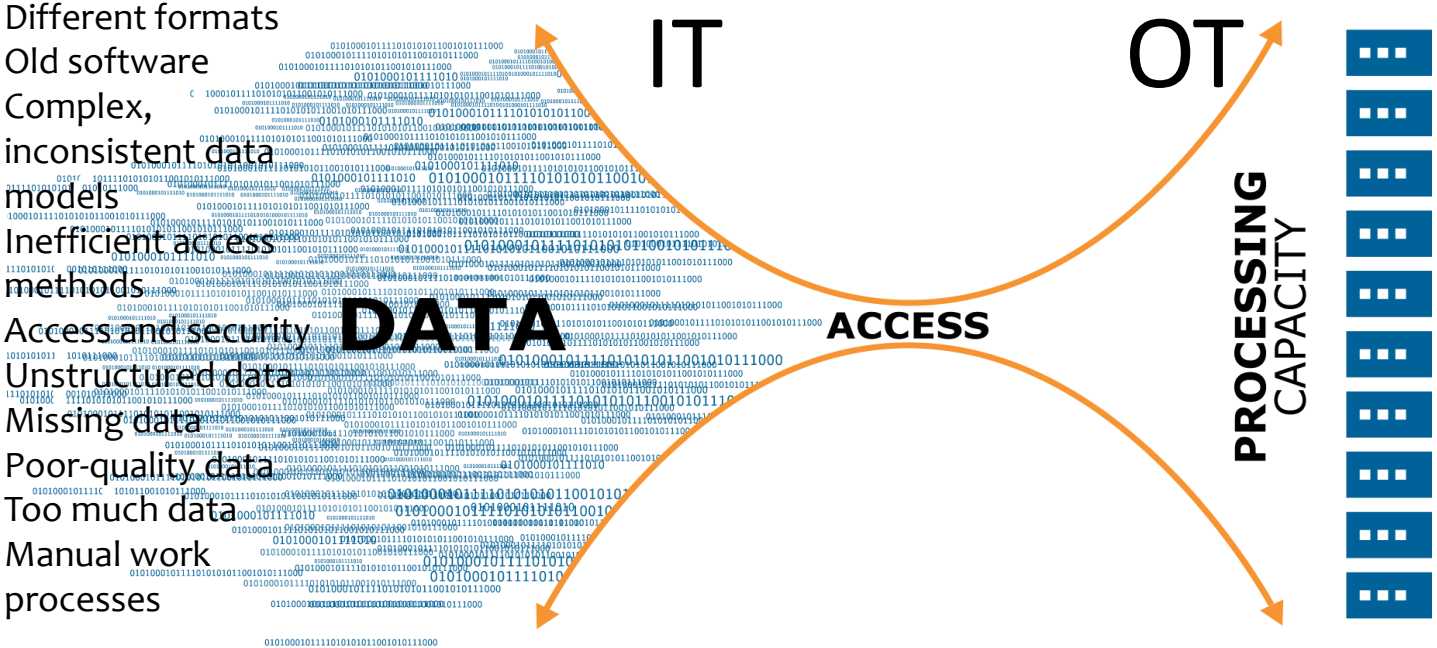
SIRIUS: Innovation-driven research? Research-driven innovation? Or both together?

David Cameron, Centre Coordinator
Tekna, Oslo
29th October 2019

The problem of scalable data access

- Different formats
- Old software
- Complex, inconsistent data models
- Inefficient access methods
- Access and security
- Unstructured data
- Missing data
- Poor-quality data
- Too much data
- Manual work processes



Accessing data is a technical & organizational bottleneck.

We make poorer decisions and waste time on tedious work getting data.

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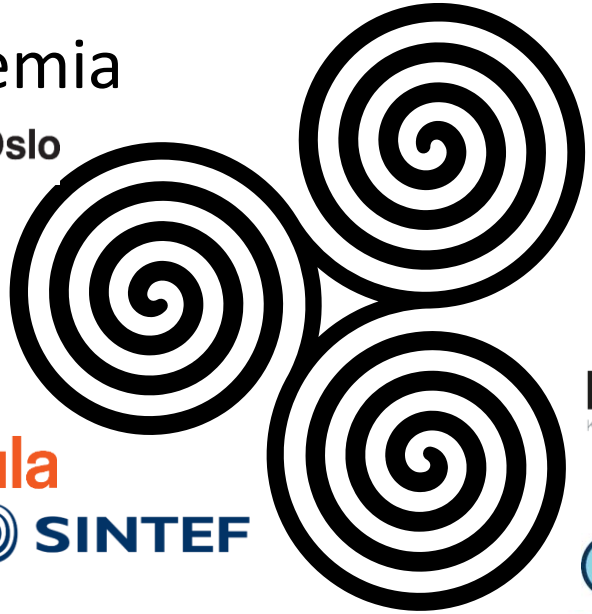
UNGDOMMEN
nå til dags

Navn: Jenny Jæger
Alder: 17
Bosted: Kolbotn

Hva hadde du gjort om du var statsminister for en dag?
- Jeg ville økt skattene for å minke forskjellene mellom folk, og gitt flere goder til velferdssamfunnet slik at flere får de samme mulighetene i livet. Jeg ville fått inn flere lærere i skolen – lærere som faktisk kan kommunisere med elevene – slik at det blir lettere å fange opp mobbesituasjoner, og alle lærer mer. På grunnskolen ville jeg også hatt gratis mat, i hvert fall gratis frukt og grønt, og leksehjelp, så utdanningen din ikke avhenger av ressursene du har hjemme. Jeg ville kuttet i kjøttindustrien og avviklet pelsindustrien. Selvfølgelig ville jeg stengt oljeplattformene og satset mye mer på grønn teknologi. Vi må jo ha en plan etter oljen. Det er så mange ting jeg ville gjort! I praksis kunne jeg kanskje ikke tatt alle disse avgjørelsene alene som statsminister, men én ting jeg faktisk, og først og fremst, hadde gjort, ville vært å gi Sylvi Listhaug sparken!

"Obviously, I would close the oil platforms and put much more effort into green technology"
Aftenposten, 24th September 2017

Our triple helix



Industrial end-users

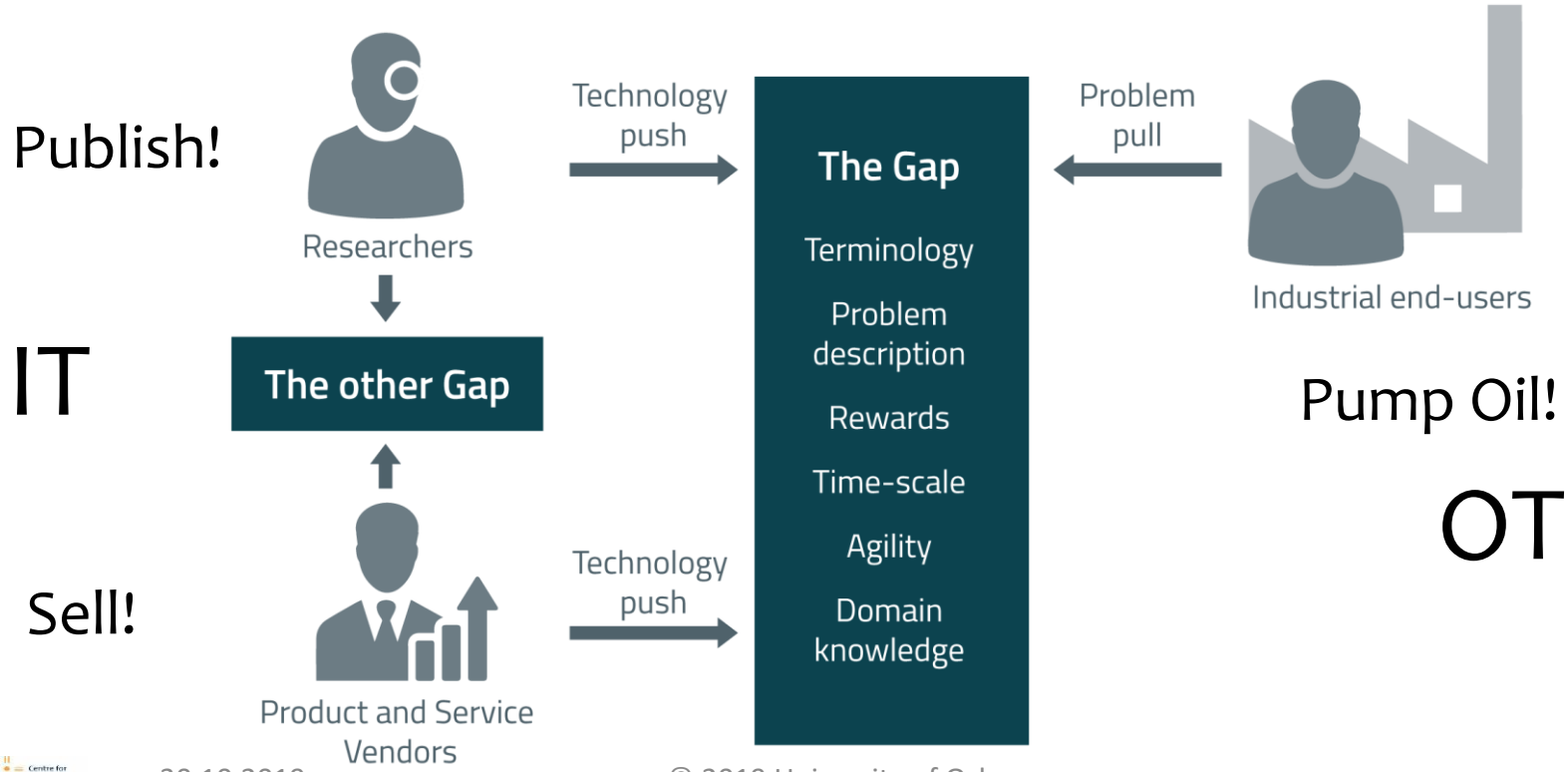
Schlumberger
equinor
TechnipFMC
aibel
AkerSolutions
DNV·GL
KADME
Knowledge and data management expertise
OSIsoft.
SAP
IBM
computas
EVRY
NUMASCALE
BIGGER DATA ANALYTICS
Dolphin

Academia

UiO : University of Oslo
DEPARTMENT OF COMPUTER SCIENCE
UNIVERSITY OF OXFORD
NTNU
Norwegian University of Science and Technology
simula
SINTEF

IT Vendors

Building bridges to fill gaps



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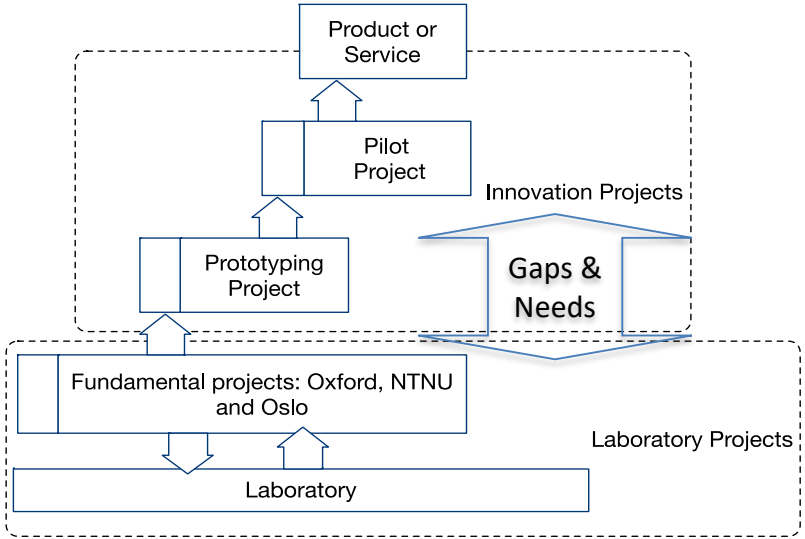
The boundary spanner

- Entrepreneurial professors with EU project experience
- Advocates and commissioners of research in companies
- Centre coordinator – industrial post-doctoral experience in university

Two ways of filling the gaps

An innovation cycle aligned with digitalization



Building arenas for establishing common understanding

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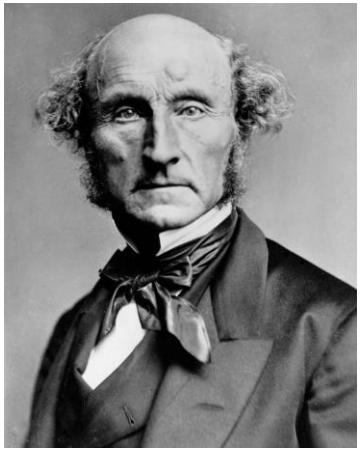
Building arenas for establishing common understanding

"It is hardly possible to overate the value (…) of placing human beings in contact **with persons dissimilar to themselves**, and with **modes of thought and action unlike** those with which they are familiar (…) Such communication has always been, and is peculiarly in the present age, **one of the primary sources of progress**"



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John Stuart Mill (1842)

Quoted by Frølund and Riedel, Strategic Industry-University Partnerships, 2018.

We cannot do this alone

- You need us:
  - Digitalization pilots need our computer science to succeed
- We need you:
  - We need to prove our worth on non-toy problems
  - Our computer science is stimulated by your needs as geologist, engineer, doctor or manager

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Research programs build a foundation for …

Analysis of Complex Systems		Ontology Engineering	
Semantic Integration		Data Science	
Scalable Computing		Industrial Digital Transformation	

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… Beacons addressing industry challenges

Geological Assistant		Integrated Digital Planning	
Subsurface Data Access & Analytics		Digital Twins	
Digital Field & Reservoir Management		Digital Field Development	
Personalized Medicine		Environmental Applications	

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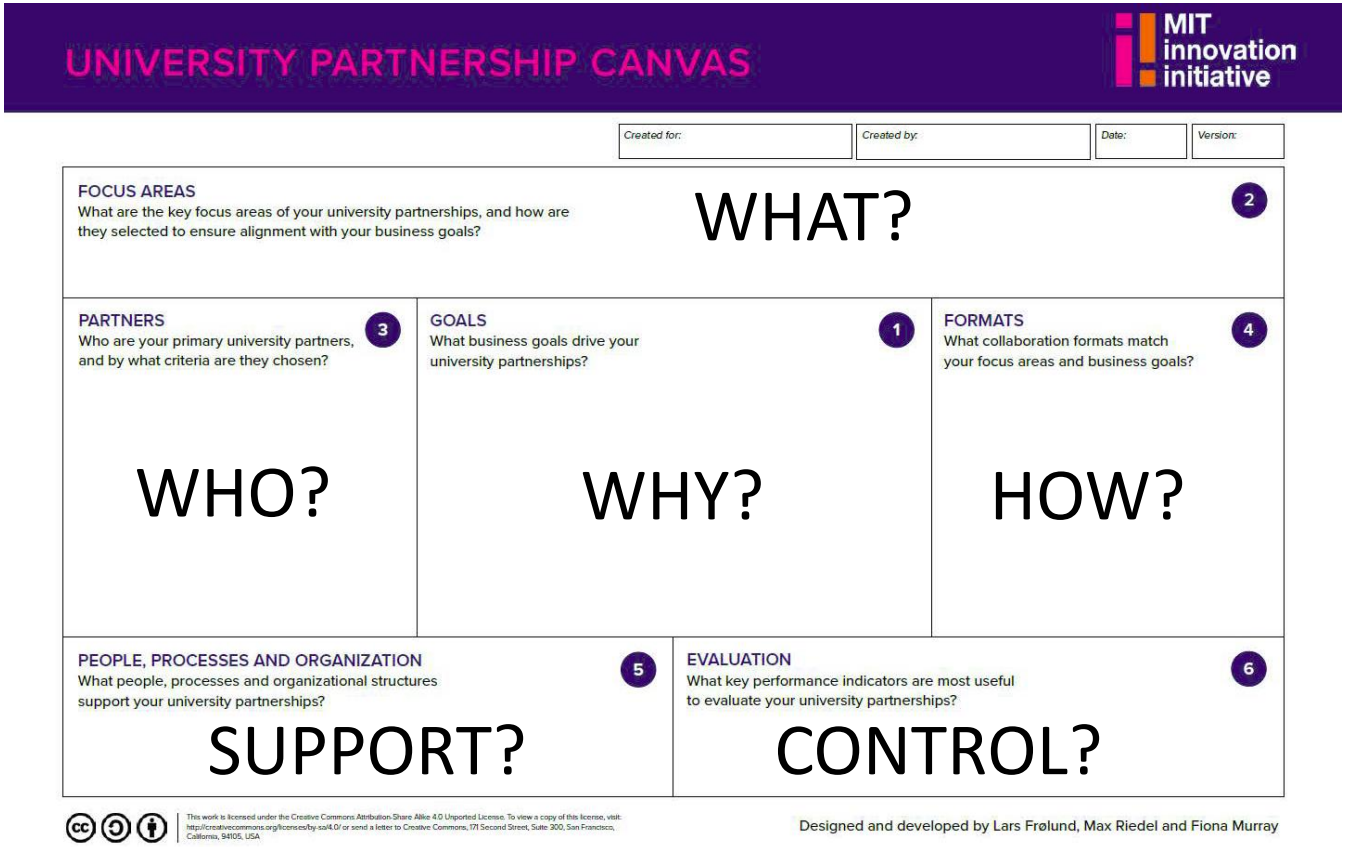
UNIVERSITY PARTNERSHIP CANVAS
MIT innovation initiative
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Date:
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FOCUS AREAS
What are the key focus areas of your university partnerships, and how are they selected to ensure alignment with your business goals?
WHAT?
2
PARTNERS
Who are your primary university partners, and by what criteria are they chosen?
3
WHO?
GOALS
What business goals drive your university partnerships?
1
WHY?
FORMATS
What collaboration formats match your focus areas and business goals?
4
HOW?
PEOPLE, PROCESSES AND ORGANIZATION
What people, processes and organizational structures support your university partnerships?
5
SUPPORT?
EVALUATION
What key performance indicators are most useful to evaluate your university partnerships?
6
CONTROL?
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Designed and developed by Lars Frølund, Max Riedel and Fiona Murray

Goals

- Industrial
  - Gain access to end user's problems and thereby expose, benchmark and improve their hardware, software and services.
  - Forum for building collaboration between companies around research problems in the centre. Several partners talked of a "forum" or a "community vision".
  - Build the digital competence of their personnel and influence internal R&D.
  - Build on existing relationships in European research projects.
- Academic
  - Work with real industrial problems and real data sets
  - Engage with end-users of technology and
  - Prototype our technologies in our partner's products and systems

Formats

- Places to meet and share research ideas and results
- Laboratory for software and hardware.
- Innovation projects, with several companies and research groups.
- SMEs and service companies need external funding or payment from operating companies to participate in innovation projects.
- Placement of researchers in companies is possible and desirable.
- Seminars and workshops are vital for building collaboration networks and shared understanding.
- SIRIUS' mentoring program is a valuable way of building relationships.
- Interns, M.Sc. projects and summer students.
  - Needs to be met with recruitment of suitable students and changes to curricula that support this exchange.

Acknowledgements

The SIRIUS partner companies.

The Research Council of Norway, through project number 237898