Koninklijke Bibliotheek
National library of the Netherlands

Preservation Action: What, how and when?

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What is preservation action?

- Execution of a strategy to regain or improve access to digital information

- A preservation action can entail:
  - Execution of a tool or a procedure
  - Setting up a specific rendering environment

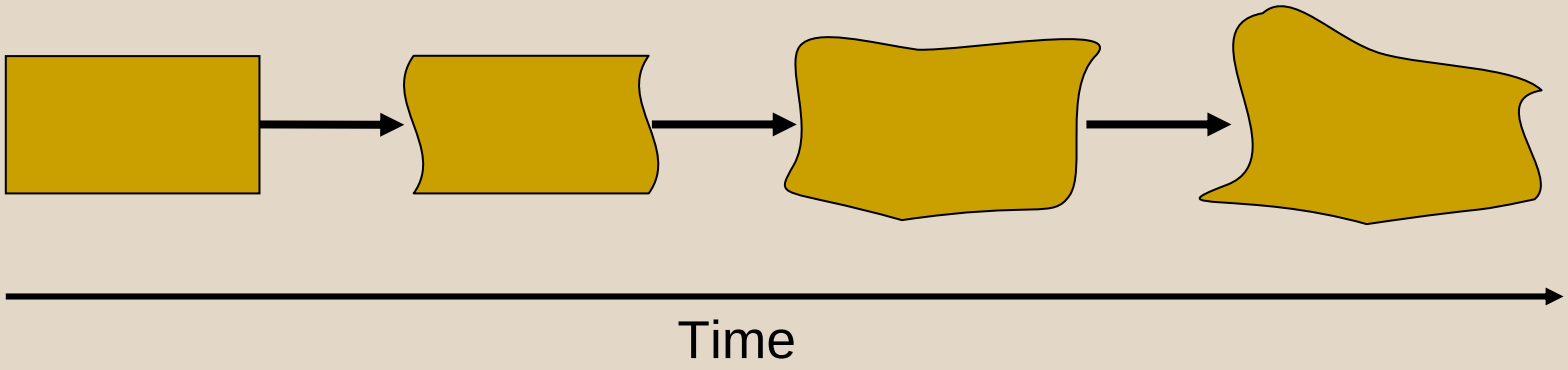
- A preservation action can be taken:
  - when/if a problem is expected
  - when/if a problem has occurred
  - as a general precaution

Goals of preservation actions

- Accessibility
- Re-use (retain functionality)
- Rendering of the original format to experience the ‘look-and-feel’
- Representation in a current format
  - Because of obsolesence of old format
  - Because the user prefers a current format
  - Because a set of files needs to be searched and has to be in the same format

Two main directions in preservation strategies

- Adapt the object: *migration*
  - The user can choose a prefered format
  - Repeated migration can cause growing errors



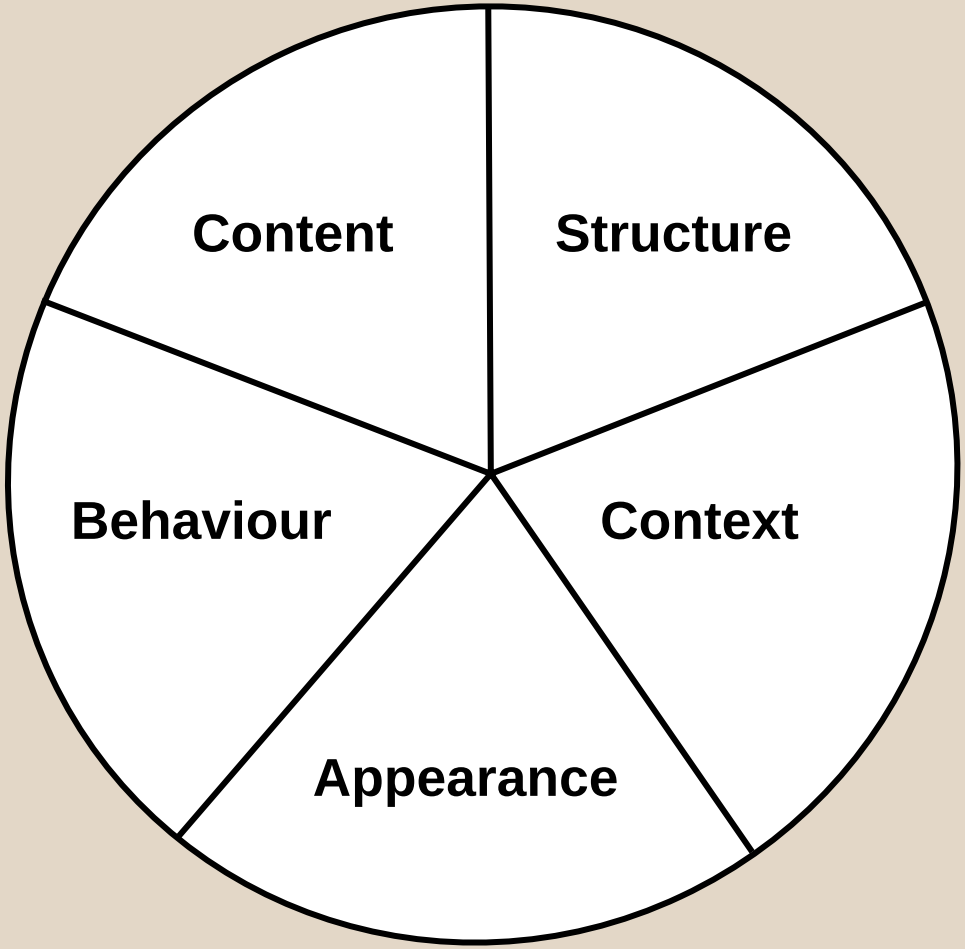
- Adapt the environment: *emulation*
  - Challenging for the future user
  - Difficult to develop?

- Combinations of emulation and migration

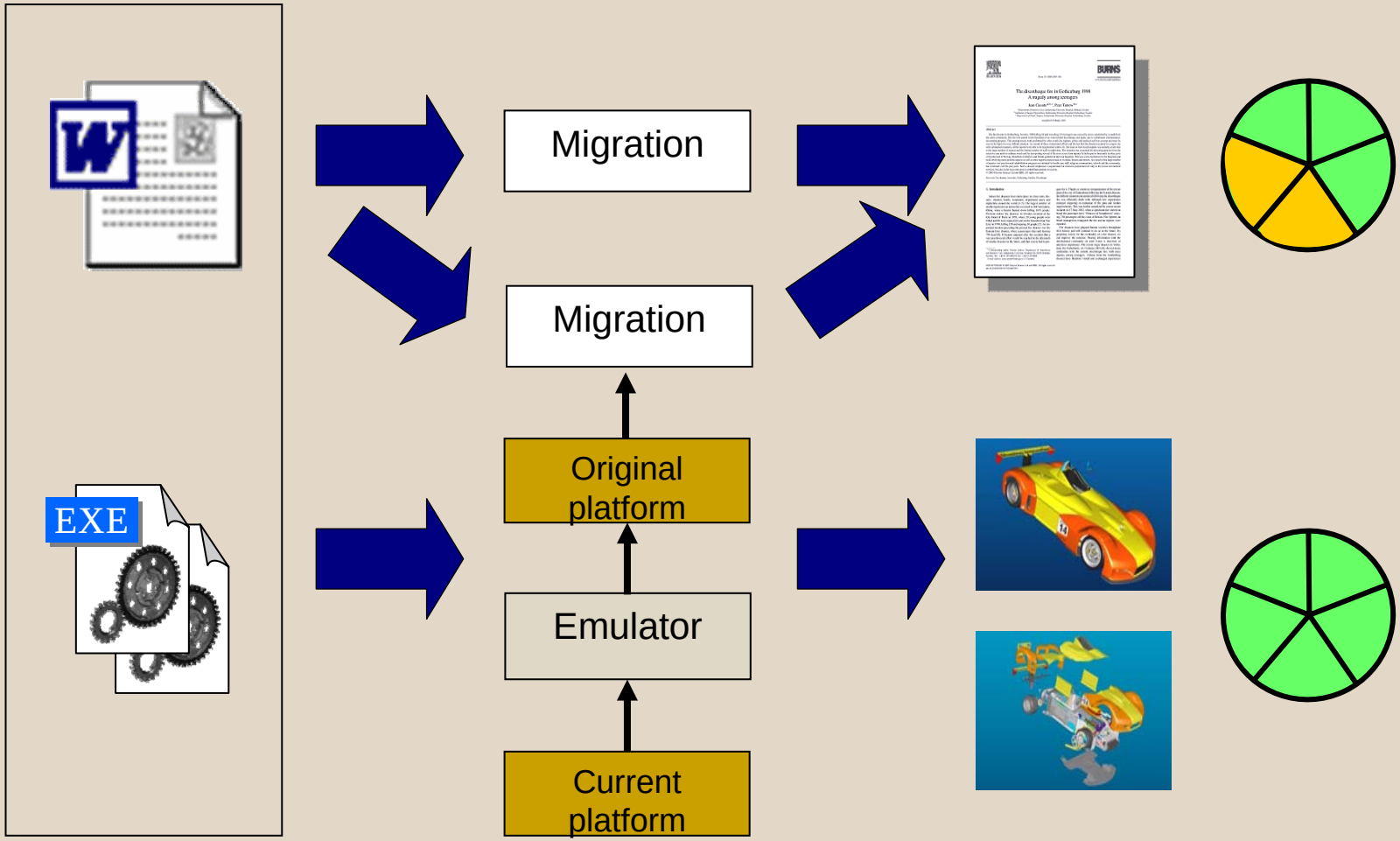
How to choose a preservation action

- Define the goal of the action
- Define the characteristics of the technical file
- Define the significant properties of the file/collection

Five basic aspects of a digital object:



Migration & emulation



Availability of preservation action tools (1)

- In general: limited operational experiences in a preservation context
- Hardly any tools operational in an long-term archiving infrastructure

- Migration
  - Tools available, but lack of QA
  - Experiences mainly in normalisation (migration on ingest)
  - Batch migration: not executed on a large scale, but modules have been implemented (KOPAL)
  - Migration-on-access: still in experimental phase

Availability of preservation action tools (2)

Emulation

- Emulators available for old (gaming) devices
- Dedicated emulators for old platforms available (many in open source)
- Virtualisation in common use for many purposes
- Virtualisation for preservation: to be defined
- Emulation for preservation in experimental phase

Challenges for the development of PA tools

How to be prepared for a problem that is not there yet?

- What future computers do we have to prepare for?
- What does the future user want?
- Not many really big disasters yet
- Still, solutions have to be prepared *before* the problem occurs

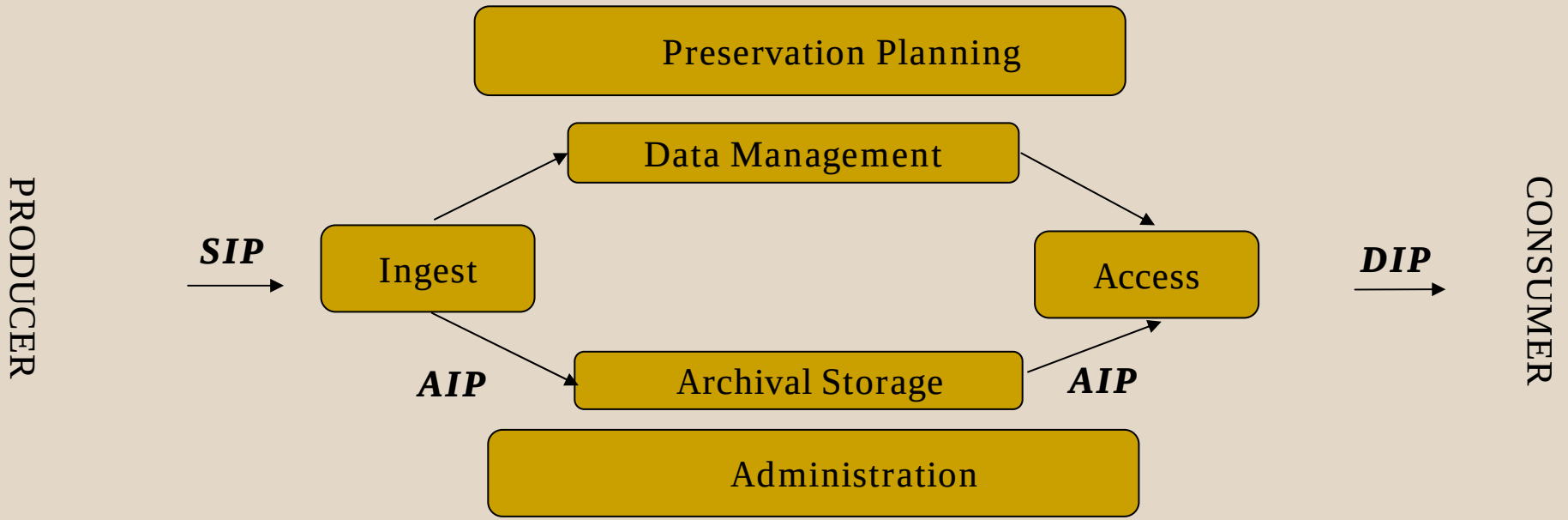
Most organisations are busy with setting up their archiving systems

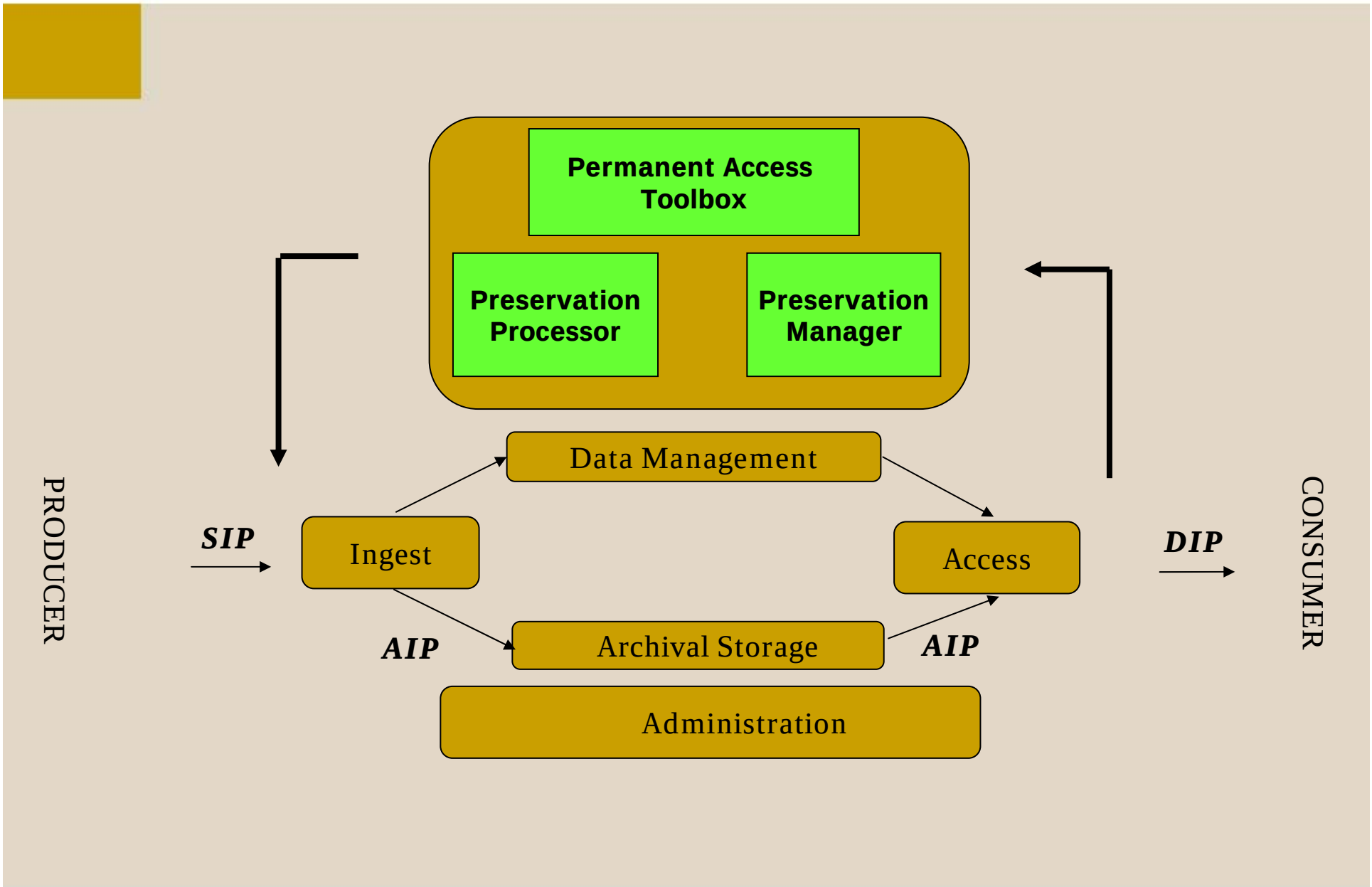
- Long-term storage systems currently in development
- Institutional repositories, depositories, e-Depots, records-management systems, etc: development and implementation takes up all of the aivalable resources

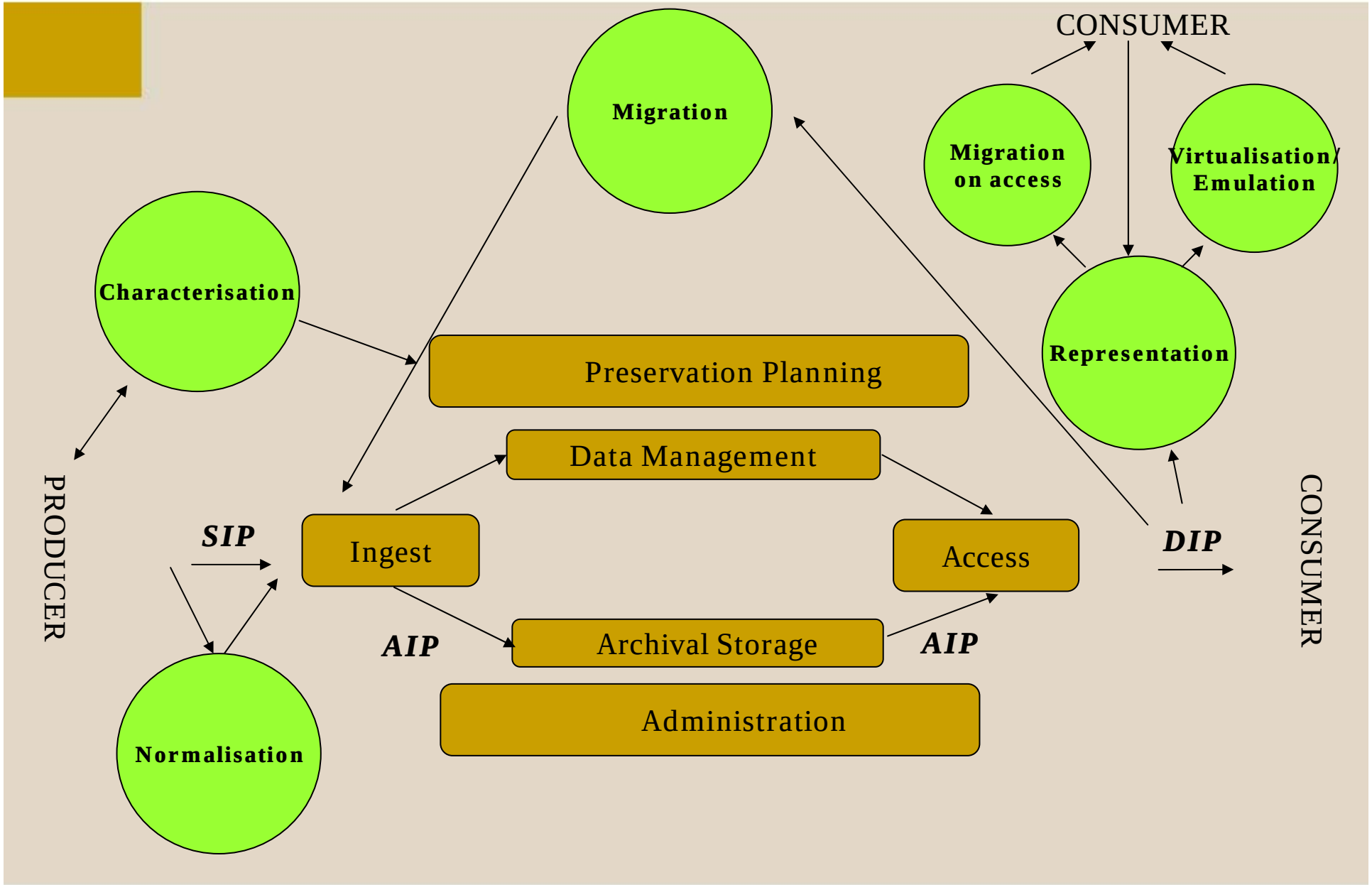
Theoretical models for implementing PA tools

Theoretical models to be further defined:

- New datamodels provide for metadata on preservation actions (Premis, DAITSS, Fedora)
- Not specifically included in the OAIS model
- New suggestions in PLANETS and CASPAR


Preservation Planning
Data Management
PRODUCER
SIP
Ingest
Access
DIP
CONSUMER
AIP
Archival Storage
AIP
Administration


Permanent Access Toolbox
Preservation Processor
Preservation Manager
Data Management
PRODUCER
SIP
Ingest
Access
DIP
CONSUMER
AIP
Archival Storage
AIP
Administration

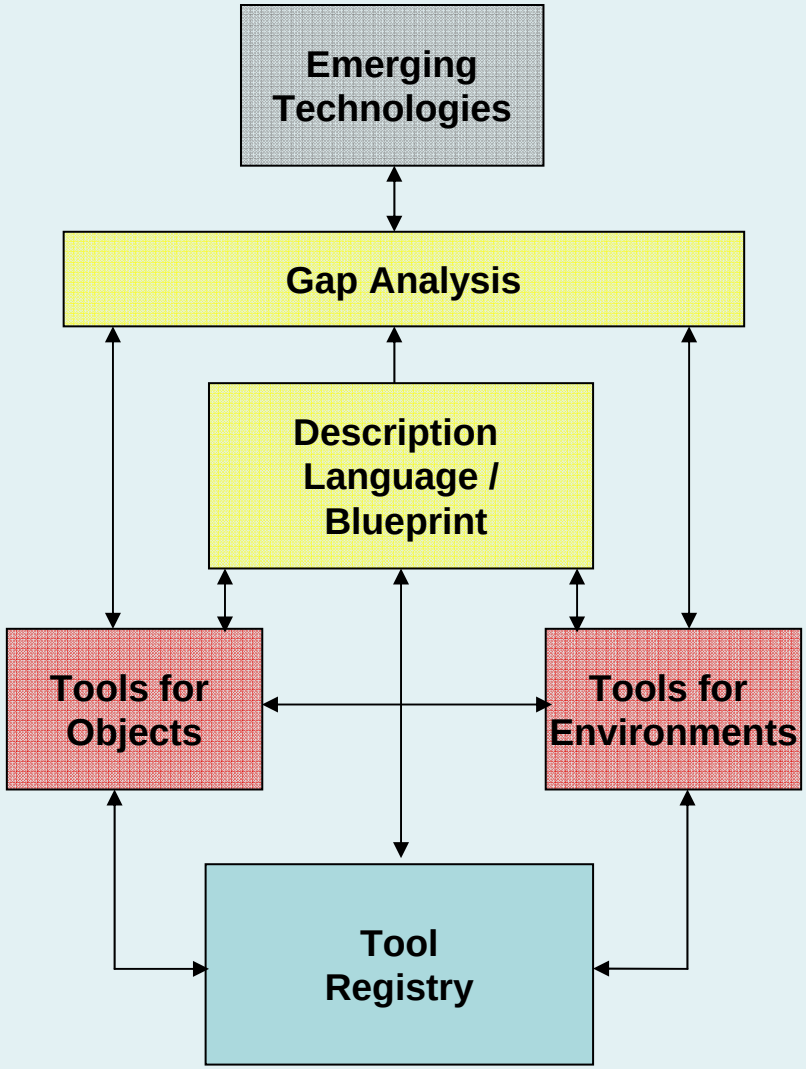

CONSUMER
Migration
Migration on access
Virtualisation/ Emulation
Characterisation
Representation
Preservation Planning
Data Management
PRODUCER
SIP
Ingest
Access
DIP
CONSUMER
AIP
Archival Storage
AIP
Administration
Normalisation

Current situation at KB's e-Depot

- Emulator prototype developed together with Nationaal Archief
- Further development of the emulator in PLANETS
- 2008:
  - First installation of rendering environment at KB's reading rooms
  - Plan for implementation of emulation within e-Depot infrastructure

- Migration module to be implemented in 2008:
  - Normalisation: non-PDF textformats converted to PDF-A
  - Next steps: batch migration and migration-on-access

Preservation Action in PLANETS



Preservation Action in PLANETS

Preservation Action Strategy Development

- A *description language* for preservation action tools
- A *blueprint* for the development of preservation action tools
- A *gap analysis*: to support the tool building workpackages with directions on what kind of tools to evaluate and build

Preservation Action Registry

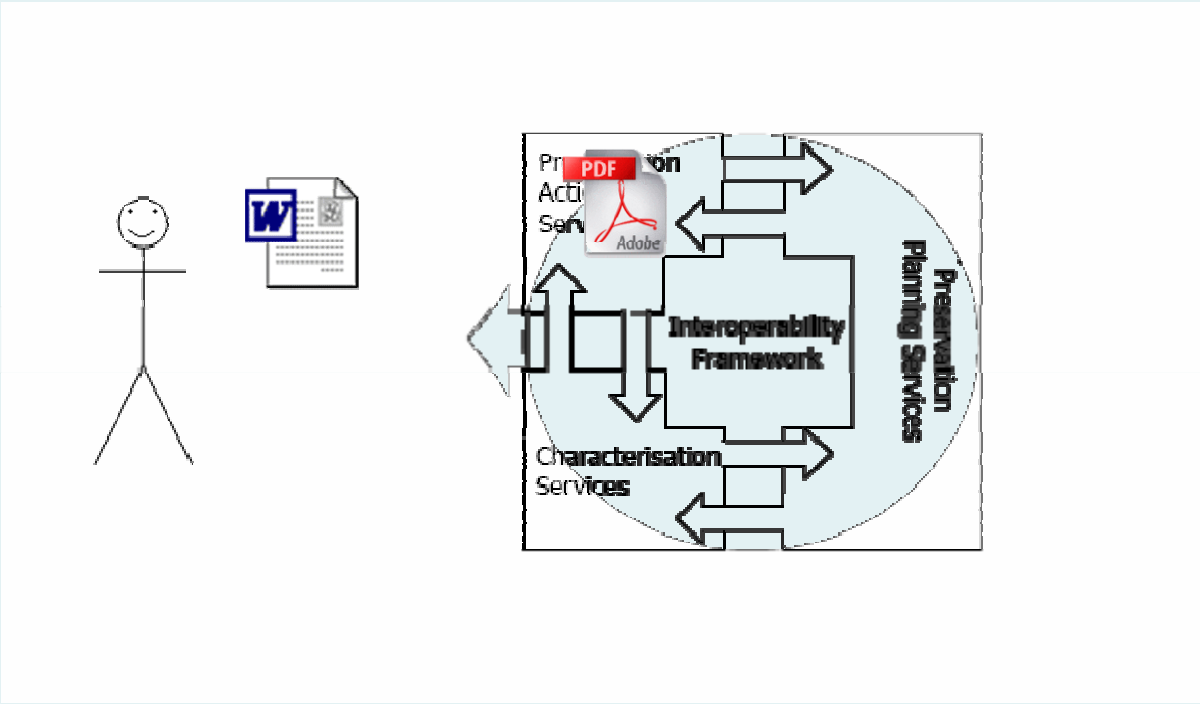
- Glossary
- Description of PA tools

Tools for objects

Tools for environments

Emerging technologies

Preservation Action in PLANETS



First accomplishments

- Outline blueprint, description language, gap analysis initiated;
- Requirements registry, procedures glossary and first release;
- Completed report on tool and services, feedback on the characterisation registry design and wrapped tools;
- Overview existing emulators and testing approach.

Our vision for 2010

- A user selects an article in the library catalogue
- It is offered to him in a few versions:
  - The ‘original’: not working on the current platform but retrievable on the emulated environment
  - A migrated version in the current PDF
  - A migrated version in FDF

And a few more years later:

- A user selects the same article
- Apart from the different versions, a package is offered, containing:
  - The article
  - A website with background information
  - A link to the stored database with the underlying research data


Thank you for your attention!
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