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Lean Operations and Business Purposes: A Common Grace Perspective

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The concept of lean operations is becoming increasingly popular and beginning to filter into many nonmanufacturing applications. This widespread use and popularity of the term *lean operations* has also given rise to a confusing and jumbled mix of several interrelated concepts, theories, constructs, principles, and practices. The protective theme embedded in a Reformed theological concept of common grace is the lens through which to consider and assess the principles and practices that make up the concept of lean operations. The protective function is seen as the element of common grace that exercises a bridling or tempering effect on the natural outworking of sin. To these ends, this article develops a conceptual model of lean operations and how lean operations affect business purposes, in particular the normative business purpose of providing opportunities for meaningful work.

Introduction

Since lean concepts were first published in the late 1970s,[1] and the term was first introduced about a decade later,[2] lean has become, at least in part, a catchphrase for any new initiative that promises significant improvements over more tedious, traditional approaches. Two recent personal examples highlight the latest trends focused on this concept. The first one involved an e-mail that found its way into my inbox. It was a recruitment announcement from Airbus, one of the leading aircraft manufacturers in the world. The stated purpose of the message was Airbus' desire and need for hiring and training people in "lean principles … to plan and deliver *operational efficiencies* and ensure we stay at the forefront of the aerospace sector."[3] The second example involved an article in a newspaper

that described the expansion efforts of a local healthcare facility and how the hospital administration "has been working with consultants with an expertise in using lean principles to drive *efficiencies* and to design new processes."[4] Although obviously not exhaustive, these illustrative examples suggest that (1) lean concepts are beginning to filter into many nonmanufacturing applications, notably including the healthcare industry, and (2) the reasons for adopting lean principles seem to be increasingly focused on improving efficiencies almost to the complete exclusion of other objectives. Furthermore, this widespread use and popularity of the term has also given rise to a confusing and jumbled mix of several interrelated concepts, theories, constructs, principles, and practices, usually falling under the label of a three- or four-letter acronym such as TPS, TQM, TPM, or DFMA. In light of these recent trends, it is useful to step back and precisely define what is meant by the terms *lean* and *lean operations* both to discuss what it was initially intended to achieve and to assess how well it is currently achieving these objectives. In trying to critique lean operations, the protective theme embedded in the Reformed theological concept of common grace will be the lens through which we consider and assess the principles and practices that make up the concept of lean operations.

Therefore, the objectives of this article are threefold. First, a normative and descriptive discussion of business purposes will be provided to clarify and define the primary purpose(s) of business as it will be used throughout the remainder of this article. A further discussion on meaningful work will follow in order to amplify one of these purposes. This discussion is a necessary first step when utilizing the protective theme of common grace as a critical lens because it is imperative to know precisely what we are trying to protect. Second, the phenomenon loosely known as lean or lean operations will be clearly defined through a thorough search of the literature. A distinction between lean principles and lean practices will be utilized when trying to better understand and critique this concept. Finally, a conceptual model of lean operations will be developed in order to illustrate how it affects business purposes, in particular the normative business purpose of providing opportunities for meaningful work. This model will then allow for a more nuanced understanding of these effects when seen through the lens of common grace.

This article will begin by briefly explaining the general concept of common grace, placing particular emphasis on the protective nature of this grace. I will discuss and then clearly define the normative purposes of business and the concept known as lean operations. Once these terms have been clearly defined, a conceptual mediating model that illustrates the mechanisms through which lean operations affect business purposes will be presented. Finally, returning to con-

sider the protective nature of common grace, the conceptual model will provide the foundation for a critique of lean operations in light of this protective theme.

Common Grace

Perhaps the person most closely associated with the concept of common grace is Abraham Kuyper—the Dutch politician, journalist, statesman, and theologian. He defines it as "that act of God by which negatively He curbs the operations of Satan, death, and sin, and by which positively He creates an intermediate state for this cosmos, as well as for our human race, which is and continues to be deeply and radically sinful, but in which sin cannot work out its end."[5] A slightly different definition states that it is primarily a restraining power of God, working either with or without man as an instrument by which the original creation powers of the universe are given an opportunity for a certain development to the glory of God.[6]

Both of these definitions highlight the fact that common grace assists not only in developing the positive in all of us but also in limiting the negative in all of us. It also suggests that there are different functions, or themes, that make up the broader concept of common grace. These themes can be thought of as constructive, protective, and imaginative. The protective theme is the most pertinent for the purposes of this study—the element of common grace that exercises a "bridling," "tempering" effect that "restrains" or "blocks" the natural outworking of sin. It is this very theme that will be used as the lens through which to evaluate and assess lean operations and its impact on meaningful work. To understand this tempering effect, it is essential both to articulate a clear definition of meaningful work and to engage in a discussion on the provision of meaningful work as a normative purpose of business. It is also imperative to provide a clear definition and fuller understanding for the all-too-foggy concept known as lean operations.

Business Purposes

Beginning in the early 1970s, the predominant answer to the question of the primary purpose of business gradually changed from a more generic objective of providing for social needs to making a social contribution to a more focused approach of profit maximization.[9] This approach has since become more tightly defined as the maximization of shareholder wealth.[10] Although not as widely accepted as this shareholder wealth model, a broader-based concept known as the stakeholder model was introduced in the mid-1980s.[11] A fundamental thesis

of the stakeholder-based argument is that organizations should be managed in the interest of all their constituents, not just in the interest of shareholders.[12]

Uneasiness over the inadequacies of both of these models, in terms of the negative unintended consequences of the shareholder model[13] and the cumbersome practicality of the stakeholder model,[14] have led to rethinking and revisiting the primary purposes of the business organization. Perhaps the most vocal critic, at least of management's fixation on profits, was Peter Drucker. When discussing the requirements of management and of learning about the behavior of individuals, he does not mince words when he states, "The profit motive and its offspring maximization of profits are … irrelevant to the function of a business, the purpose of a business, and the job of managing a business."[15] In a similar vein, Khurana argues that management education needs to return to the ideals of professionalism and professional leadership that guided it in the past.[16] The first step of this reformation process needs to be a close examination of the multitude of purposes for business, with a special emphasis on identifying the *normative* purpose(s).

According to some Christian scholars, the proper starting point when trying to determine the appropriate purposes for business is to be found in Scripture.[17] The legitimization of business is often justified in the cultural mandate found in Genesis 1:26–28. Business is seen as one of several institutions that are uniquely established to carry out the tasks listed in the mandate. Within this context, the institution of business appears to be best suited to "work the fields" and "give order to creation."[18]

Two models of business have recently emerged that utilize this perspective as the basis and the starting point—the Common Good Model[19] and the Genesis-Stewardship Model.[20] In order to address the question of proper business purposes, Alford and Naughton utilize three levels of analysis, which they call the "common good model of the firm." In the first level, they distinguish and rank two types of goods pursued through business activity—*foundational* goods such as profit, capital, and efficient work methods; and *excellent* goods such as human development. Foundational goods are defined as those that directly support the economic viability of the firm. The authors argue that these goods are necessities but that they are not sufficient. They contend that it is the pursuit of excellent goods that "inform and render meaningful all of our work."[21]

The analysis used by Alford and Naughton and the resulting distinctions that are made resonate with the framework proposed by Moore.[22] Moore incorporates MacIntyre's conceptual framework in which "virtues are exercised particularly inside practices and give rise to *internal* goods, while to survive, practices need

to be housed within institutions which are concerned with *external* goods."[23] Van Duzer makes a similar distinction, but he draws a line between *instrumental* and *intrinsic* purposes. In his Genesis-Stewardship model, he characterizes profitability as an instrumental purpose, one that is required in order to accomplish higher, intrinsic purposes. Both models incorporate the notion and necessity of profit and profitability, but profit and increasing stockholder wealth play a subservient role to a greater good. In regard to profits, it should also be noted that both models suggest that businesses need to be profit-seeking institutions, as opposed to profit-maximizing institutions.

Max DePree and William Pollard, both business leaders of Fortune 500 companies, have also suggested that business purposes require a more nuanced understanding than simply the maximization of shareholder wealth.[24] Although they do not develop a robust business model, they do suggest that some purposes serve as *means* while others serve as *ends*. DePree uses breathing to illustrate his point. Breathing, he states, is like profitability. It is a means to an end; it is not the end. In other words, we breathe in order to live, but we do not live in order to breathe.

Business practitioners and Christian academics are not the only ones who have called for a rethinking of business purposes, nor is this a recent phenomenon. In his seminal 1954 book on management, Drucker asserts that the role of managers, and thus the role of the business, is to make the strengths of its members productive and to promote the growth and development of the individuals while they work.[25] Later in his career, Drucker made a powerful argument that the primary purpose for any and all business organizations was to create a customer.[26] W. Edwards Deming, responsible for laying the foundation for the total quality management (TQM) movement, was adamant that the primary purposes were to satisfy customers and provide jobs.[27] All improvements and gains made by the company through their TQM efforts were ultimately done to achieve these ends. Davis, Schoorman, and Donaldson have also suggested a transformation in our thinking about business purposes and have introduced a stewardship theory of management by incorporating sociological and psychological approaches to governance.[28] This theory makes assumptions about subordinates that are markedly different from the agency-theory models that demand and incentivize managers to act like stockholders. Finally, in a very volatile and unprofitable industry, Southwest Airlines has been one of the most successful and profitable companies by stressing employee satisfaction as their top priority.[29]

Two distinct, yet related conclusions can be drawn from the previous discussion. First, a proper and clear understanding of the purposes of a business

organization must involve a classification of these purposes into some sort of a categorization scheme. The categories of instrumental/intrinsic, foundational/excellent, and means/ends have been suggested in the literature. This classification allows one to better see the priority, the cause/effect, and the relationships among the various purposes. Second, when it comes to defining the normative purposes of business organizations, profitability and the maximization of shareholder wealth is not a foregone conclusion, nor is it necessarily the proper one. It certainly is not the only viable one.

Therefore, for the purposes of this article, and in keeping with the above discussion, business purposes will be classified using the Genesis-Stewardship Model proposed by Van Duzer that utilizes the distinctions of instrumental and intrinsic purposes. The primary first-order intrinsic purposes suggested by Van Duzer seem to best incorporate the multitude of perspectives discussed in the literature. As stated in his model, the primary intrinsic business purposes will be defined as the following: (1) to provide the community with goods and services that enable it to flourish and (2) to provide opportunities for meaningful work that will allow employees to express their God-given creativity. Although not part of the primary intrinsic purposes, profitability remains an important purpose of the business, yet it is relegated to an instrumental role.

Meaningful Work

Because it is widely acknowledged that lean operations have had a very positive effect on the provision of goods and services, this article will focus on how well lean operations have helped to fulfill the second of Van Duzer's primary intrinsic business purposes—providing opportunities for meaningful work. To facilitate this, the concept of meaningful work must be clearly defined and understood from both the sources of meaningful work and the underlying mechanisms that provide meaningful work. Rosso et al. suggest that the *sources* of meaningful work include self (values, motivations, beliefs), others (coworkers, leaders, groups and communities, family), the work context (design, organizational mission, financial circumstances, nonwork domains, national culture), and one's spiritual life (spirituality, sacred callings).[30] The authors also suggest *how* work becomes meaningful—the *mechanisms*. These include authenticity, self-efficacy, self-esteem, purpose, belongingness, and transcendence. Given this understanding, the authors propose a theoretical framework that incorporates *both* of these notions. Their framework was generated through an extensive review of the literature on the meaning of work and is loosely named the Four Pathways to Meaningful Work.[31] Their framework is presented in table 1.

Table 1

Four Pathways to Meaningful Work

Direction / Motive	SELF	OTHERS
AGENCY	Individuation	Contribution
COMMUNION	Self-Connection	Unification

The model is helpful in that it distinguishes between the motives behind the meaningfulness of actions (agency and communion) and the people to whom those motives are directed (self and others). The four pathways are defined as follows:

1. Individuation: The meaningfulness of actions that define and distinguish the self as valuable and worthy.
2. Contribution: The meaningfulness of actions perceived as significant or done in service of something greater than the self.
3. Self-connection: The meaningfulness of actions that bring individuals closer into alignment with the way they see themselves.
4. Unification: The meaningfulness of actions that bring individuals into harmony with other beings or principles.

This model for meaningful work will be used to critique how well lean operations foster these four pathways.

Understanding Lean Operations

Because the concept of lean operations has its origins in operations management (OM), one needs a basic understanding of OM to fully understand lean operations. One definition of OM is the creation of customer value through the effective and efficient management of processes.[32] Another way to describe the function of OM, and more conducive to the purposes of this article, is in terms of the classic microeconomic concepts of supply and demand. Within this framework, the primary objective of OM is to try to match the production and delivery of products and services (supply) to the given demand for these products and services. Strategies used to accomplish this objective have focused on the necessity to control, reduce, manage, and understand variation. Such strategies have given rise to a jumbled mix of several interrelated concepts, theories, constructs, principles, and practices. Almost all of these concepts mentioned

above have been grouped under the common umbrella name of lean operations. Unfortunately, this "name" has led to considerable confusion both in terms of incorrect usage and in an overlap of several popular lean concepts and programs. Regardless, this insight—the recognition of variability in supply and demand as a primary driver of business performance—has proven to be quite useful in the attempt to minimize the misalignment between supply and demand. The most recent advancements in operations management theory and practice have taken the idea that was hatched inside the production facility and implemented it across the supply chain and, as highlighted in the opening examples, within the service industries.

Within OM there are several ways in which one can try to understand and define lean operations. First, it can be thought of as a group of complementary subsystems.[33] In this view, lean operations captures the essence of the Toyota Production System (TPS),[34] Total Quality Management (TQM), Total Preventative Maintenance (TPM), Kaizen (continuous improvement), Design for Manufacture and Assembly (DFMA), and supplier management programs. A second view is to think of lean operations as a group of underlying constructs.[35] The underlying constructs break down as (1) supplier related, (2) internally related, and (3) customer related. One can further delineate these constructs into operational concepts. For example, the operational concepts that are internally related would include a pull mentality (one in which product is "pulled" into the market based on customer orders as opposed to "pushed" into the market based on a sales forecast), a focus on flow, short setup times, controlled processes, productive maintenance, and involved employees. A matrix that combines these two schemes is found in table 2. As displayed, although many of the subsystems consider all three constructs, none of the subsystems *fully* captures the essence of the three underlying constructs. Even if one subsystem provides a heavy emphasis for one of the constructs there are other subsystems that provide additional insights into that construct.

Table 2
Matrix of the Subsystems and Underlying Concepts for Lean Operations

Underlying Concepts / Subsystems	Supplier Related	Internally Related	Customer Related
TPS/JIT	✓✓	✓✓	✓
TQM	✓	✓✓	✓✓
TPM		✓✓	
Kaizen		✓✓	
DFMA		✓✓	✓
Supplier Mgmt. Programs	✓✓		
✓✓ = heavy emphasis ✓ = moderate emphasis			

Finally, there are certain axiomatic mathematical laws that have been associated with lean operations that are not captured within table 2 or in the above discussion. The most common of these laws states that all variability within a system must be buffered by some combination of capacity, inventory, and time.[36] Thus, by combining the subsystems, constructs, and laws, one can arrive at a very comprehensive, yet concise, definition of lean operations.[37] Given this approach, the definition used in the remainder of the article, and the one that is suggested for future work in this field, is as follows: *lean operations* is an integrated management system that is intended to maximize the capacity utilization (of human and capital resources) and minimize the inventory and time buffers of a given operation through minimizing system variability (relative to supplier, internal, and customer processes and requirements).

Within this definition, lean operations can be understood at two levels—the *principles* that initially laid the foundation for lean thinking, and the *practices* that actually implement one or more of these principles in the workplace. TPS and TQM are two philosophies that provide the two key *principles* that undergird lean operations. To fully understand lean operations, it is imperative to understand the history and evolution of these two philosophies.

From its origins, TPS was based on two basic principles.[38] These principles are (1) the removal of waste and (2) making full use of the worker's capabilities; that is, treating the workers as human beings and with consideration. At the time, with the Japanese economy still struggling after the devastation of World War II, the original developers of TPS felt that a business system and strategy must take advantage of two unique features of the Japanese culture—a lack of natural resources and the Japanese concept of work. Given these realities, one can see the care and attention to which TPS, and by extension, lean operations, tries to be frugal stewards of its resources (both human and capital) and to utilize the untapped potential of its highly educated workforce.

TQM also provides some of the key foundational elements found in lean operations. Since these two movements—TPS and TQM—trace their origins to the same culture at a similar point in history, it is not surprising that the foundational elements of TQM have much in common with those associated with TPS. As with TPS, TQM is based on two fundamental principles.[39] These principles are (1) the reduction of variability and (2) the removal of barriers and the nurturing of self-development and learning. Both philosophies provide a cause/effect path to achieve their higher order objectives. TPS is primarily a cost cutting strategy achieved *through* waste removal and full employee utilization while TQM stresses the dual objectives of continuous improvement and employee fulfillment *through* the reduction of variability and the removal of barriers. According to the TQM literature, these two objectives then serve two higher-order objectives—customer satisfaction and the provision of jobs.[40] Both philosophies provide a clear focus and direction on what particular part of the business needs to be controlled and managed, and the outcomes that will result from positive efforts in these areas. Thus two separate and distinct common themes arise from these two philosophies: (1) the reduction of variability and removal of waste for cost cutting purposes and (2) the full utilization of workers and employee fulfillment for human development purposes. The term *lean principles*, as distinct from and a component of lean operations, will be used when referring to these two themes.

To gain a fuller understanding of lean operations, it is also appropriate to look at some of the most popular lean *practices* that are used to implement these lean principles. Table 3 provides a list of the most common lean practices and the lean objectives that they achieve.[41] The objectives noted in table 3 are gleaned from the definition of lean operations that was proposed earlier. The above discussion highlights the role that lean principles have in the choice, design, implementation, and objective(s) of lean practices. The supposition that lean principles drive lean practices and the implications of this belief will be a focus in a later section of the article.

Table 3
Lean Practices and the Associated Objectives

Practice \ Objective	Inventory/Time Reduction	Capacity Utilization	Variability Reduction	Involved Employees
Flow-control mechanisms (Kanban)	✓✓		✓	
Setup time reduction (SMED)	✓✓	✓	✓	
Flow-based layout (assembly line or cells)	✓✓		✓	
Line balancing (signaling)		✓✓	✓	
Increase line speed (no additional resources)		✓✓		X
Standardization of processes	✓✓		✓✓	X
Documentation of processes			✓✓	✓
Control of processes (SPC)			✓✓	
"Fool proof" mechanisms (Jidoka, Poka-Yoke)		✓	✓✓	
Visual displays of quality-related data			✓✓	✓
Supplier management tools (↓ suppliers, info sharing)	✓		✓✓	
Production leveling	✓		✓✓	
Demand-smoothing	✓		✓✓	
Short cycle times	✓		✓✓	
Cross-training	✓	✓	✓✓	✓
Manufacturability of parts			✓✓	
Clean and tidy environment			✓✓	
Elimination of waste movements by workers			✓✓	✓
Safe work environment		✓	✓	✓✓

✓✓ = heavy emphasis
✓ = moderate emphasis
X = direct negative impact

Linking Lean Operations and Meaningful Work

Now that meaningful work and lean operations have been described, let us consider how lean operations affect meaningful work. The fact that lean operations affects and often changes how work is performed is not a controversial or significant conclusion. How work is affected by the implementation of lean, primarily through job design and the meaningfulness of this work is a bit less studied and certainly less understood. Given this lack of clarity, the Job Characteristics Model (JCM) is a useful starting point to understand the relationship between these two concepts.[42] The JCM is one of the most influential attempts to design jobs with increased motivational properties. It proposes a link among five core job characteristics and three psychological states. In turn, the three psychological states influence four particular work outcomes. The JCM is presented in figure 1.

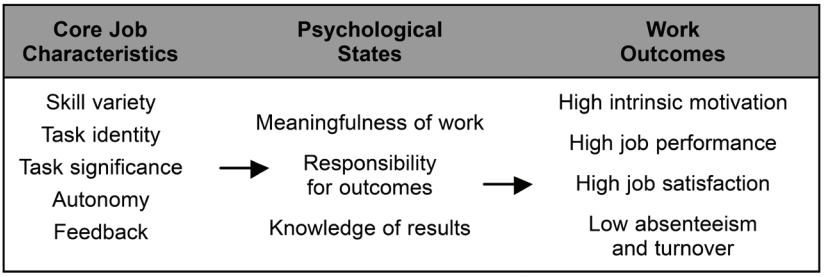

Figure 1. The Job Characteristics Model

It must be noted that each of the five job characteristics are aspects that are and that can be designed into the job. Of significance for the purposes of this article is the direct link between job characteristics that are designed into the job and the meaningfulness of work. In other words, the design of the job (job design) can and does directly influence the meaningfulness that people experience through their work.

Since its introduction, many have modified the JCM and a few have done so by incorporating lean operations concepts. Parker proposes a model that introduces a link between lean practices and work characteristics.[43] Her model proposes that lean practices have a direct influence on characteristics of work, and, by extension, lean practices influence how jobs are designed. Parker's main contribution is to propose and provide initial findings on the impact of practices, in this case lean practices, on the front end of the JCM (job characteristics). Her findings suggest that lean practices often have negative consequences through poorer quality work designs. It is important to note that these work designs, like the two examples

cited in the beginning of this article, were primarily efficiency driven initiatives. Hasle then provides two contributions to Parker's model.[44] First, within lean operations, he makes the distinction between lean concepts (the strategic level of how to understand value) and lean practices (the operational level, or tools, on how to eliminate waste). Second, he extends Parker's model by differentiating lean concepts on the front end into three interrelated concepts—lean context, lean thinking, and lean implementation strategy. Context primarily refers to the way in which lean is interpreted and the aspects that are emphasized. Lean context will prove to be an important distinction referenced later in the article. Implementation primarily refers to the approach (bottom-up or top-down) taken by management in regard to employee involvement. Finally, Hasle uses the term *lean thinking* to define the two lean principles that were discussed and defined earlier in the article—waste and variability reduction and employee involvement and fulfillment. Hasle proposes that these three lean concepts influence the lean practices that are ultimately implemented.

Although not directly related to lean operations, Berg et al. also modify the JCM in ways that we should consider.[45] They propose that work characteristics do not simply result from the mere accomplishment of work tasks, but they are a result of a proactive combination of job design and job crafting. Job design is defined as a manager-initiated structure that shapes employees' experience of meaningfulness through task identity, variety, and significance. Job crafting is defined as an employee-initiated process that shapes one's own experience of meaningfulness through proactive changes to the tasks, relationships, and perceptions associated with the job. This distinction helps us understand the specific influence and relationship of lean operations on meaningful work because both the job design and the amount of job crafting vary depending on the specific lean practice that is implemented.

A new conceptual mediating model that incorporates the above discussion is proposed to assist in achieving the research objectives. The model is presented in figure 2.

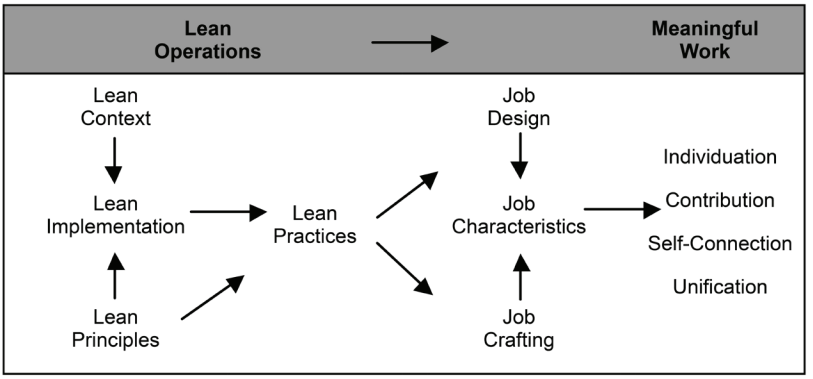

Figure 2. A Conceptual Model of How Lean Operations Affect Meaningful Work

Eight observations are of particular interest concerning this model:

1. The model divides lean operations into two distinct categories—lean concepts (of which lean principles are a major component) and lean practices. As defined earlier, lean principles refer to the two foundational bedrocks of lean operations known as reducing variability and full utilization of worker's capabilities. Lean practices refer to the way in which these principles get played out in the workplace.
2. The model proposes that lean principles directly influence both lean implementation and lean practices.
3. The model acknowledges that lean practices demand that jobs are designed in certain ways in order to meet lean (business) objectives.
4. The model acknowledges that by their very nature, lean practices allow for a certain amount of job crafting within the job.
5. Job characteristics are a combination of both job design and job crafting.
6. Business purposes are defined as providing goods and services *and* providing opportunities for meaningful work.[46]

7. The mechanisms of meaningful work are defined as those that come through individuation, contribution, self-connection, or unification.
8. Job characteristics mediate the relationship between lean operations (principles and practices) and meaningful work.

This model does not suggest that the only way lean operations affect meaningful work is through its impact on job design and job crafting. Yet this is one way in which lean operations affect meaningful work, and this model will prove to be helpful in which to focus this particular critique of lean operations.

Common Grace and Lean Operations

Given this mediating model, an emphasis of the first principle of lean operations—the removal of waste and reduction of variability—requires the design of certain job characteristics. Aligning the design of these jobs is for purposes of waste removal,[47] and variability reduction with the four pathways to meaningful work would be a chance happening at best. Although one could make a case that the first principle has a protective function with respect to the stewardship of investor capital, it does not appear to have any protective force in providing opportunities for meaningful work. Its objective is much more focused on accomplishing one of the other normative business purposes—providing goods and services that allow the community to thrive.

Emphasis on the second principle of lean operations—the full use of worker capabilities and the nurturing of self-development and learning—also requires the design of certain job characteristics. Designing jobs that allow for and contribute to the four pathways to meaningful work is highly desirable, and it is done for both intrinsic and instrumental purposes. Making full use of worker capabilities appears to be a principle that was first utilized in Japan because it made competitive sense; it was needed for the country to survive economically. For example, fully utilizing a worker's potential meant that jobs were designed to reduce worker idle time (through work pace and standardization) as well as to take full advantage of the worker's mental capacities (through worker documentation of processes and cross training). While, on the one hand, lean operations appear to be a strategic, contextual *means* for the competitive *ends* of cost-cutting and productivity enhancement, on the other hand, during the initial implementation of TPS, Toyota was convinced that company goals could be best reached *through* the participation of all employees. We can see that at the very

beginning those lean principles and the practices that followed were born out of a people-first mentality. This historical observation has ramifications in terms of understanding the future direction and purposes of lean operations. Even though providing opportunities for meaningful work is not always an intrinsic purpose of the second principle (the full use of worker capabilities and the nurturing of self-development and learning), much of the job design that is done to achieve full use of worker capabilities moves down the pathways for meaningful work, especially individuation and contribution. This is most clearly seen in attempts to incorporate worker improvement ideas, providing a safe and clean working environment, and providing clear definition of and feedback on high priority operational measures. In addition, many times these jobs are also designed with job crafting flexibility to allow for self-connection.

It is difficult to fully comprehend and discern motives behind actions, especially in the group dynamics found in larger organizations. Therefore, it is challenging to ascertain the motives behind the adoption of lean operations. Thus, while the use of lean operations can be for purely instrumental purposes, it could also be used as a strategic contextual *means* for an altruistic *end* in regard to human development. Whatever the case, the second principle of full human utilization certainly illustrates the protective nature of common grace. Even if it was only used to achieve "foundational" purposes as defined by Alford and Naughton, such as profit and efficiencies, this principle provides a certain bridling of potential exploitation and a certain protection of dignity and meaning. Thoughtful job design is needed to satisfy lean objectives. Further, on a broader systems level, removing barriers such as extrinsically motivated performance appraisal systems or a fixation on numerical goals (ideas central to the tenets of TQM) can also foster movement down the pathways of contribution, self-connection, and unification. Removals of such barriers encourage more teamwork and a collaborative work environment while helping to shift the focus to a more process-oriented, long-term perspective. It could be argued that one of the objectives (provision of jobs) of the principles of TQM falls in line with the primary intrinsic purpose of business suggested in our initial sections. Once again, we find the notion that the foundational principles on which lean originated, in this case principles based in TQM, dovetails nicely with the protective dimension of common grace. At its roots, lean operations provided not only a tempering effect on the potential for exploitation but also a proactive desire to provide meaningful work.

Turning our attention to lean practices, one is able to glean several observations when looking back at table 3. First, the major emphasis of lean practices is clearly focused on the reduction of variability. Thus the major objective for the design of jobs and tasks will be focused on the reduction of variability throughout the

process. As with the principle that focuses on efficiencies and production, these practices as a whole do not appear to exhibit the protective function of common grace when considering the provision of opportunities for meaningful work.

Second, only one practice—creating a safe work environment—can be viewed as having its primary emphasis on increasing the involvement of workers. Even this practice has some troubling overtones. One could easily argue, based on the rhetoric behind this practice, that the primary purpose for increasing worker involvement through this practice is simply to reduce the number of lost workdays. Ultimately, this practice is implemented for the purpose of higher employee utilization but with a positive side effect of more involved employees. Yet through the lens of common grace, this practice could be seen as the protection of people from the effects of sin without requiring holy or even good intentions on the part of the actor.

Finally, some lean practices actually hinder employee involvement and thus lower the meaningfulness of actions taken on the job. Standardization of processes, for example, hearkens back to the early days of Taylorism. Although not exactly the same as Taylor's "one best way" of achieving a task, lean operations that emphasize "the same way" of achieving a task can result in the same loss of individuation and self-connection primarily through its restriction on job crafting. In addition, increasing the line speed without providing additional resources or the necessary training is in clear violation of the lean principles as put forth by TPS and TQM advocates.

The apparent disconnect between the foundational principles of lean and the current lean practices highlights the significance and importance of lean context. Within the model, lean context plays a critical role in determining what lean principles and objectives will be prioritized and, ultimately, what practices will be implemented. The two examples at the beginning of this article reveal the possible disconnect between the original principles and focus of lean and the current obsession with efficiencies and productivity. Many factors may account for this drift. As previously pointed out, the onset and predominant use of the shareholder wealth maximization model has occurred subsequent to the origins of lean. Rapid advancements in technology have altered customer expectations and have allowed for labor saving methodologies. Most recently, the economic crisis that began in 2008 instilled a certain "cost cutting" mentality that still resides within the mindset of most business managers. Regardless of the causes, it is clear that lean operations (the context as used by Hasle) have changed sufficiently, over time, so that much of the current implementation of lean is heavily influenced by the first principle almost to the complete exclusion of the second. As Hasle points out, simply calling something lean does not necessarily make it lean.[48]

Conclusion

Lean operations affect business purposes. Therefore, they should prompt a deeper discussion on the nature and mechanisms of this influence as well as its goodness. This article specifically describes the somewhat confusing term *lean operations* and encourages a normative definition for business purposes. Based on these definitions, a mediating model was developed to suggest that one of the normative purposes of business—providing opportunities for meaningful work—was affected by lean operations through the mediating influence of job design and job crafting. The concept of common grace was then used as the lens through which to judge the effectiveness (goodness) of lean operations in terms of providing meaningful work opportunities. The above process leads to certain conclusions and a few suggestions.

It is noteworthy that the protective function of common grace, as it relates to providing opportunities for meaningful work to employees and by extension opportunities for humans to develop their own God-given gifts and abilities, is a significant part of the foundational principles on which lean operations were developed. Even at this level, the "protection" appears to be tenuous at best. As long as providing opportunities for meaningful work remains an *instrumental* purpose of business, proactive practices to achieve this purpose will be purely serendipitous and coincidental, though perhaps providential. Evidence of this can be seen in the general shift of lean context as it has gradually moved away from one of the basic principles of lean operations—making full use of worker capabilities and employee fulfillment—in order to serve the other one—reduction of waste and variability. Currently, the primary reason for the implementation of lean seems to center on productivity gains and cost reductions that will result from these practices. Once again, practices that promote employee fulfillment and meaningful work (as understood in the four pathways model) are only used when they are seen as a means that can be used to achieve these efficiencies. An indication of this drift from the original intentions of lean operations can be seen in the often overlooked long working hours and over-identification with work within the Japanese workforce.[49]

It should not come as a surprise that a strategy born in the discipline of operations management should stress the efficiencies, cost cutting, and production objectives of lean operations. Additionally, this should not be surprising given how lean operations have come to be loosely defined and understood in the most recent popular press. The current examples described at the beginning of the article use a term—*efficiencies*—that is not even found in the original principles of lean operations or in the comprehensive definition developed in

this article. What *should* be surprising is the protective nature that was built into lean operations from the beginning. Even if taken at its instrumental level, lean principles supported and encouraged meaningful work through the full utilization of employee's talents and abilities. Unfortunately, as previously mentioned, this protective "power" seems to be waning as we advance in time. This raises the question of whether common grace is dependent on our extension of such grace or if God's provision of common grace is going to continue no matter how much we attempt to thwart it. An argument advanced in this article is that the centrality and importance of *both* principles to lean operations is in itself God's common grace. If true, then God's protective purposes will not be undermined even if they may appear to be in present time. Dorothy Sayers' observation that the push for efficiencies in the industrialization era removed worker creativity in the workplace is still valid today.[50] The rejection of "pure" Taylorism on both humane and performance grounds *may*[51] be the fate of lean operations if it does not include honoring human potential. Therefore, both scholars and practitioners must emphasize both principles of lean operations on an instrumental basis (i.e., honor them both or else lean operations will not work as effectively over the long term) and on a normative basis (i.e., honor them because it is both right and good).

Finally, this question of lean principles highlights the significance of how businesses define their primary intrinsic purpose(s). Purposes not only drive principles, but, more dramatically, they drive practices. As long as the shareholder model reigns supreme, lean operations will be primarily utilized as an effective strategy for cost reductions leading to profit increase and thus, wealth maximization of shareholders. Yet, other definitions of business purposes are possible and, as argued here, preferable.

Even so, the current context leads to an interesting consideration. If one believes that providing opportunities for meaningful work, as described in the Pathways model, is one of the primary intrinsic purposes of business, then perhaps a stronger counterbalance within or alongside lean operations is necessary to insure the proper focus and accomplishment of this objective. At the present time, it does not appear that the original exhortations in the lean principles of fully utilizing the worker's capabilities or the involvement of employees has the same positive influence to provide the protective function of common grace that it had in its beginnings. Coupled with the previous observation that God's purposes worked out through his common grace will not be toppled, it is still the strong opinion of this author that an additional counterbalance is warranted and is indeed readily available. This supplemental "protection" must *begin* with a serious discussion of primary intrinsic purposes. In this manner, the protective nature of the second primary purpose as proposed by Van Duzer (providing

opportunities for meaningful work) coupled with the protective nature of the second foundational principle of lean operations (the full utilization of workers and employee fulfillment) would provide a fertile soil in which to promote communal flourishing and shalom.

The main thesis of this article is that God's common grace is present within lean operations as evidenced by the two fundamental principles that undergird this ideology. It has been further argued that the protective nature of this common grace will not be thwarted in spite of the current trend toward emphasizing the objectives of the first principle—primarily lower costs—at the expense of the second principle—primarily meaningful work. For both strategic reasons (for the accomplishment of business purposes) and moral reasons (for the accomplishment of God's purposes), let us return to the roots of lean operations in our focus on both foundational principles and let these principles guide us in the implementation of lean practices.

Notes

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31. This model seems to capture many of the components that Christians use when discussing the topic of calling.
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46. For the purposes of this study, the critique of lean operations will only focus on the business objective of providing opportunities for meaningful work.

47. Initially, seven wastes were identified—transport, inventory, motion, waiting, overproduction, overprocessing, and defects. Interestingly, an eighth waste was added that encompassed the underutilization of capabilities and delegating tasks without training. However, this "waste" is somewhat redundant as it is essentially captured in the second principle of TPS.

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51. The auxiliary verb *will* could be inserted here depending on one's theology and on one's conviction that the original two principles of lean operations are indeed part of God's common grace.