

DEVELOPING AND MAINTAINING EMPLOYEE COMMITMENT AND INVOLVEMENT IN LEAN CONSTRUCTION

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ABSTRACT

The principles of lean production are currently being broadly adopted by firms right across the construction industry. As yet the implementation of lean construction is in its early days, with only a limited number of accounts of its operation and success emerging so far. Of these accounts few have addressed the human resource aspects of lean construction. Yet lean construction depends heavily upon the potential and abilities of employees in order to successfully perform many of its functions and achieve its potential.

Two particular aspects of human resource management, upon which lean construction is dependent, are the commitment and involvement of workers, both essential contributors to many of the functions of lean construction. These aspects produce a crucial consideration for all organisations seeking to implement lean construction, that of whether they will be able to attain the necessary commitment and involvement of their employees. The issue is especially difficult, having regard to the previous record and patterns of employment in the construction industry.

The paper considers the human resource requirements for the implementation of lean construction into the UK construction industry, specifically with regard to whether worker involvement and commitment can be developed and maintained. The paper draws upon the experience of organisations operating lean production in other industries, together with the results from earlier research that sought to determine the potential of workers with respect to their involvement and participation at work.

The relationship between commitment and involvement is established. The role and significance of involvement in the various constituent aspects of lean production are identified and considered, together with the employee characteristics that must be developed and maintained in order to achieve the required level of employee involvement. Finally, 'survivor syndrome' is considered as a potential major impediment to involvement as a result of the radical change induced by the introduction of lean production and the trauma generated. Survivor syndrome is the psychological state that occurs in individuals who have survived a traumatic event but cannot rationalise the reasons for their survival.

KEY WORDS

Employee involvement, commitment, participation, HRM

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INTRODUCTION

Analysis of the constituent activities and techniques of lean production show that human resources (people) occupy a central position in lean production and exercise a major influence upon the implementation and success of lean production (Womack & Jones 1996). Inherent in many of these constituent activities is a high dependence upon the employees, to an extent that non-performance by employees will severely inhibit or prevent the successful operation of lean production. Examination of the constituent activities of lean production reveals the extent and importance of human resources, it also reveals the extent to which the commitment and involvement of these employees is required.

THE ROLE AND SIGNIFICANCE OF EMPLOYEE INVOLVEMENT IN LEAN PRODUCTION

The fundamental lean activity of eliminating waste requires analysis of the production process and the continuous identification and elimination of waste. This analysis although undertaken and organised on a company basis, relies very heavily upon each individual worker identifying the waste that occurs in the detail of their job, and possibly more importantly, generating better ways of doing the job to eliminate or reduce the waste. Knowledge, the majority of which is only known to the worker physically doing the work, cannot be coerced from employees, neither can it be obtained by the systems of management or technology that are in place, it must be given willingly. Such willingness implies that there must be some benefit to the employee to do so and thus there must, by deduction, be a level of commitment towards the process. The extent of such commitment is important, the greater the level of commitment then the greater the contribution the employee makes towards achieving the objectives of identifying and reducing waste. Whatever techniques the identification and elimination of waste adopt, all require the active involvement of the workers for their success, none appear capable of imposition by management.

The necessity for some level of employee commitment is not one that provokes much dissent. Barlow (1999) considers participation and self-management to be necessary parts of lean production systems. There is however some debate as to how such commitment is obtained, Green (1999) argues that lean production systems exploit the workforce who are coerced and/or misled into making their commitment to it, others such as Howell and Ballard (1999) dispute this interpretation. Whether obtained by coercion or voluntarily given, the commitment exists.

Other constituent activities of lean production are also dependent upon the active involvement of the workforce. Just-in-Time (JIT), although largely system based, is enabled to a considerable extent by Total Quality Management (TQM), whose fundamental concept is the elimination of defects at source, which is based upon every worker being empowered to produce, measure and assure the quality of their own work, without subsequent quality control checks.

TQM itself is dependent upon a level of employee commitment considerably greater than compliance, it requires the genuine commitment of employees to the ideals and processes of TQM, a commitment that derives from genuine involvement. The issue of commitment or compliance is central to the determination of whether systems of TQM are genuine. Many companies claim to operate TQM systems, however when the tests of whether there is a) an empowered workforce that is responsible for quality at source and b) the existence of an internal supplier/customer chain are applied, many are found to be wanting and therefore operating a system that is something less than genuine TQM. The key to TQM is undoubtedly the willing commitment of all employees.

The other key characteristic of TQM is continuous improvement with the aim of continuously improving customer satisfaction. Wilkinson, et al. (1998) identified the connection between commitment and continuous improvement, concluding that effective TQM will require all employees to develop a commitment to continuous improvement. Indeed, Wilkinson et al. went on to define the requirement for commitment in more definitive terms, 'TQM is likely to require a particular approach to Human Resource Management (HRM), involving an emphasis on winning employee commitment to organisational goals, rather than securing simple compliance through direct supervision and crude incentive schemes'. The commitment requirements of TQM and hence lean production are unlikely to be met by anything other than a genuine commitment on the part of workers; commitment that is willingly given. Having regard to the potential criticality of an individual worker's actions/inactions within a leant system, their commitment is not an issue can be neglected or taken for granted.

Continuous improvement is also an aspect of lean production in its own right, one that is of major significance to the on-going success of lean production, producing as it does a major part of the year-on-year improvements in performance that typify lean production. These improvements result from company-organised initiatives and the initiatives of individual employees. Studies of innovation and large amounts of anecdotal evidence from lean producers, indicate that somewhere in the order of 70% of improvements originate from the individuals who carry out the work. Success in respect of producing continuous improvement is largely dependent upon the workforce producing these improvements and workers will only contribute improvements when they are suitably motivated to do so.

The theories of motivation are extensive but not definitive. However, there is consensus that to achieve higher order outcomes, such as innovation and continuous improvement, requires higher order motivation, which will mean in practice a sophisticated and effective system of HRM. In motivational terms, workers must get to a level where they recognise a congruence between their own goals and those of the company, albeit for different reasons. Recognising the link between the company's well being and their own.

Evidence from case studies of lean based projects show the importance of employee participation to the success of lean production initiatives and demonstrate the importance of obtaining genuine participation from the workforce. Barber and Tompkins (1997) attributed the success of one such major road construction project to 'a selection of factors working together' of these factors one of the principle factors was 'an empowered, directly employed workforce'. A study of firms who had undertaken major change was carried out by Kettley (1995). That study showed the importance of obtaining higher levels of commitment and employee involvement in order for the changes to be successful.

Other constituents of lean production also require the commitment of the workforce to succeed, aspects such as flexible working, continuous workflow and supply chain management. Participation (involvement) produces flexibility, faster decision-making, innovation, satisfaction, improved quality, faster response times, etc, all desirable attributes of modern production systems, lean or otherwise.

THE RELATIONSHIP BETWEEN COMMITMENT AND INVOLVEMENT

The relationship between commitment and involvement has two dimensions, one exists within the employee, whilst the other exists between employer and employee. Within the employee, involvement is the natural action that stems from their commitment to particular ideals or corporate goals. The two coexist and appear to be mutually supportive. Of importance for companies implementing lean production, they also share a common characteristic, both are only given willingly.

The second dimension between employer and employee relates to the reaction of employees to the commitment of the company. Employee involvement is a response to the company's commitment to the same ideals and goals that employees are being asked to adopt. This employee involvement is begot by the genuine commitment demonstrated by the company. Employee involvement is a direct, and possibly proportional, response to this commitment.

Involvement is the active manifestation of commitment. In implementation terms, the commitment of the company also has a major influence upon the commitment and involvement of the workforce. Involvement of the workforce is begot by the genuine commitment of the management; employee involvement is a direct response to this commitment.

The crux of involvement has been shown to be decision-making (Pateman 1970). Involvement is founded upon the employee's ability to participate in the decision-making concerning their own actions: in this instance their own work. Involvement requires employees to participate in the decision-making concerning the organisation and operation of their work. Participation in the decision-making must be genuine. Genuineness of involvement is the key factor in its success or failure, genuine participation is shown to succeed, whilst non-genuine (pseudo-participation) is shown to fail (White 1979). Genuineness of participation in decision-making is the acid test of involvement, a test that will be regularly and periodically made by the workers involved. Studies by Tannenbaum & Massarick (1950 and 1961) and Verba (1961) identify the aspect of decision-making that defines genuineness to be whether the worker(s) have the authority to implement the decisions they have made regarding their work. Where this authority does not exist, the involvement is pseudo, only where it exists is it genuine. Examples were the early attempts to directly import, without adaptation, quality circles from Japan. In the Japanese system decisions made by the quality circle were subject to the approval of a higher authority before being implemented (or not). These failed the genuineness test and were perceived by the workers involved to be little more than a suggestion scheme, consequently involvement diminished and the schemes fell into disuse after about 18 months to 2 years (Ramsay 1991).

Workers whose commitment and involvement is demanded lean production will seek to be assured that their involvement is in fact genuine and not just another management ploy. Trust, specifically mutual trust, does and will play a significant part in the success of both commitment and involvement, consequently it must be a prime issue for consideration when company's seek to implement lean production.

THE POTENTIAL FOR INVOLVEMENT BY CONSTRUCTION EMPLOYEES

Michael Hammer and James Champy (1993) made a very valid point in relation to the use of human resources in change situations, which the introduction of lean production invariably will be. They stated that it was unsound to try to change the behaviour of workers and managers, rather it would be infinitely better to take advantage of their behaviour and talents. With respect to lean production and its implementation into the construction industry, it would be logical to identify the characteristics and potential of construction workers that were conducive to involvement, and to use these as the basis for successfully implementing lean production.

The employee characteristics that are conducive to involvement have been identified in previous studies relating to employee involvement, participation and empowerment. (Blauner 1964, Pateman 1970, Blumberg 1968, Brannen 1983), these are:

- (a) A desire to participate;
- (b) A need for independence;

- (c) A desire to make decisions;
- (d) A semi-antiauthoritarian attitude;
- (e) Goal convergence between worker and company; and
- (f) A basic trust of the company and its motives.

The major factor underlying all these characteristics is the obvious one that employees must have a basic desire to be involved. Although this may seem obvious, its effect is powerful and can be one of veto, whereby it will negate other characteristics, even where these are strong. Without some level of desire to be involved on the part of the individual none will occur. However the threshold of that desire has been shown to be quite low. The wish to be involved is a potent human trait, one that is increasingly developed by opportunities in the personal and educational aspects of most peoples lives.

Construction workers differ little from workers in other industries in terms of their desire to participate. A survey of mechanical and electrical workers showed that 80% of workers positively stated a desire to be involved in deciding how their work was organised, only 15 % expressed a reluctance to participate (Coffey, 1996). These responses correlate with the responses from other industries. Cressey et al (1981), Dowling et al (1981), Rathkey (1984) and Marchington et al (1992) indicate that in this basic respect, construction workers possess equivalent potential to workers in other industries; industries who have successfully introduced and operate lean production.

The existence of a strong desire to participate might appear to pose a threat to the orderly management of the firm and management's ability to implement the lean policies and systems. It is a very real issue for many managers. The spectre of worker directors and a return to the industrial relations of the 1970's still haunts many managers. The desire to participate does not threaten management or its right to manage in any significant way. In practice, it is supportive of the flat structures and empowerment introduced in lean construction. The employee's desire to participate is a direct one, it is the desire to participate in the decisions relating to their own work. There is little or no desire for higher level involvement or in running the company. Brannen (1983) showed that workers across a range of industries wanted to participate in the decisions that affected their own work; i.e. direct participation, but there was little inclination to be involved in the work of others; indirect participation. Similarly, 80% of construction workers expressed a desire for direct participation, whilst only 27% expressed a desire for any form of indirect participation (Coffey and Langford, 1998)

The need for independence among workers is a positive one, it belies a desire to be involved and to take responsibility for their actions, whether in a personal or work situation. It has been identified by many writers to be an essential personality characteristic for involvement (McGregor, 1960; Vroom, 1960; and House, 1974). Vroom in particular showed that workers who possess a need for independence were 'favourably affected by opportunities to participate in making decisions in their jobs', exactly the characteristics sought for workers in lean production situations. The construction industry is populated by workers with a high need for independence. This is a major attraction of working in the industry: some 50% state the reason for joining the industry in the first place to be its independent characteristics. 50% of workers also stated that its independent aspects were the main contributors to their continued satisfaction with working in construction (Coffey 1995).

The desire to make decisions is a direct manifestation of employees desire to be involved in the work. Construction workers included in the study by Coffey (1996) were shown to have a strong desire to make decisions and a high incidence of actively making decisions in the performance of their work. A large proportion of these workers (92%) expressed a desire to make decisions in their work. Importantly, this was corroborated by significant proportions who actively did make decisions relating to their work, 50% did so in

a re-active way to solve problems they encountered, whilst 31% made decisions pro-actively by seeking alternative better ways of doing their work. Interestingly, both the active and reactive decision-making remained within the authority structure of the firms involved. Only 9% indulged in contra-decision-making that could be construed as a challenge to management. This is important as it belies the fears expressed by management, that involvement reduces their abilities and power to manage. Such fears are especially prevalent at first and some middle levels of management, who bear the brunt of delayering. However, this is more to do with the reorganisation to become lean rather than employee involvement, although the two are closely linked in practice.

The desire to make decisions in relation to their work is a key requirement for workers in many aspects of lean production, it is a highly desirable trait in a workforce; it could be argued an essential trait for continuous improvement initiatives and such like.

Other employee traits have also been identified to be conducive to involvement, these include a semi-antiauthoritarian attitude. (Vroom 1960; Hesse and Wall, 1976). On first appearances a semi-antiauthoritarian attitude would be of concern to managers who may perceive these employees to be difficult, rebellious and uncontrollable, aspects that would not be conducive to the new ways of team working required by lean construction. The crucial factor is the extent of the anti-authoritarianism, too strong and the employee becomes unmanageable, too weak and the employee becomes benign and compliant, but contributes little. In practice the level is found to be one where the employee accepts the general authority structure of the organisation. The issue is closely linked to the desire for independence and the desire to make decisions. This trait belies an attitude inherent within a worker who does not accept the status quo without challenge, in lean production terms this is precisely what is required for continuous improvement, TQM, etc. Workers with this trait do not view their work passively but can be motivated to actively challenge and improve upon it. It demonstrates flexibility in the employee, flexibility that is vital to the implementation of lean production. Construction workers possess the desired amount of semi-antiauthoritarian attitude.

Driscoll (1978) identified that a basic level of trust of the company and its motives to be an essential part of genuine involvement. Its operation takes the form of a 'hygiene factor' in that its absence will prevent employee involvement and that a minimum level is required to enable involvement. This is particularly important for the continued operation of the systems of lean construction. A study by Cotton (1993) identified a major cause for employee involvement schemes to fail was a lack of trust of the company. Construction workers have been shown to possess a level of trust that is more than sufficient to support involvement, or tested in another way, their level of distrust was insufficient to prevent involvement.

The extent of convergence between the goals of the worker and the goals of the company has been identified as a significant contributory factor to successful employee involvement (Tabb and Goldfarb, 1970; Vroom and Jago 1988). In an industrial relations situation it is the company's goals that will have precedent, so it is a case of the workers goals converging with the company's, rather than the other way around. Although there must be goal convergence this does not mean that the goals must be pursued for exactly the same reasons, indeed the goals may be the same but the reasons for pursuing them are usually different. There must be a minimum level of convergence for there to be sufficient mutuality for a co-operative industrial relations system required for lean production. In the U.K. construction industry there is a significant level of goal convergence between the workers and the company, but each for different reasons.

The study by Coffey (1996) identified that all these involvement traits are present in construction workers to a significant extent. The potential for involvement by construction workers is high, but as yet not recognised or exploited. It does however offer great potential

for the implementation of lean production as these characteristics are inherent in the workforce and already largely in place. What is required is the HRM policy to unlock and use them.

SURVIVOR SYNDROME; A PARTICULAR IMPEDIMENT

In its strivings to implement and maintain lean construction, the construction industry cannot ignore the experiences of companies and other industries who have undergone or implemented major change, such as delayering, BPR and lean production. One particular experience that companies found in their newly restructured and more efficient organisations was that the anticipated improvements in performance were being inhibited by a phenomenon in the workers who have survived the rationalisation and remain employed, referred to as 'survivor's syndrome' (Brockner 1988, Rice and Dreilinger 1991). Survivor syndrome is characterised by low morale, poor productivity and a distinct distrust of management, it stems from the job losses that occurred and is derived from a feeling of 'it could have been me' and 'it could happen to me if I'm not careful'. Significantly, workers become risk adverse, fearing for their own position should any initiative on their part fail. This fear of failure and an unwillingness to initiate new methods of working are clearly contrary to involvement, commitment and continuous improvement; some of the key features of lean production.

The chances that survivor syndrome will occur in a newly leanned construction industry are quite high. Workers will have witnessed the significant reduction of jobs and workers both within their own organisation and on site, as a greater proportion of the work formally carried out on site is shifted further down the supply chain, pre-assembled, prefabricated and/or automated. Workers will fear for their own future. Initially fear may be sufficient to make the new lean production system operate satisfactorily, however this is unlikely to last as workers 'dig in' and become more established and confident in their positions by finding ways not to fail, and conversely not to try anything new.

Worker commitment will not develop unless positive efforts are made to establish and build it. In examples where lean production systems have been implemented 'no further redundancy' agreements have been used as a means of providing sufficient security to enable survivor syndrome to be avoided (Womack and Jones 1996). However, on their own these agreements will not engender commitment or the required involvement, ultimately the whole human resource management policy and practice will have to be directed towards obtaining commitment from the workforce. Perusal of the literature relating to human resource management suggests that only an integrated human resource management approach will be successful in the long term production and maintenance of commitment (Kinnie et.al. 1997).

In the U.K. construction industry, the record of human resource management is not encouraging in terms of companies operating integrated or coherent system of human resource management. Typically, the majority of construction firms, especially smaller ones, have adopted a rather ad hoc approach to human resources, if any at all (Druker and White 1996). It is difficult therefore to envisage the implementation of lean production across the construction industry without major investment in human resource management, something that as yet, only a limited number of companies, invariably larger companies, appear to be attempting or even contemplating.

There is also evidence to show that even in companies in other industries who have established HRM policies and have gone on to implement lean production, that an integrated human resource management policy is seldom present prior or during implementation. These studies show that the human resource policies necessary for the successful implementation of lean production, including those relating to commitment and participation, were developed in response to the changes produced by lean production, rather than being an integral part of the

lean production changes. Ezzamel et.al. (1993) Kettleby (1995), Kennie et.al.(1997). The lesson is there for construction companies to learn.

CONCLUSION

The conclusions to be drawn from the foregoing are that people have a significant influence on the successful implementation of lean construction. Involvement and self-management on the part of workers are a necessary, if not essential, part of lean production systems. Although as Baker (1996) points out, there remain a number of instances of hierarchical management systems operating in a variety of 'lean' organisations, the question of exclusivity is far from answered. The answer to the question of whether the involvement of workers is essential to successful lean production is, NO - not necessarily, but this fails to take account of how successful lean construction without employee involvement might be.

The need for a more integrated and professional approach to HRM is clear, as this will provide the framework within which the implementation of lean construction can be effected and thereafter the support system necessary to ensure that lean construction reaches and maintains its potential. Only an effective deliberately designed system of HRM will produce the high levels of employee commitment and involvement needed.

The characteristics conducive for employee involvement are clearly and strongly present in construction workers. These provide the basis for the human resource management necessary for the implementation of lean construction and constitute a considerable advantage in its development. Construction firms must examine their workforce and their management policies carefully, recognising the existence of these characteristics, then develop HRM policies and practices that are capable of exploiting them.

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