

# Grounding and Anchoring: Success Factors for Academia-Industry Collaboration

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## Abstract

This paper integrates a top-down analysis of the existing literature on academia-industry collaboration (AIC) with a bottom-up qualitative study consisting of 16 anonymised interviews. From a variety of academic and industry sources we identified three dominant discourses that are frequently drawn upon. These often-repeated statements, while partially true, act to obscure considerably complexity and nuance. In an effort to expand existing AIC discourse, we introduce two key concepts: *grounding* and *anchoring*. These can take place in an organisational or a personal context. An AIC project is personally grounded, when individuals involved in the project feel that the work is meaningful to them, that it is aligned with their wider values and is making a difference to the world. Analogously, organisational grounding indicates that a project is consistent with the culture and values of the organisation. An AIC project is personally anchored when the people responsible for it feel a strong sense of ownership and agency towards the project. Organisational anchoring indicates that a project is fully supported within the organisation, in particular by the relevant managers and executives. When a project is sufficiently grounded and anchored, success and the personal satisfaction of the people involved in the activity are more likely to follow.

## Keywords

academia, industry, collaboration, discourse analysis, knowledge production, academia-industry collaboration.

## Statements and Declarations

*Competing Interests:* Irene Costera Meijer and Enrico Motta were members of the MediaFutures WP Advisory Board while conducting this research, while Florence Walker was employed by MediaFutures as a Research Assistant.

## JEL Classification

O32, L2, L3, M1

# 1 – Introduction

This report emerged from the collaborative research conducted at SFI MediaFutures (<https://mediafutures.no/>), a flagship research centre in Norway, which brings together academia and industry to foster research and development into responsible media technology. Originally, the primary motivation for this study was to analyse what we had learned from the experience so far, and what we could do better in terms of maximising the value of Academia-Industry Collaboration (AIC). However, as the study progressed, we started to look beyond MediaFutures to see what lessons can be learnt from other AIC experiences. How does one successfully collaborate at the intersection of two such different realms, each with its own distinct vocabularies, cultures, and institutional logics? Or, as phrased in our original research question: which factors distinguish (un)successful collaborations between academia and industry?

A core motivation of the project was gaining an understanding of failed and successful collaborations, inspiring and difficult experiences. Due to their experiential nature, these often lack concrete output or documentation and so are less visible in the wider AIC discourse. Additionally, many existing papers (Bruneel, D’Este, and Salter 2010; Huang and Chen 2017; Puerta-Sierra, Montalvo, and Angeles 2021) focus on the macro-level factors driving AIC (for example, company strategies or government support). By way of contrast, we wanted to focus on an account of everyday experience: the many micro-level factors that may determine the success or failure of a collaboration. These can include the style of the collaboration, the experiences and motivations of those involved on a day-to-day basis, or the way joint goals are defined and agreed upon.

This report combines a top-down review of existing AIC literature with bottom-up ‘war stories’ in the form of anonymised qualitative interviews. These allow us to identify several dominant discourses pertaining to AIC, which we then examine in more detail – using our respondents’ lived experience to find a more complex, nuanced version of each. Two key concepts emerged from this process: *grounding* and *anchoring*. A project is grounded when the individuals involved in AIC feel that the work is meaningful to them, that it is aligned with their wider values and is making a difference to the world. The project is anchored when the people/person responsible for the AIC project feel a strong sense of ownership, and agency towards the project. Grounding and anchoring also apply to organisations. A project is grounded in an organisation if it is perceived as consistent with its culture and values. We talk instead of organisational anchoring to indicate that a project is perceived by the people working on it as fully supported within an organisation, in particular by the relevant managers and executives. Note our use of the words ‘feel’ and ‘perceive’, when talking about grounding and anchoring: even if the conditions we have described are present, neither grounding nor anchoring can take place if individuals do not experience that this is the case.

It is often the case that an organisation or institution will have values and goals that do not always align perfectly with those of its employees. Furthermore, any individual involved in an AIC project will have concerns that range outside of that context: a private life, external sources of stress or inspiration, or wider professional aspirations. All of these can influence and be influenced by the level of grounding or anchoring present in an AIC project. With this in mind, we have found it useful to separate grounding and anchoring into two different contexts: the organisational and the personal. That said, it must be remembered that there is some overlap and ‘interaction’ between these two realms. For example, the values of individuals can work to shape the values of an

organisation, and vice versa. It remains the case, however, that the key factors shaping AIC tend to appear quite different if we adopt a perspective centred on the people at the front line of these initiatives.

Collaboration is a fundamentally social activity. While institutional and organisational mechanisms are of great importance to AIC, it is at its most basic level a series of interactions between individuals. These interactions are shaped not only by their surrounding structures but by the individuals themselves – their emotions, their personal lives, and their professional goals inside and outside of the collaboration – particularly so when collaborators are working very closely over long periods of time. This is the domain of the personal.

In the ideal collaboration, there is a high level of both grounding and anchoring present both organisationally and personally - on both sides of the academia/industry divide. All actors involved feel that the project is aligned with their social values and helps them to achieve their wider goals (personal/organisational grounding). There is a clear organisational unit with both felt and actual responsibility for the project (organisational anchoring) and the individuals within it are personally motivated and facilitated to help it to succeed (personal anchoring). Projects that are both grounded and anchored are far more likely to succeed and be thought of positively by their participants.

## 2 – Literature Review

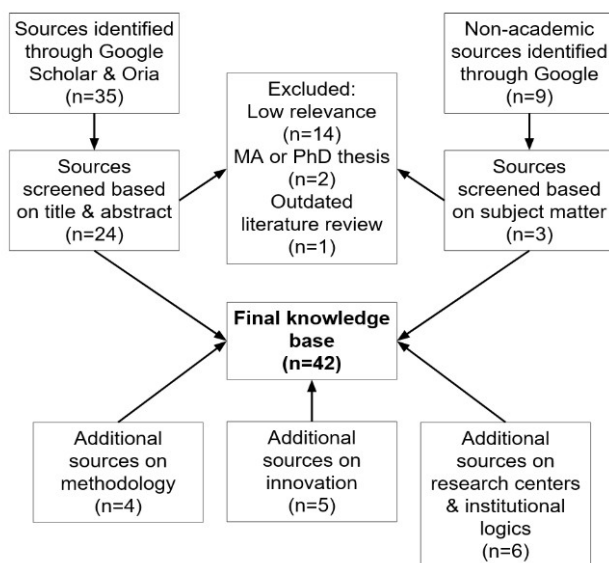


Figure 1: The scoping process.

- 'collaboration in academia'
- 'collaboration in media technology'
- 'collaboration in research'
- 'collaboration in technology'
- 'collaboration in technology' 'innovation'
- 'collaboration' 'media technology'
- 'google' 'collaboration'
- 'google' 'collaboration' 'article'
- 'interdisciplinary research'
- 'interdisciplinary research' 'media technology'
- 'microsoft' 'collaboration' 'article'
- 'university industry collaboration'
- 'university industry collaboration europe'
- 'university industry collaboration norway'

Figure 2: Selected search terms used in scoping.

The scoping process was composed of three stages: initial exploration, ‘snowballing’, and industry perspectives.

In the first, papers were collected by searching for various keyword combinations (Fig. 2) in the University of Bergen’s institutional database (Oria) and Google Scholar. Any that appeared particularly relevant were added to the pool, then screened based on their titles and abstracts. As noted in Fig. 1, 17 were excluded at this stage. The intention at this point was to gather a selection

of papers from various points between 2000 and 2022, to gain a sense of both the current state of the field and its most recent context.

The second stage – ‘snowballing’ – formed a deeper exploration of the most recent scholarship on the topic. Taking the most relevant articles gathered in the initial searches, Google Scholar was used to assess the papers that cited them. Those that were (a) recent, (b) relevant to our interests, and (c) well-cited themselves were added to the pool and – as above – screened based on their titles and abstracts.

Finally, given that we were interested in industry perspectives in addition to academic ones, industry sources were found by searching for the same keyword combinations in Google (in addition to the names of major players in the technology industry, such as Google or Microsoft).

## 2.1 – Background and Context

Although academia-industry (A-I) collaboration has much older roots, we can trace its modern form back to the 1980s and 1990s; it was during this period that it received a lot of policy support (Lee 2000). As Yong S. Lee writes:

‘But it is really during [the 1980s and 1990s] that university-industry collaboration [gained] serious policy attention. Underlying this policy attention is what is generally known in the U.S. scientific community as a “social contract” between science and society, an embodiment of postwar science policy (Bush, 1945)’ (2000, 111).

Lee goes on to explain how this social contract consisted of an understanding that scientists would return the products of their research to society, and in return would receive the support they needed to do more research. This idea of reciprocal, mutual benefit underpins a lot of thinking about A-I collaboration to this day.

However, it is also worth highlighting Lee’s use of ‘postwar’ – during the same period as this boom in A-I collaboration, the United States were enmeshed in the final stages of the Space Race and the Cold War. In addition to being mutually beneficial, A-I collaboration and innovation quite clearly advances the interests of the government. Later scholarship supports this.

The vast majority of the articles referenced cited the Triple Helix model originated by Henry Etzkowitz and Loet Leydesdorff and specifically designed to theorise university-industry-government collaboration (1995). The Triple Helix model (Fig. 3) consists of a Venn diagram in which academia, industry, and government make up the three main circles. In a keynote explanation of the model, Etzkowitz describes how these spheres interact to generate innovation and entrepreneurship:

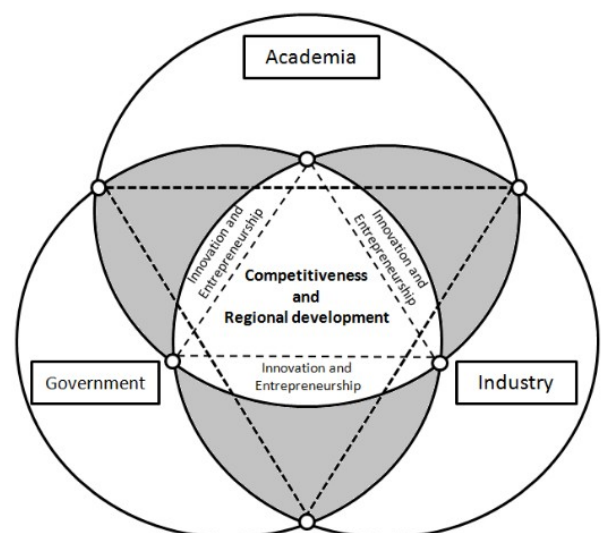


Figure 3: Etzkowitz & Leydesdorff's TripleHelix Model, as illustrated by Farinha (2012, 18).

‘Industry operates in the Triple Helix as the locus of *production*; government as the source of *contractual relations* that guarantee stable interactions and *exchange*; the university as a source of new knowledge and technology, the generative principle of *knowledge-based economies*.’ (2003, 295, emphasis ours).

The Triple Helix Model therefore operates by a very particular logic, in which collaboration is justified in financial terms. While these financial drivers are important at a management level, we have found that they do not necessarily emerge when people discuss their everyday experiences.

## 2.2 - The Benefits of A-I Collaboration

João Augusto Ferreira Freire and Eduardo Gonçalves’ recent literature review found that ‘the overwhelming majority of the evidence supports that cooperation has a positive effect on innovation performance’ (2022, 3394).

Interestingly, a 2022 paper by Jyoti Paswan et al. found that ‘research papers involving UIG collaboration do not differ significantly [from non-collaborative papers] in terms of citations’ – however, it was found that research papers that collaborated with industry partners received more social media attention than those that did not (6079).

A 2018 landmark report on university-business cooperation (UBC) from the European Commission argued that

‘...the campus acts as a platform or hub, a modern collaborative precinct, which brings together excellence in HEIs and business. UBC has the potential to increase the ability of the higher education system to keep pace with the rate of change in our societies in the areas of education and research, to create and develop talent as well as rise Europe’s competitiveness in a globalised and rapidly changing world’ (Davey et al. 2018b, 14).

Perhaps most hearteningly, the same report noted that ‘once academics and business cooperate, they tend to cooperate in multiple ways and at increasing levels’ (ibid, 9). This suggests that rather than simply being an ideal, the benefits of A-I collaboration are tangibly felt by its participants.

## 2.3 – Barriers to A-I Collaboration

Some earlier articles pointed to Intellectual Property disputes as a difficulty faced by A-I collaboration (Siegel et al. 2003; Perkmann and Walsh 2009). However, more recent scholarship does not seem to consider this a barrier worth mentioning. This shift is presumably due to A-I collaboration becoming more commonplace, resulting in a greater legal precedent for determining IP.

The European Commission report went into significant detail on the perceived barriers to UBC:

‘Academics, HEI managers and businesses agree that lack of funding and resources is a barrier to cooperation. However, academics specifically name bureaucracy and the lack of work time as inhibitors, and business identify cultural differences with respect to time management and differing motivations as specific obstacles’ (Davey et al. 2018a, 7).

This was supported by our research into industry perspectives. An essay posted on Medium by Dyaa Albakour – lead data scientist at Signal AI – stated the following:

‘It usually takes a few months from the moment a research collaboration is defined until we have a visiting researcher in the company. This might not seem like a long time in academia, but it is a long period for a start-up, and even for a scale-up’ (2021).

Interestingly, the European Commission found that differing time horizons were less of a barrier for Norwegian businesses than for European ones as a whole (Gálan-Muros et al. 2018a, 14). However, Norwegian academics who were not involved in A-I collaboration considered differing time horizons to be the highest barrier (Gálan-Muros et al. 2018b, 14).

To continue the focus on Norway, AIC activities were found to be much less developed here than they are in Europe more generally. However, the report also stated that ‘Norwegian academics perceive most barriers [to be] lower than their European counterparts’ (Gálan-Muros et al. 2018b, 15).

## 2.4 – The Collaboration Ecosystem

Independently of their work on the European Commission report, Victoria Gálan-Muros and Todd Davey proposed the UBC (university-business cooperation) Ecosystem as an iteration on the triple-helix model (Gálan-Muros and Davey 2019). The intent here is to refine the ‘fragmentary’ and ‘indistinct’ field of university-business cooperation into something more holistic (ibid). The Ecosystem model, therefore, takes into account not just the collaboration process itself but its context and supporting mechanisms (ibid).

Its constituent parts are as follows:

*Input* – all the resources available - whether human, financial, or physical (ibid, 1315-1317).

*Activity* – ‘collaborative interactions and cooperative efforts to transfer or exchange knowledge, technology or other properties’ (ibid, 1317).

*Output* – specific products or services delivered as a result (typically short-term) (ibid, 1321-1322).

*Outcome* – ‘direct benefits or detriments... experienced by individuals and institutions’ (typically long-term) (ibid, 1322).

*Impact* – indirect results experienced by ‘individuals, institutions, and societies’ (e.g. increased professionalism, reputation, networks) (ibid, 1323).

*Influencing factors* – Drivers/motivators and barriers that can be affected by management actions in the short/medium term (Davey et al. 2018b, 26; Gálan-Muros and Davey 2019).

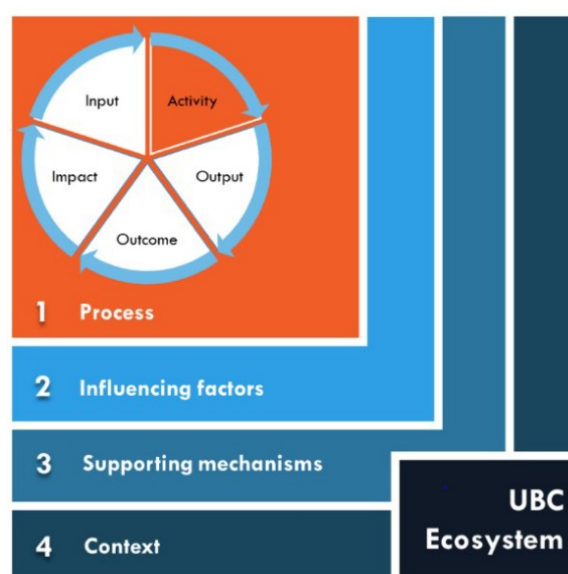


Figure 4: Gálan-Muros & Davey's UBC Ecosystem (2018a, 7).

*Supporting mechanisms* – 'measures to develop and administer UBC, put in place by HEI managers or governments' (Gálan-Muros and Davey 2019, 1324).

*Context* – 'fixed factors that cannot be changed by managerial actions, at least in the short and medium term' (e.g. participant demographics, size of institution, political/economic context) (ibid, 1327-1328).

Gálan-Muros and Davey acknowledge that the UBC ecosystem is highly theoretical, only including micro-level factors that were mentioned in the existing literature (ibid, p.1333). Indeed, much like the Triple-Helix model, it is a distinctively macro-level approach. While the Process and Influencing Factors components recognise the level of individual collaborations, they make up a relatively small part of the overall picture. Similarly, there is not much elaboration given to what said influencing factors might look like, or how they might affect the collaboration process. A key objective of our study, therefore, is to identify critical micro-level factors that may determine the success or failure of specific instances of AIC.

### **3 – Methodology**

An interview guide was drafted, reviewed, and revised. This was intended not to act as an immutable script, but provided a guiding structure for the interviews. It also acted as an example of the kind of questions that might be asked, should participants request more information prior to taking part. The final interview structure was as follows: the interview opened with a general discussion of respondents' experience with AIC, followed by questions about two specific instances – one positive, one negative. The parameters for the former were that it was particularly successful, constructive, and/or long-lasting. The latter was framed as a collaboration that respondents would not want to repeat – where a positive outcome would have been possible, but was not achieved for whatever reason.

During the revision process, a number of 'creative' questions were added. This included asking participants to reflect on their chosen experiences by mapping them on a graph and picking out the emotions they associate with them most strongly from a set of predefined cards. Our intention here was twofold: to ensure that participants remained engaged as the interview progressed and – more importantly – to encourage participants to draw on a different source of knowledge. An increasingly pressing area of interest for the project was the discovery of particular similarities and differences between the dominant discourses on AIC and more submerged, emotional realities; how the level of rational thought interacts with the level of lived experience.

To further refine the interview process, we conducted two trial interviews with early-career researchers based at MediaFutures. These did not form part of the final dataset. Trial Interview A was held within a one-hour timeslot and the participant had access to the interview guide beforehand. Trial Interview B was held within a thirty minute time slot and the participant approached the interview 'blind'. Whether participants had read the interview guide beforehand had no noticeable impact on their responses. However, the one-hour time slot allowed for a much more in-depth discussion and a better quality of interview data. As Trial Interview A had only taken 47 minutes, the interview technique was also adjusted to allow for a more thorough discussion of each point before moving on.

Further focus was also placed on the ‘creative’ questions. We refer here to questions that did not follow a straightforward verbal format. These consisted of drawing a line on a graph and picking relevant emotions from a selection of cards. While the subject of Trial Interview A stated that these had been particularly effective at ‘drawing emotions out of you’, examination of the transcripts suggested that further follow-up was needed on the part of the interviewer. The format of the emotion cards was also altered to allow for discussion of more specific experiences. A blank card was added to the set – in the event that participants had felt an emotion that was not already represented among the cards, they were able to write it here. These new cards would then be added to the set for all subsequent interviews.

Anonymity was a key concern in the interviewing process, given our focus on difficult experiences and failed collaborations. There was also an issue of institutional power: several of the participants were directly employed by MediaFutures, the organisation conducting this research. Several more were professionally connected to the centre in other ways. There was therefore a strong likelihood that their responses might be shaped by this fact, based on a potential need to appear professional, downplay difficulties, or avoid speaking negatively of the centre or its industry partners. We wanted participants to feel comfortable enough to be honest about their experiences, especially those that conflicted with dominant discourses on AIC.

The interviews were conducted, transcribed, and anonymised by Florence Walker – who, as a research assistant at MediaFutures, held relatively little institutional power. Throughout the project, she remained the only researcher to know the identities of all participants. In the anonymisation process, participants were given a randomly generated pseudonym and any references to specific names, companies, institutions, or locations were removed. Only after anonymisation had taken place were the transcripts made available to the other authors of this report, and access to the full transcripts remained limited to those three individuals. Two participants also requested that they be made aware of any quotations used from their interviews beforehand; this was respected throughout.

While five of the interviews were conducted in-person, the rest were done remotely via Zoom meetings. In these instances, Google Jamboard was used to facilitate the ‘creative’ questions. This occasionally resulted in some minor technical difficulties, such as participants being unable to control their drawing as precisely as they’d like. There was one participant who had to use the Jamboard on their phone, which made this especially difficult. However, as the graphs were not themselves an output of the session, this was not disastrous. When difficulties did arise, participants were able to clarify what they meant in the following discussion. Another key limitation here is the fact that the interviews were conducted in English, which was not a first language for several of our participants. As such, the specific formulation of their answers may not be a perfect representation of what was meant.

Analysis of the transcripts primarily made use of interpretive repertoire analysis, as developed by Margaret Wetherell and Jonathan Potter (1987; 1988). This is a critical lens that focuses on how language use creates different versions of social reality, allowing for multiple versions of an event. Interpretive repertoire analysis recognises that there is a high degree of variability within the accounts of any individual speaker, but regularity may be found across different speakers’ accounts of the same phenomena. These accounts form ‘relatively internally consistent, bounded language

units which we have called ... interpretative repertoires' (Wetherell and Potter 1988, 172). Crucially, these repertoires serve a particular social function: 'for discourse analysis... language is put together, constructed, for purposes and to achieve particular consequences' (ibid, 171). Our reasons for choosing this particular lens are discussed further in Section 6.

## 4 – Participant Demographics

The final interview pool consisted of sixteen individuals. We achieved a relatively wide spread of ages, with the youngest being 28 and the oldest 62 (making the range 34 years). There was at least one respondent from every decade between those points, with the majority being in their 40s or 50s. One participant chose not to disclose their age. It should also be noted that while many participants were based in Norway, there were also participants based across Europe and beyond.

We aimed for a 50:50 split between (a) academics and industry professionals, and (b) those affiliated and unaffiliated with the MediaFutures centre. Due to differences in response rates, the final balance skewed towards academics and those affiliated with MediaFutures. Of the sixteen individuals interviewed, nine were academics and seven were industry professionals. Among the academics, six were internal to MediaFutures and three external. Among industry professionals, five were affiliated with MediaFutures and two were not.

One limitation of this study is the relative lack of female respondents; the interview pool was overwhelmingly male, with only three of the sixteen participants being women. Additionally – while we achieved an almost perfect division of early-, mid-, and late-career academics – the industry respondents were split near-evenly between mid- and late-career, with no early-career industry professionals represented. We suspect that this is due to the fact that within industry, you are less likely to become involved with collaborative projects of this sort until you are more senior. Nevertheless, the field would benefit from future studies exploring the experiences of women and early-career industry professionals in AIC.

## 5 – Discussion of Results

Language matters. It is a well-established concept in semiotics that language does not simply reflect reality but acts to construct it (Chandler 2022, 74-78). Our specific methodology – interpretive repertoire analysis – foregrounds the ways in which 'a large part of our activities are performed *through* language; our talk and writing do not live in some purely conceptual realm, but are mediums for action' (Potter and Wetherell 1987, 9, emphasis in original). Furthermore, if repeated often enough, a discourse can solidify into a social reality – a 'common sense' – that may hinder closer examination (see Fazio and Sherry 2020).

A discourse also carries the risk of self-perpetuating. From the previously-discussed 2018 EU report on AIC, we know that those who participate in AIC are more likely to embark on future collaborations (Davey et al. 2018b, 9). We can infer from this that a significant amount of people engaging in AIC have done so before and therefore have access to a particular set of discourses about it. These then shape their expectations as they approach future collaborations – as well as being passed on to first-time collaborators.

It is vital that we effectively label the factors important to AIC so they can be discussed. By introducing a new set of concepts, we hope to broaden the current span of imagination and provide

additional discursive tools with which to ‘make sense’ of AIC. First, however, it is necessary to outline existing dominant discourses in AIC.

## 5.1 – Dominant AIC Discourses

From a combination of academic sources, industry sources, and the interviews themselves, a handful of dominant discourses on AIC emerge:

1. Collaboration is defined by a pre-existing shared goal.
2. Geographical proximity helps collaborations to succeed.
3. Academia operates on a slower timescale than industry.

While these may contain an element of truth, they also act to obscure considerable complexity and nuance. Statements 2 and 3 will be examined in Sections 6.3 and 6.4 respectively. Statement 1, however, serves as a particularly good example of the merits of our qualitative interview approach and so is discussed here.

When respondents were asked what collaboration means to them, they consistently responded with variations on ‘working together towards a shared goal’:

‘...Combining different minds and different perspectives to achieve something you wouldn't be able to achieve yourself... that *you really want to achieve*.’ (Ingo, late-career industry)

‘...Collaboration is uhhh working together *towards a common goal*’ (Anah, early-career academic)

‘...It's working with other people to accomplish a, to accomplish *a goal that we have, that we share jointly*.’ (Paviel, mid-career industry)

In each of these answers, there is an implication that the goal pre-exists the collaboration. It is assumed that either the goal does not need additional defining, or this process takes place prior to the actual work of collaboration. The collaborative process, meanwhile, consists of working *towards* this pre-existing goal.

When speaking organically about their lived experiences, however, participants described a very different process: one in which the shared goal must be continually constructed and adapted throughout the collaborative process.

‘...you need to sort of get the common understanding of what can be achieved, what are the frames we're working within? How can we *adjust what we thought was the goal* to a point where it actually makes sense for everyone involved?’ (Ingo, late-career industry)

‘...if you uh set your goals, if you formulate the goals more broadly, then under such a broad umbrella, *you have much more freedom of movement*.’ (Quinto, late-career academic)

While a shared goal often does pre-exist the collaboration, our findings demonstrate that sharing is a verb that must be repeatedly made meaningful<sup>1</sup>. From the beginning of the collaboration to the end, the goal cannot remain in alignment with the aims and values of all parties without sustained effort.

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<sup>1</sup>As will be made clear in the following section, this is also an example of grounding.

Our participants already knew that this is a crucial part of the process - but they were not necessarily aware that they knew it.

Our respondents knew from their involvement with AIC that there is a more complex reality at play – that knowledge simply needed to be drawn to the surface so it could be more closely examined. The highly specific nature of this knowledge necessarily makes it more difficult to comprehensively model. That said, while examining our informants' accounts, a handful of interpretive repertoires began to emerge. It is our hope that these results constitute a 'way in' to thinking about how the organisational and emotional forces at play in AIC interact at a micro-level.

## 5.2 – Interview Findings

In the following section, through analysis of the interview transcripts, we elaborate on the concepts of grounding and anchoring. These constitute an addition to existing AIC discourses - present in everyday accounts of collaboration but not yet formalised or categorised. We begin with a discussion of grounding - in a personal then an organisational capacity. This includes a further analysis and contextualisation of collaborative goals and of geographical proximity. Subsequently, we examine anchoring - again, with regards to the personal and then the organisational. The latter allows us to develop a deeper understanding of how time horizons operate in AIC.

### 5.2.1 – Grounding

Academic respondents often referred to working with industry as something that connects them to 'the real world' or 'real life'. Many, including the example given below, identified this as a key motivation for engaging in AIC:

'I am looking for... *real world problems to motivate and inspire my research.*' (Nero, late-career academic)

This was consistent across all career stages. One early-career academic, Montana, described the personal value she derived from working with industry - stating that it provided her with a 'grounding experience' that connected her to the rest of the world.

'I think the greatest experience that I got from it is, um, a kind of a *grounding experience* that I. The research that we do here at our tables, at our laptops, it is not necessarily applicable to real life...' (Montana, early-career academic)

In this quotation, Montana locates the academic realm – 'here at our tables, at our laptops' – as a space distinct from 'real life'. The connection between academia and industry (the project) is described as highly contingent. This is corroborated by the following quotation from a mid-career academic:

'I think it was really rewarding for the PhD student because uh, as a PhD student at the university, *it's definitely not something to take for granted that people in the real world will care what you're doing.*' (Edgar, mid-career academic)

Some respondents described purely academic work as lacking in societal relevance or impact, without specifically referencing 'real life' or the 'real world':

‘...that is sort of the big loss of not having the collaboration also from, from my side, is that *if you're publishing a paper, uh that's not really impact. [laughter] Nobody reads a paper.*’ (Mete, mid-career academic)

### ***Personal Grounding***

These statements suggest a level of futility that can be assuaged by participating in AIC. Collaboration with industry – when done successfully – provides a feeling of meaningfulness. Participants are reassured that their work matters, that it makes a difference to the world around them; this constitutes a powerful source of motivation. The AIC- project therefore becomes personally grounded.

We can talk about *personal grounding* when the people involved in the collaboration feel a sense of belonging; a sense of shared values and a common social context. Personal grounding is social and relational in nature. When a project has a sufficient level of personal grounding, participants feel a personal connection to it. They feel comfortable, at home and safe with each other because of their common values and shared aims in relation to the project. They enjoy working on it, because they feel that the project is valuable. If a project is personally grounded, people like to collaborate because they share a particular, often normative, goal. Their interactions may even lead to building relationships outside of a professional context.

When the AIC project lacked personal grounding, respondents felt frustrated and dispirited. For example, one academic respondent described his experiences of encountering misaligned goals from industry partners:

‘They uh often think in, you know, terms of, let's say, *trends and popular versions of it* and so on [...] it's hard to kind of get them to understand that this is difficult, all these things. So *they have, you know, greater expectations than there is really, that we can really expect to get.*’ (Thato, late-career academic)

Implicit here is a frustration that Thato’s industry partners have goals which he considers to be frivolous, impractical, or entirely out of reach. Grounding the project becomes very difficult in this scenario; you cannot effectively make a difference to the world if you do not understand what the world looks like, just as you cannot effectively steer a ship with a broken compass. It may also be the case that, for those in Thato’s position, the gulf between what is expected of them and what they are realistically capable of achieving serves to minimise their sense of how much they are valued within the collaboration.

From Thato’s contextual statements, we can gather the strain that this dynamic is exerting and the rifts it is causing between Thato and his collaborators: ‘we as researchers *are not helped*’; ‘*it is often not clear what they want, that's the struggle*’; ‘I think that we [*academics*] have developed a much more richer understanding of what the issues are’ (ibid). He has little sense of what the aims and values of his industry partners are, and is thus unable to connect them to his own. As a result, there is a distinct lack of trust. The aims and values of industry are sufficiently out of alignment with those of academia that the process of grounding the project is doomed to fail, leaving Thato adrift and uncertain of his role.

We also connect grounding the AIC project to the collaborators' feeling seen or heard during a collaboration – to participants' sense that their work is making a difference, that it is receiving a response. This was evident in accounts from both academia and industry:

'...where there is an interest in my research [...] you feel more motivated to keep on going because *you get the feeling that you're doing something right.*' (Teàrlag, early-career academic)

'I wanna get feedback from people, like, write it up, when I present them. And I convince my peers and once my peers get convinced of it then it just gets stronger and stronger and then *that's how we build on the shoulders of giants. So. It's all the social process.*' (Paviel, mid-career industry)

### **Organisational Grounding**

That said, industry respondents were more likely to discuss how far the research was aligned with the values and aims of their company. This is an example of *organisational grounding*: the embeddedness of the project in terms of shared aims and values on an institutional level rather than a personal one.

For example, one respondent described how, as their company had matured from a start-up to a scale-up, the scope of its collaborations with academia had changed out of necessity. They had moved away from a more open, experimental phase towards one where the aims of the company were far more narrow and precise.

'...that's where, essentially, then as the company grows, *this is where the tension happens, like what are we getting out?* [...] as we matured *as a company* and we have more clarity on *what we should be working on and um on the product*, then it becomes much more difficult to do these collaborations.

So this is, you know, this is where, kind of, *we did a few iterations where we managed to get it closer to what we, what we think is, kind of, impactful and adding value.*' (Hershel, late-career industry)

It is significant both that Hershel locates the end goal – the question of 'what are we getting out?' – as a locus of tension and that he mentions the work required to re-align the project with the company's priorities. As a concept, grounding is integral to the construction of some kind of collectivity – the issue of collaborative goals, as discussed in the previous section. From the beginning of the collaboration to the end, sustained work is required to keep the collaborative goal in line with the aims and values of both organisations. In short, the collaboration must remain organisationally grounded.

Several informants mentioned the importance of liking their collaborators and/or feeling comfortable around them. As described by Hanna - a late-career industry professional - mutual trust helps to ensure a safe environment where failure is not shamed or penalised.

'So, safety in groups is to build the trust and relationship to have, to have between, so you can be [not?] afraid of all this bad feelings. *It don't mean that you are a bad person*, don't doing your work. *It only means that you are doing something new.*' (Hanna, late-career industry)

This ensures that collaborators feel comfortable taking risks and making mistakes or stepping outside of their comfort zone, which in turn makes the work more personally meaningful.

In the above quotation, Hanna described ‘the trust and [the] relationship’ between collaborative partners as being built up simultaneously. Another participant, Anah, mentioned a hypothetical scenario where one is dependent on the other:

‘I would have, need some convincing that they are actually, like, understanding why they would be interested in completing the the task. Or [okay?] in completing the project. *If I don't understand why, I don't think I would be able to trust that they would follow up, essentially.*’ (Anah, early-career academic)

Here, knowledge and understanding of collaborative partners is a precondition for trust. When accounting for this difference, it may be notable that Hanna is from industry and Anah from academia, or that Hanna is late in her career where Anah is early. It could also be attributed to individual opinion and experience.

Trust also emerged as an implicit factor when discussing wider issues of grounding. For example, when asked what kind of corporate culture is helpful for AIC, one industry professional replied:

‘...the company culture that's generally *good for the company*, you know, where you have a reasonable amount of freedom and autonomy, and *where it's okay to fail*. And *where you have psychological safety* and all those, *it's generally considered healthy company culture* [inaudible]. So that, that, that helps.’ (Omar, mid-career industry)

Omar’s statement here is repeatedly connected to the aims of the company, how a healthy culture assists it in achieving those aims. Other respondents spoke about a need for interaction in more casual contexts – what was referred to in coding as ‘quality time’. This allows the project to become grounded in the culture of the organisations involved.

‘I think you need the informal context as well as the formal context [...] just talking about it over a beer and saying ‘is that really a good idea? no, you're right, that's not a good idea' and. Yeah. You, you need that *confidence* in each other *that you only get from having a social connection over time, I think.*’ (Ingo, late-career industry)

Tacit here is an understanding that informal social interactions provide a forum for more ‘low-stakes’ discussion of the work – a space to articulate issues or concerns in a less pressurised context. Interestingly, the value of ‘quality time’ was a more prevalent theme for industry respondents than academics. This may be because it is a more established discourse in industry contexts. Another possible explanation is that the social element of research is something that may be taken for granted in academia, while in industry people see it as something that needs to be managed and promoted as well as other work-related activities.

Earlier in this paper, the issue of *geographical proximity* was discussed as a dominant discourse in AIC: it is generally accepted that geographical proximity between organisations helps collaborations to succeed. We found that this is the case because – along with pre-existing relationships between collaborators – it can provide a level of organisational grounding by default. For example, an industry respondent (Cecilio) spoke about his experience of being approached by an unfamiliar EU project. The company representatives had decided very quickly that they did not

wish to take part, having ‘really felt this dependency they had on us [for funding]’. Notably, another reason given was the following:

‘...there was a lack of goodwill because this was an international project, we didn't know the people. [...] Uhh, whilst MediaFutures, which is a Norwegian based project, with academics that we already know and respect, is quite different. *We feel a lot more responsible to help them.*’ (Cecilio, mid-career industry)

Here, the lack of pre-existing familiarity and a sense of shared values meant that Cecilio’s company was far less willing to extend goodwill when other aspects of the collaboration were not working. Participants who share a national or regional location are more likely - or expect to be more likely - to share cultural norms, to easily understand each other, and to feel a sense of mutual goodwill. Indeed, expectations may play a larger role here than actual experience. It stands to reason that ensuring all parties’ aims are in alignment is far easier in such instances.

Another account – this one from an academic, Quinto – demonstrates that geographical and cultural distance can continue to impede collaboration once it is underway. Quinto spoke at length about a collaborative project he had worked on with a Chinese company. Here, he notes the many cultural differences that impeded organisational grounding and generally made communication more difficult:

‘...things like, you know, *the importance of hierarchy*. Is, is different between a Chinese company and a European company. Uhh and *the importance of status*, uhh, and so on. So uhh. You know, the, the, the, *the ease with which people are allowed to disagree.*’ (Quinto, late-career academic)

Previously, we stressed the importance of continually working to ensure that the collaborative goal is shared by and relevant to all parties involved – one can see from this example how this becomes more difficult across a socio-cultural divide. However, this difficulty can be overcome with the aid of frequent contact and additional effort. Later in Quinto’s interview, for example, he states the following:

‘...our personal relationships with our European counterparts, from [company] Europe. *Who are also Chinese, by the way, but stationed in Europe.* Our personal relationships with them were very good. And again there was a very high level of trust.’ (Quinto, late-career academic)

The core obstacle here is that collaborating over long distances typically means fewer interactions between individuals – making it more difficult to ground the project in the organisations involved and to build personal relationships and a sense of interpersonal connection over time. With regard to remote collaboration and/or virtual meetings, multiple respondents stressed the importance of communicating as much as possible.

‘...when you have these uhhh large distances [...] *you need to try to communicate as much of the context* in messages, email, documents and these kinds of things.’ (Nero, late-career academic)

This quotation is particularly telling – when there are fewer interactions between collaborators, each interaction needs to carry more weight in order to achieve the same effect. This is further

complicated by digital communication, in which contextual cues such as body language and tone of voice are often absent. Notably, respondents who did collaborate over long distances consistently spoke positively about the occasional in-person meetings they did have.

Furthermore, we have observed from both analysis of the interview transcripts and our own experiences that while there are clearly-established models for quality time that involve meeting up physically, there are none that accommodate long distances. It is substantially harder to carve out space for casual socialisation in a one-hour Zoom meeting than it is to have lunch together, or meet up for a drink after working in the same building. While finding solutions for this problem is outside the scope of this research, it is clearly an area of some concern to AIC; it is our hope that articulating the issue here will encourage further thought on this front.

Something that is grounded, therefore, fits the entirety of the landscape. As a descriptor, ‘grounded’ implies a solid foundation – the project has relevance and fits neatly in the values and concerns of the organisation as well as the persons collaborating on it. The project is grounded *in* the stuff of everyday organisational and personal life: common values, norms, objectives, even culture.

A project becomes personally grounded if the collaborators truly believe in it. This is work that helps to create your ideal vision of society; you believe that you are making a positive difference to the world. The people around you share your vision. You are not alone in your office, throwing ideas into an uncaring void. You are deeply connected to your peers and to the world. An organisationally grounded project, on the other hand, is a project that aligns near-perfectly with the culture, ethos, and mission statement of your employer. In many ways, the collaboration feels like a perfect match between two distinct organisations; each organisation provides something that the other needs or wants. In other words, it simply makes sense that both organisations would work together on this.

### 5.2.2 – Anchoring

In Sections 2.3 and 5.1, we mentioned the idea that academia moves at a slower pace than industry as an example of a dominant AIC discourse – and, indeed, certain respondents regarded this as a well-known fact:

*‘...and this is an obvious one, right? So academia has its own notion of time and so does industry and they very much operate on different levels and we are well aware of that and everyone knows that.’* (Edgar, mid-career academic)

While this is broadly true, we found that the distance between academic and industry timescales was often less significant for early-career researchers – specifically PhD students. While mid- and late-career academics were more likely to take a long-term view, their early-career colleagues tended to operate on a timescale much closer to that of industry. In one instance, an early-career academic even expressed frustration at wanting to move faster than industry allowed:

*‘...due to them not being able to [visit?] with me all the time I had to wait and like be on and off on this project and that caused some frustration from my side and some forgetfulness on, on their side, and uh or miscommunication sometimes.’* (Montana, early-career academic)

Interestingly – and perhaps unsurprisingly – late-career respondents were generally very cognisant of these differences in experience. One, Nero, described the vital structural role that PhD students can play within AIC projects:

‘Well, it would not have been possible without a PhD, first of all. Um. The PhD works on a topic that connects university and company, so *the PhD student to some extent is sort of the binding, binding those together.*’ (Nero, late-career academic)

Another, Edgar, acknowledged that early-career academics typically spend far more time working on AIC projects than those who recruit them, relating it to a wider discussion about the importance of recruiting the right people:

‘I don't spend that much time with the center, right? Whereas they typically do, the people we recruit, so *they are the ones who should do that magic stuff.*’ (Edgar, mid-career academic)

These quotations point to a likely explanation: junior researchers usually work more closely with industry on a day-to-day basis. It could also be speculated that early-career academics might feel more ownership over a collaborative project as it constitutes *their* PhD thesis; the project is more personally anchored in the PhD than in the mid-career-academic. Meanwhile, more senior researchers often must balance the collaboration with other concerns, such as teaching. Significantly, Edgar's statement seems to reflect an implicit knowledge that this anchoring is crucial to the success of the overall collaboration - it enables ‘that magic stuff’.

### ***Personal Anchoring***

Multiple respondents described a feeling of project ‘ownership’, stressing its importance to the collaborative process. Ownership typically consists of a high level of investment in the project: having control over it, feeling responsible for it, and wanting to see it succeed. If no one involved *feels* personally responsible and accountable for the project, this can have severe consequences. For example, one industry respondent - Omar - described how his company struggled to find participants who were able and willing to prioritise a AIC project:

‘And the people in our organisation, who could benefit from it, were *too busy doing what they were doing so that they couldn't actually participate.* So they said, ‘yes, that's nice, and we'd like to [inaudible] but, um, um, um, no’. [laughter] Or ‘*someone should do it, but not me.*’ (Omar, mid-career industry)

He went on to say that short-term collaborations were preferable, as it was easier for individuals to find time to accommodate them; ‘it's difficult for us sometimes to allocate the right resources where it's going to be beneficial because people have many things to do’. We can infer from this that a lack of organisational and/or personal anchoring may prevent more sustained collaborations from taking place, directly or indirectly.

Multiple interviewees also described the importance of personal feelings of enjoyment and/or ‘emotional deliverables’ such as pride, satisfaction, or joy.

‘I started talking with *my friend in academia*, who is leader of one of the work packages, and he was enthusiastic about it and I start to understand like, woah, we could actually do this! It

sort of powered me through the entire course, which has taken longer than a lot of other things I do. (sic)’ (Ingo, late-career industry)

‘...there's actually a fair amount of joy, you know. We get successes, you know, we are, *we just got one of our papers accepted at the absolute top conference in the field. And everybody's super proud.*’ (Quinto, late-career academic)

These examples highlight the interplay between anchoring and grounding: a positive social context generated excitement, joy, and forward momentum – which enabled participants to become more enthusiastic, personally involved and rooted in the project.

*A project is personally anchored*, therefore, if a collaborator experiences a sense of individual investment and personal responsibility/ownership in the project itself. It should be noted that levels of personal anchoring are what indicates that a project is firmly tied to someone. Anchoring is an expression or consequence of this feeling of investment and ownership; it is what makes the project possible. Beyond the project itself, personal anchoring is more likely to happen if it is also connected to participants’ own professional development. In particular, academic respondents at a variety of career stages noted how their involvement in AIC had helped them achieve their goals or advance their careers:

‘I was fairly satisfied to uh like see uh something happening that you made, on the website of big company. Uh it’s like ‘*oh, I made this!*’” (Montana, early-career academic)

‘I was probably hired here [...] because I know they picked up on the research. And so *the success of the research project turned for me into a big personal gain.*’ (Nero, late-career academic)

Notably, in some of these instances, the surrounding conditions of the collaboration were far from ideal – one case involving a distinct lack of organisational anchoring. However, even when this was the case, if there was a sufficient level of *personal* anchoring, then respondents still regarded the experience very positively. This demonstrates the importance of the personal realm when conducting AIC. For many participants, a high level of personal anchoring and grounding can compensate for a lack of either in an organisational capacity. There is something at stake for a person involved in AIC in this relationship: the collaboration matters.

Furthermore, if a project is sufficiently anchored on a personal level, then conditions are conducive for passion to emerge. While it is possible that emotional over-investment might result in negative outcomes, we broadly understand passion for a project to be a best-case scenario. When passion is present, participants are emotionally invested in the research because it is truly aligned with their values and goals. In such cases the project is likely to be personally anchored as well as personally grounded.

In these scenarios, collaborative partners can become deeply involved in the project – even to the point of changing positions, as one of our respondents experienced:

‘I think I was responsible, that I evaluated my role in the business and decided to go out of the business to work for the cluster. Because *I was eager to, more to focus on collaborating and developing* than to get really, many money into my business. [laughter]

So [clearing throat] so I think uh that is a responsible way, to be aware of what your personal goal is when you are going into *some innovation process that might influence your personal goal.*' (Hanna, late-career industry)

As noted previously, personal anchoring is significant in that it exerts a force on you. In AIC as in any other context, being passionate about your work opens you to strong emotions and even the possibility of changing direction in life.

### ***Organisational Anchoring***

A feeling of ownership also allows a project to become organisationally anchored - particularly where it concerns industry uptake following the collaboration itself. For example:

'...they [other industry participants] feel also they own these things so *they feel that they want to make it successful* and they want to essentially take the learnings from this research and use it, going forwards.' (Hershel, late-career industry)

Conversely, one academic respondent – Mete – described an industry collaboration that had initially been very positive. However, five to six years later, the resultant software was still not being used by the industry partner. When asked for his opinion on why this happened, Mete gave the following response:

'... they have probably a *weakened ownership* of things, or maybe people are doing something that they depend on other people's opinions for doing it, or all of these human mechanisms for collaboration that just. *Well, it's just not very practical to make work. And you obviously need... the thumbs up from your, from someone higher, higher up in the organisation.*' (Mete, mid-career academic)

In this instance, the project was not anchored to the correct people in the partner company – or it was, but they did not have sufficient mandate to make the required decisions. As a result, industry uptake was all but impossible; the project was not adequately organisationally anchored.

We use the term *organisational anchoring* to refer to the solidity, soundness and security of the connections between a project and its host organisation(s). A project can be described as anchored if: collaborators have enough time to invest in the project, the project 'owner' has enough support and/or freedom to make decisions about the project, and the project is rooted in a concrete organisational unit that is well-suited for it. A fundamental part of organisational anchoring is that it is a pull - that is, it necessarily requires that the organisation has sufficient capacity and capability to engage in something that is potentially complex, time-consuming, or even socially fraught.

Consider the anchor of a ship: an object that keeps it rooted in place, a means of remaining at your desired destination. You may describe someone or something as an anchor if it is a reliable source of support – if it holds the project firmly and securely in place and prevents it from becoming adrift. You may connect anchoring to a feeling of ownership and responsibility; the project is firmly anchored in you or in the organisation. Anchoring is concerned with prioritisation. How high up does the project sit on your internal list of priorities? What about that of the organisation? As such, anchoring can operate very differently depending on where you sit within said organisation.

## 6 – Reflections & Conclusions

This paper constitutes a blending between top-down analysis of the existing literature on AIC and a bottom-up qualitative study consisting of 16 anonymised interviews. From a variety of academic and industry sources - covering topics such as barriers, success factors, and overarching models - we identified three dominant AIC discourses that are frequently drawn upon. These are that collaboration is prompted by a pre-existing shared goal, academia operates on a slower timescale than industry, and geographical proximity helps collaborations to succeed.

Developing the concepts of anchoring and grounding have allowed us to gain a clearer picture of AIC, effectively nuancing all three of these dominant discourses. While AIC often is preceded by a shared goal, consistent effort is required to ensure that the goal remains shared by and relevant to all parties – from the beginning of the collaboration through to the very end. While academia operates more slowly than industry in broad terms, individuals who are more closely anchored to an AIC project are more likely to operate on industry timescales. Finally, while geographical proximity can facilitate the personal grounding of a project and make success easier to achieve, this can also be developed in other ways.

For a capstone example, we turn to the concept of passion. According to a Deloitte Insights article by John Hagel et al (2014) talking about passion in the context of work may involve three dimensions: ‘When we talk about worker passion or passionate workers, what we mean is a worker who exhibits three attributes – questing, connecting, and commitment to domain – that collectively define what we have termed the “passion of the explorer”’. While noteworthy in its own right, the aforementioned article demonstrates the value of our framework, potentially outside of a specifically AIC context. While discussing a specific set of results, Hagel et al. state that:

‘In particular, four lacked commitment to a specific industry or sector. For the most part, they were committed to something broader and more aligned with personal values than making a significant and increasing impact on a particular domain.’ (ibid)

This quotation may suggest that these projects were personally grounded but not anchored, either personally or organizationally, to their particular domains<sup>2</sup>. Indeed, throughout their article, Hagel et al. emphasise the importance of creating work environments where ‘the passion of the explorer’ is encouraged and cultivated. Striving for a high level of grounding and anchoring is one method of doing exactly this.

As concepts, grounding and anchoring constitute a valuable addition to existing AIC discourses. By developing them here, we have formalised a vocabulary that already existed - conceptualising the actual experiences of those involved in AIC and tracing how they differ from accounts in the literature. For those who wish to conduct successful AIC projects - ones that create lasting impact, that build connections, that are remembered positively by participants - the concepts of grounding and anchoring are fundamental dimensions. They act as analytical instruments, enabling more fruitful discussion of why some projects succeed and others fail. As demonstrated above, grounding and anchoring have already given us substantial insight into the purely descriptive discourses of

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<sup>2</sup>‘Domain’ is the word used by Hagel et al. to describe ‘an area of expertise, a specialization, or a market on which an individual focuses’ (2014).

geographical proximity and time horizons. Our understanding of when and why these factors are problematic is far richer as a result.

It should be noted that this study was necessarily limited in scope: only 16 interviews were conducted, with respondents who were primarily male and primarily from Western Europe. Future studies may verify this work by casting a wider net. Additionally, not much attention was paid to the impact of demographics such as gender or nationality on the dynamics of AIC - this is another possibility for future scholars. It could also be investigated how far pre-existing knowledge of these issues contributes to the eventual success or failure of AIC projects. It is our opinion that any of these could make for a fascinating area of enquiry, and it is our hope that they will be explored in future.

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**Fig. 4** Gálan-Muros & Davey's UBC Ecosystem (2018a, 7)

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