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Knowledge Management and Unlearning/ Forgetting

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Introduction and Outline

Knowledge management relies heavily on the acquisition and sharing of knowledge by both individuals and organisations, and learning is often considered to be a critical element in the effective development and management of knowledge. However, there has been less consideration given to the concept of unlearning and its implications for knowledge management. Unlearning first emerged in the organisational literature in the 1980s, and the chapter by Hedberg (1981) is generally acknowledged as one of the seminal works in this area. Since that time, individual and organisational unlearning has received significant attention; yet, certainly not as much as the related areas of individual and organisational learning.

When unlearning emerged in organisational literature, it was in response to the growing acknowledgement that individuals and organisations are not 'blank slates' and that the existence of prior knowledge may hinder future efforts to learn or acquire knowledge. The focus of this chapter is on unlearning and it argues that releasing prior knowledge, or at least acknowledging its presence and shortcomings, may hold the key to successful learning and knowledge management, both at the individual and collective levels.

The aims of this chapter are to:

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- clarify and define the concept of unlearning and how it applies to individuals and organisations;
- detail the key theories and models that have been used to understand unlearning;
- analyse individual unlearning and collective unlearning and their implications for knowledge management;
- provide examples of unlearning in practice—both the challenges and successes;
- identify the implications of unlearning for knowledge management practice.

Unlearning: The Background to a Concept

Knowledge plays a critical role in all organisations and those taking a knowledge-based view of the firm (Grant 1996; Nickerson and Zenger 2004) argue that organisations can create competitive advantage from their knowledge assets. Such perspectives suggest that if organisations can effectively develop, acquire and share knowledge across the organisation, they will be able to compete in a rapidly changing environment. In a similar vein, those individuals who have deep knowledge and expertise, and can continue to enhance their expertise, are of great value to an organisation. Therefore, for both individuals and organisations, being able to continue to develop knowledge is a critical issue. However, when pre-existing knowledge threatens the ability to learn and embrace new knowledge or ways of thinking and behaving, the ability of individuals and organisations to respond to a changing environment may be threatened. It has been argued for some time that along with the need to facilitate learning, there is equally a need to focus on relinquishing pre-existing knowledge, both on a collective and individual level, referred to by many as unlearning (Akgun et al. 2007; Hedberg 1981; Lei et al. 1999; Newstrom 1983; Starbuck 1996; Tsang and Zahra 2008).

When unlearning was first discussed, the extent to which the organisational environment would change could not have been anticipated. For example, the increasing rate of advancements in technology means that new generations have access to far more data and information that can be transferred faster, presenting not only opportunities but also challenges for today's organisations. With this ever-growing rate of knowledge transfer, unlearning is, and will continue to be, a critical issue for organisations.

Defining Unlearning

Unlearning has been discussed in many disciplines including psychology, organisational studies, management and education. It has also been applied to many different situations. Like learning, unlearning has been discussed at both the individual and collective (team or organisational) levels. In some cases, unlearning refers to individuals letting go of past practice or knowledge and embracing new ways of behaving or utilising new knowledge (Baxter 2000; Bridges 1991; Duffy 2003). However, unlearning has also been discussed at the level of the organisation, suggesting that organisations, as entities in themselves, need to be prepared to relinquish previous processes, systems or ways of working in order to adapt to changing circumstances, requirements and expectations, both internal and external to the organisation (Hamel and Prahalad 1994; Harvey and Buckley 2002; Hedberg 1981). Table 5.1 provides a sample of unlearning definitions found in the literature,

Table 5.1 Definitions of unlearning

Author	Year	Definition
Hedberg	1981	'Knowledge grows, and simultaneously it becomes obsolete as reality changes. Understanding involves both learning new knowledge and discarding obsolete and misleading knowledge.' (Hedberg 1981: 3)
Newstrom	1983	'[T]he process of reducing or eliminating preexisting knowledge or habits that would otherwise represent formidable barriers to new learning.' (Newstrom 1983: 36)
Nystrom and Starbuck	1984	'Before organizations will try new ideas, they must unlearn old ones by discovering their inadequacies and then discarding them.' (Nystrom and Starbuck 1984: 53)
Prahalad and Bettis	1986	'Unlearning is simply the process by which firms eliminate old logics and behaviours and make room for new ones.' (Prahalad and Bettis 1986: 498)
Starbuck	1996	'Unlearning is a process that shows people they should no longer rely on their current beliefs and methods.' (Starbuck 1996: 727)
Becker	2005	'Unlearning is the process by which individuals and organisations acknowledge and release prior learning (including assumptions and mental frameworks) in order to accommodate new information and behaviours.' (Becker 2005: 659)
Cegarra-Navarro and Dewhurst	2006	'Organisational unlearning […] is defined as the dynamic process that identifies and removes ineffective and obsolete knowledge and routines, which block the collective appropriation of new knowledge and opportunities.' (Cegarra-Navarro and Dewhurst 2006: 51)

some referring specifically to individual or organisational unlearning, while others can be applied at either level.

These definitions display several commonalities: They suggest an elimination or at least reduction of knowledge; they also imply that a process is occurring rather than a single event; and finally, most acknowledge the strong connections between learning and unlearning. Some imply the need to unlearn before attempting to adopt new ways, whereas others see these two activities happening simultaneously.

Differentiating Unlearning

In defining unlearning, it is also relevant to acknowledge that questions have been raised about unlearning as a standalone construct, and whether it is worth pursuing as a concept in and of itself. For example, Huber (1991: 104) suggests that 'unlearning is conceptually subsumable under learning. Use of the word "unlearning" serves primarily to emphasize a decrease in the range of potential behaviours, rather than to indicate a qualitatively different process.'

Unlearning and learning have always been closely aligned; however, there has also been discussion of constructs that might be considered close to (or indeed equivalent to) unlearning—in particular, the concept of forgetting. Forgetting is often used in conjunction with or instead of unlearning. However, the term 'forgetting' in common usage refers to ceasing to remember, usually unintentionally, whereas unlearning implies an intentional action—either for the individual or the organisation. Martin de Holan and Phillips (2004) have undertaken extensive work in organisational forgetting and have identified that organisational forgetting can be intentional or accidental, and can relate to long-held beliefs and knowledge or recently acquired knowledge. They argue that organisational forgetting can be beneficial or detrimental depending on whether the knowledge was desirable (Martin de Holan et al. 2004). Therefore, unlearning is equated with the purposeful or intentional forgetting of knowledge that is seen as detrimental to the organisation (Martin de Holan et al. 2004).

Researchers in psychology have also studied individual forgetting and discussed its relationship with the concept of unlearning. In a study of extinction, lapse and relapse, Bouton (2000) suggests that even though individuals may forget, lapse and relapse can occur with manipulation of the environment in which an individual finds themselves. This implies that extinction does not typically involve the total removal of knowledge, but it will reduce the use of knowledge in certain contexts. Some models of unlearning consider this same issue and will be discussed in the next section.

Models and Theories of Unlearning

There is no single model of unlearning, however Hedberg (1981) and Nystrom and Starbuck (1984) are recognised as early authors working in the field. Hedberg (1981) suggests that learning and unlearning happen simultaneously and that new knowledge typically replaces old knowledge; in a sense, 'overwriting' previous knowledge. It is proposed that unlearning may be triggered by the organisation either experiencing problems or identifying opportunities, leading it to question current ways of operating. Movement of key individuals within the organisation, or their exiting from the organisation, may also act as a catalyst for unlearning. Being incapable of unlearning is argued by Hedberg (1981) to be a critical weakness of organisations.

Nystrom and Starbuck (1984) were also instrumental in furthering the discussion on the importance of unlearning for organisations. They suggest that organisations need to identify areas of 'blindness and rigidity' (Nystrom and Starbuck 1984: 53) in order to continue to develop. Their suggestion is that as organisations grow, they often become complacent and are not open to signals that might indicate inadequacies in existing knowledge. Thus, it is argued that such organisations may face crises that highlight the weaknesses in existing knowledge, forcing organisations (and individuals) to consider relinquishing past beliefs and values and be open to new ideas (Starbuck 2017).

In contrast to both Hedberg (1981) and Nystrom and Starbuck (1984), Klein (1989) suggests that unlearning is not as easy as simply replacing old knowledge with new knowledge. In what is referred to as 'parenthetic learning', Klein (1989) posits that old knowledge is not discarded but is retained, and that unlearning involves realising when new responses are more appropriate than previous ones (in effect suggesting that old responses are retained in parentheses). This model proposes that a new response replacing an old one is not necessarily, in and of itself, an improvement for the organisation. Klein (1989) argues that the ability to identify contexts in which new responses are more appropriate than past responses is the key to successful change.

Another model of unlearning is offered by Newstrom (1983: 37), arguing that learners 'do not have a clean slate, but a deeply entrenched behavioural pattern that has been reinforced for years'. The amount of unlearning required to change this behavioural pattern is presented as being affected by the nature of the new knowledge or the learning that needs to occur. Newstrom suggests that if the learner is learning something entirely new, adding a new behaviour to an existing repertoire or sustaining a previous behaviour, then unlearning

is not a significant issue. However, if trying to change the extent to which they use a skill or behaviour (either increase or decrease), then unlearning will be moderate; and at the highest level, when trying to replace one behaviour with another, the need for unlearning will be significant.

Individual Knowledge, Learning and Unlearning

We are living in a knowledge era, and many employees are now considered to be knowledge workers (Alvesson 2004), relying heavily on their expertise to succeed in the workplace. However, all workers, blue collar and white collar alike, build knowledge over time to enhance their capabilities. Thus, the knowledge held by employees has been recognised as critical for organisations and has therefore received significant focus, along with the need to continually refresh and renew this knowledge. In this context, unlearning becomes critical. However, it has also been argued that those who are considered 'experts' in their field may be most resistant to unlearning due to their extensive experience (Starbuck 1996).

All adults have experiences, knowledge and ways of seeing the world upon which they draw, even when learning something new. Adult learning theory (for example, the work of Knowles (1990) relating to andragogy) argues that previous knowledge and experience should be valued and drawn upon to aid the learning process for adults. However, it has also been argued that this knowledge may be the very thing that holds a learner back (Newstrom 1983; Nystrom and Starbuck 1984).

Sometimes what individuals believe that they know may be wrong (incorrect facts or procedures that cause repeated errors), but sometimes there is a less obvious distinction than 'right or wrong' in terms of the knowledge holding individuals back. Individuals may not have all relevant information, or may be interpreting the information available to them in ways that are unhelpful. Learning and unlearning are inherently linked and, therefore, it is important to consider some of the key learning theories and the implications that they may have for unlearning.

Individual Learning Theories and Unlearning

Understanding some of the learning theories upon which contemporary understandings of knowledge have been built can assist to further comprehend unlearning. Knowles (1970) argues that any approach to facilitation of

learning for adults must recognise the existence of prior knowledge and utilise this as an integral part of the learning process. However, when considering unlearning, it is also important to identify the prior knowledge that may not be helpful to draw upon when acquiring new knowledge or building new skills. Facilitators of learning thus need to develop ways to ensure that unlearning becomes an integral part of the learning process.

Bateson (1972), an early theorist of learning, proposes the concept of deutero-learning, that is, the importance of learning how to learn. In a similar vein, Argyris and Schon (1978) propose that individuals (and indeed organisations) can learn through failure and errors, and can engage in either single-loop or double-loop learning. Single-loop learning typically involves simple identification and correction of errors. Double-loop learning, however, requires an analysis of underlying knowledge, processes or assumptions that may contribute to an error or negative outcome. This type of learning requires a deeper engagement with knowledge (and particularly assumptions) to allow for double-loop learning. Sun and Scott (2003) argue that this type of learning requires learners to discard obsolete knowledge, and it has been argued that unlearning is indeed an important part of double-loop learning (Visser 2017).

The concept of triple-loop learning has also been proposed as the step beyond single-or double-loop learning (for example, see Foldy and Creed 1999; Romme and Witteloostuijn 1999; Snell and Chak 1998). Snell and Chak (1998: 339) define triple-loop learning as developing 'new processes for generating mental maps'; not just questioning underlying knowledge or assumptions but also interrogating how these were developed in the first place. The distinctions between not learning, single-, double- and triple-loop learning are shown in Table 5.2, along with suggestions of the implications of each type of learning for unlearning.

Another widely recognised theory of learning relates to the role of experience. The experiential learning model developed by Kolb (1984), based on Dewey's model of learning, Lewin's model of experiential learning and Piaget's model of learning and cognitive development, has been widely applied to learning situations. Experiential learning is defined as 'a holistic integrative perspective on learning that combines experience, perception, cognition, and behaviour' (Kolb 1984: 21). Typically, experiential learning is suggested as occurring in an ongoing cycle of experience, observation, abstraction and testing of new knowledge or approaches. Therefore, if unlearning is a requirement of learning, it would be assumed that action learning must include experiences that require individuals to reflect upon underlying assumptions and perceptions as

Table 5.2 Levels of individual learning and implications for unlearning (based on Snell and Chak 1998: 340)

Level of learning	Manifestation for individuals	Implications for individual unlearning
Not learning (zero)	Isolation—failure to receive feedback on actions, failure to take in any new information.	Unlearning will not occur.
Single loop	Adapting—becoming more skilful; registering that one's actions are not achieving their goal, adjusting one's actions to increase the possibility of achieving the goal.	Unlearning not likely as underlying knowledge is not being questioned.
Double loop	Developing—choosing to learn different kinds of skill: understanding why one's prior meaning-making or goal-seeking systems were inadequate and led to incongruities and omissions. Reframing problems from a position of deeper insight.	Unlearning likely when questioning why prior knowledge or approaches are inadequate.
Triple loop	Inventing—becoming aware of the limitations of all grand frameworks; creating ways of coming up with new structures of thought and action suitable for particular occasions and monitoring the effects of these frames.	Unlearning essential to understanding how previous knowledge and frames developed in order to challenge previous knowledge or approaches.

a part of abstraction in order to begin to question existing ways of thinking and behaving.

Mezirow (1990: 1) also emphasises the role of experience and defines learning as 'the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action'. It is suggested that the highest level of learning—transformative learning—occurs when an individual faces a 'disorientating dilemma' and is forced to examine previously held assumptions and beliefs, and often to change their perspective. Therefore, individuals need ways to challenge these beliefs and assumptions and to consider alternative perspectives in order to learn; and, as a part of this process, unlearning will be essential to releasing these perspectives and facilitating openness to learning.

Action learning has long been advanced as an experiential approach to learning through practice and experience, and involves learning from actions taken to address problems and then reflecting upon the outcomes (Revans 1980). Since the turn of the century, the link between action learning (and

particularly 'critical action learning' that promotes critical reflection) and unlearning has been made. Brook et al. (2016) argue, based on an empirical study, that the experience of dealing with 'wicked problems' (defined as involving ambiguity, complexity and new challenges without accepted solutions), means unlearning is critical to challenging existing responses and acting differently or, in some cases, refraining from action.

It has also been suggested that individual unlearning may occur at two different levels for individuals: behaviourally or cognitively (Hislop et al. 2014). Behavioural unlearning typically refers to individuals letting go of past practices or behaviours in order to adopt new ways of working. This type of unlearning may not have any significant impact on the underlying assumptions and beliefs of the individual and therefore not involve emotional elements of unlearning. In contrast, cognitive unlearning requires individuals to question beliefs, values and assumptions and therefore involves far more profound unlearning; it is thus a process referred to as deep unlearning (Hislop et al. 2014; Rushmer and Davies 2004). Underlying cognitive unlearning, in particular, is the recognition that individuals carry knowledge and ways of knowing that influence how they think and learn about the world around them, and subsequently their ability to adopt new ways of doing so, sometimes referred to as changing frames of reference.

Mezirow (2000) suggests that it is frames of reference that shape how individuals perceive, feel and think about the world. Other terms can be found, such as cognitive structures (Nystrom and Starbuck 1984), cognitive maps (Huber 1991), mental models (Kim 1993), schemas (Barrett et al. 1995) and cognitive style (Sadler-Smith 1999). These structures are seen to manifest themselves through 'perceptual frameworks, expectations, world views, plans, goals, sagas, stories, myths, rituals, symbols, jokes, and jargon' (Nystrom and Starbuck 1984: 55), and these will change if individuals engage in cognitive unlearning. However, it is widely acknowledged that these frames of reference have been reinforced over time and therefore may be an obstacle to unlearning. For unlearning to occur, there is a need to change mental models and, for that, individuals must let go of things that they believe to be true and be prepared to question their current frames of reference. In order to facilitate such questioning, there needs to be mechanisms to surface these mental models in order to challenge them. Therefore, a key consideration in any learning or change process will be to address the existence of previous knowledge and ways of working that are inhibiting the acquisition of new knowledge.

Psychological and Educational Perspectives on Unlearning

While unlearning has moved into the educational and organisational literature, it roots can be traced back to psychology, with reference to unlearning in early memory and cognition literature (Postman and Underwood 1973). Interference theory, in particular, has a long history in psychology (for an early example, see Melton and Von Lackum 1941), focusing on the existence of knowledge and the extent to which this may interfere with learning. In particular, proactive inhibition is a type of interference whereby the existence of previous knowledge inhibits the acquisition of new knowledge (Melton and Von Lackum 1941), and reference to the link between proactive inhibition and unlearning can be found in this literature (for example, see Postman and Underwood 1973).

Beyond psychology, an application of proactive inhibition emerged in the field of education, championed by Lyndon (1989) and was applied specifically to remedial teaching of children. Lyndon claims that when addressing errors or incorrect knowledge, 'they are confronting a problem of knowledge, not its absence' (1989: 33). Lyndon argues that when errors occur, proactive inhibition is preventing the transfer of knowledge, as it works to protect the knowledge already acquired, and especially to avoid the association of conflicting ideas, and impedes the recall of new knowledge that conflicts with pre-existing knowledge. Drawing on this phenomenon, Lyndon (1989) offers an approach to teaching called 'Old Way/New Way', suggesting that previous knowledge must be acknowledged as a part of the learning process to accommodate the acquisition of new knowledge.

Drawing upon the method of 'Old Way/New Way' and proactive inhibition, Baxter et al. (1997) conducted field trials of a teaching approach called Conceptual Mediation, and applied it to vocational education and training, where it has been used to correct either physical or cognitive skills or behaviours. Field trials of Conceptual Mediation show that error rates are reduced, and that speed and retention of learning are enhanced by using this technique which overtly recognises 'old knowledge' as a part of the learning process.

There is also the psychological phenomenon known as cognitive dissonance, which suggests that individuals may experience a level of discomfort from holding two or more pieces of knowledge, attitudes or behaviours that are in conflict (Festinger 1957). In such instances, this discomfort will typically be resolved by the individual either ignoring or discarding new knowledge, or by the individual devaluing or releasing past knowledge (Perlovsky

2013). This aligns with the idea of transformative learning (Mezirow 1990: 4), where it is also argued that 'when experience is too strange or threatening to the way we think or learn, we tend to block it out or resort to psychological defense mechanisms to provide a more compatible interpretation'.

The field of social psychology continues to study cognitive dissonance, but it has also had widespread recognition in the field of management, with citations of cognitive dissonance continuing to rise in top-tier management journals (Hinojosa et al. 2017) relating to topics such as resistance to organisational change (Peccei et al. 2011), work and family role conflicts (Greenhaus and Powell 2003), job satisfaction (Wang and Hsieh 2014), risk and decision-making (Beasley 2016), and performance feedback discrepancies (Brett and Atwater 2001). It is apparent that cognitive dissonance provides a useful lens through which to consider unlearning. It draws attention to the potential impact of previously held beliefs and assumptions, and the possibility that individuals will act to either change their perspective, which would facilitate unlearning, or to develop defence mechanisms to protect existing knowledge and hence resist unlearning.

Organisational Knowledge, Learning and Unlearning

Beyond individuals being able to learn, it is acknowledged that collectives can also learn and possess knowledge. The discussion of organisational learning and the more applied concept of the learning organisation were born out of the acknowledgement that sometimes knowledge is held collectively and represents knowledge beyond that of a single individual. Much of the research and discussion of such collective knowledge has been aimed at the firm or organisational level but can equally be considered at the group or team level (Zhao et al. 2013). This phenomenon recognises that groups can also possess knowledge that may not necessarily represent the entire organisation but nonetheless has significant impact on members of the group. Therefore, it is important when considering unlearning to look not only at how individuals unlearn but how organisations and other collectives unlearn.

Successful businesses have business models and ways of operating that have made them effective over time. However, sometimes it is the very things that have made them successful that, in the longer term, may represent threats to their ongoing sustainability. If they are unable to sense when assumptions, collective beliefs and ways of operating need to change, they may face erosion

of market share, and competitors (or worse still, disruptors) may enter the marketplace and change the rules of the game. Organisational failures are often a result of managers relying on past actions and behaviours that have helped them succeed to date and as a result they will misinterpret events, or worse deny that changes are occurring in their environment (Nystrom and Starbuck 1984). Hamel and Prahalad (1994) urge managers and organisations to 'unlearn the past' and argue that 'learning to forget' is a critical issue for organisational survival. Likewise, it has been argued that we should not only strive to develop a learning organisation but to also develop the unlearning organisation (Sherwood 2000; Tsang 2017). This need has become even more relevant in today's rapidly changing business landscape. Organisational learning is a common consideration, however, organisational unlearning is far less widely acknowledged or discussed and will be covered in the next section.

Nokia: A Case Study of the Need for Organisational Unlearning

History presents many examples of organisations that did not sense a change in their environment and consequently moved rapidly from high performance to struggling for survival. It is often suggested that the more adept an organisation is at what they do, the less likely they are to question ways of working or doing business. This could certainly be argued to be the case for Nokia. In 2007, Nokia held 49.4% of the cell phone market share but plummeted to just 3% in 2013 when it was purchased by Microsoft (Lee 2013). Ironically, the history of Nokia shows that it had certainly been successful in the past at reinventing itself, having previously been a manufacturer of rubber boots and car tyres (Lee 2013). However, it could be argued that because of such success, the organisation became reliant on well-established ways of operating in an environment and market sector that was rapidly changing. Indeed, during the press conference to announce the Microsoft purchase, the CEO, Stephen Elop, is quoted as saying 'we didn't do anything wrong, but somehow, we lost'. This case provides a striking example of the need for organisations to continue to unlearn past ways of operating and question what they do and how they do it, even when they are successful market leaders.

Organisational Unlearning

Organisations are typically set up to link individuals together, with the aim of ensuring that everyone is working towards a common vision and shared goals. Over time, organisations amass knowledge and can 'learn' about appropriate ways to deal with situations that arise, and thus organisational learning has for some time been acknowledged as critical for all organisations

(Argyris and Schon 1978; Fiol and Lyles 1985; Huber 1991; Levitt and March 1988). There is now recognition that as well as being able to learn new ways of achieving outcomes, organisations need to be able to let go of past knowledge and practices that may hinder attempts to change the way they do things.

In the same way that levels of learning apply to individuals unlearning, the model presented by Snell and Chak (1998) can also be applied to unlearning at the organisational level. Table 5.3 presents the levels of learning (from no learning to triple-loop learning) and considers the implications for organisational unlearning.

As Table 5.3 indicates, organisational unlearning becomes particularly critical when double- or triple-loop learning is required, and indeed a recent study has shown the importance of unlearning for double-loop learning for organisational success (Wong et al. 2012). When organisations need to question their underlying assumptions and norms to address challenges that arise, they must unlearn previously accumulated knowledge and learning.

Table 5.3 Levels of organisational learning and implications for unlearning (based on Snell and Chak 1998: 340)

Level of learning	Manifestation for organisations	Implications for organisational unlearning
Not learning (zero)	Fragmentation—no linkage between individuals' mental models and shared mental models. Loss of the individual means loss of that person's expertise.	Organisational unlearning will not occur.
Single loop	Consolidating—adding to the firm's knowledge and competency base without altering present policies, present objectives, present mental maps or basic activities.	Organisational unlearning is unlikely, as existing knowledge has not been questioned nor physical manifestations of this knowledge been altered.
Double loop	Transforming—changing the firm's knowledge and competency base by collectively reframing problems, developing new shared paradigms or mental maps, modifying governing norms, policies and objectives.	Organisational unlearning is likely when questioning and reframing why prior knowledge or actions are not effective.
Triple loop	Co-inventing—collective mindfulness. Members discover how they and their predecessors have facilitated or inhibited learning, and produce new structures and strategies for learning.	Organisational unlearning is critical to question how existing frames have developed and provide opportunities for discarding obsolete or ineffective knowledge.

The literature on organisational forgetting (for example, see Easterby-Smith and Lyles 2011; Martin de Holan and Phillips 2004), particularly where considering forgetting that is purposeful and beneficial, is closely linked to the concept of organisational unlearning. In a review of literature on these topics, it has been suggested that three different perspectives have been taken on considering organisational forgetting and unlearning (Easterby-Smith and Lyles 2011; Tsang and Zahra 2008): cognitive, behavioural and social. The cognitive perspective considers how organisations absorb and embed knowledge within the organisation, often combining tacit and explicit knowledge, and focuses on organisations attempting to capture such knowledge, frequently through policies and procedures (Easterby-Smith and Lyles 2011). The focus on unlearning from this perspective therefore considers how to surface such knowledge and question how it may be interfering with the organisation's ability to adapt to changing circumstances or respond to challenges in its environment.

The behavioural perspective suggests that experience plays a key role in organisational forgetting and unlearning and that while ongoing experience can build capability in an organisation, it can also serve to embed routines that, in the longer term, may be detrimental to attempts to change (Easterby-Smith and Lyles 2011; Fiol and O'Connor 2017). This entails a focus on the importance of identifying behaviour that serves to restrain organisational responses, in an effort to change behaviour.

Finally, the social perspective focuses on the role that interaction between individuals plays in the establishment of bonds and connections that create and share knowledge, emphasising that unlearning requires the acknowledgement of social networks that may assist or hinder such processes (Easterby-Smith and Lyles 2011). The social perspective suggests that there are many forces that shape organisation decisions and actions and these typically are a result of the individuals within the organisations interacting and reaching shared agreements on ways of working.

Organisational Memory and Unlearning

Just as individuals can recall facts and events, it has been acknowledged that organisations also exhibit what has been referred to as an organisational memory. Stein (1995: 17) defines organisational memory as organisations having 'the means to retain and transmit information from past to future members', and argues that organisational memory has significant implications for organ-

isational learning and unlearning. Easterby-Smith and Lyles (2011) suggest that the cognitive perspective on unlearning and forgetting links closely with the concept of organisational memory, positing that organisations hold knowledge and information that might inhibit future learning. It is argued that 'on one hand, memory development enables learning from experience, while on the other hand, memory can constrain the search for and creation of future possibilities […]. Simply, memory has inertia that can constrain future organizational change' (Berthon et al. 2001: 138).

Organisational memory is considered to include both tangible elements such as standard policies and procedures, and intangible elements such as mental models (Paoli and Prencipe 2003); or as Tsang and Zahra (2008) differentiate, human and nonhuman forms of memory storage. These distinctions are similar to explicit and tacit knowledge at the individual level, and each of these can have potential implications for organisational unlearning.

Explicit Organisational Knowledge and Unlearning

Organisational knowledge and learning is captured explicitly in many ways in organisations; in policies and procedures, practice, structures and even organisational assets. These elements are often referred to as artefacts (Schein 2010) and are viewed as the carriers of past experience and learning as well as an embodiment of the organisation's culture. Martin de Holan (2011) believes that assets (for example, physical assets such as buildings) are at the core of an organisation and are often tangible representations of the resources upon which the organisation draws to produce a return. These assets frequently remain stable over time and reflect a key way that such organisations embed knowledge.

Structure is also argued to be a physical manifestation of organisational knowledge (Martin de Holan 2011) and divides the work of the organisation into separate elements that have significant influence over how work is done and the interactions that occur within the organisation. Therefore, if unlearning is to occur, organisations must consider how these structures perpetuate past ways of doing things, and should provide opportunities for different interactions. Often, organisational restructuring is seen as a way to break down barriers to facilitate unlearning and open the organisation to new ways of working.

Organisational knowledge is also captured in policies and procedures in an organisation. Again, these represent explicit reflections of learning and adaption

that has occurred over time in the organisation and are usually nonhuman ways of representing organisational memory. These policies and procedures remain as enduring evidence of prior learning and embed particular ways of working into the everyday operations of the organisation.

Tacit Organisational Knowledge and Unlearning

Organisations not only hold explicit knowledge but also possess tacit knowledge, typically held by the people and networks within the organisation. Organisations are believed to be 'characterised by knowledge structures, frames of reference, givens, causal maps, shared mental models, and the like, through which they perceive, categorise, and give meaning to events. These mechanisms act as filters in the process of assimilation of new information. Moreover, they have a bearing on and actually constrain decision-making processes as well as the generation of actions' (Paoli and Prencipe 2003: 148). In its broadest sense, organisational culture is seen to be the carrier of collective tacit knowledge or organisational memory (Balogun and Jenkins 2003; Walsh and Ungson 1991). Organisational culture is also an important consideration when seeking to understand organisational unlearning. In effect, organisational culture can prohibit considering alternative ways of handling situations and may limit an organisation's effectiveness in dealing with new or different situations, or indeed similar situations in a changing organisational context and environment.

It is often acknowledged that organisational culture encompasses a wide range of factors, including norms, behaviours, assumptions and other taken-for-granted beliefs that guide organisational actions (Cameron and Freeman 1991; Goodman et al. 2001; Schein 1996). Culture is often believed to have a positive role to play in organisations, representing the learning from past experience that can assist organisations to handle similar circumstances in the future (Walsh and Ungson 1991). However, it could also be suggested that this knowledge may lock organisations into ways of acting that could potentially impede them in the future, falling into what has been described as the 'competency trap' (Levitt and March 1988) or 'competency barriers' (Markoczy 1994). Just as experts who have amassed a large amount of experience and knowledge may find it difficult to unlearn, organisations that have been successful in the past may find unlearning a challenge.

Organisational routines have also been seen to represent a repository for organisational knowledge and memory. Many have suggested that these routines develop over time and are used by organisations to yield predictable

results (Akgun et al. 2007; Martin de Holan 2011; Sinkula 2002). Bessant et al. (2014) posit that to radically innovate in today's volatile and uncertain environment, there is a critical need for organisations to have the capability to reframe and unlearn past routines.

At the deepest level, there is recognition that not only do organisations have established routines, but these are often based on deeply embedded assumptions, mental models and unspoken rules, of which many in the organisation are not even aware. These have been referred to as understandings (Martin de Holan 2011), dominant logic (Prahalad and Bettis 1986) or basic underlying assumptions (Schein 2004). They are generally taken for granted and their use is often unacknowledged, but they can have a profound effect on how organisations make decisions and behave and therefore need to be challenged and unlearned if an organisation is to remain effective.

So, collectively, organisational culture and all its elements have the potential to significantly impact the ability of an organisation to unlearn. However, it is important to note that culture in and of itself may not make an organisation more resistant to unlearning; indeed, if an organisation engenders a culture of adaption and agility, it may mean that the culture facilitates organisational unlearning.

Key Individuals and Organisational Unlearning

Although there is a move to focusing on the importance of teams in organisations, there is still recognition that key individuals, particularly leaders, will have a profound influence on the unlearning ability of the whole organisation. Leaders, either formal or informal, can play a critical role in organisational learning, unlearning and knowledge management because of their influence on those around them. Many have argued that managers carry a range of assumptions and biases, and that there is a need for managers and leaders to be willing to unlearn these frames of reference to facilitate organisational change. Prahalad and Bettis (1986) suggest that managers represent a 'dominant coalition' that can sometimes hinder unlearning within the organisation and Markoczy (1994) states that managers have amassed knowledge in particular organisational routines and have gained legitimacy in the application of particular belief systems and routines and so are resistant to organisational change. Therefore, any organisation needing to change and adapt will have to consider carefully how to facilitate unlearning in its managers and thought leaders to ensure that organisational unlearning can occur.

Industries, Occupations and Unlearning

Beyond the boundaries of organisations, there are other collectives such as industries and occupations that may possess their own knowledge and ways of doing things that are entrenched and which govern how individuals behave—a concept referred to by Schein (2010) as a macroculture. It is suggested that occupations, particularly those professions that require extensive training conducted over an extended period, and involving extensive socialisation and identification as a profession, can possess their own ways of doing things that endure, regardless of the organisation in which an individual works. For example, in the field of prosthodontics (a specialised area of dentistry focused on producing and installing artificial teeth and mouth parts), Sadowsky (2016) challenges those in the profession to question why the adoption of new techniques and the acceptance of a range of new biomaterials has taken some time, despite research to support these innovations. He suggests that unlearning within the profession will be critical for the future in an age where innovation is accelerating. In a similar vein, Rushmer and Davies (2004) suggest that health care has deeply entrenched and accepted practices which have a long history. They believe that there are some 'deep rooted', established and widely accepted clinical practices that require unlearning if health care advancements are to be made, and there is a significant and emotional attachment to some of these practices previously considered to be 'fact'.

Moreover, there are many industries that provide examples of the need to unlearn prevailing models and methods of operating. In recent years, the rapid rate of advancement in technology has changed the landscape of many industry sectors, with media being a pertinent example. Although there may be differences across countries, there is little doubt that the media business has changed dramatically; traditional newspapers are in decline and audiences are turning to a wide range of digital sources for news and current affairs (Nielsen 2015). While this is just one industry that has fundamentally changed due to the emergence of new technology, it is also an example of how an industry needed to unlearn in order to survive. However, in recognising a significant shift in their environment, it is claimed that some of the responses, including selling off rights to news content that was subsequently provided for free, did not assist the industry to adapt and in fact may have hastened its decline (Farhi 2009). This may be a case of an industry (or at least elements of it) failing to recognise that it needed to question underlying assumptions, routines and ways of doing business in order to be able to adapt to a step change in the environment.

Implications for Practice

Many of the definitions of unlearning emphasise the need to 'let go' of something currently held—knowledge, assumptions, myths, ways of working—but this is not necessarily easily achieved. Understanding the importance of unlearning and the need for it—in individuals, organisations, occupations and industries—only begins the conversation. The key challenge for organisations is to develop ways to facilitate unlearning both in individuals and across the organisation. There are a range of approaches offered to facilitate and support unlearning in the workplace, and these have been summarised below.

Respect Past Practice It is important to acknowledge that something is being 'lost' and to be aware of how individuals may react in different ways to this loss. Unlearning must not be assumed to simply be a cognitive or behavioural process but one that potentially involves emotional elements. This emotional element of unlearning must be taken into account in efforts to challenge and change assumptions and ways of working. Although past ways of working may now be considered inadequate to meet the needs of a changing world, nonetheless it is critical to respect the value of past practice and the contribution that it has made to achieving current results. Therefore, in introducing change, the knowledge being unlearnt must be acknowledged rather than dismissed (or worse still, ignored), and the emphasis can then turn to reinforcing how the 'new way' is beneficial to conserving an overall direction or purpose that the previous practice began.

Reward Those Challenging the Status Quo If unlearning requires questioning past assumptions, and challenging ideas at every level, then it is important to build a culture of unlearning and openness to experience, and to encourage responsible risk-taking. This can be a difficult task if policies and practices, and entrenched ways of working do not reward such behaviours. Policies and procedures, and importantly human resource management practices, such as performance management, that may work counter to challenging the status quo need to be reviewed. If key goals and rewards for individuals or teams are focused around outcomes such as efficiency and productivity with no encouragement to innovate (which in the short term may have a negative impact on such outcomes), then there is a disincentive to try new ways of working. In addition to reinforcing behaviour that questions existing assumptions and processes on an ongoing basis, issuing the challenge of questioning current practice and identifying potential innovations to a wide range of internal

stakeholders through explicit activities such as innovation contests has also been advocated as a way to encourage unlearning (Bessant et al. 2014).

Welcome Outside Perspectives Stable organisations are often those that become most resistant to unlearning. They have established ways of operating and, as these have made them successful, they see little need for change. Particularly for these organisations, but for most others too, it has been suggested that gaining external perspectives is critical (Bessant et al. 2014). Getting close to the entire value chain—suppliers, customers, competitors and the community alike—provides organisations with the opportunity to seek new perspectives and additional input.

There is also a need to look at new employees in a different way. Perhaps rather than considering their induction as a way of socialising them and showing them existing ways of working, they should be viewed as presenting an opportunity to challenge pre-existing models and frames of reference. There is also the rapid growth in the use of freelancers and independent contractors in organisations (Meager 2016). They represent new challenges to organisations but may also provide a unique opportunity for outside perspectives, as they work with multiple organisations and are exposed to diverse ways of working.

The diversity literature has long espoused the value of diversity in all its forms as a way of bringing new and different perspectives to the workplace (DeGrassi et al. 2012; Rink and Ellemers 2010). More recently, the use of 'reverse mentoring' has been advocated as a way for older workers to learn from younger workers (Chaudhuri and Ghosh 2012; Marcinkus Murphy 2012), often due to different expertise with technology (engaging with the discussion of digital natives versus digital immigrants (Prensky 2001)). However, beyond digital literacy, diversity in all its forms is critical to facilitate unlearning, as different perspectives bring the ability to view problems from different standpoints and challenge underlying assumptions.

Seek Feedback Organisations have long been implored to seek feedback as a way of challenging current practice (Starbuck 1996). Whether internally or externally, asking for feedback enables organisations to reflect on their operations and underlying processes. Many organisations routinely seek feedback from customers, suppliers and employees. However, the extent to which this information is used to inform decision-making and question current processes and assumptions may vary significantly. By seeking (and most importantly using) feedback, organisations can open themselves up to unlearning current ways of operating that may not be optimal for ongoing high performance.

Find Learning and Unlearning Opportunities in All Situations It is also important that unexpected events, disagreements and warnings are seen as flagging potential opportunities to unlearn (Starbuck 1996). Dismissing such situations may be missing an important indication that unlearning is required. When crises occur or mistakes are made, these often present a unique opportunity to analyse the underlying assumptions, mental modes, accepted ways of operating and frames of reference that may have led to less than effective outcomes, and identify more appropriate ways to respond in future.

View Situations as Experimental Finally, it is often suggested that when individuals are encouraged to see something as 'experimental' or as a trial, they are more likely to be willing to let go of past practices and try something new (Nystrom and Starbuck 1984). Organisations that show a willingness to test new ideas and ways of working, and to seek feedback to refine these are likely to find more willingness in individuals to commence the process of unlearning.

Conclusion

Unlearning is receiving growing recognition as a key part of knowledge management, organisational learning and change. Unlearning challenges organisations to acknowledge how current policies, practices, assumptions and ways of operating may limit the ability to adapt to their changing environment. Likewise, individuals need to be able to identify when existing knowledge may be inhibiting their effectiveness and identify ways to change not only their behaviour but to question what they have previously accepted. In a world that is rapidly changing with the impact of technology, globalisation and social pressures, unlearning for both individuals and organisations will only continue to grow in importance.

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