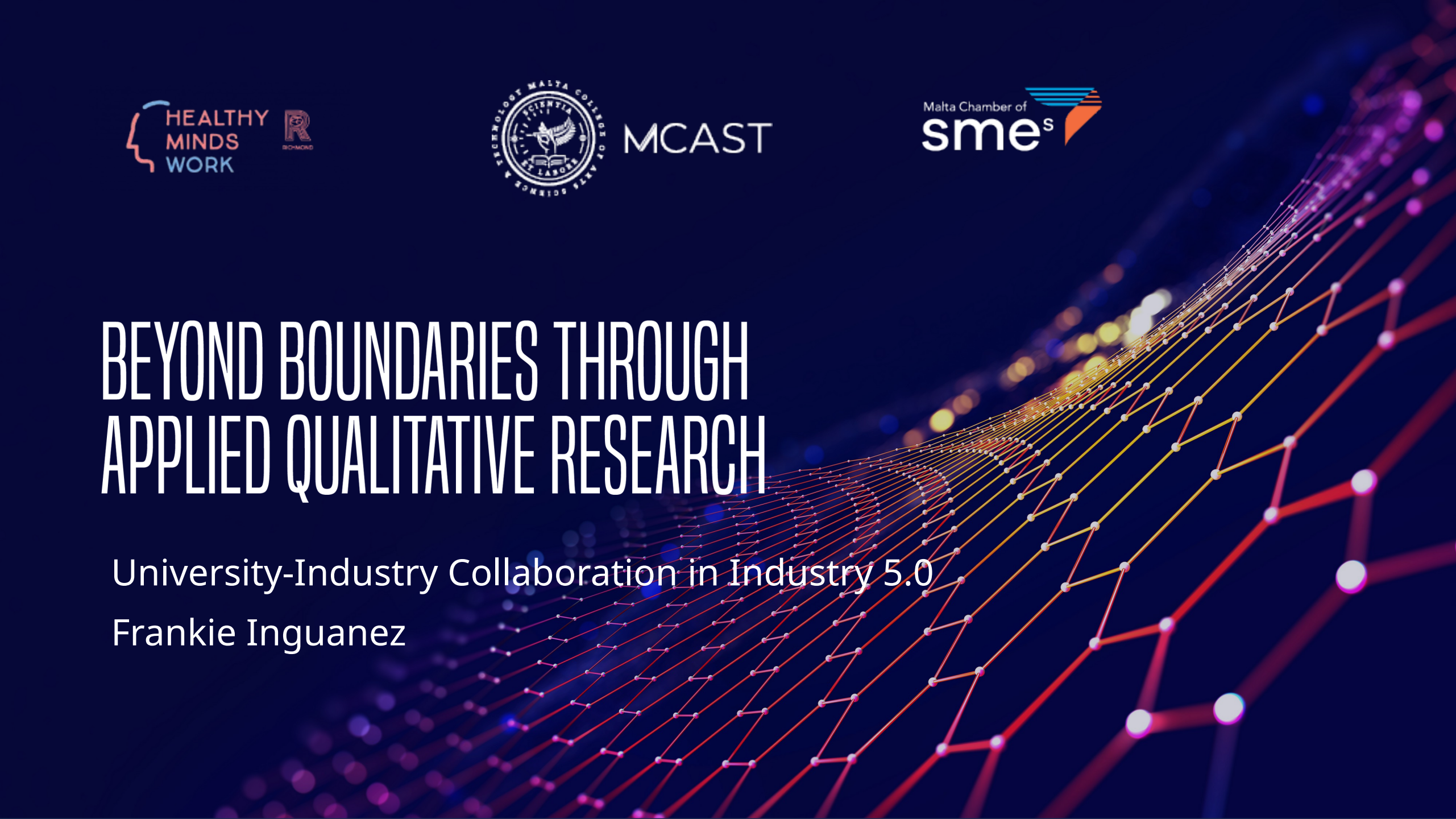


BEYOND BOUNDARIES THROUGH APPLIED QUALITATIVE RESEARCH

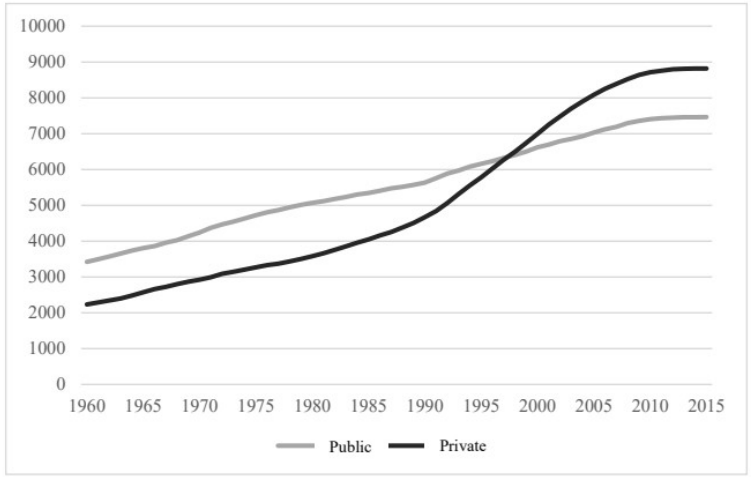
University-Industry Collaboration in Industry 5.0

Frankie Inguanez

Tertiary education growth

Previous research has shown the **massive expansion in tertiary education around the globe**, with **developing nations catching up quickly with the historical forerunners**

Figure 1. Number of higher education organizations offering a first terminal degree worldwide, 1960-2014.

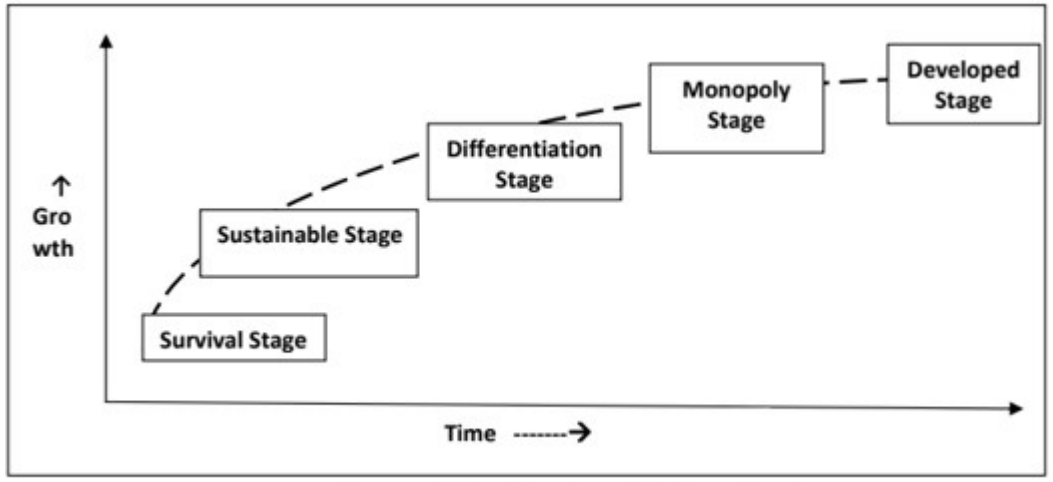


Source. Author's calculations of data from the World Higher Education Database (WHED).

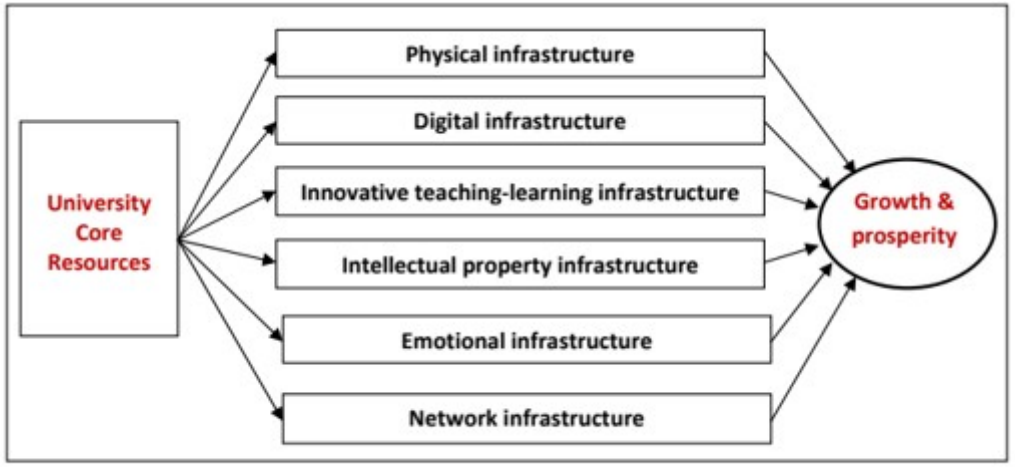
- Open borders and free markets often go hand in hand and facilitate the mobility of students, faculty, and service providers.
- Such work is often propelled by initiatives at the regional level where the overlapping **European 9 Qualifications Framework** and the **Bologna Process of higher education reorganization and standardization** can be considered the most elaborate attempt (Zapp 2017)

Growth stages of the Uni Lifecycle model

Innovations in higher education model are finding importance than ever before due to enhanced higher education institutions and the advancement in technology adopted mass education opportunities. After privatization of higher education, there is an enhanced competition between universities to attract students globally. **Universities are competing with each other in terms of their physical and intellectual assets.** (Aithal and Aithal 2019)



Growth stages of the Lifecycle model of a university



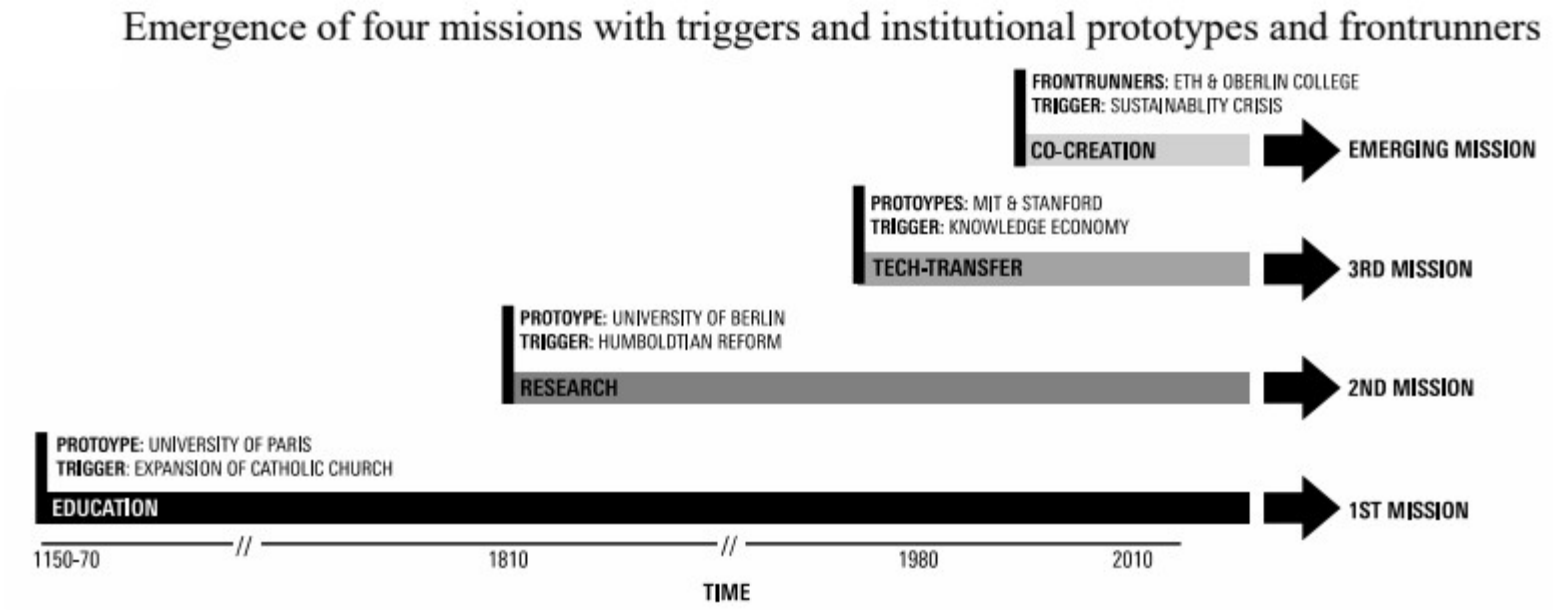
University Core Resources model for growth & prosperity

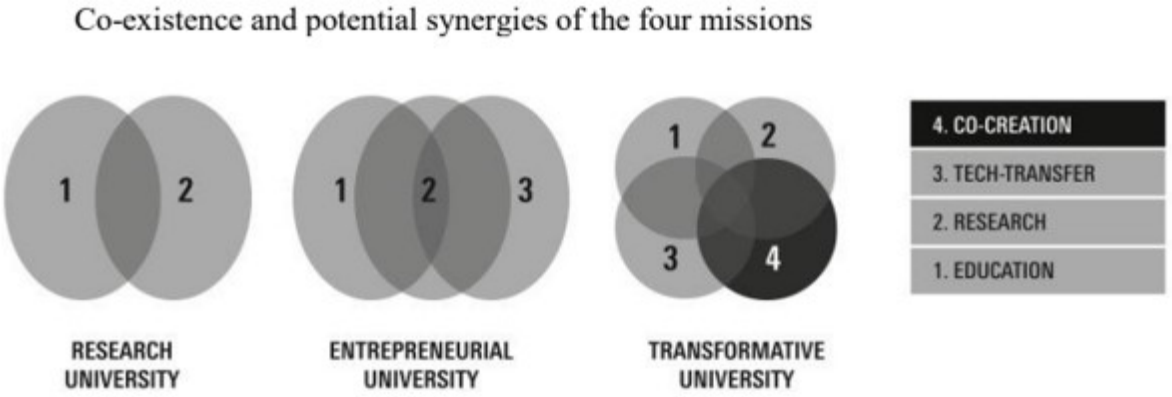
Transitions of Higher Education

Selected elements	Elite 0–15% tertiary enrolment	Mass 16–50% tertiary enrolment	Universal Over 50% tertiary enrolment
Attitudes to access	A privilege of birth or talent or both	A right for those with certain qualifications	An obligation for the middle and upper classes
Functions of higher education	Shaping mind and character of ruling class; preparation for elite roles	Transmission of skills; preparation for broader range of technical and economic elite roles	Adaptation of "whole population" to rapid social and technological change
Institutional characteristics	Homogeneous with high and common standards	Comprehensive with more diverse standards	Great diversity with no common standards
Locus of power and decision making	"The Athenaeum" – small elite group, shared values and assumptions	Ordinary political processes of interest groups and party programs	"Mass publics" question special privileges and immunities of academia
Access and selection	Meritocratic achievement based on school performance	Meritocratic plus "compensatory programmes" to	"Open" emphasis on "equality of group achievement"

(Saguin 2022)

Education four missions



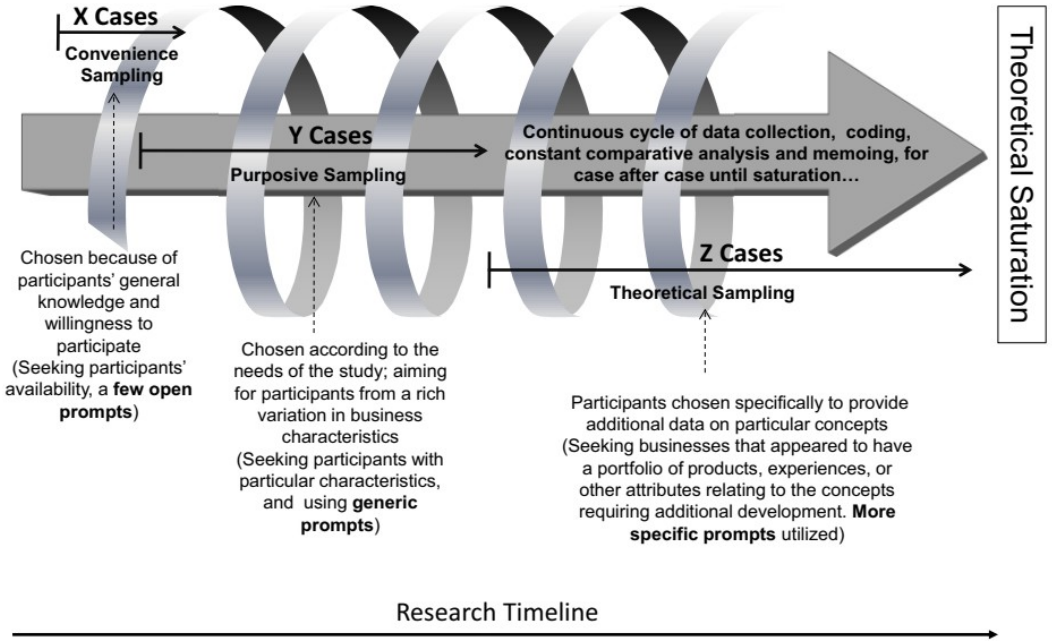


(Trencher et al. 2014)

Methodology

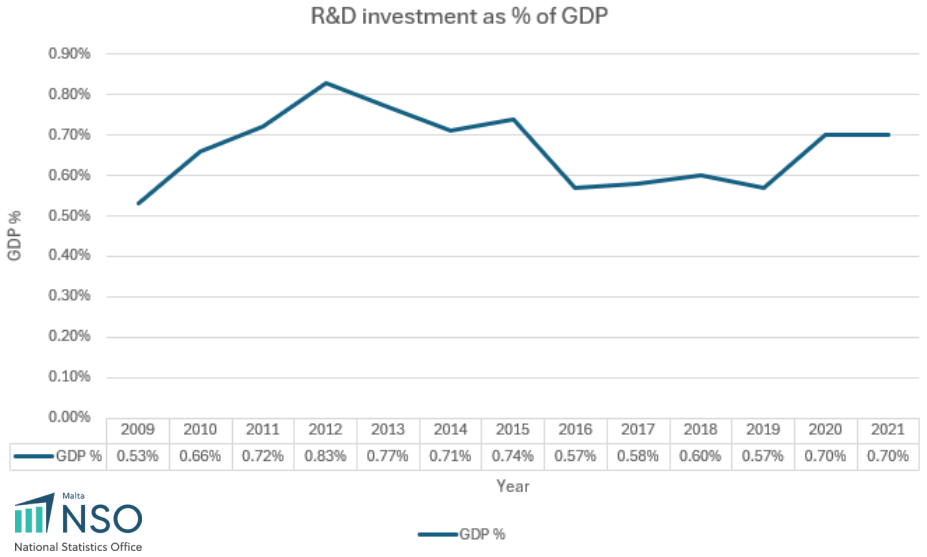
How is University-Industry collaboration being shaped with Industry 5.0?

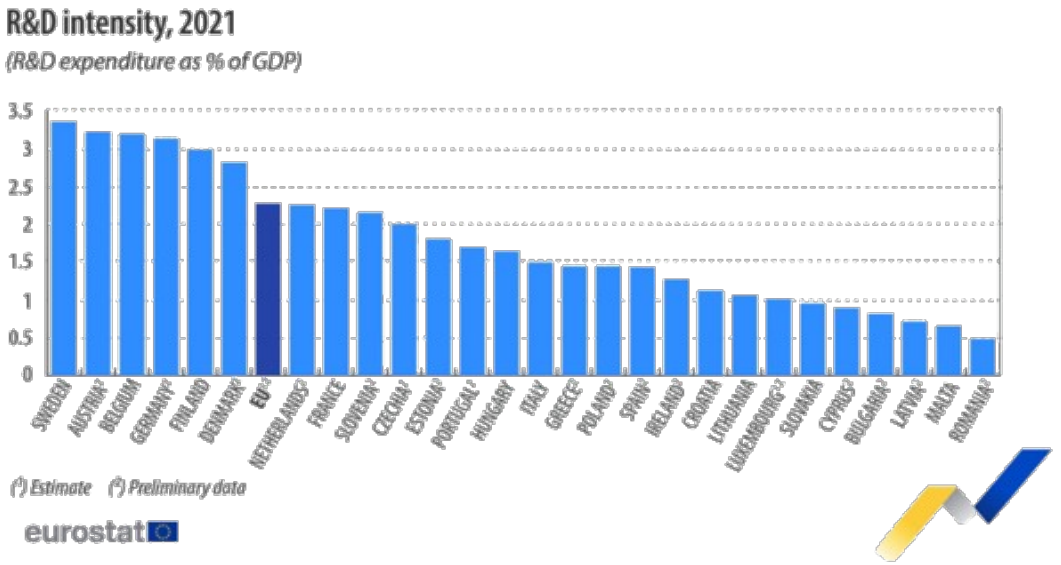
- A **grounded theory** enquiry in research practices across researchers, experts and practitioners.
- **Primary:** 15 interviews
- **Secondary:** NSO, MFHEA, Eurostat, EMCOSU

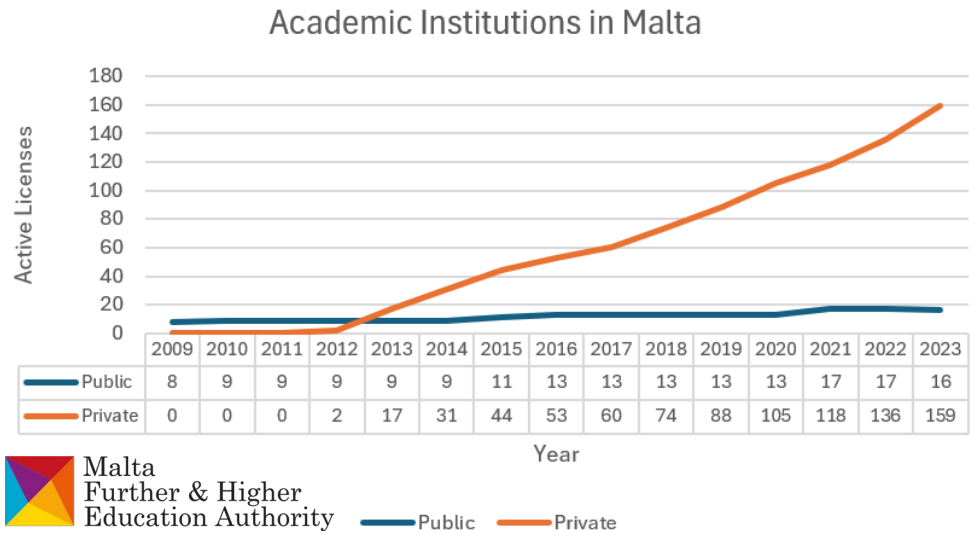


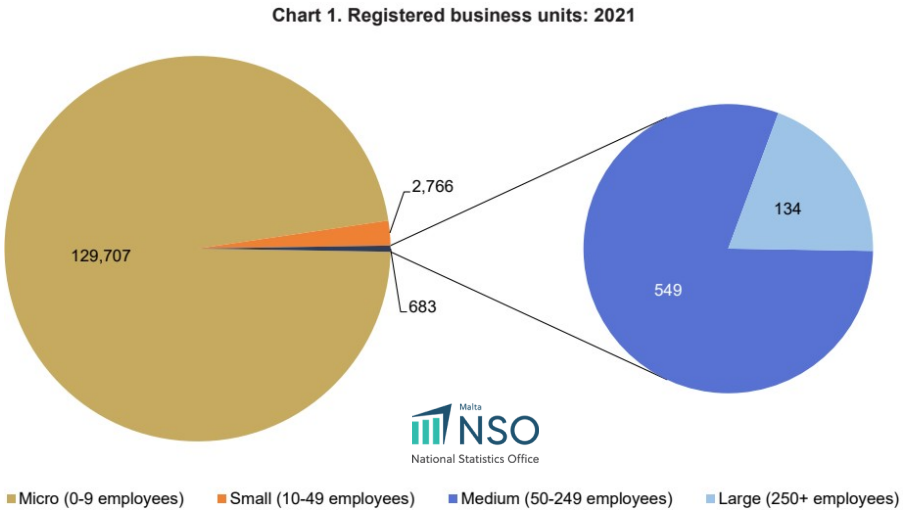
(Rizzo et al. 2024)

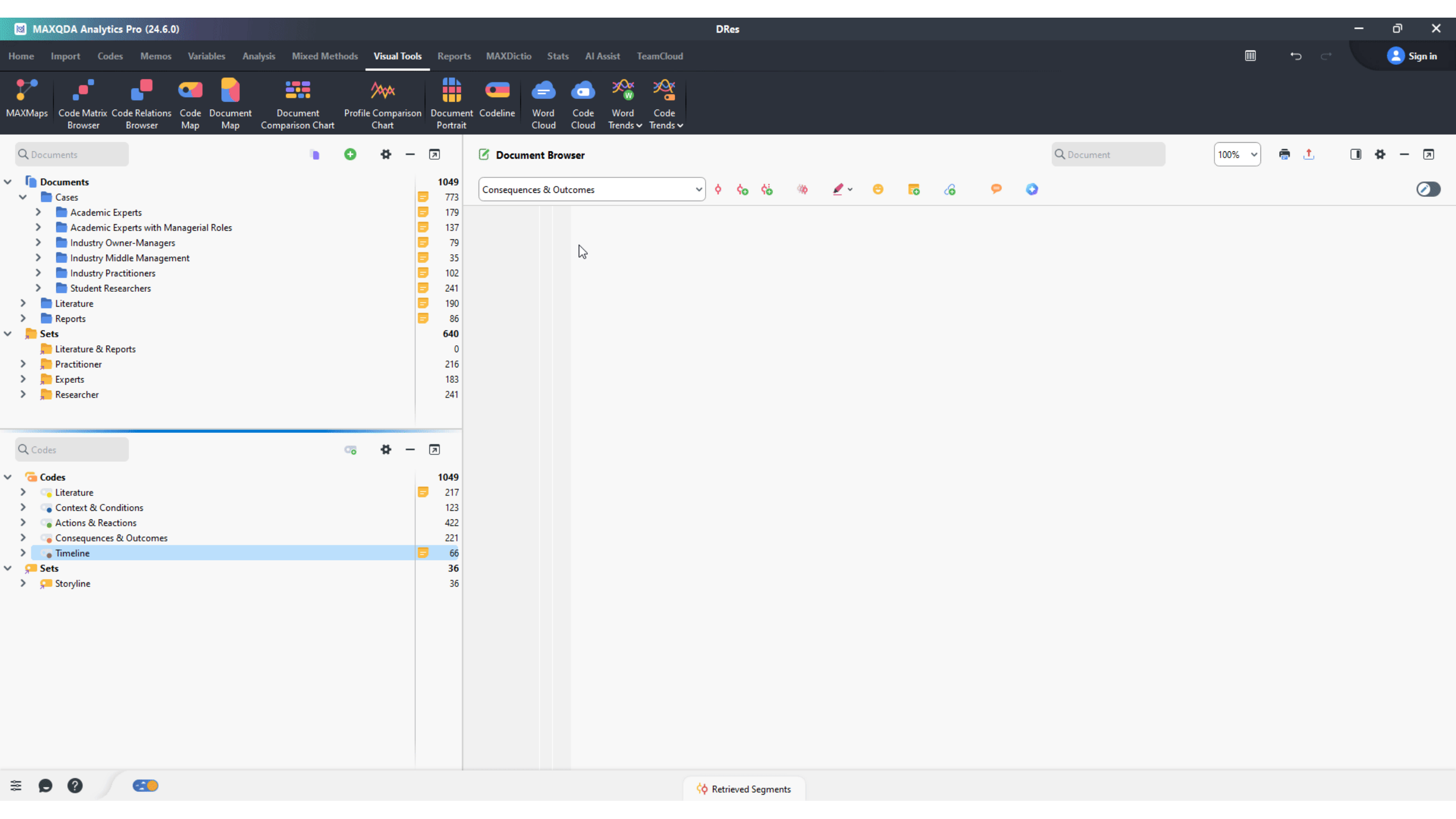
Local Context







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Code Relations Browser
Code Map
Document Map
Document Comparison Chart
Profile Comparison Chart
Document Portrait
Codeline
Word Cloud
Code Cloud
Word Trends
Code Trends
Documents
Documents 1049
Cases 773
Academic Experts 179
Academic Experts with Managerial Roles 137
Industry Owner-Managers 79
Industry Middle Management 35
Industry Practitioners 102
Student Researchers 241
Literature 190
Reports 86
Sets 640
Literature & Reports 0
Practitioner 216
Experts 183
Researcher 241
Codes
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Literature 217
Context & Conditions 123
Actions & Reactions 422
Consequences & Outcomes 221
Timeline 66
Sets 36
Storyline 36
Document Browser
Document
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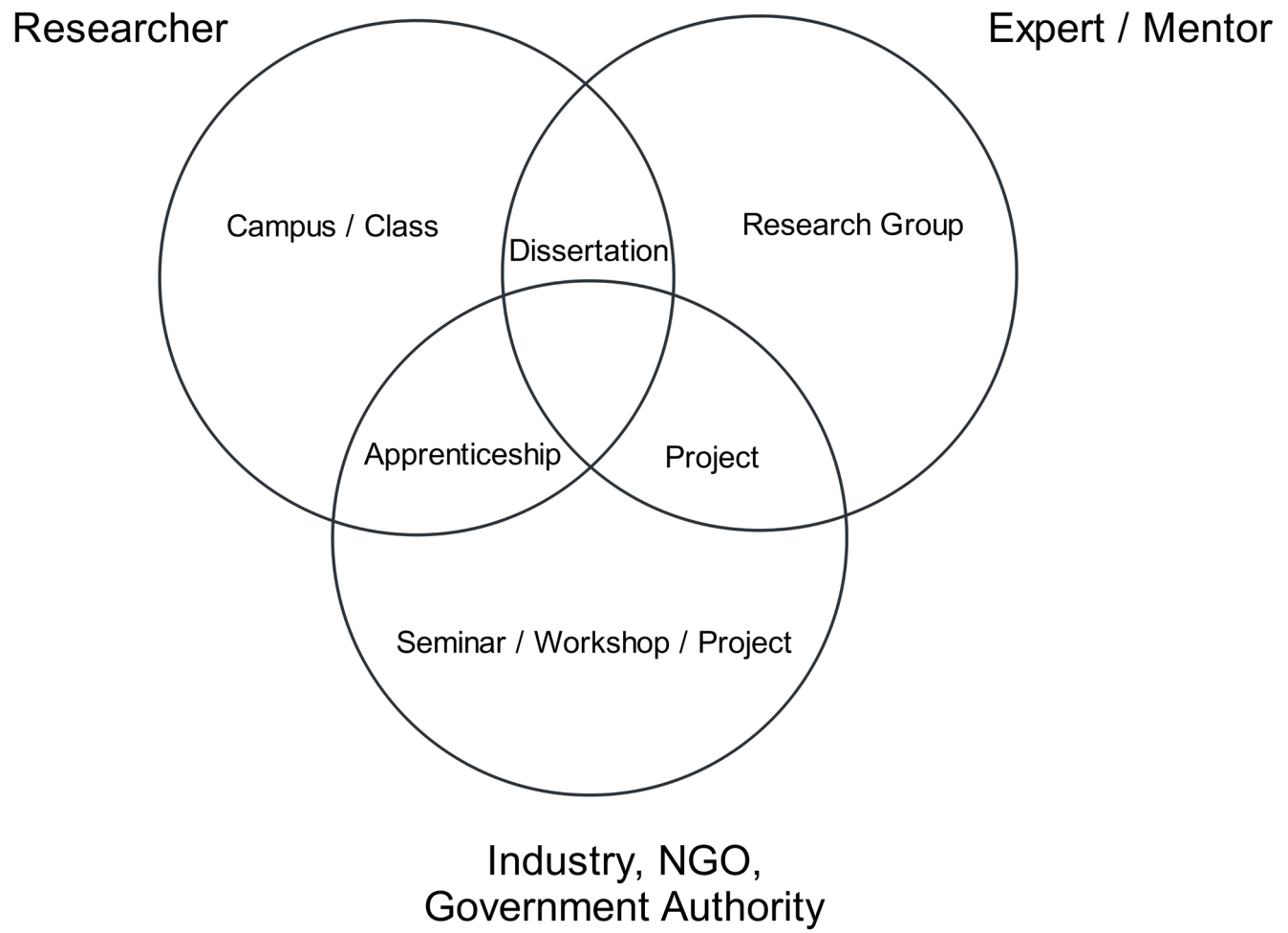
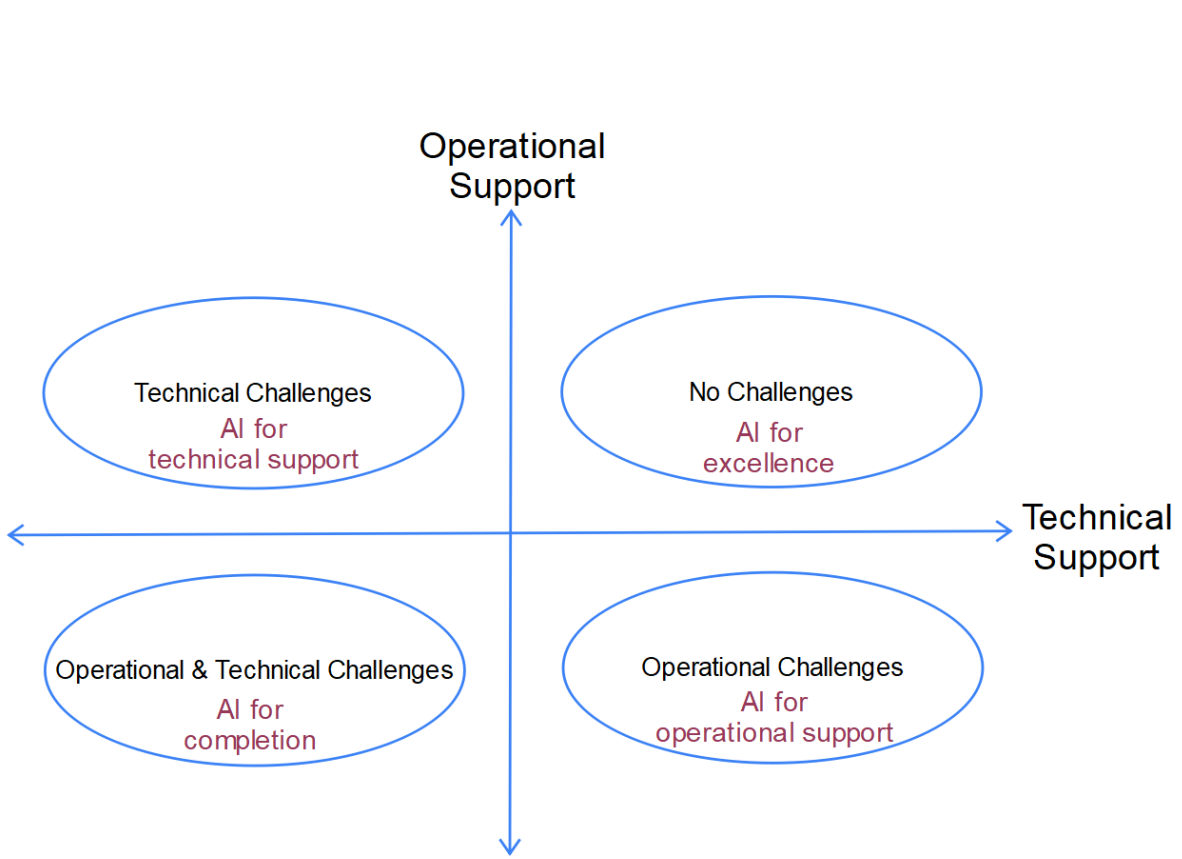
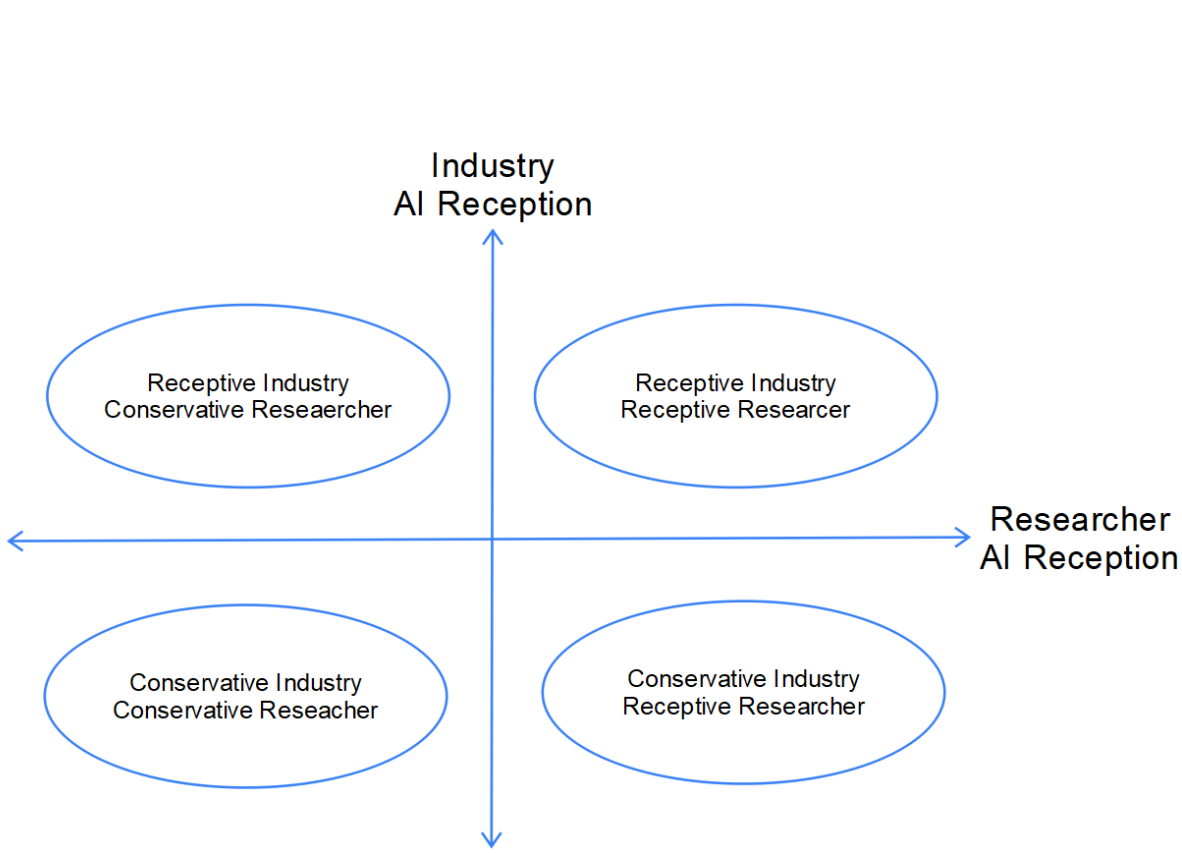
Consequences & Outcomes
Retrieved Segments

Communication Channels



AI Positioning & Usage





Key Findings

- **Industry Relevance:** The undergraduate research is limited to academic interest and even though it is being recognised at the international level through academic publications, it is not perceived as relevant to the local industry. Certain practitioners are nonparticipant in the ideation of the research, do not know how to utilise this research, and do not see value in it. Industry are seeing more value in the apprenticeship programme.
- **Research Diversity:** The undergraduate research area diversity is not a representation of the technology diversity within the local sector. Also, it is not a true representation of the diversity in academic interests, which leads to further misalignments of mentor-student technical interests.

Key Findings

- **Different AI adoption:** Students are progressing from an academic environment that is receptive to AI to an industry that is very sceptical and is not utilising the technology internally. The indications are that the students would need to redefine how they research content within the industry without the use of AI.

Emerging theory on the mentor-student undergraduate research alignment scenarios.

		Technical Domain (T)	
		Unmatched	**Matched**
Operational Support (O)	**Lacking**	(1) OT deficiency	(2) O deficiency
	Sufficient	(3) T deficiency	(4) No deficiency

Next Steps

- Sampling
  - Currently in purposive
- Interview
  - Young researchers utilize a more advanced and stable AI creatively
  - Small IT organizations
  - Researchers in funded projects
  - Management in Research
- Focus
  - Understanding misalignment situations more
  - Identifying different gaps

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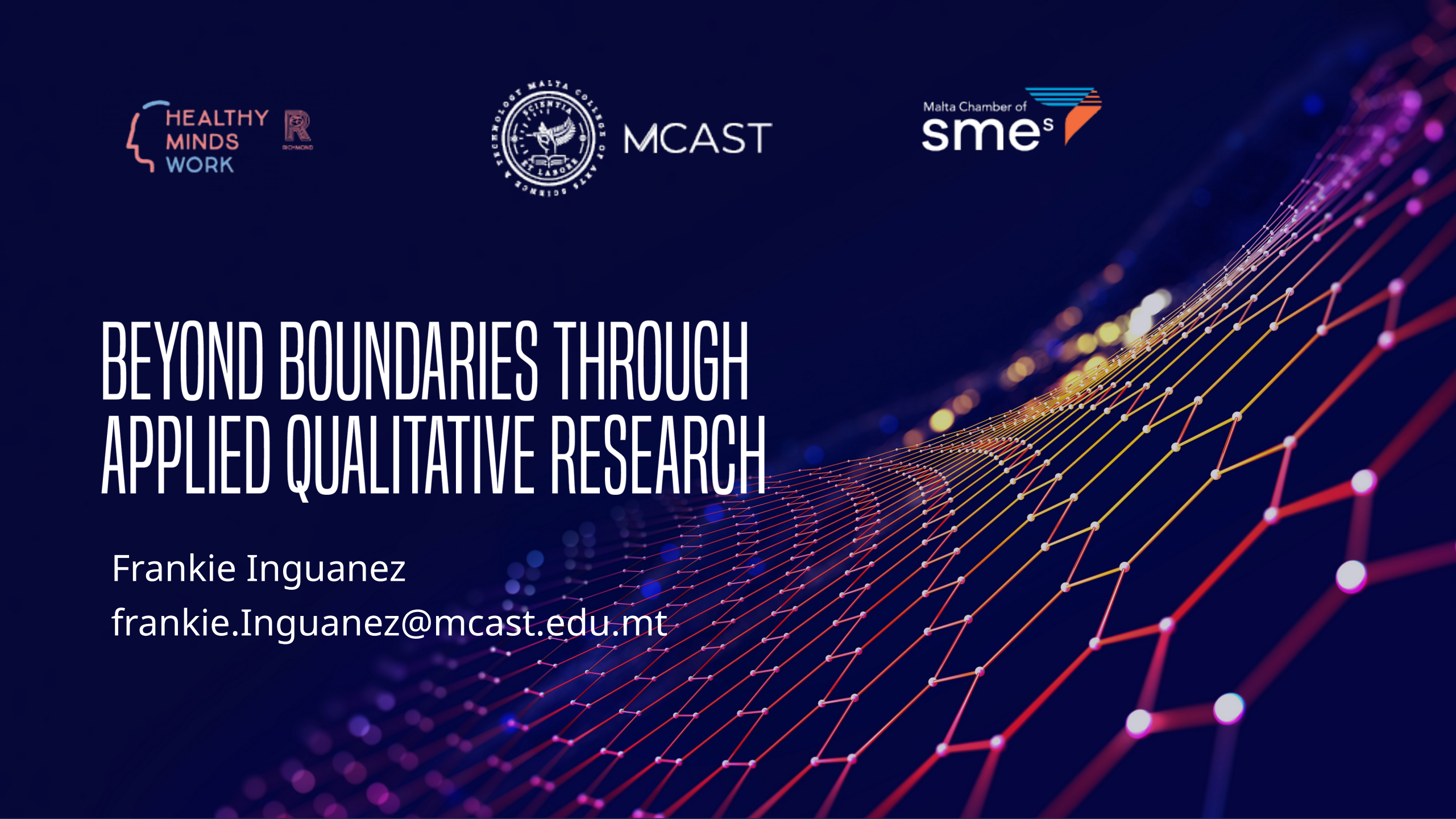

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