DigitalPreservationCoalition

An Introduction to Digital Preservation

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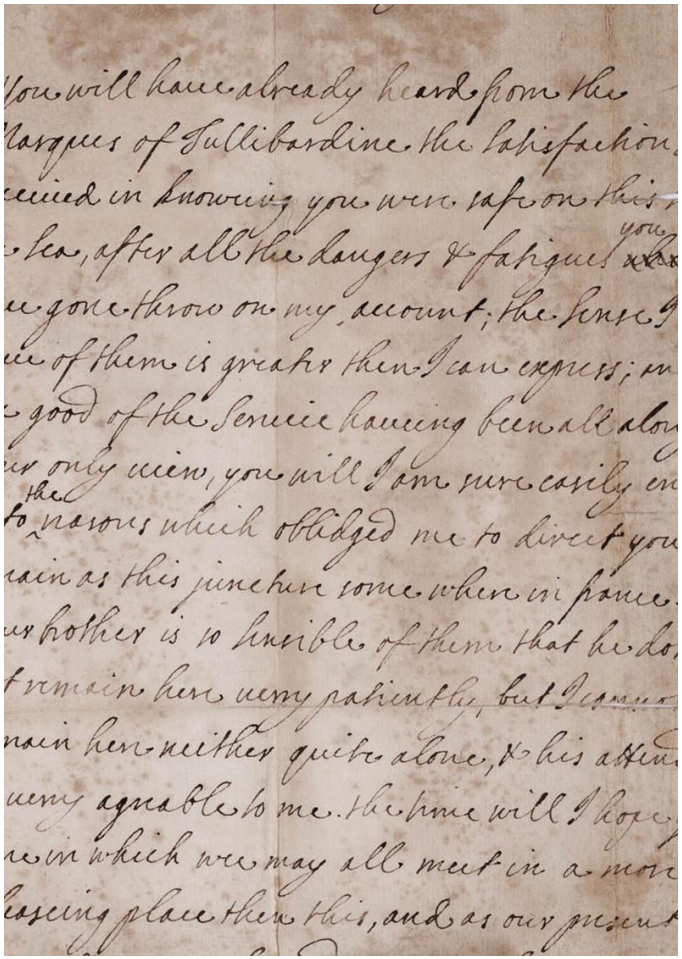
Traditional Media



- Robust
- Tangible
- Independently understandable
- Experienced in assigning value

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Digital Information

- Ephemeral
- Obsolescence
  - Media
  - Formats
  - Documentation
- Rights
  - Copyright
  - Moral
  - Data Protection
- Skills
- Sustainability

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Some Say the Outlook is Bleak….

- Not without melodrama - ‘Digital Dark Ages’
  - Vint Cerf and his ‘digital vellum’
- *“…of all the web links cited in answers to parliamentary questions 1997-2006, 40 percent are now broken”* (Spencer et al 2009)
- No easy off-the-shelf solution
  - Although services providers are now emerging

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What's the Problem?

- Digital data (images, documents etc.) have value
- They can create opportunities

...but...

- Access depends on software hardware and people
- Technology and people change

...therefore...

- Technology can create barriers to reuse
- Managing data in the long term protects and creates opportunities

- We can't do it 'just because' - must explain benefits!

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In a Bit More Detail….

- Seven basic challenges
- Ways to address them:
  - Tools
  - Services
  - Standards
- Fancy words and acronym bingo

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Challenge One

Starting a digital preservation programme seems expensive and it's difficult to know where to start…

…but there's plenty of help on how to build a business case and tools to aid with planning

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A Solid Foundation

- **Research** and **Training** – don't get bogged down
- Identify **Benefits** and **Risks**
- Understand **Aims** and **Goals**
- Write a solid **Business Case**
- Relevant and clear **Digital Preservation Policy**
- Make realistic **Plans for Development**

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OAIS Information Model

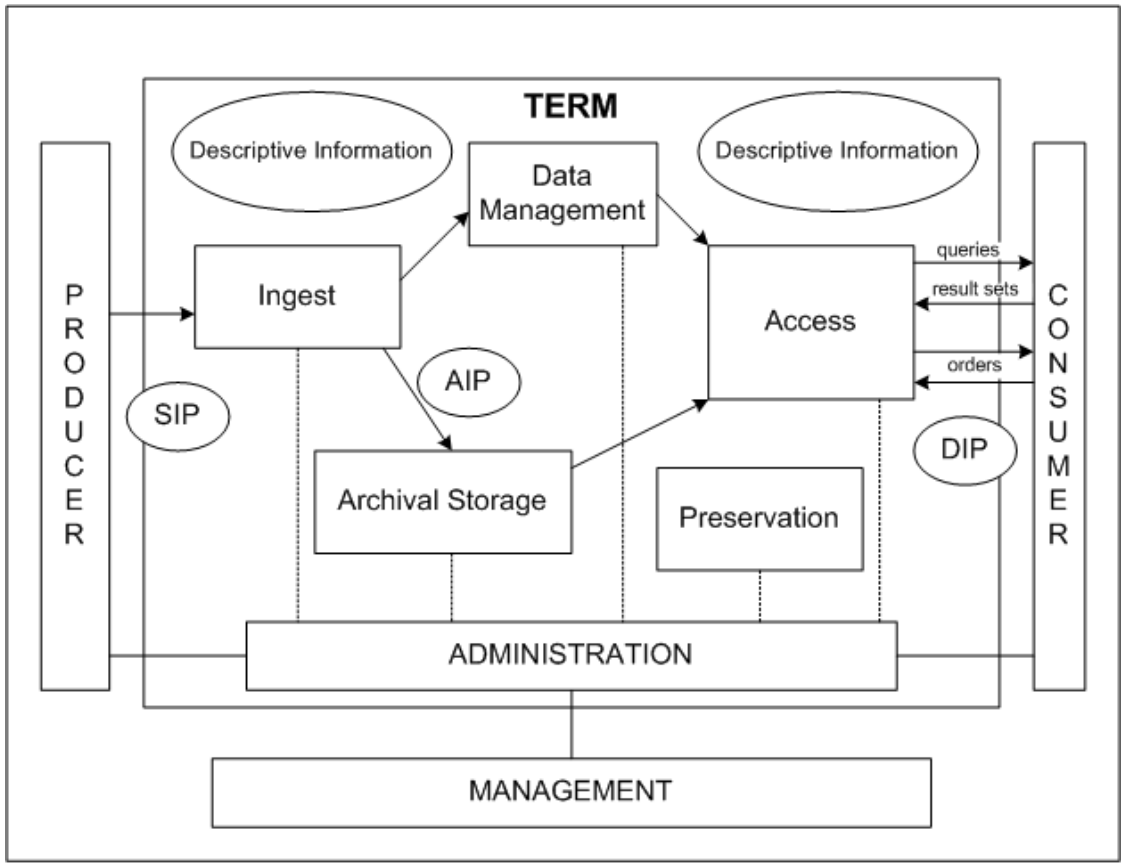

Fig. 1. Major functions of the OAIS Reference Model from Consultative Committee for Space Data Systems (CCSDS), CCSDS 650.0-W-1, Producer-Archive Interface Methodology Abstract Standard. (OAIS). White Book. Issue 1. Draft Recommendation for Space Data System Standards.

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Challenge Two

Access and long term use depends on the constant configuration of hardware, software, data and the capacity of the operator….

… so we need to capture information on this configuration and use it to enable access.

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Use Standards and Tools

- Essential to capture sufficient documentation
  - Metadata Standards
  - OAIS Representation Information
- Tools
  - Registry Services
  - Characterisation
- Collection Audit

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Challenge Three

Technology continues to change creating the conditions for obsolescence…

… so we need to plan and take action accordingly, expecting that our current plans may need to change.

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Active Preservation

- OAIS Preservation Planning functions
- Preservation Planning tools
- Different Approaches
  - Migration
  - Emulation
  - Hardware Preservation
  - Virtulisation
  - Etc…….

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Challenge Four

Storage media fail, have a short life and storage devices are subject to obsolescence.

… so we need a storage strategy which includes error checking and refreshment

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Storage and Refreshment

Different Solutions:

- Multiple media
- Controlled storage
- Self-reporting media
- Lots Of Copies Keeps Stuff Safe
- Cloud storage

Beware: proliferation can become a problem

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Challenge Five

Digital preservation systems are subject to the same obsolescence as the objects they safeguard…

… so we need systems which are modular, based on standards and which can be tested on an on-going basis

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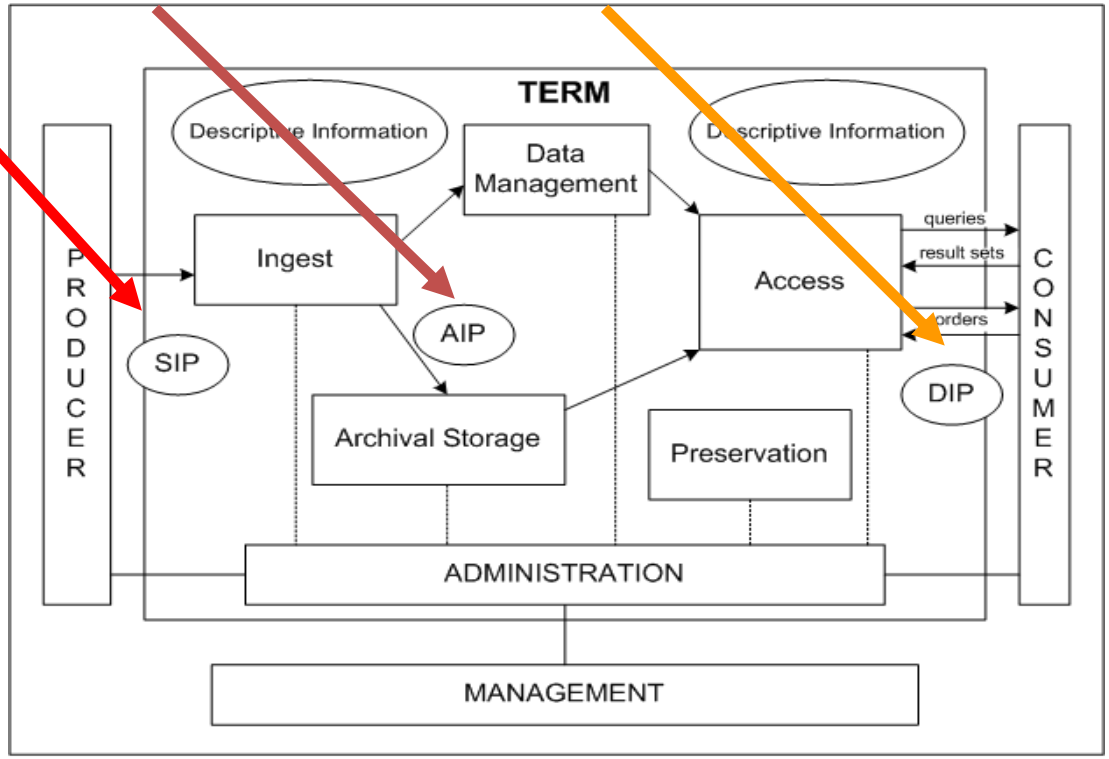
OAIS

Submit **Archive** **Disseminate**



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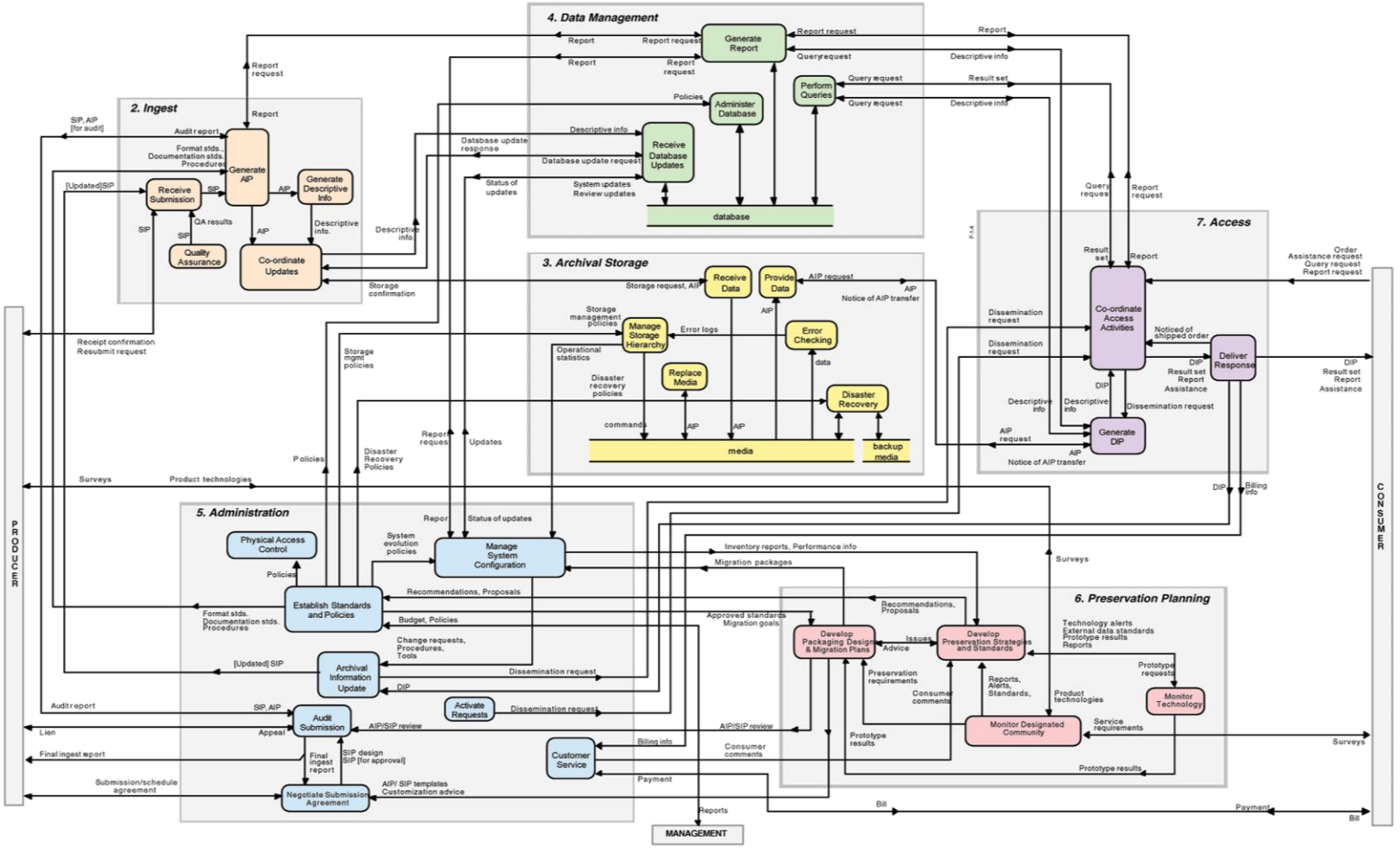
Where it gets really scary….



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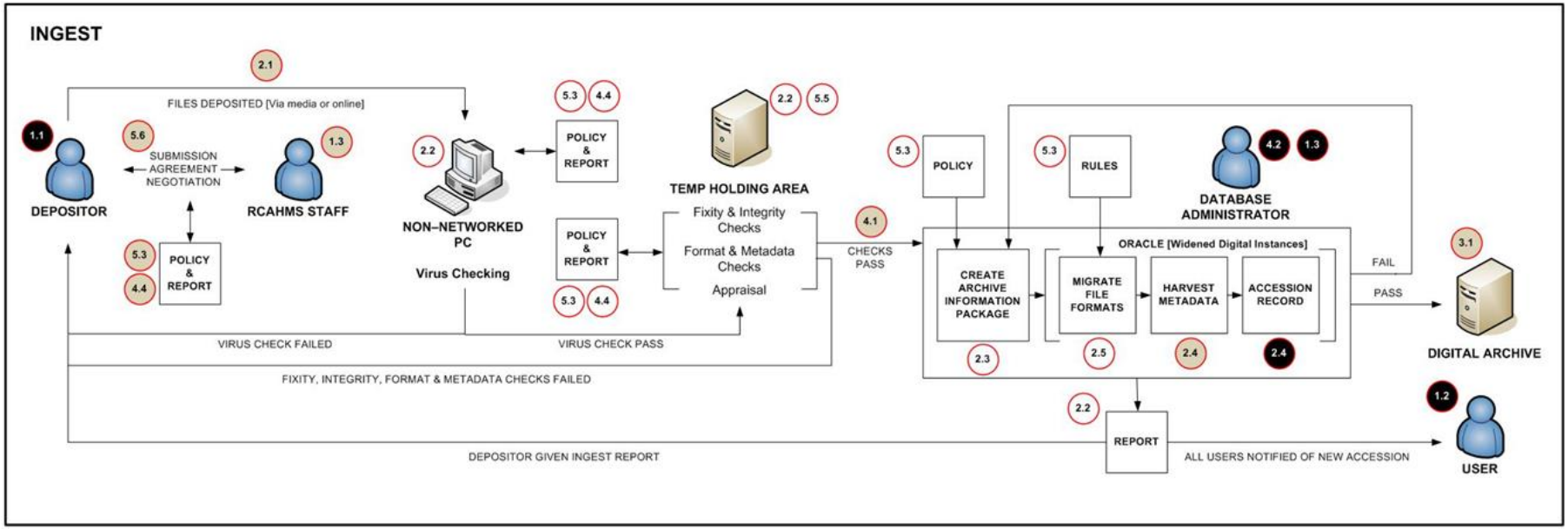
But still useful….



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Challenge Six

Digital resources are intolerant of gaps in preservation…

…We need to act early and we need to act on an on-going basis. Lends itself to risk management approaches

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Ongoing Preservation

Different responses:

- Intervene early in lifecycle
- Build in Sustainability
  - Transferable Archive Information Packages
- Risk management approach

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Challenge Seven

Resources can be corrupted or tampered without trace…

…Need to carry out fixity and authenticity checks on your data

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Fixity and Authenticity

A variety of solutions:

- Checksums
- Forensic tools
- Authenticity Evidence Records
- Data security protocols
  - (ISO 27000 series)

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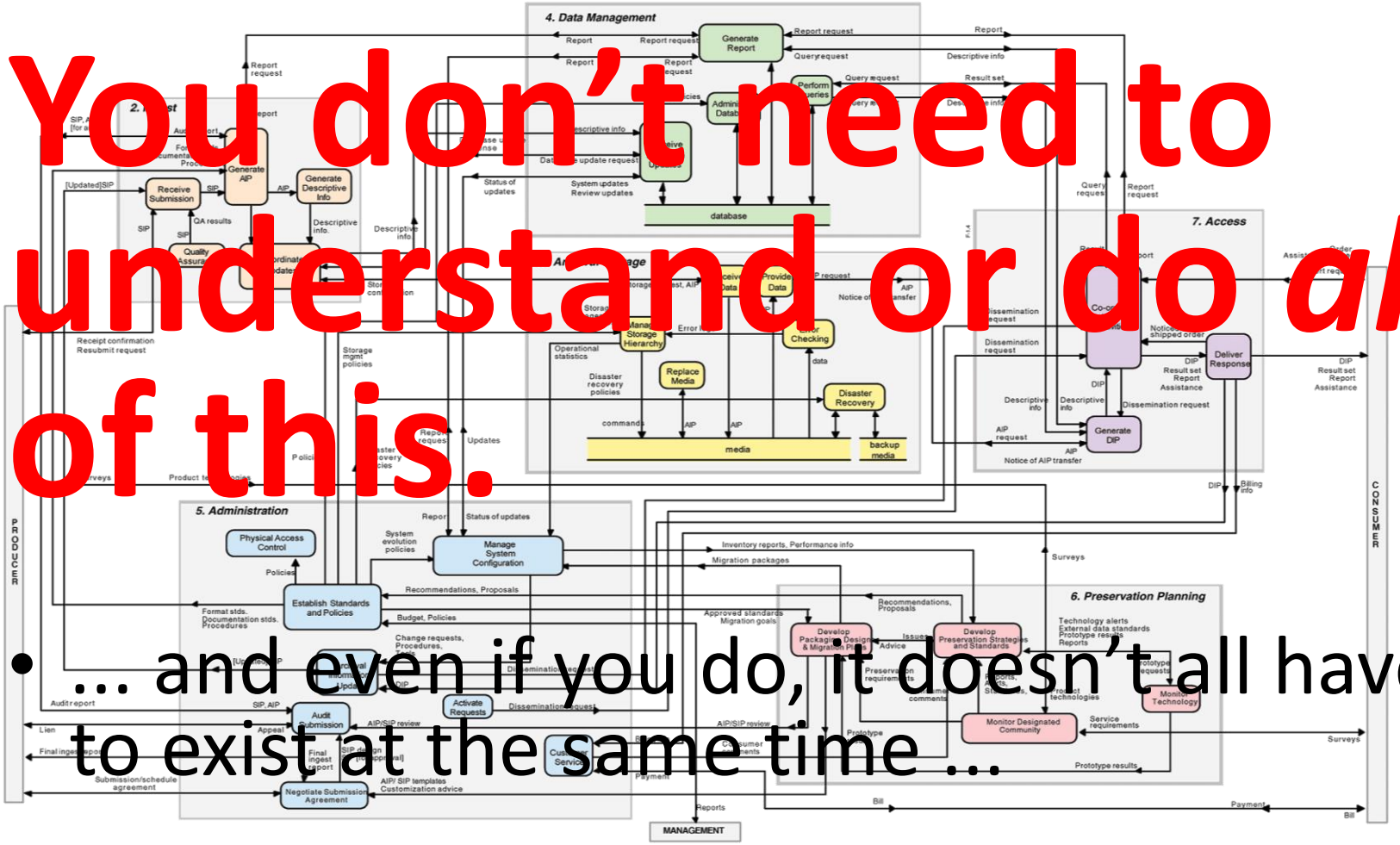
In reality…..



You don’t need to understand or do *all* of this.

- … and even if you do, it doesn’t all have to exist at the same time …

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What Do I Need to Know?

- It won't go away……

And……

- It won't fix itself……

But……

- You already have many of the skills you need!

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It's Not All About Digital Preservation

- Likely to only be one aspect of your job
- A wide range of skills are required
  - Project Management
  - Risk Management
  - Communication
  - User Analysis
- DigCurV Curriculum Framework
  - http://www.digcurv.gla.ac.uk/

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Nobody Has All the Answers

- Collaboration is key
- Learn from others
- Digital preservation is an active process
- There are no perfect solutions, they're still evolving
- We learn as much from our failures as our successes

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