
Reconstructing the Concept of Team Fluidity for the Digitized Era

Yi-Te Chiu*

School of Information Management, Victoria University of Wellington,
New Zealand

E-mail: yi-te.chiu@vuw.ac.nz

Mohammad Saud Khan

School of Management, Victoria University of Wellington, New
Zealand

E-mail: saud.khan@vuw.ac.nz

Maryam Mirzaei

Unitec Institute of Technology, New Zealand

E-mail: mmirzaei@unitec.ac.nz

Catherine Caudwell

School of Design, Victoria University of Wellington, New Zealand

E-mail: catherine.caudwell@vuw.ac.nz

Abstract: In the modern digitized business environment, organizations are facing continual transformation in response to threats and opportunities. Team—an essential component of organizations—has evolved from an intact social system characterised by clear boundaries and differentiated roles to an emergent social system with fluidity in various aspects. To better understand fluidity in the team context, we review the previous literature and reconstruct the meaning of team fluidity. We define team fluidity as a team state characterized by team membership change, shorter team member tenure, unclear team boundary, and emergent team structure. We hope that an integrated understanding of team fluidity can shed light on both management theories and practices.

Keywords: Team fluidity, Agility, Organisational structure, Construct development

1 Introduction

In a recent survey of over 1,300 CEOs from the world's leading organizations, forty-one percent of CEOs anticipate that their organization will be substantially transformed over the next three years in response to threats and opportunities arising from new

technologies, sophisticated customer needs, and constantly emerging competitors (KPMG, 2016). They consider fostering innovation as the top strategic priority. To address the needs of innovation for sustained competitive advantages, organizations are pursuing enterprise agility, an organisational ability to quickly respond to market changes and opportunities that aim to create and preserve business value (Sambamurthy et al., 2003). In other words, organizations strive to develop fast and appropriate responses at both the strategic and operational level so that they can adjust their business models, including social and technological structures to survive and thrive. Organizations move away from a traditional hierarchical structure and gravitate toward a team-based structure. A recent study indicates team interactions and communications have increased by 50% over last two decades, which for many companies, means more than three-quarters of an employee's day (Cross et al., 2016). For instance, Netflix is adopting tools such as intuition engineering and chaos engineering in their eight engineering teams to harness such complexities (Renaudin, 2016). Similarly, Spotify configures the organization structure based on tightly bonded small core units called squad. Squads with different development foci, when combined, bring new ideas and spark innovation. Moreover, squad members belong to other larger formal and informal teams, such as Chapters, Tribes, and Guilds, to build a sharing understanding of tasks and teams (Kniberg and Ivarsson, 2012). The phenomenon shown in many nowadays organizations indicates that the nature of teams has evolved from an intact social system characterised by clear boundaries and differentiated roles (Hackman, 2012) to an emergent social system with fluidity in various aspects.

Previous research suggests fluid teams to be another type of team (e.g., Bushe and Chu, 2011). We contend that fluidity is a new property of a team phenomenon and is prevalent in cross-functional teams, virtual teams, agile project teams, entrepreneurial teams, and temporary teams (e.g., Majchrzak et al., 2012, Saunders, 2006, Pilbeam, 2013). Additionally, much of the published work focuses on membership changes when considering fluidity (e.g., Bushe and Chu, 2011, Dineen and Noe, 2003). We suggest that there should be more to learn beyond team membership as membership alone does not completely reflect what teams are experiencing when facing continual changes. We propose that team fluidity connotes an elastic team composition and structure that is stable enough for team operation, but sufficiently adaptable to changing business demands. Organizations strive to capitalise on diverse and fluid expertise without suffering from poor team dynamics, miscommunication, misunderstanding, and an unproductive collaboration.

Through the review of the literature, this study aims to develop a conceptual definition of team fluidity to reduce ambiguity in the existing literature and open the discussion on the management of team fluidity. In the following sections, we first discuss our research approach and then present our preliminary findings. A working definition of team fluidity follows. We conclude our paper with implications.

2 Research Approach

To investigate the phenomenon under question, this project sets out to analyse emerging concepts in the literature on team fluidity. We search for relevant papers up to and including April 2017 from academic databases (i.e., Web of Science, Business Source

Complete, ABI/INFORM, ACM Digital Library). The search phrases (i.e., fluidity, fluid teams, team changes, team adaptation, and temporary teams) have been adopted to search for literature. A total of 49 relevant papers were identified. We follow MacKenzie et al. (2011) suggestions for the development of a conceptual definition. We first examine how the concept of fluidity has been discussed and defined in prior research and formulate a definition of team fluidity.

3 Toward a Conceptualized Definition of Team Fluidity

Team is traditionally defined as “a bounded and stable set of individuals interdependent of a common purpose” (Hackman, 1987). The common characteristics include: team boundary, common goals, specialized roles and responsibilities, and interdependencies. Fluidity—an unstable state that is likely to change often (Sinclair, 2001)—indicates an inherent incompatibility with team. Hackman (2012) suggests a reconsideration of team for nowadays business environment and offers a definition with a broader perspective. That is, regardless of the stability of membership and boundedness of a team, a team is a work unit collectively perceived by team members, including core team members and those may join and leave at different points of time, working toward a common purpose. The nature of team fluidity is embedded in the new definition, particularly emphasizing changes in memberships and boundary. As shown in Table 1, fluid membership can be readily recognized in the previous literature. Fluid boundary and structure emerge from our review. Three attributes of team fluidity are elucidated as below.

Table 1 Selected descriptions and definitions of fluidity in the team setting

<i>Definition or Description</i>	<i>Membership</i>	<i>Boundary</i>	<i>Structure</i>
Team fluidity is defined as “the rate of <u>change in team membership</u> over time” (Dineen and Noe, 2003)	V		
Fluid workgroup with <u>changing membership</u> and leadership (Harrison et al., 2000)	V		V
The changing nature of a team includes <i>the chronic porousness of team boundaries</i> and <u>fluidity of membership</u> (Wageman et al., 2012)	V	V	
Fluidity team is defined as groups with <u>unstable membership</u> that organizations create and hold responsible for one or more outcomes (Bushe and Chu, 2011)	V		
These [Entrepreneurial] teams may be formal or ad hoc, but <u>their membership is likely to be fluid as people join or depart depending on project requirements</u> (Morris et al., 1994).	V		
Care coordination teams are fluid and dynamic, i.e. <u>members of the team change over time</u> (Tannenbaum et al., 2012)	V		
Fluid team refers to not only for <u>changes in overall composition</u> but also for changes in a team’s internal structure over time as junior members assume more-senior roles . (Huckman, 2009)	V		V
<u>Change in the core team members</u> is concomitant with	V		V

flux in coordination (Summers et al., 2012)

The boundaries of today’s teams are fluid, with members swapping in and out as needed, as well as multiplex, with *members inextricably connected to their organizational context, or to other teams directly* (Mortensen, 2014)

V

V

Note. Underline text: Membership; *Italic text*: Boundary; **Bold text**: Structure

3.1 Fluid team membership

Fluidity membership can be attributed to a theory of open and closed group by Ziller (1965). Open group, as compared to stable closed group, is characterized by membership in “constant state of change”. Changes may include expansion, subtraction, or replacement. Each of these changes may apply to a single member or a cohort of members (Mathieu et al., 2013). Team fluidity represents one or more of these changes (West, 2009, Majchrzak et al., 2012, Dineen, 2005). Arrow and McGrath (1995) argue that stability and change form a spectrum that spans from one extreme of “frozen rigidity to extreme of radical discontinuity in the membership structure”. The frequency of membership change (i.e., turnover) and the length of membership (i.e., tenure) are two major indicators of membership changes in previous literature. High team fluidity is concomitant with high frequent membership change and short membership. It should be noted that the length of membership is contingent on lifespan of the team. Average of one-week membership where team lasts for 8 weeks can be considered highly fluid (Dineen, 2005).

3.2 Fluid team boundary

The boundary of the team defines who is in and out of the team (Valentine, 2014). We differentiate team boundary from team membership by their nature. Team membership (i.e., team tenure and turnover) is a global team property, which is relatively objective, descriptive, and easily observable” (Kozlowski and Klein, 2000), whereas team boundary emerges from team members’ experiences and perceptions. Wageman et al. (2012) suggest that team members have divergent perceptions toward who is in and out of the team. Team boundary is perceived as fluid when turnover of team members is high and membership tenure is short. Such perception can be shared by team members because team members immediately experience constant removal or addition of team members. Fluid team boundary can become intricate when team members hold different perceptions of who belongs to the team. Such divergent perceptions become prevalent when team members work in multiple teams at the same time (Mortensen, 2014). Team members may less attach their membership to the group and have different perceptions of team boundary. A lack of shared understanding among team members is likely to cause higher team fluidity (Huckman, 2009).

3.3 Fluid team structure

Fluid team memberships and fluid boundary are accompanied by fluid team structure. Team structure concerns team relationships that determine the allocation of tasks, roles and responsibilities, and authority (Bresman and Zellmer-Bruhn, 2013, Stewart and Barrick, 2000). Traditional formal structure with predefined task assignments, clear roles and responsibility, and command and control leadership is less common in a fluid team

environment. Fluid team structure is characterised by pull-based task assignment, blurred roles and responsibilities (Dubé, 2014), and self-leadership (Aime et al., 2014). It relies less on administrative coordination, such as plans, rules, standards, procedures, and communication norms (Malone and Crowston, 1994), but more on informal and emergent coordination (Okhuysen and Bechky, 2009). Fluid team structure suggests dynamic sequence and timing of interdependent actions in response to an ever-changing context where a team is situated. Team members are therefore expected to be equipped with high cognitive ability to quickly adapted to fluid interaction patterns (Summers et al., 2012).

3.4 Definition of team fluidity

Team fluidity a team-level construct, reflected by three underlying attributes: changes in membership, boundary, and structure. Team fluidity is a function of three attributes. A change in any of three attributes affects team fluidity. That is, each attribute is sufficient to, but not necessary to, cause team fluidity. Following MacKenzie et al. (2011), we specify the general property of the team fluidity as an emergent state of a team, which characterizes “properties of the team that are typically dynamic in nature and vary as a function of the team context, inputs, processes, and outcomes” that can influence team and task operations (Marks et al., 2001). Considering three common attributes identified in the literature review, we define team fluidity as a team state characterized by team membership change, shorter team member tenure, unclear team boundary, and emergent team structure.

4 Conclusions and Future Research

This paper analyzes a number of definitions related to fluidity in the team context. Our preliminary analysis indicates three salient attributes of team fluidity, namely, changes in membership, boundary, and structure. It expands previous research from focusing on a unidimensional to multidimensional aspect of team fluidity. We acknowledge that our definition is purely conceptual and requires validation by subject matter experts and practitioners to evaluate if the formally defined concept covers a conceptual domain. Furthermore, we suggest examining the applicability of team fluidity to various phenomenon. For instance, open innovation, “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and to expand the markets for external use of innovation, respectively” (Chesbrough et al., 2006), indicates high team fluidity in all three attributes discussed in this paper. Open innovation involves stakeholders from other business units, partners, suppliers, competitors, consultancies, and government because of a need of different expertise and an anticipation of value-co-creation (Poot et al., 2014). It affects team memberships, boundary, and structure. Empirical studies have shown that innovation is associated with informal organizational structure (Naqshbandi and Kaur, 2011). Challenges lie in managing the affective, cognitive, and behavioural complexities caused by fluidity underlying the open innovation environment. While contemporary researchers have devoted considerable efforts to manage collaboration complexities in modern business environment, by taking into account a new meaning of team fluidity, we believe that our research provides an integrated perspective for both practitioners and researchers to consider when they design their solutions and research.

5 References

- AIME, F., HUMPHREY, S., DERUE, D. S. & PAUL, J. B. 2014. The riddle of heterarchy: Power transitions in cross-functional teams. *Academy of Management Journal*, 57, 327-352.
- ARROW, H. & MCGRATH, J. E. 1995. Membership dynamics in groups at work: A theoretical framework. *Research in Organizational Behavior*, 17, 373-373.
- BRESMAN, H. & ZELLMER-BRUHN, M. 2013. The Structural Context of Team Learning: Effects of Organizational and Team Structure on Internal and External Learning. *Organization Science*, 24, 1120-1139.
- BUSHE, G. R. & CHU, A. 2011. Fluid teams: solutions to the problems of unstable team membership. *Organizational Dynamics*, 40, 181-188.
- CHESBROUGH, H., VANHAVERBEKE, W. & WEST, J. 2006. *Open innovation: Researching a new paradigm*, Oxford University Press on Demand.
- CROSS, R., REBELE, R. & GRANT, A. 2016. Collaborative overload. *Harvard Business Review*, 94, 74-79.
- DINEEN, B. R. 2005. TeamXchange: A team project experience involving virtual teams and fluid team membership. *Journal of Management Education*, 29, 593-616.
- DINEEN, B. R. & NOE, R. A. 2003. The Impact of team fluidity and its implications for human resource management research and practice. *Research in Personnel and Human Resources Management*, 22, 1-37.
- DUBÉ, L. 2014. Exploring how IT professionals experience role transitions at the end of successful projects. *Journal of Management Information Systems*, 31, 17-46.
- HACKMAN, J. R. 2012. From causes to conditions in group research. *Journal of Organizational Behavior*, 33, 428-444.
- HACKMAN, R. 1987. The design of work teams. In: LORSCH, I. J. W. (ed.) *Handbook of Organizational Behavior*. Englewood Cliffs, NJ: Prentice Hall.
- HARRISON, G. L., MCKINNON, J. L., WU, A. & CHOW, C. W. 2000. Cultural influences on adaptation to fluid workgroups and teams. *Journal of International Business Studies*, 31, 489-505.
- HUCKMAN, R. S. S., BRADLEY R.; UPTON, DAVID M. 2009. Team familiarity, role experience, and performance: Evidence from Indian software services. *Management Science*, 55, 85-100.
- KNIBERG, H. & IVARSSON, A. 2012. *Scaling agile@ spotify with tribes, squads, chapters & guilds* [Online]. Available: <https://ucvox.files.wordpress.com/2012/11/113617905-scaling-agile-spotify-11.pdf> [Accessed].
- KOZLOWSKI, S. W. J. & KLEIN, K. J. 2000. A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes.
- KPMG 2016. Now or Never: 2016 Global CEO Outlook. KPMG International.
- MACKENZIE, S. B., PODSAKOFF, P. M. & PODSAKOFF, N. P. 2011. Construct measurement and validation procedures in MIS and behavioral research: Integrating new and existing techniques. *MIS Quarterly*, 35, 293-334.
- MAJCHRZAK, A., MORE, P. H. B. & FARAJ, S. 2012. Transcending knowledge differences in cross-functional teams. *Organization Science*, 23, 951-970.
- MALONE, T. W. & CROWSTON, K. 1994. The interdisciplinary study of coordination. *ACM Computing Surveys (CSUR)*, 26, 87-119.
- MARKS, M. A., MATHIEU, J. E. & ZACCARO, S. J. 2001. A temporally based framework and taxonomy of team processes. *Academy of Management Review*, 26, 356-376.
- MATHIEU, J. E., TANNENBAUM, S. I., DONSBACH, J. S. & ALLIGER, G. M. 2013. Achieving optimal team composition for success. *Developing and enhancing*

high-performance teams: Evidence-based practices and advice. San Francisco: Jossey-Bass.

- MORRIS, M. H., DAVIS, D. L. & ALLEN, J. W. 1994. Fostering corporate entrepreneurship: Cross-cultural comparisons of the importance of individualism versus collectivism. *Journal of International Business Studies*, 65-89.
- MORTENSEN, M. 2014. Constructing the Team: The Antecedents and Effects of Membership Model Divergence. *Organization Science*, 25, 909-931.
- NAQSHBANDI, D. M. M. & KAUR, S. 2011. A study of organizational citizenship behaviours, organizational structures and open innovation. *International Journal of Business and Social Science*, 2, 182-193.
- OKHUYSEN, G. A. & BECHKY, B. A. 2009. 10 coordination in organizations: An integrative perspective. *The Academy of Management Annals*, 3, 463-502.
- PILBEAM, C. 2013. Coordinating temporary organizations in international development through social and temporal embeddedness. *International Journal of Project Management*, 31, 190-199.
- POOT, T., FAEMS, D. & VANHAVERBEKE, W. I. M. 2014. Toward a dynamic perspective on open innovation: A longitudinal assessment of the adoption of internal and external innovation strategies in the Netherlands. *Open Innovation Research, Management and Practice*. World Scientific.
- RENAUDIN, J. 2016. *How Netflix Embraces Complexity without Sacrificing Speed: An Interview with Casey Rosenthal* [Online]. Available: <https://www.stickyminds.com/interview/how-netflix-embraces-complexity-without-sacrificing-speed-interview-casey-rosenthal> [Accessed November 17 2017].
- SAMBAMURTHY, V., BHARADWAJ, A. & GROVER, V. 2003. Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms. *MIS Quarterly*, 237-263.
- SAUNDERS, C. S. A., MANJU K. 2006. Are all distributed teams the same? Differentiating between temporary and ongoing distributed teams. *Small Group Research*, 37, 662-700.
- SINCLAIR, J. M. 2001. *Collins COBUILD English dictionary for advanced learners*, HarperCollins.
- STEWART, G. L. & BARRICK, M. R. 2000. Team structure and performance: Assessing the mediating role of intrateam process and the moderating role of task type. *Academy of Management Journal*, 43, 135-148.
- SUMMERS, J. K., HUMPHREY, S. E. & FERRIS, G. R. 2012. Team member change, flux in coordination, and performance: Effects of strategic core roles, information transfer, and cognitive ability. *Academy of Management Journal*, 55, 314-338.
- TANNENBAUM, S. I., MATHIEU, J. E., SALAS, E. & COHEN, D. 2012. Teams are changing: Are research and practice evolving fast enough? *Industrial and Organizational Psychology*, 5, 2-24.
- VALENTINE, M. A. E., AMY C. 2014. Team scaffolds: How mesolevel structures enable role-based coordination in temporary groups. *Organization Science*, 26, 405-422.
- WAGEMAN, R., GARDNER, H. & MORTENSEN, M. 2012. The changing ecology of teams: New directions for teams research. *Journal of Organizational Behavior*, 33, 301-315.
- WEST, B. J. P., JAIME L.; CARSTEN, MELISSA K. 2009. Team level positivity: Investigating positive psychological capacities and team level outcomes. *Journal of Organizational Behavior*, 30, 249-267.

This paper was presented at The ISPIM Innovation Summit – Building the Innovation Century, Melbourne, Australia on 10-13 December 2017. The publication is available to ISPIM members at www.ispim.org.

ZILLER, R. C. 1965. Toward a theory of open and closed groups. *Psychological Bulletin*, 64, 164-182.

Feedback: Which areas/questions do you want feedback on at the event?

Since we are currently conceptualising team fluidity and developing a framework for managing team fluidity, we appreciate any feedback related to theories, research streams (in addition to team changes, team adaptation, temporary teams), and empirical cases that can add richness of our discussion.