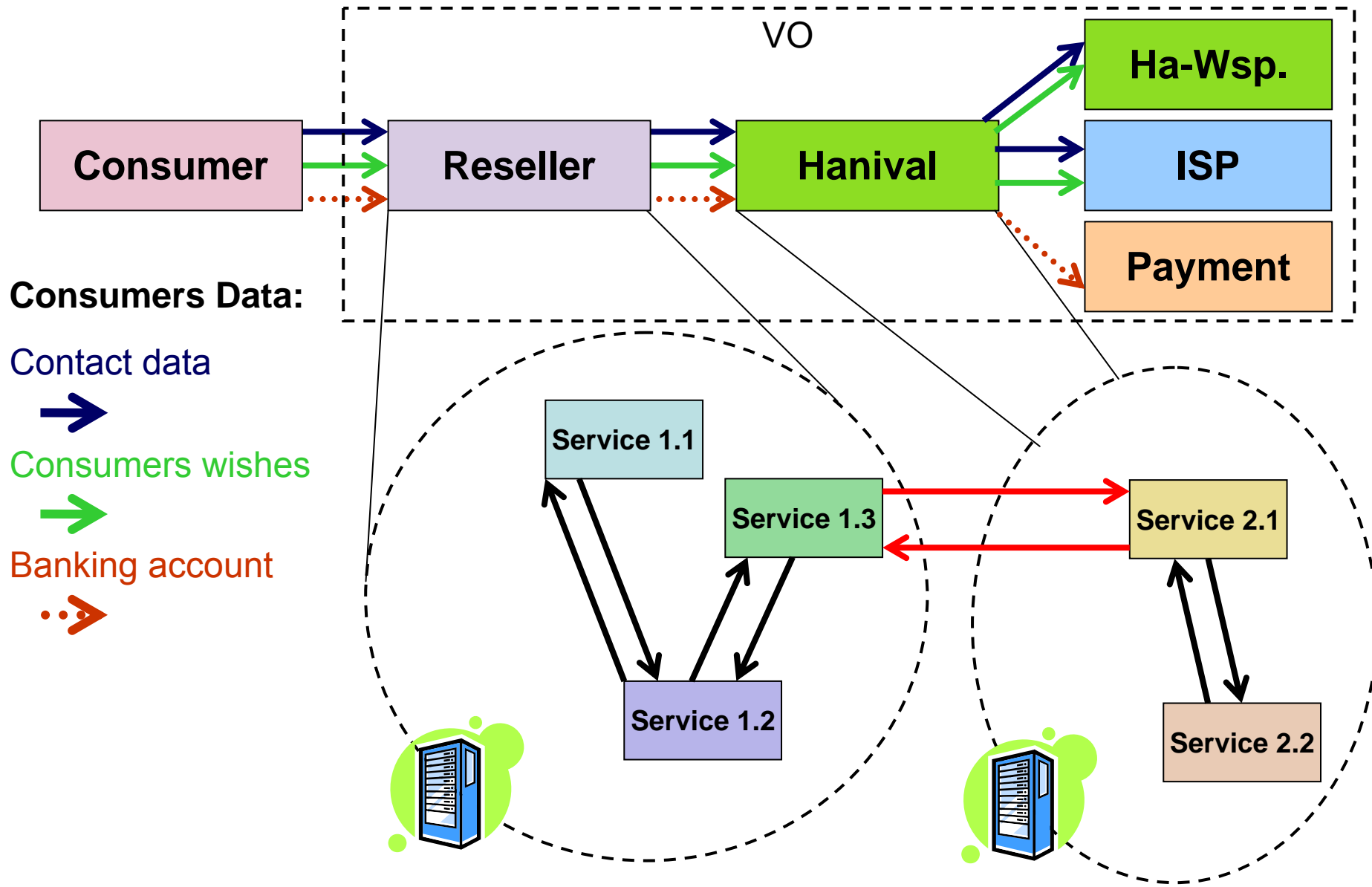
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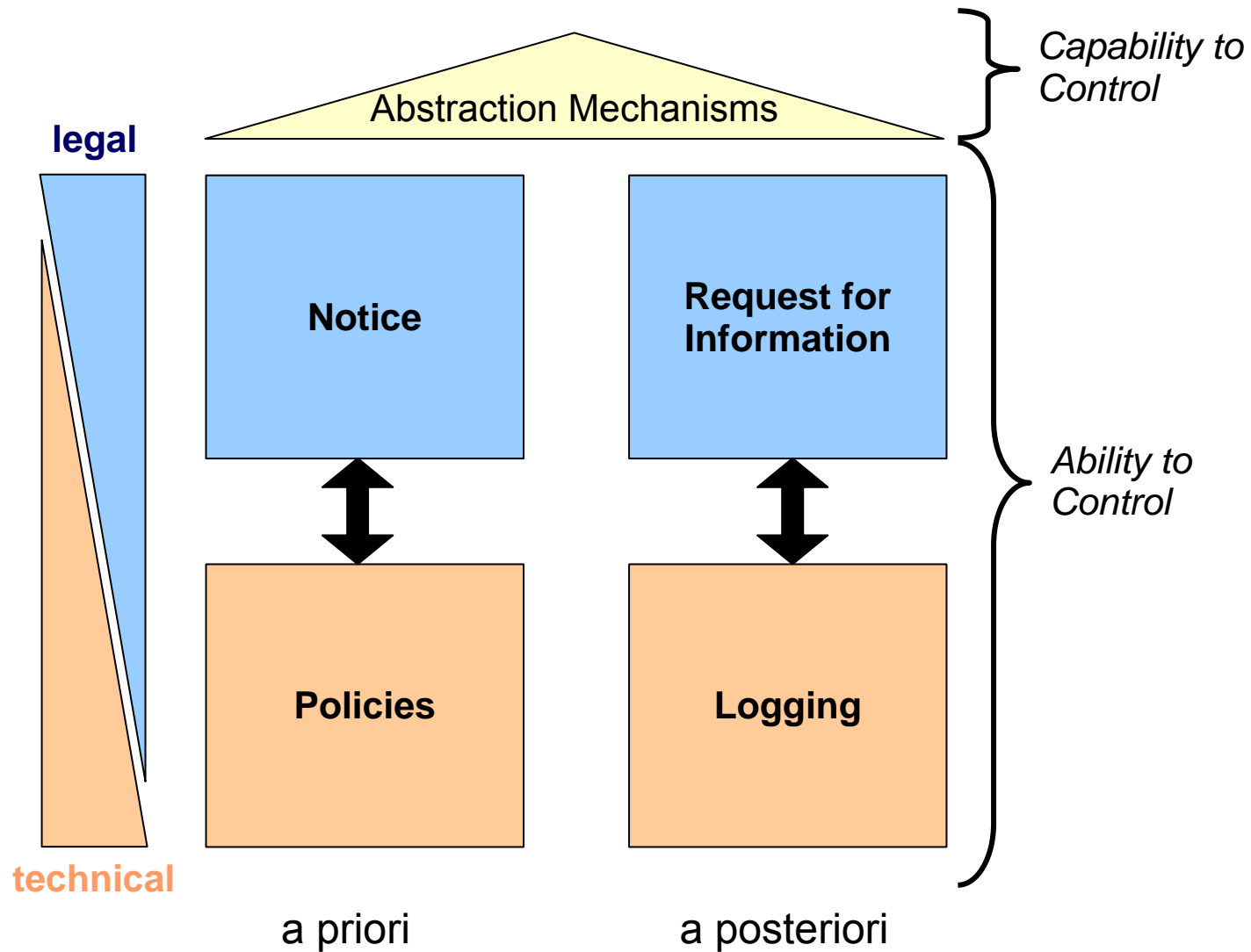
Example Virtual Organization

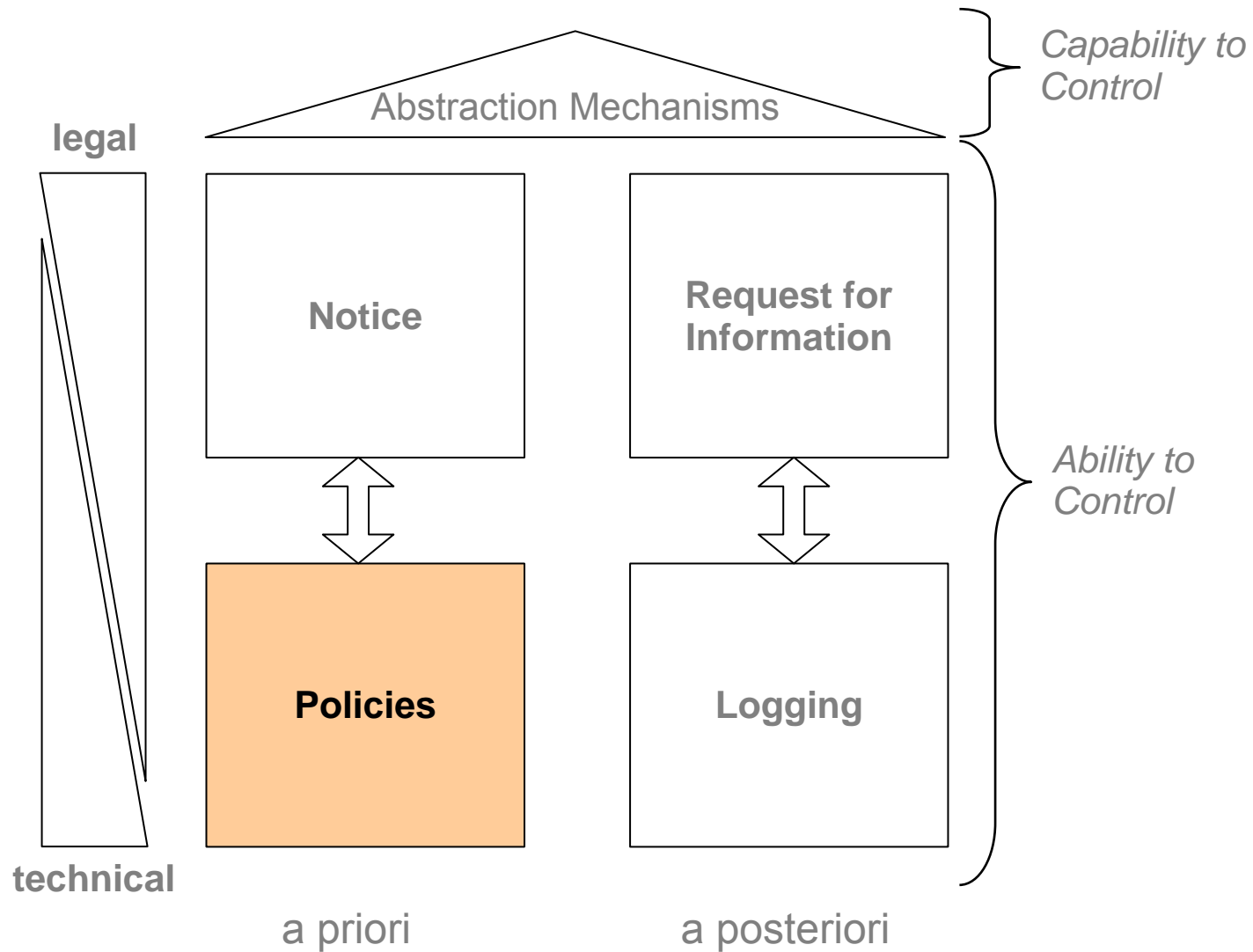


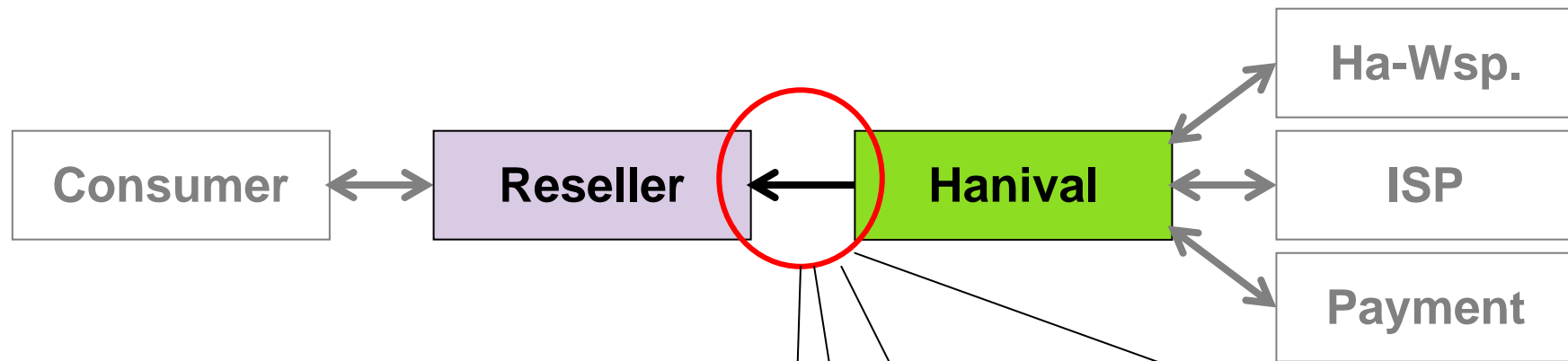
- ◆ Unclear of how to comply with privacy law/demands for data flows within the SOA of a virtual organization
- ◆ For some aspects of privacy there exist tools and standards, for others not even the requirements are clear
- ◆ Existing standards are often focused on inner organizational integration → not necessarily suitable for virtual organizations
- ◆ Need for the definition of requirements, which future mechanisms have to fulfill

Controllability of personal data as a central aspect

1. Development of legal and technical **framework for controllability** of data flows within the SOA of virtual organizations
2. Derivation of **questions for scenario analysis** and application to different **scenarios** of virtual organizations
3. Derivation of **requirements** for mechanisms to achieve controllability







Policies as text,
part of contracts

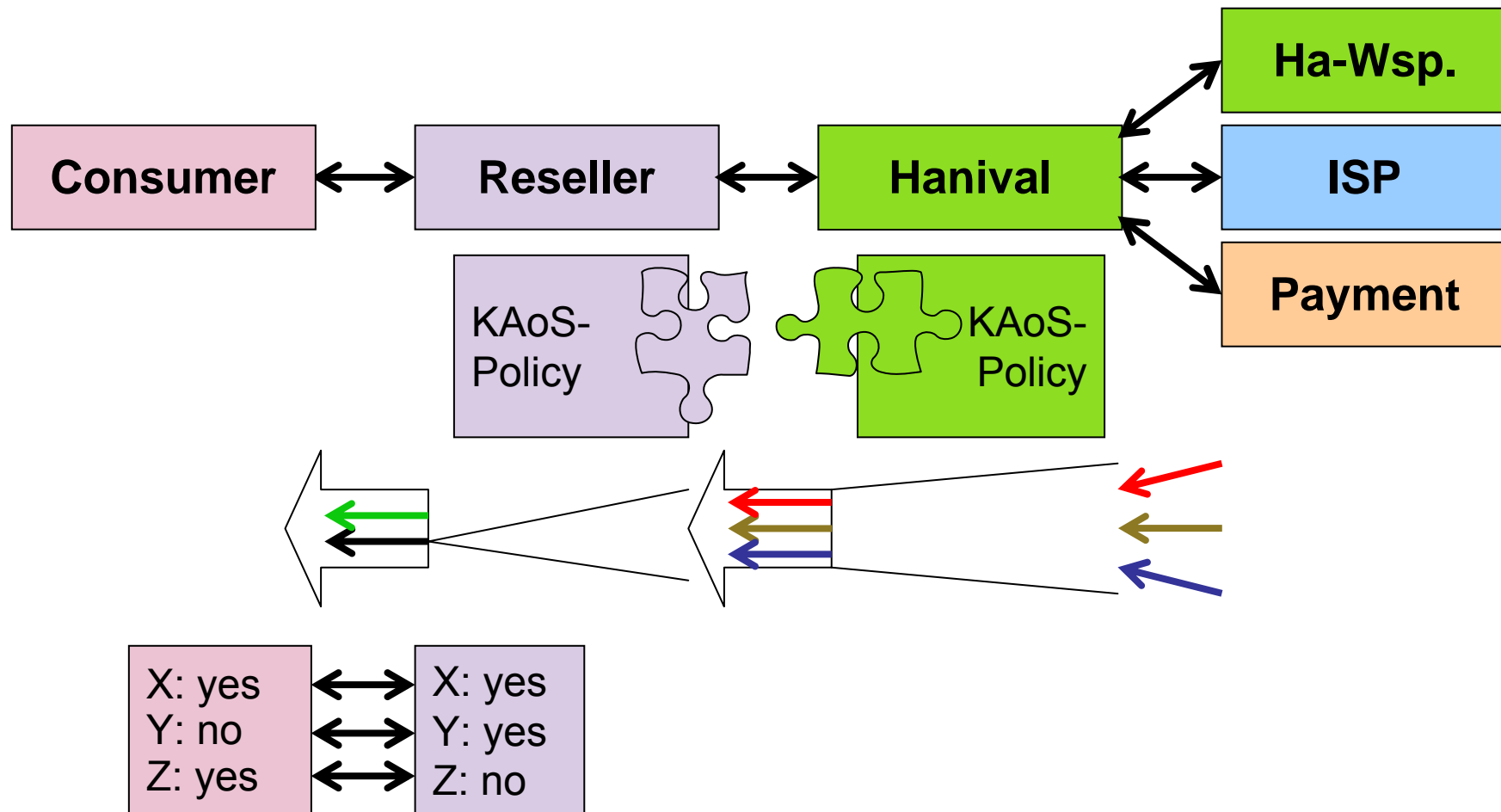


Service Contract
(16) ... Hanival assures to the signatory to give personal data only away for the provision of services to other parties ...

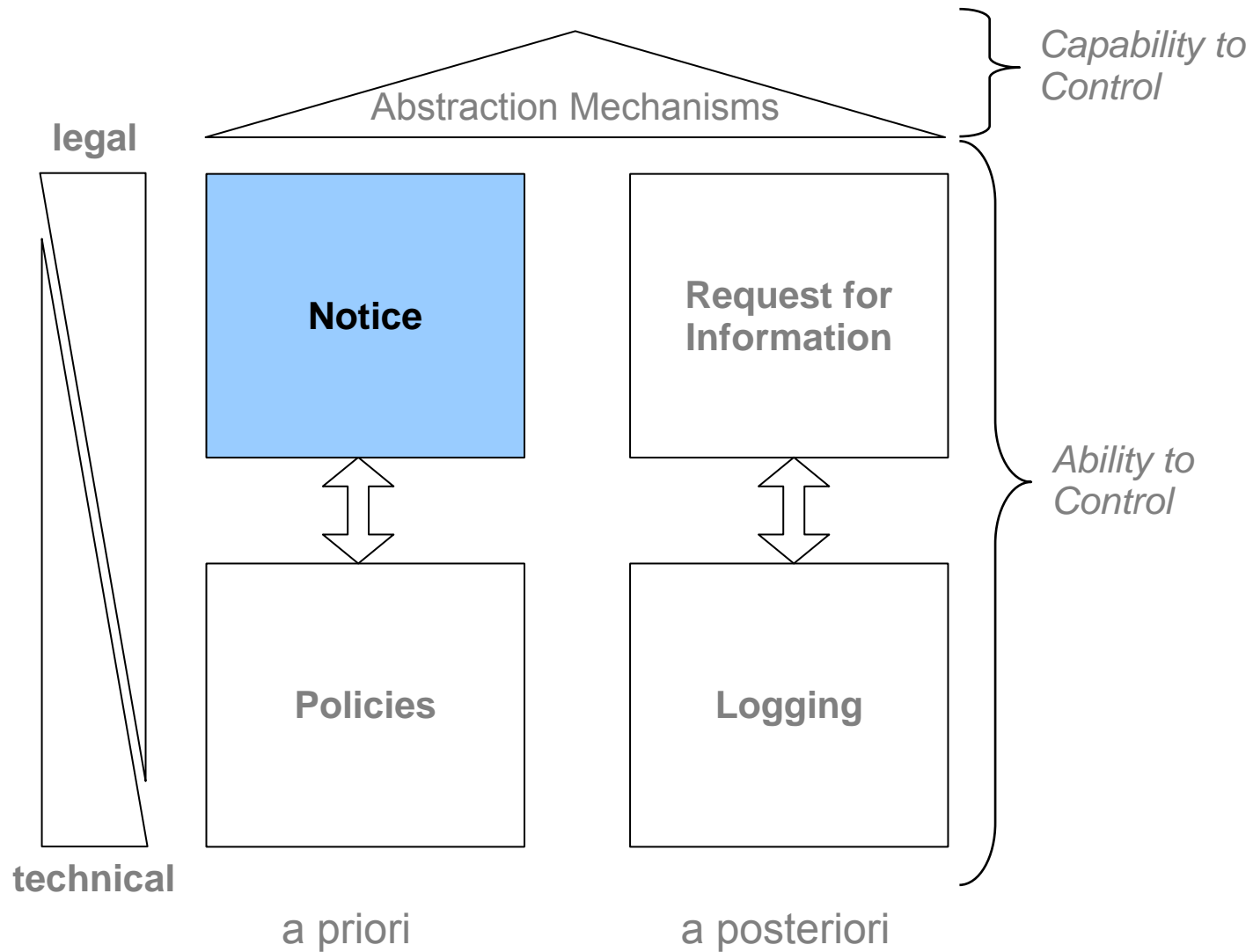
Possible:

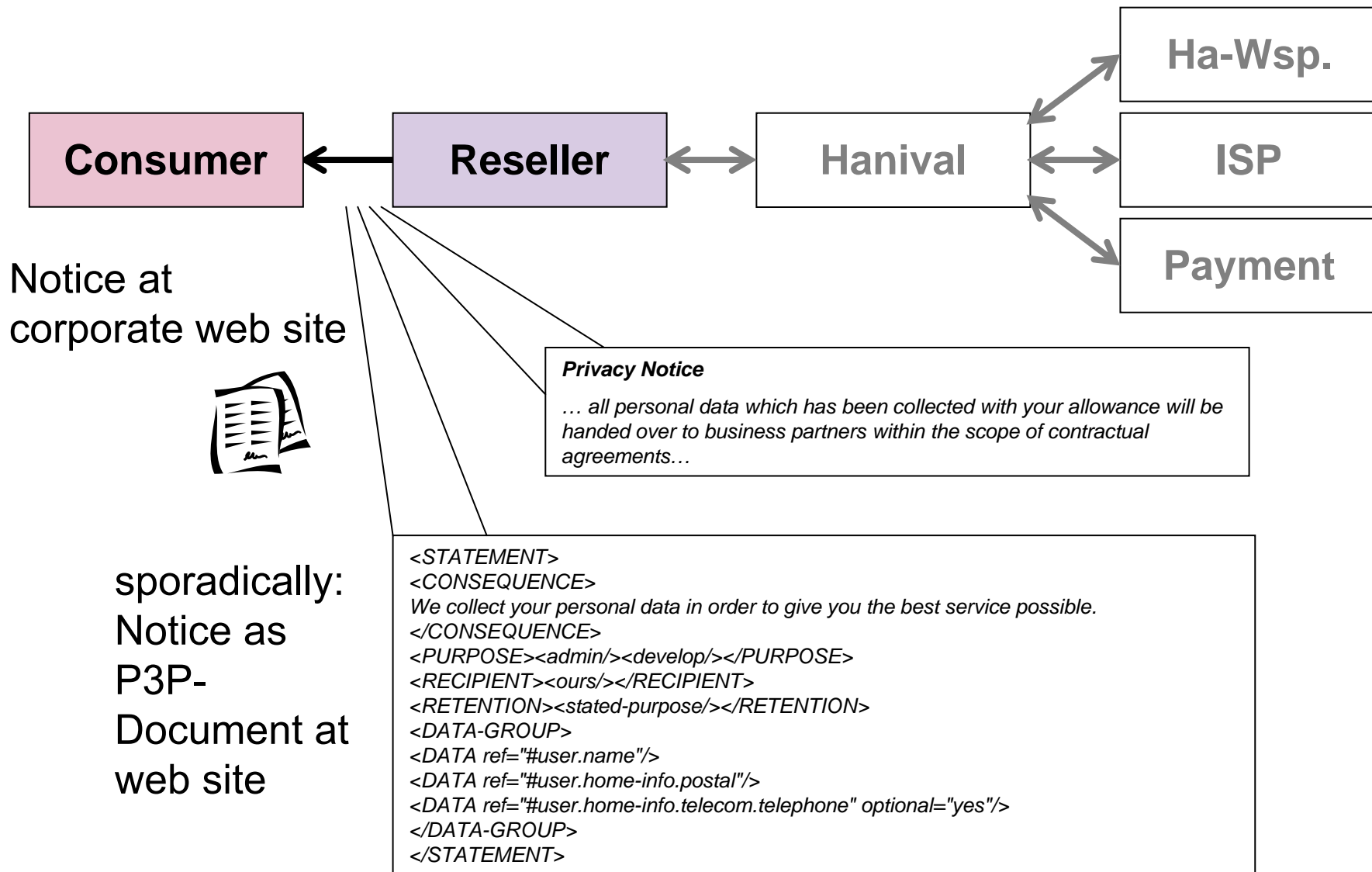
- Policies in standardized language:
EPAL, WSPL, WS-Policy
- policies in a semantic language,
e.g. KAOs, Rei:

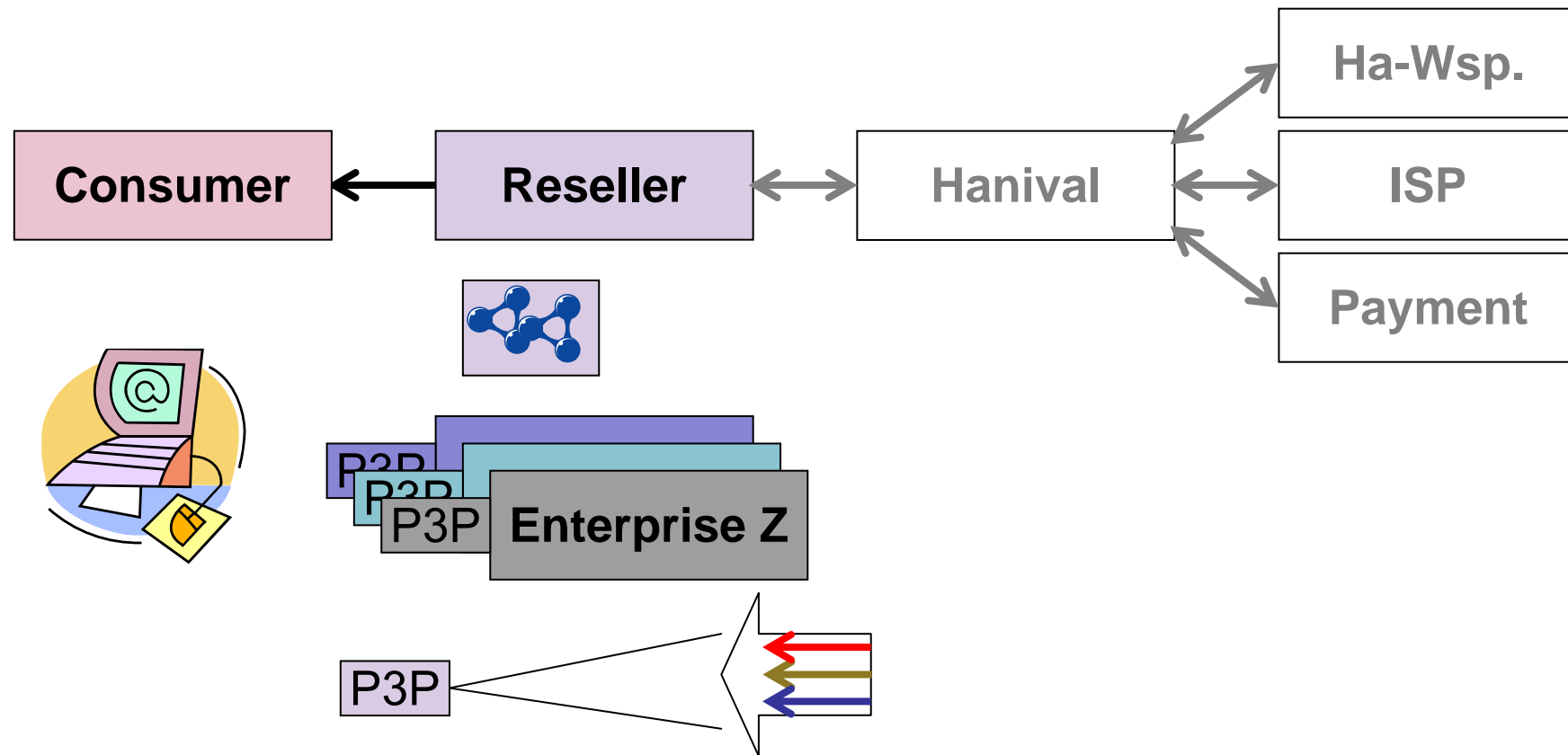
```
<daml:Class rdf:ID="P1Action">
<rdfs:subClassOf rdf:resource="&action;SendingPersonalData" />
<rdfs:subClassOf>
  <daml:Restriction>
    <daml:onProperty rdf:resource="&action;#hasDestination" />
    <daml:toClass rdf:resource="&domains;signatory" />
  </daml:Restriction>
</rdfs:subClassOf>
</daml:Class>
```



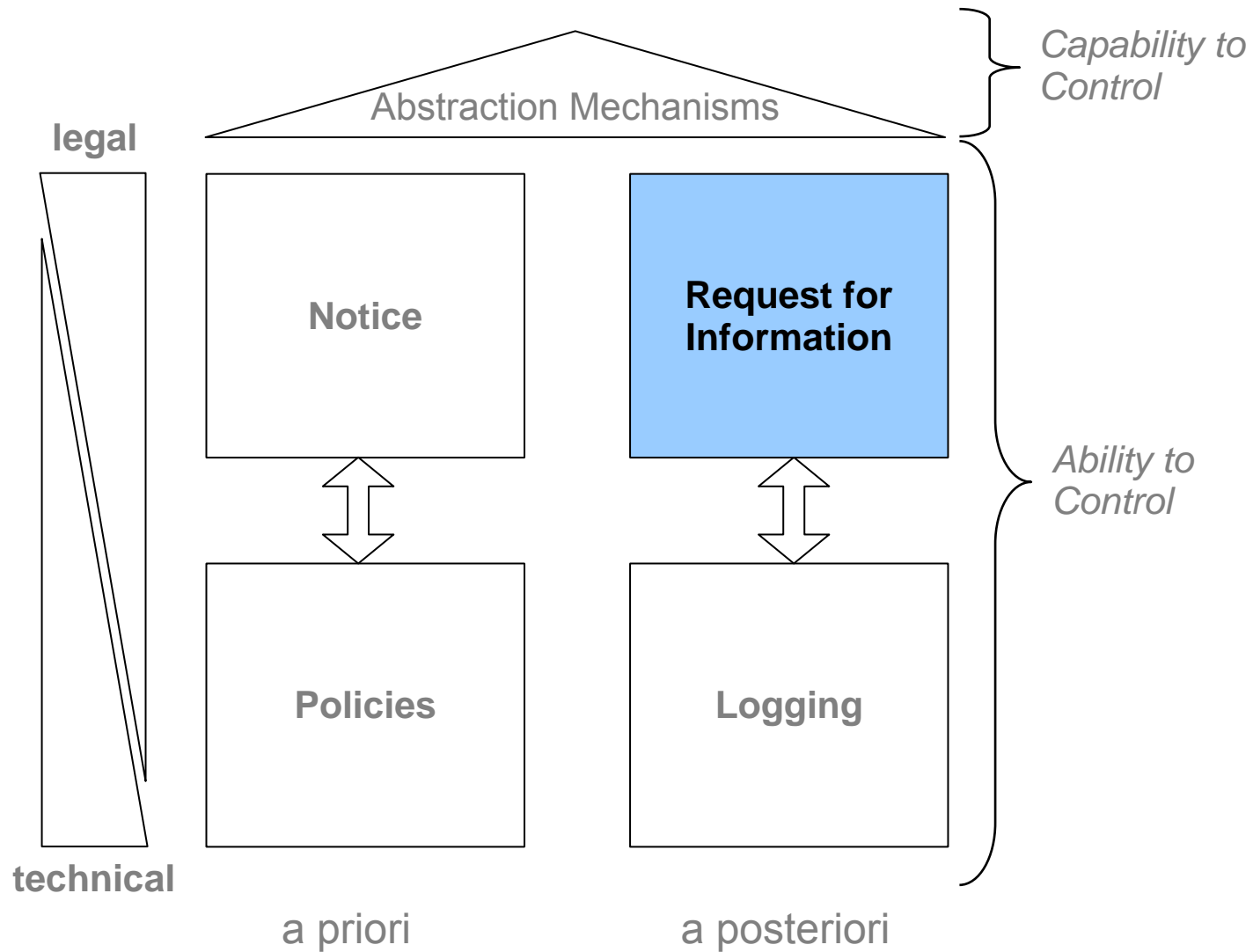
- Unified semantic standard for policy exchange
- Mechanisms for aggregation of policies
- Tool support for matching policies and preferences





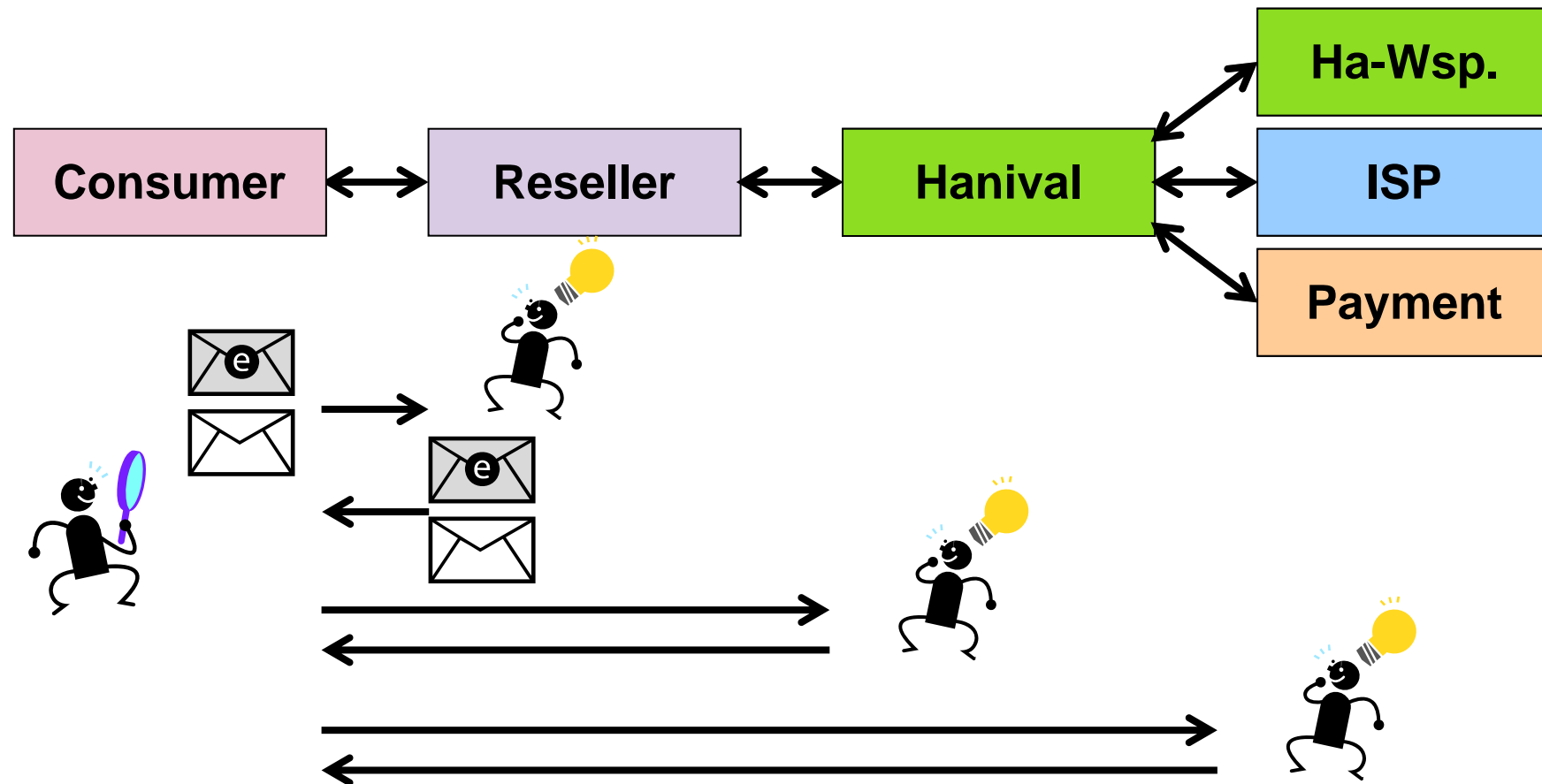


- Semantic standards for notice must be used
- Tool support for interpretation and generation of notices
- First step: usage of P3P on corporate web sites
- Mechanism for automatic generation of P3P-Documents from other policies



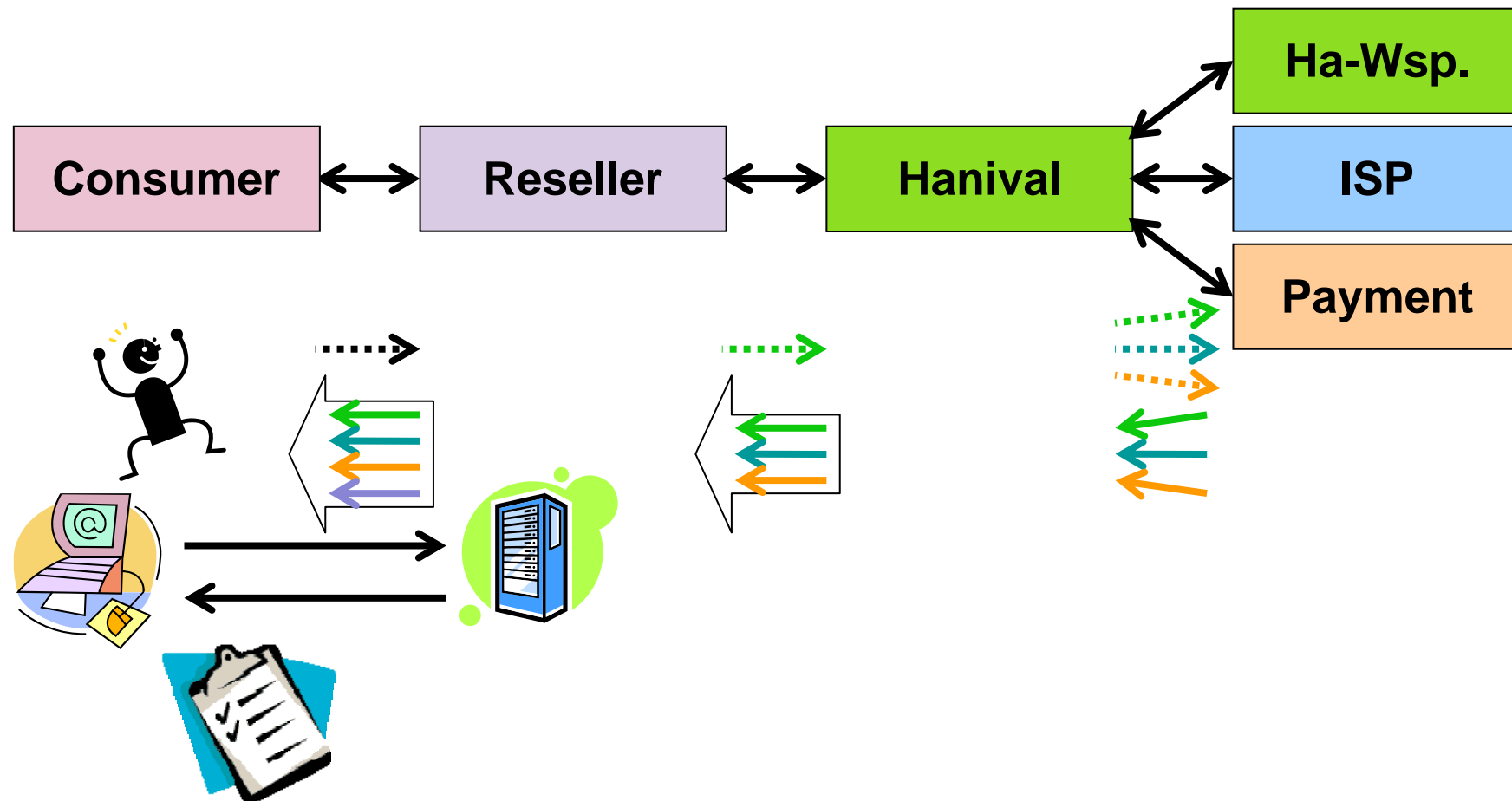
Request for Information – Current State

<is web>

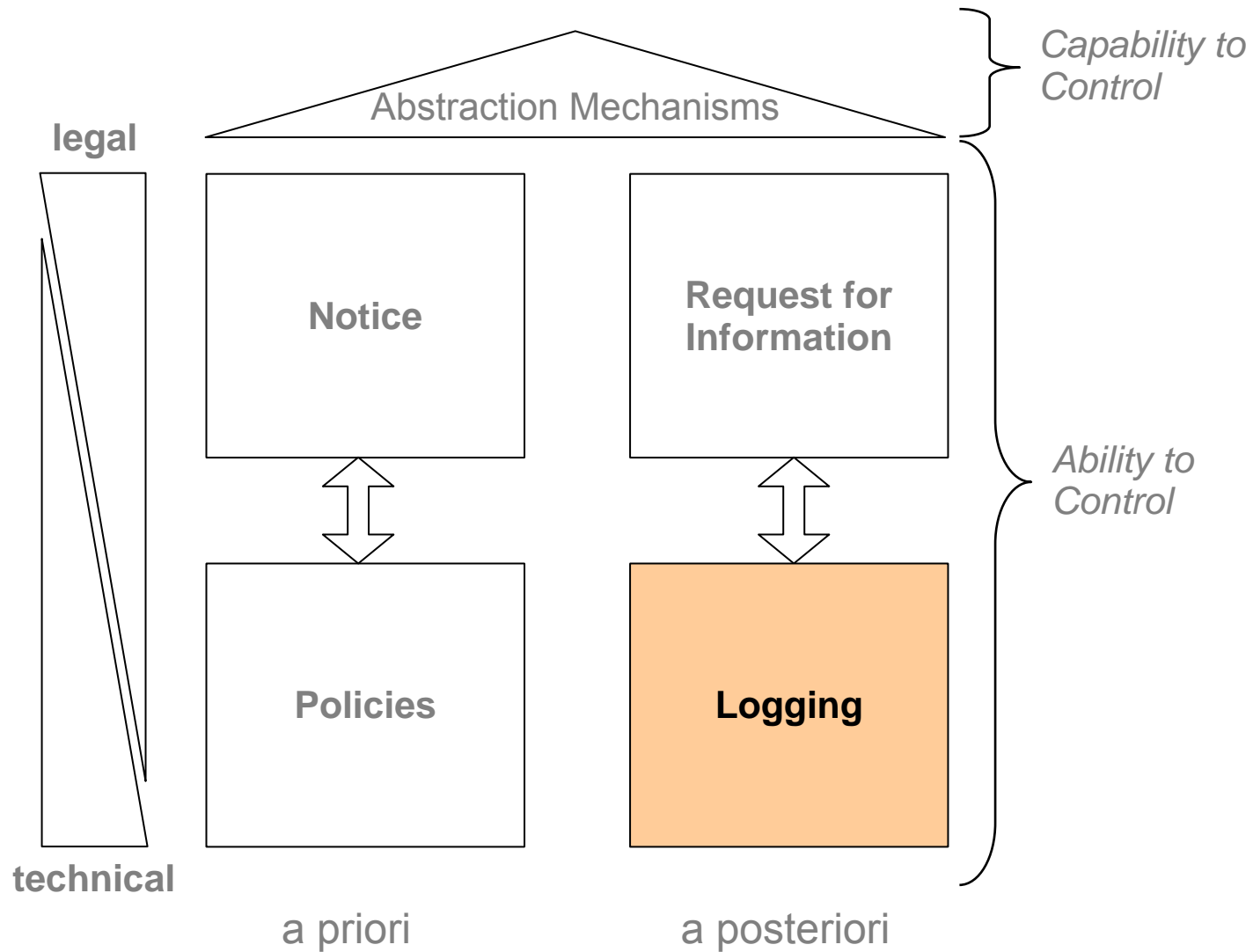


- Customer has to search for contact data of enterprise
- Request for information formulated as text; sent as classical or electronic mail
- Separately for every enterprise

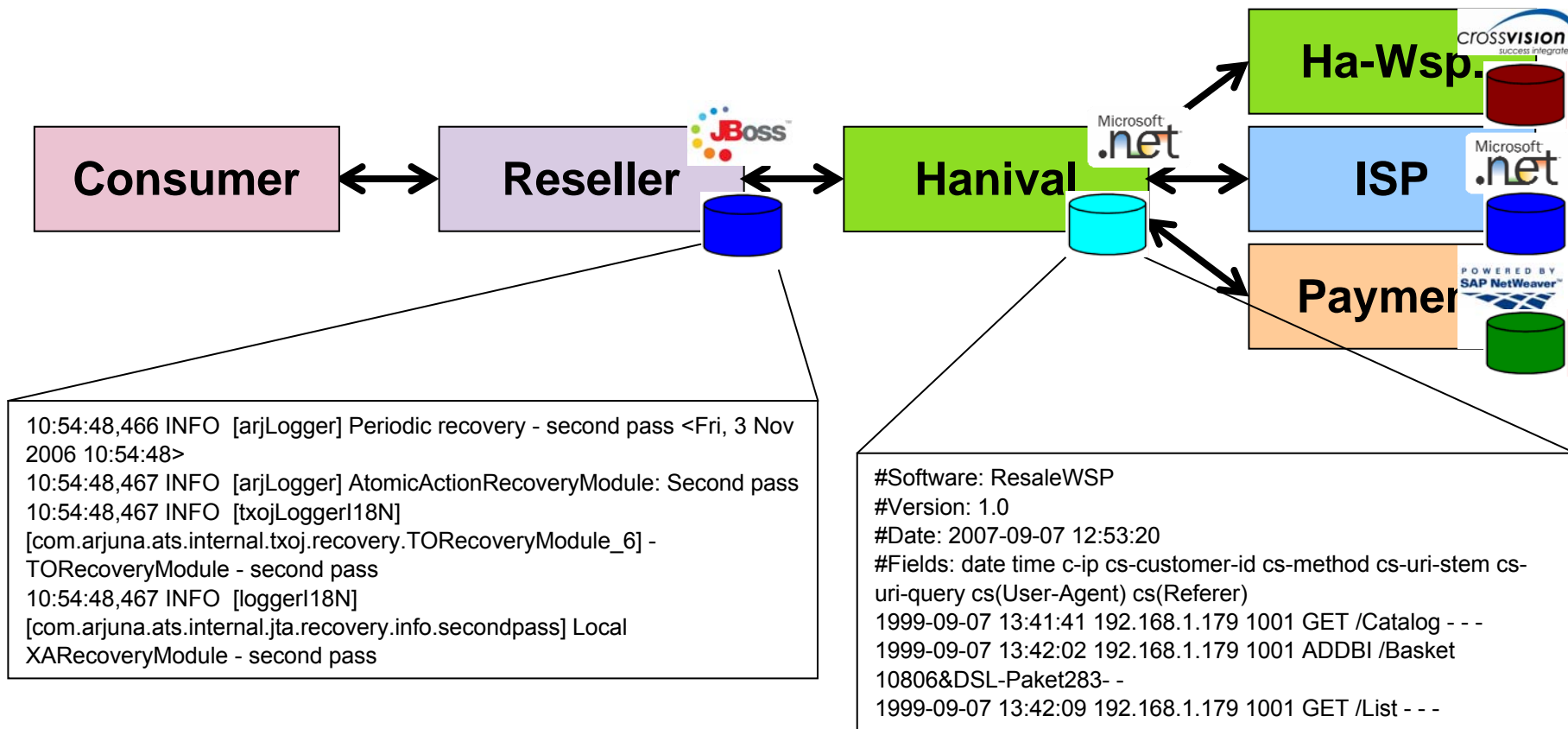
Request for Information - Requirements



- Information must be given combined for the whole virtual organization
- Standard for request for information
- Customer has to be able to compare requested information with the privacy notice



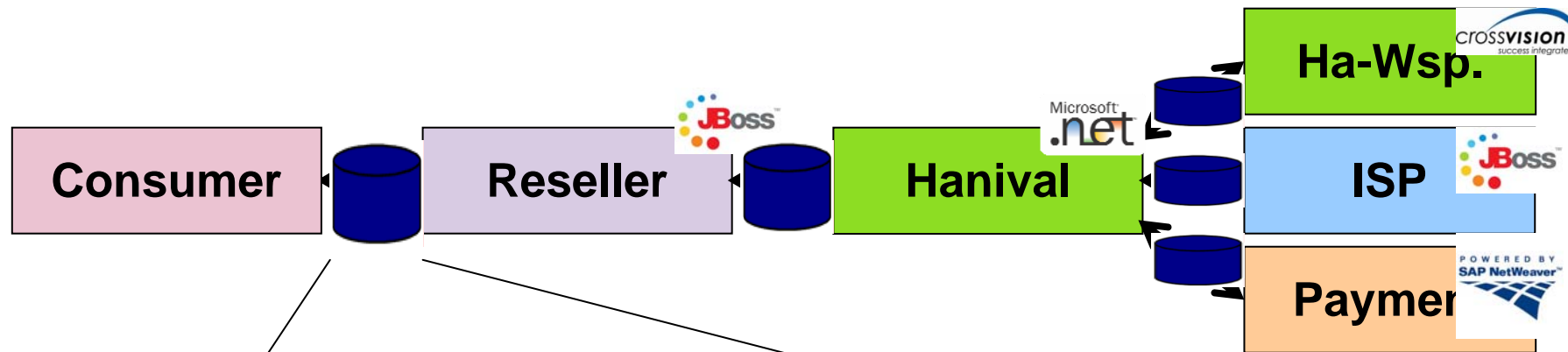
Logging – Current State



Today common: distributed logging in different platform dependent standards.

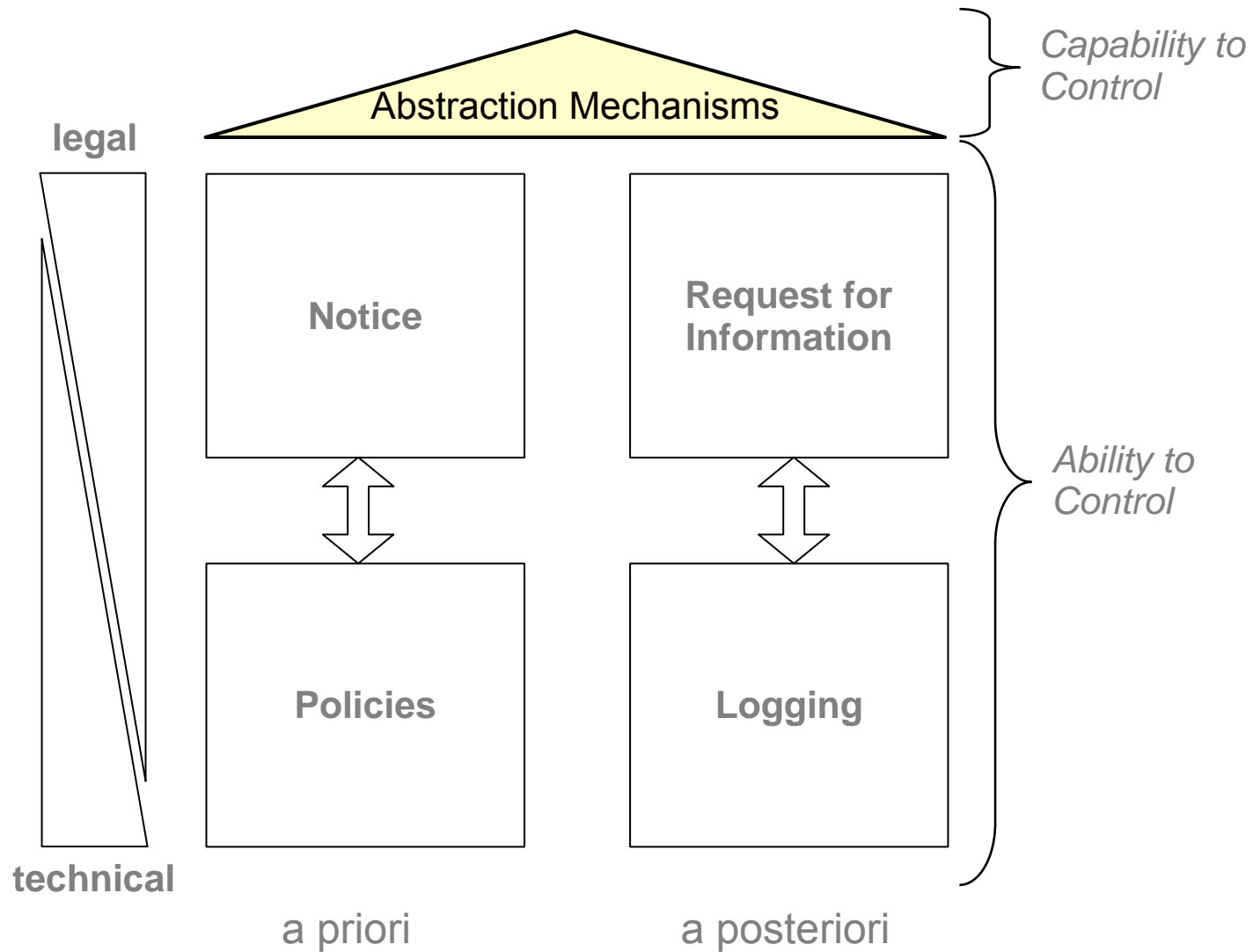
Today possible: distributed logging in one cross platform standard (e.g. Extended Log File Format).

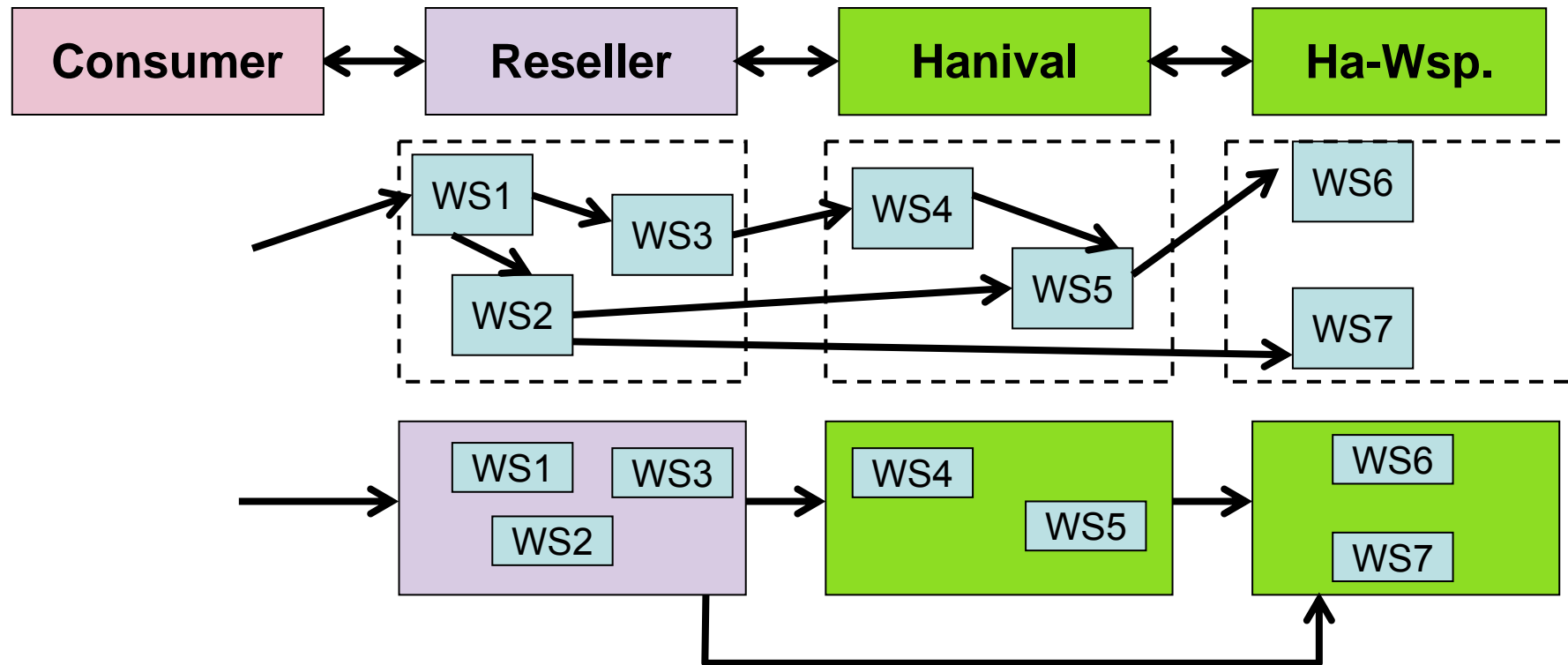
Logging - Requirements



01	:addressDI1	rdf:type	sl:DataInstance
02	:addressDI1	sl:hasUUID	"a26f4580-39d9-11dc-a3fa-..."
03	:addressDI1	sl:hasCopy	:addressDI2
04	:action1	rdf:type	sl:action
05	:action1	sl:performedOnDataInstance	:addressDI1
06	:action1	sl:isOfKind	sl:CopyAction
07	:action1	sl:hasPurpose	dofd:DeliverOrder
08	:logEntry1	rdf:type	sl:LogEntry
09	:logEntry1	sl:hasUUID	"cf2f30c0-39c1-11dc-80ae-..."
10	:logEntry1	sl:logsAction	:action1
14	:entity1	rdf:type	sl:Entity
15	:entity1	sl:hasName	"Wiederverkaufder GmbH"
17	:entity1	sl:hasLogged	:logEntry1
18	:entity1	sl:hasPGPCertificate	"http://wiederverkaufder.de/cert.asc"
19	:entity1	sl:Signature	"HrdSDFc..."

- ◆ Semantic logging standard must be used
- ◆ Formal approach of linking logs and data
- ◆ Mechanisms to return data and logs to the person concerned





- ◆ Abstraction – aggregation of data
- ◆ Compatible standards for controllability mechanisms
- ◆ Automation of tasks
- ◆ Transparent user interfaces for customers

- ◆ SOA – emerging paradigm
- ◆ Increasing complexity → reduced controllability
- ◆ Need for further development of controllability mechanisms
- ◆ Increased support for conformance with legal requirements

Thank You

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