

Sustaining Public Sector Continuous Improvement Through Organisational Learning

Chris Buckell

cwrbuckell@gmail.com

University of Warwick

Coventry, CV4 7AL, UK

Mairi Macintyre

m.macintyre@warwick.ac.uk

University of Warwick

Coventry, CV4 7AL, UK

Abstract

Purpose: Public Service Organisations (PSOs) are facing continuing funding challenges and increased pressure to maintain and improve service delivery with fewer resources. One response, with the promise of improving efficiency rather than cutting services, has been to implement Continuous Improvement (CI) but success has been sporadic and unpredictable. Well documented CI methodologies, notably Lean and Six Sigma, have general agreement across practitioners and scholars alike, thus the reasons behind their potted success must lie elsewhere. This work explores the wider contextual issues of CI implementation with the aim of providing guidelines to give a greater confidence of successful implementation.

Study design/methodology/approach: A structured literature review provided the initial conceptual framework that was further developed through a series of in-depth, semi-structured interviews carried out with industry experts. The framework illustrates the phenomenon of organisational learning in relation to CI in UK PSOs.

Findings: The research shows that emphasis should be placed on addressing logic and mindsets at an individual and organisational level in order to re-focus CI efforts and achieve sustainable process improvement. Particular attention should be placed on the role of leaders.

Originality/value: This research takes a unique approach to CI in the UK PSO context, providing insights into the achievement of sustainable CI and a theoretical framework for addressing PSO logic. It establishes a theoretical foundation for the evaluation of organisational learning in relation to sustainable CI in UK PSOs. It also makes practical recommendations to support PSO to reveal, evaluate and address organisational principles. Research should continue to focus on the critical role of organisational learning in relation to addressing PSO logic for sustained CI.

Keywords: Public Service Organisation (PSO), Continuous Improvement (CI), organisational learning, sustainment, Lean, Six Sigma

Paper Type: Research Paper

Paper Structure

This paper argues that conventional Public Service Organisations (PSOs) thinking, termed the PSO paradigm, is the root cause of the problem of unsustainable CI in public services. To address this, PSOs need to re-evaluate fundamental principles and logic in relation to CI interventions. This paper is presented in six sections. This section outlines the paper structure. The second section discusses the promulgation of CI methodologies in public sector. Section three introduces organisational learning theory as a possible explainer of the current progress of CI to date. Section four presents an analysis of the current state of organisational learning. Section five provides an overview of the piloting of a case study with a UK health sector organisation. Finally, this paper concludes that addressing organisational logics and mind sets is critical in achieving sustainable CI results.

The need for CI in Public Services

In response to the global financial crisis in 2008 the UK public sector faced unprecedented austerity and budget cuts (Mawdsley & Lewis, 2017), increasing pressure to “build a leaner, more efficient state”, and “do more with less” (Watt, 2013). UK Government policy echoed the political appetite for efficiency and cost savings. One response to this by Public Sector Organisations (PSOs) was to introduce Continuous Improvement (CI) initiatives.

Before this time, a variety of CI methodologies had emerged from the manufacturing sector and were being applied in service organisations, promising process efficiency and removal of waste (Gupta *et al.*, 2016; Samuel *et al.*, 2015). These methodologies, led by Lean, Six Sigma, and the combination of Lean Six Sigma (LSS) offered frameworks and tools which, was claimed, could be successfully transferred into service organisations. Consequently, manufacturing-originated CI methodologies became pervasive in service organisations and public sector from the 1990s onwards (Samuel *et al.*, 2015; Tortorella *et al.*, 2017).

The application of CI in Public Services

As CI spread across public sector, a large body of knowledge accumulated. Academic studies identified critical success factors to success for LSS change programmes in PSOs (Chay *et al.*, 2015; Eaton, 2010; Lucey *et al.*, 2005; Masters, 2010; Radnor & Osborne, 2013; Tortorella *et al.*, 2017). Despite this, PSOs have continued to report the same recurring problems for over a decade (Bateman *et al.*, 2018b) and CI as a whole remains largely unsustainable (Bateman *et al.*, 2017). This strongly suggests that there has been insufficient adaptation of approach or application of the lessons learned.

Researchers such as Hines *et al.* (2011b; Hines & Lethbridge, 2008) and Radnor (2010; 2013) recognised emerging problems with the sustainability of CI in the early 2000s, particularly methodologies which originated in manufacturing. They encouraged adaptation of method with emphasis on the socio-cultural elements of change; particularly the central role of leadership, staff empowerment and behaviours (Hines, 2011a; Lindsay, 2016).

Despite this advancement in understanding, a cost reduction and tools-focus remained the predominant CI approach, largely in isolated applications (Bateman *et al.*, 2018b; Burgess & Radnor, 2013; Gupta *et al.*, 2016; Radnor, 2011; Radnor & Osborne, 2013). This has achieved

cost efficiencies but has ultimately been unsustainable (economically and socially). Radnor & Bateman argued more recently that CI should be considered a long-term endeavour that requires behavioural and cultural change in order to be sustained (Bateman *et al.*, 2018a; Bateman *et al.*, 2018b).

Contemporary thinking on the PSO Paradigm

Bateman's (2017) review provides the most comprehensive evaluation of CI in PSOs. Similar to Radnor's (2010a) report, it too focusses on strategy, training, techniques and barriers to implementation. Whilst still reporting the same barriers to implementation i.e. leadership, staff resistance etc, it also demonstrated a degree of progress in thinking and a more nuanced understanding of CI methodologies compared to earlier implementations.

There has been little discussion or evaluation of the tenets of PSO thinking, which this paper terms the PSO paradigm, and its relationship with methodology interpretation. Seddon & O'Donovan (2015) argue in their critique of LSS that innovation in public services cannot be achieved until "a fundamental change in the mind-set of managers" occurs. Hines (2018) raises a similar question his paper *Lean: have we got it wrong?* concluding that focus on waste cannot lead to sustainable Lean. Moreover, he notes "such a mindset is likely to become an obstacle in its own right". This presents an opportunity to consider how the current PSO paradigm can be addressed in order to unlock the sustainability (economic and social) issue.

Despite mounting questions regarding their efficacy and the way in which they were implemented, CI methodologies have been predominantly applied through a cost-reduction view (Radnor & Osborne, 2013). On the one hand, PSOs have demonstrated some evidence of learning; regarding the well-established barriers (Bateman *et al.*, 2017) and the importance of leadership and employee engagement. However, Bateman *et al.*'s (2018b) recent editorial noted "a strong emphasis on tools" to reduce waste. This is an alarming situation as the same observations were reported by Radnor & Boaden 10 years earlier (2008), despite numerous warnings originating back to the early 2000s.

A critical point has now been reached where a fundamental review of the approach to CI initiatives is required. Failure to do so will result in re-occurring problems and worsening service delivery in the long term. To do this, urgent research should now be conducted to evaluate and re-assess existing PSO paradigm thinking. This is argued as necessary in order to allow already stretched public services to meet demand and ensure their survival going forward (Bateman *et al.*, 2017; Bateman *et al.*, 2018b; Osborne, 2018; Radnor & Bateman, 2016).

On Organisational Learning

The arguments laid out above identify a lack of learning or adaptation of LSS principles since the introduction and promulgation of CI methodologies in service organisations. Given the body of research which highlights the chequered success of sustaining LSS, the consideration of organisational learning theory is presented in this section: specifically, in respect of revealing and replacing the underlying tenets of the PSO paradigm (cost reduction, internal efficiency, short term scope) to enable socially and economically sustainable CI.

Unlocking the PSO paradigm requires addressing deeply entrenched cognitive routines and norms (individual and organisational). Individuals must examine and re-evaluate their own

behaviours, and the mental models that govern them. Seddon & Caulkin (2007), Becker (2018) and Fiol et al (2017a; 2017b) might describe this type of “unlearning” as a necessary process in creating new mental models which enable learning to occur. Therefore, a theory of organisational learning is required which considers the effects of cognitive patterns on behaviours. This research draws on the single (SLL) and double (DLL) loop organisational learning theory of Argyris & Schon (1974; 1999). DLL theory is highly relevant in a PSO context because it offers insights into addressing underlying thinking which drives behaviour and is a central theme of this paper.

Argyris & Schon (1974) on organisational learning

Argyris’ research (1976; 1994; 2002; 1999) highlights the importance of learning processes in problem solving and decision making. Argyris emphasises the importance of ‘mental models’ that influence reliable inquiry into organisations and their problems. Learning is achieved by comparing actions taken with “feedback from the environment” which informs subsequent actions. Learning itself is defined as the “detection and correction of errors” (Argyris, 1974) such that mismatches between the action taken and the desired outcome are identified. This is typically how organisations solve problems.

A shortfall occurs in most organisations as they solve problems by only correcting errors in the external environment without reflecting inwards (Argyris, 1991). This is defined as single loop learning. Of equal importance, argues Argyris, is the need to change the way people “reason about their [individual and collective] behaviour”. This is defined as double loop learning. To change behaviours, the cognitive processes used to identify and formulate actions need to be understood, unpacked and evaluated. Figure 1 below illustrates the processes of single and double loop learning.

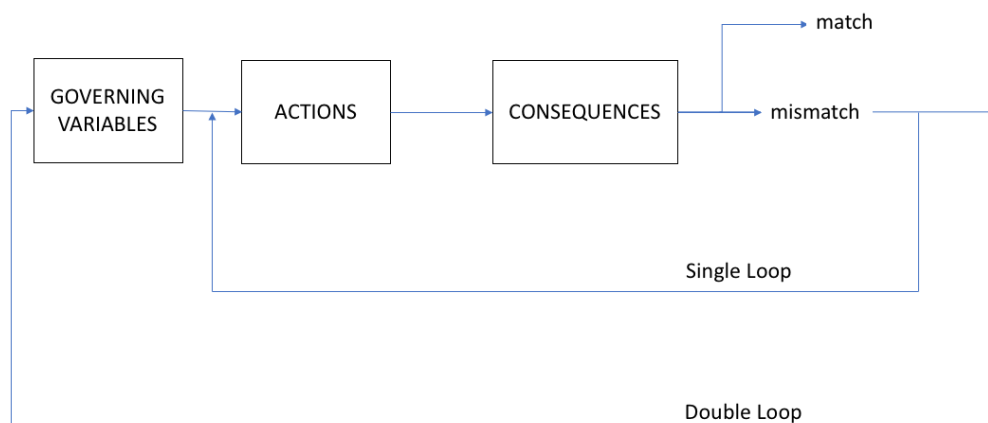


Figure 1 The Process of Single and Double Loop Learning

Taken from Argyris (1990)

Tenets of single loop learning (SLL)

Single loop learning occurs when a mismatch or unexpected consequence of an action is identified (first order error), then that action corrected. In this process, external errors are rectified, but the underlying ‘governing variables’ are not addressed (second order error). SLL relates to Model-I type reasoning, and is based on the following principles (Argyris, 1974; Argyris, 1999);

- Define specific goals or objectives and try to achieve them
- Maximise winning and minimise losing
- Minimise negativity
- Assumes actions are rational- evaluated against the achievement of objectives

Evaluating the consequences of SLL reveal insights into the current PSO paradigm and how it inhibits sustained CI. Individuals and organisations that engage in single loop learning exhibit the following behaviours (Argyris, 1976; 1994; 2002; 1999);

- engage in defensive reasoning
- generate superficial single-loop responses and single-loop solutions
- reinforce organisational routines
- inhibit genuine organisational learning
- lack awareness of unintended consequences of the status quo

At an individual level, members of an organisation rarely consider their own behaviours and unconsciously avoid coming to terms with difficult, potentially negative truths, or challenge the status quo. They are programmed by their theories-in-use to not challenge or question others for the protection of themselves or their group. This in turn protects their personal value system and ideologies, which remain unchallenged at a personal level. Consequently, this leads to ‘maneuvers’ (Argyris, 1976; Halperin & Clapp, 2007) by individuals to interpret and suppress the information they give and receive to rationalise it against their theories-in-use. Argyris emphasises that organisational and individual mental models are often taken for granted (Argyris, 1991). Becker (2018) and Fiol & O’Connor (2017a; 2017b) also emphasise the often-deep emotional and behavioural attachment to existing cognitive processes.

At an organisational level this reinforces the current organisational norms and thinking as there is no reason to doubt it. Over time, the theories-in-use in the organisation become less receptive to corrective feedback (Argyris, 1976; Argyris, 1994). Changing individual and collective thinking, therefore the PSO paradigm, must be recognised as a significant challenge.

The importance of double loop learning (DLL)

According to Argyris, “success in the marketplace depends on learning” (Argyris, 1991), specifically *sustained* productive organisational learning (Argyris, 1999). Furthermore, Argyris argues that defensive routines of single loop learning which “preserve the status quo”, must be disrupted in order for genuine learning to occur. What DLL provides, unlike SLL, is productive organisational ‘inquiry’ rather than unreflective corrective action.

DLL involves reflection on values and logic in addition to outcomes. It illuminates the dilemmas that are otherwise suppressed and therefore allows genuine learning to occur (and the subsequent re-evaluation of governing variables). DLL learning relates to Model-II type reasoning, and is characterised by three principles (Argyris, 1974; Argyris, 1999);

- Valid information- learning is enhanced by valid info
- Free and informed choice
- Internal commitment- including receptiveness for corrective feedback

DLL is an ideal, not an absolute state, because in a dynamic organisational environment the cycle of corrective action in response to valid information is continual. Enabling the principles of DLL fosters an environment where people can identify inconsistencies between espoused theories and theories-in-action (internally and externally), examine them through valid information, are free to take corrective and informed action, and are internally committed. When this reflection occurs, DLL can take place and the driving logic and mental model (governing variables) can be evaluated. This leads to continual organisational learning, and ultimately, sustained CI.

The current state of CI in Public Sector

To illustrate the phenomenon of SLL, a theoretical model was constructed, showing a causal chain (see Figure 2) originating with the external influences of central government, to the PSO paradigm, to its effects at a localised level in relation to SLL and CI in PSOs. In the current state, PSOs generally operate within a single loop model, whereby no reflection on governing logic occurs. Therefore, genuine learning and re-evaluation of the principles behind CI interventions does not take place. Consequently, CI eventually succumbs to recurring problems and is not sustained.

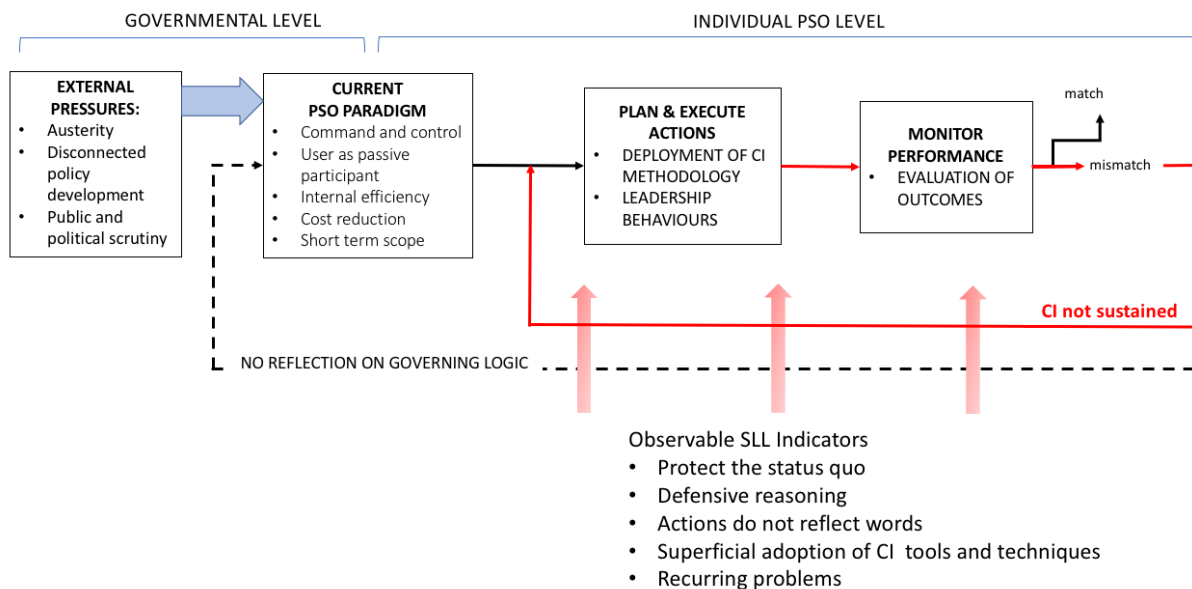


Figure 2 Current State of organisational learning in PSOs

Adapted from Argyris (1990)

DLL as an undervalued perspective on CI

This paper argues that the current PSO paradigm is pervasive in public sector and counterproductive to organisational learning and sustainable CI. Furthermore, until the current paradigm changes and LSS methodologies are re-interpreted, PSOs will only continue to achieve the same mixed results, criticisms and unsustainable service improvement. If CI cannot be sustainably established, it may lose momentum altogether and PSO service delivery will only continue to get worse. As a consequence, the service user, taxpayer and citizen are the recipient of ineffective and sub-par services. With the resource constraints such as they are, this is likely to be an ongoing issue. Double loop learning could offer a prescriptive solution for sustainable CI, but how this can be achieved however remains largely under-investigated in a PSO-specific context.

This research offers strong explanatory power of the phenomenon of unsustainable CI. There remains relatively little discussion or awareness of Argyris's theory in the academic literature or in practice, except a handful of studies of systems-thinking implementations (Dunnion & O'Donovan, 2014; Gibson & O'Donovan, 2013; Jaaron & Backhouse, 2017). To underline the importance of changing PSO thinking, one respondent noted in interview:

“We can talk about Lean ‘til the cows come home. We can talk about continuous improvement until the cows come...We can talk about loads of other...leadership, all of it. Until they recognise they’re a service-based organisation none of it is going to [work]”

Here, there is further evidence in support of the central argument of this research: PSOs need to fundamentally re-evaluate their paradigms. This coincides with a developing body of knowledge which calls for a new approach to public service management (a new PSO paradigm) built on: co-production of service delivery between the PSO and the user, outside-in thinking, connected policy-operations development and adding value to the lives of citizens (Osborne, 2018; Osborne *et al.*, 2015; Radnor & Bateman, 2016; Stoker, 2006). This research attempts to progress these ideas by offering theoretical framework and practical support to PSOs, and enabling these principles to become realised.

Case Study pilot of SLL and DLL behaviours

To add further validation to the theoretical body of work, a case study was developed with a UK Health sector organisation, beginning March 2019. The case study began through the delivery of an interactive workshop, where leadership teams were introduced to Argyris' theory and then invited to consider statements taken from a series of interviews with CI professionals. Each statement related to an example of SLL or DLL respectively. The delegates were then asked to reflect on their own experiences and identify whether their organisation exhibited SLL and DLL-type behaviours. From there, a data gathering exercise was implemented where the delegates captured examples of behaviours that they observed, including organisational artefacts they encountered (such as processes, policies and procedures). The examples were categorised into themes to assess the underlying ‘governing variables’. Early feedback suggested that this had a positive impact in highlighting the established mind sets and thinking in each organisation.

Initial Findings

The analysis in Table 1 below shows the presence of both single loop learning (SLL) and double loop learning (DLL) behaviours in the organisation. The proportion of SLL and DLL behaviours was broadly in line with expectations and was validated further by similar findings from an internal CI maturity assessment in August 2019. This correlation suggests that there is significant value in continuing to take this work forward.

The analysis shows where the pilot organisation is demonstrating positive DLL behaviours; asking new questions and challenging the status quo, with 26% of the examples evidencing this. The number of examples regarding experimentation were relatively low (13%), while 23% of the examples evidenced the presence of deep-rooted organisational routines (SLL). This presents some significant opportunity to embed DLL behaviours (desirable), and address the SLL (undermine sustained CI).

There were also examples indicating incongruence between espoused and in-use theories of action (15%). There were some double-loop learning examples of how we experiment and seek new information sources, for example from customers/stakeholders. However, there was also evidence of defensive reasoning (single-loop behaviour).

Learning Theme	Count	
	DLL	SLL
asking new questions and challenging the status quo	16	
new information sources	7	
experimentation	8	
defensive reasoning		5
what we say and what we do are different		9
deep-rooted organisational routines	1	14
Total	32	28

Table 1 Thematic analysis

This process of collection and analysis is ongoing, and the next step: once having established patterns in the current governing variables and their impact on sustaining CI activity, is to re-evaluate and consider new governing variables. The outlook of for the continuation of this pilot study is positive, and will be supplemented with in-depth analysis of the themes and the implementation of; targeted change activities, artefact, process and policy reviews with a continual focus on leadership and employee engagement.

Conclusion

The aim of this research is not to ‘reinvent the wheel’ by creating entirely new CI frameworks or roles within PSOs. These would require significant up-front investment; generating awareness, training, developing tools etc. Rather, this attempts to *re-focus* and change emphasis on existing LSS activity and methodologies, to recognise the central importance of behavioural and cognitive aspects of CI and organisational learning in PSOs, and adapt method accordingly. As a starting point, organisations are required to expose, and subsequently challenge, their governing variables. This research is one of the first to develop and present a universal framework/method for quantifying SLL and DLL behaviours.

There is reason to be optimistic about the future of CI in PSOs. This research offers an undervalued theoretical perspective to consider the implementation of CI in PSOs. By instilling a new PSO paradigm, which puts the needs of the user at the heart of policy development and service delivery, PSOs can respond to the economic challenges now and in the future by designing and delivering sustainable public services. Future research should continue to build on the conceptual propositions of this study through observational testing and application of the illustrative models and transitional strategies in enabling sustainable CI.

References

Argyris, C. (1976) Single-loop and double-loop models in research on decision making. *Administrative science quarterly*, 363-375.

Argyris, C. (1994) Good communication that blocks learning. *Harvard Business Review*, 72 (4): 77-85.

Argyris, C. (2002) Double-loop learning, teaching, and research. *Academy of Management Learning & Education*, 1 (2): 206-218.

Argyris, C., -. (1974) *Theory in practice : increasing professional effectiveness / Chris Argyris, Donald A. Schön*. First edition edn. Jossey-Bass Publishers.

Argyris, C., -. (1984) *The Planning of change / (edited) by Warren G. Bennis, Kenneth D. Benne, Robert Chin Teaching smart people how to learn / Chris Argyris*. 4th ed. edn. Holt, Rinehart and Winston Harvard Business Press.

Argyris, C., -. (1999) *On organizational learning / Chris Argyris*. 2nd ed. edn. Blackwell.

Bateman, N., Buxton, R. & Radnor, Z. (2017) *The status of continuous improvement in ICiPS members in 2015*.

Bateman, N., Lethbridge, S. & Esain, A. (2018a) Pillar or platform—a taxonomy for process improvement activities in public services. *Public Money & Management*, 38 (1): 5-12.

Bateman, N., Radnor, Z. & Glennon, R. (2018b) Editorial: The landscape of Lean across public services. *Public Money & Management*, 38 (1): 1-4.

Becker, K. (2018) Organizational unlearning: time to expand our horizons? *Learning Organization*, 25 (3): 180-189.

Burgess, N. & Radnor, Z. (2013) Evaluating Lean in healthcare. *International Journal of Health Care Quality Assurance*, 26 (3): 220-235.

Chay, T., Xu, Y., Tiwari, A. & Chay, F. (2015) Towards lean transformation: the analysis of lean implementation frameworks. *Journal of Manufacturing Technology Management*, 26 (7): 1031-1052.

Dunnion, J. & O'Donovan, B. (2014) Systems Thinking and Higher Education: The Vanguard Method. *Systemic Practice & Action Research*, 27 (1): 23.

Eaton, M. (2010) Why change programmes fail. *Training Journal*, 53-57.

Fiol, C. M. & O'Connor, E. J. (2017a) Unlearning established organizational routines – Part II. *The Learning Organization*, 24 (2): 82-92.

Fiol, M. & O'Connor, E. (2017b) Unlearning established organizational routines – Part I. *The Learning Organization*, 24 (1): 13-29.

Gibson, J. & O'Donovan, B. (2013) The Vanguard Method as Applied to the Design and Management of English and Welsh Children's Services Departments. *Systemic Practice & Action Research*, 27 (1): 39-55.

Gupta, S., Sharma, M. & Sunder M, V. (2016) Lean services: a systematic review. *International Journal of Productivity and Performance Management*, 65 (8): 1025-1056.

Halperin, M. H. & Clapp, P. (2007) *Bureaucratic politics and foreign policy*. Brookings Institution Press.

Hines, P. (2011a) *Service design and delivery / Mairi Macintyre, Glenn Parry, Jannis Angelis, Editors*
Staying lean : thriving, not just surviving / Peter Hines ... [et al.]. 2nd ed. edn. Springer Productivity Press.

Hines, P. (2011b) *Staying lean : thriving, not just surviving / Peter Hines ... [et al.]*. 2nd ed. edn. Productivity Press.

Hines, P. (2018) The Lean Journey: have we got it wrong? *Total Quality Management and Business Excellence*, (February 2018):

Hines, P. & Lethbridge, S. (2008) New Development: Creating a Lean University. *Public Money & Management*, 28 (1): 53-56.

Lindsay, C. (2016). *Lean in Healthcare: An Evaluation of Lean Implementation in NHS Lothian*. PhD. Edinburgh Napier University.

Lucey, J., Bateman, N. & Hines, P. (2005) Why major lean transitions have not been sustained. *Management Services*, 49 (2): 9-13.

Masters, K. I. A. (2010) From New Public Management to Lean thinking : understanding and managing 'potentially avoidable failure induced demand'.

Mawdsley, H. & Lewis, D. (2017) Lean and mean: how NPM facilitates the bullying of UK employees with long-term health conditions. *Public Money & Management*, 37 (5): 317-324.

Osborne, S. P. (2018) From public service-dominant logic to public service logic: are public service organizations capable of co-production and value co-creation? *Public Management Review*, 20 (2): 225-231.

Radnor, Z. (2010a) *Review of Business Process Improvement Methodologies in public services*.

Radnor, Z. & Boaden, R. (2008) Editorial: Lean in Public Services—Panacea or Paradox? *Public Money & Management*, 28 (1): 3-7.

Radnor, Z. & Bucci, G. (2007a) *Evaluation of Pacesetter: Lean, Senior Leadership and Operational Management within HMRC Processing*.

Radnor, Z. & Bucci, G. (2010) *Evaluation of the Lean Programme in HMCS*.

Radnor, Z. & Johnston, R. (2013) Lean in UK Government: internal efficiency or customer service? *Production Planning & Control*, 24 (10-11): 903-915.

Radnor, Z. & Osborne, S. P. (2013) Lean: A failed theory for public services? *Public Management Review*, 15 (2): 265-287.

Samuel, D., Found, P. & Williams, S. J. (2015) How did the publication of the book *The Machine That Changed The World* change management thinking? Exploring 25 years of lean literature. *International Journal of Operations & Production Management*, 35 (10): 1386-1407.

Seddon, J. & O'Donovan, B. (2010) Why aren't we all working for learning organisations. *e-organisations and people*, 17 (2):

Seddon, J. & O'Donovan, B. (2015) *An exploration into the failure of 'lean'*.

Seddon, J., O'Donovan, B. & Zokaei, K. (2011) Rethinking lean service. In: *Service Design and Delivery*. Springer: 41-60.

Tortorella, G. L., Fogliatto, F. S., Anzanello, M., Marodin, G. A., Garcia, M. & Reis Esteves, R. (2017) Making the value flow: application of value stream mapping in a Brazilian public healthcare organisation. *Total Quality Management & Business Excellence*, 28 (13): 1544-1558.

Watt, N. (2013) David Cameron makes leaner state a permanent goal. *The Guardian* Tuesday 12th November 2013: Available from: [www.theguardian.com/politics/2013/nov/11/david-
cameron-policy-shift-leaner-efficient-state](http://www.theguardian.com/politics/2013/nov/11/david-cameron-policy-shift-leaner-efficient-state) (Accessed 18th January 2018).