The Digital Transformation of the Workforce

Integrating Digital Immigrants and Natives

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Agenda / Plan

1. Existing training and development resources

2. Changing demands on the data manager

3. How to address the evolving demands

4. Training/Development priorities

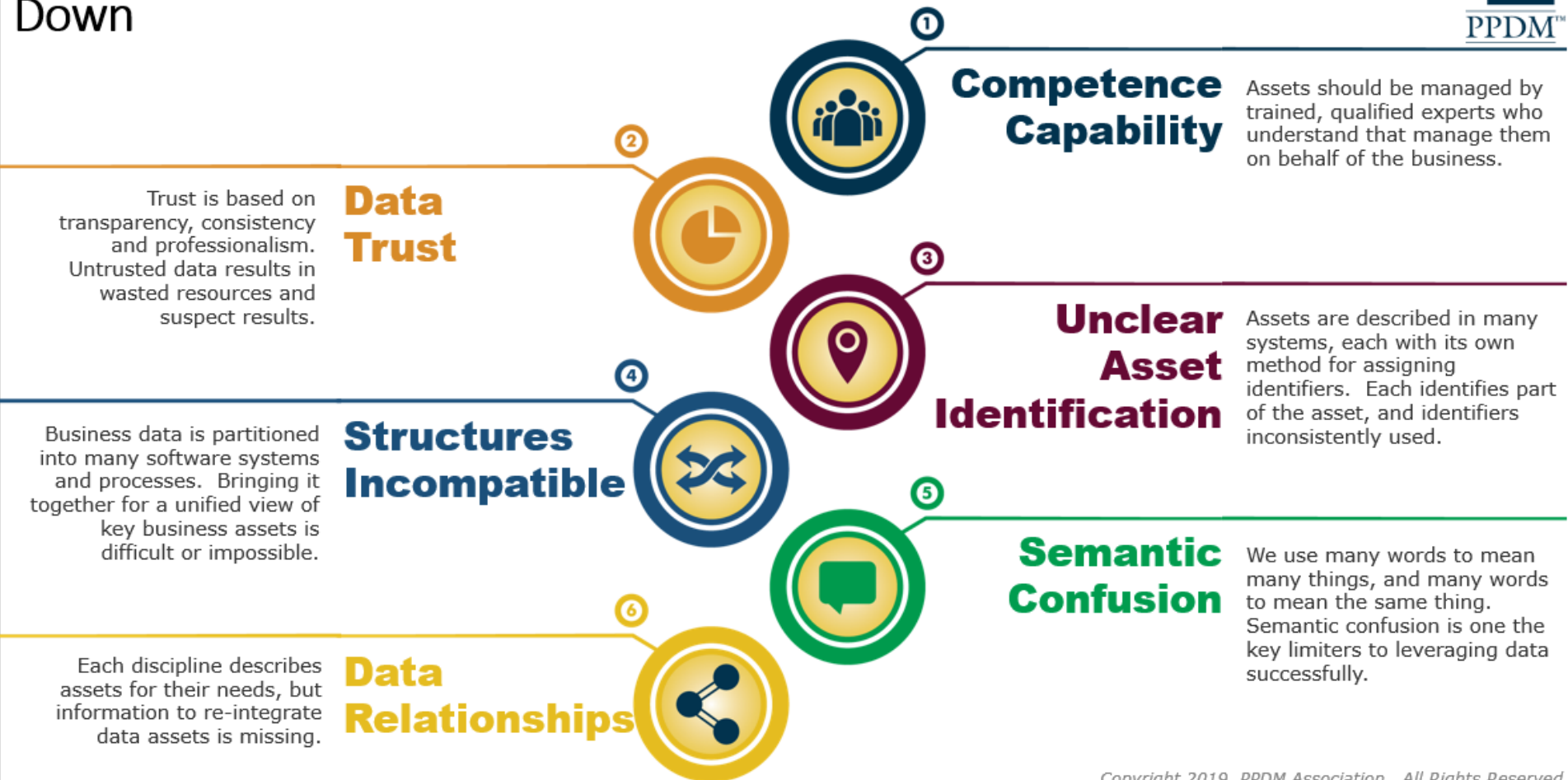5. How readily can we close the gap

How this works

- Menti details

- All results will be shared via the conference website along with this presentation

- All responses are anonymized – no personal details collected

- We'll start with an *easy* question ……..
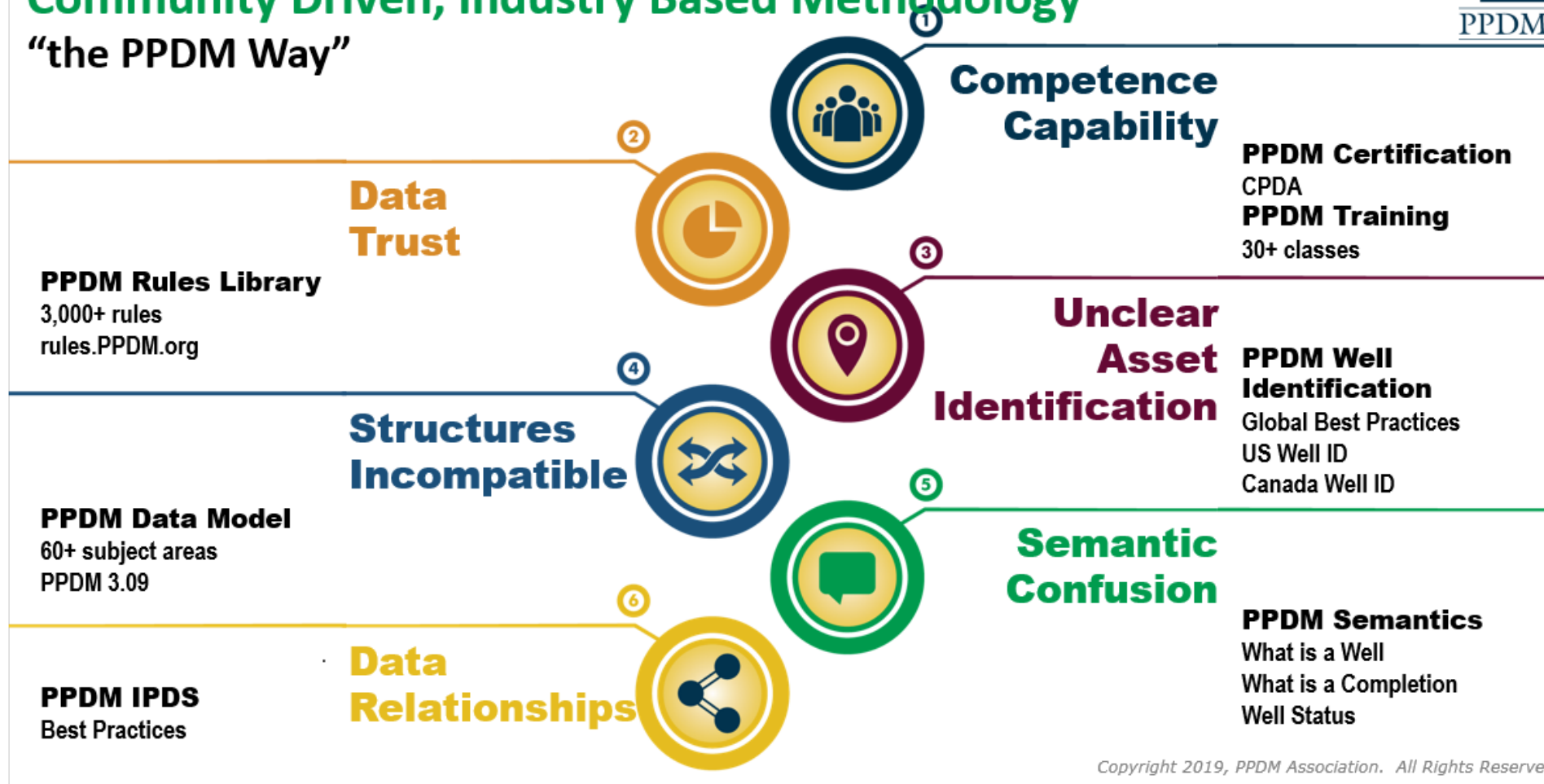
www.menti.com
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Existing O&G Specific Resources

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These Data Challenges Slow You Down

① Competence Capability

Assets should be managed by trained, qualified experts who understand that manage them on behalf of the business.

② Data Trust

Trust is based on transparency, consistency and professionalism. Untrusted data results in wasted resources and suspect results.

③ Unclear Asset Identification

Assets are described in many systems, each with its own method for assigning identifiers. Each identifies part of the asset, and identifiers inconsistently used.

④ Structures Incompatible

Business data is partitioned into many software systems and processes. Bringing it together for a unified view of key business assets is difficult or impossible.

⑤ Semantic Confusion

We use many words to mean many things, and many words to mean the same thing. Semantic confusion is one the key limiters to leveraging data successfully.

⑥ Data Relationships

Each discipline describes assets for their needs, but information to re-integrate data assets is missing.

PPDM Helps Solve Key Data Challenges With Its Powerful,
Community Driven, Industry Based Methodology
"the PPDM Way"

① Competence Capability

② Data Trust

PPDM Certification
CPDA
PPDM Training
30+ classes

PPDM Rules Library
3,000+ rules
rules.PPDM.org

③ Unclear Asset Identification

④ Structures Incompatible

PPDM Well Identification
Global Best Practices
US Well ID
Canada Well ID

PPDM Data Model
60+ subject areas
PPDM 3.09

⑤ Semantic Confusion

⑥ Data Relationships

PPDM Semantics
What is a Well
What is a Completion
Well Status

PPDM IPDS
Best Practices

Academic Qualifications

Robert Gordon University
<u>Graduate Certificate</u>
Petroleum Data Management
1 year, part time, online learning

IFP / ENSG
<u>Masters</u>, Petroleum Data Management
1 year, full time, on campus

University of Aberdeen
<u>Masters</u>, Petroleum Data Management
1 year, full time, on campus
OR $2\frac{1}{4}$ years part time, online learning

Academic Qualifications …… contd.

Rice University, Houston
Masters Subsurface Geoscience: Includes 'Energy Data Management' Specialization Option

SAIT, Calgary – Continuing Education / Full-Time Courses
Pipeline Data Management / Petroleum Computer Applications / Geoscience Information Technology
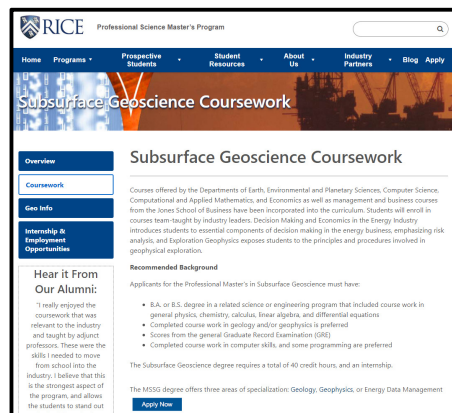
The Strategy: How to Build a Professional Discipline

PPDM™

Professional Recognition

Professional Development

Training Education | HR support Careers Salaries | Certification & Maintenance

Professional Discipline

Professional Governance

International Petroleum Data Standards

Best Practices | Standards & Specifications | Professional Expectations

Community

Organizational Governance

Community of Practice

Events Globally | Community Leadership | Publications & Communication

Professional Society

- Launched earlier this year. 130+ members and growing. Membership rate €40.

- Focussed on the needs of the individual

The Society for Petroleum Data Managers

Background

The Society for Petroleum Data Managers (SPDM) was founded by CDA, a data management subsidiary of Oil & Gas UK, and Stiftelsen ECIM, a community for E&P Data and Information Managers. These organisations have an established track record of supporting and promoting petroleum data management in the oil and gas industry.

Resource Links

- https://www.abdn.ac.uk/study/postgraduate-taught/degree-programmes/1009/petroleum-data-management/

- http://www.ifp-school.com/jcms/r_17844/en/new-program-petroleum-data-management-pdm

- http://www.rgu.ac.uk/information-communication-and-media/study-options/distance-and-flexible-learning/petroleum-data-management/

- http://ppdm.org/ppdm/PPDM/Certification/PPDM/Certification_Home.aspx?hkey=1641cf04-6e79-44c7-853e-579bcd4f9485

- https://societypdm.com/home

- https://profms.rice.edu/subsurface-geoscience/subsurface-geoscience-coursework

- https://www.sait.ca/programs-and-courses/full-time-studies/diplomas/geoscience-information-technology

Question: Interactive Session 1

- ## What resources have we missed?

- Guidance:
  - *Please make responses sufficiently detailed to enable us to locate and record the resource so we can share*
  - *Please don't share internal (company specific) proprietary courses*
  - *Please do share free or members access resources*
  - *Please do share commercial offerings (providing they are available to all)*

Changing Demands

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What new demands?

Previously Python meant this…

Cloud, this…

And Rehydration…

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New Demands: Like these…

1. Language/Definitions/Meaning/Understanding

2. Programming Skills & Open Platforms (Python, R, GitHub)

3. Cloud Service Architecture/Technologies/Suppliers

4. Analytics and Visualization Tools

5. Organisational (new reporting lines, new team member disciplines)

6. New Thinking / New Ways of Working (e.g. Agile)

7. Broader Data Domains

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Question: Interactive Session 2

- Rank each of the 7 areas in order of importance/impact in your organisation, role or 'realm'

- What new demands weren't on the list?

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Addressing the Evolving Demands

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Question: Interactive Session 3

- **Which of the following has your company proactively pursued/used?**
  1. Recruit digital natives
  2. Create 'head room' for new starters (restructuring)
  3. Training and development programs/plans
  4. Outsource to 3rd parties
  5. Take the passenger approach (accept the new skills that new recruits serendipitously bring)

Training/Development Priorities

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'Fundamentals of Data Management' Course Content

Day 1	Day 2	Day 3	Day 4
Introduction	Data Lifecycle	Data Transformation	Business Processes
Seismic Data	Standards & Cataloguing	QA & QC	Data Governance
Well Data	Physical Data	Data Integration	Business Continuity
Reservoir & Production Data	Digital Data	Archive Management	Evaluation

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FDM Use Cases

New Starters

Capacity Building

Knowledge Exchange

Corporate Data Managers

Geoscientists

Regulator Data Managers

400+ attendees

10+ years

4 continents

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Future Data Management Training Needs

Machine Learning – capabilities & terminology

Data Science Data Needs

Machine Learning Tools

New Ways of Working / Thinking

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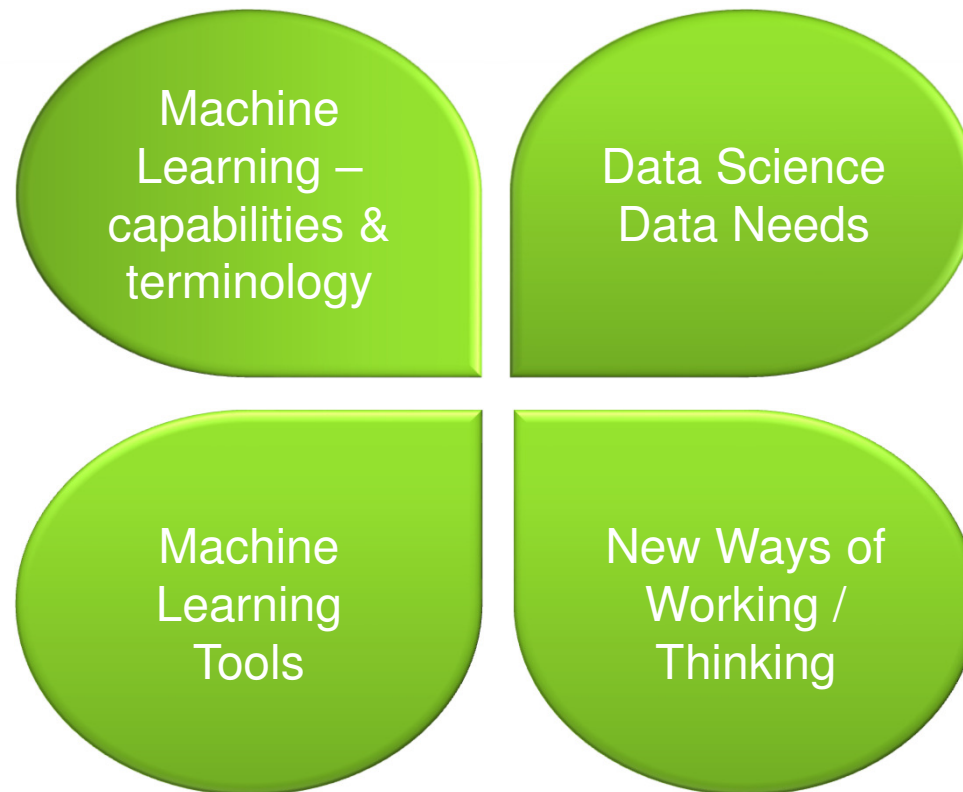
Question: Interactive Session 4

- **What other training areas need to be developed?**

- **How can they be addressed?**
  1. Recruit/Outsource
  2. Internal Training
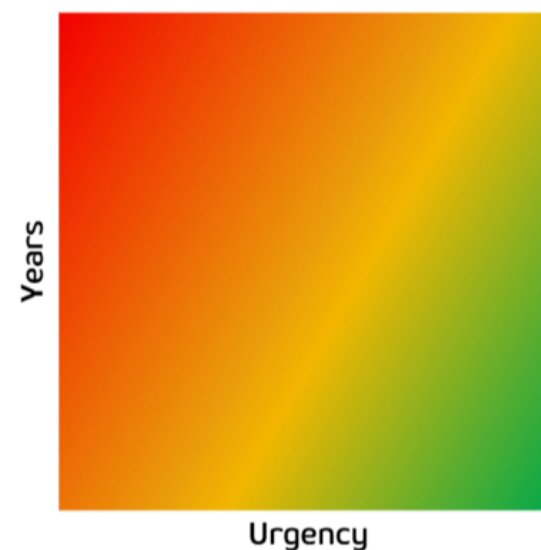 3. External Training
  4. Standards / Community Initiatives

Closing the Gap

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Question: Interactive Session 5

- Over what timeframe do you think we can close these gaps?

- How quickly do we need to close them?

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Final Thoughts

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Next Steps

Collaboration?

Academic Courses?

Internal Efforts?

3rd Parties?

Years

Urgency

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Contacts

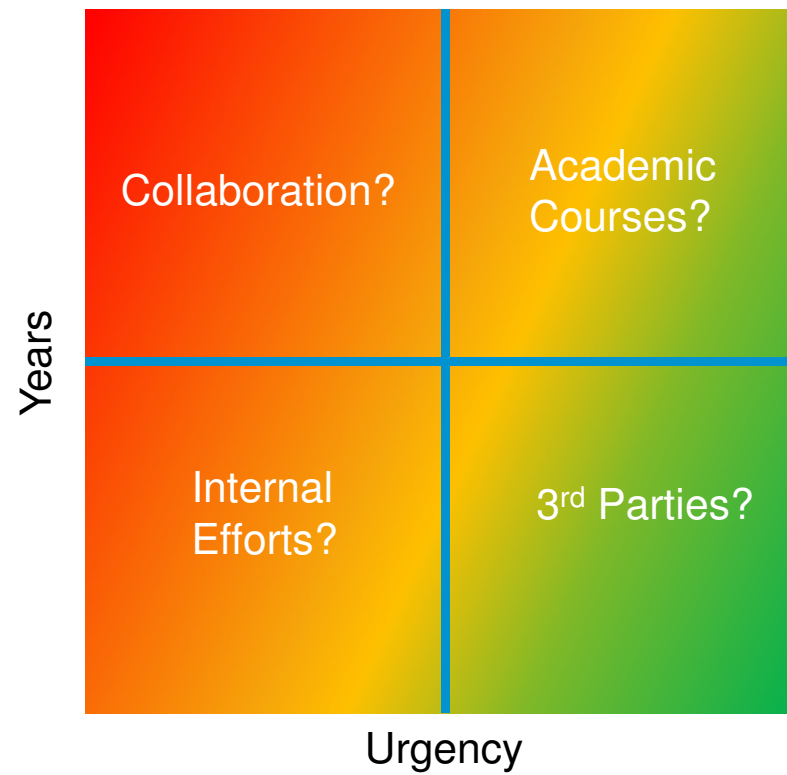## Kerry Blinston:

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