Bibliothèque nationale de France (BnF)

Distributed
Archiving & Preservation System
Système de Préservation
et d'Archivage Réparti (SPAR)

Lessons from the implementation

Sun-PASIG Malta

Agenda

- Missions and context
- From theory to practice
  - → the model
  - → the expectations
  - → handling “bad” data
  - → lessons
- Management through risk analysis
  - → Focus shift
  - → Dealing with human skills

Missions of the libary

- Missions :
  - →to build up the collections,
  - →to preserve and communicate them to the public,
  - →to produce a reference catalog,
  - →to cooperate with other institutions,
  - →to participate to research programs.

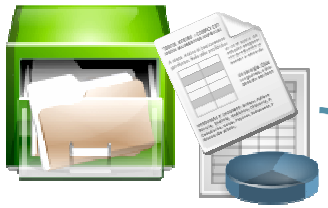
Legal deposit :

- →legal deposit since 1537 for printed materials
- →1648:engravings and maps
- →1793: musical scores
- →1925: photos
- →1938: phonograms
- →1975: videograms
- →1992: electronic documents
- →2006: Web legal deposit

Digital archiving at BnF

Production applications

Preservation digitization



Record management

WEB Archiving

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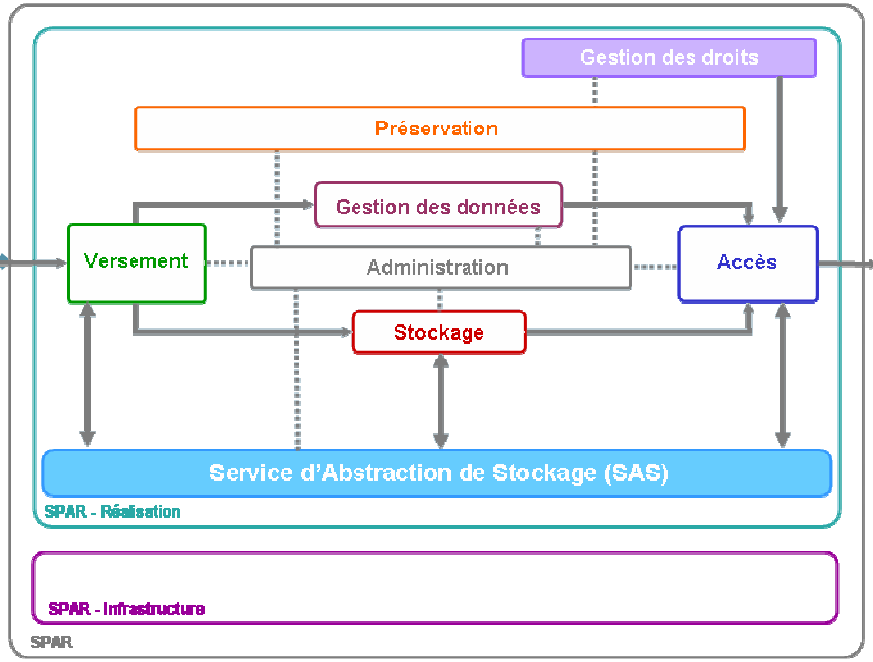

Dissemination applications

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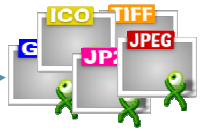

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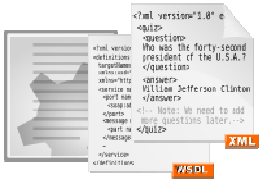

wayback

...

Decomposition in channels

- To deal with the variability and heterogeneity of the data, definition of channels
- build on the relation between the digital objects and the archival system, independently of any given organization:
  - → Preservation digitization
  - → Audiovisual material
  - → Negotiated legal deposit (dark Web, regional press)
  - → Automatic legal deposit (surface Web)
  - → Administrative production
  - → Deposit / Third party archiving
  - → Acquisition / Donation

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Model

- Each channel is formally defined by a reference package:
  - → description of the Service Level Agreement (SLA)
  - → includes human readable definition
  - → machine actionable parameters
  - → links to accepted formats at various levels of commitment (stored, identified, known, managed)
  - → links to the used tools

Channel description (sample)

```
<sla:serviceLevelAgreement>
  <sla:header>
    <sla:channelIdentifier>FIL_NUM_CONS_A</sla:channelIdentifier>
    <sla:type>info:bnf/spar/context/channel#ingest</sla:type>
  </sla:header>
  <sla:packageAttribute>
    <sla:minSize unit="kilobyte">10</sla:minSize>
    <sla:maxSize unit="gigabyte">40</sla:maxSize>
    <sla:maxNumberOfFiles>3000</sla:maxNumberOfFiles>
    <sla:packageContent>
        <sla:formatCategory type="info:bnf/spar/representation#storedFormat"
                            order="deny,allow">
          <sla:formatList action="deny"><format>*</format></sla:formatList>
      </sla:formatCategory>
      <sla:formatCategory type="info:bnf/spar/representation#managedFormat"
                           order="deny,allow">
        <sla:formatList action="allow">
          <format type="ark">ark:/12148/fTIFF_6_0w</format>
        </sla:formatList>
        <sla:formatList action="deny"><format>*</format></sla:formatList>
      </sla:formatCategory>
    </sla:packageContent>
</sla:serviceLevelAgreement>
```

Expectations

- For the digitized collection,
  - → all formats are managed
- BUT we deal with 10 years of data creation
  - → historical choices
  - → changes in requirements
  - → changes in scope
  - → learning mechanisms

“Bad” HTML files

- Testing the formal method, we discover “bad” HTML files => not valid against the W3C validator

- BUT these files have been
  - → produced for 2 years
  - → displayed for 8 years

- Possible strategies:
  - → correct the data before ingestion
  - → accept “bad” data and plan for correction

Previous experience : SGML files

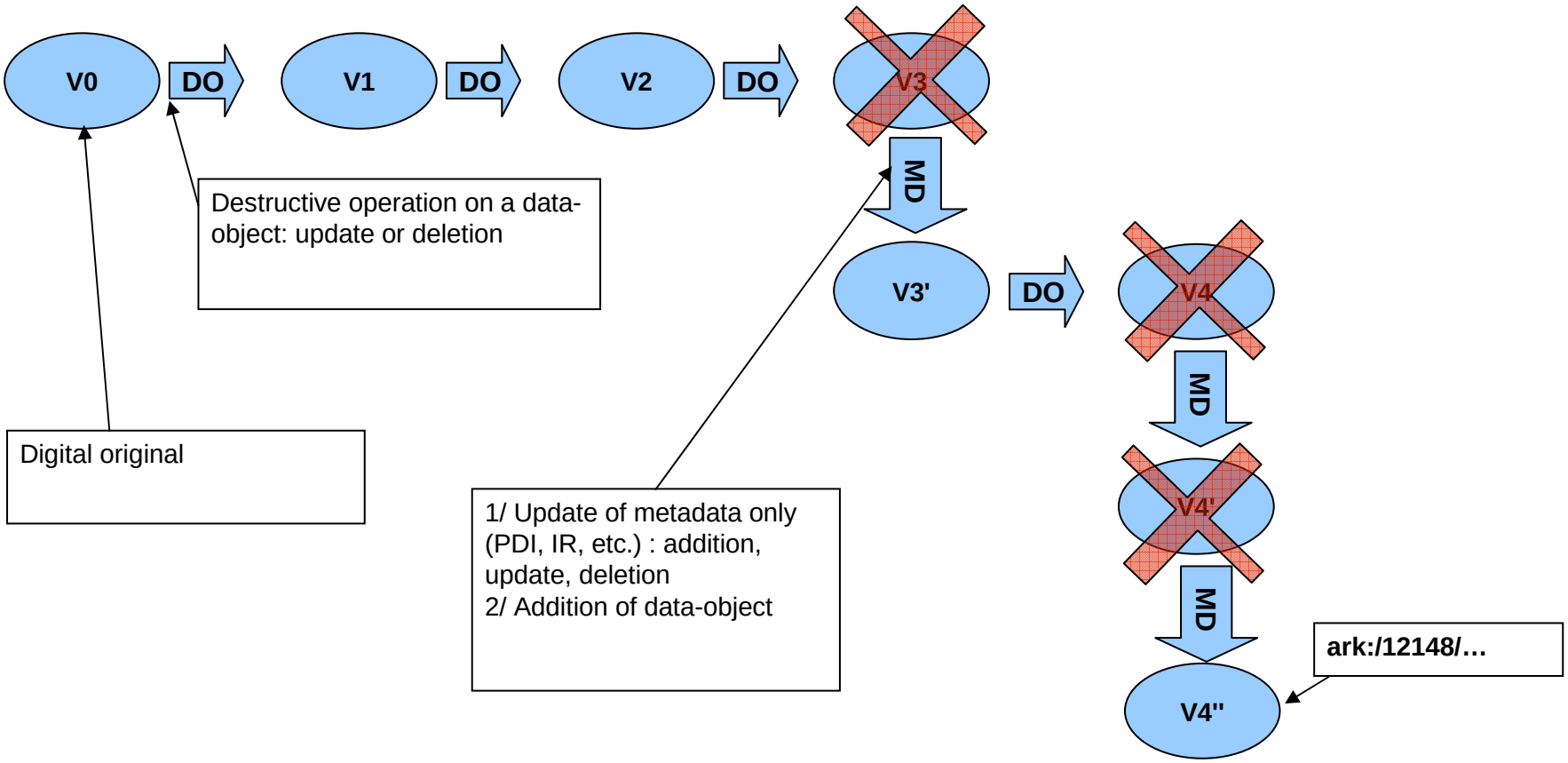
- Previous experience :
  - → production made on SGML format (special TEI profile)
  - → uncontrolled conversion made in XML (the current format at the time)
  - → at ingestion time, no way to display correctly the files

  - → need for *archeological* search, to come up with:
    - the original XML files
    - the original specifications (SGML DTD)
    - the expected XML files
    - the needed tools (SGML parsers)
    - the required skills

Strategy applied

- The idea is to accept the files in a control way
  - → Lax the requirements on the channel (some identified formats)
  - → Use the ingest mechanisms to characterize the files as much as possible
  - → Formally determine the set of “bad” data
  - → Plan for *curation* with a well defined and documented migration plan
- Benefits
  - → the history of transformation is preserved, the decision are traced and the tools used are known

Lifecycle of an Archival Package (AIP)

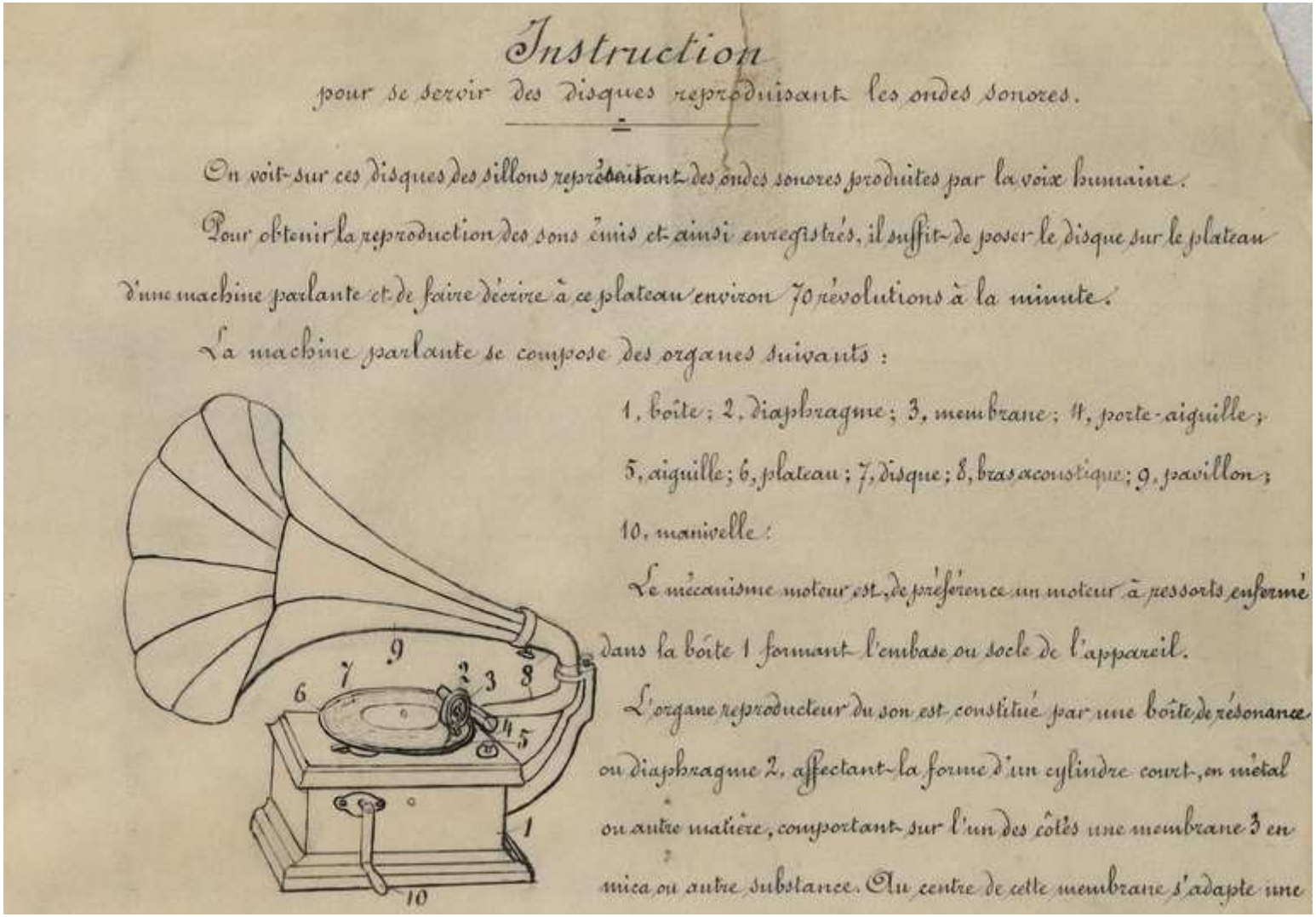


- Each version/edition has its own internal identifier
- The persistent identifier is unique, in ark: format

Some lessons

- Lesson 1:
  - → never think your data is perfect
- Lesson 2:
  - → the model works !!!
- Lesson 3:
  - → migration is part of the preservation process
  - → keep the original data and trace the operations made

Instructions to use the original tool



Instruction

pour se servir des disques reproduisant les ondes sonores.

On voit sur ces disques des sillons représentant des ondes sonores produites par la voix humaine.

Pour obtenir la reproduction des sons émis et ainsi enregistrés, il suffit de poser le disque sur le plateau d'une machine parlante et de faire décrire à ce plateau environ 70 révolutions à la minute.

La machine parlante se compose des organes suivants :

1, boîte ; 2, diaphragme ; 3, membrane ; 4, porte-aiguille ; 5, aiguille ; 6, plateau ; 7, disque ; 8, bras acoustique ; 9, pavillon ; 10, manivelle :

Le mécanisme moteur est, de préférence un moteur à ressorts enfermé dans la boîte 1 formant l'embase ou socle de l'appareil.

L'organe reproducteur du son est constitué par une boîte de résonance ou diaphragme 2, affectant la forme d'un cylindre court, en métal ou autre matière, comportant sur l'un des côtés une membrane 3 en mica ou autre substance. Au centre de cette membrane s'adapte une

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Risk analysis

- Risk management is at the core of preservation strategy
- Necessity for reassessing the risks on a regular basis
- Inclusion of the preservation system in the whole organization:
  - → sustainability of the economics
  - → add value to the service

Handling the transition

- Building a smooth transition in two phases
  - → ingesting and auditing
  - → direct access
- BUT dissemination has became critical in our ecosystem:
  - → access through Gallica
  - → cooperation with Europeana
  - → experimentation with publishers

  - → Risk to high to modify access at the moment

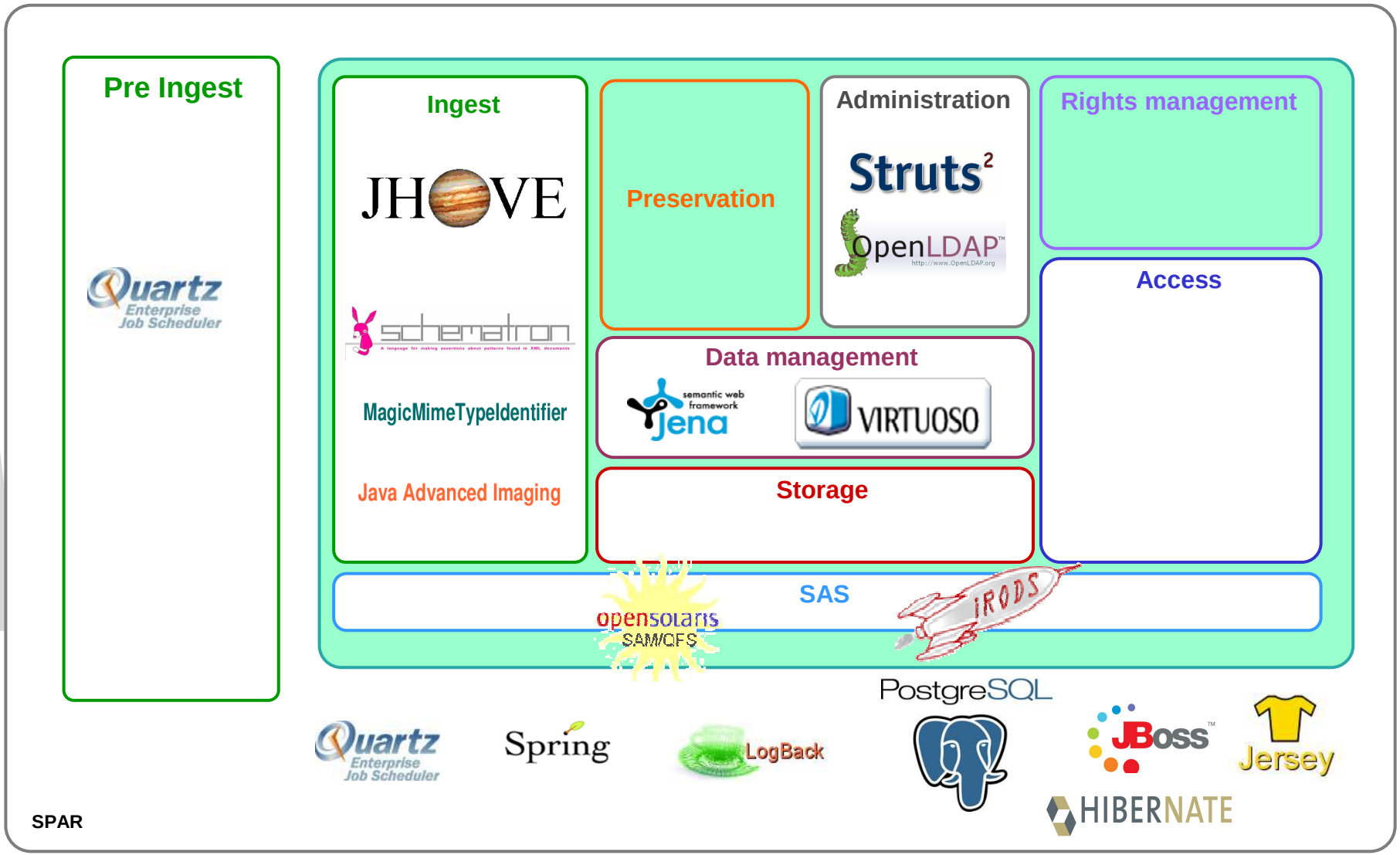
Focus shift to preservation repository

- The SPAR project focus shifts to
  - →ingesting data
  - →storing it safely
  - →and managing it
- It acts as a digital repository for preservation

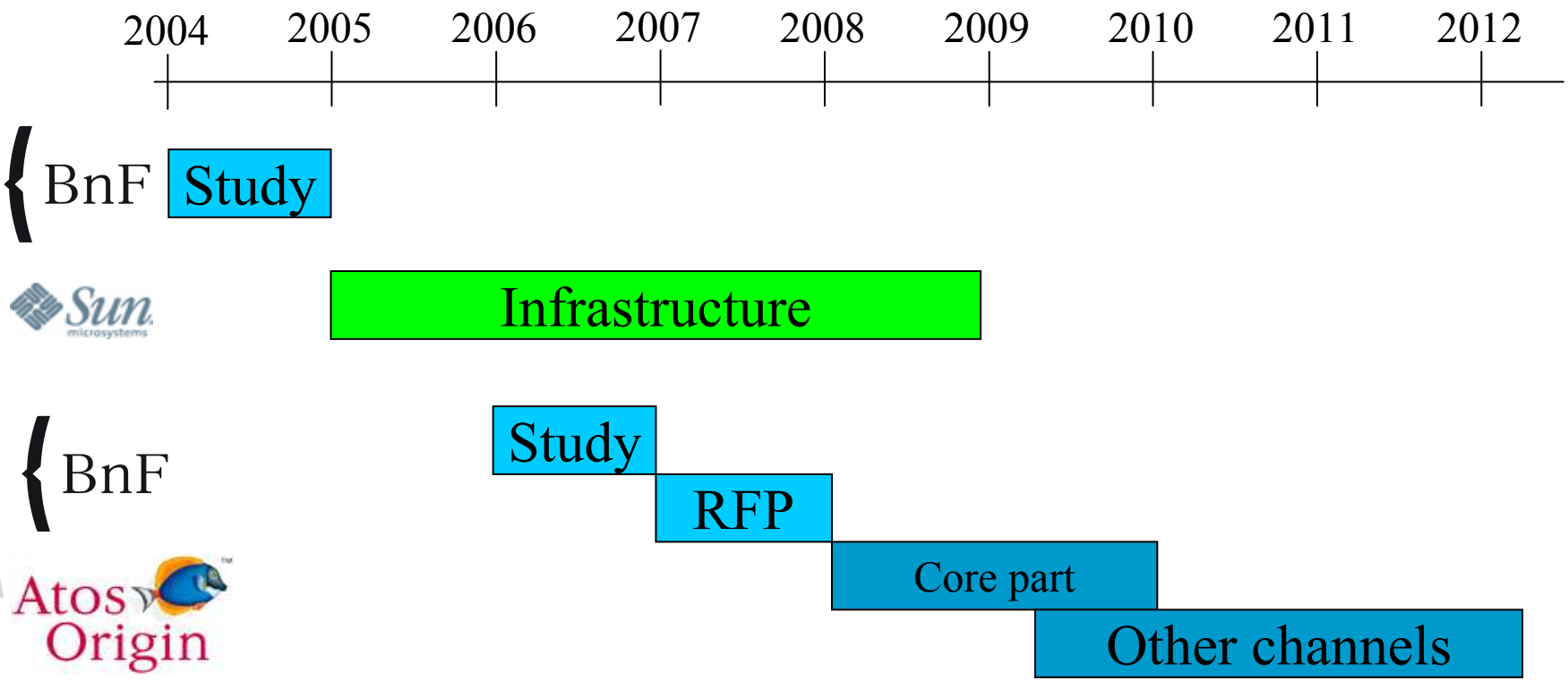
Dealing with human skills

- Need for enhanced skills in the library
  - → preservation expert: digital archeologist, model and formats
  - → digital curator: management of digital collections
  - → computer scientists: advise on tools
  - → administrator: dealing with the data deluge
  - → manager: understanding of digital issues, endorsement of channels

Implementation



Planning


2004
2005
2006
2007
2008
2009
2010
2011
2012
BnF
Study
Sun microsystems
Infrastructure
BnF
Study
RFP
Core part
Other channels
Atos Origin

Thank you for your attention

Questions ?

More information : http://bibnum.bnf.fr/spar

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