Green lean and the need for Six Sigma

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Abstract
Purpose
The purpose of this paper is to critically review the green lean approach and highlight its limitations; examine the compatibility of the green, lean and Six Sigma concepts; and propose Six Sigma, and specially its problem-solving methodology DMAIC, as an approach to help enhancing the effectiveness of green lean initiatives. Historically, profitability and efficiency, and more recently customer satisfaction, quality and responsiveness objectives have been the prevailing interest for organisations. However, the move towards greener operations and products has forced companies to seek alternatives to combine these with green objectives and initiatives. Green lean is the result of this combination. Thus, the paper conceptually proposes Green Lean Six Sigma.

Design/methodology/approach
To do this, a systematic literature review (SLR) of the subjects under investigation was conducted.

Findings
The SLR indicated that the green lean integration may have inherited the same limitations as the individual green and lean approaches, but these may be overcome through the integration of Six Sigma. It also identified the similarities of some of the main attributes of green, lean and Six Sigma, which suggest their compatibility to be unified as an integrated approach.

Practical implications
The paper allows scholars to develop a deeper and richer knowledge on the simultaneous deployment of green and operational improvement initiatives and help practitioners in formulating more effective strategies for their deployment.

Originality/value
The paper is one of the very first researches that investigate the potential benefits of integrating green lean and Six Sigma.

Keywords
Six Sigma, DMAIC, Lean, Green

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This Green Belt Lean Six Sigma course will help you to improve productivity and quality and provide you with the skills necessary to work on projects to transform a business. You do not need any knowledge or experience of Lean Six Sigma to sign up for the Green Belt course. Lean Six Sigma Green Belt training will provide you with the skills necessary to work on projects that can transform a business. After this Lean Six Sigma Green Belt Course you will: 1. Gain a practical understanding of the history and reasons for Lean Six Sigma 2. Lean Six Sigma is a method that relies on a collaborative team effort to improve performance by systematically removing waste and reducing variation. It combines lean manufacturing/lean enterprise and Six Sigma to eliminate the eight kinds of waste (muda): Defects, Over-Production, Waiting, Non-Utilized Talent, Transportation, Inventory, Motion, and Extra-Processing. The Six Sigma professionals exist at all levels in the organization, but play different roles at each level. We often hear six sigma professionals entitled to specific color belts. And the focus of Six Sigma is to “improve processes and increase customer satisfaction”. Any process is bound to have some inherent variation, naturally. When this variation is out of permissible limits, the process generates defects.