



Knowledge Storage

How do we store knowledge?

Menu

- *A preview on Knowledge Management System*
- *Impact on Business*
- *Knowledge storage*
- *Tools*

Preview on
Knowledge Management System
(KMS)



What is knowledge?

structured, non fact

Knowledge

structured, fact

Information

unstructured, fact

Data

** engineering perspective*

Data → Information → Knowledge

5

10

February

12

Car

2

Motor

Data → Information → Knowledge

January February

Motor

10

12

Car

5

2

Data → Information → Knowledge

January February March

Motor

10

12

14

Car

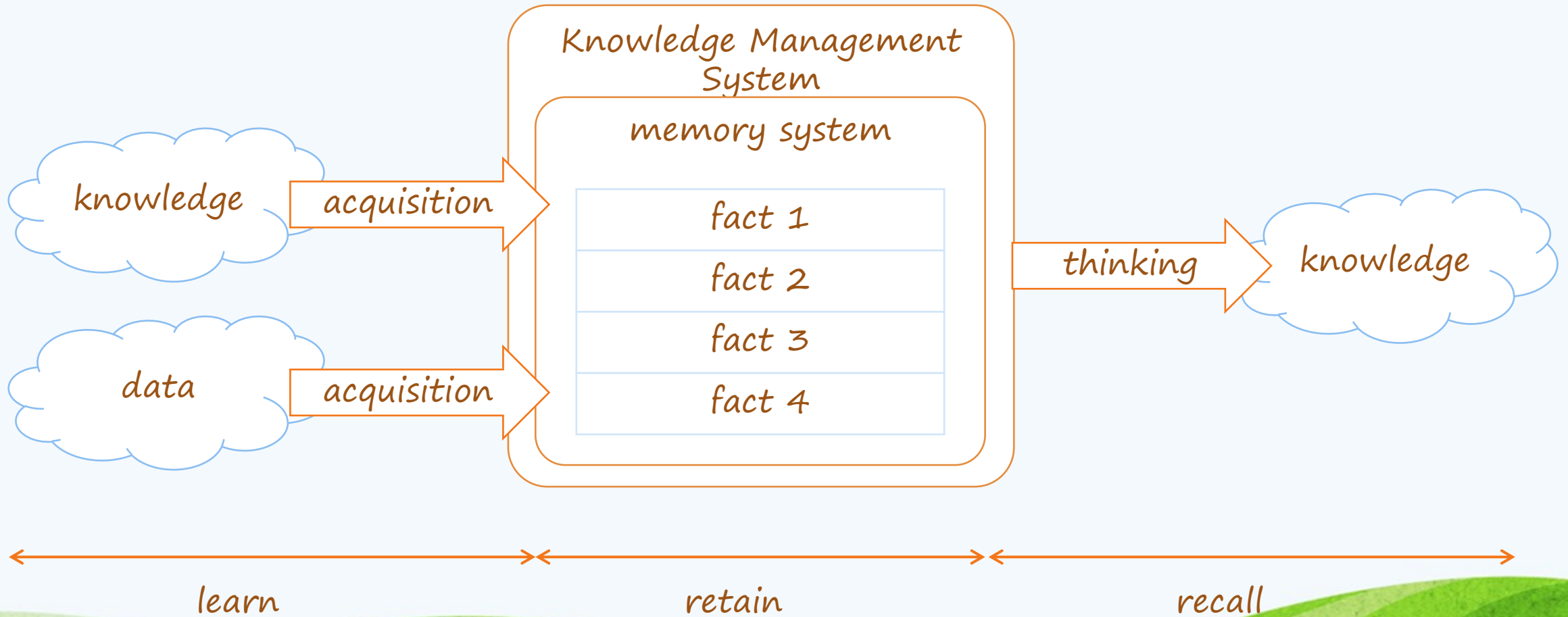
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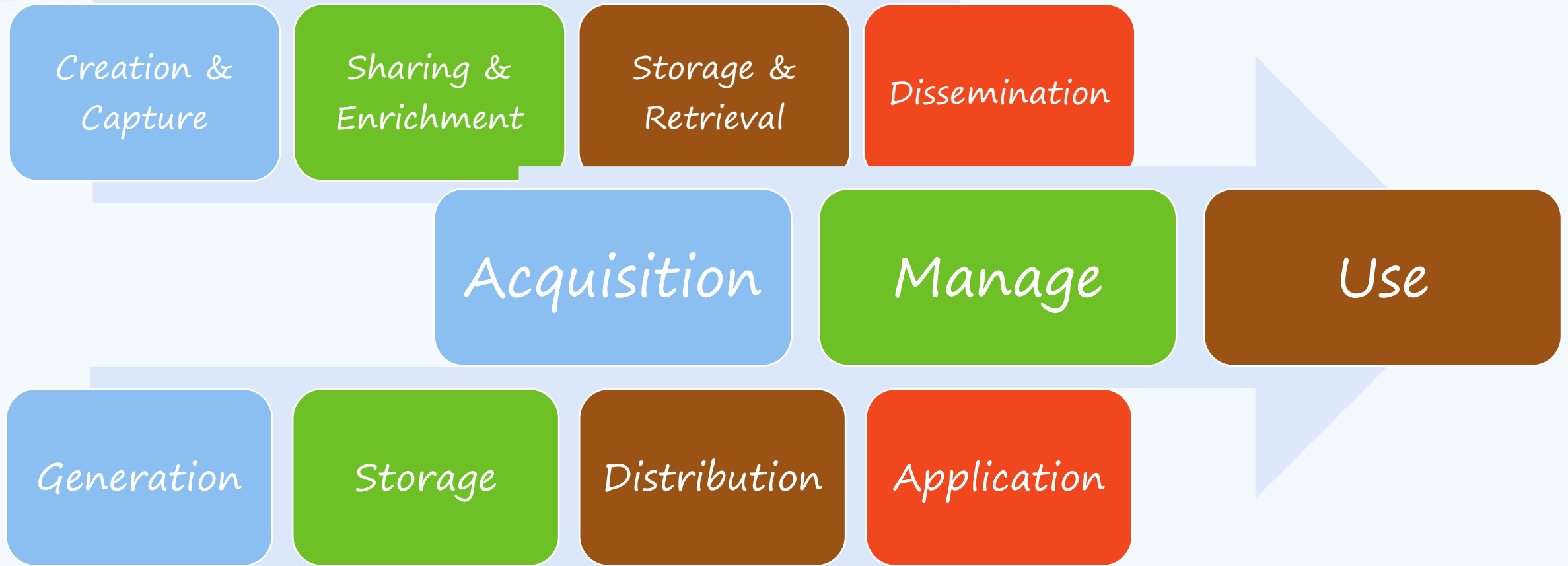
1

*March is prediction

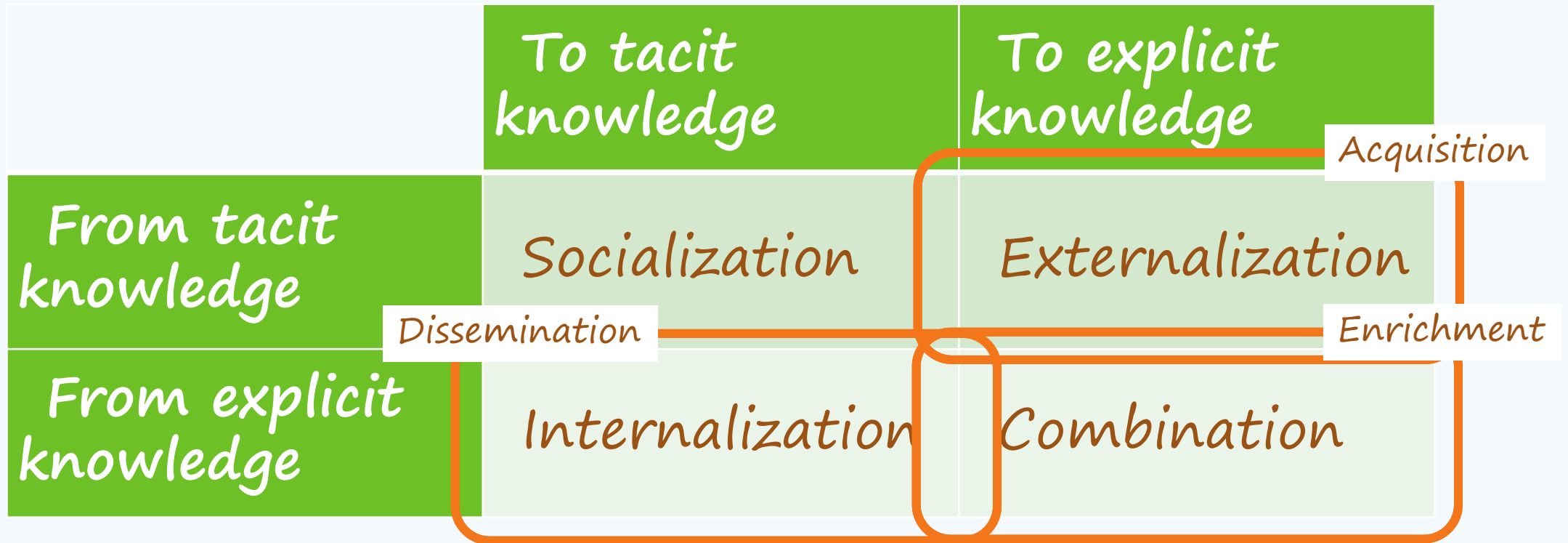
What is Knowledge?



(many) Aspects on KMS



Knowledge Creation



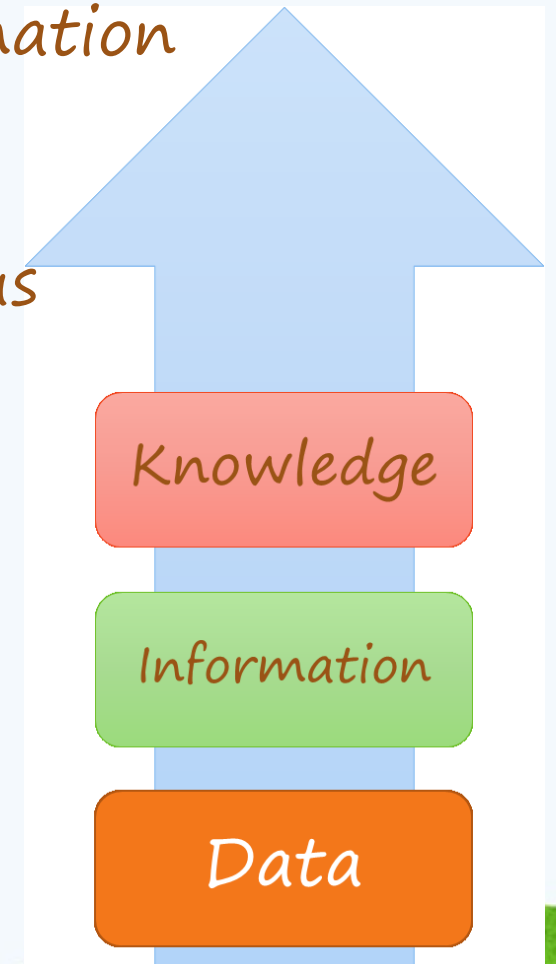
A stylized landscape illustration. The foreground features rolling green hills in various shades of green. On the left, a tree with a dark brown trunk and several rounded, overlapping leaves in shades of purple and pink stands on a small mound. The background consists of layered, wavy bands of light blue and white, suggesting a sky or distant hills. The overall style is clean and modern with a paper-like texture.

Impact on Business

BIG Data aka. Data Mining aka. DSS

- Purpose: finding pattern in data to obtain information
- Benefit: provide recommendations to business
- Loss: so many buzz words, making it hard to focus
- Tool: Apache Hadoop, Pentaho, Weka

Note: It is not about the tool, it is about direction



Knowledge Management System

- Purpose: record knowledge for references
- Benefit: no second mistake
- Loss: unstructured, make it hard for knowledge internalization

- Tool: way too many tools

	To tacit knowledge	To explicit knowledge
From tacit knowledge	Socialization	Externalization
From explicit knowledge	Internalization	Combination

Note: It is not about the knowledge, it is about knowledge internalization (dissemination)

A stylized illustration of a landscape. The foreground features rolling green hills in various shades of green. On the left, a purple and pink flower with a brown stem and small orange and brown leaves sits on a hill. The background consists of a blue sky with wavy, layered bands of light blue and white. The text "Knowledge Storage" is written in a brown, cursive font in the center-right of the image.

Knowledge Storage

Why do we need to care about storage?

- Average information worker spends over an hour and a half on email each day, which is 20% of their work time
- Employees get 50% - 75% of their relevant information directly from other people
- More than 80% of enterprise's digitized information reside in individual hard drives and personal files

Source: Information Worker Productivity Council Research, (2004), and "The Knowledge Worker Investment Paradox" Gartner Research, (2002).

Options on Knowledge Storage

- *file system storage:*
 - *Local*
 - *Network directories and folders*
- *Databases*
- *e-mail*
- *websites (intranet and external).*

Approach on Knowledge Storage

- *Structured*
 - *Storage-wise*
 - *Easy to locate*
 - *Document-wise*
 - *Easy to understand*
- *Un Structured*
 - *Storage-wise*
 - *Flexibility on storing new type of knowledge*

Structured Design in Storage-wise

Example of segmentation:

- Based on Subject:
 - DDC (Dewey Decimal Classification)
 - MARC (Machine Readable Cataloging)
- Based on bibliography
- Based on Format:
 - VPS (Virtual Private Server)

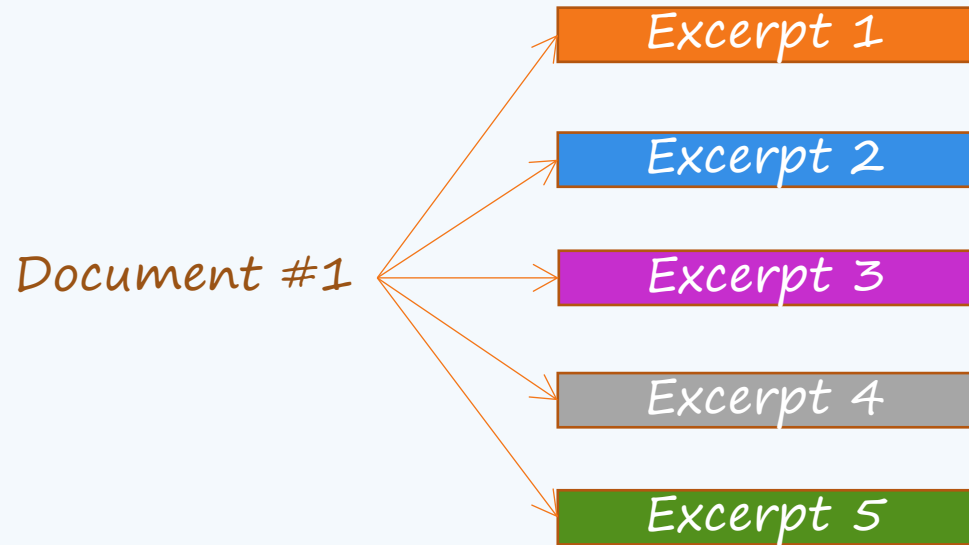
Segment A

Segment B

Segment C

Document #6		
Document #5		
Document #4	Document #4	
Document #3	Document #3	
Document #2	Document #2	Document #2
Document #1	Document #1	Document #1

Structured Design in Document-wise



Example of Excerption:

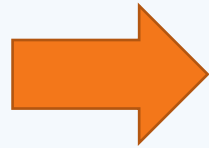
- Based on Metadata:
 - DC (Dublin Core Metadata Initiative)
- Based on RDF:
 - Semantic Web

Un-Structured Design in Storage-wise

Need additional tools:

- OLTP (Online Transaction Processing)
- OLAP (Online Analytical Processing)

Document #1
Document #5
Document #3
Document #1
Document #4
Document #6
Document #4
Document #2
Document #3
Document #2
Document #2
Document #1



Organizing Knowledge

- *two-step process:*
 1. *the information should be divided into manageable units*
 2. *each unit should be categorized.*
- *Before the information is divided into smaller units, there is need to determine the size, or granularity, of each meaningful unit. The finer the subdivision or granularity of each unit the more tedious and time consuming the cataloging effort will be.*
- *After the information is divided into smaller units, the units must then be categorized by content type. In order to do this, it is necessary to create a list of all the content types for the organization. This list may include classifications such as proposals, invoices, white papers, and correspondence*

Expected Result on Better Knowledge Storage

- Faster accessibility*
- Higher availability*
- Easier to operate and maintain*



Tools
DSpace – EPrints – OJS

Why the three?

Google Scholar Inclusions

Inclusions

Submit a website with academic articles to Google Scholar. We accept journal papers, conference papers, technical reports, dissertations, pre-prints, post-prints and abstracts.

All fields marked with * are required.

Type of website:

DSpace repository

EPrints repository

Other repository

Open Journal Systems
OJS website

Other journal website

Personal publications

- *DSpace is the most used (ROAR)*

Registry of Open Access Repositories

[Home](#) [About](#) [Search](#) [Search Content](#) [Browse](#)

[Login](#) | [New Entry](#) | [Create Account](#)

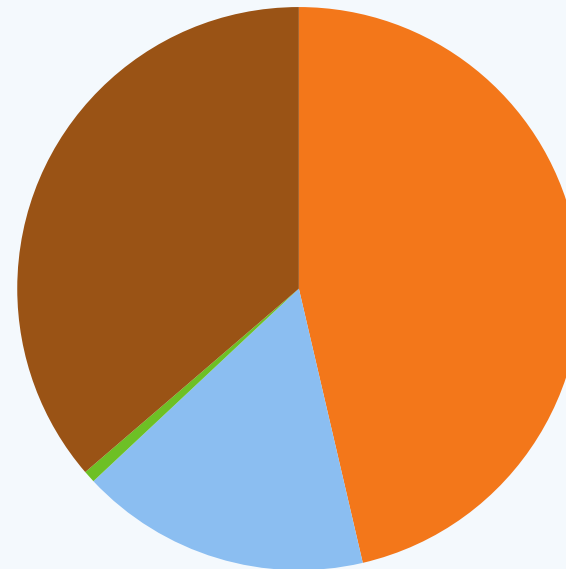
Browse by Repository Software

Please select a value to browse from the list below.

- [Repository Software](#) (3469)
 - [ARNO](#) (4)
 - [Bepress](#) (384)
 - [CDS Invenio](#) (20)
 - [ContentDM by OCLC](#) (9)
 - [DIGIBIB](#) (22)
 - [DigiTool](#) (10)
 - [DiVA](#) (26)
 - [DoKS](#) (5)
 - [DSpace](#) (1608)
 - [EDOC](#) (1)
 - [EPrints](#) (578)
 - [Equella](#) (5)
 - [ETD-db](#) (30)
 - [Fedora](#) (58)
 - [Fez](#) (11)
 - [Greenstone](#) (21)
 - [HAL](#) (23)
 - [i-Tor](#) (1)
 - [Keystone DLS](#) (1)
 - [MiTOS](#) (16)
 - [MyCoRe](#) (9)
 - [Open Journal System](#) (24)
 - [Open Repository](#) (19)
 - [OPUS \(Open Publications System\)](#) (72)
 - [Other softwares \(various\)](#) (511)
 - [PMB Services](#) (3)
 - [SBCAT](#) (3)
 - [SciX](#) (3)
 - [SobekCM](#) (1)
 - [WIKINDX](#) (1)
 - [Zentity](#) (1)

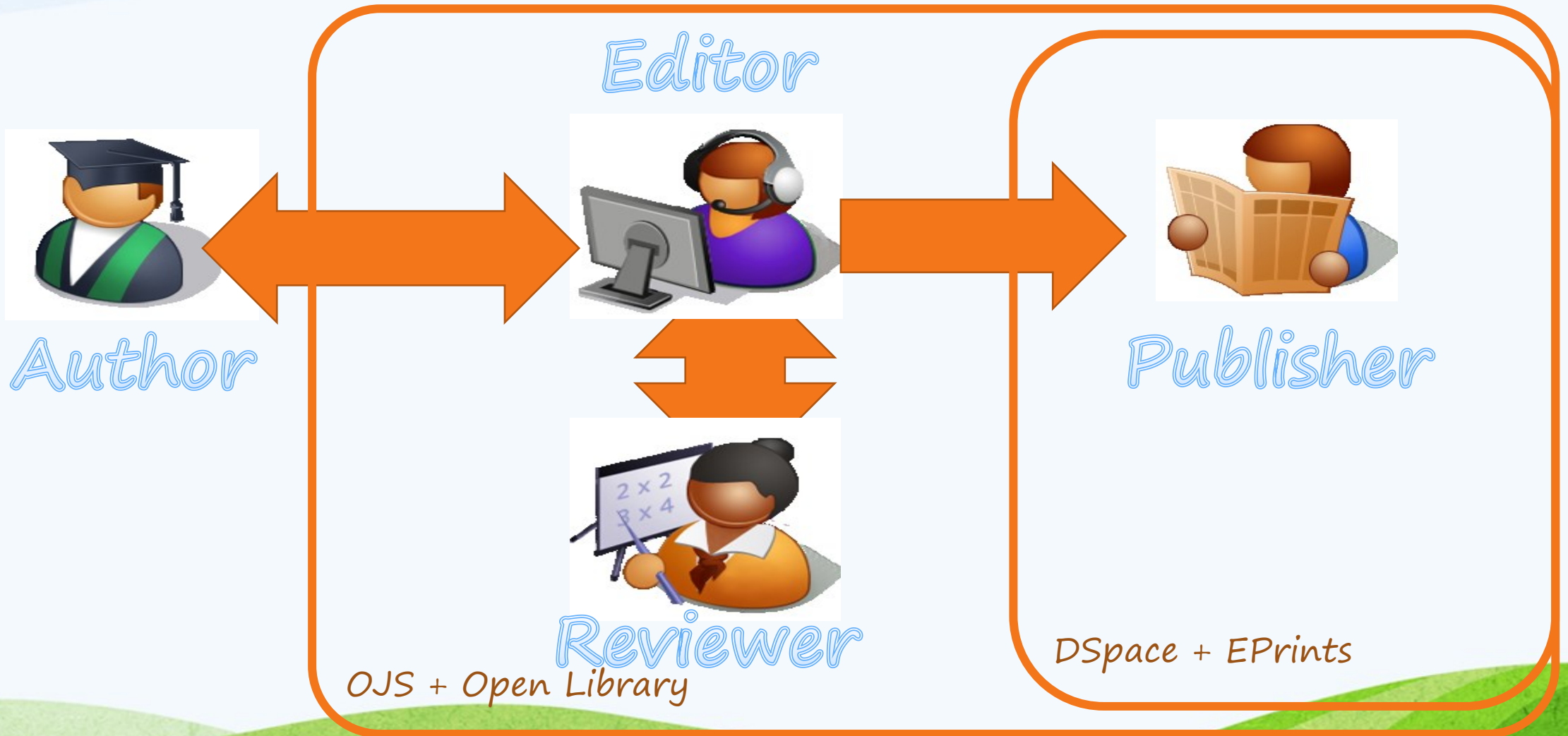
ROAR

Number of Repositories



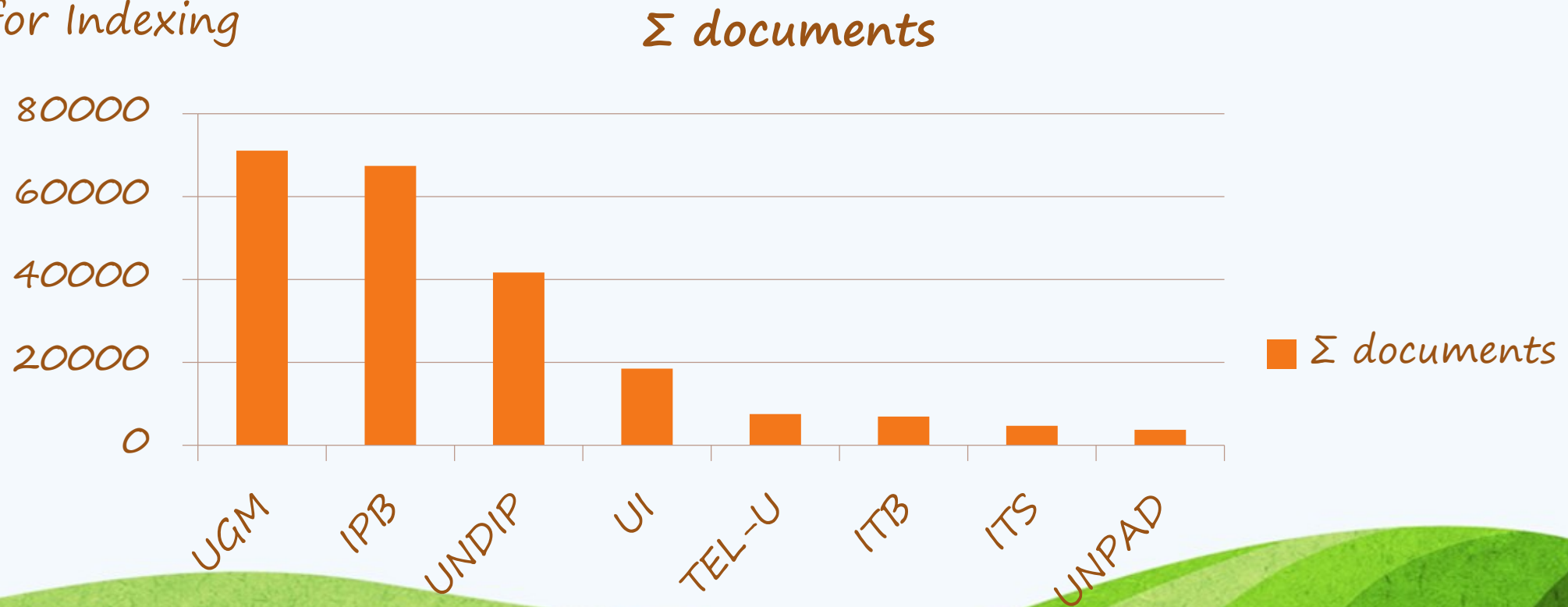
- *DSpace*
- *EPrints*
- *OJS*
- *Other*

Role of Responsibility



Openness

- Search Engine Friendly
- Metadata Format
- Ability for Indexing



Who uses Which?

<i>Institution</i>	<i>Num. of Documents</i>	<i>Chosen Platform</i>
UGM	71100	Eprints
IPB	67400	OJS
UNDIP	41700	EPrints
UI	18500	OJS
TEL-U	7580	Open Library
ITB	6970	OJS
ITS	4690	OJS
UNPAD	3730	OJS

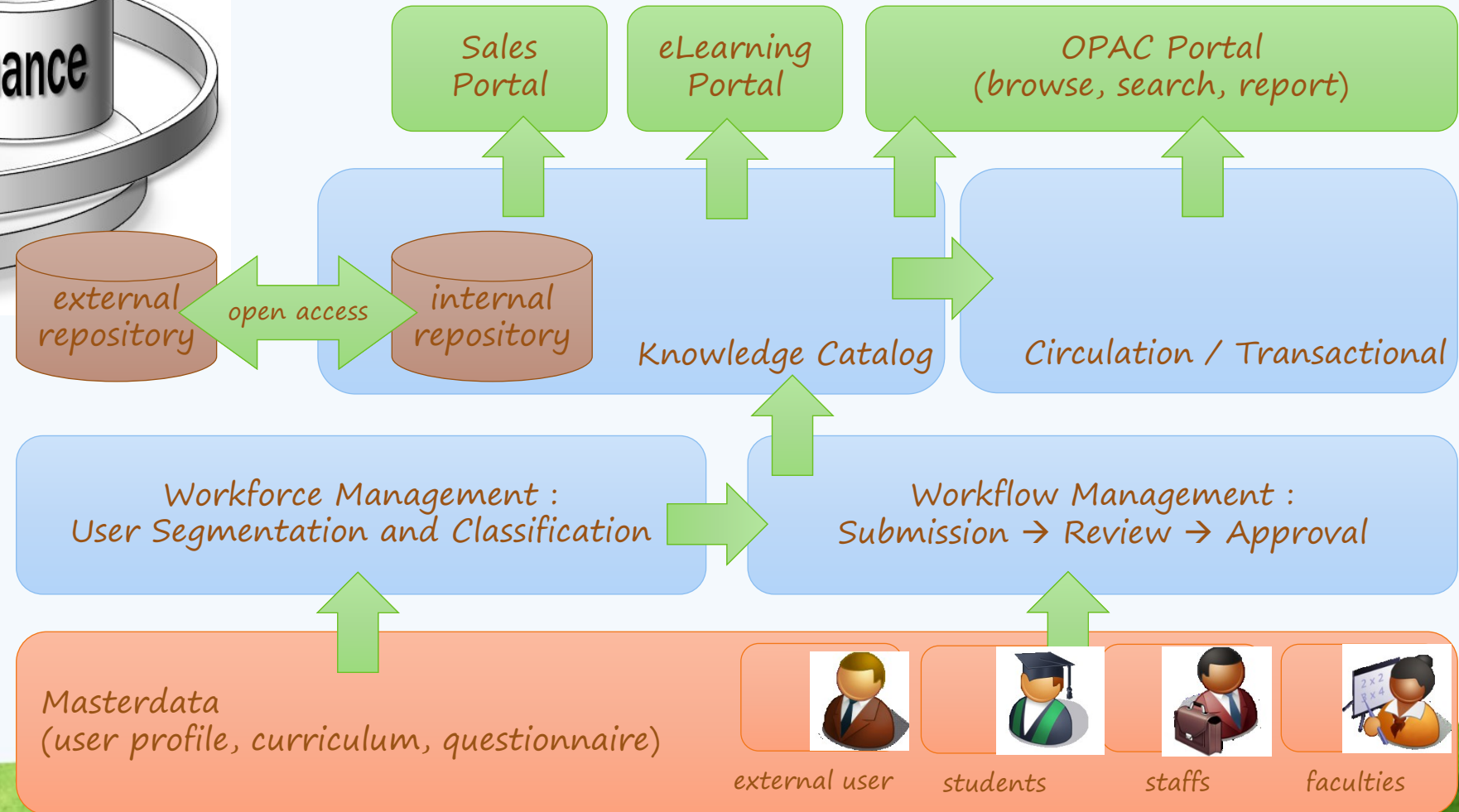
Comparison

Aspect	DSpace	EPrints	OJS	OpenLib
Search Engine Friendly	Yes	Yes	Yes	Yes
Metadata Format	QDublin + MARC	Dublin	Dublin + MARC	QDublin
Technology	Java	Perl	PHP	PHP
Knowledge Sharing	OAI-PMH SWORD	OAI-PMH SWORD	OAI-PMH	OAI-PMH
Open Source Software	Yes	Yes	Yes	Yes

Which One?

- Do you need an editorial-reviewer process?*
- Or you just need a place to publish?*
- Who will be the publisher? You'll do the extra hour?*

Telkom University Open Library





Thank You

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