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A Life-Cycle Framework to Manage Collaboration and Knowledge Exchange in Open Organisations

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Abstract

Successful research and development requires interdisciplinary collaboration, often across organisational boundaries and for extended timeframes, such as in innovation networks or ecosystems. Open Organisation (OO) research can support collaboration and knowledge exchange in such situations. It builds on established concepts of Open Innovation through enhancing the exchange of knowledge by the exchange of humans. This paper contributes to OO research by presenting an OO lifecycle framework, which analyses evolving organisational and collaboration characteristics and resulting management needs.

Keywords: open innovation, design management, project management, open organisation, organisational lifecycle

1. Introduction

This paper presents and evaluates the first part of a framework to manage successful collaboration and knowledge exchange across the entire life cycle an Open Organisation (OO). We use the example of a university-industry research centre (UIRC) to discuss the framework, however findings are also relevant to any medium- to long-term organisation, such as industry networks or triple / quadruple helix settings of academic, industry, government and general public actors (Leydesdorff, 2012).

UIRCs are of high relevance to drive cutting edge research and translate it to practice. They comprise different interdisciplinary academic and practice partners, such as businesses, non-commercial organisations and communities, and usually last five years (e.g. Australian Industrial Transformational Training Centres) or up to 12 years (e.g. German Collaborative Research Centres/ "Sonderforschungs-bereiche"). The high number and diversity of partners is a key success factor as they allow for synergies between disciplines and domains leading to more radical research findings, the combination of technical, social and business perspectives, and an increased applicability of research findings. However, at the same time, this also causes problems. While a high number of partners increases coordination efforts and complicates team building and forming of a centre identity, a high diversity of disciplines, backgrounds, mindsets and even terminologies can cause misunderstandings and hamper successful collaboration. This is even intensified through often different geographic locations, which limit personal exchange or coincidental meetings sparking spontaneous ideas (e.g. serendipity). The resulting key challenges of each centre are to avoid institutional or disciplinary silos and to enable purposeful collaboration and knowledge exchange across disciplines and locations.

Open Innovation (OI) has the potential to tackle these challenges. OI is an established concept to enable purposeful knowledge exchange and collaboration across organisational boundaries (Chesbrough, 2017). It combines traditional forms of collaboration, such as lead user workshops, with new often ICT-enabled

ones, such as ideation contests, and provides approaches, methods and tools to plan, start and manage such collaborations (Guertler and Sick, 2021). OI has been successfully used in academia and in industry, for example to support the adoption of Industry 4.0 in SMEs (Messeni Petruzzelli *et al.*, 2021). In this respect, it is linked to university-industry collaboration research, which investigates success factors, barriers and mechanisms of how to initialise and manage successful collaboration between both domains (McCabe *et al.*, 2016; Awasthy *et al.*, 2020). This includes aspects, such as differing cultures, expectations of solution maturity, economic interests and publishing (Pertuze *et al.*, 2010).

Although both fields show great potential benefits for enabling knowledge exchange and collaboration within a multi-year UIRC, there are several limitations. University-industry collaboration is well-explored but often only from a project perspective. Medium- to long-term perspectives have usually only been mentioned as a side note (e.g. Awasthy *et al.*, 2020). Collaboration within each domain has also not been a key focus. OI has been well explored to enable knowledge exchange on project and organisational levels but normally focuses either on OI as a combination or process of activities (cf. Chesbrough, 2017). OI as a long-term organisational entity is still underexplored. Recent research tends to consider not only the exchange of knowledge but also humans in the sense of an Open Organisation (OO) is promising but still in its infancy (Kremer *et al.*, 2016; Lang *et al.*, 2017). Research like the "Open Innovation in Science research framework" (Beck *et al.*, 2020) discusses different types of OI and partners in research projects but is abstract and does not provide any actionable guidance nor considerations from an organisational perspective of OI. The long-term perspective is important as UIRCs are temporal organisations with their own governance structure, processes and culture, and hence different from a simple project. Therefore, it is important to consider different life-cycle phases and resulting needs of an UIRC.

This leads to the following research question: *How can collaboration and knowledge exchange be systematically managed over the life cycle of an Open Organisation?*

To answer this question, we analyse literature on OO and OI, university-industry collaboration and organisational life-cycles. Based on this, we develop an Open Organisation Life-Cycle framework, which describes characteristics of each life-cycle phase and resulting collaboration needs and key activities. In an exploratory case study research, we apply and evaluate activities and methods to support the birth phase of an UIRC. The derived insights are discussed to evaluate the framework, to derive subsequent research steps, and inform the ongoing lifecycle management of the UIRC.

Although still work in progress, the initial evaluation proves the relevance and advantages of the Open Organisation Life-Cycle framework. This research contributes to systematically connecting OI theory with organisational life-cycle theory to strengthen the young field of Open Organisation research. Through considering knowledge as well as knowledge carriers, OO research helps to integrate OI into the DNA of organisations rather than being separate activities or initiatives. The new life-cycle perspective allows for a systematic analysis and support of each life-cycle phase. This is also relevant for research on start-ups and triple/quadruple helix innovation eco-systems.

2. Theoretical background on Open Organisations and organisational life cycles

2.1. Open Organisation – An enhancement of Open Innovation

Open Innovation (OI) describes the purposeful collaboration and exchange of internal and external knowledge across organisational boundaries (Chesbrough, 2017). Depending on the flow of knowledge and the locus of innovation respectively, three types of OI can be differentiated: (1) outside-in/inbound OI to enrich internal innovation management, (2) inside-out/outbound OI to foster external innovations, and (3) coupled OI as a combination of the previous two (Gassmann and Enkel, 2004; Chesbrough and Bogers, 2014). Openness is not an either/or decision but can vary across and even within organisations, processes and projects. Thus, Dahlander and Gann (2010) coined the term permeability to describe this range of situational openness.

Since 2003, originating from a focus on OI initiatives in large multinational businesses, research has expanded for instance to OI on a project level (Guertler and Sick, 2021), in SMEs (Hossain, 2015), and

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in non-commercial organisations and science (Beck *et al.*, 2020). This includes enhancing the perspective of openness from knowledge to also include people as carriers of knowledge, leading to so-called Open Organisations (OO), defined as "*the sharing of ideas, knowledge, resources, and skills across organisational, generational, and cultural boundaries within, and in some cases outside, an organisational system for the purpose of achieving a stated outcome*" (Foster, 2014, p. 41). Opening and sharing occurs vertically across hierarchies, horizontally between functional departments, externally with outside partners, and geographically (Ashkenas, 2002). Hence, openness and collaboration occur on the level of department, company/organisation and network and requires specific competences, both on a group and individual level as depicted in (Figure 1) (Weidmann and Lindemann, 2015; Lang *et al.*, 2017).

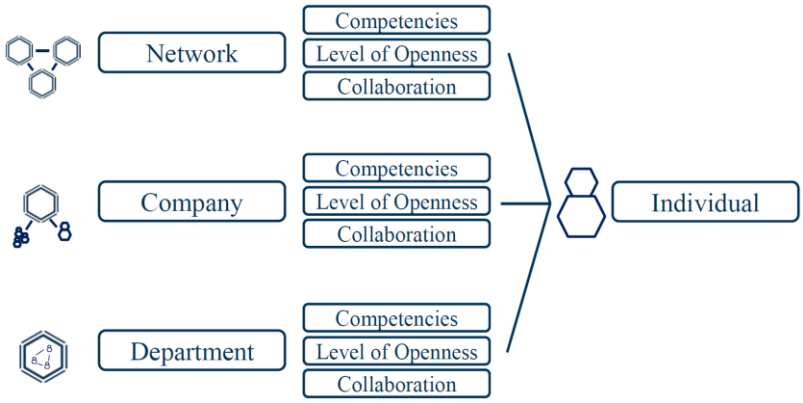


Figure 1. Open organisation framework (Weidmann and Lindemann, 2015)

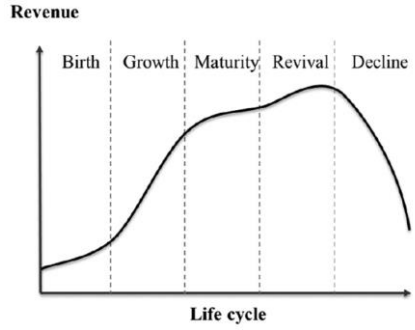
Resulting benefits of open organisations include speed and flexibility of task handling and problem solving, effective integration of experts and knowledge, and more radical innovations (Ashkenas, 2002). Although early industry feedback confirms the relevance of OO, a key challenge is the lack of methodical support for planning and managing OO (Kremer *et al.*, 2016).

In summary, although OO research as well as associated OI research have been considering different degrees of openness and collaboration for different project phases and parts of organisations, the question of which degree of openness and level of collaboration is most suitable throughout the life of an organisation has not been sufficiently investigated.

2.2. Organisational life cycle

Based on the insight that organisations change over time, organisational science adapted the concept of life cycles from biology (Lester, 2004). This allows to analyse and describe how characteristics, needs and practises change over time, and how organisations can best be supported, e.g. in terms of strategy (Lester, 2004) or accounting (Pasch, 2019). Although literature shows slightly differing phase models (Lester, 2004), the underlying structure is always similar. Pasch (2019) in line with Lester (2004) describes five life-cycle phases as described in (Table 1).

Table 1. 5-phase organisational life-cycle model from a revenue perspective (Pasch, 2019)

Birth / existence: small size; low formality of structures, processes and control; limited know-how **Growth / survival:** medium size; formal structures, processes and control; know-how increase **Maturity / success:** large size; high bureaucracy; reduced flexibility; importance of efficiency; wealth of know-how **Revival / renewal:** very large size; desire to reduce bureaucracy and return to leaner processes including effective know-how management **Decline:** declining size and know-how; decision about closure or transition to something new	

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In summary, research on organisational life cycles has primarily focussed on commercial organisations. This is reflected in phase descriptions, involved sub-concepts and key business metrics like revenue, which only have limited applicability to UIRCs.

3. Open Organisation Life-Cycle Framework

The Open Organisation Life-Cycle framework (Table 2), developed by the authors, is based on the 5-phase life-cycle models of Pasch (2019) and Lester (2004). As both models focus on businesses, phases were adapted and enhanced to consider the specific nature of university-industry research centres (UIRC). A central distinction is the known end of each UIRC and its point in time, i.e. when its funding finishes. While the first three phases are similar, the fourth phase addresses the decision about the future of an UIRC taking strategic and operational aspects into consideration. Depending on this decision, the fifth phase, comprises either the closure and wrap-up of the UIRC or its transition into something new. The latter can include the UIRC as a whole or more often selected parts, which e.g. might become part of another UIRC or continue as an informal network or community of practice. The framework describes each life-cycle phase, its performance, key activities and challenges, resulting effects on collaboration and knowledge exchange and what key activities can support them. This also includes the level of collaboration, which can range from (1) coordination as independent activities of actors that are aligned concerning content and timing; (2) cooperation as a common processing of a specific task where partners work for themselves but require input from the others; and actual (3) collaboration as more intensive and fully joint co-work (Zentes *et al.*, 2003).

Table 2. Open organisation life-cycle framework of an UIRC

	Birth	**Growth**	**Maturity**	**Decision**	**Closure or transition**
Description	UIRC is launched and starts operating; this can also include any preparation between the funding approval and launch	UIRC has achieved initial research insights and completed some smaller projects and is continuously increasing its activities and level of collaboration	UIRC is operating on a stable basis, processes are running smoothly and a common culture has formed, additional partners for selected activities are invited	UIRC is reaching the end of its funding period. Exploration of opportunities and their cost and benefits whether and how UIRC could be continued in adjusted form	Closure and wrap-up of UIRC or transition into non-funded informal organisation or transition of knowledge, people etc. into other projects or UIRCs
Performance	Low: research projects are starting	Increasing: first research insights and publications; first transfer projects have started	High: research and transfer projects are full on and leading to continuous publications	Slowing: findings and results are evaluated and communicated	Declining: wrap up of research projects and publication of findings
Key UIRC activities	Set up organisation; define structure and processes; form UIRC team; recruiting postdocs and PhD students; create centre culture	Initiate and promote initial research collaborations; develop relationships; develop strategies for engagement across, within and external to UIRC	Communicate progress and results; nurture relationships; continual improvement; develop talent; evaluate eco-system and impact; consider commercialisation opportunities	Identify and decide on future of centre; establish transition plans	Celebrate outcomes of UIRC; complete transition plans (closure or handover)

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Key challenges	Finding talent with right skills and experience; establishing coherent agendas;	Managing expectations of stakeholders; managing time requirements (slow research vs fast pace of industry); overcoming geographic locations & distance	Measuring success and impact; managing IP; reporting to stakeholders; addressing needs of diverse actors; maintaining industry pace vs research pace	Reporting success and impact; disseminating research outcomes quickly; identify and select suitable transition plan	Meet KPIs; keep UIRC culture and collaboration alive until the end
Collaboration and knowledge exchange	Explore research interests and practice interests with industry partners and stakeholders; listen to stakeholders; identify value drivers	Get to know skill sets and expertise; understand - spend time with stakeholders and within industry contexts; program and initiate events for knowledge exchange and collaboration	Conduct knowledge exchange activities, such as industry round-tables; research seminars; sympo-siums; business breakfasts; webinars; workshops	Continue with knowledge exchange activities;	Complete knowledge exchange and collaboration activities; consider transition plans
Key Open Organisation activities	Define: Clarify research programs and synergies; clarify industry partners' interest and expectations; map research and industry interests to derive transfer projects; build a collaboration culture	Identify: Research and innovation champions within organisations; identify barriers to adoption; identify innovation opportunities; identify external and internal sources of knowledge and skills; review IP structures	Collaborate: Understand innovation roles within UIRC; identify innovation ecosystem and value chain; map innovation processes; support collaboration	Leverage: Understand innovation roles within ecosystem; re-evaluate value drivers; leverage sources of knowledge and innovation processes;	Promote: Disseminate outcomes through publications and communication channels; commercialise outcomes and take to market

4. Managing the birth phase of a university-industry research centre - Initial insights

This section presents initial insights from applying the Open Organisation Life-Cycle framework in the context of an Australian UIRC. It focusses on the question of how academic and industry partners can be linked through similar interests and topics to enable purposeful collaboration and knowledge exchange. Other aspects such as processes and events are important but not in the focus of this paper.

4.1. The case study: The Australian Cobotics Centre

The focal UIRC is the Australian Cobotics Centre, funded for five years by the Australian Research Council through their Industrial Transformation and Training Centre program. It focusses on developing new technological, social and methodical knowledge to support the successful adoption of collaborative robots (cobots) in industry. In addition to academic research, the transfer of research outcomes to practice is a key element, e.g. through upskilling activities, industry placements of researchers and transfer projects focussing on solving specific problems of the industry partners.

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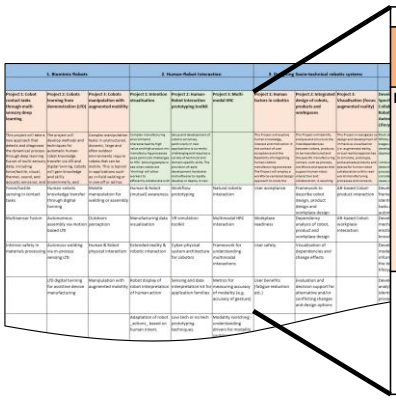
The interdisciplinary research team comprises 19 chief investigators (CIs), 5 postdocs and 16 PhD students from backgrounds ranging from robotics, via engineering design, design, technology management to social science, based at three Australian and a German university, including different faculties and schools/departments. Industry partners include five manufacturing companies, another UIRC and an industrial association. The research activities are structured in five research programs with 17 PhD projects addressing technical cobot issues as well as social and organisational aspects. Each industry partner can identify several problems that are solved in the context of different industry transfer projects. The transfer projects can range in duration from several weeks to several months, and combine knowledge and researchers from different research programs and projects, depending on the specific industry based problem to be solved.

Thus, the UIRC requires multidimensional collaboration and exchange of knowledge and humans, e.g. within and across research programs and projects, between researchers at different universities and departments, between researchers and industry, and through industry placements of PhD students and postdocs. The associated complexity also includes a dynamic aspect as organisational characteristics and needs of the UIRC evolve along with evolving research insights and outcomes and industry interests.

Therefore, the Australian Cobotics Centre is a suitable research object to explore and research an Open Organisation Life-Cycle framework. The end of funding after five years also means a dedicated end of the centre's life-cycle and a resulting decision of closure or transition. To support a systematic planning facilitation of collaboration and knowledge exchange, the centre has an OO team of four academics to work on this in close alignment with the centre director and management team.

4.2. Research project clarification workshops

Understanding and aligning the interests of partners and stakeholders are essential for OI (Guertler and Sick, 2021) and OO. The first step undertaken by the OO team was research project workshops, where the CIs clarified relevant topics of the five research programs and their 17 projects, including overarching interests of program leads and CIs. This allowed to capture any changes and updates in the almost two years between submitting the funding application and the launch of the UIRC. Each of the five 2-person program leads were asked to review their research program and projects based on a template prepared by the OO team and to derive a list of key topics for each research project (Figure 2). In 30-60 minutes workshops, the OO team met with each program lead team to discuss their filled template and ask clarifying questions. Discussing their own list of key topics and those of other programs allowed to identify potential overlaps and synergies, and to refine topics in preparation for the subsequent mapping of research and industry interests.



Program	3. Designing Socio-technical robotic systems		
Project	**Project 1: Human factors in cobotics**	**Project 2: Integrated design of cobots, products and workspaces**	**Project 3: Visualisation (focus: augmented reality)**
Project description	This Project will explore human knowledge, interest and motivation in the context of user acceptance and the feasibility of integrating human-robotic manufacturing processes. The Project will employ a workforce-centered design approach to study the interrelationship of humans and collaborative robots in the workplaces of industry partners including workforce readiness, worker safety, reduction of operator fatigue and repetitive strain, and quality.	This Project will identify, analyse and structure the interdependencies between cobots, products to be manufactured and the specific manufacturing context, such as process, workflows and spaces that support human-robot interaction and collaboration. A resulting framework will support companies in designing new or improving existing cobot workspaces and identifying necessary changes to products and manufacturing context.	This Project investigates co-design and development of immersive visualisation (i.e. augmented reality, virtual reality) approaches to simulate, prototype, and evaluate products and spaces for human-robot collaboration within real-world manufacturing processes and contexts.
List of key topics	User acceptance	Framework to describe cobot design, product design and workplace design	Digital cobot model
	Workplace readiness	Dependency analysis	Digital workplace model
	User safety	Visualisation of dependencies and change effects	AR-based Cobot-product interaction
	User benefits (fatigue reduction etc.)	Evaluation and selection of alternative options	AR-based Cobot-workplace interaction

Figure 2. Clarification of research programs and projects

4.3. Clarifying industry interests: Industry deep dive workshops

To align the project interests of the different UIRC stakeholders, it is necessary to analyse and understand their overarching interests and motives of being part of an UIRC. This can be achieved by

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defining an initial set of business models, which will evolve and update depending on the life-cycle stage and help specify how the UIRC will create value for various stakeholders. While the value proposition to academics in an UIRC and in general university-industry collaboration (UIC) is well-defined (*e.g.* employment creation, research funding, scientific outputs, career advancement etc), value creation for industry partners often requires further definition. This is due to e.g. orientation asymmetries between university and industry participants in joint research projects (He *et al.*, 2021), interest in fast-paced problem-solving rather than in-depth problem exploration etc., which need to be designed into the collaboration from the beginning. We used Business Model Canvases (BMC) (Osterwalder *et al.*, 2010) as a holistic tool to analyse the industry partners' business models, i.e. how they create, capture, and deliver value to their stakeholders – considering the nine dimensions: *value proposition, customer segments, channels, customer relationships, revenue stream, cost structures, key resources, key partnerships and key actions*.

For each dimension, we also defined UIRC-focussed guiding questions to build an understanding of general business models, as well as the industry partners' interests and expectations concerning the UIRC. These included e.g. for Value Proposition: *What problem shall be solved? Why or how have you selected specific research programs of the UIRC?*; or for Channels: *How do you envision the mechanics of a successful collaboration? In addition to embedding researchers in your site, are you interested in embedding your staff into university research labs?*; or Revenue Stream: *How can we measure the success and return-on-invest of our transfer projects with you?* etc.

These adapted BMCs were used as part of company-specific deep dive workshops with company representatives from the industry partners and all research program leaders. The workshops were held via video conference and followed a common process. During the workshop an interviewer led the conversation using the guiding questions to start off the conversation and a scribe recorded the answers in the BMC using Miro, an online collaboration board. Other participating researchers had the opportunity to add notes to Miro and ask follow up questions at defined points during the workshop.

4.4. Mapping research and industry interests and projects

After the identification of research topics and industry interests and problems, both sides are mapped to identify links and fields for potential collaboration – which is still ongoing at the moment. As both, research and industry interests evolve over the life-cycle of the UIRC, the mapping is always a temporal snapshot and needs to be updated regularly – this can result in new or removed links as well as new transfer projects or adjusted research topics. The mapping is conducted by the OO team based on the previously collected information and subsequently discussed and validated with research program leads and industry partners.

The mapping uses a Domain Mapping Matrix (DMM) from structural complexity management (Danilovic and Browning, 2007) with the research projects on the y-axis and the industry transfer projects on the x-axis (Figure 3). The identified research topics from the research project clarification workshops allow for a detailed mapping of research projects and industry interests and problems, in order to identify links between research and transfer projects (topics not depicted to keep the figure clean). The resulting DMM serves different purposes: first, it provides an overview of which research project informs which transfer project and what researchers to involve. It shows if a transfer project draws from a variety of research projects or is rather targeted (like A), which directly affects the type and level of necessary collaboration. Second, the column sums (B) of the DMM can therefore be used as an indicator for the relative complexity of a transfer project and associated collaboration, i.e. the higher the number and diversity of research projects, the more complex the required collaboration. Third, the row sum (C) highlights research projects with a high number of links, which can indicate high popularity or a central role within the centre, as well as projects with a low number of links. While the first could be supported by additional resources, discussing the latter with all UIRC members could help to better promote and link such projects. However, it could also reveal less relevant topics that could be adjusted or replaced with more relevant ones.

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	Transfer Projects (TP)	Industry partner 1			Industry partner 2			Industry partner 3			...	Industry partner 6			
	Research programs	TP 1.1	TP 1.2	TP 1.n	TP 2.1	TP 2.2	TP 2.n	TP 3.1	TP 3.2	TP 3.n	...	TP 6.1	TP 6.2	TP 6.n	Row sum
1	**Biomimic Robots**														
	Project 1: Cobot contact tasks through multi-sensory deep learning	X						X							2
	Project 2: Cobots learning from demonstration					X		X							2
	...	X						X				X			3
2	**Human-Robot Interaction**														
	Project 1: Intention visualisation														0
	Project 2: Human-Robot interaction prototyping toolkit	X							X						2
	...											X			1
3	**Designing Socio-technical robotic systems**														
	Project 1: Human factors in cobotics				X	X							X		3
	Project 2: Integrated design of cobots, products and workspaces				X				X				X		3
	...	X							X			X			3
4	**Quality assurance and compliance**														
	...		X						X				X		3
5	**Human-Robot Workforce**														
	...		X		X								X		3
	Column sum	4	3		5	4		3	5			3	7		

A

B

C

simplified view

Figure 3. DMM-based mapping of research and industry projects (simplified example)

5. Reflective summary and relevance of culture building activities

Our initial study and preliminary insights confirm the relevance of clarifying the interests of all partners and stakeholders involved. Given the organisational character and medium-/long-term lifetime of an OO, this is more challenging than for traditional OI projects as it requires frequent updates to reflect organisational and research evolvements. Although the majority of research interests and topics did not change over the two years period between proposal submission and UIRC launch, there were still minor updates. The discussion of research programs and projects also helped to build a common understanding of the general UIRC and its research programs across the UIRC, identify related and overlapping research topics, different perspectives on topics and potential areas for synergies. The lists of key research topics help to concretise research projects and therefore support the mapping of research and industry interests by explicating implicit information from the existing program descriptions.

However, the study also highlighted that identifying stakeholder interests is not trivial. Especially the industry deep dive workshops revealed large differences: while some industry partners could articulate concrete motivations and expectations towards the UIRC including an initial list of specific problems for potential transfer projects, others had only rather vague ideas. At one end of the spectrum, a company was fully able to define a research project, modes of collaboration and a pathway towards an implementation of the outcomes into the business, having considered both firm-internal and external factors required for the successful translation of research outputs into business. On the other end, a company just simply stated that they wanted to have access to knowledge without being able to specify concrete collaboration mechanisms. For the latter, the identified list of key research topics in addition to the project descriptions could be used as kind of a menu they could pick from to identify suitable problems and create their own transfer project.

While the presented tools support a process-driven approach, it is also important to address social and cultural factors of a collaboration. In general, in the birth phase of the UIRC, it has been essential to develop partnerships and relationships across the different stakeholders including the CIs, the centre management team, and the industry partners. Thus, the application of the presented tools was accompanied by parallel meetings of researchers and companies, where CIs could present research programs and projects and their underlying motives to build a better understanding and spark ideas about suitable problems and use-cases for transfer projects. In addition, a current online survey with member companies of the partnering industrial association aims at building a better understanding of the variety and priority of their interests and expectations.

In addition, to establish a clear set of guiding principles the centre director and manager worked with the UIRC CIs to develop a vision statement and set of values. This provided a foundation for collaboration and informed the following culture building activities providing different opportunities for stakeholders to come together and discuss ideas and interests.

The impact of the COVID-19 pandemic in Australia has informed the format of engagements with major restrictions on travel across the states of Victoria, New South Wales and Queensland requiring all the

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meetings to be conducted virtually. Focussing on the social and cultural side of collaboration, social meetings have been conducted. To understand the personalities of the academic CIs from the three different universities in the three different states, fortnightly panel conversations in pairs of three CIs allowed to learn more about individual backgrounds, hobbies and research interests.
The recruitment of key research staff such as PhD candidates and post-doctoral research fellows has been a critical part of establishing the centre. Selecting candidates that align not only to the expertise areas required for the research but also to the values and vision of the centre has brought together the academics and industry partners in establishing its culture.
The industry deep dives have been an essential step in creating opportunities for listening to and learning about the interests and needs of the industry partners. We believe it set a precedent for open dialogue and enquiry to occur between the academics and industry partners.
In general, the initial Open Organisation Life-Cycle framework has been an important tool to reflect on and structure the characteristics and needs of the UIRC over time and the resulting consequences for collaboration and knowledge exchange. This does not only support the planning and management of OO activities but also their communication to the interdisciplinary UIRC members.

6. Conclusion and outlook

By presenting an Open Organisation Life-Cycle framework, this paper responds to the emerging trend towards medium- and long-term types of open collaboration and innovation, such as (triple/quadruple helix) innovation ecosystems, start-up ecosystems and virtual organisations. Open Organisations (OO) represent an enhancement to OI, where not only knowledge but also humans (temporarily) move across organisational boundaries. Although OO and OI research has considered different degrees of openness and collaboration for different project phases and parts of organisations, the question of which degree of openness and level of collaboration is most suitable throughout the life of an organisation has not been sufficiently investigated.
Thus, this paper contributes to OO, OI and organisational science by combining OO with organisational lifecycle research. It supports to build a better understanding of different life-cycle phases of medium- to long-term (open) organisations, their characteristics and resulting needs concerning collaboration and knowledge exchange. Other researchers can use the framework as both a framework to analyse OO from a life-cycle phase perspective and a framework to develop methodical OO and OI support. Thus, this paper is not only relevant for researching the management of research centres but for any type of medium- to long-term OO.
As this research is ongoing and currently primarily focuses on the birth phase of a university-industry research centre, the presented insights are preliminary. The framework needs to be detailed and enhanced in the following phases. This includes an ongoing and systematic action research-based evaluation of the framework and supporting methods and tools. Although this paper has a focus on process and method support, attention will also need to be paid to social elements of an OO. This also includes questions around building a culture of collaboration, which can work widely autonomous and does not require full-time facilitation. To support the management of an OO, specific performance metrics need to be defined, combining “hard” output-oriented metrics like number of publications with “soft” social-oriented ones to measure the quality of collaboration. Although focussing on UIRC, it could be valuable to explore how the Open Organisation Life-Cycle framework could be applied to industry-centred and -led OO.

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