



Big data, small library

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Adelaide Convention Centre

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Overview



Background

Shell Australia Technical Library

Geophysical data

Big data – velocity, volume, variety, complexity

Seismic

Project Data
Geophysical Logs
Navigation
Seismic Data
Drill Core Plans
Temperature Data

Checkshot
Core Photos
Files

Images
Logs
Maps

Publications
Reports

Notes
Interpretations
Palynology
Photographs
Wireline Logs

Well Headers
Deviation Surveys
Geochemistry
Well Logs
Mud

Drill
Observers Logs

GIS Models
Unstructured Documents
Formation Pressure Data

Assay Pulps
Palaeontology
Surveys
Cuttings
LWD/MWD
Wireline Logs

Spectral Data
Thin Sections

Geophysical data – seismic surveys

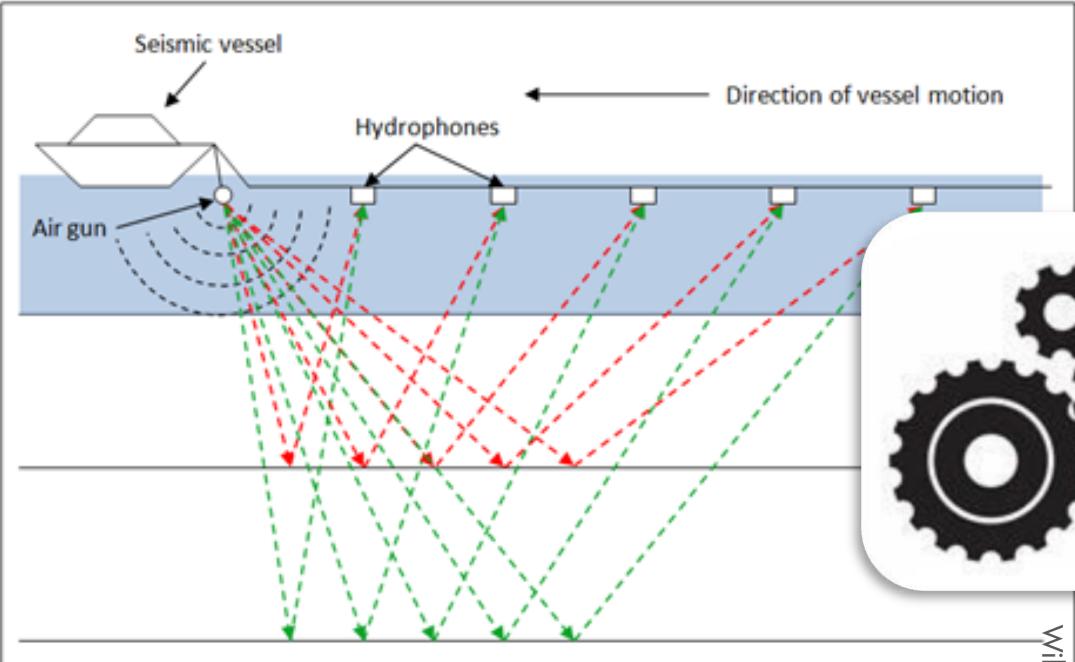
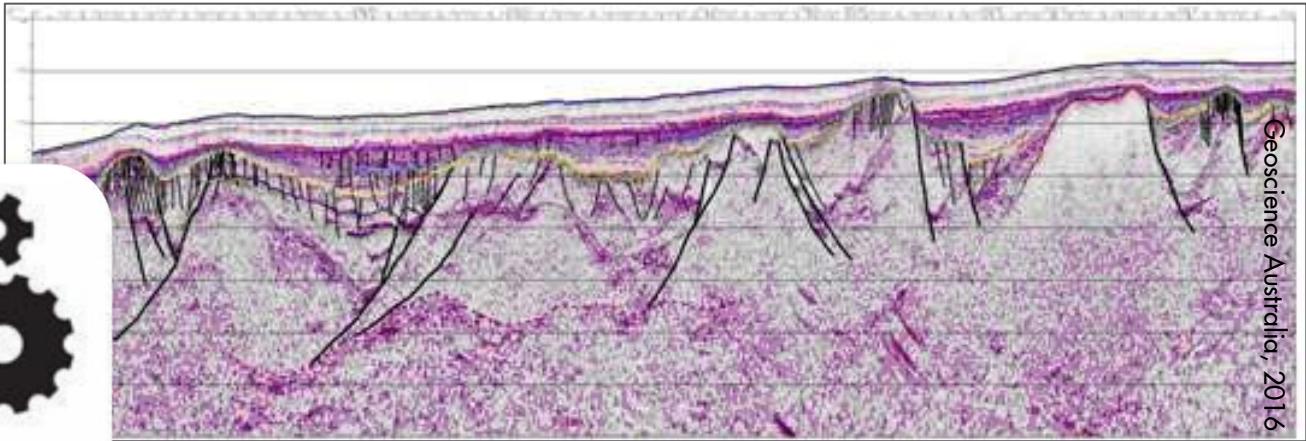


Diagram of a marine towed streamer seismic survey with the raypaths that result from a single shot by an airgun into a streamer containing 5 hydrophones.
--- = raypaths to first reflector; - - = raypaths to second reflector;

Wilkinson, R. (2006)



Interpreted Seismic Section

Big data: *velocity* + volume + variety + complexity

Government
Acreage Release:
Data acquisition &
review

SOURCE DATA

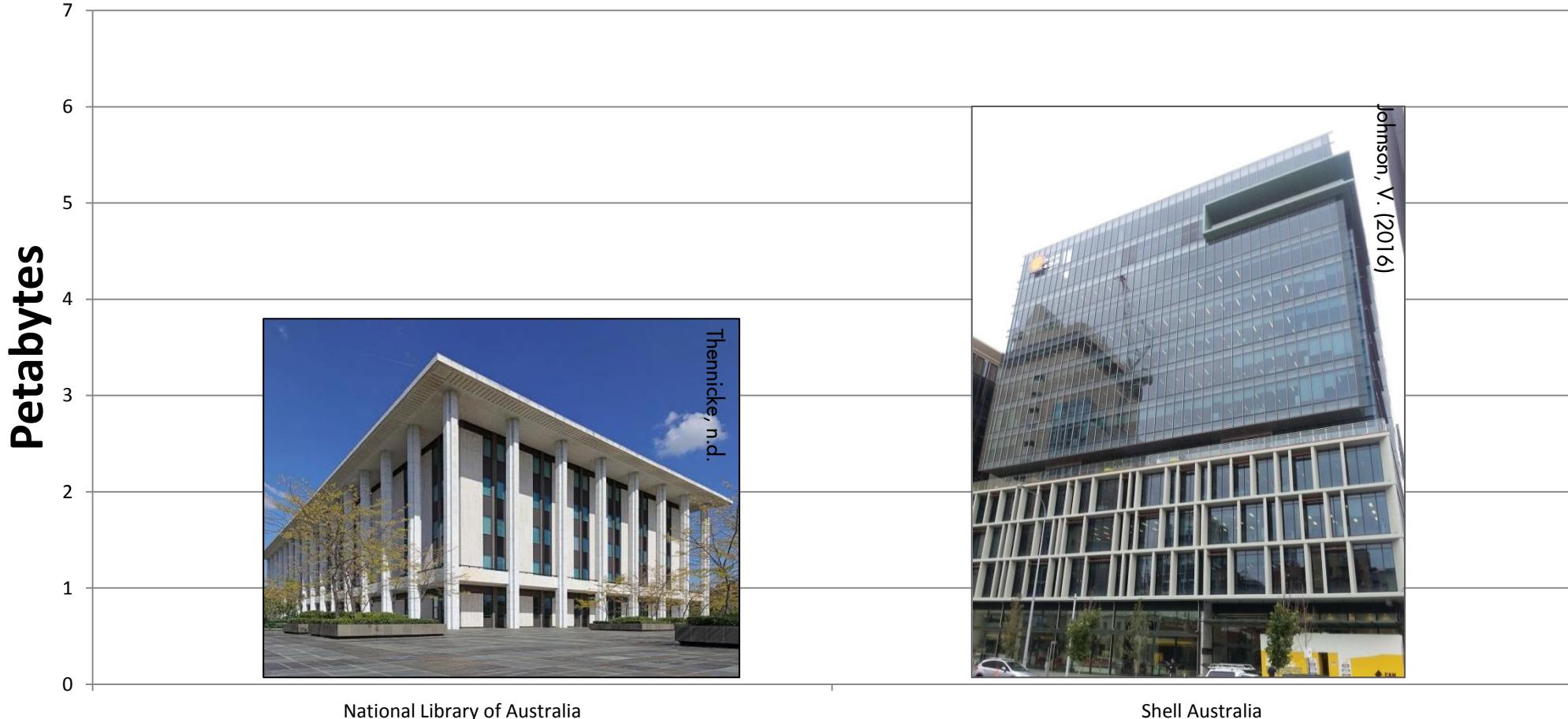
Data submission to
government, share
data with Joint
Venture companies

DISPATCH DATA

Work program:
Seismic surveys,
drilling wells

RECEIVE DATA

Big data: velocity + **volume** + variety + complexity



Big data: velocity + volume + variety + complexity

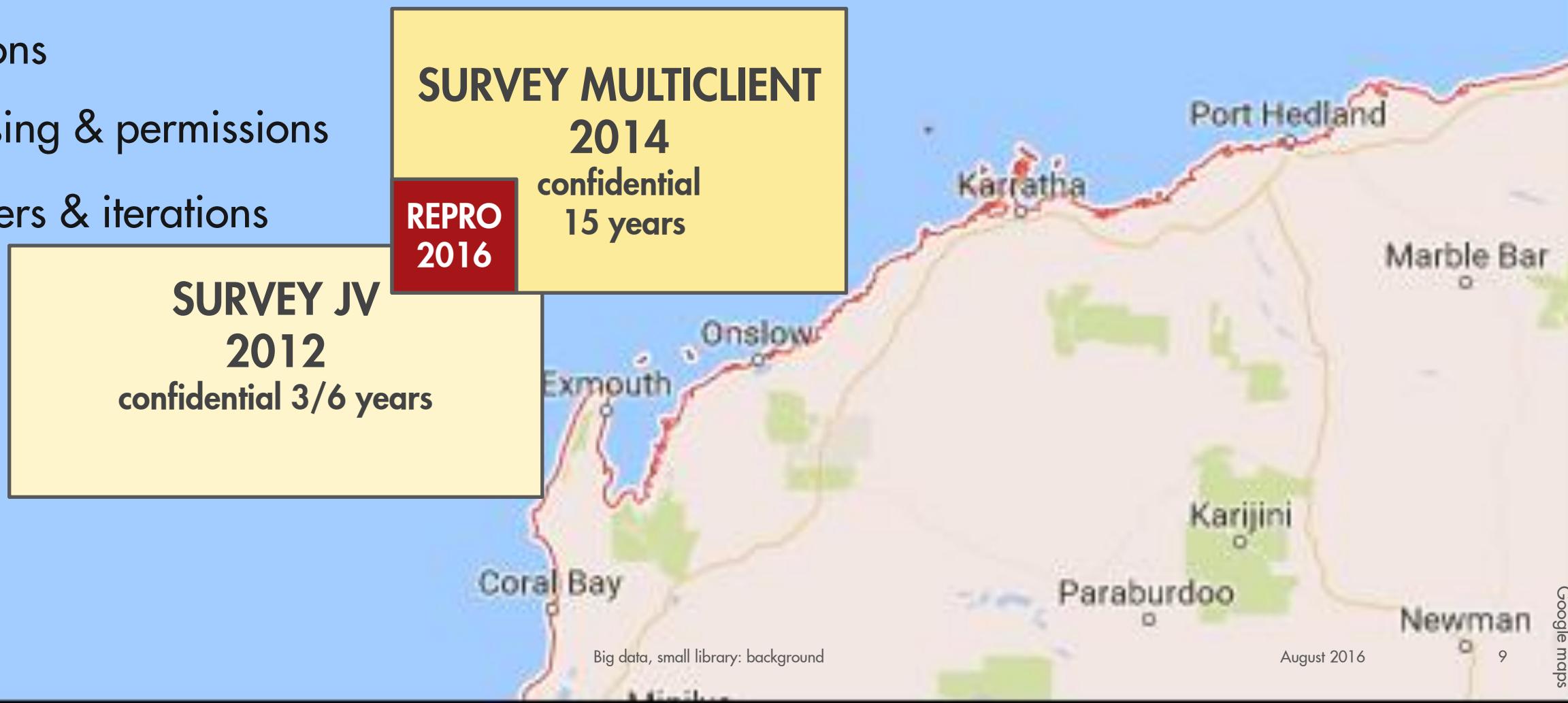


Johnson, V. (2016)

123Di	PPT
123NDI	PPTX
ASCII	prj
ASCII ESSO	PSD
ASCII Western	SAF
AVF	SEGB
BIN	SEGД
BRICK	SEGY
BRICK-TAR	sipmap
CGM	SPC
CPIO Backup	SPIDEC
CSV	SSF
DAT	TAR
DBF	TAR - 123Di
DOC	TAR - LINUX
DTS	TAR - P190
FAL	TAR (-b1)
FH	TAR (-b20)
FIELD	TAR 9-b20
GOCAD	TAR-b1
HTML	TAR-b20
hzh.glb	TAR Backup
HZN	TAR COMPRESS
Landmark	TAR SEGY
Landmark	TIF
Landmark BRICK	TIFF
Landmark 2v2	TSAVE
Landmark 3D	TXT
Landmark Ascii	UDIX
Landmark BACKUP	UKOOA
Landmark DTS	Landmark EMERALD CITY
Landmark	UKOOA P190
time	UNKNOWN
	URAX
	USDIX
	USTAR
	Various
	VT
	WAV
	WAVSAM
	Western
	Western P190
	XLS
	VDIX
	VELF
	VELF CARD
	VINT
	VRMS
	VSH
	XLSX
	XTF
	xytv.gz
	XYZ
	ZGY
	ZIP

Big data: velocity + volume + variety + complexity

- Components – raw, processed, interpreted – many files, many media
- Versions
- Licensing & permissions
- Mergers & iterations

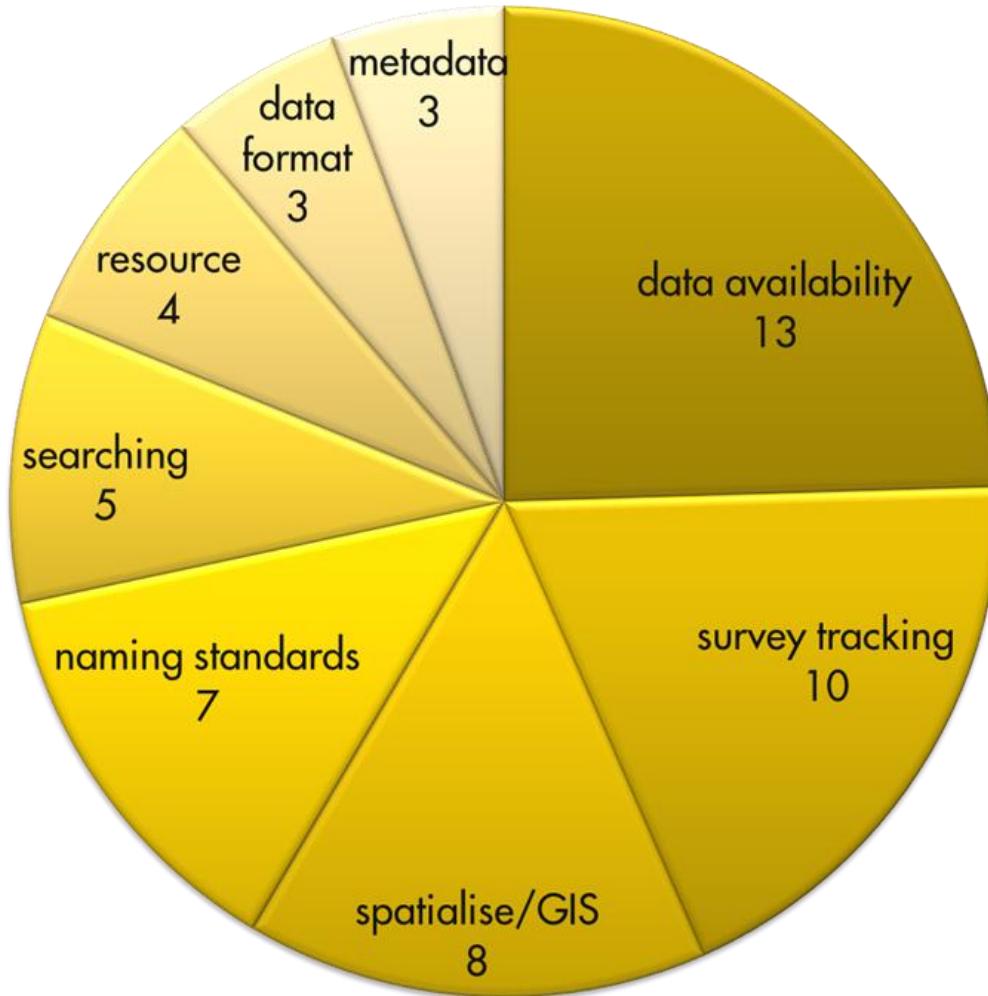


The Process

An opportunity for improvement
Five steps



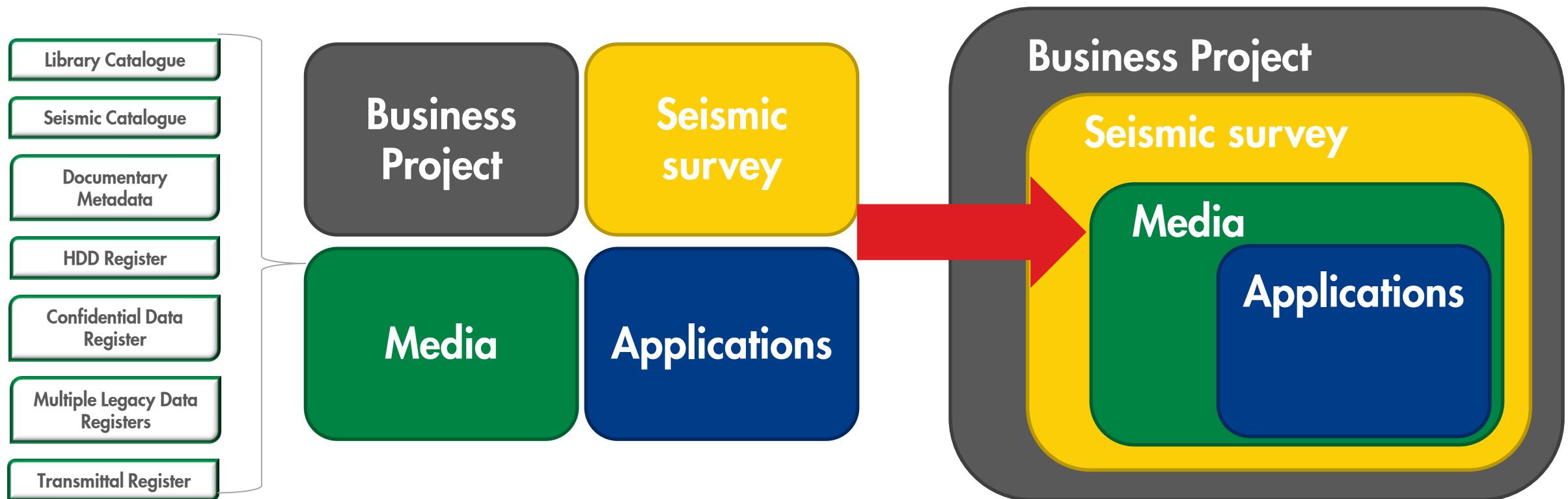
No pain, no gain



Data management pain points:

- Tracking data through the E&P lifecycle
- Naming standards
- Searching

Metadata, metadata everywhere



Step 1: Initial assessment

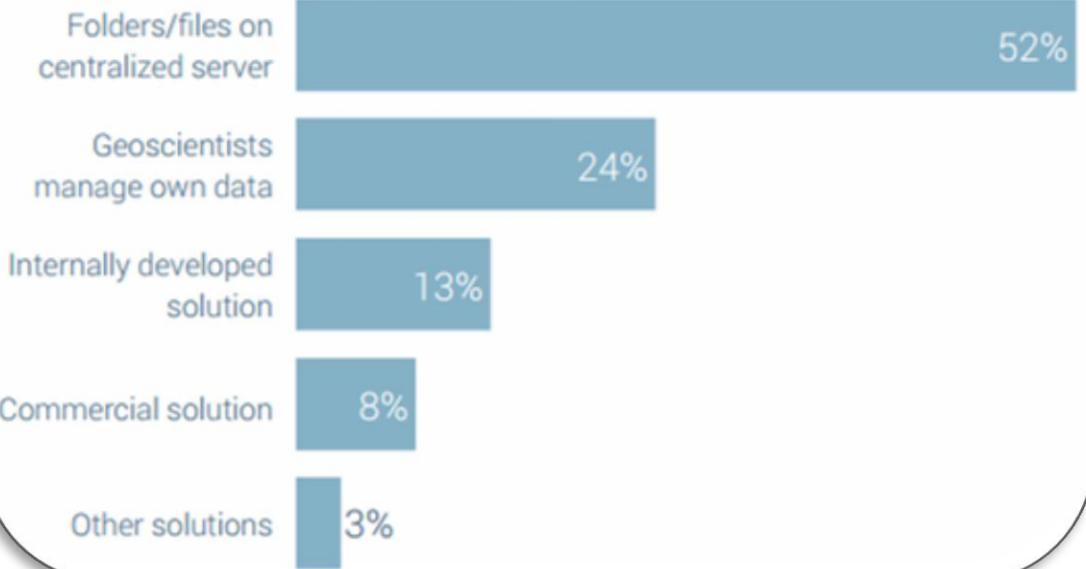
■ Cost

■ Confidentiality

■ Control

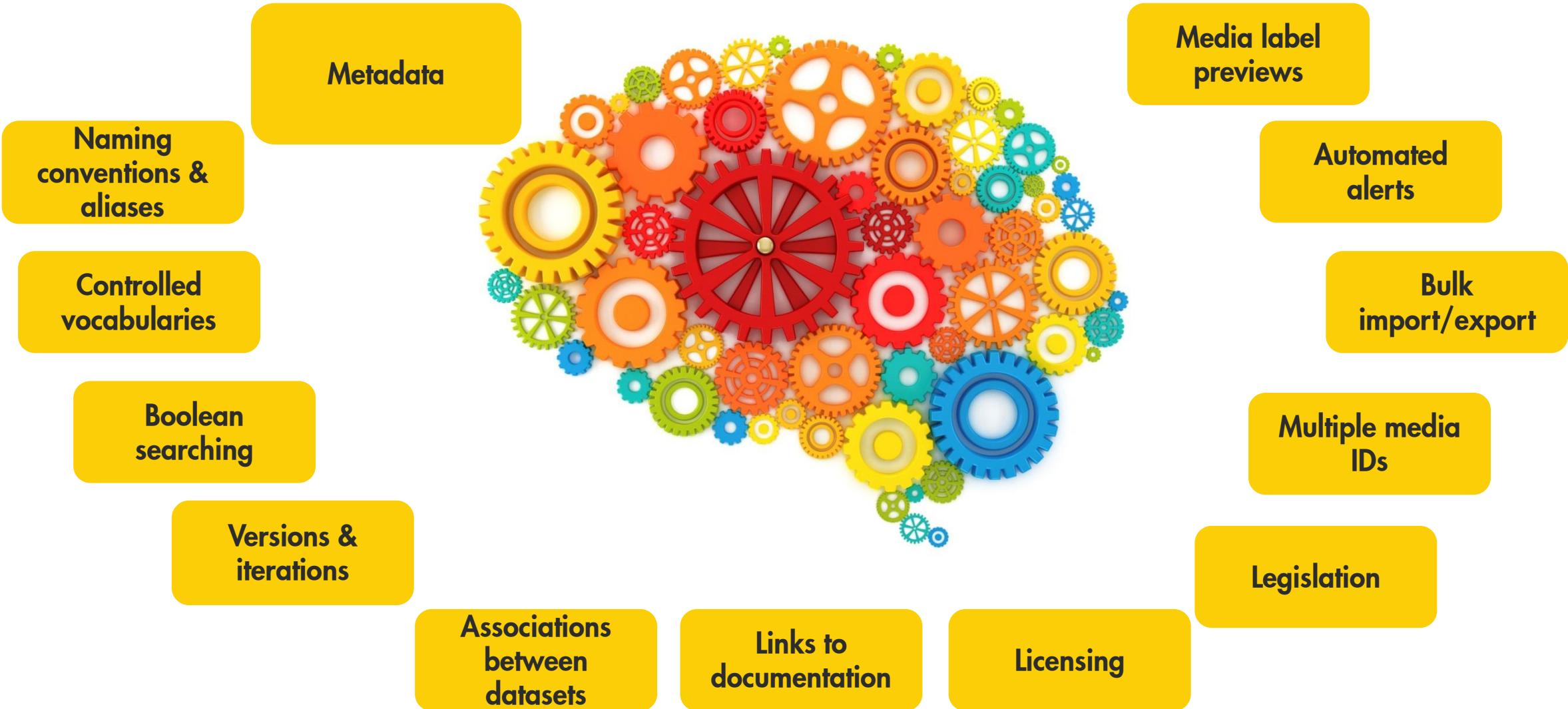
■ Customization

Management of Geophysical and Other Geoscientific Data

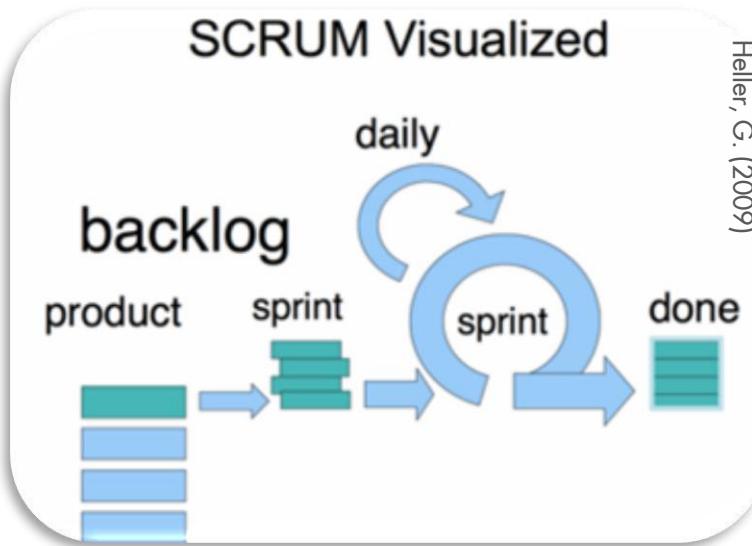
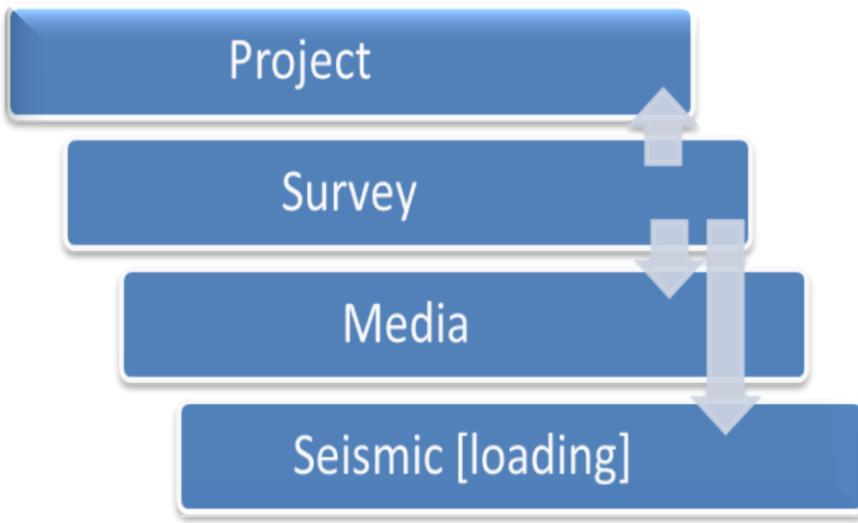


Geosoft 2015 Exploration Information Management Report

Step 2: Stakeholder workshops



Step 3: Database construction & testing



WISHLIST	PRIORITY FEATURES	SPRINT	DONE
Yellow sticky notes	Yellow sticky notes	Yellow sticky notes	Yellow sticky notes

Step 4: Guideline development & education



Step 5: Populating the database

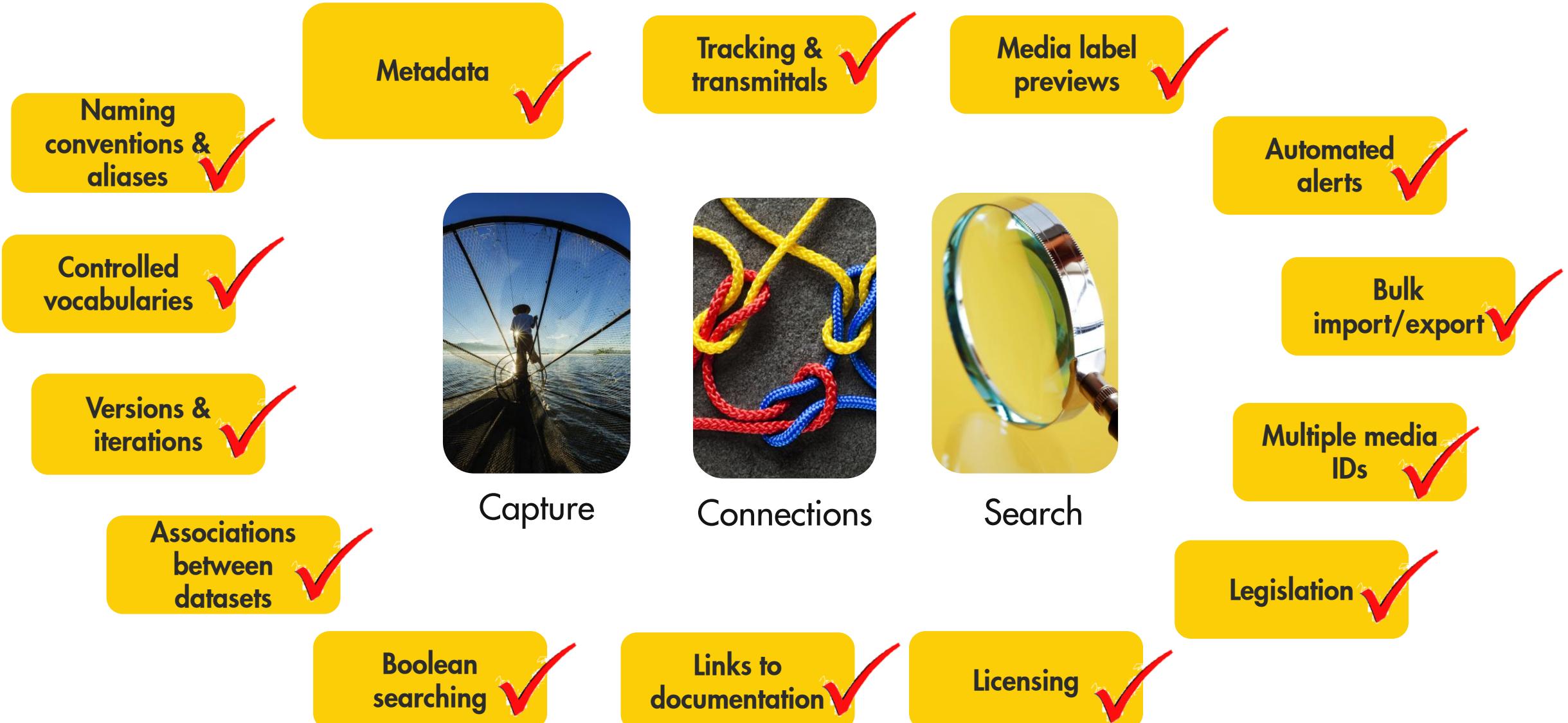


The result

**It works!
Plans for the future**

3

The end result



A wide-angle photograph of a rural landscape. A paved road with yellow center and side stripes curves from the bottom foreground towards the horizon. The land is covered in lush green fields, with some brownish-yellow areas suggesting late summer or autumn. Small farm buildings and a few trees are scattered across the hills. The sky is a bright, clear blue.

View to the future

Questions and Answers

A large, stylized graphic consisting of the letters 'Q' and '&' and 'A' in yellow. The 'Q' is on the left, the '&' is in the center, and the 'A' is on the right. The 'A' has a small horizontal bar at its base. The entire graphic is set against a white background.

References

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