Scientific data repositories: the USP experience

Pró-Reitoria de Pesquisa

Superintendência de Tecnologia da Informação

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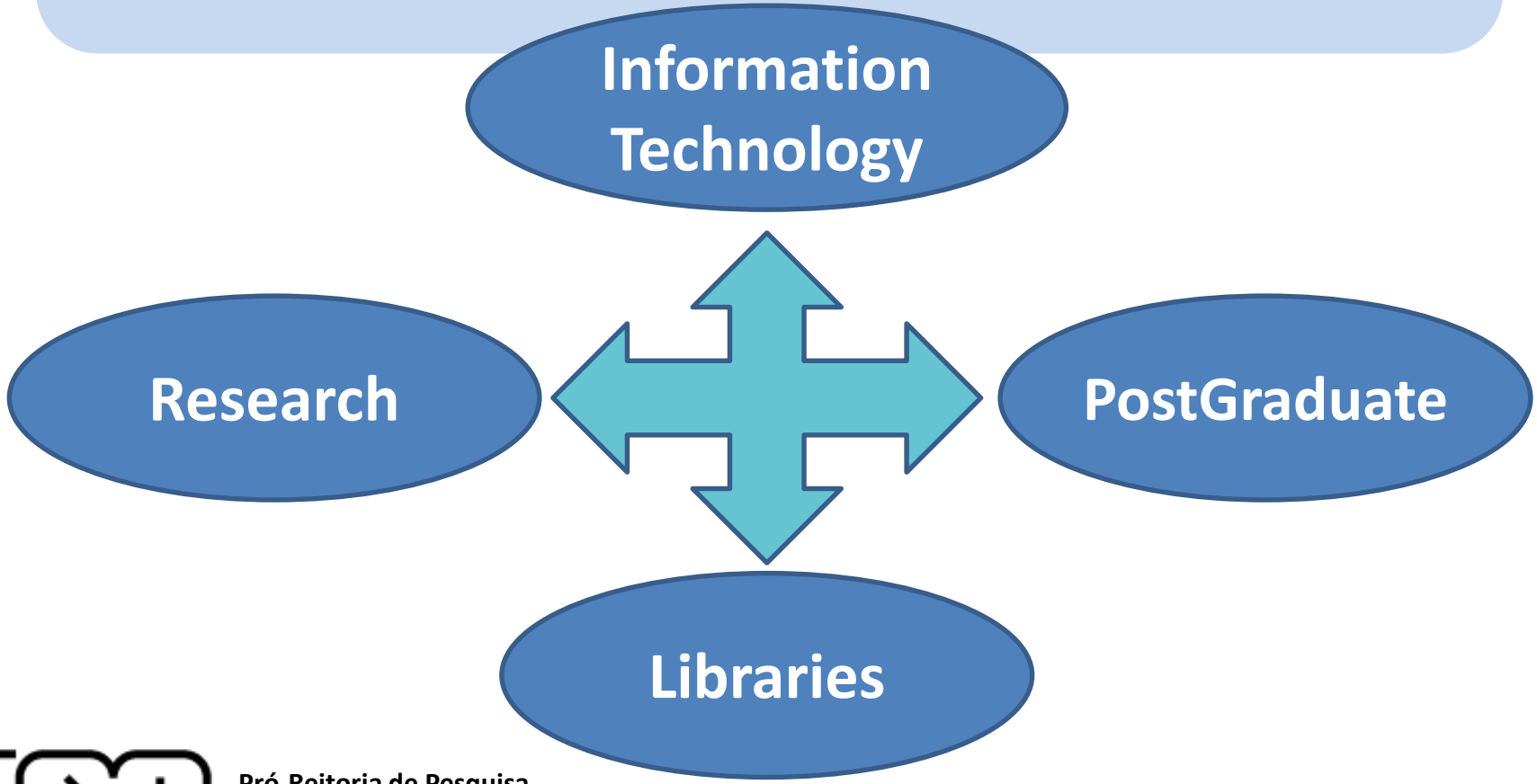
2018

Challenge: multidisciplinary area

Collaborative work



Challenge: data diversity

Heterogeneous data (text, image, audio, video)
Distributed data
Specificity of the data in each different area

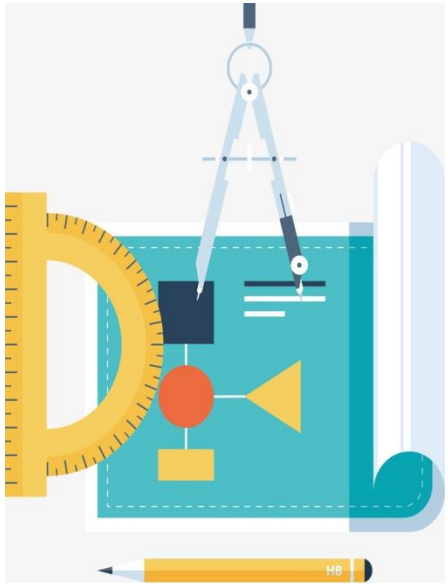
Challenge: storage (the biggest)

safety, space availability, access availability (24/24 x 7/7), persistence, specialized human resources

Challenge: cultural change and tools

Repositories with intuitive and minimal interfaces, with standardized and integrated data

Easy for any user



Actions Taken

USP Actions Made

1

Institutionalize efforts and actions

Creation of a multidisciplinary Work Group to:

- evaluate technologies
- suggest policies
- conduct a pilot study

Information Technology

Research

PostGraduate

Libraries

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2

Evaluate software alternatives

Open source? External proprietary? Internal development?

Our option:
Open source platforms

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3

Define technical team

Tasks: study possible solutions, study market tendencies

Where and how:
Scientific articles
Sites of more experient organizations
Platforms installation

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4

Define platform architecture

Centralized? Distributed? Hybrid?

Our choice:
Distributed repositories
Centralized retrieval

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5

Define, prepare and make available repositories platforms

Platforms installation:
Platforms customization
Test phase with volunteers

The Dataverse Project

DSPACE

ckan

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6

Define, prepare and make available storage infrastructure

Our choices:

USP Cloud

2 Petabytes up to now

Redundant platforms

Expert cloud team

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7

Standardize a Data Management Plan tool

Our choice:
DMPTool.org
(templates customization)

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8

Build a retrieval tool

Integrate metadata of repositories in a centralized platform (metasearcher)

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9

Build a site with concepts and information for researchers

Conceptual information related to digital repositories

Links to computational tools

USP Ongoing Actions

USP Ongoing Actions

1

Define a structured pilot study

Select about 40 research groups
from different areas

Ask for using the 3 repositories and
answer a survey about preferences

USP Ongoing Actions

2

Prepare the infrastructure for the future

Study of storage strategies for the future

Define a modular structure that can evolve

Define infrastructure independent of repository platforms

Next steps

- Choose a repository platform (if possible).
- Study the repositories use for planning the future.
- Define policies:
  - Who can use?
  - How much time?
  - How much space?
  - How to ask for access?
  - Who pays?

What have we learned (so far)

- Storage is the biggest challenge (space, time).
- It is almost impossible to centralize repositories, but it is possible to centralize search and retrieval.
- There is no consensus about repository platforms.
- Different rules and different metadata are necessary for different researchers. However, a limited set of common attributes (Dublin Core) must be defined to start the process.

USP Technical Team

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