ARTICLE

A BLUEPRINT FOR INNOVATION COLLABORATION: IMPLEMENTING THE COFFEE HOUSE CONCEPT

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The seeds of modern economic development and international trade were sown in the coffee houses of 17th century London. Dr Peter Massingham revisits their development to explore new models of collaboration between business and academia to boost Australia's innovation performance.

PREAMBLE

The impetus for this paper began at Global Access Partners Annual Economic Summit 'Spaces of Australian Innovation' in September 2016. One of the themes of the Summit was how to improve Sydney's performance as an innovation hub. The Summit agreed that Sydney represents an opportunity to become a global leader as an innovation city. At that time (2016), considerable work was being done by the Greater Sydney Commission and the Sydney Innovation Hub Taskforce to improve Sydney's innovation performance. At the Summit dinner, Ms Lucy Turnbull gave a keynote address on the concept of *coffee houses*. Coffee houses of the 17th-18th century London were places where 'intellectuals, professionals and merchants thronged… to debate, distribute pamphlets, do deals, smoke clay pipes and drink coffee rather than ale'.[1] They were the original hubs of innovation. Lloyds of London began in 1688 at Edward Lloyd's coffee house; in 1698, the owner

1. History.co.uk, no author, https://www.history.co.uk/history-of-london/londons-coffee-houses (accessed 25 May 2019)

of Jonathan's coffee house started the London Stock Exchange;[2] in 1771, senior engineers began holding dibber meetings at the Kings Head Tavern that led to the Society of Civil Engineers.[3] During discussions at the Summit, a project concept emerged to modernise this model of innovation collaboration by developing communities of practice (CoP) across Sydney. The concept design was that these CoP will be physical spaces for business, consultants and academics to share knowledge and encourage innovation in the city.

INTRODUCTION

There is substantial evidence that despite Australia's highly educated population, well-developed economic infrastructure, and creative and practical culture; the nation's innovation performance needs improvement. The Australian Government's 2015 National Innovation and Science Agenda (NISA) identified innovation at the heart of a strong economy. In 2007, Australia ranked 9th globally in terms of its knowledge economy.[4] Australia can no longer rely upon natural resources, agriculture and manufacturing to compete globally. In 2016, Australia ranked 19th in the 2016 Global Innovation Index.[5] Bill Ferris AC, former Chair of Innovation Science Australia (ISA), said that 'We need to significantly lift our game if we want to be a top tier innovation nation'[6]. ISA's framework identifies three innovation activities: knowledge creation, knowledge transfer and knowledge application.[7] Australia is rated above average compared to other OECD[8] countries in creation, and average or below in the other areas.[9] The worst performing area is knowledge transfer. ISA's framework identifies six categories of enablers that facilitate innovation activities: policy, money, infrastructure, skills, networks and culture.[10] This paper examines the networks enabler and how it might improve knowledge transfer.

The paper's focus is on how to improve the networks enabler within the context of a city. Innovation occurs in multiple ways: by an individual, in groups, in organisations and between organisations. Within this context, innovation may occur in clusters of innovators located in close physical proximity. Silicon Valley is an example. Cities can be innovators in the sense that they represent communities of innovation. Cities are also able to facilitate innovation by providing each of the six innovation activities. This paper examines how to improve a city's performance as an innovation hub. Sydney, as Australia's highest ranked innovative city, can lead the way for the rest of Australia. Sydney is ranked 10th in the Innovative Cities Index.[11] It is the 3rd ranked city in Asia after Tokyo (1st) and Singapore (6th). This paper outlines a framework to understand the nature of innovation collaboration at a city level. The framework may be used to build on Sydney's position, for example, learn why Sydney is performing well, share these lessons with other cities, and improve Sydney's ranking.

COLLABORATION FOR INNOVATION

The paper's underlying assumption is that innovation performance may be improved by people collaborating. Innovation is defined as an economic or social term, as changing the yield of resources, and as changing the value and satisfaction obtained

2. History.co.uk
3. J. Rogers, and M. Ports, ASCE is Born, *Civil Engineering*; vol, 72, no. 11/12, 2002, pp. 188-191
4. Knowledge for Development (K4D) Program, http://web.worldbank.org/archive/website01030/WEB/IMAGES/KAM_V4.PDF, p. 5 (accessed 25 May 2019)
5. Innovation Science Australia (ISA) (2016) Performance Review of the Australian Innovation, Science and Research System. Commonwealth of Australia. Canberra, p. x
6. ISA, p. i
7. ISA, p. ix
8. Organisation for Economic Co-operation and Development
9. ISA, p. xi
10. ISA, p. ix
11. 2 Think Now Data Innovation Agency, https://www.innovation-cities.com/innovation-cities-index-2018-global/13935/accessed 28 May 2019

from resources by the consumer.[12] Human capital is the primary source of innovation.[13] Human capital represents the human factor in the organisation: the combined intelligence, skills, and expertise that give the organisation its distinctive character[14]. Innovation collaboration may be defined as the development and implementation of new ideas by people who engage in discussions with others within an organisational context.[15] People share and create human capital in communities of practice (CoP). CoP are groups of people who share a concern, passion, or set of problems about a topic, and who deepen their knowledge in this area by interacting on a regular basis.[16] CoP can support and enable innovation processes in organisations,[17] and improve organisational performance.[18]

There is evidence that Australia needs to improve its performance in terms of innovation collaboration. The national investment in research and development (R&D) currently totals 2.1 per cent of GDP[19]. The Australian Government invests around $10 billion in R&D, and other participants in the ISR[20] System (primarily the business community) invest twice as much again[21]. Only about 5% of these funds are allocated to knowledge transfer[22]. Therefore, the focus of this paper – innovation collaboration – is an under-researched area. The Federal Government's policy highlights how innovation is not just about new ideas, products and business models; innovation is also about creating a culture of embracing risk, moving quickly to support good ideas and learning from mistakes.

Increasingly, external professional or occupational social networks are being distinguished from traditional internally focused CoP. However, these external CoP are more difficult to manage, have less goodwill and shared identity amongst participants, and highlight socio-political power inequities which represent barriers to knowledge sharing.[23] These problems are particularly evident at a city level due to the multiple, complex and interdependent social systems.[24] Australia's innovation system involves multiple stakeholders, and the main groups are business and academia. Australia has world-class universities and research organisations with several ranked in the top 100 globally, but is ranked lowest in the OECD in research–business collaboration.[25] Strengthening the relationship between its innovative businesses and our research organisations is crucial to Australia's economic success. Business may be further disaggregated into 'for profits', 'not-for-profits', government organisations, and consultants. Innovation occurs within each of these types of organisations within a city. Building linkages across these social systems will require several layers of collaboration.

12. P. Drucker, *Innovation and entrepreneurship: Practice and principles*. New York: Harper and Row, 1985
13. P. Massingham, *Knowledge Management: Theory in Practice*, Sage Publishing, London, U.K, 2019
14. N. Bontis, Intellectual capital: an exploratory study that develops measures and models, *Management Decision*, vol. 36, no. 2, 1998, pp 63-76
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17. H. Bertels, E. Kleinschmidt and P. Koen, Communities of practice versus organizational climate: which one matters more to dispersed collaboration in the front end of innovation? *Journal of Product Innovation Management*, vol. 28, no. 5, 2011, pp. 757-72
18. K. Bradley et al., Managing a new collaborative entity in business organizations: understanding organizational communities of practice effectiveness, *Journal of Applied Psychology*, vol. 96, no. 6, 2011, pp. 1234-45
19. ISA, Innovation review, p viii
20. Innovation, Science and Research (ISR) System, ISA
21. ISA
22. ISA, Innovation review, p viii
23. C. Nielsen and J. Sort, Value exchange in university–industry collaborations, *International Journal of Technology Transfer and Commercialisation*, vol. 12, no. 4, 2015, pp. 193-215
24. R. Kitchin, T. Lauriault and G. McArdle,. Knowing and governing cities through urban indicators, city benchmarking and real-time dashboards, *Regional Studies, Regional Science*, vol. 2 no. 1, 2015, pp. 6-28.
25. ISA, Innovation review

MANAGING THE COFFEE SHOP MODEL

Communities of Practice (CoP) have traditionally been seen as informal, self-selecting, self-managing groups that operate open-ended without deadlines or deliverables.[26] This voluntary aspect can be a strength and a weakness. The strengths are the democracy and participation that enable the knowledge-sharing practices CoP strive for.[27] This empowerment seems necessary for the creativity and adaptability that effective CoP require. As a result, CoP have been handled with a light touch and tend to be nurtured rather than commanded and controlled.[28] The weaknesses are that CoP are dependent on participants' motivation and goodwill which threaten their continuity; and they are not accountable.[29] This means that CoP may become little more than opportunities to chat with limited personal or organisational gain or practical outcomes in terms of innovation. Research has recognised that CoP have heterogenous purposes and performance with different characteristics and dynamics[30]. The type of external CoP that drives innovation at a city level must be managed.

Professional practice CoP have diverse characteristics created by people who do not usually work together and come from different knowledge perspectives.[31] Participants may lack a shared sense of communal identity created by being employees within the same organisation.[32] As a result, these external CoP require more formal controls such as membership criteria and performance outcomes.[33] These controls introduce problems of power, conflict and internal dynamics in CoP.[34] These problems threaten the need for democracy and participation considered essential to knowledge sharing within CoP.[35] Professional practice CoP are the social system required to drive innovation collaboration within cities and improve the network enabler, particularly collaboration between business and universities. However, they will not work on the voluntary basis adopted by the internal CoP model. Professional practice CoP lack the sense of identity and goodwill generated by employee membership. This creates attitudinal and behavioural problems. Improving the networks enabler and knowledge transfer within a city's innovation system requires an understanding of these problems and how to solve them.

TOWARDS A BLUEPRINT OF INNOVATION COLLABORATION

Current thinking

Research has found that the willingness to innovate is created by communities that share a sense of purpose, values, and rules of engagement[36]. Research has found that cross-community CoP require special knowledge processes to build identity, trust, and social relations necessary for effective knowledge transfer[37]. These processes might include boundary spanning roles; absorptive capacity, transfer capability, and motivation for both the knower (donor) and the seeker (recipient) in the

26. P. Baumard, *Tacit Knowledge in Organizations*, London, Sage, 1999
27. P. Massingham, An Evaluation of Knowledge Management Tools Part 2: Managing Knowledge Flows and Enablers, *Journal of Knowledge Management*, vol. 18, no. 6, 2014c, pp. 1101-126
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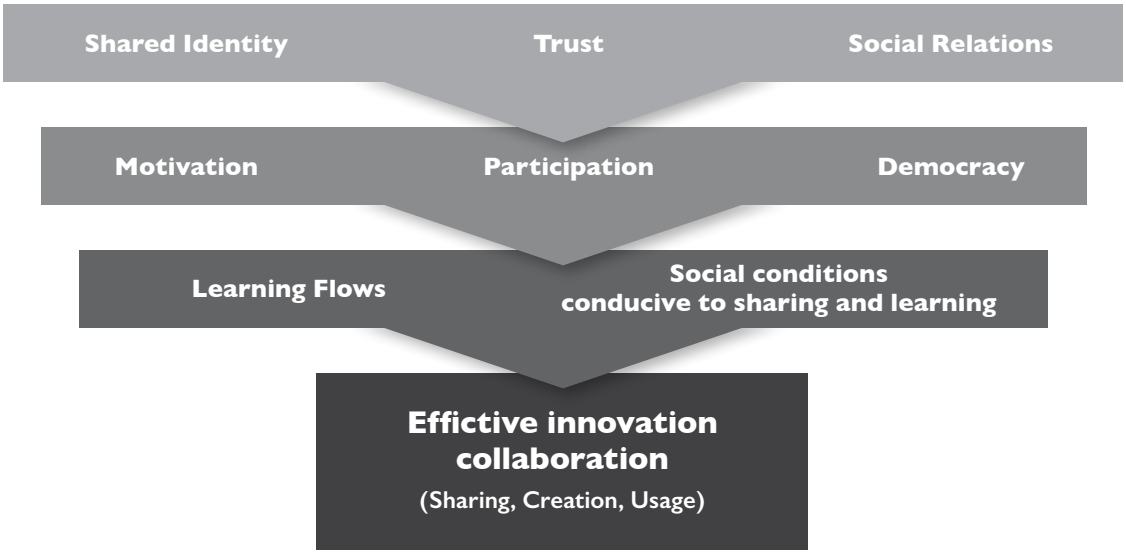
35. P. Massingham, The Researcher as Change Agent, *Systemic Practice and Action Research*, no. 27, 2014a, pp. 417-448
36. L. Hill et al., *Collective Genius: The Art and Practice of Leading Innovation*, Harvard Business Review Press, Harvard, 2014
37. Hislop, *Knowledge Management in Organizations*

FIGURE 2: Innovation Collaboration: Communities of Practice Model



CoP knowledge exchange; as well as understanding the nature of the knowledge being transferred; and inter-organisational dynamics such as power, trust and risk, structures and mechanisms, and social ties.[38] Figure 1 presents a conceptualisation about how to manage professional practice external CoP with a specific focus on connecting knowers (experts) and learners (users) to build innovation capability.

New thinking

The Blueprint

This section presents ideas on how professional practice CoP may be managed to facilitate knowledge flows necessary to improve innovation performance at a city level. The ideas suggest how to improve the networks enabler necessary for knowledge transfer between innovation system stakeholders, particularly business and universities. Figure 2 presents a four phased model about how to manage professional practice external CoP at a city level.

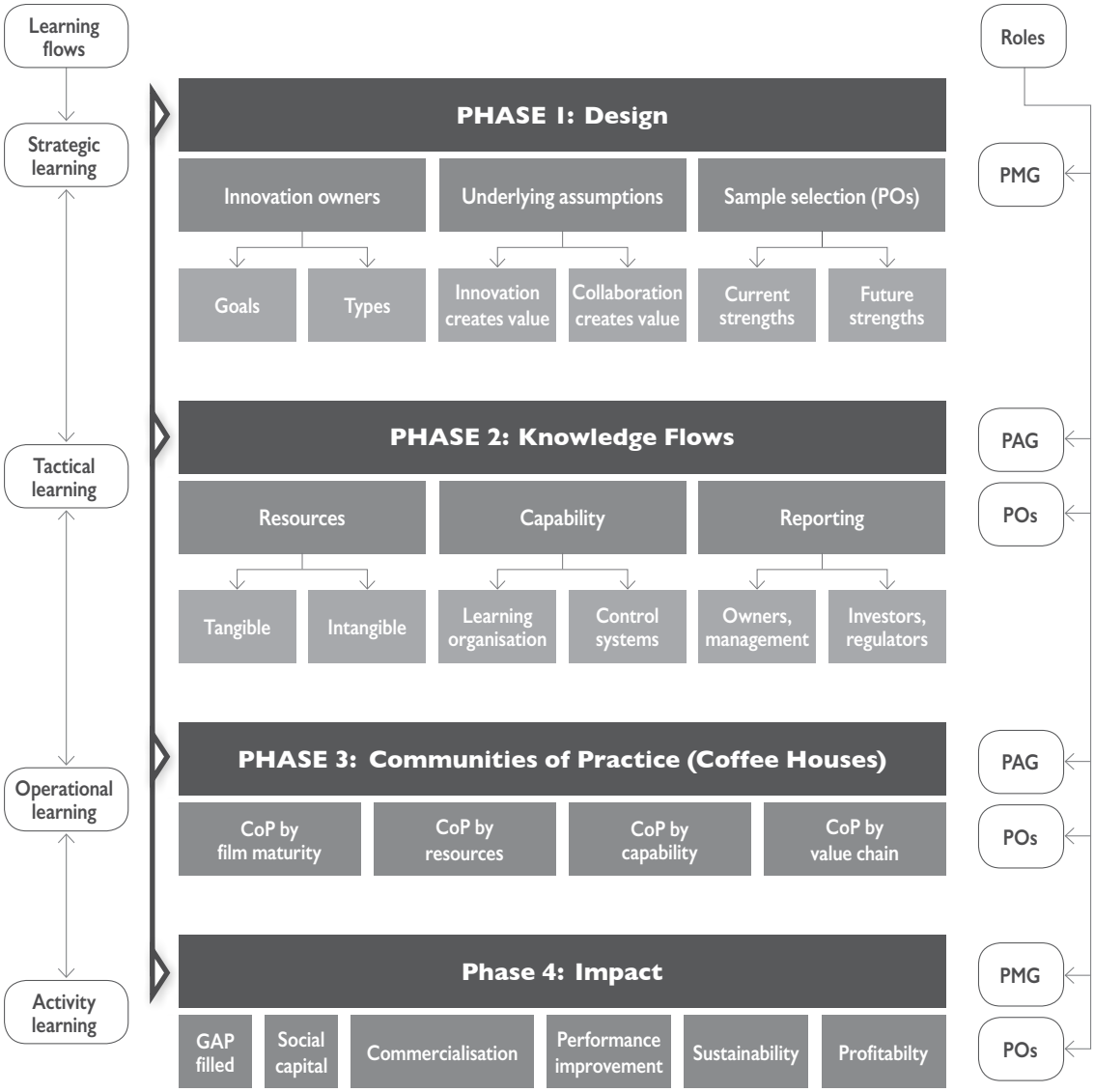
The model represents how a participant's learning journey interacts within the broader social system of Sydney's business, academic and consulting communities. This takes place through a series of four Action Research (AR) levels, and learning flows within each of these levels.

How the model works

Each of the four AR levels represents both a horizontal and vertical knowledge flow. Knowledge can become stuck in either direction. The challenge is to ensure that the knowledge flows smoothly horizontally and vertically within the CoP. The aim

38. M. Easterby-Smith, A. Lyles and E. Tsang, Inter-organizational knowledge transfer: current themes and future prospects, *Journal of Management Studies*, vol. 45, no. 4, 2008, pp. 677-90

FIGURE 2: Innovation Collaboration: Implementating the Coffee House Model



is to move down the levels – from Phase 1 design to Phase 4 impact – as quickly as possible. Each phase represents a gate that must be opened before progress to the next phase. The gate opens as the activities in each phase are completed. To progress to the next phase, the knowledge flow must satisfy the CoP members in each of the phase's criteria. For example, in Phase 1, the CoP must be designed in a way that ensures that the members, e.g., industry and universities, agree on the CoP goals and the type of innovation desired. This point is where knowledge flows often become stuck in potential research projects. In Australian Research Council (ARC) Linkage Projects, for example, there is no requirement for the university partner to produce any practical outcomes at all. This clause is designed to separate academic research from consulting. Whereas consultants provide knowledge solutions to business clients in exchange for financial reward, the ARC does not want academics to conduct research under these conditions. The idea is that financial incentives might introduce pressure to bias results or produce research outcomes desired by the sponsor rather than truth. While this might preserve the integrity of academic research, it does not address business concerns that this research has limited practical outcomes or value.

The model tracks knowledge flows within the CoP. These knowledge flows begin at the top of Figure 2. Knowledge can become stuck. These sticking points cause the CoP to become dysfunctional, and the innovation collaboration fails. This may explain why Australia rates so poorly in industry-university collaboration compared to other OECD countries. Systemic factors exist which prevent effective professional practice external CoP from focusing on innovation collaboration in Australia. It may be that the process gets stuck in Phase 1, strategic learning, when potential partners cannot see that collaboration creates value (see underlying assumptions). Until this perception is addressed, there is little chance that potential partners will progress to Phase 2 and scope a collaborative agreement. However, these systemic factors may exist anywhere in the model where activities are ineffective and knowledge flow slows or stops altogether.

On the right-hand side of Figure 2 are roles. These represent the CoP corporate governance. The Project Management Group (PMG) should include the key stakeholders, e.g., business and academics. The Project Advisory Group (PAG) are experts who volunteer to share some of their knowledge with users in the innovation CoP. They should be selected in terms of whether their experience, skills, and knowledge matches the CoP goals and the end users' needs. The Participating Organisations (POs) are the users of the PAG's knowledge. These are individuals, groups or organisations, e.g., entrepreneurs, start-ups, or intrapreneurs who want to innovate but lack some key knowledge and seek help.

Vertical knowledge flows

On the left-hand side of figure 2, there are four AR levels:

1. Strategic: what are we doing?
2. Tactical: why are we doing it?
3. Operational: how do we do it?
4. Activity: how do we improve what we are doing?[39]

Each of the four AR levels represents a gate that must be opened before progressing to the next phase. If the CoP moves to another phase before satisfying the criteria above, the CoP will not function effectively and knowledge flows will become stuck in an activity.

39. Massingham, 2014a, Change Agent

Horizontal knowledge flows

PHASE 1: Design. This paper's blueprint for innovation collaboration begins by ensuring an understanding of the problem, before jumping to a solution. The design phase starts with the goals and types of innovation sought by the CoP. It is necessary to challenge the PMGs' expectations about the CoP and its underlying assumptions about whether innovation and collaboration actually create value and, if so, how. Finally, it is necessary to build on these activities to ensure that the PMG selects the types of POs that will benefit from the CoP and its outcomes, and contribute to improving the city's innovation performance.

PHASE 2: Knowledge Flows. The blueprint process continues by identifying the knowledge resources and capabilities which will be shared in the CoP. At the 2016 GAP Annual Economic Summit on 'Spaces for Australian Innovation', innovators were described as 'weeds' in the sense of creative people being different or difficult. Organisations have been guilty of 'pulling out the weeds' to ensure compliance.[40] The following extract from the Global Access Partners 2016 Summit illustrates this point:

> **Despite all the schemes to encourage it, innovation cannot be institutionalised. Innovation and the institutional mindset are diametrically opposed, and so, rather than discuss ways in which bureaucrats can foster it, innovation should be allowed to grow like a 'weed', sprouting wherever it finds a crack of space or hint of nourishment. Most genuine innovators are individualists, rather than collaborators, and will always chafe under the restraints and assumptions which government and society might place upon them. Australia should therefore embrace innovation as a wild, self-seeding 'weed', and, rather than smother it in attempts to codify and order its growth, allow it to flourish away from more cultivated processes.**[41]

The blueprint encourages creativity by developing opportunities for creative people as 'weed hothouses' that facilitate knowledge sharing about innovation. Phase 2 begins with benchmarking to establish gaps in resources and capability within POs. Resources are typically classified as tangible and intangible. Tangible resources include: physical resources, financial resources, technology assets, and organisational resources; while intangible assets include: human assets and intellectual assets; brands, company image, and reputational assets; relationships: alliances, joint ventures, or partnerships; and company culture and incentive systems.[42] Innovation requires tangible and intangible resources. Phase 2 identifies what POs need to know to improve their innovation performance. Financial resources, for example, are critical, particularly for start-up firms. How to access these resources is valuable knowledge. Similarly, commercialisation is valuable knowledge. The project will connect people who need to know,e.g., finance or commercialisation (POs), with people who have successfully done this (PAG). Capabilities are included to capture the change and cultural components considered essential at the 2016 GAP Summit. While the CoP will improve the knowledge transfer necessary to improve the POs' innovation, the role of the firm is fundamental too.[43] Dynamic capabilities are the firm's ability to integrate, build and reconfigure internal and external resources and competences

40. https://www.globalaccesspartners.org/A_Vision_for_Australia_2016_Summit_Report.pdf, p. 35
41. GAP 2016 Summit, p. 35
42. A. Thompson, M. Peteraf, J. Gamble, & A. Strickland, *Crafting & Executing Strategy. The Quest for Competitive Advantage: Concepts & Cases*, (20th edition), McGraw-Hill Irwin, NY., USA, 2016
43. A. de Felice, Measuring the social capabilities and the implication on innovation: Evidence from a special industrial cluster, *Journal of Economic Studies*, vol. 41, no. 6, 2014, pp. 907-928

to address and shape rapidly changing business environments.[44] They create value in the way they combine resources to 'determine the speed at, and degree to which, the firm's idiosyncratic resources and competences can be aligned and realigned to match the opportunities and requirements of the business environment'.[45] The outcomes are the capacity to outperform competition. Specific examples of dynamic capabilities include change routines, such as product development, and strategic analysis e.g., of investment choices or market timing decisions. However, they are more commonly found in creative managerial and entrepreneurial acts,[46] e.g., product, process or market innovation. This blueprint measures dynamic capabilities in terms of Learning Organisation Capacity (LOC). LOC defines an organisation that effectively manages its knowledge resources,[47] responds to forces for change,[48] and learns from its experiences.[49] At the individual and group levels, LOC enables innovation and creativity suitable for knowledge workers.[50] The final part of Phase 2 is reporting. Accounting for innovation is about identifying the factors that drive successful and unsuccessful innovations. This activity provides a basis from which innovation performance can be measured, success rates increased, and high performance achieved. Measurement of innovation and effective governance are critical to balancing strategy, resources and risk, ultimately identifying conditions in which innovation can thrive.

PHASE 3: Communities of Practice. My blueprint's main focus is to use CoP to facilitate the flow of knowledge identified as necessary by Phase 2. Professional practice CoP must be managed. However, this may create problems of power, conflict, and internal dynamics which could threaten democracy and participation that are considered essential to knowledge sharing within CoP. This blueprint develops solutions to these issues by embedding best-practice knowledge management into the CoP.[51] Innovation is contextual in the sense that each CoP will have different goals and outcomes. For example, the knowledge of the PAG and the knowledge needed by the POs will vary. The gap between what the PAG knows and what the POs know will vary. Therefore, the knowledge management interventions need to also vary according to the unique needs of each CoP. To address these contextual variations, this blueprint recommends introducing four types of CoP within a city (see Figure 2). These will organise members by:

- **firm maturity:** CoP 1.1: start-ups, CoP 1.2: growth, CoP 1.3: mature;
- **resources:** CoP 2.1: tangible, CoP 2.2: intangible;
- **capability:** (e.g., these will emerge from phase 2): CoP 3.1: commercialisation, CoP 3.2: sales; and
- **value chain:** CoP 4.1: upstream (e.g., supply chain), CoP 4.2 downstream (e.g., distribution channel).

The variety in the CoP will ensure each type of innovation context will be covered. This coverage

44. D. Teece, Explicating Dynamic Capabilities: The nature and microfoundations of sustainable enterprise performance, *Strategic Management Journal*, vol. 28, no. 13, 2007, pp. 1319-1350
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46. D. Teece and A. Al-Aali
47. R. Grant, Toward a Knowledge-based Theory of the Firm, *Strategic Management Journal*, no. 17, 1996, pp. 109-122
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will capture the multiple social systems involved in innovation in the city, and provide a place for every type of 'weed hothouse' to grow.

PHASE 4: Impact. This evaluates the results of the CoP to measure changes in innovation performance as a result of the knowledge management interventions (Phase 3). The impact measures will focus on the direct outcomes of gap analysis and social network analysis to compare the success of the four CoP models in Phase 3. Accounting for innovation will then report on the indirect measures of performance improvement, sustainability and profitability to track whether the direct outcomes contributed to change in these areas. These results should then be reported along with policy and practical guidelines. This enables lessons learned to be captured about effective innovation collaboration which may be shared with other cities and regional centres.

CONCLUSION

This paper has provided a blueprint for innovation collaboration at a city level. Adopting the idea of the London Coffee House model of the 17th and 18th centuries (see preamble), the paper develops ideas about how to build professional Communities of Practice (CoP) which connect those that seek innovation knowledge with those that have innovation knowledge. The paper address two key questions: (1) how can collaboration improve a city's innovation performance? and (2) how can external CoP improve innovation collaboration? This blueprint answers the first question by identifying the knowledge resources, both tangible and intangible, necessary for innovation. It answers the second question by identifying and facilitating the knowledge flows necessary to improve access to these resources. The blueprint also includes performance measurement and reporting.

The adoption of innovation outputs, including those sourced from external social systems, delivers important practical outcomes, such as improved productivity, longer life expectancies and a more resilient Australian Innovation, Science and Research System.[52] This paper's blueprint has provided a mechanism to improve the system's networks enabler. Implementing the blueprint will improve knowledge transfer between business and universities. It will connect those that know with those that need to know and, in doing so, genuinely create innovation of benefit both to the organisation and Australia more generally.

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52. ISA, Innovation review, p. ix

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