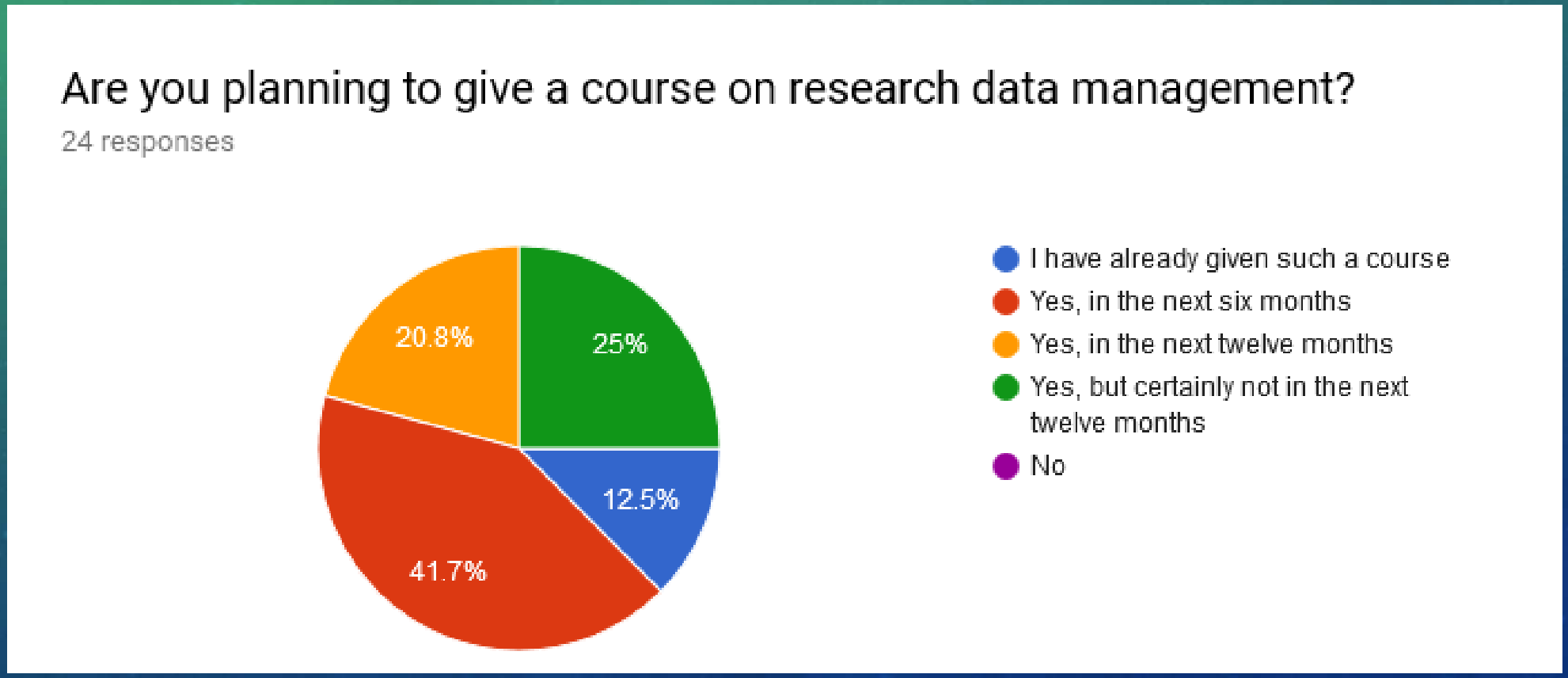
TRAIN THE TRAINER

TEACHING RESEARCH DATA MANAGEMENT

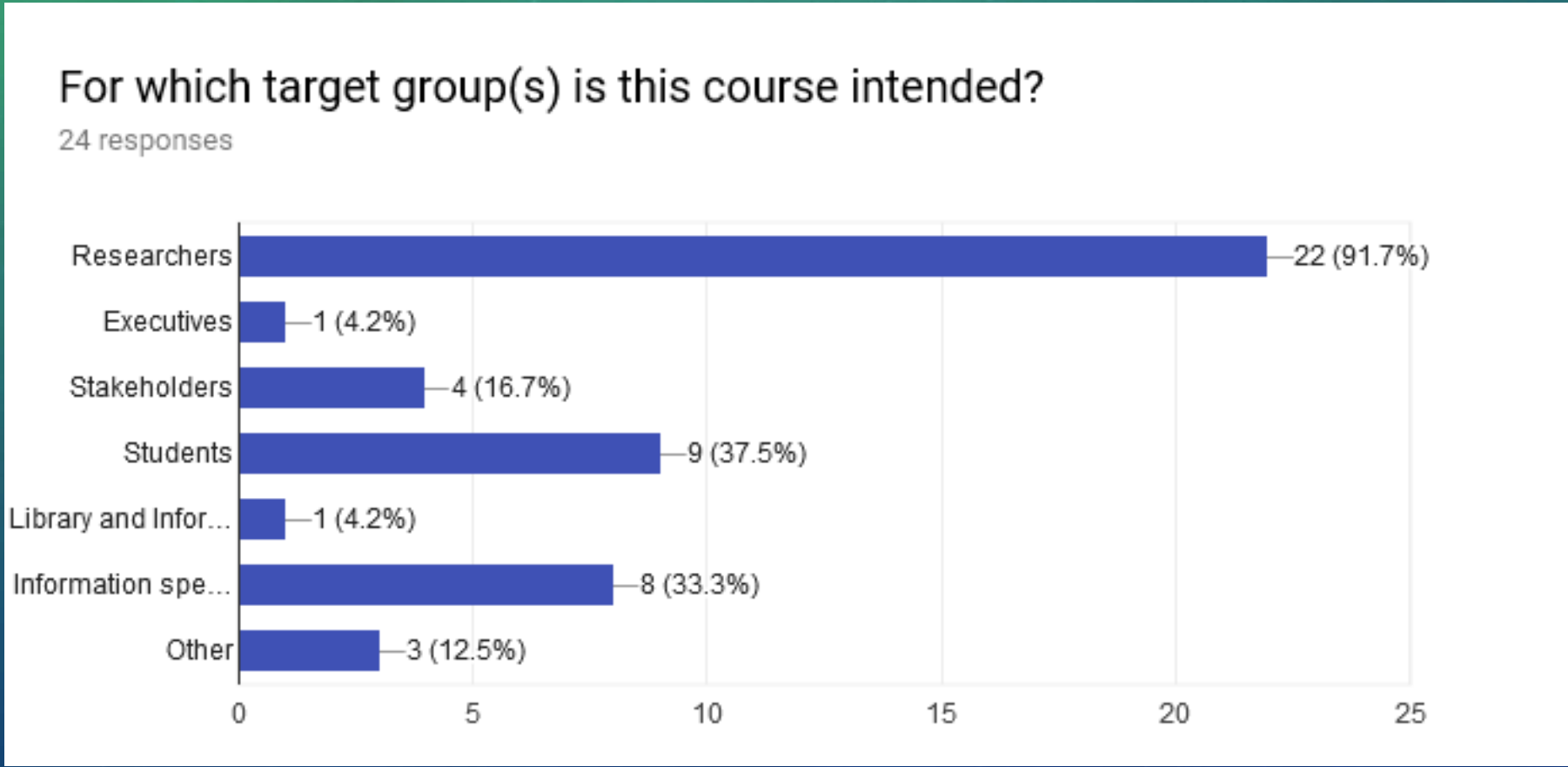
ELIANE BLUMER, RENÉ SCHNEIDER

Courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

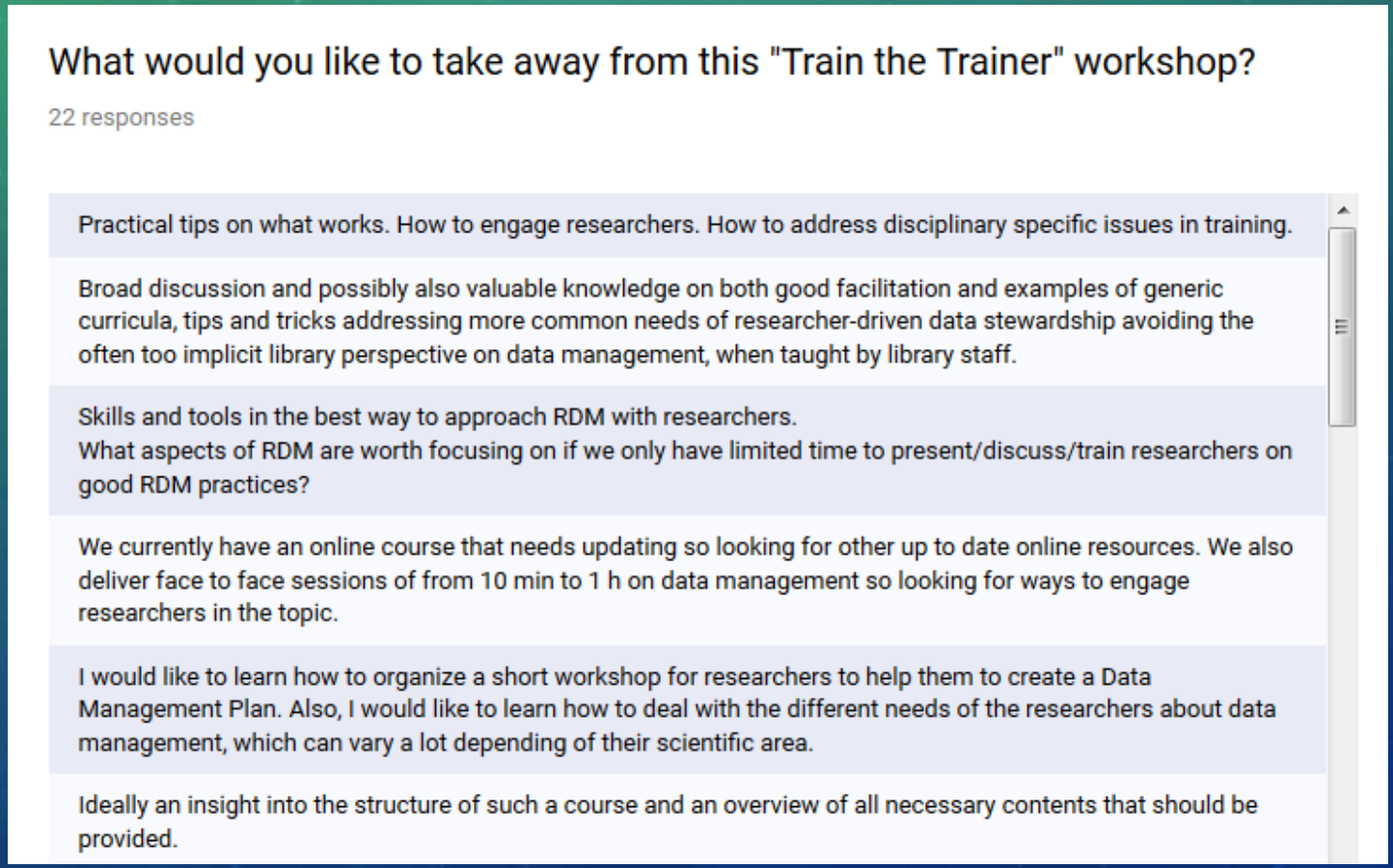
SURVEY – QUESTION 1



SURVEY – QUESTION 2



SURVEY – QUESTION 3



What would you like to take away from this "Train the Trainer" workshop?

22 responses

Practical tips on what works. How to engage researchers. How to address disciplinary specific issues in training.

Broad discussion and possibly also valuable knowledge on both good facilitation and examples of generic curricula, tips and tricks addressing more common needs of researcher-driven data stewardship avoiding the often too implicit library perspective on data management, when taught by library staff.

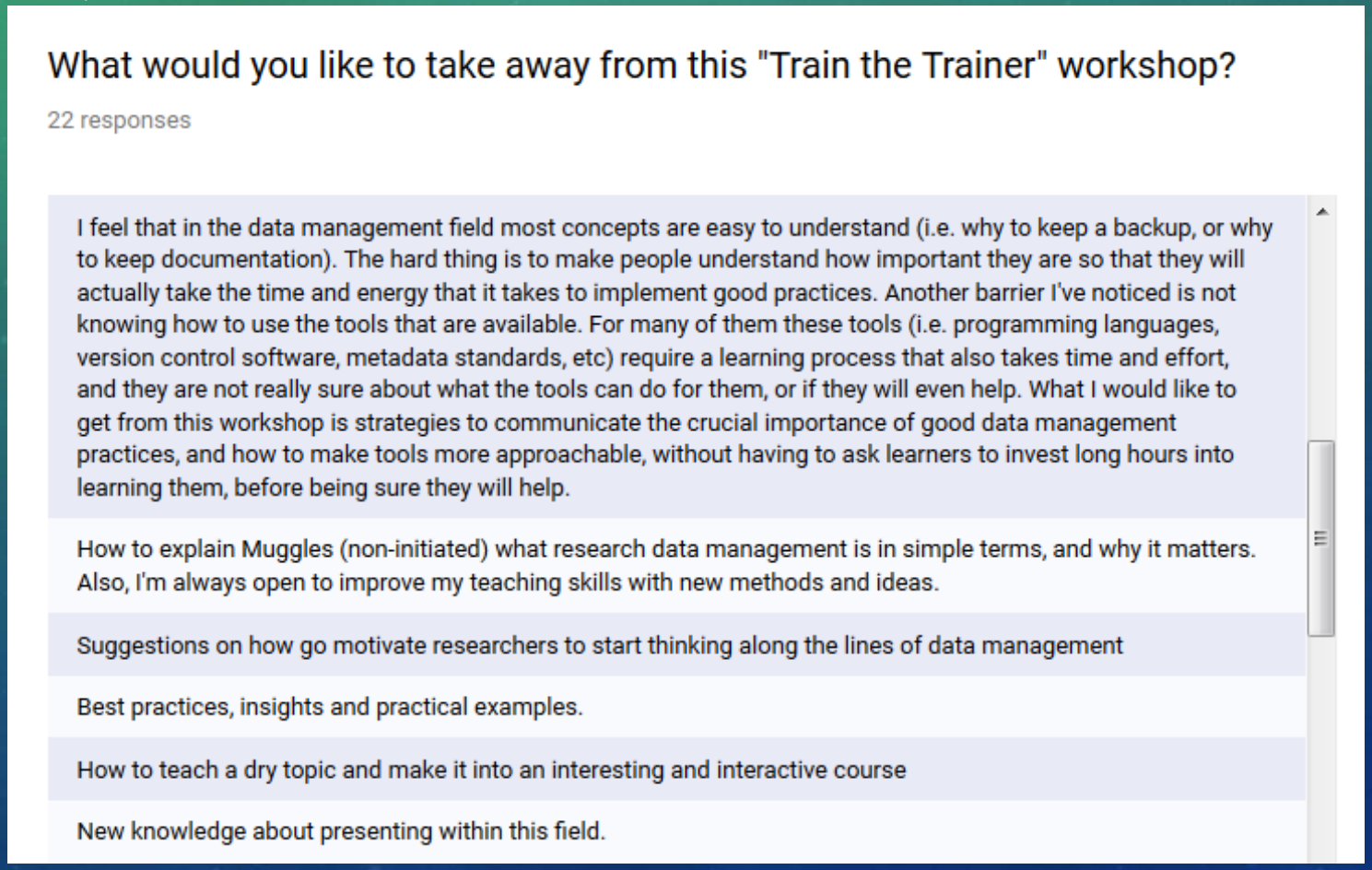
Skills and tools in the best way to approach RDM with researchers.
What aspects of RDM are worth focusing on if we only have limited time to present/discuss/train researchers on good RDM practices?

We currently have an online course that needs updating so looking for other up to date online resources. We also deliver face to face sessions of from 10 min to 1 h on data management so looking for ways to engage researchers in the topic.

I would like to learn how to organize a short workshop for researchers to help them to create a Data Management Plan. Also, I would like to learn how to deal with the different needs of the researchers about data management, which can vary a lot depending of their scientific area.

Ideally an insight into the structure of such a course and an overview of all necessary contents that should be provided.

SURVEY – QUESTION 3



What would you like to take away from this "Train the Trainer" workshop?

22 responses

I feel that in the data management field most concepts are easy to understand (i.e. why to keep a backup, or why to keep documentation). The hard thing is to make people understand how important they are so that they will actually take the time and energy that it takes to implement good practices. Another barrier I've noticed is not knowing how to use the tools that are available. For many of them these tools (i.e. programming languages, version control software, metadata standards, etc) require a learning process that also takes time and effort, and they are not really sure about what the tools can do for them, or if they will even help. What I would like to get from this workshop is strategies to communicate the crucial importance of good data management practices, and how to make tools more approachable, without having to ask learners to invest long hours into learning them, before being sure they will help.

How to explain Muggles (non-initiated) what research data management is in simple terms, and why it matters. Also, I'm always open to improve my teaching skills with new methods and ideas.

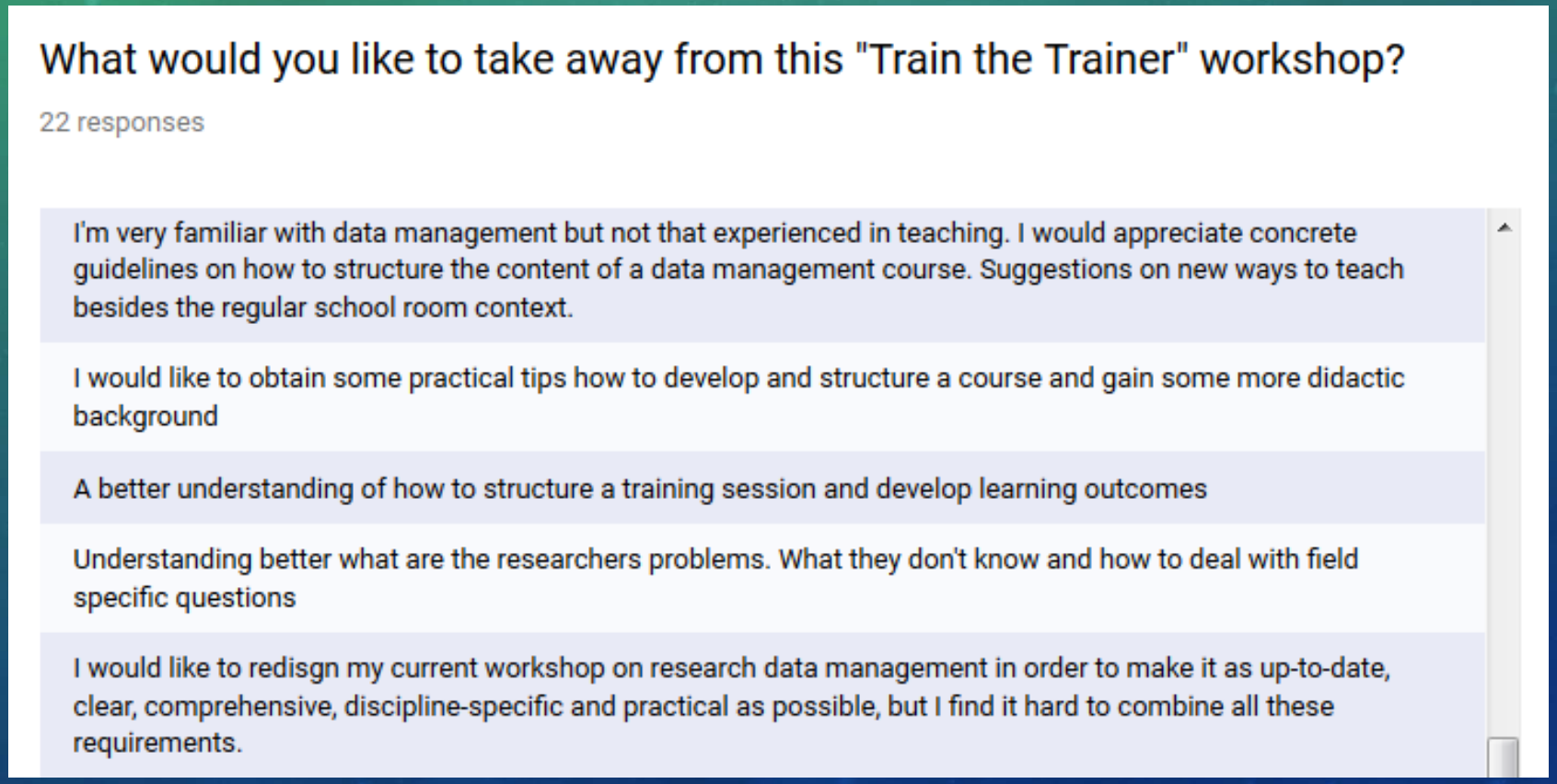
Suggestions on how go motivate researchers to start thinking along the lines of data management

Best practices, insights and practical examples.

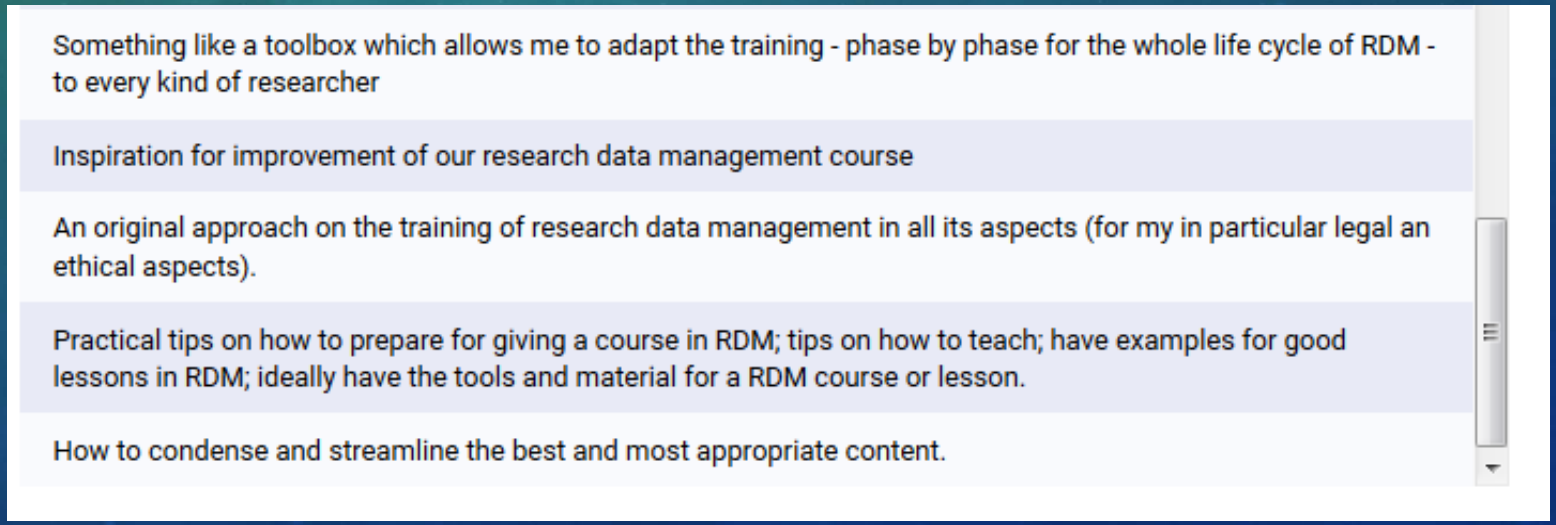
How to teach a dry topic and make it into an interesting and interactive course

New knowledge about presenting within this field.

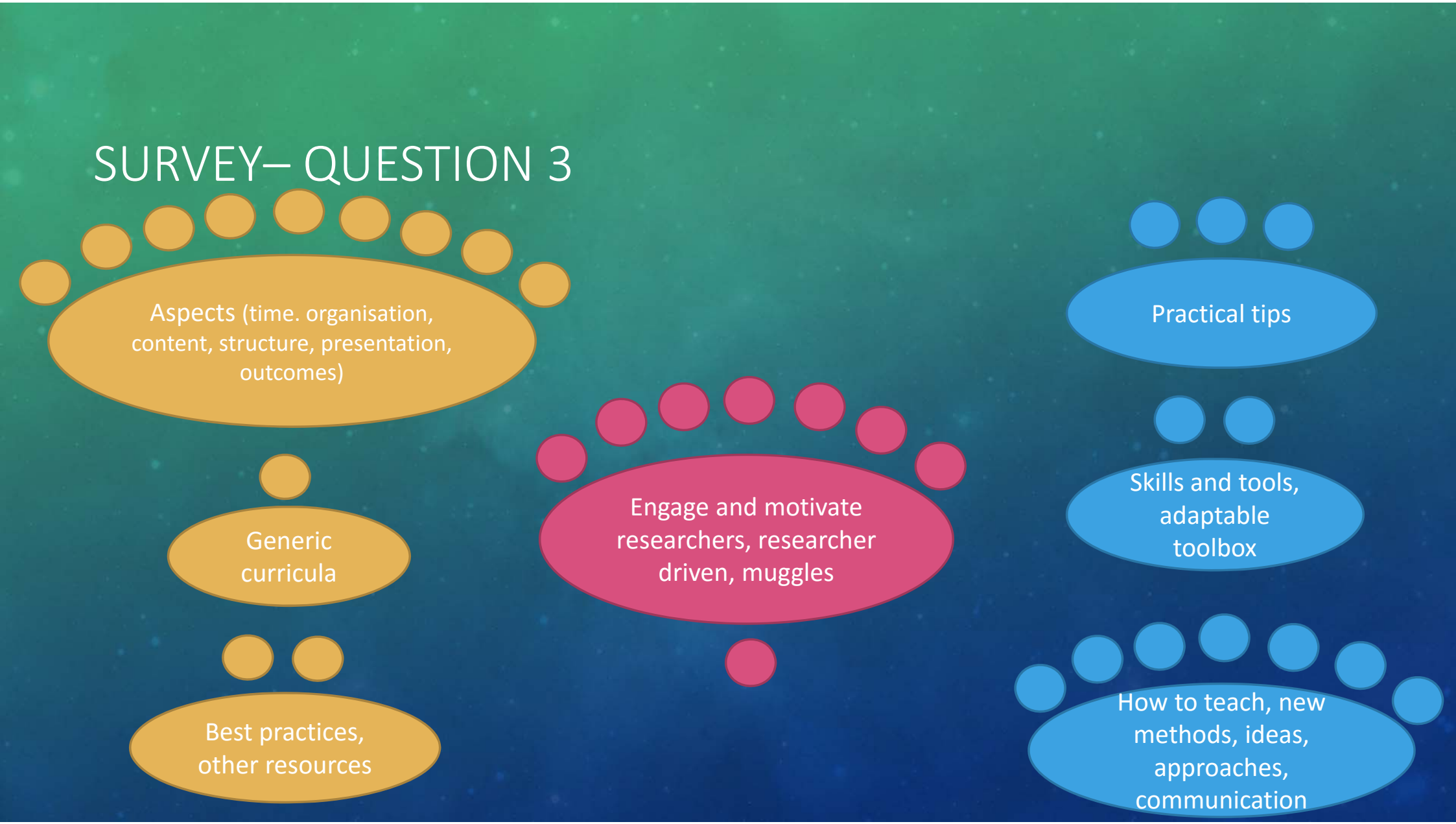
SURVEY – QUESTION 3



SURVEY – QUESTION 3



SURVEY– QUESTION 3



PROGRAMME: MORNING

An example of a short course

Didactics I:

Methods, Learning Types, Adult learning

Short Break

Research Data Literacy

Hands On I: Content as Metro Map

PROGRAMME: AFTERNOON

Didactics II: Planning a course

Hands-On II: Linearisation

Monitoring

Short Break

Hands On III: Detailed Planning and Visualisation

Wrap Up & Evaluation (4 pm)

TRAIN THE TRAINER
RESEARCH DATA MANAGEMENT

All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

ELIANE BLUMER

ECOLE POLYTECHNIQUE FÉDÉRALE, LAUSANNE

TARGET GROUP

- Trainers

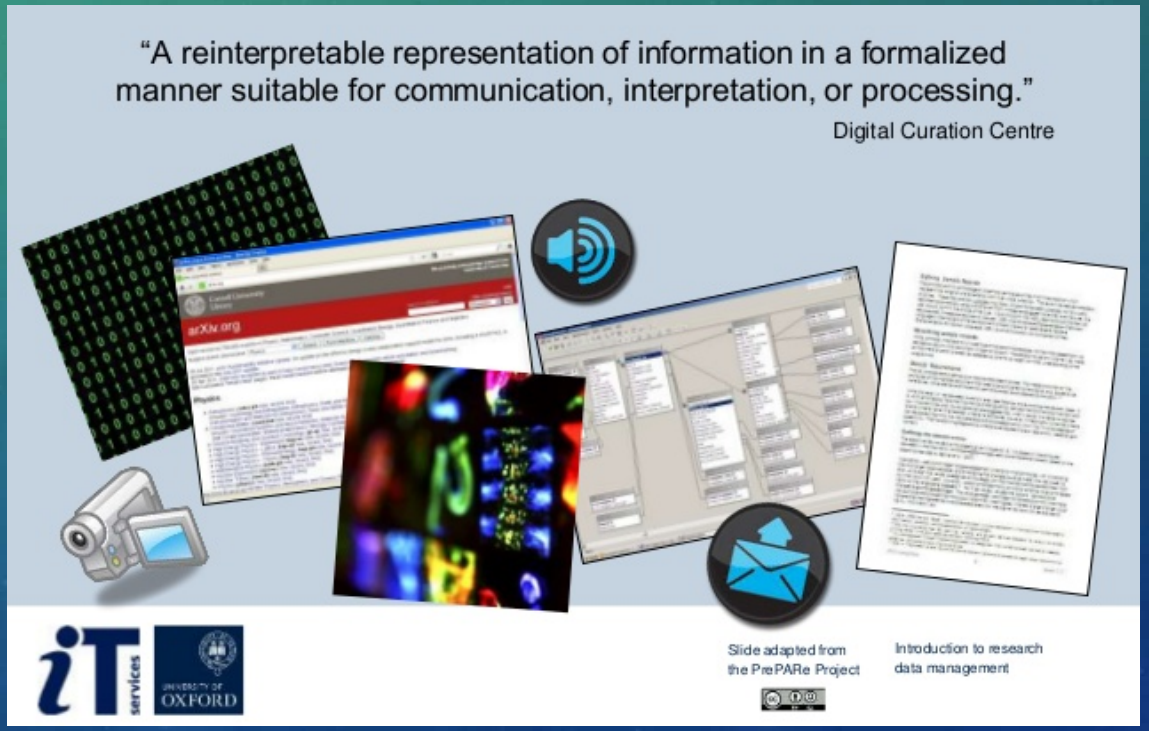
LEARNING OBJECTIVES

At the end of this introduction, you will

I. Be able to define data, research data and research data management (RDM).
II. Know the main actors within research data management.
III. Know the different steps within research data management.
IV. Know tools and be able to assign them to the respective step.

WHAT ARE DATA?

Research data are “used as primary sources for scientific research, and […] are commonly accepted in the scientific community as necessary to validate research findings” (OECD Principles and guidelines for access to research data from public funding).



WHAT ARE RESEARCH DATA?

- **Observational**: data captured in real time that is usually unique and irreplaceable.
  - For example: neuroiamaging, survey data, field recordings, sample data
- **Experimental**: data captured from lab equipment that is often reproducible.
  - For example, gene sequences, chromatograms, magnetic field data
- **Models or simulation**: data generated from test models where model and metadata may be more important than output data from the model.
  - For example, climate models, economic models

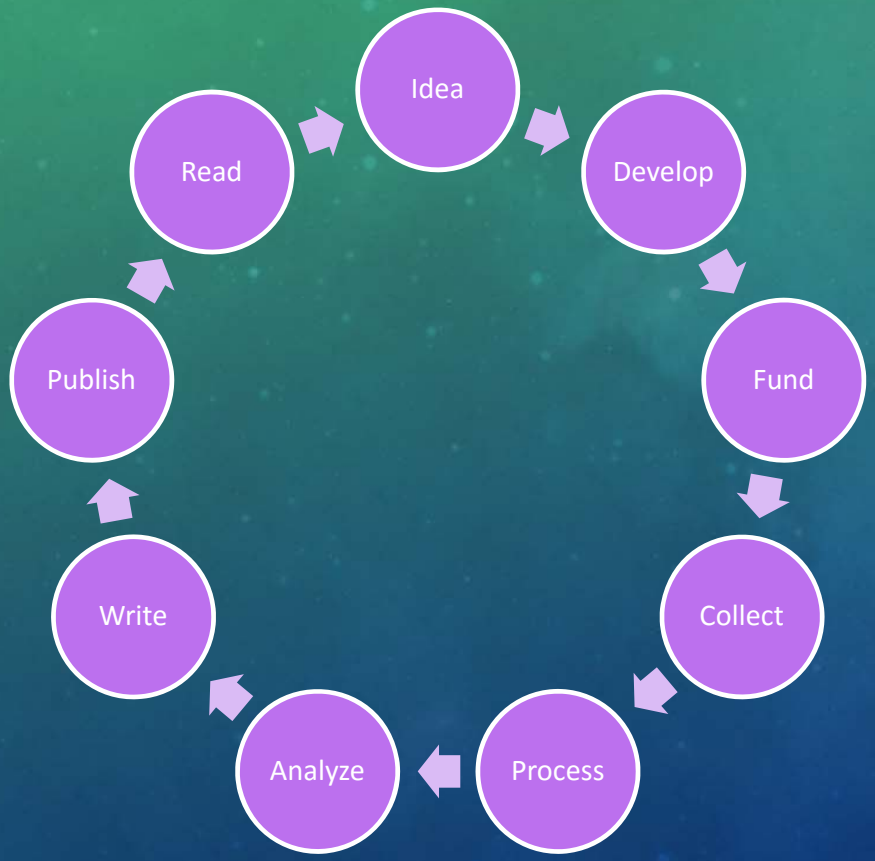
Source: https://data.bris.ac.uk/bootcamp/data/

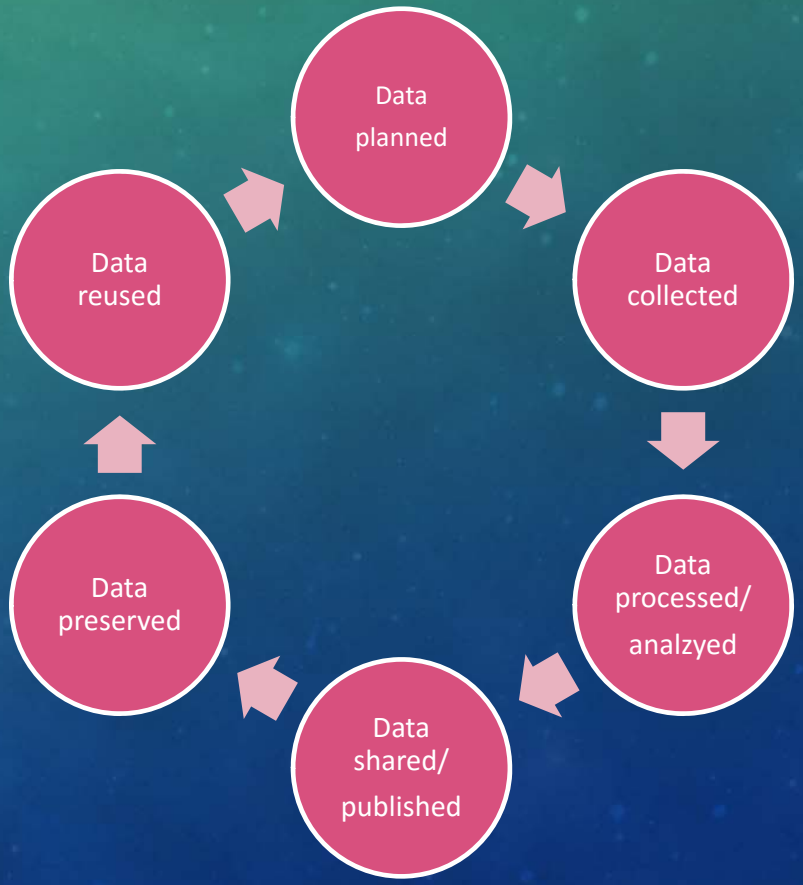
WHAT ARE RESEARCH DATA?

- **Derived or compiled**: resulting from processing or combining 'raw' data.
  - For example, text and data mining, compiled databases, 3D models
- **Reference or canonical**: a static or organic conglomeration or collection of datasets, probably published and curated.
  - For example, gene sequence databanks, collection of letters or archive of historical images

Source: https://data.bris.ac.uk/bootcamp/data/

RDM – FROM THE POINT OF VIEW OF…





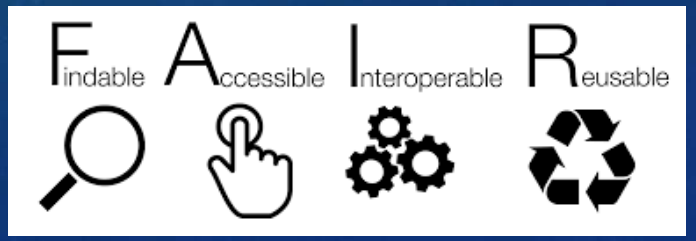
MINI-EXERCISE « ROLES IN RDM »

Mini-Exercise (5min)

- In groups of two.
- Make the puzzle.

WHY RESEARCH DATA MANAGEMENT?

- FAIR Principles
  - To be findable
  - To be accessible
  - To be interoperable
  - To be reusable



https://commons.wikimedia.org/wiki/File:FAIR_data_principles.jpg

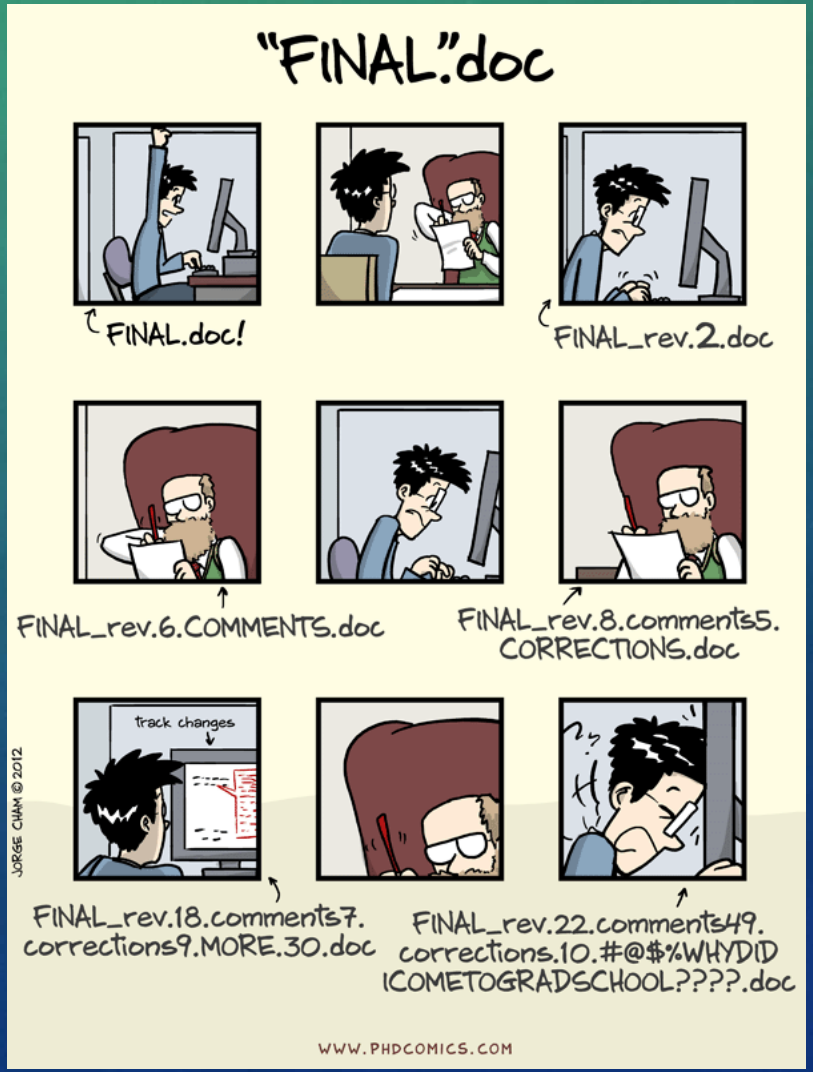
COMPLIANCE

	Policy Coverage		Policy Stipulations					Support Provided			
Research Funders	Published Outputs	Data	Time Limits	Data Plan	Sharing/ Access	Long-Term Curation	Monitoring	Guidance	Repository	Data Centre	Costs
SNSF	●	●	●	●	●	●	○	◐	○	○	◐
European Commission: H2020	●	●	◐	●	◐	◐	◐	●	●	◐	●
European Commission: ERC	●	●	◐	●	◐	◐	◐	●	●	◐	●
NIH	●	●	◐	●	◐	◐	◐	●	●	◐	●
NSF	●	●	◐	●	◐	◐	◐	●	●	◐	●
Bill & Melinda Gates Foundation	●	●	◐	●	◐	◐	◐	●	●	◐	●
AHRC	●	●	●	●	●	◐	○	●	○	◐	◐
BBSRC	●	●	●	●	●	●	●	●	●	◐	●
EPSRC	●	●	●	◐	●	●	●	◐	○	○	●
ESRC	●	●	●	●	●	●	●	●	●	●	◐
MRC	●	●	●	●	●	●	○	◐	●	○	◐
NERC	●	●	●	●	●	●	●	●	●	●	◐
STFC	●	●	●	●	●	●	●	◐	●	◐	◐
Cancer	●	●	●	●	●	●	●	◐	●	○	●
Wellcome	●	●	●	●	●	●	●	●	●	●	●

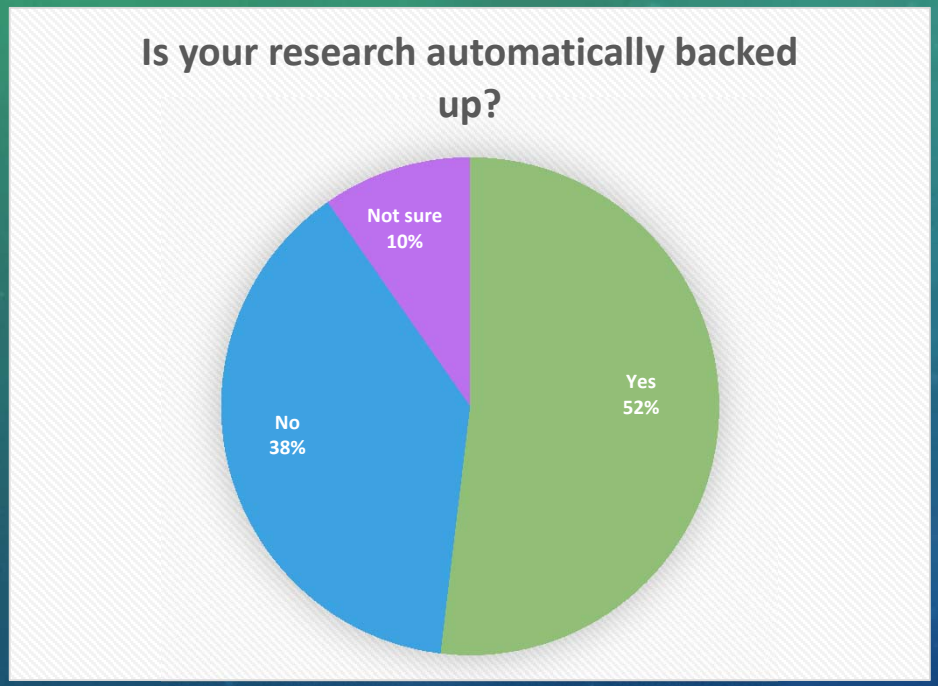
https://researchdata.epfl.ch/cms/site/researchdata/lang/en/plan-fund/funders-data-requirements

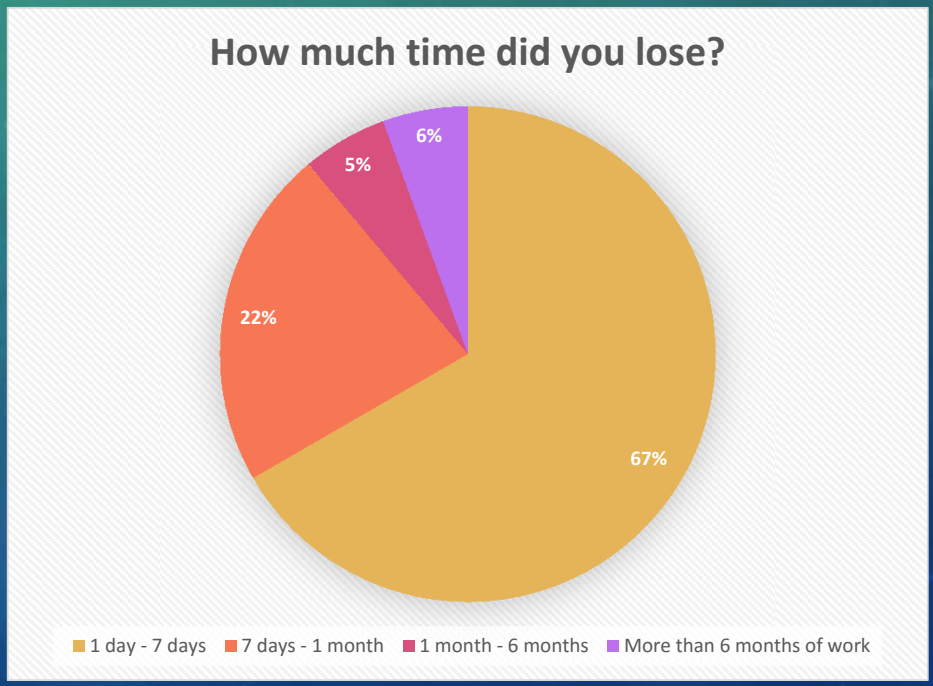
EFFICIENCY

- Supports systematic documentation
- Improves the research process
- Economic benefits



SECURITY – HOW MUCH DATA WOULD YOU LOOSE IF…

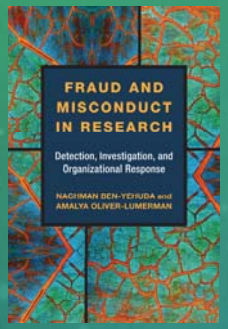




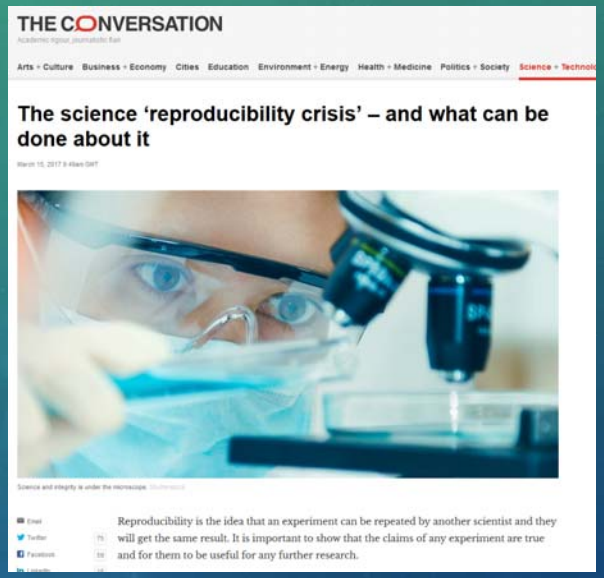
EPFL Library, Survey for research data management, 2017

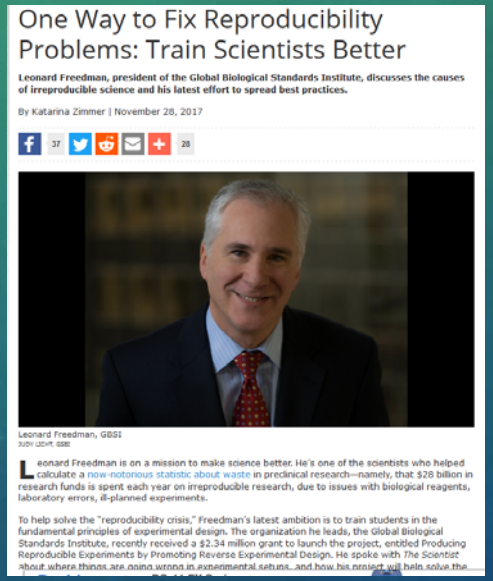
QUALITY

- «Reproducibility crisis»
- Accuracy
- Scientific Integrity
- Public trust in science



http://theconversation.com/the-science-reproducibility-crisis-and-what-can-be-done-about-it-74198

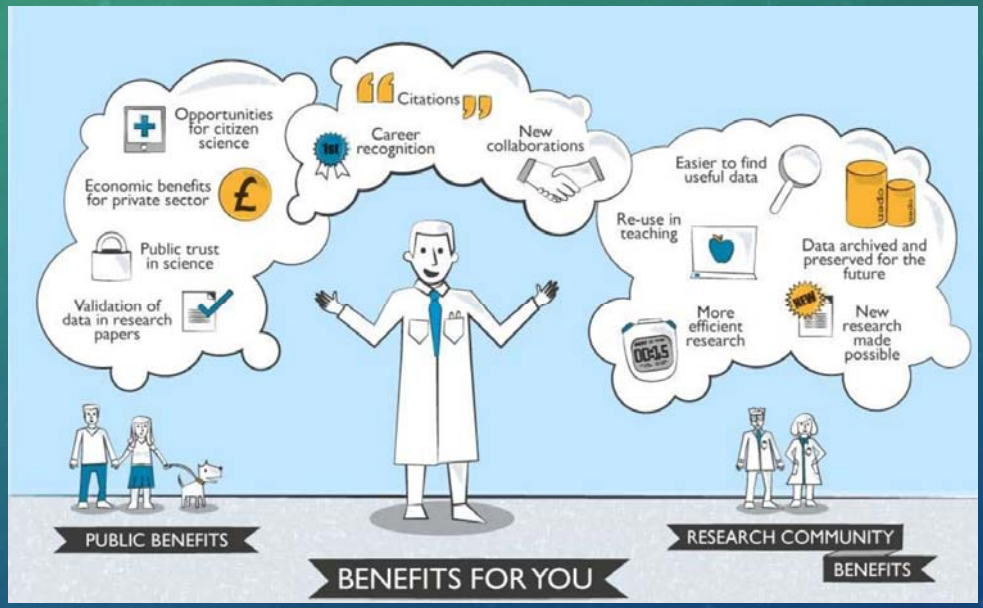




https://www.the-scientist.com/?articles.view/articleNo/51047/title/One-Way-to-Fix-Reproducibility-Problems--Train-Scientists-Better/

(OPEN) ACCESS

- Citations and career recognition
- New collaborations
- Validation of data

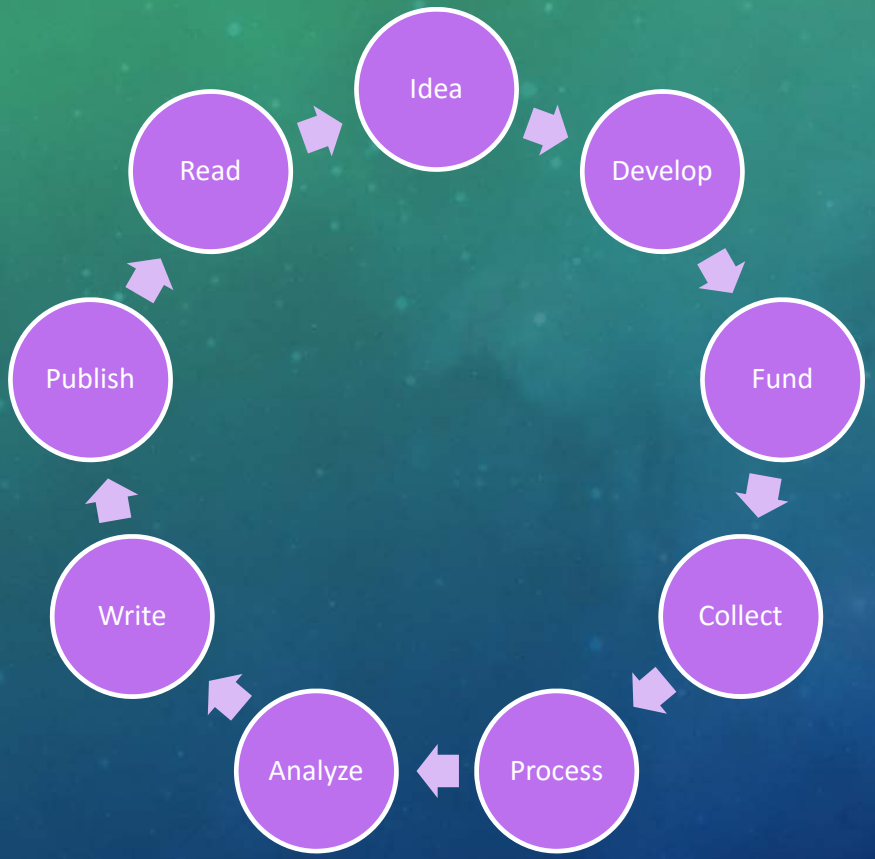


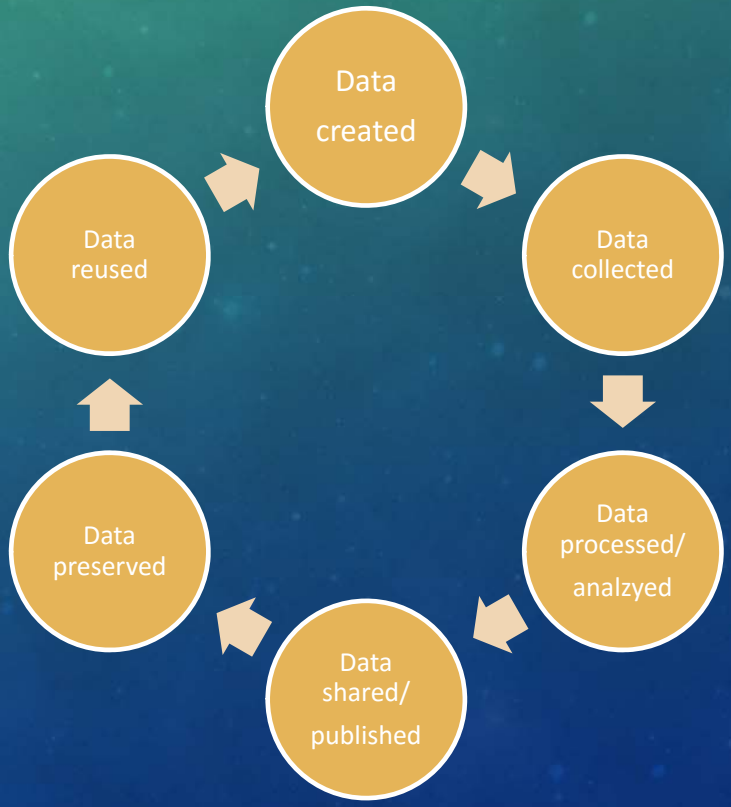
Hole, Brian. The Journal of Open Archaeology Data and PRIME: Incentivising Open Data Archiving [Internet]. 18 Jan 2013 [cited 28 Nov 2016]. Available: http://www.slideshare.net/brianhole/the-journal-of-open-archaeology-data-and-prime-incentivising-open-data-archiving

STEPS AND TOOLS

- Take a look at the tools (5min)
- Pin them to the right step (5min)
- Take a look at the solution (5min)
- Discuss (5min)

SMALL REPETITION





YOU SHOULD NOW …

I. Be able to define data, research data and research data management (RDM).
II. Know the main actors within research data management.
III. Know the different steps within research data management.
IV. Know tools and be able to assign them to the respective step.

ANY QUESTIONS?

ELIANE.BLUMER@EPFL.CH

All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

TRAIN THE TRAINER

METHODS-DIDACTICS

RENÉ SCHNEIDER

HES-SO, HAUTE ECOLE DE GESTION, GENEVA

OVERVIEW

I. Methodological and Didactical Approach
II. Learning Styles and their Implication for Practice
III. Principles for Adult Learning (Andragogics)
IV. Aspects of a Training Trainers for Research Data Management

I. METHODOLOGICAL AND DIDACTICAL APPROACH

No matter what you are planning to do
no matter the duration of your course,
you should base your course on a didactical concept.

Two examples:

- The Twenty-Minute-Rule
- E-Class Reference

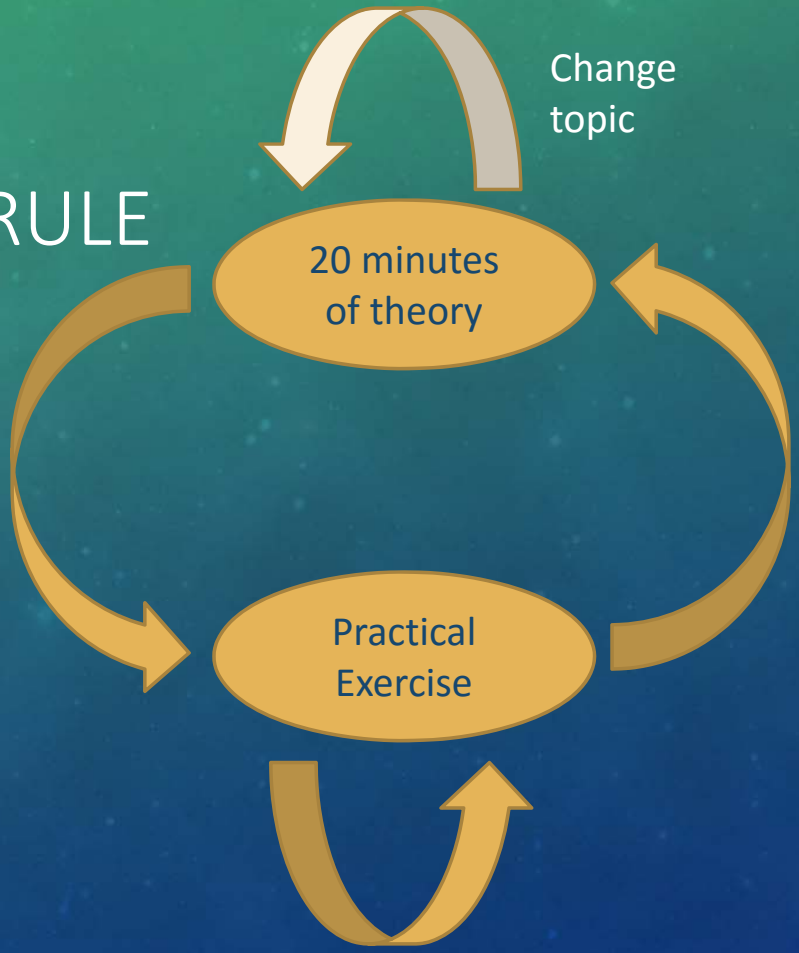
1ST EXAMPLE: THE TWENTY-MINUTE-RULE

Never speak longer than 20 minutes of theory.

Simply because the brain feels bored after 20 min.

Then change for practice.

(Else: change topic after 20 min.)



But: Experience and practice is very important, esp. for adults.

Klaus W. Döring: Handbuch Lehren und Trainieren in der Weiterbildung. Beltz Verlag (Weinheim, Basel) 2008.

ECLASS REFERENCE

E = Explain
C = Clarify
L = Look
A = Act
S = Share
S = Self Evaluate/Submit

Gerson, E. (2000): E-CLASS: Creating a Guide to Online Course Development For Distance Learning Faculty.
http://www.westga.edu/~distance/ojdla/winter34/gerson34.html

ECLASS - The pedagogical concept behind eLML:
http://www.elml.ch/website/en/html/about_concept.html

ECLASS REFERENCE – DURING THE LUNCH TIME LECTURE

E = Explain – Goals and target group
C = Clarify – Definitions, theoretical input

A = Act – Two exercises (One for two – one for the whole group)
L = Look – Proposing one possible solution
S = Share – Exchanging in pleno (with all participants)
(**S** = Self Evaluate/Submit – giving comments on other solutions)

E-CLASS REFERENCE: TRAIN2DACAR E-LEARNING MODULES

Explain:
Goals
Scenario (Storytelling)

Modul 4-1

35 min

Repositorien

Dieses Modul zeigt Ihnen, wo Sie Ihre Daten mittelfristig, d.h. unmittelbar nach Abschluss des Projekts und vor dem Transfer in ein Langzeitarchiv ablegen können. Wir zeigen Ihnen ein Portal, in dem Sie geeignete Repositorien finden können und diskutieren die Vor- und Nachteile der bekanntesten Repositorien.

Lernziele

Sie lernen in diesem Modul

- wie sie sich einen Gesamtüberblick über bestehende Repositorien verschaffen können,
- welches die wichtigsten Repositorien für eine erste Veröffentlichung ihrer Daten sind,
- wie sie Projektmanagement und Datenverwaltung incl. Publikation und Archivierung miteinander kombinieren können.

SCENARIO

Fabrice ist Projektleiter eines archäologischen Forschungsprojekts an einer schweizerischen Universität und möchte einige Daten aus dem Forschungsprojekt, die nicht an eine vollständige Datenbank gebunden sind, auf einem geeigneten Repositorium publizieren und dies schon bevor er sich den Fragen der Langzeitarchivierung stellt.

Er möchte wissen, welche Repositorien es überhaupt gibt und welche in seiner Disziplin als Hauptanlaufstellen gelten.

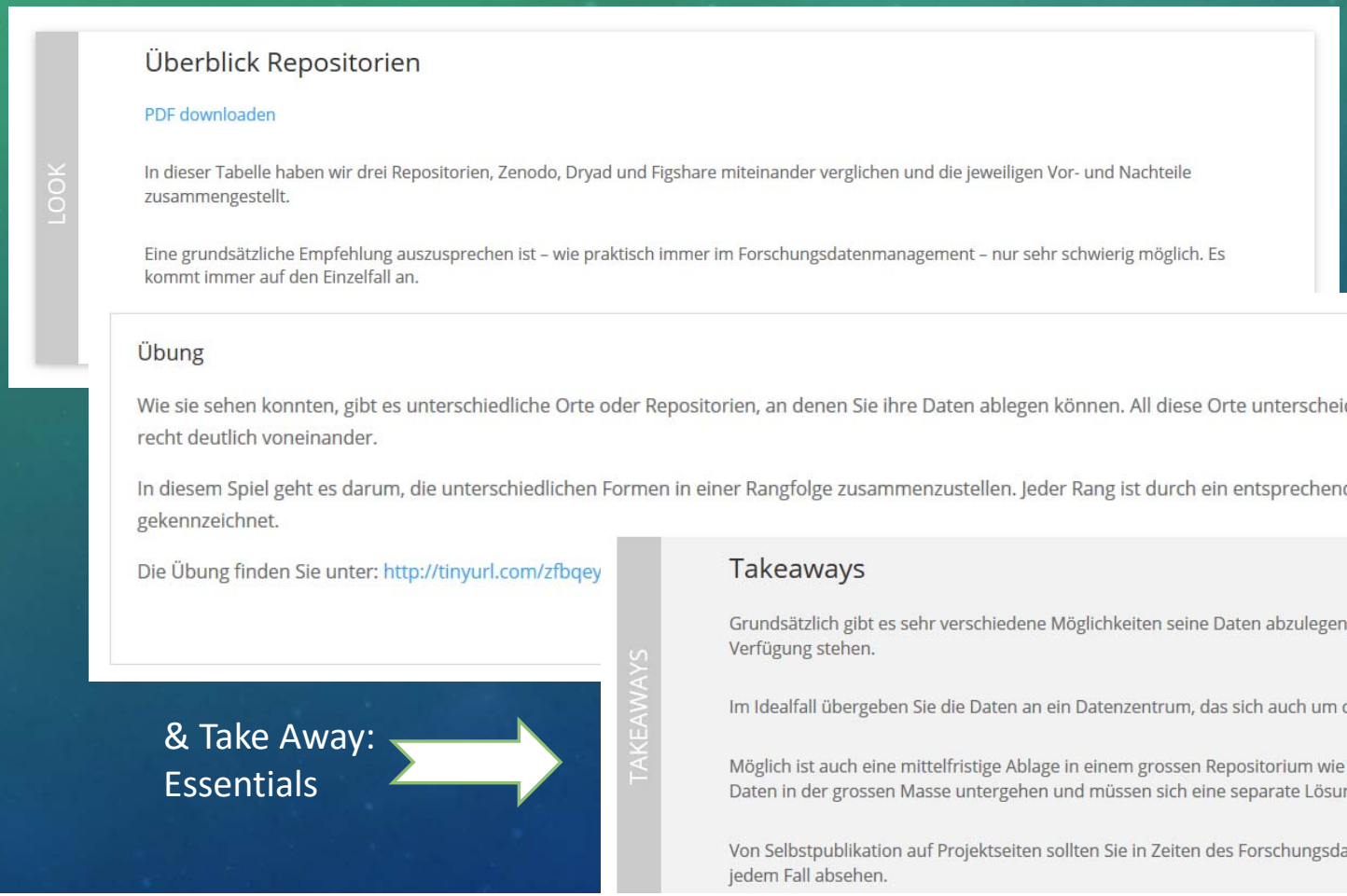
Auf welchen Repositorien er möglichst niedrigschwellig seine Daten ablegen und nach welchen Kriterien er seine Entscheidung treffen soll.

All cartoons courtesyof Jørg
Digitalbevaring.dk.CC BY 2.5

Clarify:
Slides

www.researchdatamanagement.ch

E-LEARNING MODULE



Look:
One specific Item

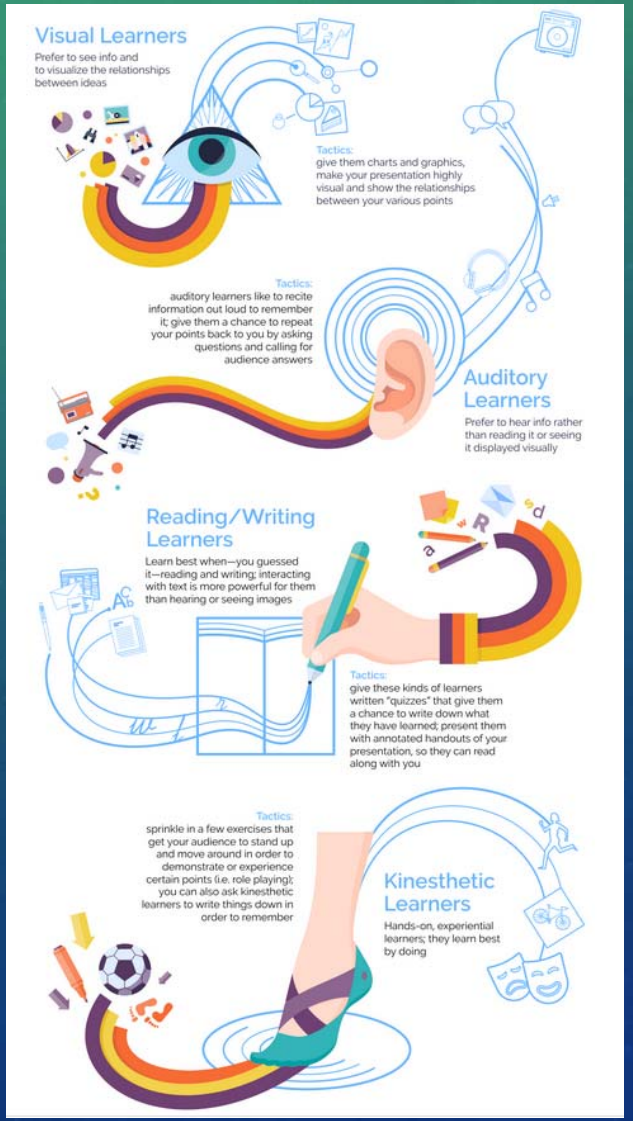
Act:
Exercise

& Take Away:
Essentials

II. LEARNING STYLES / TYPES

There is a (disputed) theory in learning that is based on the existence of four different learing types or learning styles.

a) Visual
b) Auditory
c) Communicative (reading / writing)
d) Kinesthetic (motoric)



https://blog.prezi.com/the-four-different-types-of-learners-and-what-they-mean-to-your-presentations-infographic/

IMPLICATIONS FOR PRACTICE

No matter if this is true or not or one day proven in cognitive studies, you should always teach classes that combine auditory, visual, communicative and kinesthetic aspects, maybe only to make them somewhat more entertaining or less boaring.

(Never forget: Whatsapp is less than a second away …)

II. LEARNING STYLES – DURING THE LUNCH TIME LECTURE

a) Auditory - Talk
b) Visual - Slides
c) Communicative – Group work
d) Kinesthetic – Puzzling and Pinning

III. ADULT TEACHING (ANDRAGOGICS)

Teaching research data management always means to teach adults, generally adults that are very intelligent or do at least consider themselves to be so.

It is interesting to see that teaching adults differs in some aspects from teaching children and adolescents.

PRINCIPLES

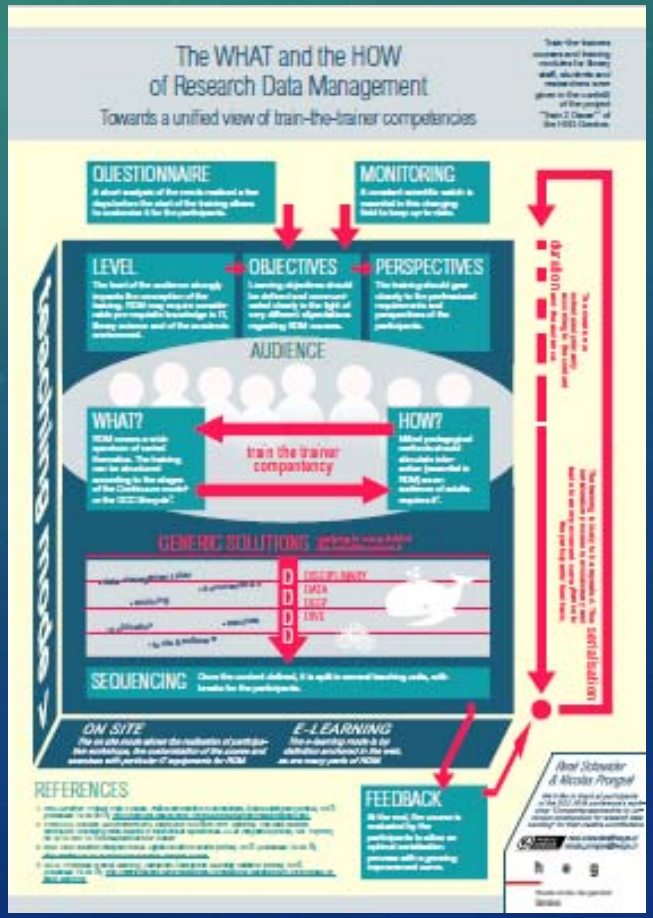
1. Adults must want to learn. (inner motivation and added values are decisive)
2. Adults will learn only what they feel they need to learn. (be practical and direct)
3. Adults learn by doing. (active participation matters)

PRINCIPLES (CONTINUED)

4. Adult learning focuses on problems and the problems must be realistic. (from problems to solutions –> discover gaps and try to close them)
5. Experience affects adult learning. (advantage and burden –> avoid the repetition of negative experiences)
6. Adults learn best in an informal situation. (I only want to learn what I need to know. –> No fixed curriculum.)
7. Adults want guidance. (Present options –> don't say exactly what has to be done.)

- http://www.literacyns.ca/clln-resources.htm
- Canadian Literacy and Learning Network. *Principles of Adult Learning* Archived 2014-02-17. Archived at the Wayback Machine. Jossey-Bass, 2013.

IV. ASPECTS OF TRAINING TRAINERS FOR RESEARCH DATA MANAGEMENT



https://hesso.tind.io/record/1974/files/Poster.pdf

FINALLY

Don’t forget:

Teaching is all about **preparation** –

and **flexibility** for everything

that does not work the way you thought it should.

QUESTIONS?

RENE.SCHNEIDER@HESGE.CH

RESEARCH DATA LITERACY

WHAT DOES THAT REALLY MEAN?

All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

RENÉ SCHNEIDER

HES-SO, HAUTE ECOLE DE GESTION, GENEVA

OVERVIEW

I. Core competences
II. Special skills
III. Course duration and target groups
IV. Literacy as metro map

CORE COMPETENCES

- Big 6 of Information Literacy as Essential Skills (Eisenberg)
- Seven Pillars of Information Literacy as a Core Model for Higher Education (SCONUL)
- DPOE curriculum: «Train the trainer program in Digital Curation» (established by the Library of Congress)

BIG 6 INFORMATION LITERACY

Big 6
Clarify
Locate
Select /Analyze
Organize / Synthesize
Evaluate
Create / Present

SEVEN PILLARS FOR HIGHER EDUCATION

Big 6	Seven Pillars
1. Clarify	
2. Locate	1. Identify
3. Select /Analyze	2. Scope
4. Organize / Synthesize	3. Plan
	4. Gather
5. Evaluate	5. Evaluate
	6. Manage
6. Create / Present	7. Present

TRAIN THE TRAINER DIGITAL CURATION

Big 6	Seven Pillars	DPOE curriculum
1. Clarify		
2. Locate	1. Identify	1. Identify
3. Select /Analyze	2. Scope	2. Select
4. Organize / Synthesize	3. Plan	
	4. Gather	3. Store
		4. Protect
5. Evaluate	5. Evaluate	
	6. Manage	5. Manage
6. Create / Present	7. Present	6. Provide

FUSION

Research Data Literacy
Provide
Identify
Scope
Plan
Store
Protect
Evaluate
Manage

SPECIAL SKILLS

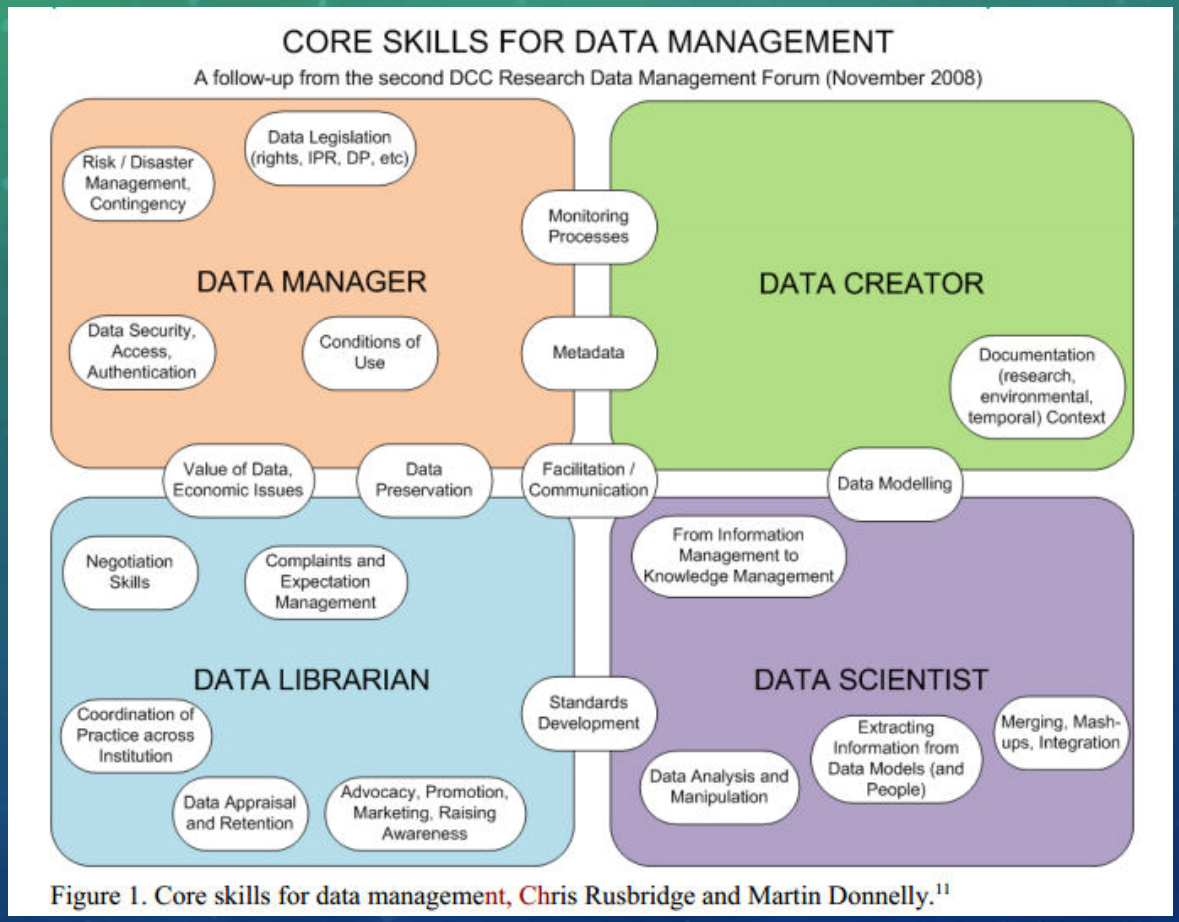


Figure 1. Core skills for data management, Chris Rusbridge and Martin Donnelly.[11]

SKILLS ATTRIBUTED TO COMPETENCES

Competences	Skills
Identify	Documentation (research environmental, temporal) / Context / From Information Management to Knowledge Management
Scope	Monitoring Process / Extracting Information from Data Models (and People)
Plan	Data Modeling / Meta Data / Standards Development
Store	Data Analysis and Manipulation / Merging, Mashing, Integration
Protect	Data Preservation / Data Security / Access Authentication / Conditions of Use / Data Legislation
Evaluate	Data Appraisal and Retention / Value of Data / Economic Issues
Manage	Complaints and Expectation Management / Coordination of Practice across Institution / Negotiation Skills / Risk & Disaster Management / Contingency / Advocacy, Promotion, Marketing
Provide	Facilitation, Communication / Raising Awareness

COMPETENCES AND COURSE DURATION

	Provide	Identify	Scope	Plan	Store	Protect	Evaluate	Manage
2 hours	*	*	*					
1 course (30h)	*	*	*	*	*			
1 module (2-3 courses)	*	*	*	*	*	*	*	
Certificate	*	*	*	*	*	*	*	*
Full programme	*	*	*	*	*	*	*	*

DURATION AND TARGET GROUPS

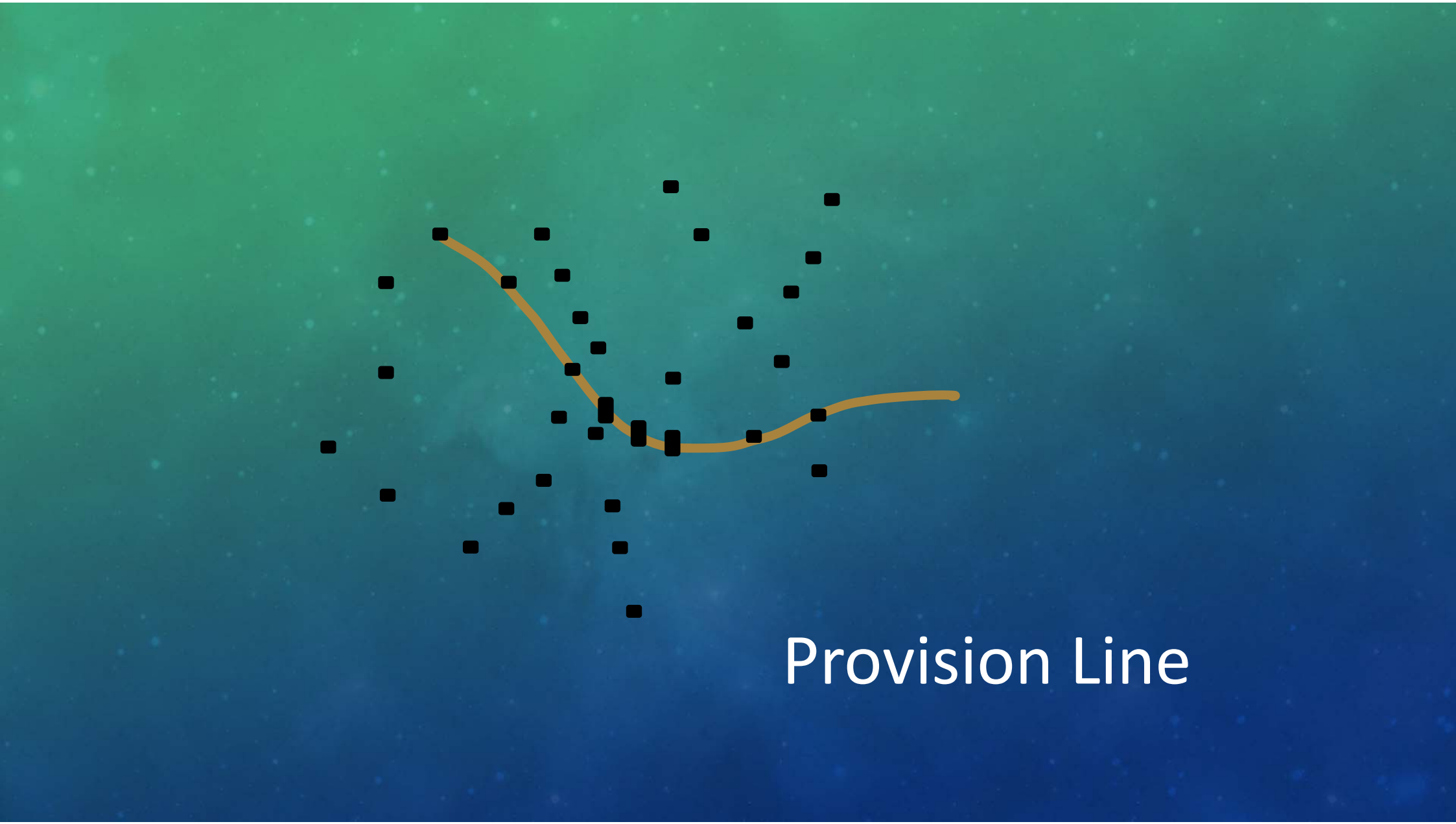
	2 hours	1 course (30 hours)	1 module (2-3 courses)	Intermediary program	Full study programme	Certificate
Any Bachelor student	*	-	-	-	-	-
Any Master student	+	*	-	-	-	-
LIS Bachelor Students	-	+	*	*	-	-
LIS Master Students	-	-	+	*	*	-
Data Creators	+	*	-	-	-	-
Data Scientists	+	*	-	-	-	*
Data Librarians	-	+	-	-	-	+
Data Managers	-	+	-	-	-	+

+ : compulsory
* : optional

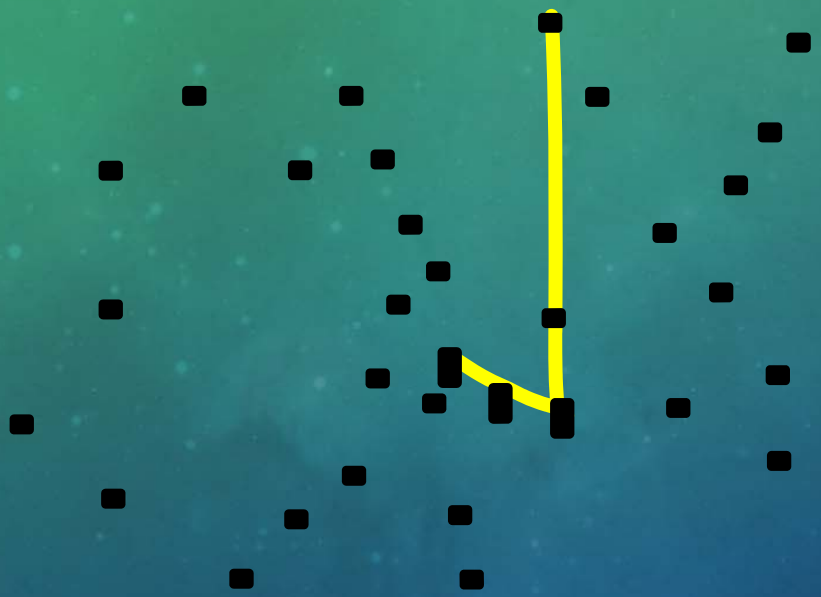
IV. LITERACY AS METRO MAP

LET’S SAY

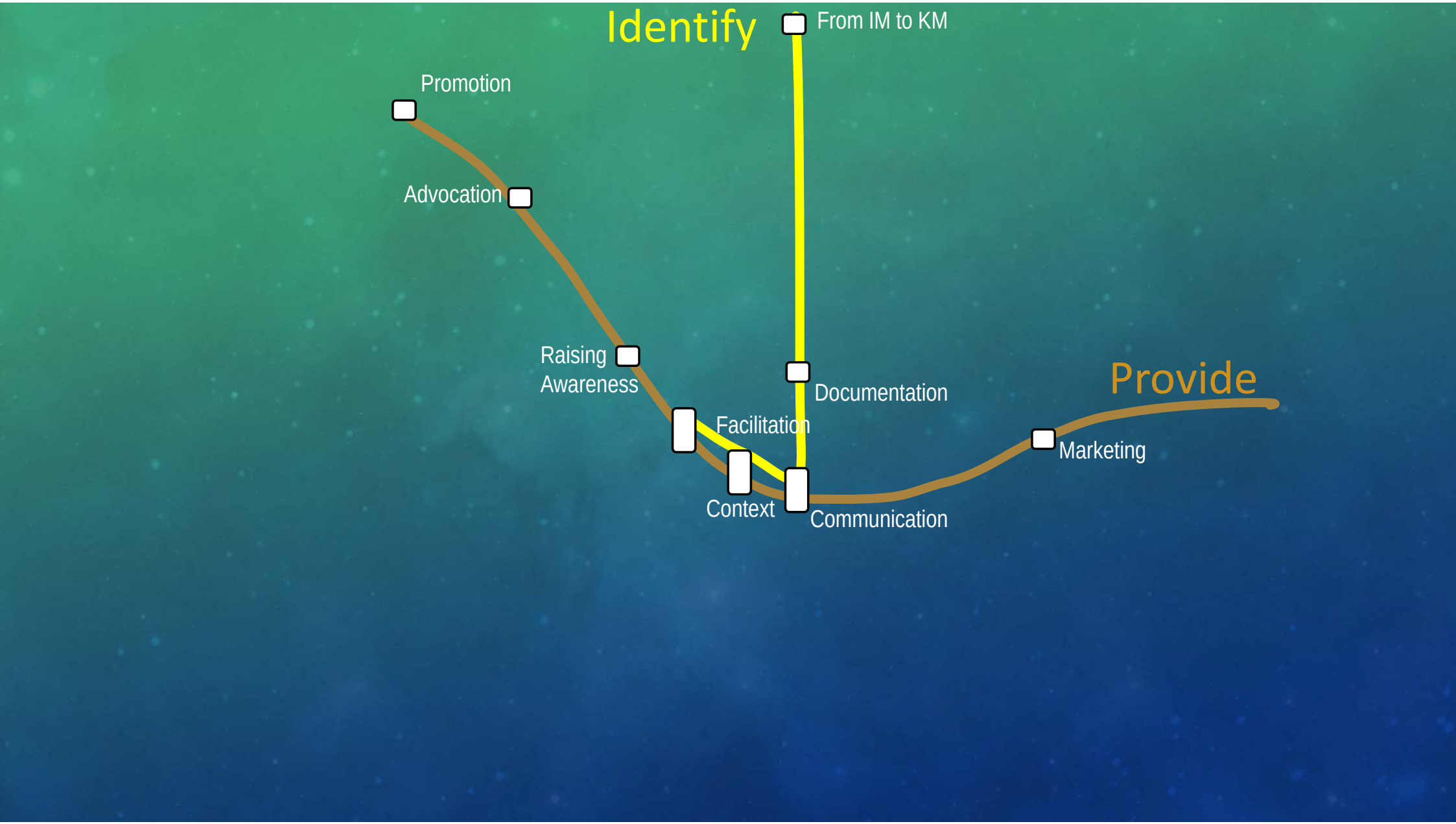
- that metro lines represent *core competences*,
- and *special skills*, i.e. the respective knowledge like stops!

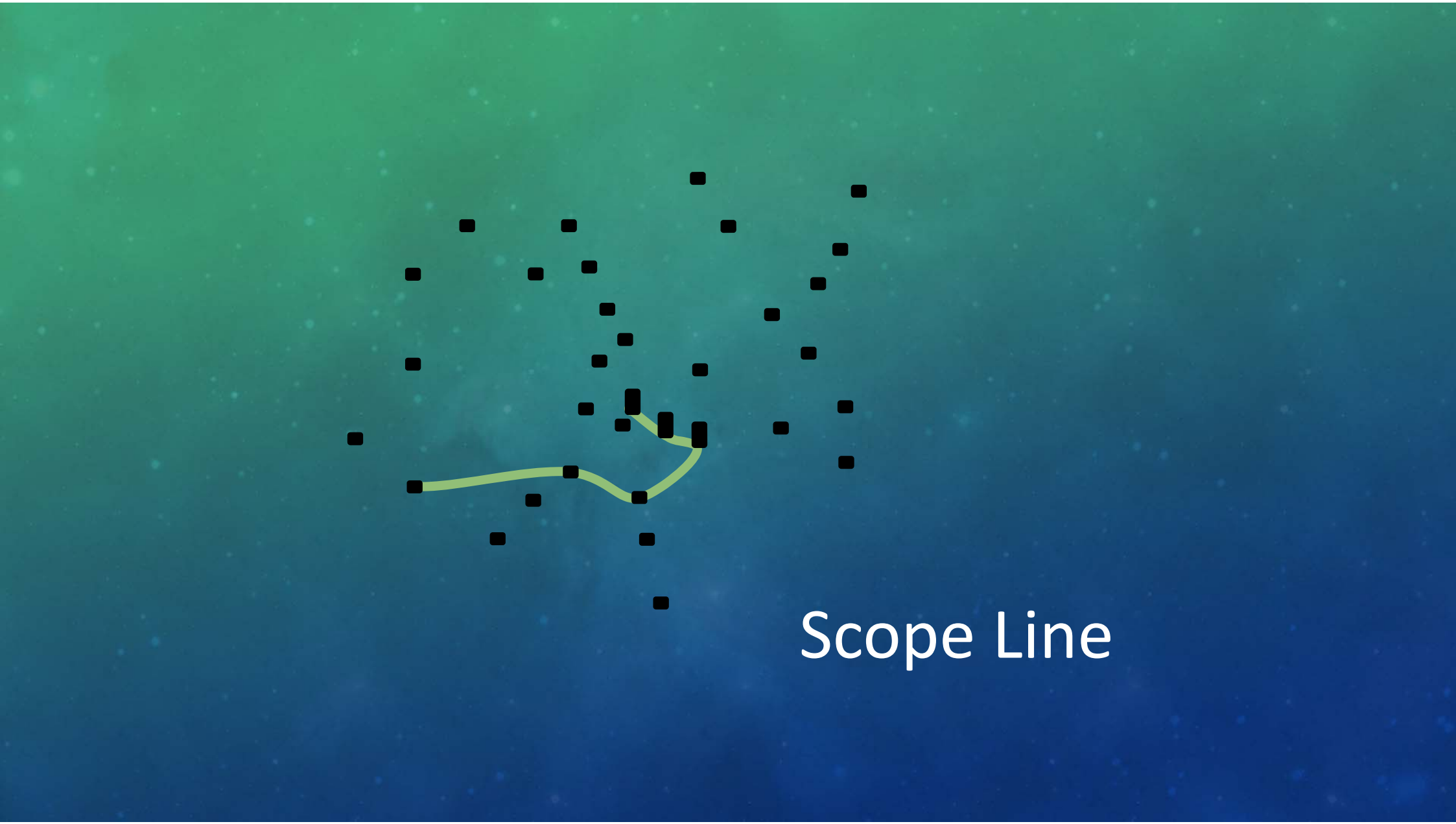

Provision Line

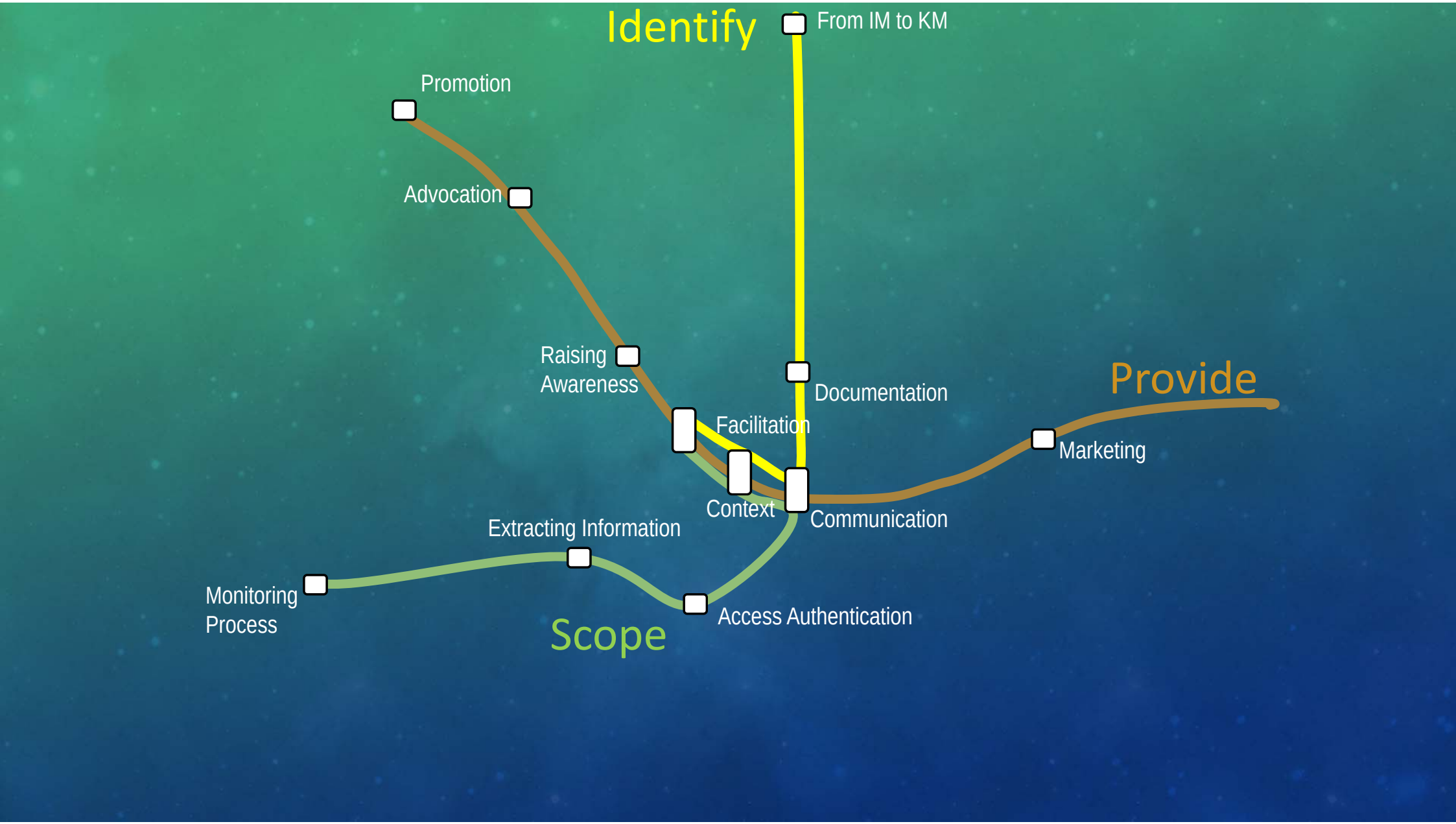

Promotion
Advocation
Raising
Awareness
Facilitation
Communication
Marketing
Provide

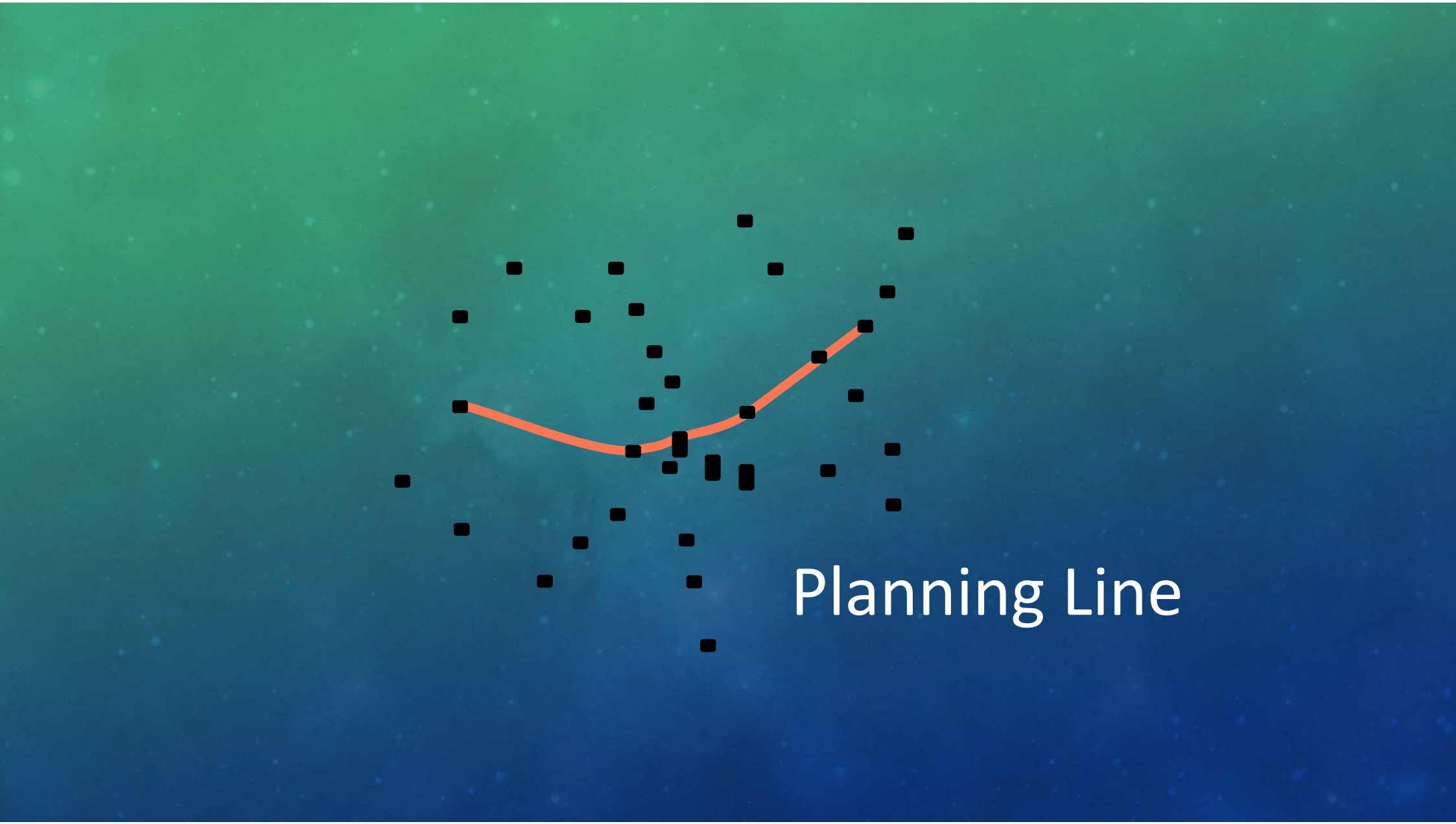


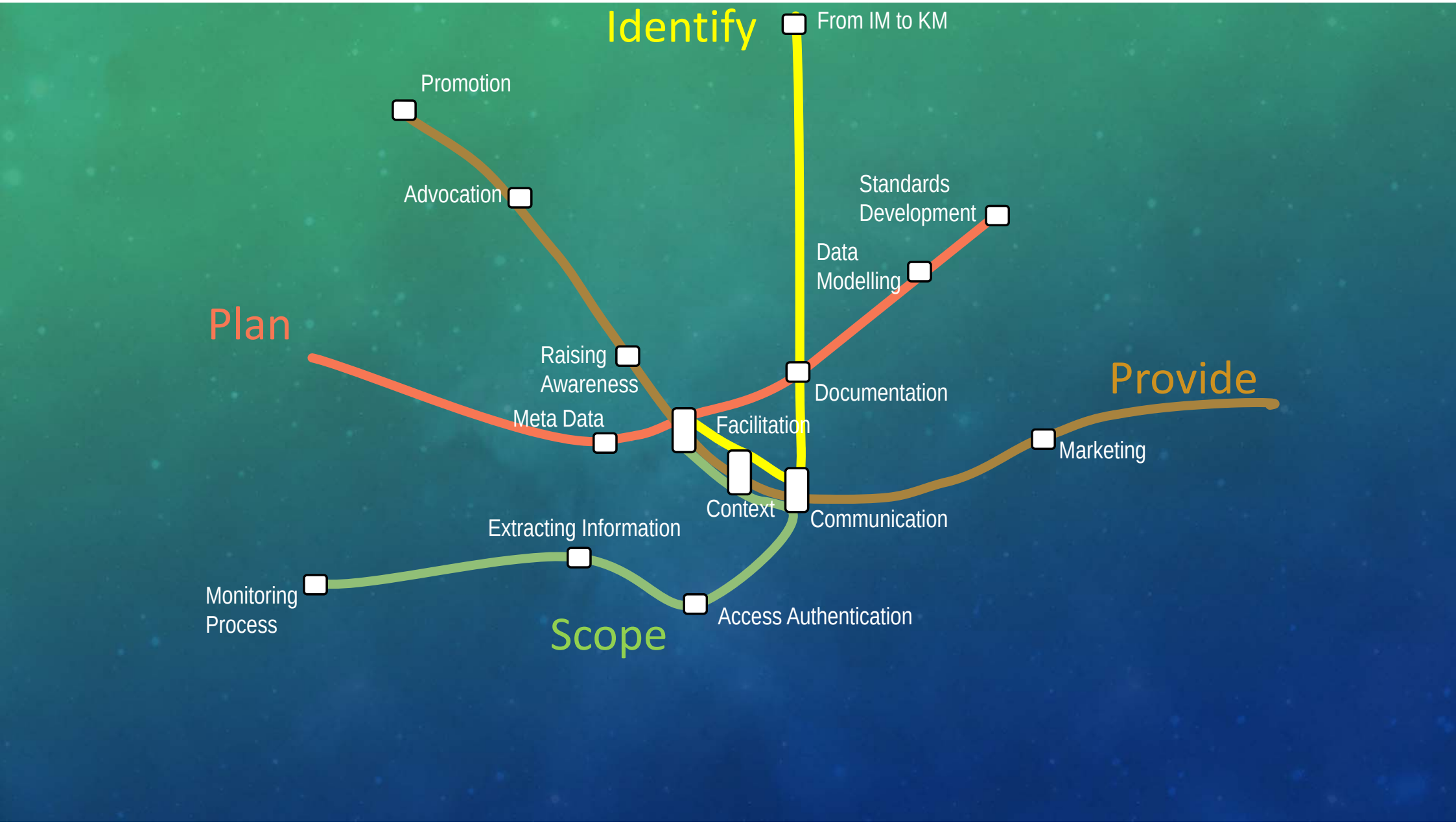
- Identification Line

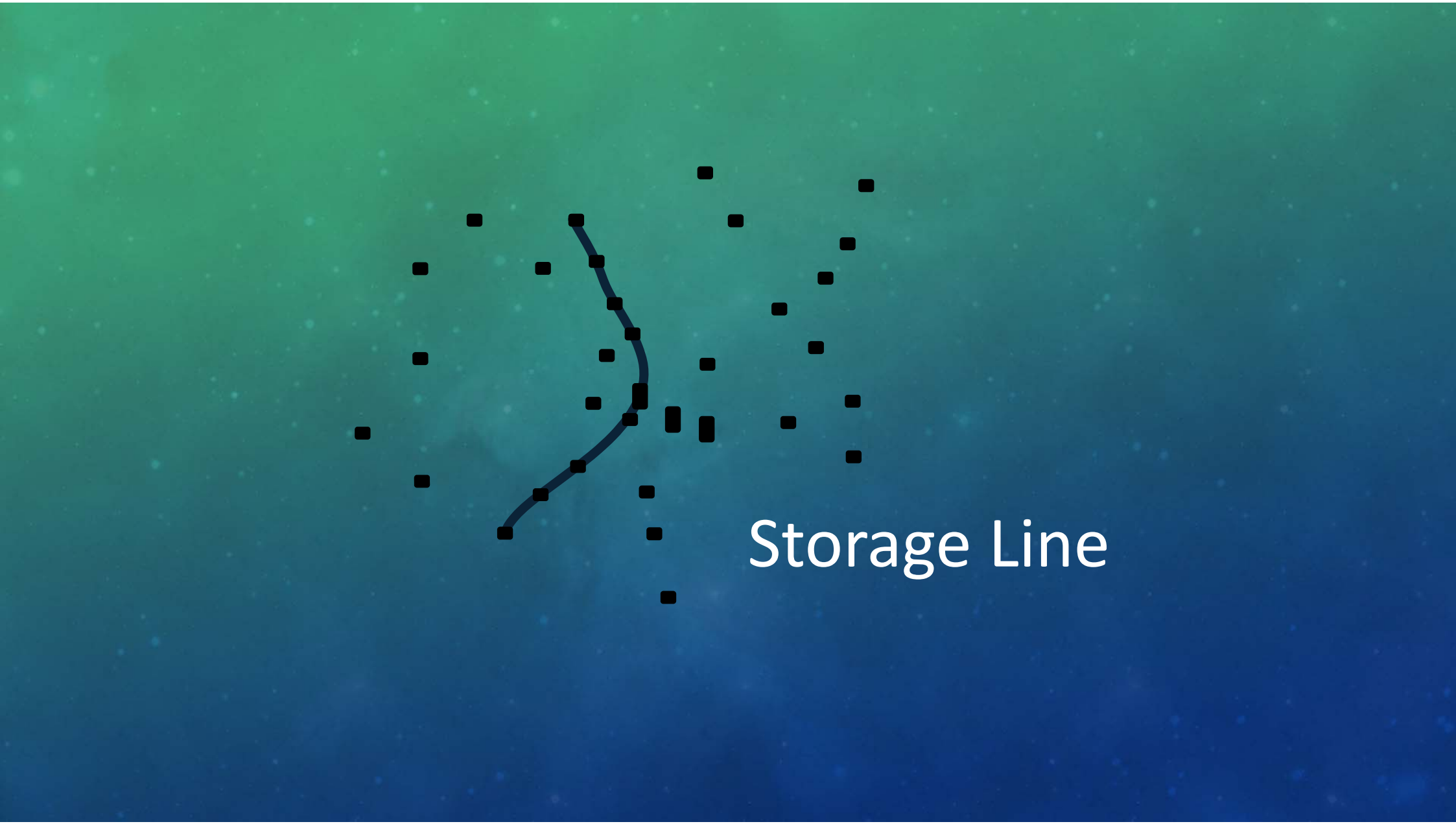

Identify
From IM to KM
Promotion
Advocation
Raising Awareness
Facilitation
Documentation
Provide
Marketing
Context
Communication

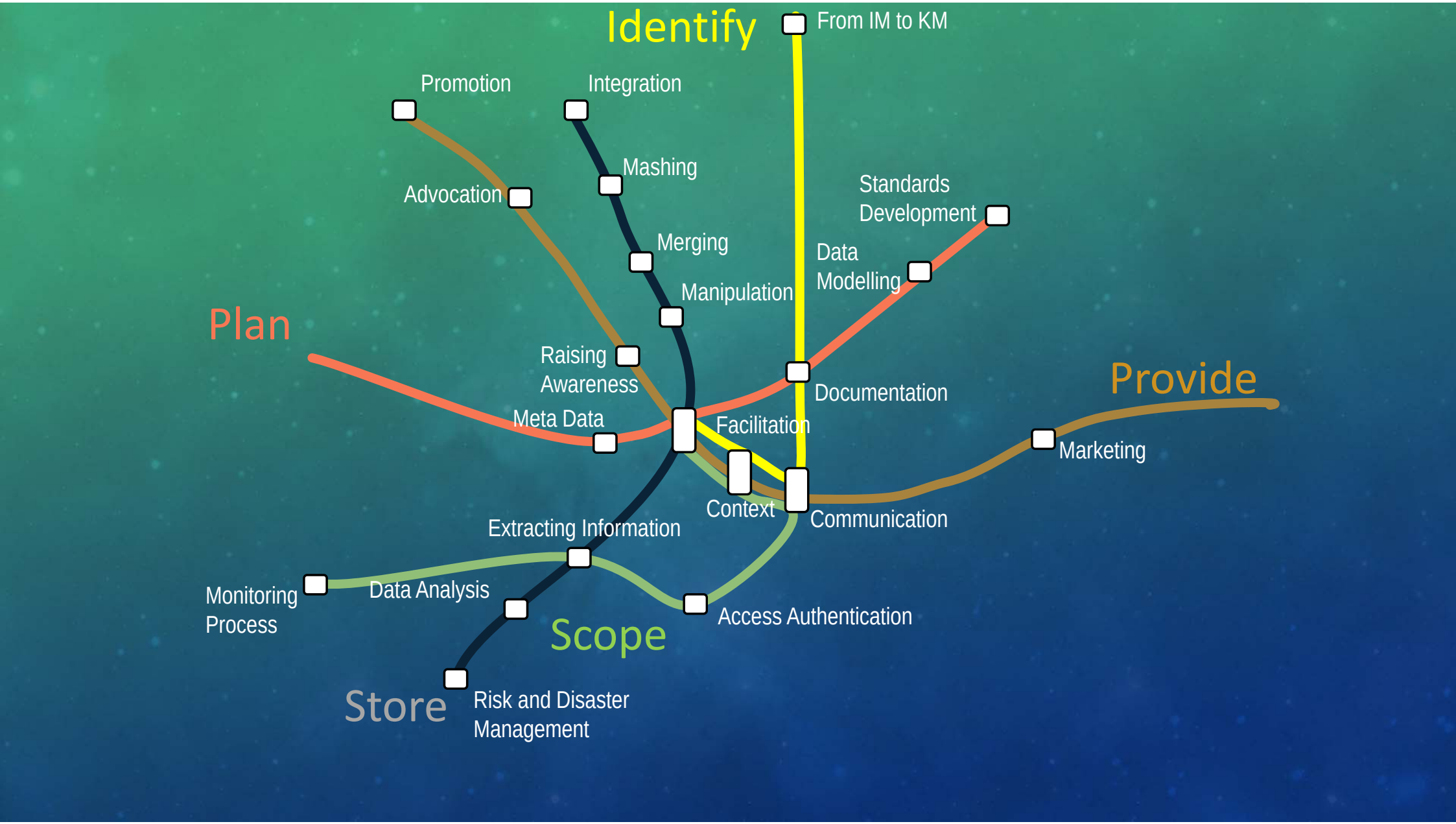

Scope Line

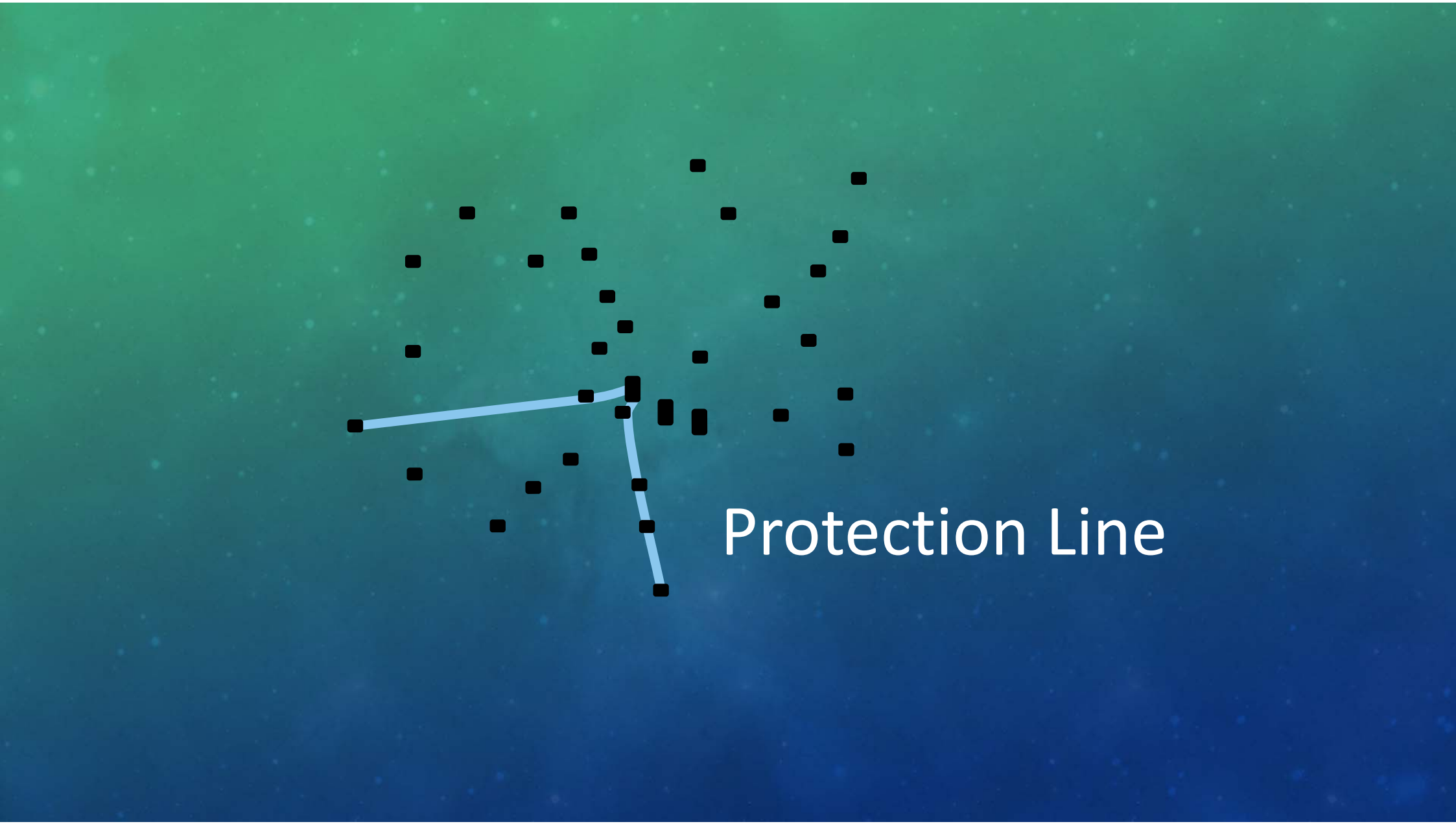

Identify
From IM to KM
Promotion
Advocation
Raising Awareness
Documentation
Facilitation
Provide
Marketing
Context
Communication
Extracting Information
Monitoring Process
Access Authentication
Scope


Planning Line


Identify
From IM to KM
Promotion
Advocation
Standards
Development
Data
Modelling
Plan
Raising
Awareness
Meta Data
Facilitation
Documentation
Provide
Marketing
Context
Communication
Extracting Information
Monitoring
Process
Access Authentication
Scope

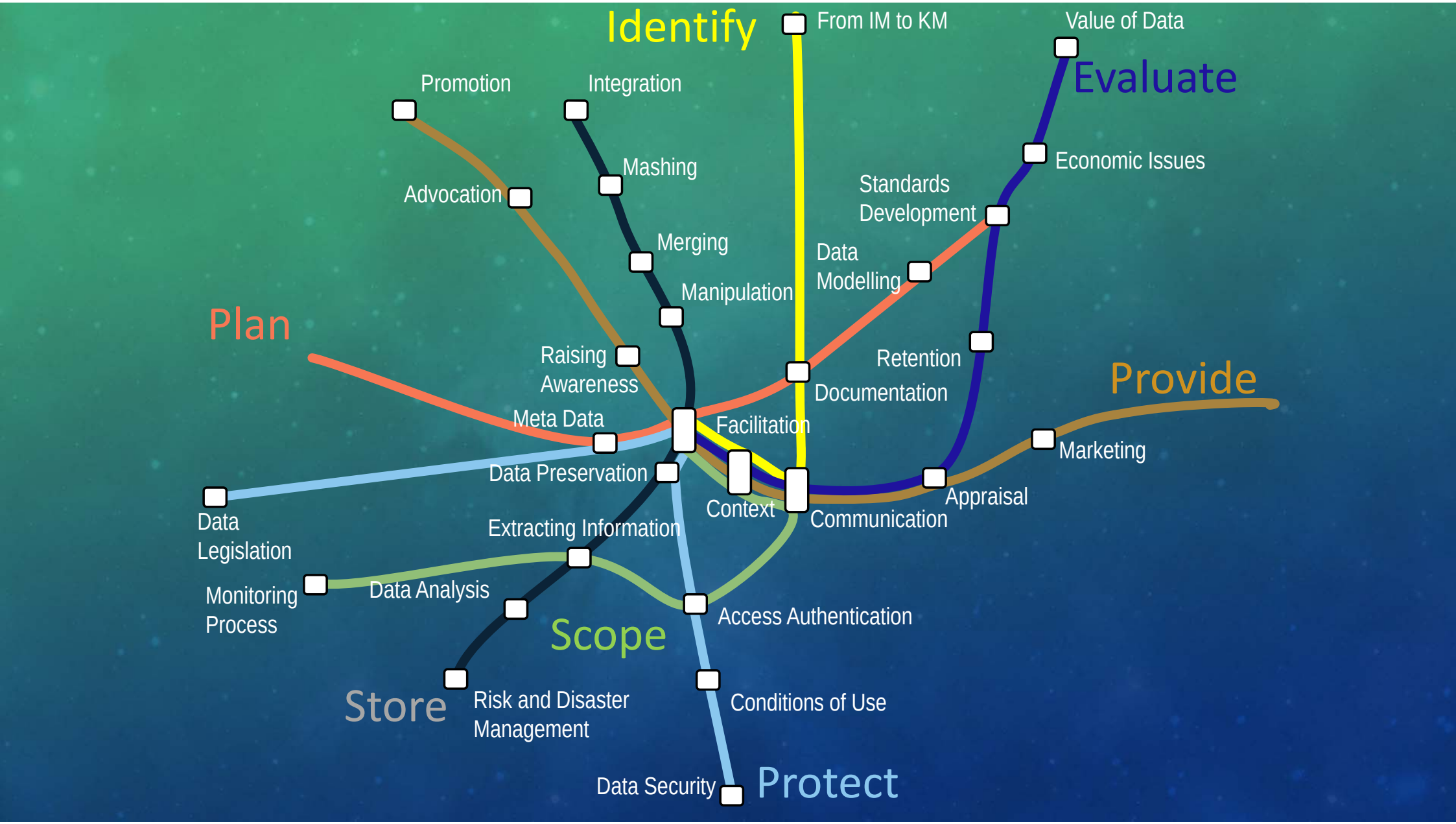

Storage Line


Identify
From IM to KM
Promotion
Integration
Mashing
Advocation
Standards
Development
Merging
Data
Modelling
Manipulation
Plan
Raising
Awareness
Provide
Documentation
Meta Data
Facilitation
Marketing
Context
Communication
Extracting Information
Monitoring
Process
Data Analysis
Access Authentication
Scope
Store
Risk and Disaster
Management

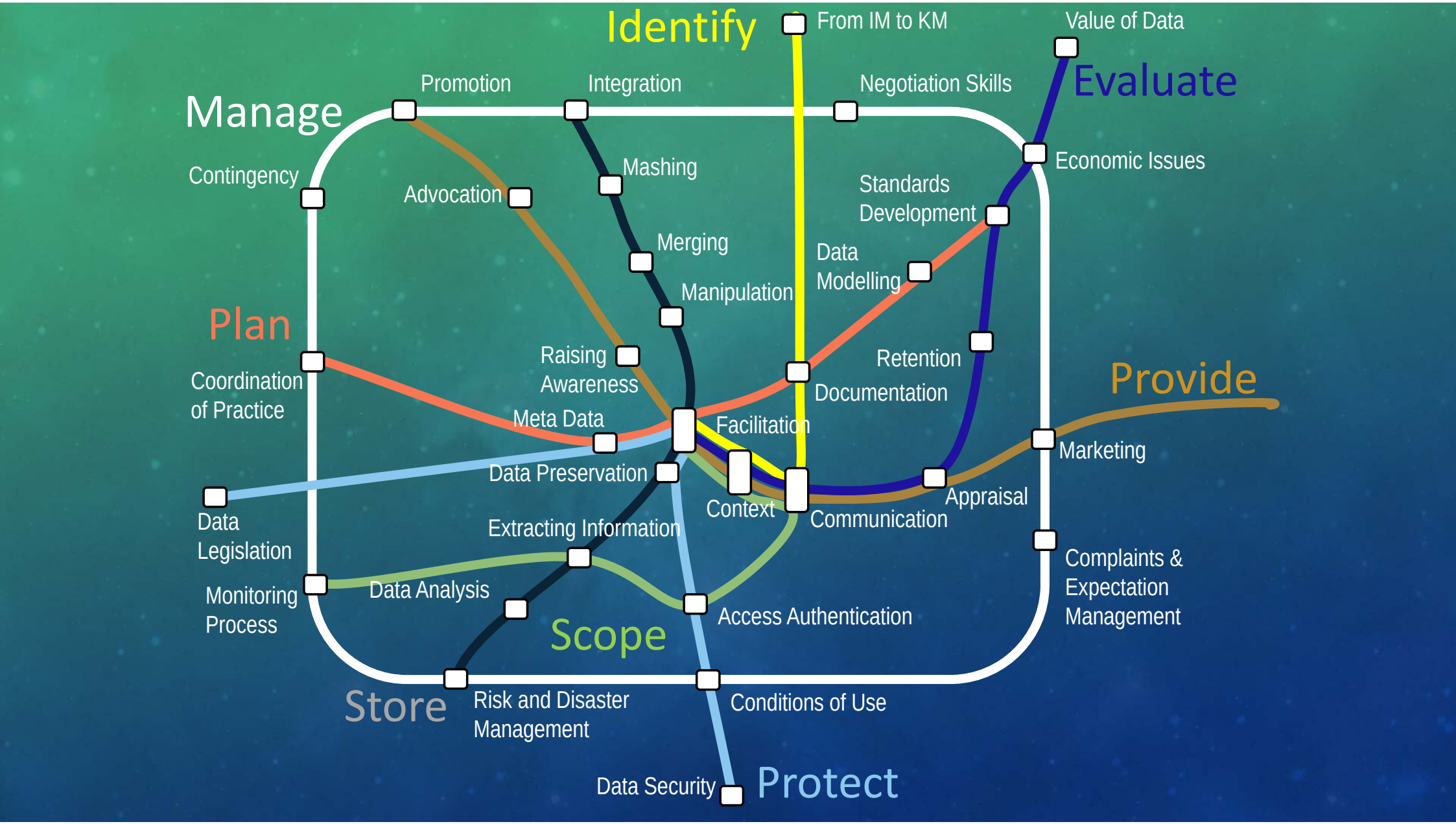

Protection Line


Identify
From IM to KM
Promotion
Integration
Mashing
Advocation
Standards
Development
Merging
Data
Modelling
Manipulation
Plan
Raising
Awareness
Provide
Documentation
Meta Data
Facilitation
Marketing
Data Preservation
Context
Communication
Data
Legislation
Extracting Information
Monitoring
Process
Data Analysis
Access Authentication
Scope
Store
Risk and Disaster
Management
Conditions of Use
Data Security
Protect

Evaluation Line


Identify
From IM to KM
Value of Data
Evaluate
Promotion
Integration
Mashing
Economic Issues
Advocation
Standards
Development
Merging
Data
Modelling
Manipulation
Plan
Raising
Awareness
Retention
Documentation
Provide
Meta Data
Facilitation
Marketing
Data Preservation
Appraisal
Context
Communication
Data
Legislation
Extracting Information
Monitoring
Process
Data Analysis
Access Authentication
Scope
Store
Risk and Disaster
Management
Conditions of Use
Data Security
Protect

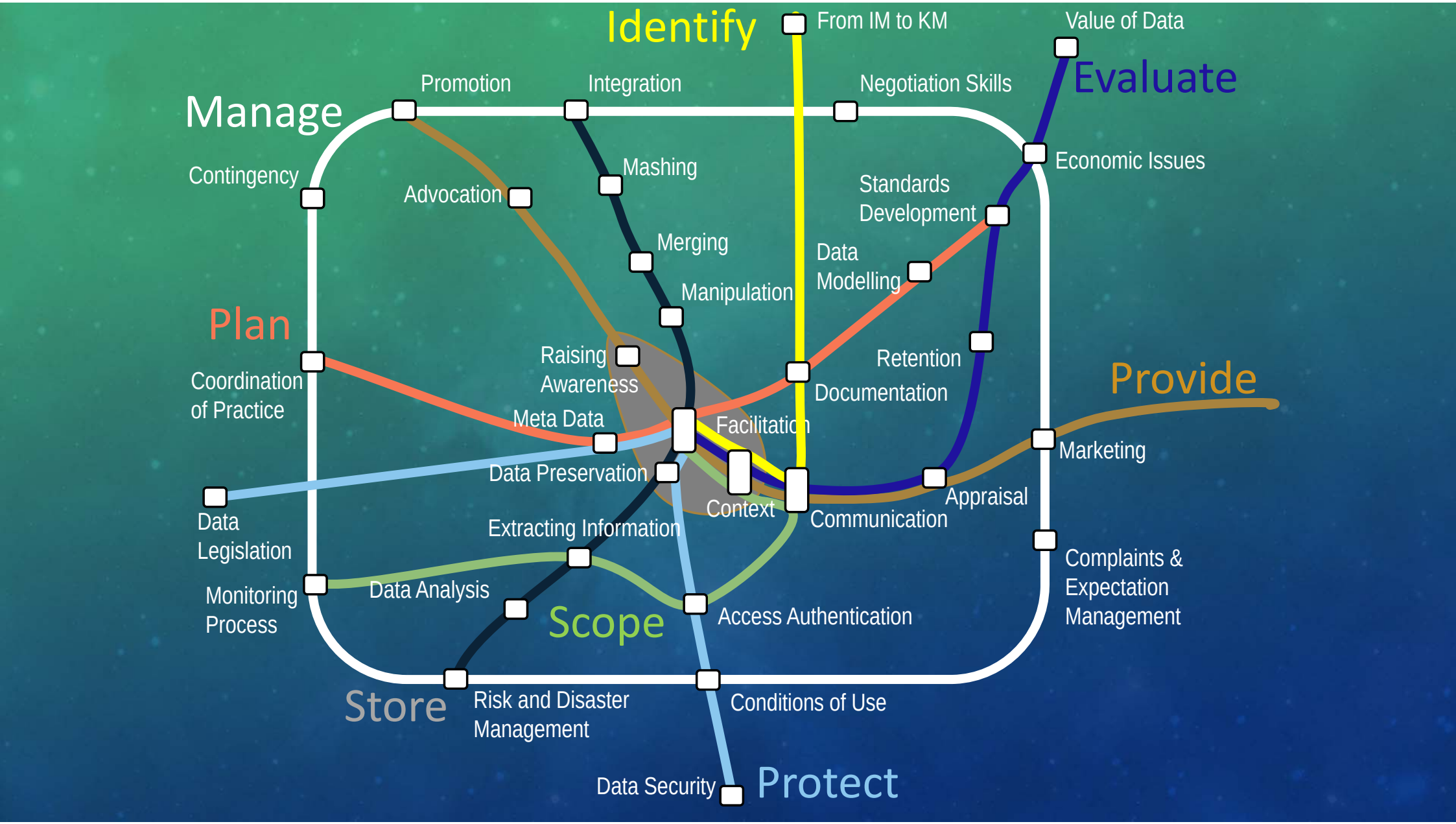
Management Line


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Documentation
Provide
Coordination of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Context
Communication
Appraisal
Data Legislation
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Access Authentication
Scope
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect

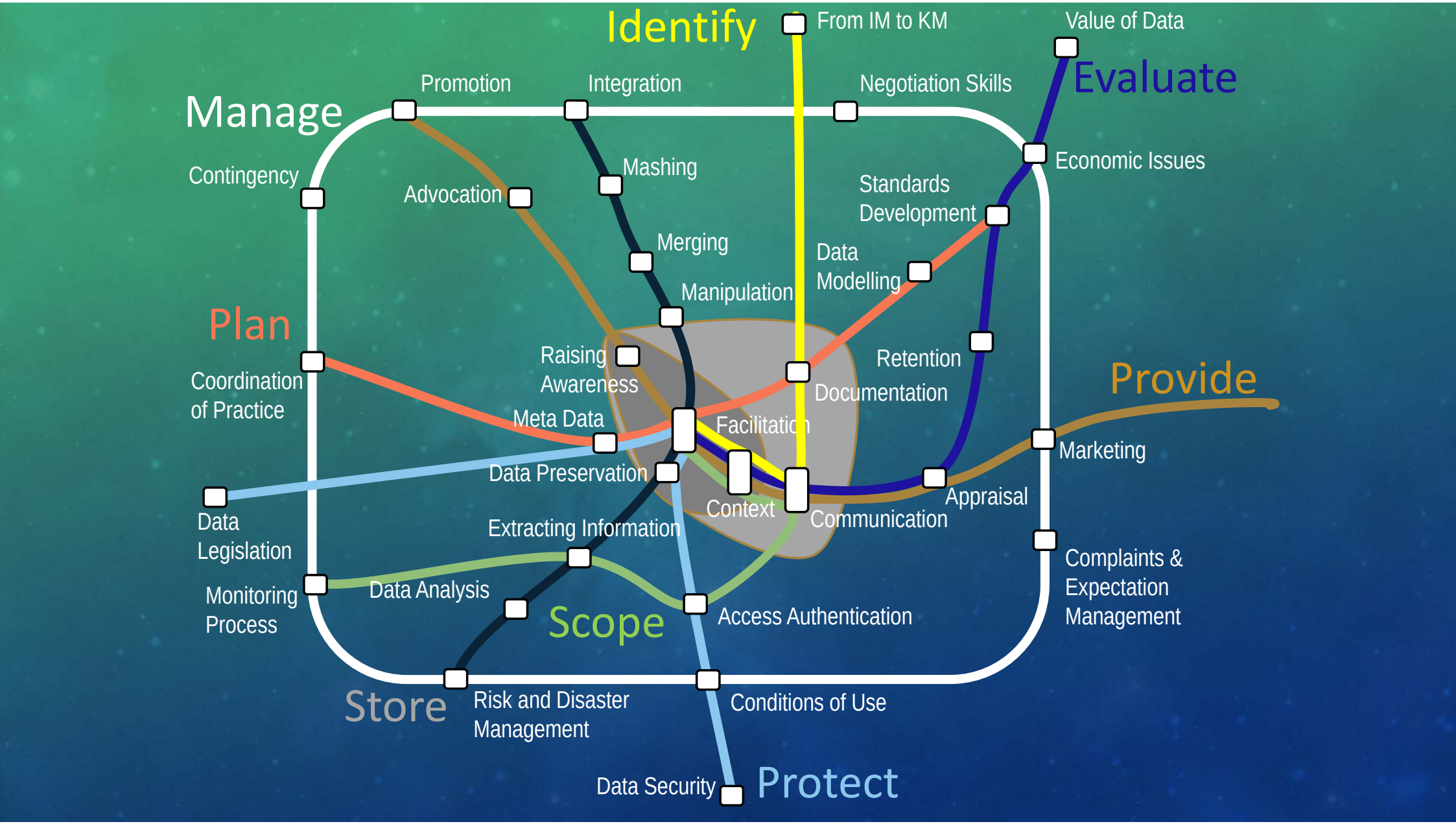
AND THAN WE COULD SAY

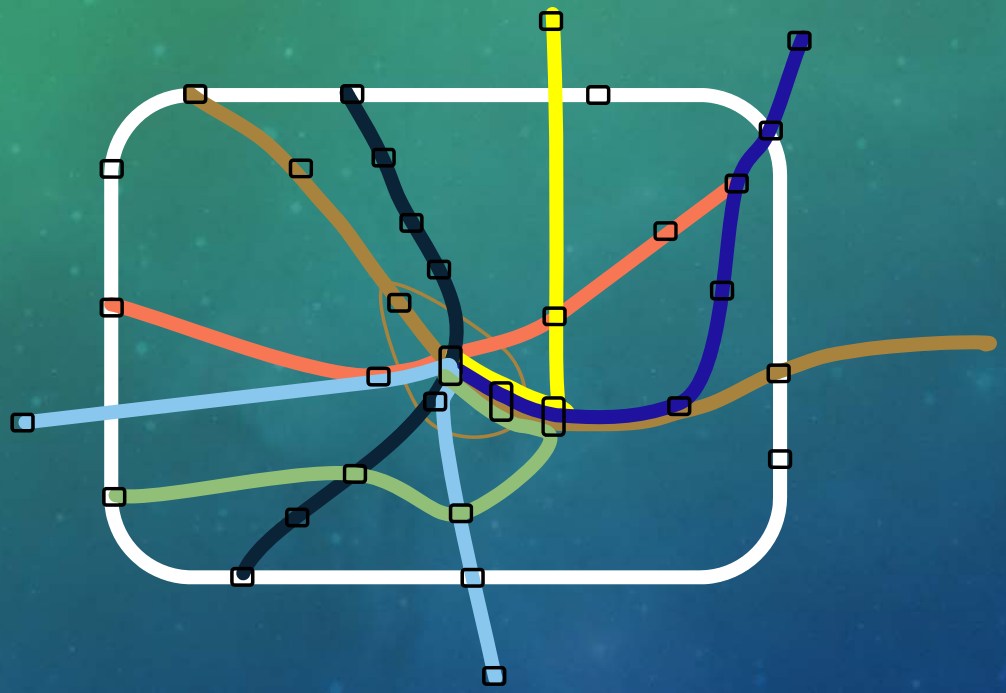
- that metro lines represent *core competences*,
- and *special skills*, i.e. the respective knowledge like stops,
- *Teaching units* are like zones you could move in,
- and *study programmes* are represented by the duration of validity.

Two hours validity

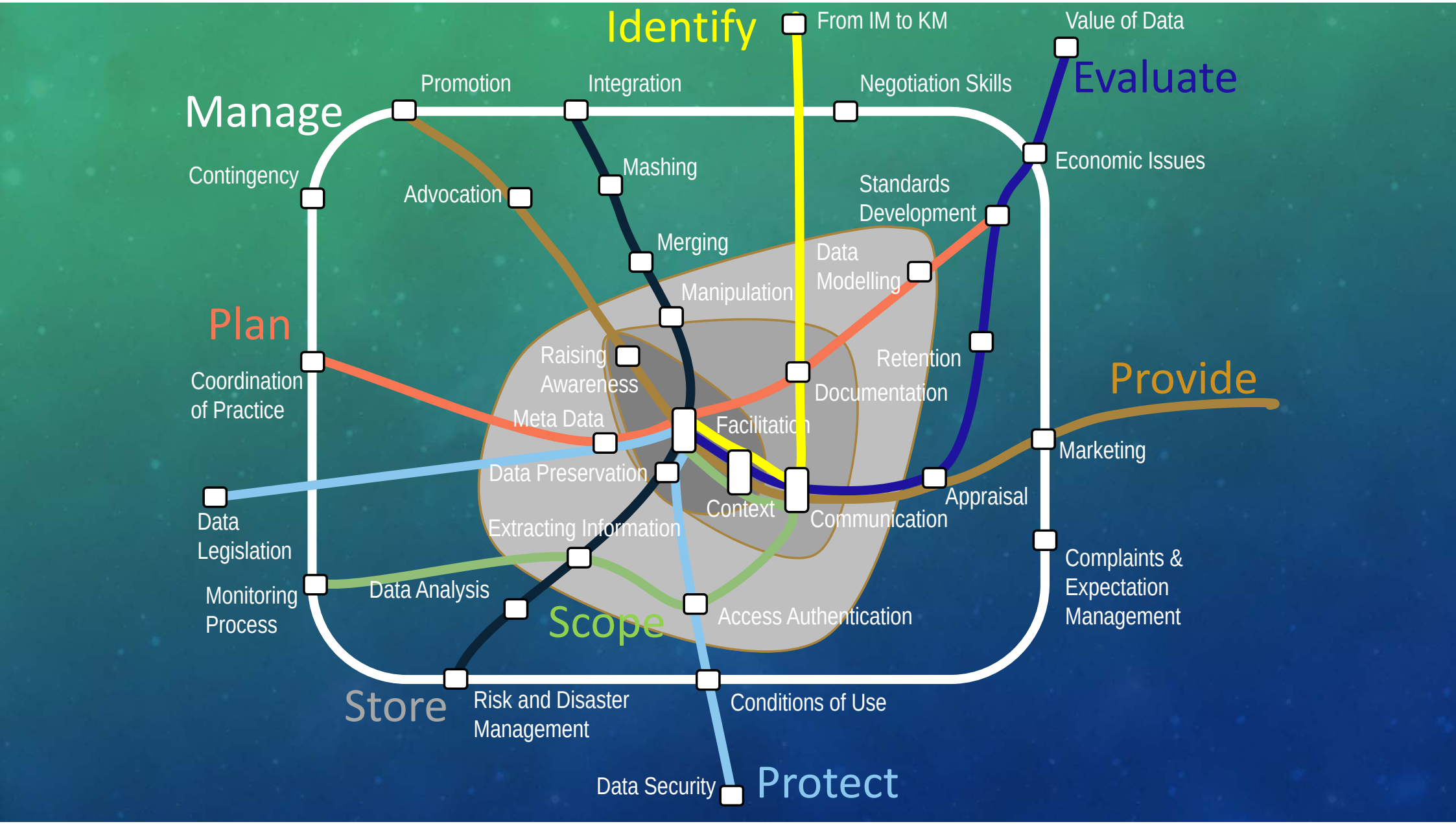

Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Documentation
Provide
Coordination of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Context
Communication
Appraisal
Data Legislation
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect

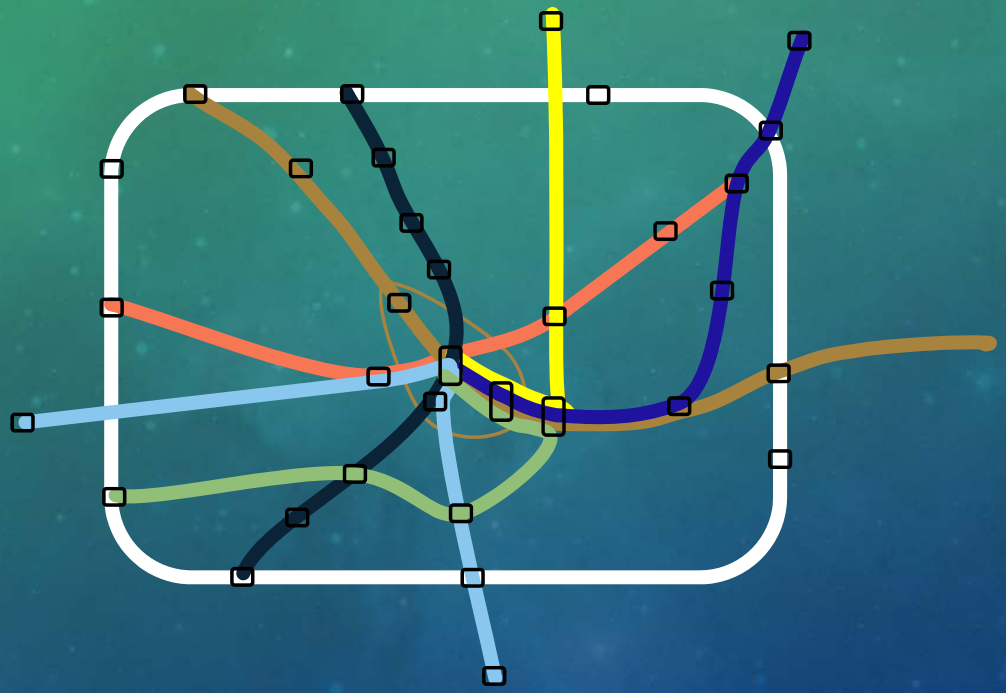
Whole Course / Workshop Ticket


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Documentation
Provide
Coordination of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Appraisal
Context
Communication
Data Legislation
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect

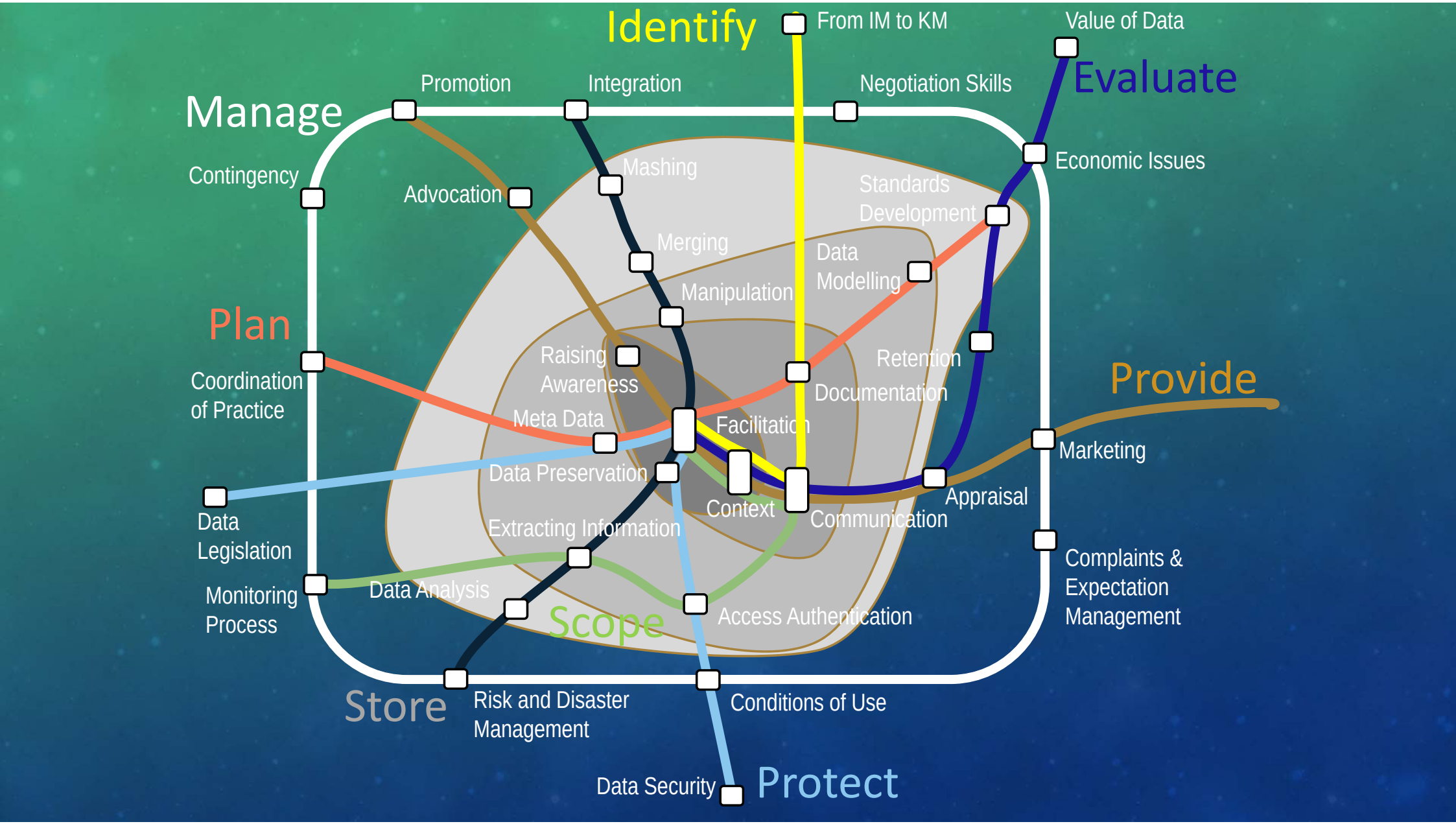


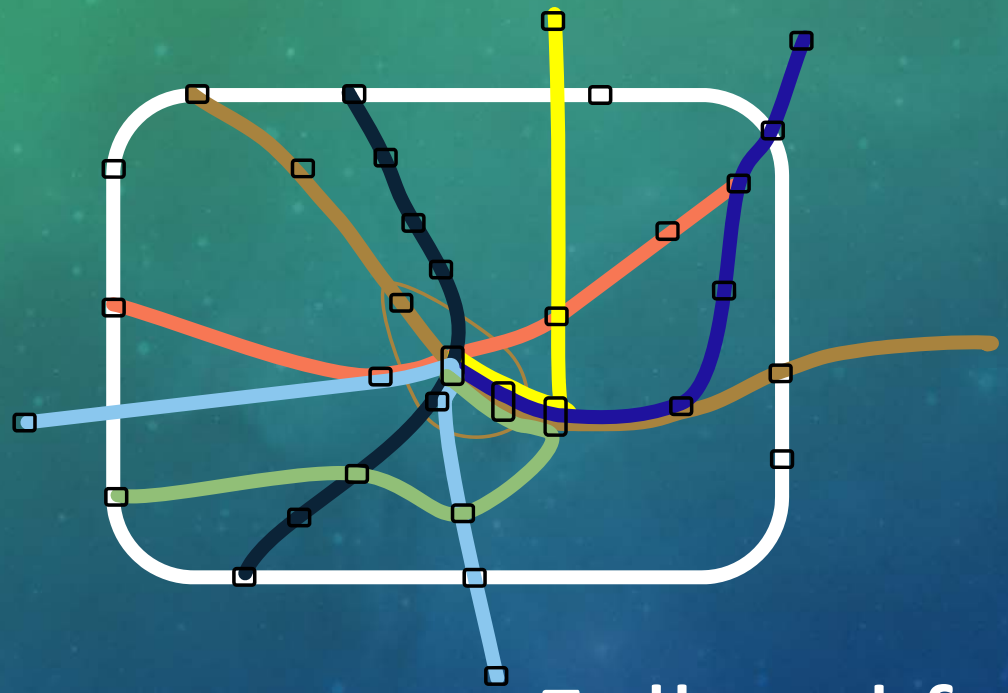
One Module Ticket


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Documentation
Provide
Coordination of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Appraisal
Context
Communication
Data Legislation
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect

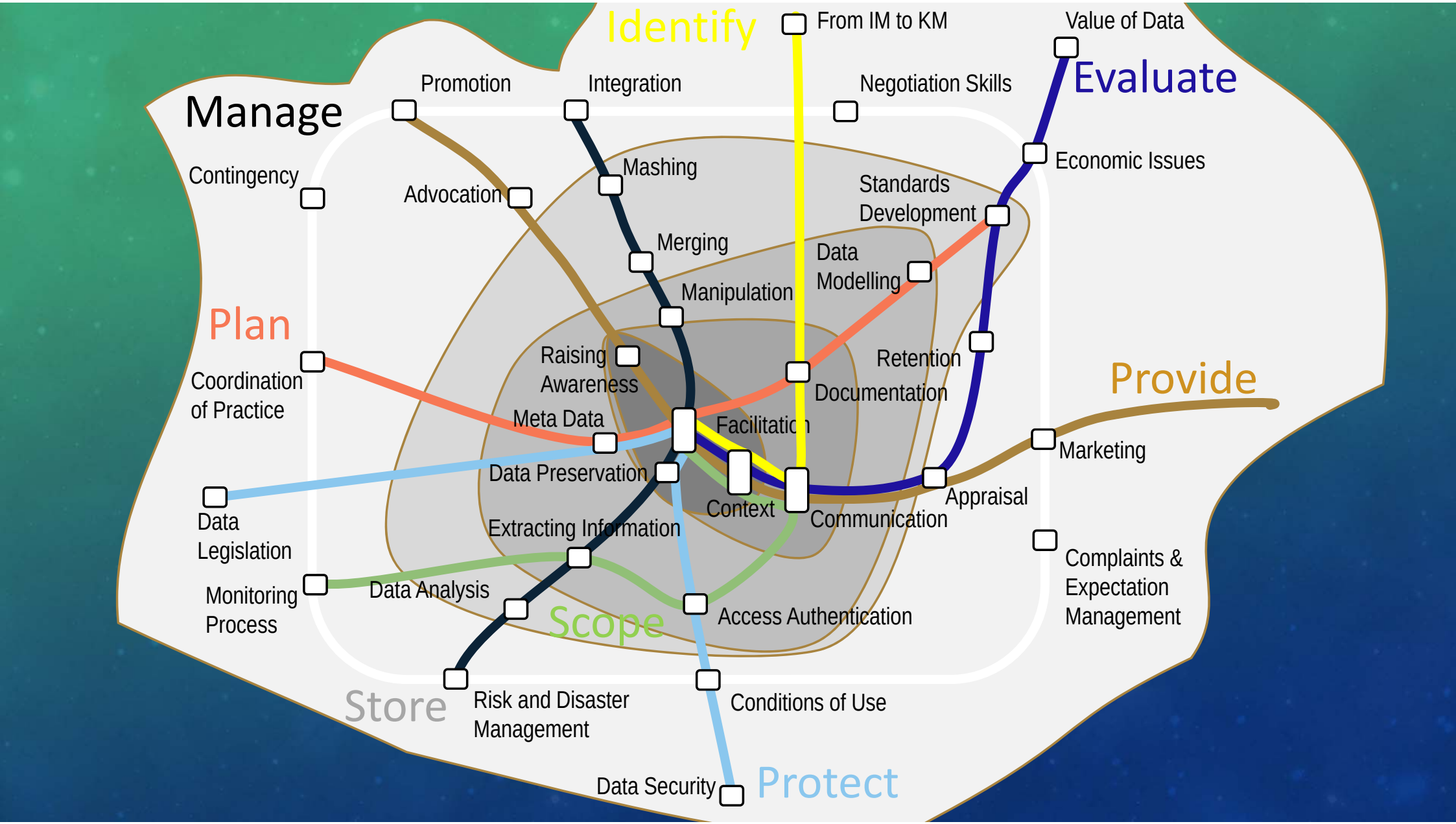


Certificate Ticket


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Documentation
Provide
Coordination of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Appraisal
Context
Communication
Data Legislation
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect



Full and free access
(Two years validity)


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards
Development
Merging
Data
Modelling
Manipulation
Plan
Raising
Awareness
Retention
Documentation
Provide
Coordination
of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Appraisal
Data
Legislation
Context
Communication
Extracting Information
Complaints &
Expectation
Management
Monitoring
Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster
Management
Conditions of Use
Data Security
Protect

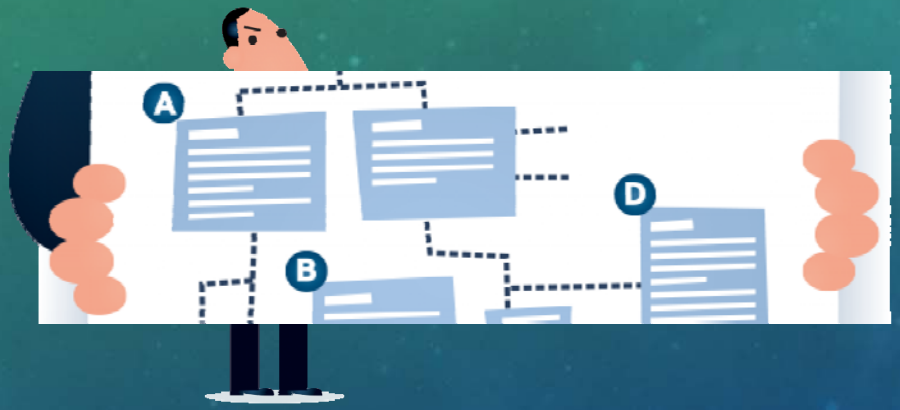
QUESTIONS?

RENE.SCHNEIDER@HESGE.CH

SCHNEIDER, René, 2013. Research Data Literacy. In: *Worldwide commonalities and challenges in information literacy research and practice: European Conference, ECIL 2013, Istanbul, Turkey, October 22-25, 2013: revised selected papers*. Berlin: Springer, 2013, S. 134-140. Communications in Computer and Information Science, Vol. 397.

RESEARCH DATA METRO MAP

IN FIVE STEPS



All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

RENÉ SCHNEIDER

HES-SO, HAUTE ECOLE DE GESTION, GENEVA

QUESTION

How do I create a metro map,

i.e. an overview of all possible course content?

FIVE STEPS

1. Stops – Collect all skills
2. Metro lines – Allocate skills to core compentences
3. Connecting stations – Determine thematic proximity
4. Zones– Prioritise Content
5. Spatial Arrangement

1. STOPS

Try to determine the skills to acquire and/or the content to learn in an accurate and concise manner and write them on cards.

These will be your stops.

You may define them yourselves or choose them out of existing courses or training programmes.

STOPS

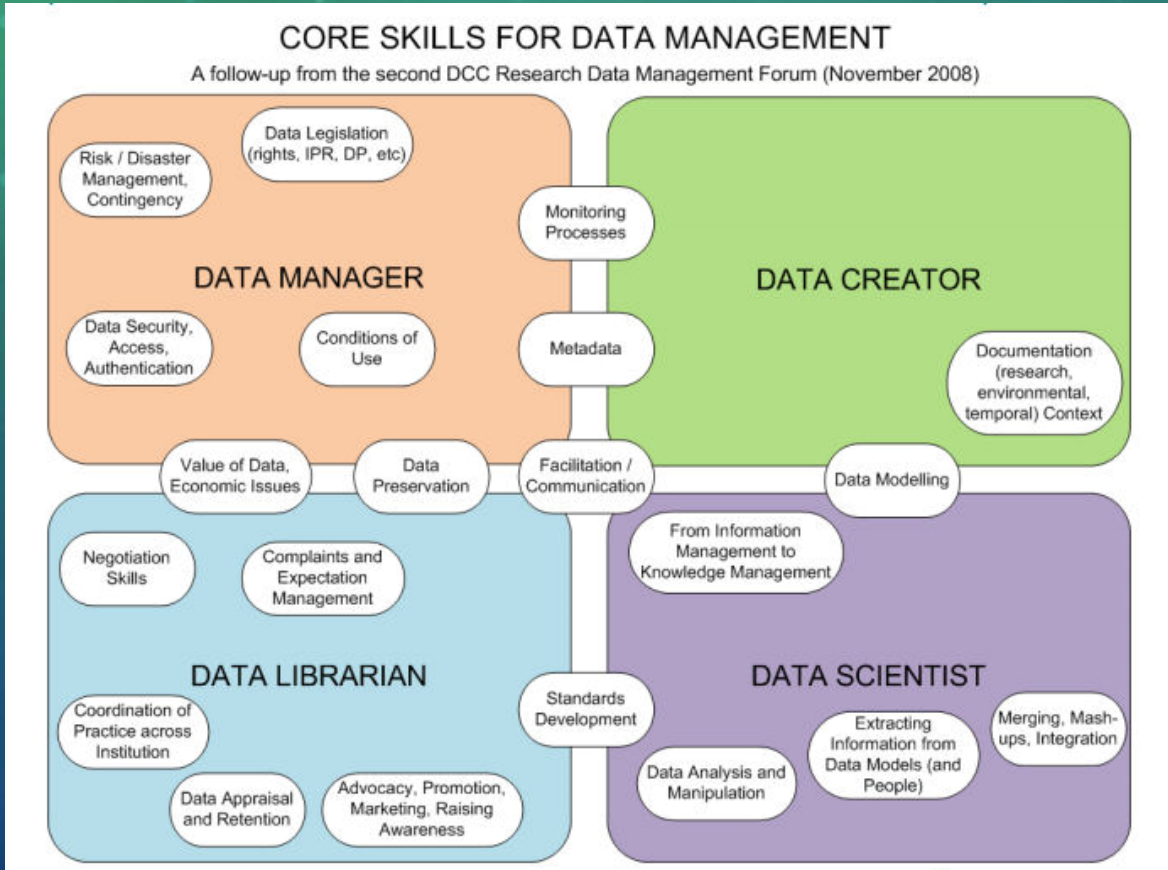


Figure 1. Core skills for data management, Chris Rusbridge and Martin Donnelly.[11]

2. METRO LINES

Then try to fix the metro lines (not more than 6 (±2), probably based on a data literacy competence) and attribute each card to one line.

It might be useful to consider a general and comprehensive competence (line), e.g. management that might become a kind of circle line.

This attribution may happen in a twofold manner. (As follows…)

CARD SORTING

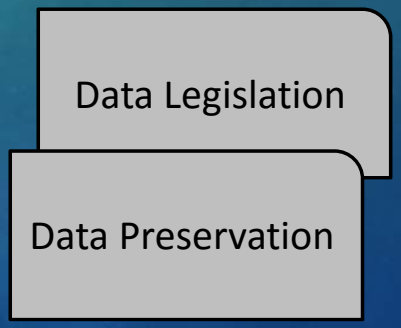
1. Open Card Sorting:

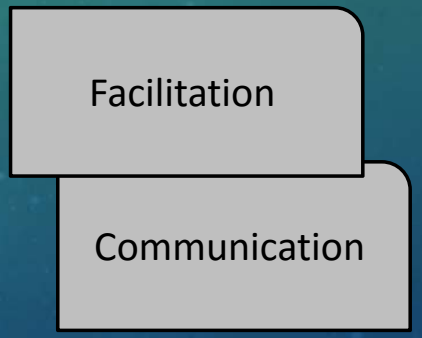
- Assemble the cards in groups if their content makes them belong together.
- Then define the labels of each category.

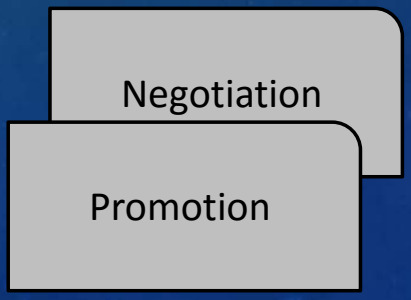
2. Closed Card Sorting:

- Start with a number of a priori determined categories (competences) and allocate each skill to one category.

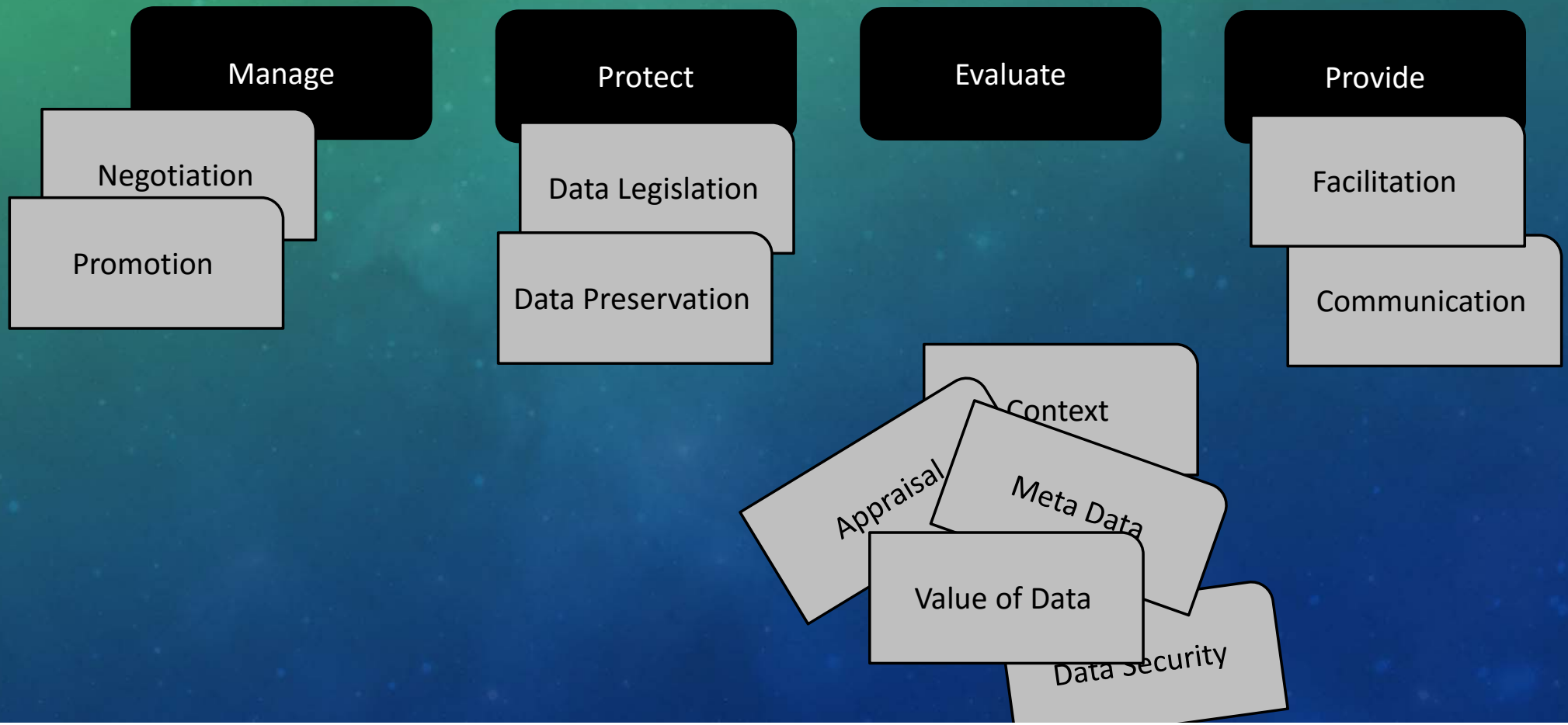
OPEN CARD SORTING







CLOSED CARD SORTING



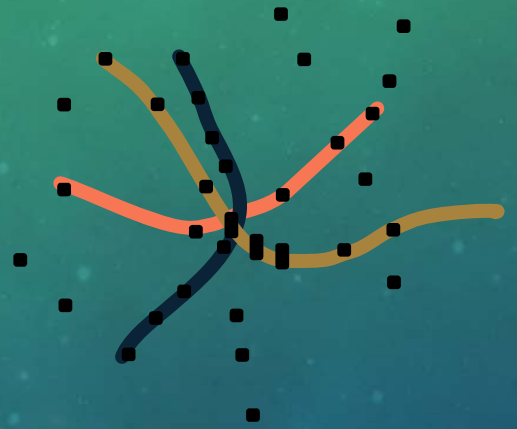
CLOSED CARD SORTING

In our case we will make use of the core competences developed for research data literacy:

Provide, Identify, Scope, Plan, Store, Protect, Evaluate, Manage

It’s up to you to formulate your own competences or shorten or modify the list with respect to the needs of your target groups.

3. CONNECTION STATIONS



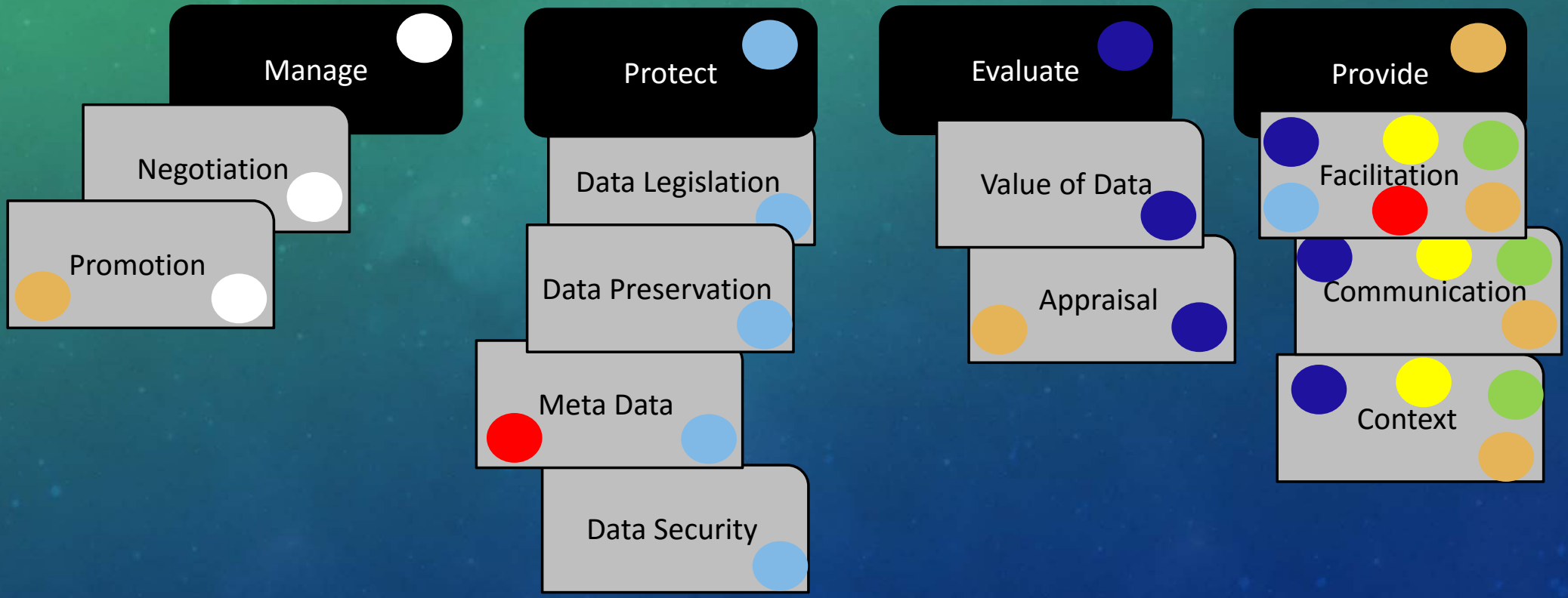
Some skills may belong to more categories.

Mark each line with a color.

Assign – in the following step - as many colors (lines) to a card (skill) as possible.

As soon as a card has more than one color, it will become a connecting station in your map.

COLOURED MARKING



4. DEFINITION OF ZONES – PRIORITISING

Then, mark each coloured card with a priority that you give to the content.

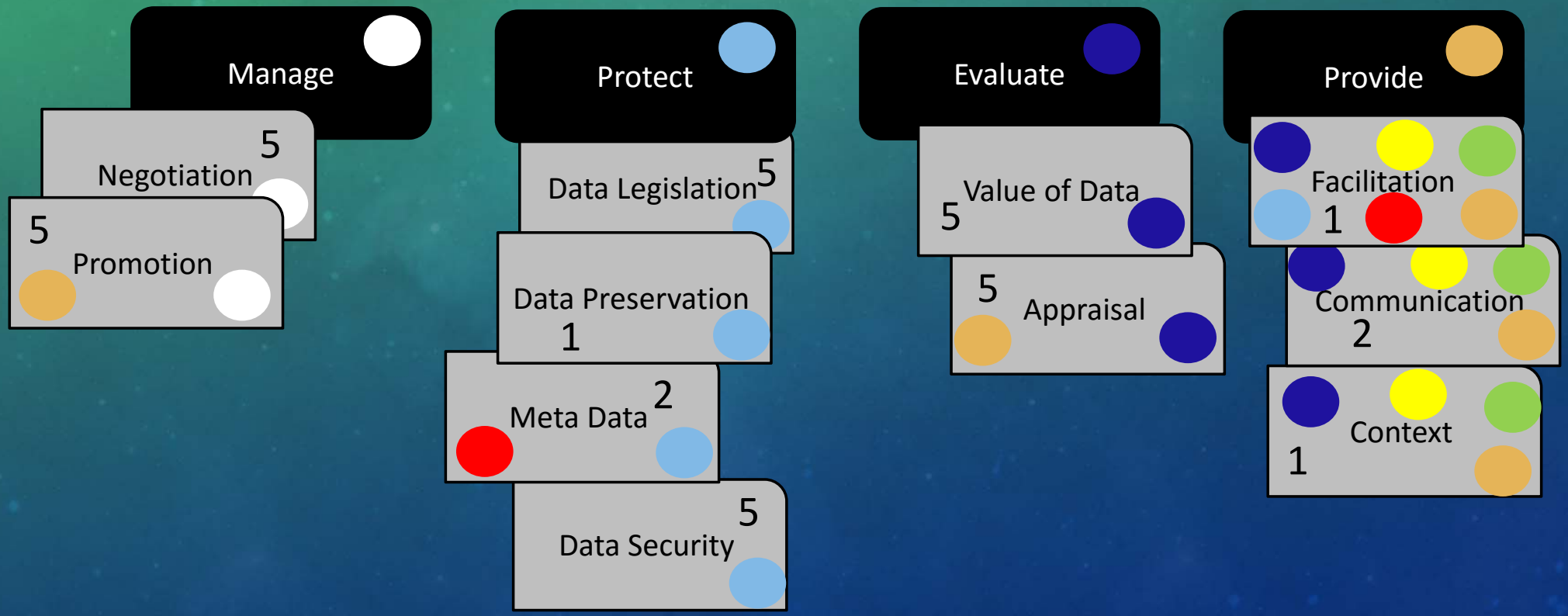
The number of coloured labels might be an indicator for its importance, i.e. a card with lots of colours may have a high importance … and thus be placed in the centre of your map.

DEFINITION OF ZONES – PRIORITISING

Assign highest priority (i.e. a low number starting from 1) to knowledge that everybody should have.

The higher the number, the lower its importance for everyone and the higher the probability that it is only important for experts or managers.

PRIORITISING



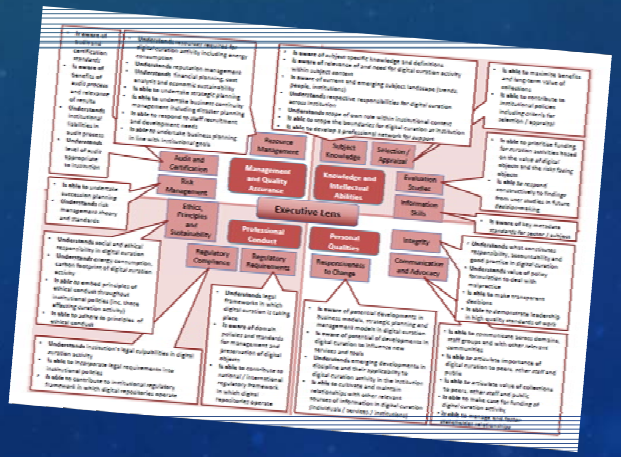
DEFINITION OF ZONES – SIMPLIFIED

According to the results of the digcurv projet, http://www.digcurv.gla.ac.uk/, it is possible to simply have three levels /zones.

DigCurv distinguishes three levels: Practitioner, Manager, Executive.

Each lense itself divides the competences:

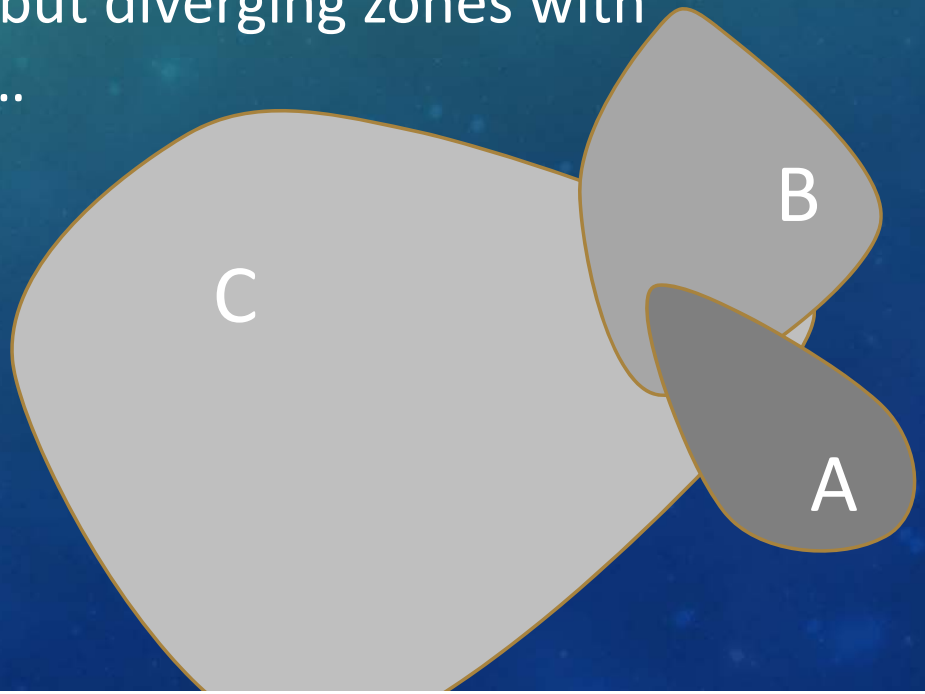
- is aware of – Awareness - 1
- understands – Understanding - 2
- is able to – Action – 3



DEFINITION OF ZONES – SIMPLIFIED

You may therefore define three overlapping but diverging zones with an intersecting zone for general knowledge …

A: Executive
B: Manager
C: Practitioner



DEFINITION OF ZONES – SIMPLIFIED

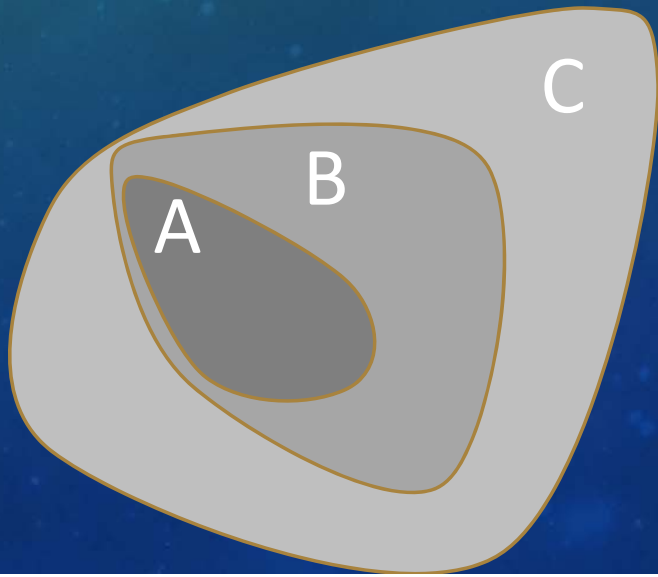
Or three concentric zones, according to the time you have at disosal for your course. The larger or peripheric the zone, the deeper the knowlege to be mediated.

A: Awareness

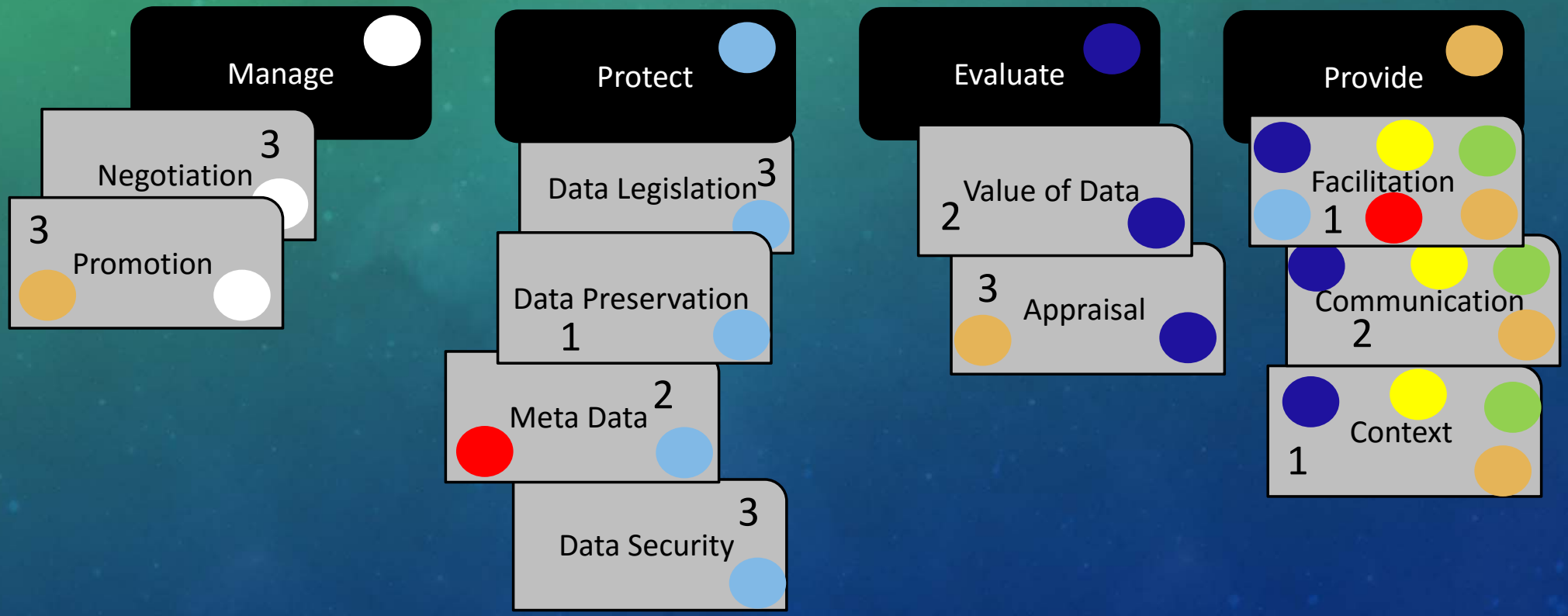
B: Understanding

C: Enabling

(This is the approach we suggest in this workshop for the sake of simplicity)



PRIORITISATION

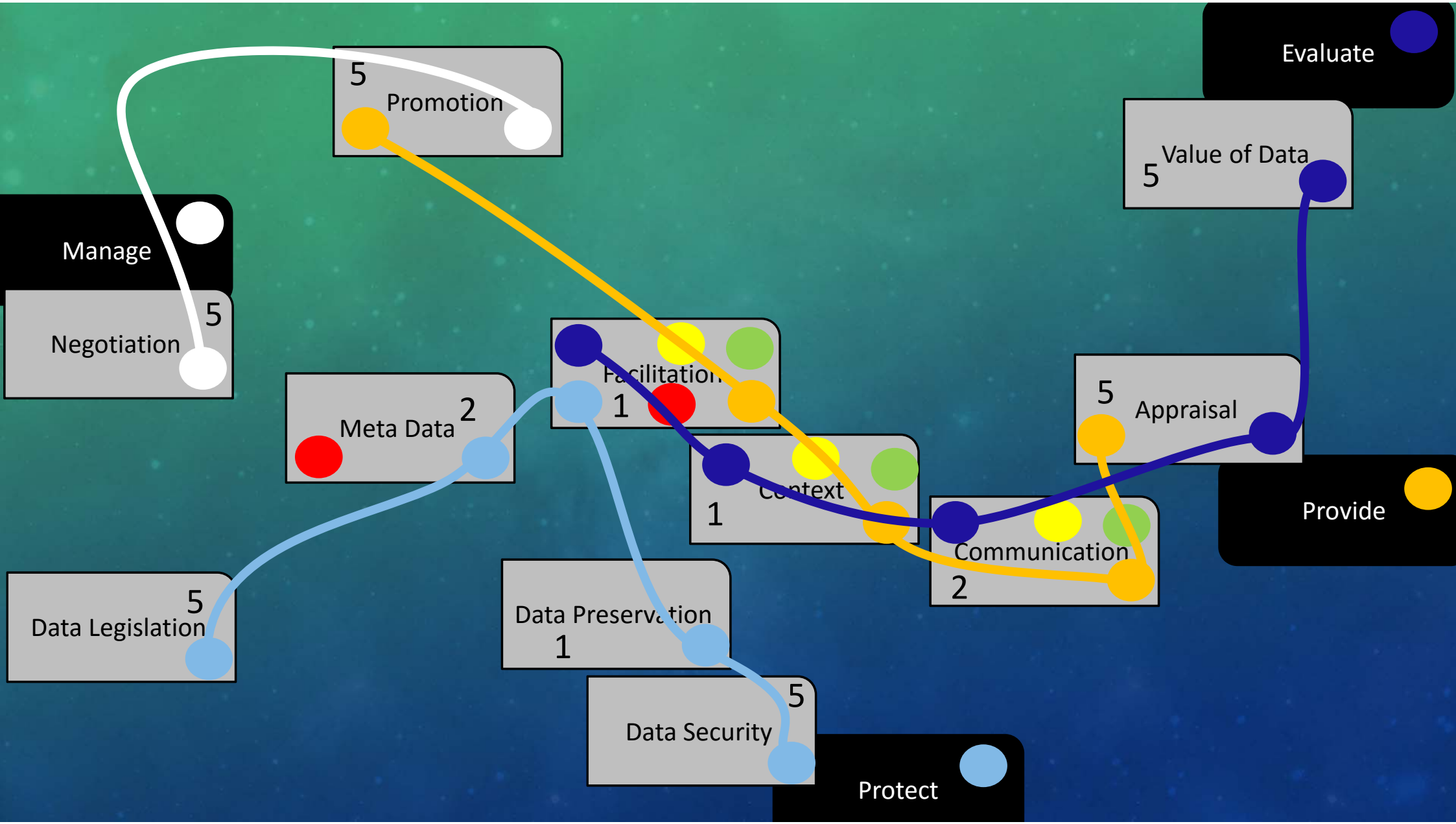


CONSEQUENCE

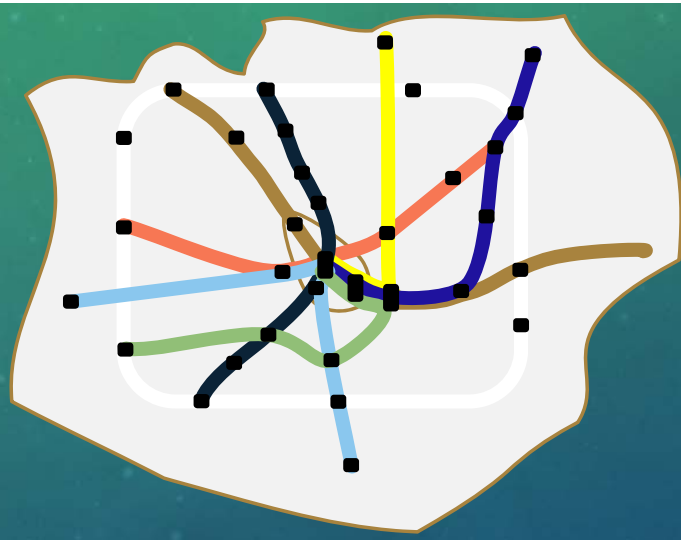
1. Each card with a low number is placed in the centre!
2. Each card with more than one colour,
   a. builds one intersection, if there is one card with these two colours,
   b. Creates a parallel section, if several cards have the same colours and same priority,
   c. Builds several intersections, if they are of the same colour but have different priorities.

5. SPATIAL ARRANGEMENT

Arrange cards and lines in an imaginary geographic space.

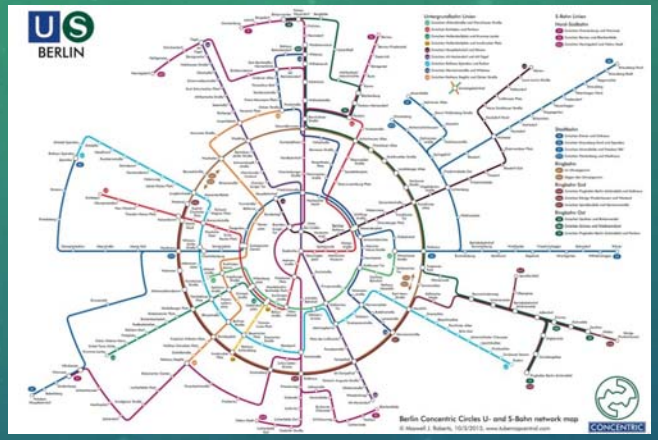

Evaluate
5
Promotion
5
Value of Data
Manage
5
Negotiation
2
Meta Data
1
Facilitation
5
Appraisal
1
Context
Provide
2
Communication
5
Data Legislation
1
Data Preservation
5
Data Security
Protect

RECOMMENDATION



Once finished, we recommend to redraw everything on paper.

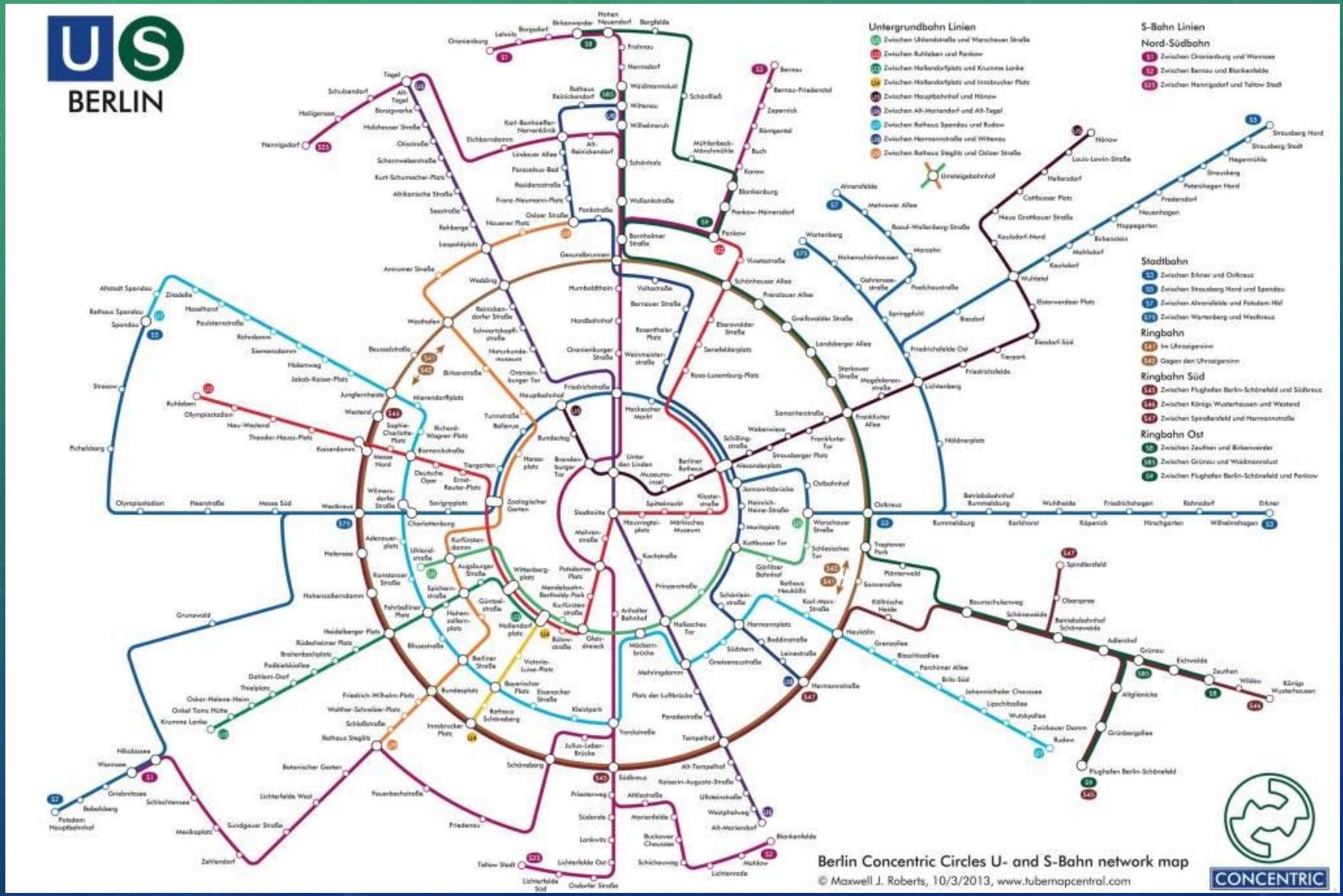
SOME HINTS FOR THE EXPERTS



© Maxwell J. Roberts

- Order: Lines should be rather straight because it is easier for the eye to follow lines instead of zigzags.
- Coherence: Go for parallel lines, avoid angles, prefer symmetry.
- Harmony: Some combinations of colour and form are more pleasant to the eye than others, e.g. a 90 degrees angle just seems perfect to the eye, if it is only 80 degrees, it seems as if something went wrong.
- Balance: Avoid concentrations of stations which create blank areas elsewhere.

http://www.welt.de/gesundheit/psychologie/article120467042/Ein-Psychologe-macht-S-und-U-Bahn-Plaene-rund.html



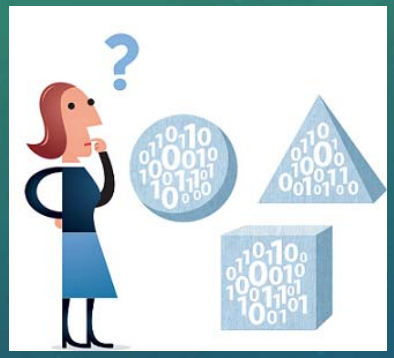
EXERCISE

Create your own metro map with all the content you can imagine to teach.

A FEW THINGS ABOUT (GOOD) TEACHING

ELIANE BLUMER

ECOLE POLYTECHNIQUE FÉDÉRALE, LAUSANNE



All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

TEACHING AND ITS PREPARATION IS A PROCESS

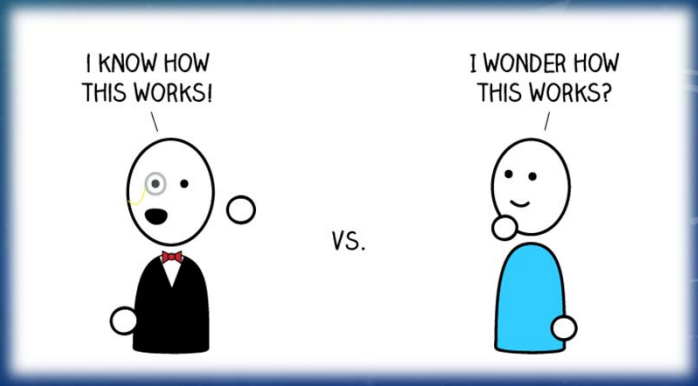
BASIC DECISIONS

- ✓ What is the **context** of my course?
- ✓ What is my **target group**?
- ✓ What are the **learning objectives**?
- ✓ **How** do I want to **convey** my content?
- ✓ How **many sequences** does my course contain?
- ✓ How do I **evaluate** my course?

CONTEXT

Basic Decisions

- Any prerequisites already given?
  - Time
  - Room
  - Learning methods
- Expectations
- Target Group



http://mindfulambition.net/beginners-mind/

TARGET GROUP

Basic Decisions

Individual prerequisites

- Cognitive
  - Learning strategies
  - Competencies
  - Intelligence
- Emotional
  - Fears
  - Security level
- Motivational
  - Curiosity
  - Attitudes

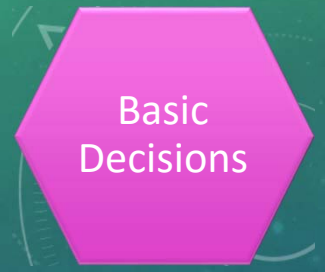
Environmental prerequisites

- Family
  - Financial situation
  - Relationships
- Social/socio-cultural
  - Culture
  - Language
  - Status
- Institutional
  - Accessibility of the building
  - Child care

LEARNING OBJECTIVES

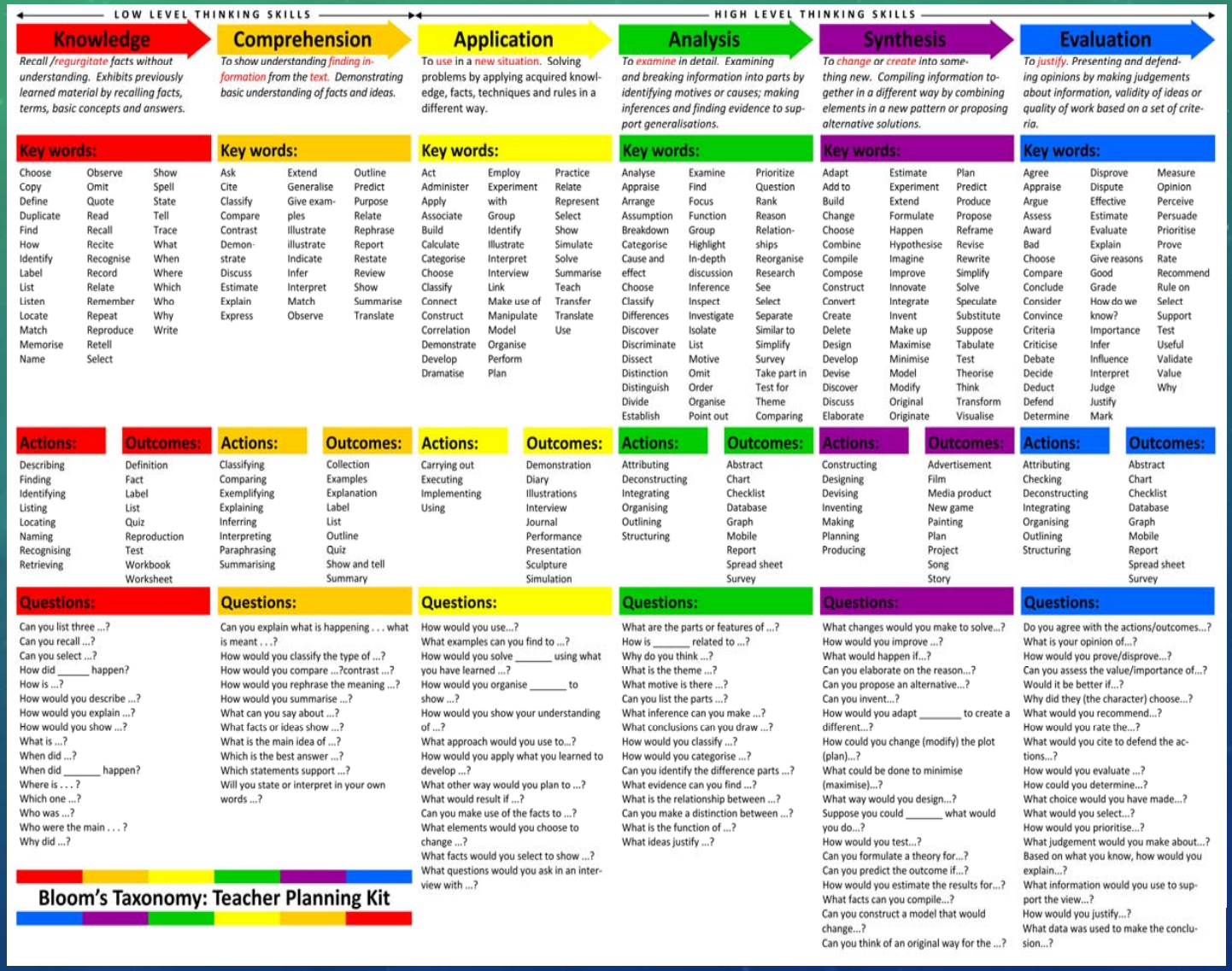
- **Who**: the subject who has to learn.
- **What**: observable behaviour, formulated with a verb.
- **How**: the goal which the subject has to achieve.
- **How many:** if necessary, quantitative indicators.

LEARNING OBJECTIVES - EXAMPLES



- The student translates the French terms into English by heart.
- The nurse chooses the adequate treating method for every listed illness in the less time possible.
- The participant justifies his/her opinion towards current political situation with logic arguments.

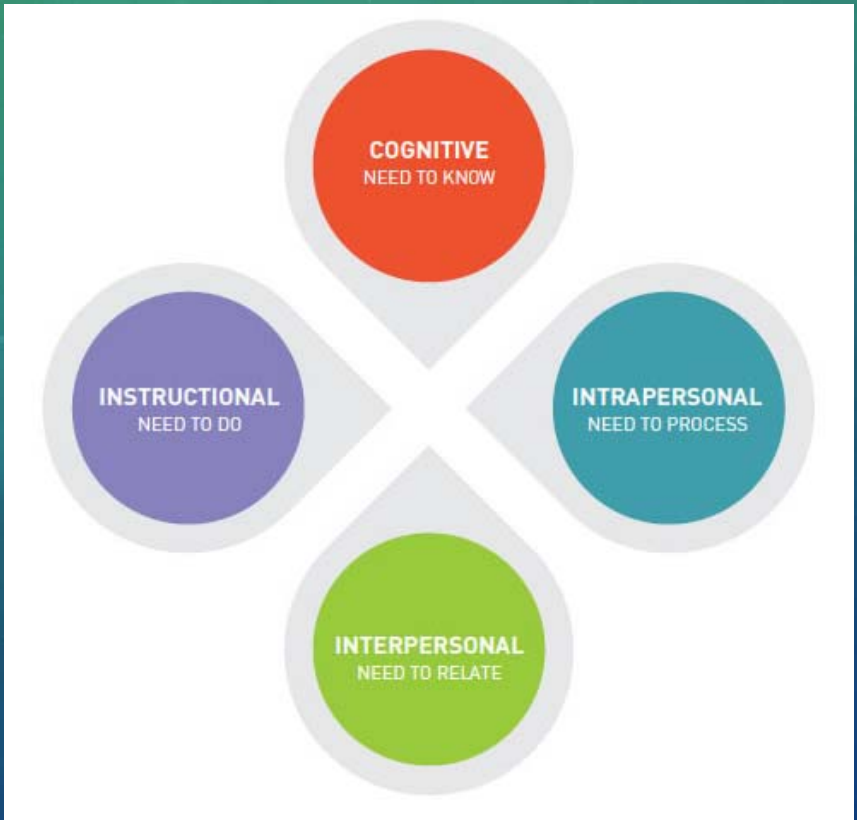
LEARNING OBJECTIVES



https://www.tes.com/lessons/ck3ciKII_efBeQ/planning-for-effective-teaching-bloom-s-taxonomy

COMPETENCES

Basic Decisions



https://studentsatthecenterhub.org/resources/educatorcompetencies/

TEACHING METHODS

Basic Decisions

- Teaching Methods and approaches
- Interactive teaching techniques
- Teaching resources
- Best teaching blogs of 2017
- A few OER resources

DRAFT AND DETAIL PLAN

Draft and detail planning

Detail Plan - Train the Trainer Workshop: How do I create a course in research data management? 22. Feb. 2018

Time	What	Documentation	Referees	Comments
09.00	Ready to Go			
09h00-13h15	Vorstellung Dozenten und Überblick	Karten Präsentation 00 / Resultate Umfrage	EB RS	Ice-Breaker Wissen, was auf einen zukommt
09h15-10h00	**T & P:** „Lunch Time Lectures“ RDM	Präsentation 0 **Material**: - Puzzle - Übungsblatt Schritte	EB	Beispiel für einen Kurs Gruppenbildung (nach Heterogenität)
10h00-10h20	**T:** Didaktik 1	Präsentation 1 **Material**: - Poster klein (leer) 1x pro TN	RS	Didaktische Erläuterung des Kurses
10h20-10h30	Reserve			
10h30-11h00	Pause			
11h00-11h20	**T:** Forschungsdaten-kompetenz	Präsentation 2 Kein Material	RS	Aspekte der Forschungsdatenkompetenz
11h20-12h10	**P:** Card Sorting	Präsentation 3 Übung: Card Sorting **Material**: - je Gruppe Kern-kompetenzen auf Karte und 30 leere Karten - Flipchart, Pattafix, Farben, Zahlen	EB, RS, (heterogene Gruppen)	Praktische Umsetzung des vorher Gesagten, erster Schritt zur Darstellung von Kursinhalten
12h10-12h30	Vernissage Metromaps	Metromaps, Magnete	alle,	Präsentation der unterschiedlichen Metromaps (5-7 min à Map)
12h30-13h00	Lunch			
Zeit	**Was**	**Unterlagen**	**Referenten**	**Kommentare zu Methodik und Lernzielen**

IMPLEMENTATION

Imple-
mentation

http://capturedclutter.com/paper-management-organization-atlanta/

DYNAMICS IN GROUPS

Realization

Forming
Team acquaints and establishes ground rules. Formalities are preserved and members are treated as strangers.

Storming
Members start to communicate their feelings but still view themselves as individuals rather than part of the team. They resist control by group leaders and show hostility.

Norming
People feel part of the team and realize that they can achieve work if they accept other viewpoints.

Performing
The team works in an open and trusting atmosphere where flexibility is the key and hierarchy is of little importance.

Adjourning
The team conducts an assessment of the year and implements a plan for transitioning roles and recognizing members' contributions.

https://pt.slideshare.net/perspectum/5-stages-of-group-development-norms-tuckman-16474067/9

COMMUNICATION

Realization

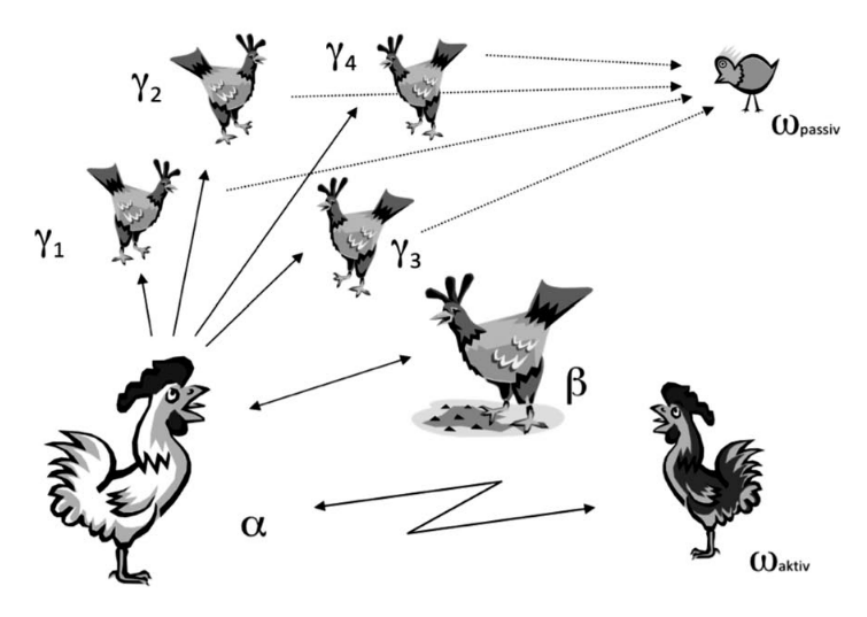
- Be clear
- Do paraphrase
- Be respectful
- Do tailor to audience
- Do face-to-face

- Don’t give more attention to something else than to your participants
- Don’t overuse abbreviations
- Don’t monopolize the conversation
- Don’t react or get upset
- Don’t interrupt

For further information: http://alfabravo.com/2007/11/presentation-skills-dos-donts/
Based on: https://www.bastiansolutions.com/blog/index.php/2013/02/15/5-dos-and-donts-of-communication/

DIFFICULT SITUATIONS

Realization



Rosa-Luxemburg Stiftung. (2009) Arbeit mit Gruppen – Arbeitsmaterial. S. 12.

More information: https://www.uq.edu.au/tutors/difficult-classroom-situations

More information: http://www.icab.be/articles/methods_overview.html

FEEDBACK

Evaluation

I didn’t like it.

Connections

I want to get rid of.

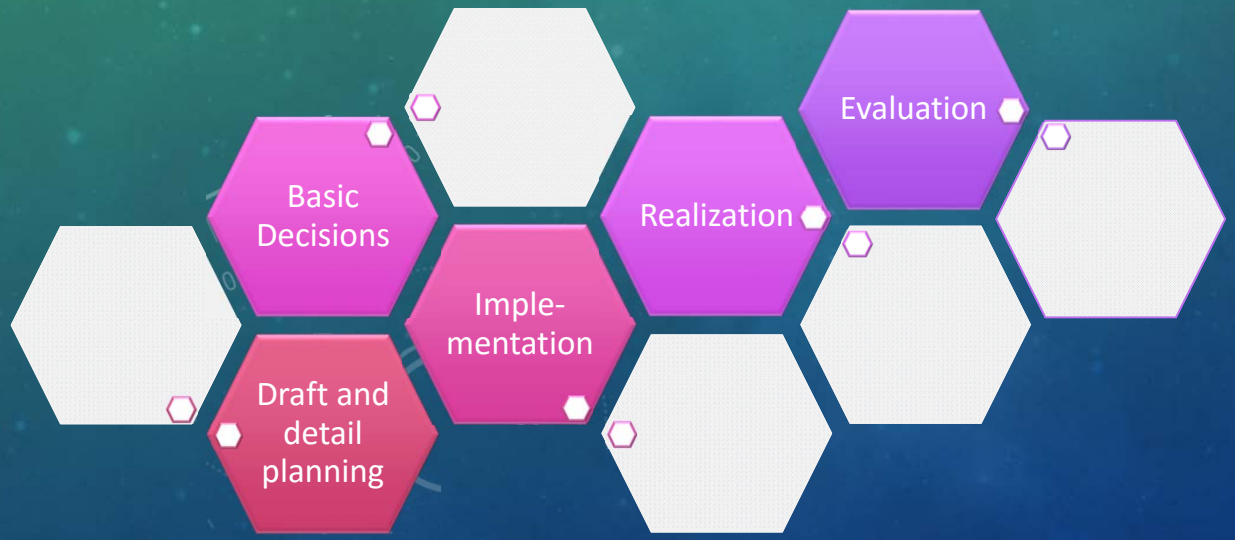
This was missed out.

I liked it.

https://www.teachthought.com/technology/20-simple-assessment-strategies-can-use-every-day/

ANY QUESTIONS?

ELIANE.BLUMER@EPFL.CH



RESEARCH DATA METRO MAP

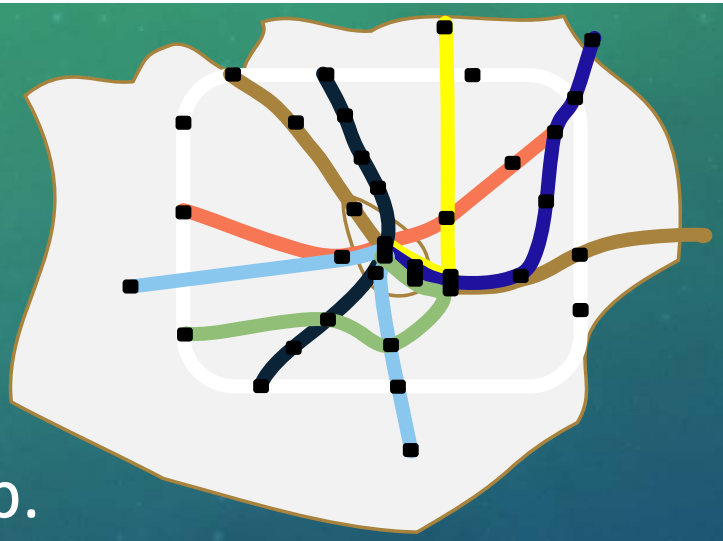
LINEARISATION AND SCHEDULING

All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

RENÉ SCHNEIDER

HES-SO, HAUTE ECOLE DE GESTION, GENEVA

LINEARISATION



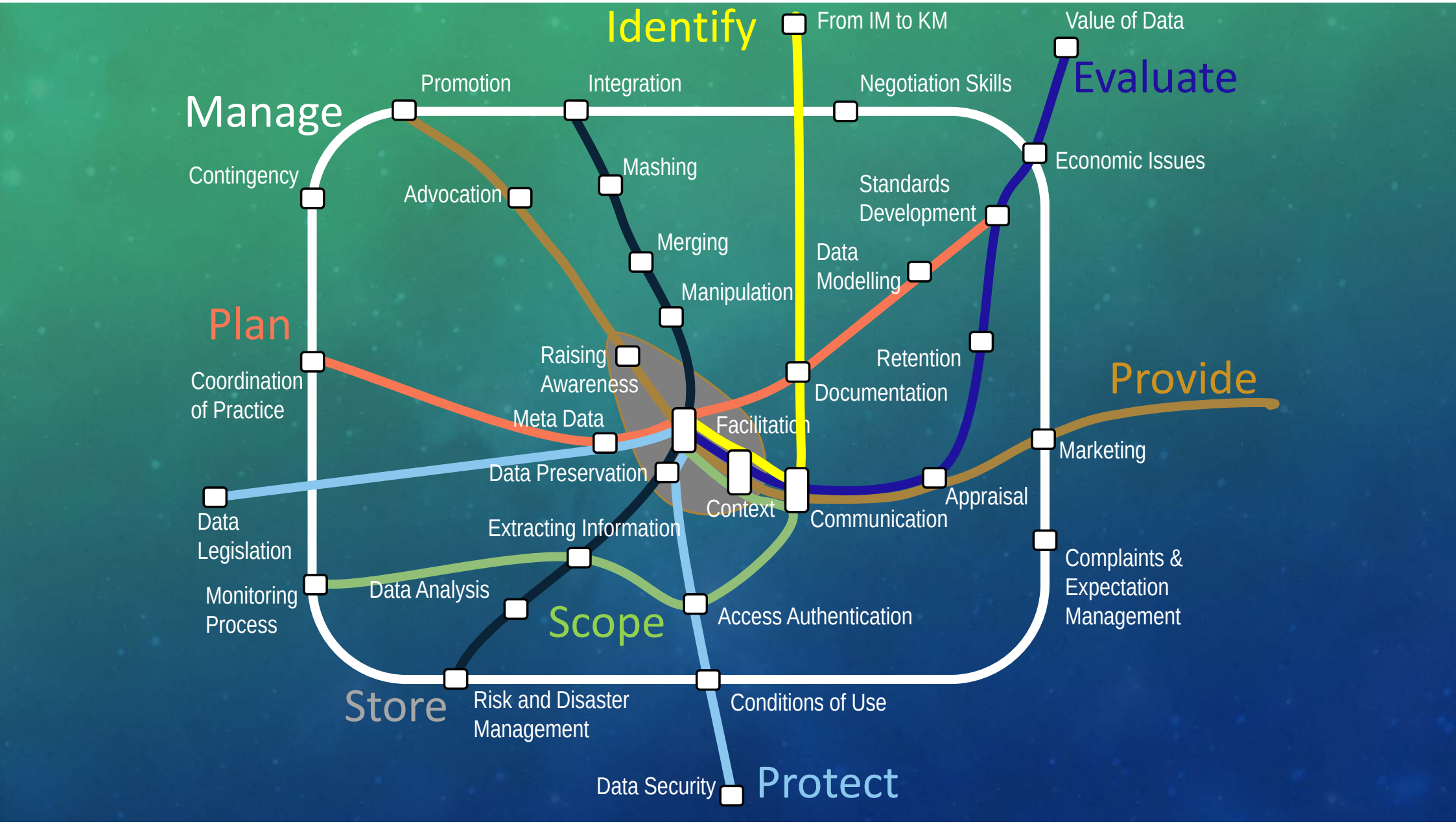
So far you have a two-dimensional metro map.

But teaching is bound to space and time.

Space is three-dimensional but the arrow of time itself

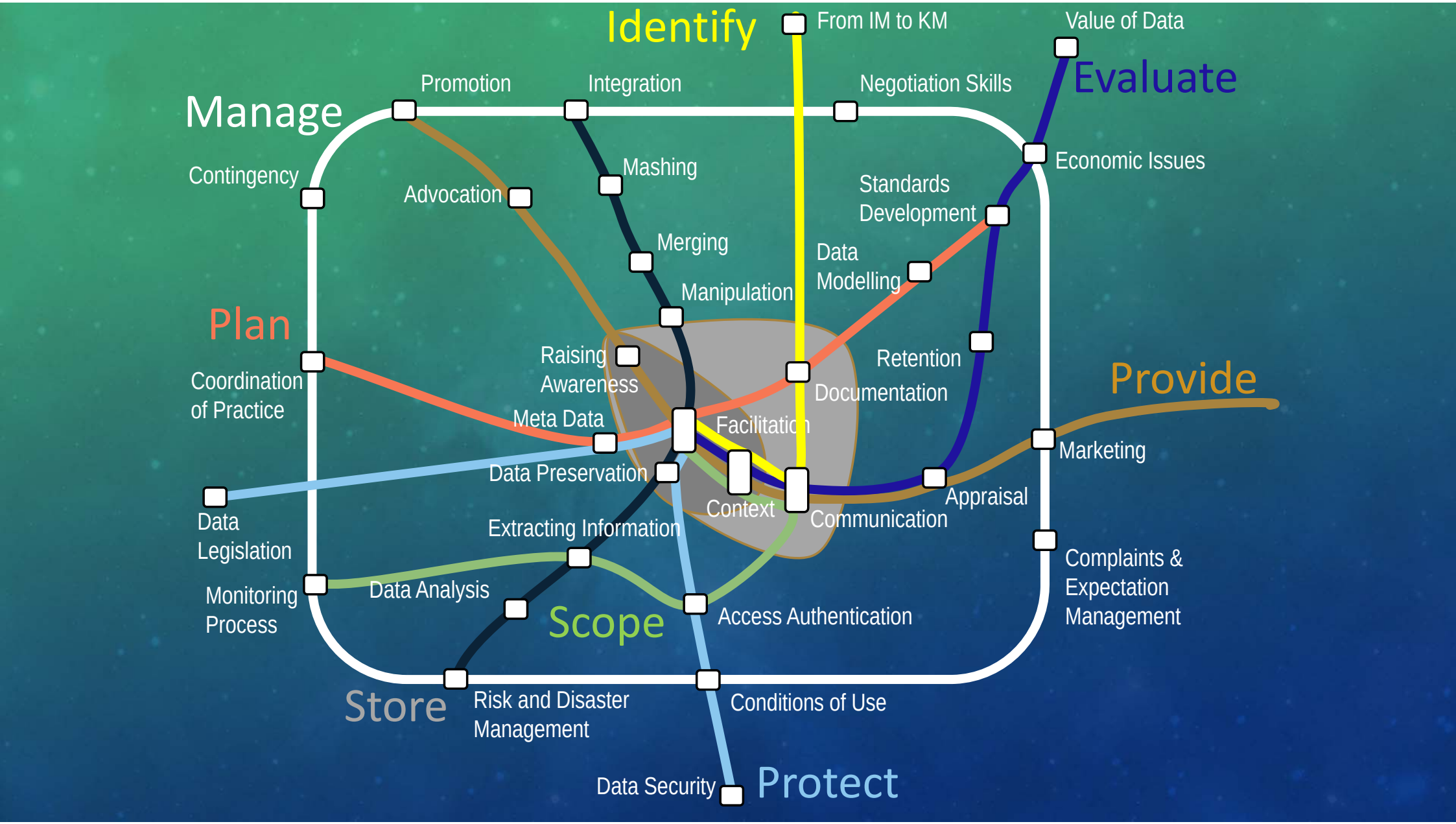
is **linear** and **irreversible**.

Hence, teaching is a matter of linearisation.


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Documentation
Provide
Coordination of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Context
Communication
Appraisal
Data Legislation
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect

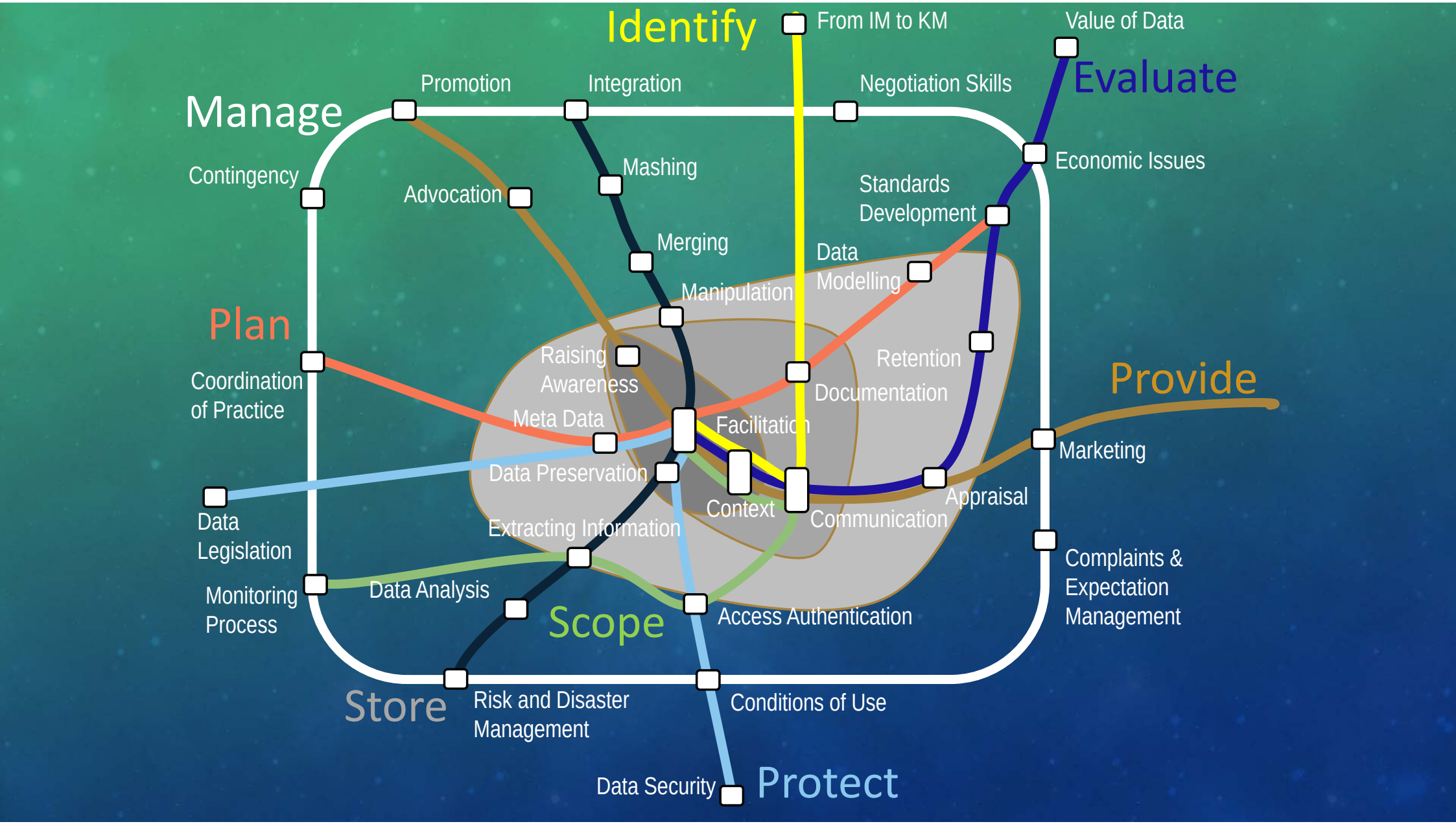
2 HOURS

Stop	Time
Raising Awareness	5 min
Context	45 min
Facilitation	40 min
Data Preservation	50 min


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Documentation
Provide
Coordination of Practice
Meta Data
Facilitation
Marketing
Data Preservation
Appraisal
Context
Communication
Data Legislation
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect

ONE-DAY WORKSHOP

Stop	Time
Raising Awareness	1 hour
Facilitation	
Context	
Communication	
Documentation	2 hours
Data Preservation	4 hours
Communication	1 hour


Identify
From IM to KM
Value of Data
Evaluate
Manage
Promotion
Integration
Negotiation Skills
Economic Issues
Contingency
Advocation
Mashing
Standards Development
Merging
Data Modelling
Manipulation
Plan
Raising Awareness
Retention
Provide
Coordination of Practice
Meta Data
Facilitation
Documentation
Marketing
Data Preservation
Appraisal
Data Legislation
Context
Communication
Extracting Information
Complaints & Expectation Management
Monitoring Process
Data Analysis
Scope
Access Authentication
Store
Risk and Disaster Management
Conditions of Use
Data Security
Protect

FULL COURSE (30 HOURS)

Stop	Time
Context	2 hours
Raising Awareness	
Facilitation*	
Communication	2 hours
Extraction Information	4 hours
Documentation	4 hours

Stop	Time
Data Modelling	4 hours
Data Documentation	4 hours
Manipulation	2 units
Data Preservation	6 hours
Appraisal	2 hours
Retention	

* means, you will always come back to that topic, in our case Facilitation

EXERCISE - LINEARISATION

1. Take your map.
2. Choose the stops that you will pass across according to the duration of your course and/or the level of your students.
3. Define the teaching goals according to these constraints.

This will be the first step to your train (course) schedule.

TOUR D'HORIZON

ELIANE BLUMER

ECOLE POLYTECHNIQUE FÉDÉRALE, LAUSANNE

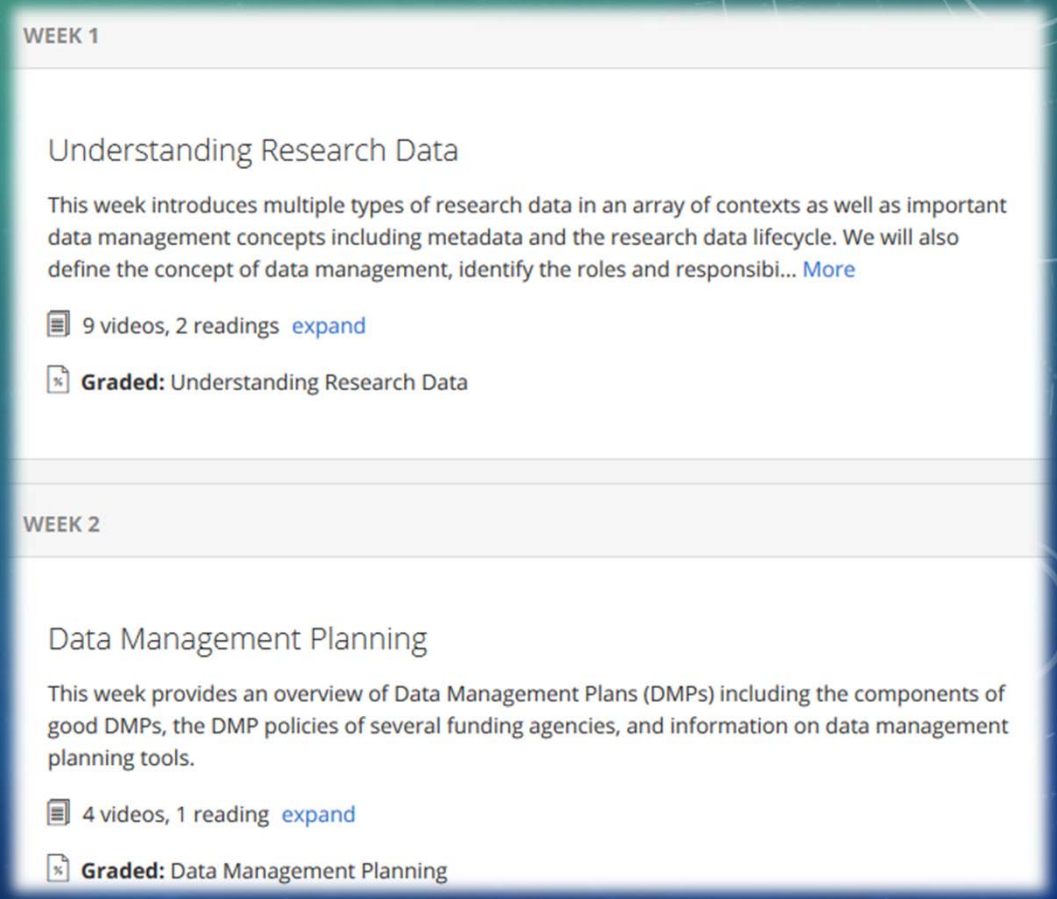
All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

A FEW EXAMPLES…

I. Teaching format
II. Target audience
III. Objectives/competences
IV. Duration
V. Other

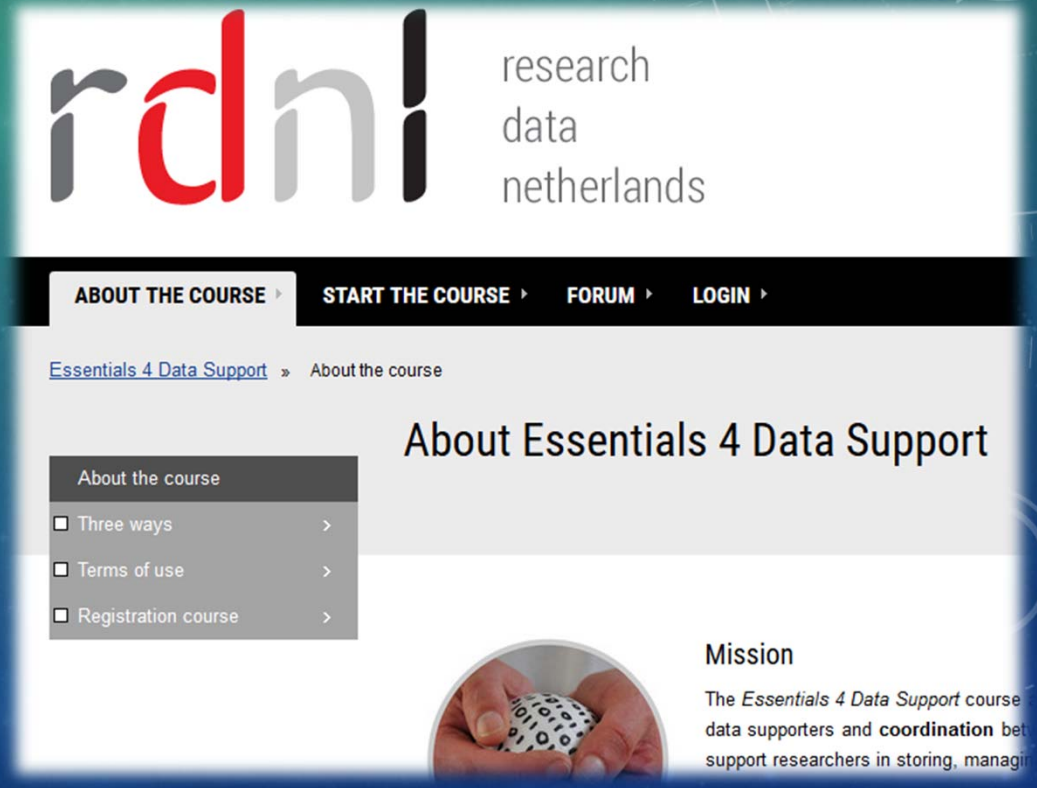
MOOC « RESEARCH DATA MANAGEMENT AND SHARING »

Teaching format	Self-study, online
Target audience	Open for all, Beginners
Objectives	Basics, Planning, Organizing, Archiving, Sharing
Duration	5 weeks or self-paced
Other	Certificate if wanted



ESSENTIAL 4 DATA SUPPORT

Teaching format	a.) self-study (free) b.) self-study with registration c.) course with certificate (250Euro)
Target audience	Information Specialists
Objectives	Basics, Planning, Organizing, Archiving, Storing, Archiving, Sharing, Managing
Duration	2 days + ca. 25h self-study
Other	English

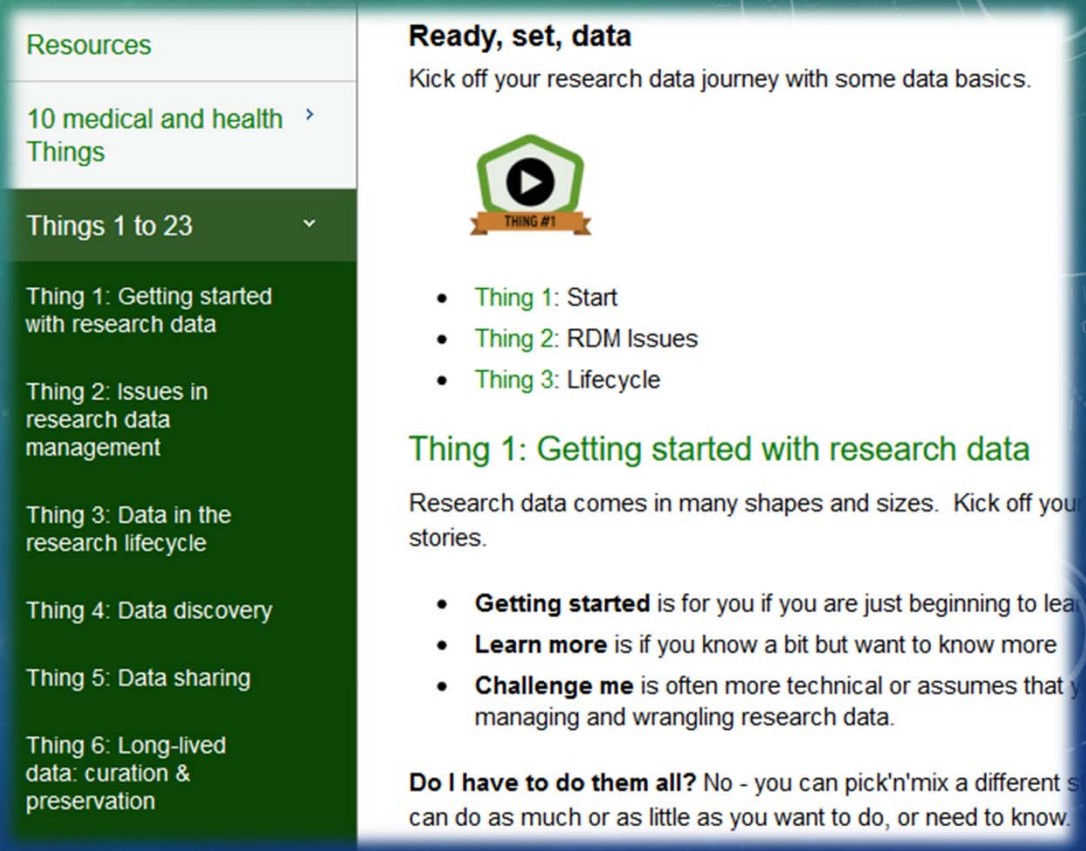


DORANUM

Teaching format	Self-study
Target audience	Information Specialists and future trainers
Objectives	Basics, Planning, Organizing, Archiving, Storing, Archiving, Sharing, Managing
Duration	2 days + ca. 25h self-study
Other	Only in French

ANDS : 23 THINGS

Teaching format	Self-study, online
Target audience	Information Specialists in Australia
Objectives	Entire research life-cycle
Duration	Ca. 23 weeks
Other	3 levels



DIGITAL CURATION MSC (ROBERT GORDON UNIVERSITY)

Teaching format	Master of science, online
Target audience	Information Specialists
Objectives	Basics, Planning, Storing, Curating, Managing, Archiving
Duration	3 semester
Other	Expensive

RESEARCHDATAMANAGEMENT.CH

Teaching format	Self-study, online
Target audience	Information Specialists in Switzerland
Objectives	Entire research data life-cycle
Duration	23 weeks
Other	3 skill levels

TO RESUME

- A lot of different formats
  - However, strong concentration on online
- Most widely expanded : English resources
- Data Analysis is often left out

Fachinotti, Elena; Gozzelino, Eva, Lonati, Sara: Les bibliothèques scientifiques et les données de la recherche : défis et enjeux; (Travail de recherche réalisé dans le cadre du Master of Science en Information documentaire HES à la Haute école de gestion de Genève (HEG-GE), 2016).

ANY QUESTIONS?

ELIANE.BLUMER@EPFL.CH

DRAFT AND DETAIL PLAN

1. Choose one stop of your metro-line course.
2. Fill in the draft and detail plan template.
3. Give a short presentation of 3min.

DRAFT AND DETAIL PLAN

Formular für die Feinplanung

Zeit	Inhalte / Themen	Ablauf, Methoden

BASIC DECISIONS

Answer once more the following questions
and do write down the answers on a sheet of paper.

- ✓ What is the **context** of my course?
- ✓ What is my **target group**?
- ✓ What are the **learning objectives**?
- ✓ **How** do I want to **convey** my content?
- ✓ How **many sequences** does my course contain?
- ✓ How do I **evaluate** my course?

All cartoons courtesy of Jørgen Stamp, Digitalbevaring.dk. CC BY 2.5.

TRAIN THE TRAINER

WHAT WE DID AND WHY WE DID IT

RENÉ SCHNEIDER

HES-SO, HAUTE ECOLE DE GESTION, GENEVA

A REVIEW FROM THE META LEVEL

μετά

Everything we did was driven by a purpose.

0. SURVEY PRIOR TO THE COURSE

Get in contact.

Get a first idea.

Show that you are prepared.

I. PRESENTATION AS DATA SET

Ice Breaker

A different approach for introducing oneself and creating groups.

II. LUNCH TIME LECTURE

The essence of the whole day «en miniature».

II. DIDACTICS I

Application of the 20-minute rule.

Basic theoretical input.

II. HANDS ON: METRO MAP

Put theory into practice.

Group work.

Make people come together, change out ideas and work towards a goal, even if the result is far from being perfect or terminated.

Card sorting helps to clear your mind and to communicate your point of view to others.

III. DIDACTICS II

Some more theory.

Guidance to come to more concrete results.

IV. HANDS ON II

From two dimensions to linear sequencing.

Group work continued with a new mix.

(Some groups work, others don’t.

Give the latter the chance to re-try in other constellations.

V. MONITORING

Show different sources for inspiration.

VI. HANDS ON III

From linear sequencing to punctual refinement.

Make people present the work they did.

VII. WRAP-UP AND EVALUATION

Space for all that has to be said and done before leaving.

(From both sides!)

FINAL QUESTIONS?

RENE.SCHNEIDER@HESGE.CH

ELIANE.BLUMER@EPFL.CH