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**Amoeba management and organizational ambidexterity:
similarities, differences, and implications for organizational
fit**

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Amoeba management and organizational ambidexterity: similarities, differences, and implications for organizational fit and success

Abstract

Purpose: This paper extensively discusses the performance management system characteristics of amoeba management and organizational ambidexterity to a) provide conceptual comparisons between the two and b) assist scholars and practitioners in their respective research design and adoption decisions.

Design/methodology/approach: Management databases that included Science Direct, ABI/INFORM Global, Business Source Premier, and Scopus (and their Japanese counterparts), as well as a number of journals known for publishing work on amoeba management and organizational ambidexterity, were used to identify relevant published work. An initial identification of almost 2,500 books and articles was reduced to the paper's approximately 100 references. Feedback from presenting the paper at management conferences and university seminars support the comprehensiveness of the assembled literature.

Findings: This paper shows that prior research's conflating of amoeba management and organizational ambidexterity is misguided. While the two performance management systems share a common overarching philosophy on how to successfully operate in highly competitive environments and adopt a similar urgency about the need for business units to feature relatively small numbers of employees, significant differences involving the enactment of strategy, organizational structure, organizational culture, planning horizon, performance measures, employee involvement, employee selection, and leadership prevail.

Originality/value: By providing scholars and practitioners with better, more holistic understandings of amoeba management and organizational ambidexterity, the paper seeks to advance theoretical and practical insights into the two performance management systems. The paper's model helps scholars incorporate into their research more complete theoretical constructions and operational representations of these two performance management systems and helps practitioners make better informed adoption choices.

1. Introduction

Performance management systems embody the set of organizational activities employed by managers to focus employee attention and motivate behaviour for the ultimate purpose of implementing the organization's strategy (Ferreira and Otley, 2009). Successful performance management systems allow for both the efficient utilisation of existing business operations and the effective discovery and support of what will become the organization's future profit-making products, services, and business units. Using Otley's (1999) framework, it can be

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2
3 observed that amoeba management and organizational ambidexterity each exhibit all the
4 essential characteristics of a fully operational performance management system. In particular,
5 they include Otley's (1999) five elements of objectives, strategies and plans, performance
6 targets, rewards, and information flows.
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13 The potential for organizational ambidexterity and amoeba management to operate as
14 performance management systems has been overlooked (Raisch, Birkinshaw, Probst, and
15 Tushman, 2009; Simsek, 2009; Cao, Gedajlovic, and Zhang, 2009; Gupta, Smith, and
16 Shalley, 2006; Adler and Hiromoto, 2012). In fact, because they both share a common
17 overarching philosophy (i.e., promoting organizational nimbleness and agility) and a
18 commitment to ensuring business units have relatively small numbers of employees (usually
19 50 or fewer employees per unit), the two are frequently inappropriately equated (Adler and
20 Hiromoto, 2012). This situation is unhelpful to scholars, many of whom are unaware of how
21 these two systems compare with one another.
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35 The purpose of the present paper is to a) distinguish amoeba management and organizational
36 ambidexterity from one another and b) assist scholars in studying and practitioners in
37 adopting performance management systems that allow strong fit with their organizational
38 context. The aims of the paper share similarities with Turner, Swart, and Maylor (2013). Just
39 as these authors sought to provide scholars and practitioners with better, more holistic
40 understandings of organizational ambidexterity, the present paper seeks to advance
41 theoretical and practical understandings of organizational ambidexterity as an influential
42 performance management system, while at the same time enabling fuller theoretical and
43 practical understandings of using amoeba management for performance management
44 purposes.
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3 The research in this paper relies on a multidisciplinary literature and includes research
4 published in non-English-language journals, which is particularly essential for understanding
5 the amoeba management concept. Guiding the review of relevant previous studies are the
6 following two research questions:
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- 12
13 1. What are the distinguishing performance management characteristics of amoeba
14 management and organizational ambidexterity?
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- 16 2. Based on the characteristics identified in (1), what are implications for the
17 research and practice of amoeba management and organizational ambidexterity?
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23 The paper culminates with the presentation of an original table that can inform scholarly and
24 management practice. In particular, this table incorporates the conceptual frameworks of
25 Ferreira and Otley (2009) and Adler (2011) to distinguish the performance management
26 characteristics of amoeba management and organizational ambidexterity. From this
27 explication, researchers can test the research propositions implied by the table and improve
28 the research designs of studies involving amoeba management and organizational
29 ambidexterity.
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41 The paper is organised in the following manner. The next section discusses the methodology
42 for searching, selecting and analysing the existing research on organizational ambidexterity
43 and amoeba management. Section 3 provides a description of organizational ambidexterity,
44 which is followed in Section 4 by a description of amoeba management. Next the paper
45 discusses how amoeba management and organizational ambidexterity include all the
46 hallmarks of fully functioning, comprehensive performance management systems. In
47 Sections 6 and 7, the similarities and differences between these two performance
48 management systems are discussed. Section 7 culminates with the presentation of an original
49 table aimed at benefiting researchers' study of amoeba management and organizational
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ambidexterity. The final section presents the paper's conclusions and discusses their implications for scholars, as well as practitioners.

2. Methodological considerations

The review of the amoeba management and organizational ambidexterity literatures was undertaken by an academic team with multidisciplinary expertise and fluency in English and Japanese. The multidisciplinary capability was vital due to the multiple disciplines that commonly contribute to the amoeba management and organizational ambidexterity literatures. Being aware of these various streams of work was essential to identifying and assembling the work relied on to create the original table that is presented in Section 7. The research team's fluency in Japanese was especially vital for undertaking the literature review of amoeba management, for the vast majority of this literature appears in books and academic and practitioner journals published in Japanese.

When identifying the literature capable of addressing this paper's two research questions, several standard research protocols were observed. In particular, we used management databases that included Science Direct, ABI/INFORM Global, Business Source Premier, and Scopus (and their Japanese counterparts) to highlight work that could enlighten our research questions. The search query consisted of the words "ambidexterity," "ambidextrous," "amoeba," and "amoeba management." We also chose a number of journals that were known to publish work on amoeba management and organizational ambidexterity, namely *Academy of Management Review*, *Academy of Management Journal*, *Academy of Management Perspectives*, *Journal of Management Studies*, *Organization Science*, *Journal of Management*, *California Management Review*, *Harvard Business Review*, and *Kigyō Kaikei (The Journal of Accounting)*. We meticulously examined these journals' issues over the past 25 years for articles on either amoeba management or organizational ambidexterity. We

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3 further identified the leading scholars/gurus (e.g., Simsek, Tushman, O'Reilly, Benner,
4 Birkinshaw, Gibson, Nadler, Ushio, Miya, Hiromoto, and Tani) in these two fields of study
5 and used our management databases to ensure we had accumulated a full account of their
6 work, as well as to enable citation analyses aimed at uncovering other scholars who had cited
7 these leading scholars' work.
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16 In total we uncovered nearly 2,500 books and articles on the topics of amoeba management
17 and organizational ambidexterity. Many of these books and articles made only passing
18 reference to amoeba management or organizational ambidexterity when our aim called for
19 comprehensive descriptions of either or both. With the help of research assistants, we
20 distilled the initial list of 2,500 down to the approximately 100 amoeba management and
21 organizational ambidexterity books and articles that comprise the references to this paper. It
22 is worth noting that the present paper has been workshoped at the seminar series of various
23 universities and presented at management and accounting conferences, which provided
24 further opportunities to test the comprehensiveness of the literature assembled and reviewed
25 in the present paper.
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41 **3. Organizational ambidexterity**

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43 Ambidextrous organisations are characterized by their ability to undertake the seemingly
44 contradictory actions of promoting stability and promoting change, and to do so with ease
45 and without losing focus (Duncan, 1976). Nadler and Tushman (1999) refer to this
46 ambidextrous aptitude as the simultaneous ability to manage the paradoxes of refinement
47 (efficiency) and renewal (innovation). Meanwhile, O'Reilly and Tushman (2004) describe
48 ambidexterity as being able to exploit one's current business operations and at the same time
49 identify new business opportunities that will come to define the organization's future.
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59 O'Reilly and Tushman (2004) liken this ability to the Roman god Janus, who had two sets of
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3 eyes. One set focused on what lay behind, while the other saw what lay ahead. The use of
4
5 ambidexterity is positively associated with organizational effectiveness and longevity (see,
6
7 for example, Kim and Huh, 2015), with prominent ambidextrous adopters including IBM,
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9 USA Today, Ciba Vision, Hewlett-Packard, Johnson & Johnson, GlaxoSmithKline, and Asea
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11 Brown Boveri.
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16 Ambidextrous organizations are characterized by highly decentralised organizational
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18 structures. As noted by O'Reilly et al. (2009, p. 84), "it [organizational ambidexterity]
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20 embodies a complex set of routines including decentralization, differentiation, [and] targeted
21
22 integration ..." Benner and Tushman (2003, p. 247) describe the organizational
23
24 interrelationships as comprising "... multiple tightly coupled subunits that are themselves
25
26 loosely coupled with each other." In other words, effective organizational ambidexterity
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28 requires the combined and complementary use of differentiation and integration (Raisch et
29
30 al., 2009).
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36 Debate reigns in the literature over how an organisation should best go about managing
37
38 organizational ambidexterity's conflicting demands of exploration and exploitation (Simsek,
39
40 2009). As Gupta et al. (2006, p. 697) note, "although near consensus exists on the need for
41
42 balance [between exploration and exploitation], there is considerably less clarity on how this
43
44 balance can be achieved." Some scholars propose a contextual approach (Birkinshaw and
45
46 Gibson, 2004), while others advocate for what is called a structural solution (O'Reilly and
47
48 Tushman, 2004; Jelinek and Schoonhoven, 1993). Although the contextual and structural
49
50 approaches differ on several key dimensions, the main point of difference is whether
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52 individual employees should be empowered to "make choices between alignment-oriented
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54 [exploitation] and adaption-oriented [exploration] activities in the context of their day-to-day
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3 work” (Birkinshaw and Gibson, 2004, p. 7) or whether such power should remain with senior
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5 management.
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9 O’Reilly and Tushman (2004) champion the structural approach. They believe in the
10
11 necessity of separating an organization’s business units into exploitative units, which are
12
13 responsible for ensuring their operations are the most efficient and cost-effective, and
14
15 explorative units, which are responsible for creating the organization’s next set of successful
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17 and profitable products and services (O’Reilly and Tushman, 2004). They argue that
18
19 substantial differences in terms of strategic intent, critical tasks, competencies, structure,
20
21 control, rewards, culture, and the role of leadership characterize exploitative and explorative
22
23 business operations. The former is largely profit-focused, emphasizes operational efficiency,
24
25 and is supported by a mechanistic structure and authoritative leadership (O’Reilly and
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27 Tushman, 2004). The latter requires an appetite for risk, demands high adaptability and
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29 innovation, and is supported by an organic structure and visionary leadership (O’Reilly and
30
31 Tushman, 2004).
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39 The exploitative and explorative business units, though structured independently from one
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41 another, are integrated into the existing organizational structure by a senior management
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43 group. Rather than having the units spun off as quasi-independent companies, O’Reilly and
44
45 Tushman (2004) note the importance of designating a group of general managers who are
46
47 each responsible for a set of complementary exploitative and explorative business units. It is
48
49 only here at the senior management level that an individual must be capable of ambidextrous
50
51 thinking and action. These managers must be capable of “combining the attributes of rigorous
52
53 cost cutters and free-thinking entrepreneurs while maintaining the objectivity required to
54
55 make difficult trade-offs,” with O’Reilly and Tushman referring to such individuals as a “rare
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57 but essential breed” (O’Reilly and Tushman, 2004, p. 81).
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3 Nadler and Tushman (1999) note that while the business units of ambidextrous organizations
4 may have distinct and very different business missions, for success to occur the accent must
5 be on creating synergy and sharing resources. This focus, and its ultimate achievement, must
6 occur in spite of the fact that the units will naturally find overlap in their customer base and
7 therefore be in direct competition with each other. And it is this challenge of maintaining
8 harmony and inter-unit integration that becomes a primary task of the senior management
9 team.
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21 Birkinshaw and Gibson (2004) advance a contextual approach to an organization's
22 simultaneous quest for exploitation and exploration. They argue that structural separation can
23 stymie organizational learning and reduce employee commitment when the activities of an
24 organisation's existing core business are separated from its efforts to explore. Zhan and Chen
25 (2013, p. 601) find a powerful interaction existing between exploitation and exploration,
26 noting that they serve to "reinforce each other." According to Birkinshaw and Gibson (2004),
27 business unit separation not only prevents the realization of the synergies Zhan and Chen
28 (2013) write about, but it also leads to new innovations being seen as unrealistic and actively
29 resisted by the relevant exploitative business unit. To overcome this problem, Birkinshaw and
30 Gibson (2004) argue for a grass roots approach to ambidexterity.
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46 Under the contextual approach, and in contrast to what occurs under the structural approach,
47 organizational ambidexterity is driven from the ambidexterity of individuals rather than
48 through senior managers' planned assignment of different responsibilities (exploitation
49 versus exploration) to specific business units. Accordingly, the ambidexterity envisioned in
50 the contextual approach means that lower level employees are empowered to balance the
51 competing requirements of exploitation and exploration within their daily work. Recent work
52 by Yang, Zhou, and Zhang (2015), points to how the tension between exploitation and
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3 exploration can be managed by the use of collectivistic cultures. At the national level, such
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5 cultures are commonly found in Asian countries (e.g., Japan, China and South Korea).
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9 Key characteristics of ambidextrous individuals include their willingness to show initiative,
10
11 be alert to new opportunities, adopt cooperative work styles, network internally, and be
12
13 comfortable multitasking (Birkinshaw and Gibson, 2004). Unlike the structural approach, the
14
15 contextual approach views senior management's role as twofold: 1. setting the appropriate
16
17 organisational context and 2. enabling an environment in which ambidextrous individuals can
18
19 thrive (Birkinshaw and Gibson, 2004).
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24 To summarize, scholars hold a divided view on how to best execute organizational
25
26 ambidexterity. Some believe in the use of a dual structure (O'Reilly and Tushman, 2004;
27
28 Jelinek and Schoonhoven, 1993), which is intended to allow the exploitative and explorative
29
30 business units to focus on a single mandate of either defending a current market or exploring
31
32 and building a new market. Other scholars argue for a contextual approach, which requires
33
34 each business unit to undertake the seemingly contradictory demands of defending and
35
36 exploring (Birkinshaw and Gibson, 2004; McDonough and Leifer, 1983).
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41 42 **4. Amoeba management**

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44 Amoeba management is a Japanese-inspired performance management system. It was
45
46 conceived by Kazuo Inamori and introduced into the fledgling company he founded, which
47
48 was originally called Kyoto Ceramics Company, Ltd. Today's company, named Kyocera,
49
50 produces a wide variety of products ranging from automotive components to semiconductor
51
52 components and from dental implants to solar panels. The company operates on six
53
54 continents, and together with the Kyocera Group has annual net sales of over £11.5 billion
55
56 and a total workforce of almost 77,000 employees. For its latest fiscal year end of March
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3 2018, the company reported net income of £733 million, which is 6.4% of net sales. As
4
5 further testament to Kyocera's outstanding financial performance, the company has reported
6
7 a profit every year over its 59 years of operations. Kyocera's financial performance clearly
8
9 meets Porter's definition of sustained success: above average rate-of-return (Porter, 1980, p.
10
11 35) sustained over a period of years (Porter, 1985, p. 11).
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14

15 Amoeba management involves the structuring of a company into small, fast-responding,
16
17 customer-focused, entrepreneurially-oriented business units operating like independent
18
19 companies that share a united purpose (i.e., the parent organization's goals and objectives
20
21 Adler and Hiromoto, 2012). The goal of amoeba management is to empower each amoeba to
22
23 the point that each assumes all the responsibilities of an independent company. When
24
25 managing their particular unit's profitability, each amoeba is meant to do so in coordinated
26
27 independence of one another.
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32 Amoeba management uses a profit centre approach to structure a company (Miya, 2003;
33
34 Kazusa and Sawabe, 2005; Hiromoto and Hiki, 2006). The use of the word "amoeba" is
35
36 meant to capture the concept of an entity at its smallest, most elemental level, as well as to
37
38 describe its life-like capability to "multiply and change shape in response to the environment"
39
40 (Inamori, 1999; p. 57). In other words, amoeba management is intended to offer a
41
42 spontaneous, homeostatic response to a business world that features rapid, dynamic change.
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47 Amoebas typically consist of 5-50 employees (Cooper, 1994). Each amoeba is accountable
48
49 for a meaningful organizational activity, an activity that is meant to mirror what currently
50
51 exists (or could exist) in the outside, competitive environment. The amoeba leader and his/her
52
53 employees are encouraged to act like the owner of a small, independent company (Tani,
54
55 1997; Tani, 1999; Tani, 2005). Accordingly, the manager is accountable for a wide range of
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57 activities, including the regular ongoing daily activities of purchasing raw materials and
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1
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3 hiring and scheduling labour, as well as the more strategic activities of new product and new
4
5 market development. Amoeba leaders are meant to be accountable for managing their units'
6
7 profitability, and in the process become not just valued and respected managerial decision
8
9 makers but part of a network of *de facto* business partners. While Kyocera is the best known
10
11 user of amoeba management, it has also been implemented at more than 300, predominantly
12
13 Japanese, companies, including Systec Corporation, Disco Corporation, and Hiroshima
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15 Aluminium Industry Company Ltd. (Miya, 2003; Miya, 2010; Takeda and Boyns, 2014).
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21 **5. Performance management systems**

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23 Performance management is often conceptualized in a variety of ways, with no universal
24
25 definition prevailing (Ferreira and Otley, 2009). While it is generally accepted that
26
27 performance management comprises the means (i.e., the organizational systems, structures
28
29 and processes) for influencing organisational members' implementation of the organization's
30
31 strategy, debate exists about whether the formulation, implementation, and control of an
32
33 organization's strategy is separate from or part of performance management. Anthony and
34
35 Govindarajan (2007) subscribe to the former view, while Mintzberg (1978), Merchant and
36
37 Otley (2007), and Ferreira and Otley (2009) argue for the latter perspective. Resolving this
38
39 debate is not an intended purpose of this paper, and therefore the approach adopted by Adler
40
41 (2011) is used here. In particular, performance management is conceptualized as:
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47 The means by which an organization seeks to encourage and support its workers'
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49 implementation of the organization's strategy, including the way in which the
50
51 organization designs its internal business processes and structures, utilizes and
52
53 develops its core competencies, and promotes and leverages its culture.

54 In seeking to specify how an organization would execute the task of designing a suitable
55
56 performance management system, Ferreira and Otley (2009) offer an updated framework, one
57
58 that extends the earlier work of Otley (1999), and includes a more comprehensive and holistic
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1
2
3 description of the main elements that comprise a performance management system. Included
4
5 among their 12 elements of performance management systems are:
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7

- 8 1. Strategy
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- 11 2. Organizational structure
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- 14 3. Plans and targets
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- 16
- 17 4. Performance measures
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20 This paper focuses on these four elements because of their ability to offer useful contrasts
21
22 between the operation of ambidextrous-based and amoeba management-based performance
23
24 management systems. Augmenting the four Ferreira and Otley (2009) elements are the
25
26 following four elements helping to comprise Adler's 2011 performance management
27
28 taxonomy, with the latter researcher noting how they are referred to by Ferreira and Otley
29
30 (2009) but ultimately omitted from their framework:
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- 33
- 34 5. Organizational culture
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- 37 6. Employee involvement
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- 40 7. Employee selection
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- 42
- 43 8. Leadership style
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46 As this paper subsequently shows in Section 7, not only do amoeba management and
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48 organizational ambidexterity address the essential elements of a performance management
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50 system, but they make very specific representations about how each of the above listed eight
51
52 performance management system elements should be designed or undertaken. In particular,
53
54 both amoeba management and organizational ambidexterity prescribe how organizations
55
56 should design their systems and processes, structure their responsibility centres, build and
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3 leverage their cultures, and tailor their employee recruitment, selection, and training and
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5 development.
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10 Adler and Hiromoto (2012) specifically refer to these design decisions when writing about
11 the operation of amoeba management. Meanwhile, although organizational ambidexterity in
12 its early manifestation was often described as a dynamic capability (O'Reilly and Tushman,
13 2004; Gibson and Birkinshaw, 2004) whereby senior managers sought to reconfigure and
14
15 redeploy organizational assets in response to a changing environment of threats and
16
17 opportunities, the more contemporary understanding of organizational ambidexterity views
18
19 the concept as embodying "... a complex set of routines including decentralization,
20
21 differentiation, targeted integration, and the ability of senior leadership to orchestrate the
22
23 complex trade-offs that ambidexterity requires" (O'Reilly and Tushman, 2009, p. 84).
24
25 Moreover, Simsek (2009, p. 599) notes that organizational ambidexterity involves "... not
26
27 only separate structural subunits for exploration and exploitation, but also different
28
29 competencies, systems, incentives, processes, and cultures for each unit." He further proceeds
30
31 to state that organisational ambidexterity embodies "... a carefully selected set of systems
32
33 and processes that collectively define organizational members' behavioural context" (Simsek,
34
35 2009, p. 602). These ideas are further reinforced by He and Wong (2004), who describe the
36
37 structures, processes, strategies, capabilities, and cultures ambidexterity requires for success.
38
39 In other words, an organization's adoption of ambidexterity involves decision-making about
40
41 the business processes and organizational structures required to promote authority and
42
43 accountability, the identification and development of core competencies needed to gain and
44
45 sustain competitive advantage, and the fostering of a supportive organizational culture to
46
47 enable an organizationally-shared focus and commitment. These elements represent the
48
49 essential ingredients of a fully functioning performance management system.
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3 The eight performance management system elements are used in the remainder of this paper
4 to compare and contrast amoeba management and the structural approach of organizational
5 ambidexterity. Focusing on the structural approach is a purposeful choice, for it is more
6 consistent with the reality of most organizations (Turner et al., 2013) and permits a deeper
7 and more insightful coverage than would otherwise be possible if both approaches were
8 included.
9

19 **6. Similarities between amoeba management and organizational ambidexterity**

20
21 As just noted, amoeba management and organizational ambidexterity both constitute
22 complete performance management systems. In addition, amoeba management and
23 organizational ambidexterity share a common philosophy. Both recognise the danger of
24 organizational hubris, or what Nadler and Tushman (1999) refer to as the “success
25 syndrome.” Accordingly, both performance management systems exhort managers to act
26 entrepreneurially and with a high customer focus. Inamori (1999, p. 41), when speaking
27 about the operation of amoeba management, describes this latter need as becoming your
28 “customers’ servants.”
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40 Amoeba management and organizational ambidexterity invariably feature in environments
41 characterised by highly intense competition (Adler and Hiromoto, 2012; Raisch and
42 Birkinshaw, 2008; Gibson and Birkinshaw, 2004), where the competitive and complex
43 environment preclude the possibility for work to be “... scripted perfectly in advance”
44 (Turner et al., 2013). To succeed in such environments, organizations must exhibit high
45 efficiency and agility. In particular, organizations must simultaneously emphasise present-
46 day efficiency and effect changes in the organization’s structure, processes, and competencies
47 that will prepare it for tomorrow’s challenges.
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O'Reilly *et al.* (2009), when describing how ambidextrous organizations are meant to meet the challenges of a competitive market, state the need for organizations to exploit their existing products/services and processes, while at the same time exploring opportunities that present significant, breakthrough innovations in business process, technology, and/or product/service offerings. The amoeba management literature offers similar advice, stressing the importance for organizations to focus on both incremental improvements and savvy prospecting. Accordingly, the philosophies of amoeba management and organizational ambidexterity share Nadler and Tushman's (1999) goal of transforming organizational structures, processes, and systems from institutionalising stability to institutionalising change.

While the philosophical foundations and ultimate aims of these two performance management systems are highly similar, there is a small point of difference. Amoeba management views the organization's response to its environment as a process of homeostasis. Organizational ambidexterity, though still viewing the relationships between an organization and its environment in open systems terms (Scott, 2003), views these relationships as being sociologically- rather than biologically-inspired.

In addition to sharing a common overarching philosophy on how to successfully operate in highly competitive environments, amoeba management and organizational ambidexterity share the similar objective of ensuring business units have relatively small numbers of employees. Small-sized business units are intended to encourage and foster innovation and creativity. Asea Brown Boveri, an adopter of organizational ambidexterity, created over 5,000 profit centres within its company, with an average size of 50 employees in each. Kyocera operates around 3,000 amoebas, with the typical amoeba size being between 5-50 employees.

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3 The division of an overall company into a large number of business units – with each
4 business unit comprising a small, empowered, and autonomous work group – is one of the
5 most visible features of amoeba management and organizational ambidexterity. And it is for
6 this reason that the two performance management systems are oftentimes, though most
7 incorrectly, seen as being equivalent. As is shown in the next section of this paper, the reality
8 is very different.
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18 **7. Differences between amoeba management and organizational ambidexterity**

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20 Substantial, although often overlooked, differences punctuate the operation of amoeba
21 management and organizational ambidexterity. Ambidexterity scholars are particularly prone
22 to conflate the two performance management systems, and this occurrence appears to be at
23 least partly the result of the flexible understandings scholars apply to the concept of
24 ambidexterity (Birkinshaw and Gupta, 2013). As the succeeding paragraphs demonstrate, the
25 two performance management systems differ on such key dimensions as strategy,
26 organizational structure, organizational culture, planning horizon, performance measures,
27 employee involvement, employee selection, and leadership. These eight dimensions, and in
28 particular how the two performance management systems differ across them, are discussed in
29 turn below.
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46 *7.1 Strategy*

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48 Firms that adopt amoeba management must ensure their amoebas are capable of pursuing a
49 hybrid strategy (Adler and Hiromoto, 2012), or what might be better termed a confrontation
50 strategy (Cooper, 1995). A confrontation strategy is akin to what Mintzberg and Waters
51 (1985) call an imposed strategy. Such strategies are the direct result of the collapsing of an
52 industry's competitive space. This occurrence is generally the result of the product/service
53 attaining commodity status; the consequent result being that competitors can no longer pick and
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3 choose which product/service attributes they will focus on. Instead they must meet a set of
4
5 industry-wide minimum thresholds for price, quality, and functionality, or risk putting their
6
7 organizations' survivals in jeopardy. Since amoebas compete for all intents and purposes as
8
9 independent companies, they will find they must adopt a confrontation strategy to compete
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11 successfully.
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16 Business units of a firm that adopts organizational ambidexterity will pursue either a defender or
17
18 a prospector strategy (Miles and Snow, 1978). Since ambidextrous firms separate their business
19
20 units into exploitative and explorative businesses, different strategies will apply for each type. In
21
22 particular, the exploitative businesses will pursue a defender strategy. They will benchmark their
23
24 key business activities and adopt highly formalized and highly standardized operating systems in
25
26 an attempt to improve product/service efficiency and maintain profit margins (Adler, 2018, p.
27
28 81). In contrast, the explorative businesses will pursue a prospector strategy. They will devolve
29
30 decision making and use informal operating systems that are customized to their individual
31
32 settings in their quest to grow sales and market share (Adler, 2018, p. 81).
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38 *7.2 Organizational structure*

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40 Amoeba management is noted for its extreme decentralization (Miya, 2003). For a company
41
42 like Kyocera, its large size and highly turbulent environment mean that its choice of
43
44 decentralization is appropriate (Lawrence and Lorsch, 1967). Of course, Kyocera has chosen
45
46 to operate a far from typical decentralized structure. The extensive nature of its decentralised
47
48 structure – whereby thousands of business units with very small head counts are growing,
49
50 dividing, combining, and dissolving – means that this performance management system
51
52 creates a huge demand for integrating mechanisms. Without these, the organization would
53
54 likely disintegrate into a sea of chaos. Adler and Hiromoto (2012) offer a detailed discussion
55
56 of these integrating mechanisms.
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3 The significant extent of responsibility inherent in amoeba management's decentralized
4 structure is matched by the significant amount of authority vested with all employees, and
5 especially the amoeba leaders. In particular, under amoeba management, employees are
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7
8 meant to move beyond being simply empowered, to being valued and respected business
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10
11 partners (Adler and Hiromoto, 2012). This elevated status necessarily means that employees
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13
14 are expected to assume the additional business and management responsibilities that
15
16
17 accompany the greater benefits associated with being business partners.
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20
21 Ambidextrous organizations also operate decentralised organizational structures. As noted by
22
23 O'Reilly et al. (2009, p. 84), "it [organizational ambidexterity] embodies a complex set of
24
25 routines including decentralization, differentiation, [and] targeted integration ..." Benner and
26
27 Tushman (2003, p. 247) describe the organizational interrelationships as comprising "...
28
29 multiple tightly coupled subunits that are themselves loosely coupled with each other." In
30
31 other words, and just as was seen with amoeba management, effective organizational
32
33 ambidexterity requires the combined and complementary use of differentiation and
34
35 integration (Raisch et al., 2009). The main difference in organizational structure between
36
37 organizational ambidexterity and amoeba management is that the amount of differentiation
38
39 featuring in the former, though quite high, is relatively not as great as what occurs in the
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41
42 latter.
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45
46 For ambidextrous organizations, the exploitative or explorative nature of any given business
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48 unit will dictate the type of decentralized organizational structure it operates (O'Reilly and
49
50 Tushman, 2004). Exploitative business units operate decentralized organizational structures
51
52 that are characterised by high formality (Mengue and Auh, 2010). Organizational formality
53
54 refers to the extent to which rules and procedures govern the work roles employees assume
55
56 and the manner in which the employees undertake business activities (Hall and Tolbert,
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2009). Due to the high premium that exploitative business units place on cost control and profit attainment, the structures of these business units feature tight and mechanistic control (Su, Li, Yang, and Li, 2011). Explorative business units, while also adopting decentralised organizational structures, are characterised by low formality (Mengue and Auh, 2010). There is a premium in these business units on innovation, growth, and creativity. Accordingly, these business units feature control that is looser and less restricted than what occurs in exploitative units.

7.3 *Organizational culture*

Amoebas are marked by an organizational culture that is best described as entrepreneurial. Each amoeba is meant to act like an independent company. Due to the small size of the amoebas, typically featuring between 5-50 employees, the amoebas are expected to be capable of quickly pouncing on any new business opportunity that may appear. Inamori (1999) always conceived of the amoebas as operating with the same agility and entrepreneurialism as a food stall seller. Just as the food stall seller can relatively rapidly change his/her location, pricing, and menu to suit changes in the market, so too is the amoeba expected to decide on the markets it will compete in, the pricing it will adopt, and the products/services it will offer.

The organizational culture that features at ambidextrous organizations will again depend on whether the business unit is exploitative or explorative (Ketkar and Sett, 2009; López-Cabrales, Valle, and Galan, 2011; McLaughlin, Bessant, and Smart, 2008). The former will benefit from a culture that promotes efficiency and low risk taking, while the latter will exhibit a culture that encourages risk taking and experimentation. Such cultural orientations are consistent with the exploitative business unit's emphasis on and attention to present-day costs and profits, and the explorative business unit's emphasis on locating and adopting the business processes and

1
2
3 product/service innovations that will define the company's future (O'Reilly and Tushman,
4
5 2004).

9 *7.4 Planning horizon*

11 Amoeba management includes a very precise planning program. In particular, each amoeba
12 must establish a yearly budget, which is referred to as the "master plan" (Adler and
13 Hiromoto, 2012). The master plan is subdivided into monthly budgets. The collective
14 amoebas' master plans are consolidated into a divisional master plan, and the divisional
15 master plans are themselves consolidated into a firm-wide master plan (Adler and Hiromoto,
16 2012). Also operating at the corporate level is a three-year firm-wide rolling plan (see Figure
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Insert Figure 1 about here

Each amoeba's performance relative to any given monthly plan is measured daily, with
responsibility for achievement being largely delegated to the respective amoeba leaders
(Adler and Hiromoto, 2012). The master plan performance is monitored at the half-year point
and at year-end (Adler and Hiromoto, 2012). The planning and control focus is mostly short-
term. The three-year rolling plan provides only a modicum of attention being paid to longer
term challenges, opportunities, and milestones. As Adler and Hiromoto's (2012) note, the
amoeba leaders they interviewed raised as a shortcoming of amoeba management the short-
to (at best) mid-term decision-making and planning focus it engendered.

The planning horizon used by ambidextrous organizations has either a short- to mid-term
focus or a mid- to long-term focus depending upon the type of business unit being described
(Andriopoulos and Lewis, 2010; Junni et al., 2013). Exploitative business units adopt a short-
term focus. These units are trying to extract what remaining profitability exists in the market.

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3 The focus is therefore short-term and the targets are based around achieving short-term,
4 financial measures. Product margins and profitabilities are paramount. In contrast,
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6
7 explorative business units try to anticipate the technological transformations and shifts in
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9
10 customer preferences that will ultimately affect changes in products and markets. The
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12
13 planning horizon for these business units is significantly longer than is the case for
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16 exploitative units. In addition, targets for explorative business units commonly involve
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18
19 future-oriented goals and strategic milestones related to the number and timing of new
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21
22 product/service introductions and market share growth (Eriksson and Szentes, 2017).

23 *7.5 Performance measures*

24
25 Amoeba management uses a very simple, to the point of being simplistic, measure of
26
27
28 performance evaluation. All amoebas calculate what is called an “hourly efficiency.” Hourly
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30
31 efficiency is computed by dividing each amoeba’s profit (before-labour expense) by the
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34 number of hours worked during the period by all members of the particular amoeba. This
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37 hourly efficiency can be easily compared to the average hourly labour rate of the amoeba to
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39
40 determine whether the amoeba is profitable (Kazusa, 2010). Furthermore, the exclusion of
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43 labour expense from the calculation of hourly efficiency enables the metric to resemble, with
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46 the exception of its capital charge for fixed assets (Monden, 2000), added value (Mizuno,
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48
49 1998; Mizuno, 2008). In fact, the term added value was used within the company when
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52 hourly efficiency was first introduced in the late 1960s (Suzuki, 2009; Ushio, 2010).

53
54 A second advantage in using hourly efficiency is that it promotes inter-amoeba comparisons.
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57 Hourly efficiency, being a ratio, scales for size and permits direct comparisons between
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59
60 amoebas. As a third and final advantage, hourly efficiency serves to support the
entrepreneurial culture that is at the heart of amoeba management. The collection and
reporting of an amoeba’s revenues, expenses, and its number of hours worked helps stimulate

1
2
3 employees' consciousness about and commitment to reducing costs, increasing efficiency,
4 and promoting customer value (Ushio, 2006; Ushio, 2008). Table 1 presents an example of an
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6 hourly efficiency report.
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11 **Insert Table 1 about here**
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16 It must be remembered that amoeba management relies on an extreme form of
17 decentralisation. Under such circumstances, where many of the workers – who are meant to
18 act like owners of an independent company – only possess very rudimentary financial skills,
19 the use of complex accounting practices and systems would not be practicable.
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26 Simplicity in accounting information is a Kyocera hallmark (Miya, 1997; Tani, 1997; Tani,
27 2005). As a poignant illustration, an amoeba leader at one of Kyocera's manufacturing plants
28 was interested in understanding the profitability of different customers (Adler and Hiromoto,
29 2012). This leader elected to split his amoeba into smaller amoebas, with each newly created
30 amoeba being associated with sales to a unique customer. This reorganization, reported the
31 manager, meant that information could be obtained on the relative profitability of each
32 customer (Adler and Hiromoto, 2012). The idea that the accounting system could, if
33 amended, provide the customer profitability information he sought was deemed irrelevant
34 (Adler and Hiromoto, 2012). Amoeba management demands that decision making about
35 operational and strategic matters be a naturally occurring process throughout all levels of the
36 organization. For the decision making to be genuine, and for the amoeba leaders and their
37 team to feel like they are the true owners of an independent business, the information used by
38 these employees must be something they control and understand. Hourly efficiency contains
39 accounting line items which are controllable, or at least capable of being influenced
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(Merchant, 1985), by employees (Kazusa and Sawabe, 2006). Accordingly, hourly efficiency enhances employee commitment and motivation (Hiromoto and Hiki, 2010).

Ambidextrous organizations use different performance measures depending on whether the business unit is exploitative or explorative. Exploitative units use performance measures that are based on product/service margins and productivity, such as return on sales and return on assets for measuring margins and activity ratios like inventory turnover and manufacturing cycle times for measuring productivity. Explorative units, meanwhile, rely on performance measures that are based on the attainment of market growth and strategic milestones. These units would wish to adopt performance measures that are relative in nature, such as market share, and more lead-oriented, such as number of new patents. The adoption of different sets of measures for exploitative and explorative business units is consistent with the advice of Anthony and Govindarajan (2007, p. 586).

7.6 Employee involvement

Employees of amoebas are highly empowered (Miya, 2004; Hiromoto, 2005), to the point that they are considered *de facto* business partners. It is worthwhile understanding that when Inamori founded Kyocera, he felt insecure and anxious about his ability to lead his company. His previous business experience consisted of working four years as an electrical engineer at Shofu, a ceramics manufacturer that now specializes in dental products. During his early days as CEO, Inamori described intense feelings of loneliness and isolation. He lamented the fact that there was neither anyone to mentor him, nor anyone to share his/her business experience, provide management advice, or boost his confidence. Accordingly, he developed amoeba management as the means for creating the business partners he so desperately craved (Inamori, 2006).

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3 Employee involvement is central to the success of amoeba management. Amoeba employees
4
5 are expected to act like independent owners. They are meant to be proactive about
6
7 environmental change, always seeking to mitigate its threats and exploit its opportunities
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9 (Sawabe, 2010). Suzuki (2009), for example, writes how even in the early 1970s, when
10
11 Kyocera had grown to more than a thousand employees divided across 80 amoebas, all
12
13 employees were expected to support the operation of their respective amoebas as if these
14
15 were independent companies. The employees' ambit of responsibility included the
16
17 management of all business processes, except for financing (Suzuki, 2009).
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23 Ambidextrous organizations look to similarly leverage their employees' skills and efforts.
24
25 The very fact that organizational ambidexterity involves the division of an organization into
26
27 small business units is consistent with this performance management system's aim of getting
28
29 "... employees to feel a sense of ownership and take responsibility for their own results"
30
31 (Tushman and O'Reilly, 1997).
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36 The main difference between how employee involvement is used within amoeba management
37
38 and organizational ambidexterity relates to the extent to which decisions over strategic
39
40 matters are the province of senior-level employees or all employees. Amoeba management
41
42 vests responsibility for strategic decision making with all employees. In contrast,
43
44 organizational ambidexterity assigns the responsibility to the "executive team" (Nadler and
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46 Tushman, 1999, p. 59; O'Reilly and Tushman, 2011). O'Reilly et al. (2009, p. 88) further
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48 expand on this idea when they write:
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53 To identify new emerging business opportunities that warrant the attention of
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55 senior management, twice a year there is a formal process in which ideas are
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57 solicited from both within the company (IBM Fellows and Distinguished
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59 Engineers, R&D, Marketing, and Sales) and from others outside (e.g., customers,
60
venture capitalists, and external experts).

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3 According to O'Reilly and his colleagues, it is an executive team that orchestrates inter-
4
5 business unit harmony, oversees the allocation of resources, and provides inspiration and
6
7 strategic direction. O'Reilly and Tushman (2004, p. 81) reinforce this understanding when
8
9 they write:
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13 One of the most important lessons is that ambidextrous organizations need
14
15 ambidextrous senior teams and managers – executives who have the ability to
16
17 understand and be sensitive to the needs of very different kinds of businesses.
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19 Combining the attributes of rigorous cost cutters and free-thinking entrepreneurs
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21 while maintaining the objectivity required to make difficult trade-offs, such
22
23 managers are a rare but essential breed.

24 25 *7.7 Employee selection*

26 Employee selection is critical to the successful implementation of amoeba management.

27 Recruited employees need to fit, or at least be capable of being inculcated into, the
28
29 organization's culture. As previously noted, the amoeba management organization's culture
30
31 exhibits high entrepreneurialism. Since only a subset of people relish environments that seek
32
33 to empower and challenge employees (see Hackman and Oldham, 1980), there is a critical
34
35 need to identify and only recruit people with the correct skill set. Hackman and Oldham refer
36
37 to this correct skill set as the exhibition of high growth need strength (GNS). Adler and
38
39 Hiromoto (2012) describe how managers at Kyocera appeared to be referring to a similar trait
40
41 when these managers spoke of the need to find employees with "toughness and hunger." In
42
43 further describing what was meant by toughness and hunger, the managers spoke of
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45 employees who were tolerant of change and eager to become involved and participate in
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47 organizational decision making (Adler and Hiromoto, 2012).
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53 In addition to the need for new recruits at amoeba management companies to possess high
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55 GNS, prospective employees must also be ready for an "exhausting" work environment
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57 (Adler and Hiromoto, 2012). While Japan, where most amoeba management firms operate,
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2
3 has long been associated with employees working long hours and showing strong
4
5 commitment to their group/team, employees at Kyocera's US manufacturing plant show a
6
7 similarly high commitment to their work and loyalty to their company. Adler and Hiromoto
8
9 (2012) note how the average employee at Kyocera's San Diego plant works more hours than
10
11 would be the case for comparable jobs at other companies. The loyalty shown by Kyocera's
12
13 employees is an important self-governing control that helps to ensure amoebas are acting for
14
15 the greater good of the company and not simply for their own self-interest. Kyocera's
16
17 corporate motto: *Kei Ten Ai Jin*, which translates into "respect the divine and love people," is
18
19 meant to support workers' organizational citizenship. More specifically, the motto is seen to
20
21 discourage vanity and self-aggrandisement and promote "unselfish and noble" behaviour
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23 (Adler and Hiromoto, 2012).
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30 Employee selection for ambidextrous organisations is highly important. This is especially
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32 true for the senior managers who must be among the rare breed of ambidextrous leaders
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34 (O'Reilly and Tushman, 2004). Senior managers are required to be both rigorously analytical
35
36 and free-thinking. Such skills are not always easily found. When USA Today and Ciba
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38 Vision introduced organizational ambidexterity into their organizations, they fired 70% and
39
40 60% of their respective senior management teams because these executives were either
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42 unwilling or unable to become ambidextrous (O'Reilly and Tushman, 2008).
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48 The lower level employees of ambidextrous companies do not need to exhibit the same
49
50 degree of ambidexterity as their senior managers. Instead, depending on the business units
51
52 they are associated with, they will likely either require strong analytical skills or strong
53
54 creative thinking skills. Of course, for some employees, at least those who aspire to senior
55
56 management positions, they too will need to become ambidextrous.
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7.8 Leadership style

Amoeba management, at least in terms of how it works at Kyocera, is associated with different forms of leadership by different types of leaders. Inamori, who had been the company's CEO and Chairman from its inception in 1959 until 1997, displayed a transformational leadership style (Adler and Hiromoto, 2012). His rags to riches story, his fusion of spirituality with work, and his generous philanthropy all combine to make him a larger-than-life hero in the minds of Kyocera employees (Adler and Hiromoto, 2012).

Even though Inamori has relinquished all his official duties at Kyocera, he still has a palpable presence as the company's Honorary President. Not only does he still attend various public, Kyocera-sponsored events, but his legendary status and the fact that his books on management are read by all employees embed him metaphysically, if not physically, into the daily fabric of Kyocera life. His books, for example, are formally prescribed reading for employee induction and commonly feature as part of an amoeba's daily team meetings. Amoebas are reported to read a page from one of his books each day (Adler and Hiromoto, 2012). In sum, in spite of Inamori no longer being an active senior manager, his transformational leadership continues to be strongly felt.

Adler and Hiromoto (2012) characterize the leadership styles of amoeba leaders as exhibiting consideration and involvement. Such a classification is consistent with the fact that amoeba management was originally envisioned to promote a management by all approach. In particular, amoeba leaders are meant to support high employee involvement (Hiki, 2007; Fujii, 1997; and Matsui, 2004). As Adler and Hiromoto (2012) note, they do this in part by upholding Kyocera's mission statement, which is listed as:

To provide opportunities for the material and intellectual growth of all employees, and through our joint effort, contribute to the advancement of society and mankind.

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2
3 The need for amoeba leaders to be considerate and respectful of their employees is further
4 reinforced by the company's corporate motto (i.e., "respect the divine and love people"). In
5 order to encourage amoeba leaders to exhibit these behaviours, the company regularly
6 implements training for all its employees, both its current leaders (the amoeba leaders) and its
7 future leaders (the amoeba team members) (Kazusa, 2010; and Kitai and Suzuki, 2010).
8 While the link between amoeba management and considerate leadership is obvious, it is also
9 possible to view the amoeba leaders as exhibiting authentic leadership (Northouse, 2016;
10 Gardner et al., 2011).
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23 The matching of leadership styles with ambidexterity, though well studied, is far from
24 definitive. As Chang (2016, p. 246) notes, "... transformational leadership has a positive
25 effect on organizational ambidexterity, but the nature of the relationship remains murky." At
26 least part of this murkiness is due to the failure of prior studies to separate ambidexterity into
27 its contextual and structural forms, as well as these studies' failure to account for the effect of
28 other leadership styles (e.g., transactional leadership).
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39 Senior managers of ambidextrous firms first champion and subsequently hold employees
40 accountable for achieving organizational ambidexterity (Parikh and Bhatnagar, 2018). More
41 specifically, O'Reilly et al. (2009) and O'Reilly and Tushman (2004) argue that it is
42 ultimately an organization's general managers who are responsible for taking a leading and
43 determining role in maintaining harmony, promoting inter-unit integration, and setting
44 strategic direction.
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53 The managers of the exploitative and explorative business units both exhibit a top down
54 approach. However, depending on the particular type of business unit, the leadership style
55 will be further characterized as authoritarian or visionary (Nadler and Tushman, 1999). The
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3 managers of the exploitative units display authoritarian styles. With the focus of the
4
5 performance metrics of these units emphasizing margins and productivity, the managers will
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7 strive to control costs and keep to budget. Supporting this contention, Lin, McDonough,
8
9 Yang, and Wang (2017) draw upon alignment theory to argue and subsequently demonstrate
10
11 the need for managers of exploitative business units to focus on organizational capital. In
12
13 contrast, managers of explorative business units are visionary and more employee-centric
14
15 (Van Wart, 2003). Explorative business units are meant to identify and develop the next
16
17 generation of business processes and product/service innovations that will define the
18
19 company's future, and it is this message and vision that these managers are constantly
20
21 seeking to reinforce among their employees.
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28 *7.9 Fitting amoeba management and organizational ambidexterity to the environmental* 29 *context*

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31 Although the two performance management approaches share the common goal of
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33 organizational responsiveness and encourage a company's utilisation of small-sized business
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35 units, the two approaches can be distinguished along the eight performance management
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37 system dimensions of strategy, organizational structure, organizational culture, planning
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39 horizon, performance measures, employee involvement, employee selection, and leadership
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41 style. The significant differences between the performance management system
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43 characteristics of amoeba management and organizational ambidexterity indicate that each
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45 will be associated with a different level of fit to any given organizational context.
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51 The need to ensure organizational fit with internal and external contingent factors has been
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53 repeatedly demonstrated in the literature (Morse and Lorsch, 2000; Franco-Santos,
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55 Lucianetti, and Bourne, 2012; Melnyk, Bititci, Platts, Tobias, and Andersen, 2014; and Adler,
56
57 2018). Tamayo-Torres, Roehrich, and Lewis (2017), for example, demonstrate the influence
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3 of stable and dynamic environments on the link between organizational ambidexterity use
4 and manufacturing performance. As a further example, in a meta-analysis designed to explain
5 the literature's mixed results between the adoption of organizational ambidexterity and firm
6 performance, Junni, Sarala, Taras, and Tarba (2013) demonstrate the significant moderating
7 effect of contextual factors on the link between ambidexterity and performance.
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16 Table 3 provides an original table for revealing the distinguishing performance management
17 characteristics of amoeba management and organizational ambidexterity. From this table's
18 summarized explication of the two performance management systems, scholars and
19 practitioners now have fuller insight into the potential fit and consequent success amoeba
20 management and organizational ambidexterity will have with various organizational contexts.
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29 **Insert Table 3 about here**
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8. Conclusion

Amoeba management and organizational ambidexterity, in their respective abilities to represent fully functioning performance management systems, have the misfortune of being both understudied and misunderstood. The two are commonly seen as offering similar, if not equivalent, performance management opportunities. This is an unfortunate mistake. As this paper shows, while the two performance management systems share a common overarching philosophy on how to successfully operate in highly competitive environments and adopt a similar urgency about the need for business units to feature relatively small numbers of employees, there are several significant differences that separate the two. Amoeba management and organizational ambidexterity take different approaches to enacting strategy, organizational structure, organizational culture, planning horizon, performance measures, employee involvement, employee selection, and leadership.

An enunciation of the similarities and differences between amoeba management and organizational ambidexterity should benefit scholars. To date, research that studies the two performance management systems has often failed to capture the less visible features that comprise these two systems (see, for example, Turner et al., 2013; Cooper, 1994; Kotter and Rothbard, 1991). The present paper's development of Tables 2 and 3, along with its comprehensive discussion of them, should help alleviate this problem.

8.1 Implications for future researchers and practitioners

For scholars to succeed in studying how either amoeba management or organizational ambidexterity are correlated with organizational success, whether this is accomplished with case study or survey-based research, a fuller understanding of the archetypical components of amoeba management and organizational ambidexterity is crucial to conducting this research.

A continued reliance on the more superficial features of the two performance management

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3 systems will only serve to handicap the development of further, deeper understandings.

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5 Tables 2 and 3 should serve to guide future researchers and help them ensure they are
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7 operationalizing the full extent of the systems they are studying.
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11 Tables 2 and 3 should also prove beneficial to practitioners, for they will be able to use the
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13 tables to consider the *ex ante* success of choosing amoeba management or organizational
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15 ambidexterity as their preferred performance management system. Estimates of this success
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17 will be based on how well their organizations will be able to implement the defining
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19 characteristics of each of the performance management systems. Some organizations may
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21 find that organizational, regulatory, or even social (e.g., national culture) factors constrain the
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23 use of one or more of the performance management systems, thereby limiting the potential to
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25 achieve good fit. It is also the case that competitive market forces may limit the choice of
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27 performance management system. For example, in situations where an organization operates
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29 in a mature market, whereby the products/services offered have reached a commoditized
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31 stage, a confrontation strategy will by necessity feature (Cooper, 1985) and therefore the use
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33 of amoeba management will be preferred.
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40 41 *8.2 Research directions and limitations*

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43 Tables 2 and 3 offer a substantial trove of research opportunities. Both tables can be seen to
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45 readily generate testable research propositions. Table 3, for example, provides prescriptions
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47 about the correct pairings between the adoption of amoeba management or organizational
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49 ambidexterity and the eight performance management system elements. Implicit in this
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51 characterization is the argument that violations of these prescriptions will adversely impact
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53 organizational performance. Such a statement naturally lends itself to the development of
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55 research propositions and their empirical investigation. In particular, the proposal of three
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57 separate research propositions about superior performance being associated with Table 3's
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3 prescriptions and each of the three performance management systems (amoeba management,
4 exploitative-focused organizational ambidexterity, and explorative-focused organizational
5 ambidexterity) can be made.
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11 This study comes with the usual set of caveats. First, while every effort was made to ensure
12 all the relevant work presenting critical and comprehensive analyses of amoeba management
13 and organizational ambidexterity was assembled, it is possible that some work was
14 overlooked. However, the study's reliance on the same set of data-collection protocols
15 frequently used by authors who write review articles should provide some reassurance that
16 the likelihood of relevant work not featuring in the present paper has been minimized.
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27 A second limitation of this study concerns the use of the performance management taxonomy
28 used to identify and discuss the differences between amoeba management and organizational
29 ambidexterity. While the Ferreira and Otley (2009) and Adler (2011) are arguably the leading
30 performance management taxonomies, it is possible that reliance on a different taxonomy
31 could have produced different outcomes. Since the literature's various performance
32 management taxonomies all share similar themes and essentially only differ by virtue of the
33 names applied to the themes (Adler, 2011), it is unlikely that the adoption of a different
34 taxonomy would have produced meaningfully different results.
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47 Notwithstanding these limitations, the present paper offers scholars and practitioners new and
48 fuller insights into the workings of amoeba management and organizational ambidexterity.

49 Armed with these improved insights, it is hoped that the conduct of scholarly research and
50 managerial practice in relation to these two performance management systems can be
51 enriched.
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Figure 1: Amoeba management financial planning process

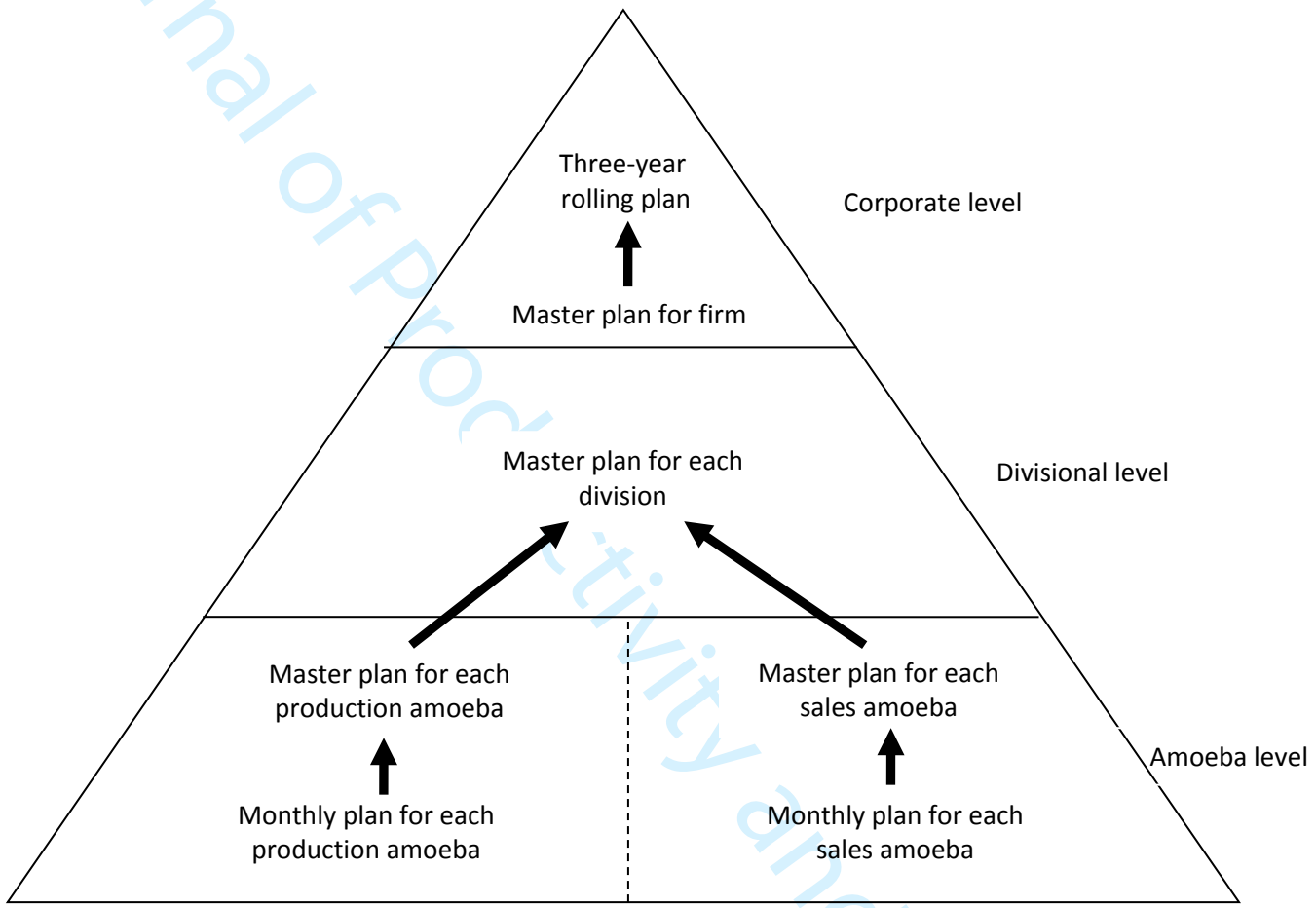


Table 1: Hourly efficiency report illustration¹

Gross production	6,500,000 (\$)
Production outside	4,000,000 (\$)
Total internal sales	2,500,000 (\$)
Total internal purchases	2,200,000 (\$)
Net production	4,300,000 (\$)
Deductions	2,400,000 (\$)
Added value	1,900,000 (\$)
Total working hours	35,000 (hours)
Hourly efficiency this month	54.28 (\$)
Production per hour	122.85 (\$)

Table notes:

1. Gross production is the sum of production outside and internal sales.
2. Internal purchases are subtracted from gross production to calculate net production.
3. Added value is the difference between net production and deductions. These deductions include all expenses other than amoeba labour costs.
4. Hourly efficiency is calculated as added value divided by total working hours, and production per hour is the quotient obtained by dividing total working hours into net production.

¹ Sourced from Kazuo's Inamori's official website at: <http://global.kyocera.com/inamori/management/amoeba/system.html> on 8 October 2015.

Table 2: Similar characteristics shared by amoeba management and organizational ambidexterity

Attribute	Description
Organizational setting	Both performance management systems are advocated for environments featuring intense competition.
Strategic focus	Both performance management systems exhort employees to act entrepreneurially and with high customer focus.
Management approach	Both performance management systems require transforming organizational structures, processes, and systems from institutionalising stability to institutionalising change.
Organizational capability	Both performance management systems share a common overarching philosophy on how to successfully operate in highly competitive environments, extolling the virtues of organizational leanness and agility.
Business unit size	Both performance management systems champion relatively small-sized business units featuring no more than 50 employees per business unit.

Table 3: An illustration of the distinguishing performance management characteristics of amoeba management and organizational ambidexterity

Performance management system features	Amoeba management	Ambidextrous organizations	
		Exploitative	Explorative
Strategy	Cooper's (1995) confrontation strategy	Miles and Snow's (1978) defender strategy	Miles and Snow's (1978) prospector strategy
Organizational structure	Extreme decentralization	Decentralisation, but marked by high formality	Decentralisation, but marked by low formality
Organizational culture	Entrepreneurial	Efficiency	Risk taking
Planning horizon	Short to mid-term	Short-term	Long-term
Performance measures	Simple, "hourly efficiency"	Margins and productivity	Milestones and growth
Employee involvement	Substantial empowerment, partner status	Empowered at operational level, but limited at strategic level	
Employee selection	Crucial	Highly important	
Leadership style	Transformational by Inamori, considerate and involved by amoeba leaders	Top down, authoritarian	Top down, visionary

Reviewer 1 comments:	Author's response
Revise on the references and citation sources writing and make sure to follow the guidelines of the IJPPM.	IJPPM author guidelines for referencing, which I found at http://www.emeraldgroupublishing.com/products/journals/author_guidelines.htm?id=ijppm , have now been closely followed.
Reviewer 2 comments:	
1. The paper needs to delineate more specifically the differences and similarities between the two concepts, e.g., leadership.	1. A table listing the similarities has been added, per your comment #2. Subsections in Section 7 of the paper have been revised to ensure a clear delineation of the two performance management concepts using further and more up-to-date literature.
2. A separate table be made to draw out the similarities.	2. A new table, which is labelled Table 2, has been added to the paper.
3. It is recommended that more literature, especially the recent work on ambidexterity and amoeba management be included.	3. Further and newer work relating to ambidexterity and amoeba management has been added. For example, the paper's section 7.4 now includes references to Andriopoulos and Lewis (2010), Junni et al. (2013), and Eriksson and Szentes (2017). As will be seen, more recent references have been added to other sections of the paper. These additions, of course, have had to be balanced against the reviewer's comment #8 to limit the length of the paper. I trust and hope I have found that happy medium.
4. It is recommended that more detail be outlined about the process by which papers were selected to be included in the research review.	4. We now include a further and more detailed description of the search we performed (please see pp.4-5). This description includes, for example, the search terms we used, the journals that we covered issue-by-issue over the past 25 years, and the names of prominent amoeba management and organizational ambidexterity scholars whose total scholarly work we closely scrutinized for possible inclusion among our list of papers and books.
5. As mentioned earlier, the paper needs revision and additions with respect to recent work done on the two concepts as well as clear delineation of the points of similarity and differences.	5. This has now been done. Please see the authors' responses above to your comments 1-3.
6. A separate heading needs to be added which clearly mentions the implications and usefulness of the research for future researchers, policy makers, managers, leaders	6. This change has now been made. Please see Section 8.1.

1 2 3 4 5	and the society at large. Right now, there is no such heading in the paper.	
6 7 8	7. A separate heading needs to be added for future research directions and limitations of the current study.	7. This change has now been made. Please see Section 8.2.
9 10 11 12	8. Some concepts are repeated unnecessarily. These should be mentioned just once to reduce the length of paper.	8. The paper has been revised to ensure no unnecessary repetition, with a professional editor being employed.
13 14 15 16	9. References/ citations also needs to be proofread (for example the use of "and" "&" and the references style and dates).	9. IJPPM author guidelines for referencing, which I found at http://www.emeraldgrouppublishing.com/products/journals/author_guidelines.htm?id=ijppm , have now been closely followed.
17 18 19 20 21 22	10. It has also been observed that while describing the experiences of Kyocera, references are not given, which needs to be added to improve the validity and reliability of the shared information.	10. These references have now been added.

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