

ADVANCES IN MANAGEMENT  
ACCOUNTING

# ADVANCES IN MANAGEMENT ACCOUNTING

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ADVANCES IN MANAGEMENT  
ACCOUNTING VOLUME 33

# ADVANCES IN MANAGEMENT ACCOUNTING

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# STATEMENT OF PURPOSE

*Advances in Management Accounting (AIMA)* is a publication of quality, applied research in management accounting. The journal's purpose is to publish thought-provoking articles that advance knowledge in the management accounting discipline and are of interest to both academics and practitioners. The journal seeks thoughtful, well-developed articles on a variety of current topics in management accounting, broadly defined. All research methods including survey research, field tests, corporate case studies, experiments, meta-analyses, and modeling are welcome. Some speculative articles, research notes, critiques, and survey pieces will be included where appropriate.

Articles may range from purely empirical to purely theoretical, from practice-based applications to speculation on the development of new techniques and frameworks. Empirical articles must present sound research designs and well-explained execution. Theoretical articles must present reasonable assumptions and logical development of ideas. All articles should include well-defined problems, concise presentations, and succinct conclusions that follow logically from the data.

## REVIEW PROCEDURES

*AIMA* intends to provide authors with timely reviews clearly indicating the acceptance status of their manuscripts. The results of initial reviews normally will be reported to authors within eight weeks from the date the manuscript is received. The author will be expected to work with the Editor, who will act as a liaison between the author and the reviewers to resolve areas of concern. To ensure publication, it is the author's responsibility to make necessary revisions in a timely and satisfactory manner.

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# MANUSCRIPT FORM GUIDELINES

1. Manuscripts should include a cover page that indicates the author's name and affiliation.
2. Manuscripts should include a separate lead page with an abstract (not to exceed 250 words) and up to seven keywords.
3. The author's name and affiliation should not appear on the abstract.
4. Tables, figures, and exhibits should appear on a separate page. Each should be numbered and have a title.
5. To be assured of anonymous reviews, authors should not identify themselves directly or indirectly.
6. Manuscripts currently under review by other publications should not be submitted.
7. Authors should email the manuscript in two WORD files to the editor. The first attachment should include the cover page and the second should exclude the cover page.
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# INTRODUCTION

This volume of *Advances in Management Accounting (AIMA)* represents the diversity of management accounting topics, methods, and author affiliations, which form the basic tenets of *AIMA*. Included are papers on traditional management accounting topics such as performance measurement, incentive compensation, and budgeting as well as those on broader topics of interest to management accountants, such as continuous improvement, lean accounting, and sustainability. The articles in this volume employ a variety of methods from field-based methods to surveys. Finally, the diversity in authorship is apparent with affiliations from Australia, China, Greece, Malaysia, New Zealand, Taiwan ROC, the United Kingdom and the United States.

This volume begins by Matt Kaufman, Ella Mae Matsumura, and Urban Wemmerlöv that is based on two field studies which examine how continuous improvement activities are evaluated. The paper identifies several issues that could cause divergence between operational and financial assessments of these activities. This helps to address a persistent issue in the management accounting literature, namely the conflict between operations and accounting managers, which is highlighted in the divergent perspectives of Johnson and Kaplan (1987) after their publication of *Relevance Lost*. The authors found that instead of the operational control system being at odds with the accounting control system, each of these systems supports a different piece of the financial improvement puzzle.

In a similar vein, the second chapter by Lawrence P. Grasso and Thomas Tyson investigates the relationship between lean manufacturing practices, management accounting, and performance measurement practices and facility performance. Using survey data from managers and executives at manufacturing facilities the authors found a significant positive association between lean manufacturing practices and the use of management accounting and performance measurement practices. The authors found that facilities that emphasized process performance measures did not reduce their emphasis on results performance measures and the emphasis on results performance measures lead to improved financial performance. The results provide important insights for managers of companies engaged in lean transformation and for academics that research or teach lean accounting.

In the third chapter, Chia-Ling Lee and Ya-Nan Shih investigate collaborative relationships in supply chains and how the use of strategic performance measurement systems affect buyer competitiveness. They demonstrate that it is through the use of strategic performance measurement systems that collaborative relationships indirectly and positively influence the competitiveness of delivery and flexibility. This contributes to the growing literature on the role of strategic performance measurement systems in linking the relationship between collaborative relationships and competitiveness.

We then have three chapters examining budgeting, starting with Odysseas Pavlatos and Hara Kostakis who use a survey to investigate the use of budgets in start-up companies in Europe. Their results show that the use of budgets for planning, resource allocation, and performance evaluation is related to higher financial performance. The authors also found that CEO characteristics, such as business educational background and their beliefs about planning, influence the use of budgets in start-up firms. This chapter concludes with analysis showing that there is a positive association between perceived environmental uncertainty and the use of budgets for planning and resource allocation and a negative association between perceived environmental uncertainty and the use of budgets for performance evaluation.

In a further investigation of budgeting, the next chapter by Kevin E. Dow, Davood Askarany, Belaynesh Teklay, and Ulf H. Richter use a survey to explore the relationship between the level of perceived procedural and distributive justice and budget satisfaction and motivation to achieve organizational goals. The authors apply the Habermasian concept of deliberative democracy which argues for the inclusion of all the parties affected by the deliberative process and found that both dimensions of justice – distributive and procedural – are positively associated with participation, and in turn, positively impact satisfaction and motivation. Studying the budgeting process provides an indication of how justice mediates the relationship between participation and both satisfaction and motivation.

The chapter by Sakthi Mahenthiran, Robert Mackoy, and Jane L. Y. Terpstra-Tong then examine the influence that budgetary support and teamwork has on organizational commitment and performance. The authors survey senior managers in Malaysia and the United States and find that teamwork and budgetary support each has a direct effect on organizational commitment to employees as well as firm performance. Further, the authors find that organizational commitment to employees mediates the relationship between budgetary support, teamwork, and firm performance. Some differences are noted between the United States and Malaysian managers as teamwork was shown to affect performance directly in Malaysia, but not in the United States, and that budgetary support affects performance in the United States but not in Malaysia. The authors attribute the effects to the different national cultures and social-exchange relations and highlight the contributions to the budgeting, organizational commitment literature, and to practice.

In the next chapter, Nuraddeen Abubakar Nuhu, Kevin Baird, and Sophia Su use a survey of Australian managers to examine the impact of environmental activity management on triple bottom line performance and the role that sustainability strategies play in mediating these relationships. Their findings indicate that each of the three levels of environmental activity management; environmental activity analysis, environmental activity cost analysis, and environmental activity-based costing influence specific aspects of performance, either directly and/or indirectly through environmental and social sustainability strategies. These findings suggest that managers could enhance their use of environmental activity management practices through the use of sustainability strategies in order to enhance performance.

The final chapter by Dipankar Ghosh, Anne Wu, and Ling-Chu Lee examines incentive compensation and the use of financial and non-financial measures using proprietary field data from an auto dealership. The authors found that financial measures were weighted more for bonus decisions than for merit raise and promotion decisions, while non-financial measures were weighted more for merit raise and promotion decisions. This shows that the temporal orientations of the measures and incentives seemed to be aligned with the short-term/long-term nature of financial/non-financial time dimensions of the incentives. They also found that for bonuses, both financial and non-financial measures had a positive influence on both junior and senior managers. This differed though for promotions, with the influence of financial measures being insignificant for both groups. This was in contrast to the influence of non-financial measures which was not only significant for each group but was significantly greater for junior managers than it was for senior managers. Thus, the use of non-financial measures in the evaluation of senior managers had less influence on their promotion than for junior managers.

The eight chapters in Volume 33 represent relevant, theoretically sound, and practical studies that extend our knowledge within the management accounting discipline. These chapters manifest the journal's commitment to providing a high level of contribution to management accounting research and practice.

**Chris Akroyd**  
**Laurie L. Burney**  
*Editors*

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# ACCOUNTING CONTROL, OPERATIONAL CONTROL, AND THE VALUE OF CONTINUOUS IMPROVEMENT: A CAPACITY CHANGE PERSPECTIVE

Matt Kaufman, Ella Mae Matsumura and  
Urban Wemmerlöv

## ABSTRACT

*This study examines challenges to the retrospective financial evaluation of continuous improvement (CI) activities. Through a review of the literature and active engagement with CI implementations, we identify several issues that may lead to divergence between operational and financial assessments. Out of this conflict emerges a set of concepts that we find important – the delineation of soft versus hard capacity benefits, the distinction between capacity used and capacity paid for, and the data gaps that relate to these benefits – and recognize operational improvement and financial improvement as distinct, yet inter-related, theoretical constructs. This study helps explain a series of persistent gaps in the management accounting literature: Conflict between operations and accounting managers, the divergent perspectives of Johnson and Kaplan after their publication of Relevance Lost (Johnson & Kaplan, 1987), and the need for both operational control (including detailed capacity control) and accounting control in CI firms. Instead of one control system being at odds with the other, or co-existing despite each other, each of these systems support a different component of the financial improvement process. Operational*

*control systems in CI firms emphasize non-financial information and social and behavioral controls that empower decision-making by employees, while accounting control systems seek to motivate and translate operational gains into financial gains. Soft and hard benefits linked to capacity play an integral role in understanding the difference in focus of each control system, while data limitations help to explain why these systems remain loosely coupled in practice (or absent, as seems to be the case with detailed Capacity Management Systems).*

**Keywords:** Continuous improvement; lean; total quality management; financial value; management accounting; capacity management; management control systems

## INTRODUCTION

Despite the importance of continuous improvement (CI) in contemporary manufacturing environments,<sup>1</sup> the literature details ongoing disagreement between operational and financial managers regarding its economic impact (e.g., [Ittner & Larcker, 1995](#); [McNair, Lynch, & Cross, 1990](#); [Tillema & van der Steen, 2015](#)). We find examples within both the extant literature and our own investigation where firms are unable to quantitatively resolve these differences, and instead stress the importance of beliefs to justify or defend the implementation of CI initiatives (e.g., [Oliver, 2008](#)). However, while beliefs may provide an answer to the question of why CI is a popular management strategy, they do not address the important question of its financial benefits.

Our investigation into the unresolved issue around the financial evaluation of CI initiatives evolved from our involvement with an academic center for Quick Response Manufacturing (QRM; [Suri, 1998, 2010](#)).<sup>2</sup> Manufacturing firms from across the country participate in QRM Center projects to identify opportunities to reduce lead times, improve operational efficiency, stimulate growth, and increase profitability. This study originated with this particular method for CI, but our findings apply to any improvement approach (including total quality management (TQM), Six Sigma, Lean, etc.).

During our research project conception, we helped to host a forum on the economic value of QRM. The purpose of the meeting was to discuss how to demonstrate the financial impact of CI initiatives. One engineering manager told the story about selling QRM to his CEO by describing existing operational practices as ineffective and no longer suited to the firm's competitive environment. Others described shifting customer preferences or growing competition from firms prioritizing rapid delivery. In general, the need for changes in the firms' operations emerged as a response to shifting market conditions.

Discussions with managers at the forum confirmed the notion that current or projected financial problems often result in a recognition that a firm must modify its strategy, even if diverse actors cannot agree on the specific changes that must

occur. CI helps to facilitate needed change by rallying firms around operational solutions with widespread acceptance: reduced manufacturing lead time, faster customer response, improved product quality and the elimination of defects, and the elimination of waste throughout production and administrative processes.

A surprising aspect of the forum was the fervor with which C-level executives and operational managers questioned the need for a financial assessment of CI's impact (Oliver, 2008). Instead, they chose to frame QRM adoption and implementation using words such as "philosophy," "belief," and "strategy." Some participants noted similar shortcomings when it comes to the financial evaluation of other CI initiatives, such as TQM and Lean. Most managers described the relationship between reductions in lead times (QRM), defects (TQM), or waste (Lean) and a firm's long-term economic benefits as intuitive and logical. Operating from this assumption, they viewed periodic and untimely accounting reports as impediments to realizing these benefits. Standard costs bear the brunt of these complaints in ways that echo the arguments made in *Relevance Lost* (Johnson & Kaplan, 1987). In fact, one CEO in attendance described his habit of purchasing a copy of this book for every accountant at his firm to little effect, but continues to "tilt at windmills" in his own quixotic quest to reconcile activities on the production floor with recorded financial results.

This study investigates CI-related financial benefits through a triangulation of literature review, discussions with management and engagement with practice. We identify the conceptualization of resource capacity as an issue that can lead to dissonance between operational and financial assessments of CI. We also identify capacity usage as a major contributor to the financial outcome of CI. Both the literature and our case evidence point to the measurement and management of capacity changes as a significant element in the financial validation of CI, and as a potential source of disagreement between an organization's operations and accounting staff.<sup>3</sup> In that context, we find that the outcome of CI initiatives can be viewed as made up of two distinct, yet interconnected, components. *Soft capacity benefits* result from improvement activities that reduce the utilization of the firm's productive resources (e.g., people, plant, and equipment), but have not found alternative productive use (nor have the resources been eliminated). *Hard capacity benefits* result from idle resources being eliminated or put to productive use. A company must use a control system to translate soft capacity benefits into hard capacity benefits in order to achieve financial improvement, yet gaps in data provided by a firm's management information systems can hinder such verifications.

We contribute to the management control literature in the following ways. First, we identify a set of concepts – the delineation of soft versus hard capacity benefits, the distinction between capacity used and capacity paid for, and the disposition strategy for non-value-adding capacity – that together serve as a bridge between the constructs of operational improvement and financial improvement. We find this gap is exacerbated in firms that go against recommendations made by the literature on Lean manufacturing to avoid cost-cutting as a driver for adoption and holistically apply Lean principles throughout an organization (Maskell, Baggaley, & Grasso, 2011). Our study focuses on practices available to firms that

adopt CI to meet financial targets and that maintain traditional accounting control systems. Instead of operational control systems being at odds with traditional accounting control systems,<sup>4</sup> or the two types of systems co-existing despite each other (e.g., [Ittner & Larcker, 1995](#); [Tillema & van der Steen, 2015](#)), the two types of control systems target different components of the financial value generation process. Our findings provide a bridge in settings where operations lack detailed understanding of traditional accounting control systems and accountants similarly lack detailed understanding of Lean principles.

Second, we highlight a lack of detailed capacity data, as well as the significant effort required for their collection, as an impediment to the financial estimation of CI practices. While the availability of operational data has improved significantly over the past several decades, these improvements tend to cluster on the production floor and emphasize machine or plant utilization. Results presented highlight data gaps around capacity in labor-intensive areas of the production process, with the goal of promoting common understanding between operations and accounting management.

Finally, the insights we present point to the prevalence and importance of belief systems, an aspect of firms' formal management control systems in need of additional study (e.g., [Heinicke, Guenther, & Widener, 2016](#); [Tessier & Otley, 2012](#)). While operational control systems in CI firms emphasize non-financial information (including capacity usage) and aim to empower employee decision-making, accounting control systems seek to motivate the translation of operational gains into financial gains. Soft and hard capacity benefits play an integral role in understanding this difference in focus, while data limitations help to explain why operational and accounting control remains loosely coupled in practice. Our study points to strong beliefs as drivers of CI activities whose financial consequences are difficult to measure.

The next section reviews the two dominant perspectives on CI within the management accounting literature, with a particular focus on capacity and financial improvement. The two subsequent sections describe the methodology used in our fieldwork, and present case evidence from two CI firms. The penultimate section synthesizes results and proposes a set of concepts useful in integrating CI activities within the broader management control literature. The final section summarizes our findings and discusses opportunities for further research.

## **PRIOR LITERATURE AND THEORETICAL DEVELOPMENT**

Conflict between financial and operational management regarding the accuracy and usefulness of traditional costing systems is a central theme of *Relevance Lost* ([Johnson & Kaplan, 1987](#)), and provides the conceptual foundation for its critique of traditional costing systems. Traditional, or absorption-based, accounting systems rely upon overhead allocation, standard costs, and variance analysis to reconcile accrual accounting financial reports to measures of operational spending, efficiency, and utilization. To improve communication between

the operations and financial management functions in manufacturing firms, the book's conclusion stresses the development of information systems to collect frequent, detailed, and accurate operationally relevant data that support the use of non-financial performance metrics.

Johnson and Kaplan would go on to address these ideas from differing perspectives and using different tools. Kaplan (e.g., [Cooper & Kaplan, 1998](#); [Kaplan, 1994](#); [Kaplan & Norton, 1992](#)) would come to focus on decision-making by senior management through the development of Activity-Based Costing (ABC) and the Balanced Scorecard (BSC). [Johnson \(1992, 2006, 2008\)](#); also [Johnson & Broms, 2000](#)) would stress operational management through CI initiatives, such as the Toyota Production System (TPS), Lean Manufacturing, and Total Quality Management (TQM). Over the last three decades, both academics and practitioners have devoted a significant amount of effort toward the continued development of each perspective, and both literature streams are relevant for our study of CI activities and their financial value. We describe the two perspectives and ensuing associated streams below, and relate them to capacity management.

#### *ABC and the BSC*

[Kaplan \(1994\)](#) describes three major areas of development that he engaged in from 1984 to 1994: ABC management, operational control systems, and the BSC for performance measurement and strategic management. ABC changed the focus from allocating departmental cost pools using volume-based drivers to a method of assigning activity-based cost pools using a hierarchy of drivers: unit-level, batch-level, and product-sustaining. The focus on activities and their associated resource usage provided motivation for CI efforts that would also reduce unit costs. Examples from manufacturing include reducing setup times between production runs and improving quality to decrease the need for quality inspections. In the non-manufacturing arena, examples include reducing price-quotation times and improving the accuracy of order entry, leading to decreased times required to fill orders.

Several studies describe potential conflicts between operations and financial management around ABC reports, and whether ABC implementations have been successful ([Briers & Chua, 2001](#); [Hozee & Bruggeman, 2010](#); [Rowe, Shields, & Birnberg, 2012](#)). Assessments of overall financial impact are mixed (e.g., [Ittner, Lanen, & Larcker, 2002](#)). Recent studies suggest that the link between ABC usage and financial improvement is mediated by improved operational performance ([Hozee & Bruggeman, 2010](#); [Maiga & Jacobs, 2008](#)), which can be specifically supported through CI ([Banker, Bardhan, & Chen, 2008](#)).<sup>5</sup>

Participation by operational personnel in ABC system design appears to increase the likelihood of financial improvement ([Eldenburg, Soderstrom, Willis, & Wu, 2010](#); [Hozee & Bruggeman, 2010](#)). The most frequent criticism of ABC within the academic literature describes its implementation as overly granular and complex to implement ([Gosselin, 2006](#); [Innes, Mitchell, & Sinclair, 2000](#)). [Kaplan and Anderson \(2007\)](#) address these concerns with the development of Time-Driven ABC (TDABC).

Kaplan's work in the operational controls area reported that measurements of quality, process times, and costs were in some companies shared with employees to facilitate and help motivate CI (Hutton & Kaplan, 1993; Kaplan, 1989, 1990). The development of the BSC framework (Kaplan & Norton, 1992, 2007) followed. The BSC approach emphasizes cause-and-effect linkages across four perspectives: learning and growth, processes, customers, and financial outcomes.<sup>6</sup> In this approach, financial performance reflects not only revenues, but also management of costs through productivity improvements and effective capacity utilization.

### *Capacity Management and Process Improvement*

Capacity is a pivotal issue within the context of ABC and TDABC. Kaplan (1994, p. 253) recognizes that a key driver of financial improvement comes from the effective management of capacity, and explicates this special insight through the following equation:

$$\text{Cost of Resources Supplied} = \text{Cost of Resources Used} + \text{Cost of Unused Capacity} \quad (1)$$

Financial accounting systems focus on the left-hand side of this equation, expressed in the form of income statement expenses, while management accounting systems like ABC shift the focus to the cost of resources used. The key insight from the equation is that a firm pays for capacity whether or not it is used. As argued by proponents of Lean Accounting (Maskell et al., 2011), a decrease in the cost of resources used will increase the cost of unused capacity unless this is actively managed downward or used productively (Cooper & Kaplan, 1998). The explicit tracking of the cost of unused capacity leads Cooper and Kaplan (1998, p. 125) to reframe the purposes of ABC from cost allocation to "... a system for identifying, measuring, creating, and managing capacity."

Capacity is a natural focal point for process improvement since Lean's attention to waste elimination (elimination of non-value-added activities) is tantamount to the removal of non-value-adding capacity (e.g., Browning & Heath, 2009; Womack & Jones, 2003). However, ABC is not a system designed to measure capacity in detail. To do that would require a dedicated Capacity Management System. The literature on capacity management notes that there are several distinct uses of capacity (for details, see Klammer, 1996; McNair & Vangermeersch, 1998). Importantly, Used Capacity can be separated into Productive and Non-productive Capacity to indicate that used capacity that is non-productive (i.e., non-value-adding activities such as setups, downtime, scrap, and rework) should be carefully monitored and targeted for process improvement.<sup>7</sup> A useful extension of Kaplan's equation would thus read:

$$\text{Cost of Resources Supplied} = \text{Cost of Productive Capacity Used} + \text{Cost of Non-productive Capacity Used} + \text{Cost of Unused Capacity} \quad (2)$$

A specific challenge with CI is that increased operational efficiency can fail to deliver measurable financial benefits. Successful CI efforts can free up capacity that will add to the cost of Unused Capacity and thus must be put to effective use or eliminated before improvement will be realized within financial reports. Capacity dispositions may seem deceptively simple to implement, but [Maskell et al. \(2011\)](#) allude to significant impediments and argue that the elimination of freed capacity is a strategy pursued by “far too many companies” in ways that “can spell the end of Lean” ([Maskell et al., 2011](#), pp. 77–78). The reasoning is not explained, but intuitively, the success of a program built on the philosophy of employee empowerment (like Lean) will be undermined if employees fear suggested improvements may lead to the elimination of their job. Productive use of freed-up capacity through business growth is put forward as the superior strategy, but one that requires operations to coordinate with “sales and marketing, engineering, finance, procurement and human resources, as well as the CEO” ([Maskell et al., 2011](#), p. 84).

#### *Lean Manufacturing and Lean Accounting*

Johnson’s studies of the TPS (in essence, Lean) and Six Sigma in the decade following the publication of *Relevance Lost* in 1987 emphasize the perspectives of operational staff and argue that the responsibility for identifying problems should reside with employees performing the work, and not with exception reports generated by information systems ([Johnson & Broms, 2000](#)). Firms operating under the TPS philosophy view production as a continuous flow, where “work itself is the information, and all of the information needed to direct operations is in the work” ([Johnson & Broms, 2000](#), p. 31). Through careful workflow design and the empowerment of shop floor workers, firms can remove the need for complex transaction-based information systems and realize significant savings. Johnson specifically criticized management accounting tools like ABC, arguing that it was the right answer to the wrong problem – being overly focused on more accurate costing information instead of attending directly to the underlying business processes ([Johnson, 2006, 2008](#)). In his vision of a TPS-inspired operational control system, employees focus less on achieving specific financial targets and react instead to the direct real-time feedback coming from the production process.

Aside from the writings of Johnson, which were aimed primarily at operational staff, TPS concepts remained relatively absent from the accounting literature until the development of Lean Accounting ([Cunningham & Fiume, 2003](#); [Maskell et al., 2011](#); [McVay, Kennedy, & Fullerton, 2013](#)). This form of managerial accounting emphasizes a value stream orientation, the simplification of transaction processing, an increase in direct costing, and the elimination of standard costing ([Abernethy, Lillis, Brownell, & Carter, 2001](#); [Fullerton, Kennedy, & Widener, 2013](#); [Fullerton & McWatters, 2002](#); [Kennedy & Widener, 2008](#); [Maskell et al., 2011](#)).<sup>8</sup> While the recommendations made in this literature are detailed and compelling, firms may choose to adopt a CI initiative while maintaining a traditional accounting control system.

A primary challenge to the acceptance of Lean Accounting in organizations is the mandate from financial reporting standard setters that manufacturing overhead be allocated to products produced and inventoried (i.e., absorption costing). This issue was a focal point in *Relevance Lost* (Johnson & Kaplan, 1987), and remains a significant source of friction between operational and financial personnel. We note here especially the phenomenon that when production improvements facilitate increased sales while reducing finished goods inventories, the related expensing of prior-period inventory costs results in decreasing operating income despite increasing sales (e.g., Cooper & Maskell, 2008). However, external stakeholders assess corporate management performance using financial accounting reports. This reality is an important factor in the use of financial accounting systems and a key driver of financial target setting within firms.

Kennedy and Widener (2008) describe Lean Control systems as distinct from Lean Accounting practices. Lean Control systems are less focused on accounting and rather emphasize non-financial information (Baines & Langfield-Smith, 2003; Fullerton & McWatters, 2002; Ittner & Larcker, 1995; Kennedy & Widener, 2008; Kristensen & Israelsen, 2014) as well as social and behavioral controls that empower decision-making by employees (Fullerton et al., 2013; Kennedy & Widener, 2008; Kristensen & Israelsen, 2014; Ouchi, 1979; Shah & Ward, 2003). A general theme underlying the arguments for Lean Control systems is a shift away from the diagnostic reporting and financial confines of traditional accounting control. Specifically, Lean Control systems can encompass non-financial performance measures (including their visual representation), peer pressure, training, reward systems, and delegation of decision rights.

#### *Operational–Financial Communication Friction as a Persistent Organizational Issue*

The literature on Lean Accounting and Lean Control systems provides insight into communication problems between operational and financial management, sometimes blaming both sides (e.g., Carnes & Hedin, 2005). Many firms are unable, or unwilling, to abandon accrual accounting due to its primary role in communications with financial stakeholders and its default settings within many accounting information systems. McNair et al. (1990) discuss the tension between operations and financial managers, putting much of the blame on standards and variance analysis in traditional accounting systems. In a later account, Tillema and van der Steen (2015) provide case evidence that suggests barriers to effective communication and shared understanding between operational and financial management remain a persistent, unresolved problem. The authors use language similar to the one used by Johnson and Kaplan (1987) to describe tensions and conflicts within Lean manufacturing firms as the result of two competing views of management control. They argue that Lean and traditional accounting systems could coexist, but their case firms experienced consistent difficulty “when people needed to communicate the benefits of lean production to other parties who used the traditional concept of control” (Tillema & van der Steen, 2015, p. 77).