

Meta-informações das revisões bibliográficas (2018)

Várias dessas informações não podem ser extraídas do artigo e devem ser obtidas via internet.

O artigo de revisão que você irá analisar nem sempre contém informações para todas as meta-informações, além das que você pode encontrar na web. Se ele não contiver, digite NADA no tópico correspondente.

As informações podem ser inseridas em inglês, como cópia do original (citar a página)

Salvar este artigo antes de inserir o conteúdo, com o título: SEP5843 2018 - análise revisão <nome do aluno> <ano, autor principal>

1. Referência completa do artigo

BAINES, T. S.; Lightfoot, H. W.; Evans, S.; Neely, A.; Greenough, R.; Peppard, J.; Roy, R.; Shehab, E.; Braganza, A.; Tiwari, A.; Alcock, J. R.; Angus, J. P.; Bastl, M.; Cousens, A.; Irving, P.; Johnson, M.; Kingston, J.; Lockett, H.; Martinez, V.; Michele, P.; Tranfield, D.; Walton, I. M.; Wilson H. State-of-the-art in product-service systems. **Proceedings Of The Institution Of Mechanical Engineers, Part B: Journal of Engineering Manufacture**, [s.l.], v. 221, n. 10, p.1543-1552, out. 2007. SAGE Publications.

2. Autores (um registro por autor)

Tim Baines

2.1. Tipo: professor

2.2. Idade: +/- 60

2.3. Anos pesquisando no assunto: mais de 27

2.4. Instituição: Aston University - Birmingham, Inglaterra

2.5. Índice-h: 24

2.6. Colegas da mesma instituição: Ali Ziaee Bigdeli, Andreas Schroeder, Daniel Andrews, Angela C Marqui, Gillian Holmes, Panos Petridis, Chris Owen, Andrew Harrison, Des Evans, Jim Euchner, Patricia Garcia, Parikshit Naik, Katja Dmitrijeva, Torsten Dehn (<https://www.advancedservicesgroup.co.uk>)

2.7. Quantidade de artigos já publicados: 73

2.8. Outros artigos significativos (mais citados) sobre outros temas:

Scopus:

State-of-the-art in lean design engineering: A literature review on white collar lean (86)

Developing and evaluating a methodology for business process improvement (75)

State-of-the-art in integrated vehicle health management (53)

Improving supply chain performance through improved visibility (60)

Humans: The missing link in manufacturing simulation? (63)

Developing and evaluating a methodology for business process improvement (75)

2.9. Outros artigos significativos (mais citados) neste tema

State-of-the-art in product-service systems (817)

The servitization of manufacturing: A review of literature and reflection on future challenges (436)

Towards an operations strategy for product-centric servitization (176)

The servitization of manufacturing: A systematic literature review of interdependent trends

(77)

Servitization of the manufacturing firm: Exploring the operations practices and technologies that deliver advanced services (70)

2.10. Co-autores recorrentes

Scopus:

Lightfoot, Howard W. (17)

Kay, John (9)

Ziaee Bigdeli, Ali (8)

Greenough, Richard M. (6)

Harrison, David K. (6)

Bustinza, Oscar F. (6)

Smart, Palie K. (5)

Ladbrook, John (5)

Benedettini, Ornella (5)

Ball, P. D. (4)

Howard W Lightfoot

2.11. Tipo: Research Fellow

2.12. Idade: +/- 58

2.13. Anos pesquisando no assunto: em torno de 12 anos (baseado na descrição dele do linkedin de pesquisas na área)

2.14. Instituição: Aston University

2.15. Índice-h: 15 (Scopus)

2.16. Colegas da mesma instituição: Tim Baines, Ali Ziaee Bigdeli, Andreas Schroeder, Daniel Andrews, Angela C Marqui, Gillian Holmes, Panos Petridis, Chris Owen, Andrew Harrison, Des Evans, Jim Euchner, Patricia Garcia, Parikshit Naik, Katja Dmitrijeva, Torsten Dehn

2.17. Quantidade de artigos já publicados: 18 e 1 capítulo de livro

2.18. Outros artigos significativos (mais citados) sobre outros temas

State-of-the-art of 'Lean' in the aviation maintenance, repair, and overhaul industry (23)

State-of-the-art in integrated vehicle health management (53)

State-of-the-art in lean design engineering: A literature review on white collar lean (86)

Beyond theory: An examination of lean new product introduction practices in the UK (6)

2.19. Outros artigos significativos (mais citados) neste tema:

State-of-the-art in product-service systems (823)

Towards an operations strategy for product-centric servitization (178)

The servitization of manufacturing: A review of literature and reflection on future challenges (439)

Servitized manufacture: Practical challenges of delivering integrated products and services (37)

The adoption of servitization strategies by UK-based manufacturers (24)

The servitization of manufacturing: A systematic literature review of interdependent trends (81)

Servitization of the manufacturing firm: Exploring the operations practices and technologies that deliver advanced services (71)

2.20. Co-autores recorrentes:

- Baines, Tim (17)
- Smart, Palie K. (5)
- Benedettini, Ornella (4)
- Greenough, Richard M. (4)
- Johnson, Mark A. (3)
- Kay, John (3)
- Evans, Stephen P. (2)
- Peppard, Joe W. (2)
- Shehab, Essam M. (2)
- Tiwari, Ashutosh (2)

Stephen P. Evans

- 2.21. Tipo: professor
- 2.22. Idade: 46
- 2.23. Anos pesquisando no assunto: +/- 11 anos (os primeiros artigos na área são de 2007)
- 2.24. Instituição: University of Cambridge
- 2.25. Índice-h: 11
- 2.26. Colegas da mesma instituição
Keith Seffen, Andy Neely, P. John Clarkson, Ioannis Brilakis, Malcolm D. Bolton, Gehan Amaratunga, Stuart Kenneth Haigh, Steve Young
- 2.27. Quantidade de artigos já publicados: 32
- 2.28. Outros artigos significativos (mais citados) sobre outros temas
Buyer-supplier partnerships during product design and development in the global automotive sector: Who invests, in what and when? (45)
An investigation of customer delight during product evaluation: Implications for the development of desirable products (20)
Understanding luxury in the premium automotive industry (3)
A comparison of four sustainable manufacturing strategies (36)
- 2.29. Outros artigos significativos (mais citados) neste tema
Industrialization as a key element of sustainable product-service solutions (78)
Challenges in transforming manufacturing organisations into product-service providers (176)
A framework for designing product service systems (2)
Strategies for designing and developing services for manufacturing firms (64)
Influencing factors of successful transitions towards product-service systems: A simulation approach (27)
- 2.30. Co-autores recorrentes
Sackett, Peter John (7)
Burns, Andrew D. (3)
Lettice, Fiona E. (3)
Martinez, Veronica (3)
Baines, Tim (2)
Duarte, Gonçalo Monteiro (2)
Kingston, Jennifer (2)

Lightfoot, Howard W. (2)
Roy, Rajkumar (2)
Tiwari, Ashutosh (2)

Andy Neely

- 2.31. Tipo: Professor, Director of Cambridge Service Alliance
- 2.32. Idade: 50
- 2.33. Anos pesquisando no assunto: 29
- 2.34. Instituição: University of Cambridge
- 2.35. Índice-h: 36
- 2.36. Colegas da mesma instituição:
Keith Seffen, Andy Neely, P. John Clarkson, Ioannis Brilakis, Malcolm D. Bolton, Gehan Amaratunga, Stuart Kenneth Haigh, Steve Young, Stephen P. Evans
- 2.37. Quantidade de artigos já publicados: 97
- 2.38. Outros artigos significativos (mais citados) sobre outros temas:
Distributed manufacturing: scope, challenges and opportunities (12)
Capturing value from big data – a taxonomy of data-driven business models used by start-up firms (11)
Using electric vehicles for energy services: Industry perspectives (23)
Information visualization to support management decisions (22)
- 2.39. Outros artigos significativos (mais citados) neste tema
Exploring the journey to services (2)
Examining the influence of service additions on manufacturing firms' bankruptcy likelihood (6)
Only the Brave: Product Innovation, Service Business Model Innovation, and Their Impact on Performance (24)
Why do servitized firms fail? A risk-based explanation (39)
- 2.40. Co-autores recorrentes
Platts, Ken W. (14)
Bourne, Mike C. (12)
Mills, John F. (12)
Gregory, Mike J. (10)
Kennerley, Mike P. (9)
Marr, Bernard (7)
Adams, Chris (6)
D'Este, Pablo (5)
Martinez, Veronica (4)
Parlikad, Ajith Kumar (4)

Richard Greenough

- 2.41. Tipo: professor
- 2.42. Idade: +/- 55 anos
- 2.43. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)
- 2.44. Instituição: Montfort University, Leicester, UK
- 2.45. Índice-h: 10
- 2.46. Colegas da mesma instituição:

Subhes C Bhattacharyya, Leticia Ozawa-Meida, Vijay Pakka, Richard Bull, Mark Lemon, Andrew John Wright, Paul Cropper, J Richard Snape, Paul Fleming

2.47. Quantidade de artigos já publicados: 34

2.48. Outros artigos significativos (mais citados) sobre outros temas:

Perovskite solar cells: An integrated hybrid lifecycle assessment and review in comparison with other photovoltaic technologies (6)

An exergy based approach to resource accounting for factories (6)

Acceptance of thermal conditions and energy use of three ventilation strategies with six exhaust configurations for the classroom (7)

Integrating economic considerations with operational and embodied emissions into a decision support system for the optimal ranking of building retrofit options (25)

Operational vs. embodied emissions in buildings - A review of current trends (91)

An advanced energy management framework to promote energy awareness (76)

2.49. Outros artigos significativos (mais citados) neste tema

Modelling condition-based maintenance to deliver a service to machine tool users (29)

2.50. Co-autores recorrentes

Baines, Tim (6)

Acquaye, Adolf A. (5)

Ibn-Mohammed, Taofeeq (5)

Lightfoot, Howard W. (4)

Ozawa-Meida, Leticia (4)

Taylor, Simon C. (4)

Wright, Andrew John (4)

Brown, Neil (3)

Fakun, Devendra (3)

Kay, John (3)

Joe Peppard

2.51. Tipo: Principal Research Scientist

2.52. Idade: -

2.53. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)

2.54. Instituição: MIT Sloan School of Management, Boston

2.55. Índice-h: 26

2.56. Colegas da mesma instituição:

Alenka Braček Lalić, Andrei Villarroel, Arnold Walravens, Arshad Ahmad, Bernard Gracia, Bill Fischer, Brane Kalpič, Branislav Vujović, Chris Start, Danica Purg

2.57. Quantidade de artigos já publicados: 57

2.58. Outros artigos significativos (mais citados) sobre outros temas:

Information systems strategy as practice: Micro strategy and strategizing for IS (48)

Why IT fumbles analytics (37)

Factors affecting the successful realisation of benefits from systems development projects:

Findings from three case studies (72)

Clarifying the ambiguous role of the CIO (43)

2.59. Outros artigos significativos (mais citados) neste tema: NADA

2.60. Co-autores recorrentes

Shehab, Essam M. (7)
Edwards, Chris (6)
Hassan, Hend S H (5)
Rylander, Anna (5)
Ward, John M. (4)
Gerth, Anthony B. (3)
Lambert, Rob (3)
Ashurst, Colin (2)
Baines, Tim (2)
Breu, Karin (2)

Rajkumar Roy

- 2.61. Tipo: Professor
2.62. Idade: 55
2.63. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)
2.64. Instituição: Cranfield University
2.65. Índice-h: 24
2.66. Colegas da mesma instituição:
Stephenson, Professor T; Gao, Professor JX; Harrison, Professor A; Neely, Professor A; Greenough, Professor R; Jin, Dr T; Tranfield, Professor D; Wainwright, Dr CER; Shore, Professor P; Cartie, Dr DDR; Fan, Dr IS; Stephenson, Professor D; Allen, Professor D; Baines, Professor T; Julien, Dr DM; Mills, Mr AR; Partridge, Professor IK.
2.67. Quantidade de artigos já publicados: 202
2.68. Outros artigos significativos (mais citados) sobre outros temas:
An Innovative Process to Select Augmented Reality (AR) Technology for Maintenance (2)
Secure IoT Devices for the Maintenance of Machine Tools (1)
A novel defect depth measurement method based on Nonlinear System Identification for pulsed thermographic inspection (6)
2.69. Outros artigos significativos (mais citados) neste tema: NADA
2.70. Co-autores recorrentes
Tiwari, Ashutosh (34)
Mehnen, Jörn (26)
Shehab, Essam M. (26)
Erkoyuncu, John Ahmet (21)
Oduguwa, Victor (9)
Redding, Louis E. (9)
Sackett, Peter John (8)
Cheruvu, Kalyan S. (7)
Gao, J. X. (7)
Addepalli, Sri (6)

Essam Shehab

- 2.71. Tipo: Professor
2.72. Idade: 51
2.73. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)
2.74. Instituição: Cranfield University

- 2.75. Índice-h: 18
- 2.76. Colegas da mesma instituição:
Stephenson, Professor T; Gao, Professor JX; Harrison, Professor A; Neely, Professor A; Greenough, Professor R; Jin, Dr T; Tranfield, Professor D; Wainwright, Dr CER; Shore, Professor P; Cartie, Dr DDR; Fan, Dr IS; Stephenson, Professor D; Allen, Professor D; Baines, Professor T; Julien, Dr DM; Mills, Mr AR; Partridge, Professor IK.
- 2.77. Quantidade de artigos já publicados: 111
- 2.78. Outros artigos significativos (mais citados) sobre outros temas:

The impact of organizational project benefits management governance on ERP project success: Neo-institutional theory perspective (4)

Modelling of cryogenic cooling system design concepts for superconducting aircraft propulsion (2)

- 2.79. Outros artigos significativos (mais citados) neste tema:
A multiple-case assessment of product service system leanness in UK manufacturing companies (3)

- 2.80. Co-autores recorrentes

Roy, Rajkumar (26)
Al-Ashaab, Ahmed H.S. (15)
Erkoyuncu, John Ahmet (12)
Abdalla, Hassan S. (9)
Baguley, Paul E. (8)
Kirkwood, Leigh (8)
Peppard, Joe W. (7)
Beadle, Chris (6)
Cheruvu, Kalyan S. (6)
Maksimovic, Maksim (6)

Ashley Braganza

- 2.81. Tipo: Professor
- 2.82. Idade: +/- 57
- 2.83. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)

2.84. Instituição: Brunel University London · Brunel Business School

2.85. Índice-h: 10

- 2.86. Colegas da mesma instituição:

Dr Wafi Al-Karaghoul, Dr Sarmad AlShawi, Dr Abraham Althonayan, Dr Sharifah Alwi, Mr Majid Aminzare, Professor Neil Anderson, Dr Nikolaos Antypas, Mr John Aston, Dr Angela Ayios, Dr Goudarz Azar.

2.87. Quantidade de artigos já publicados: 26

- 2.88. Outros artigos significativos (mais citados) sobre outros temas:

Organizational knowledge transfer through creation, mobilization and diffusion: A case analysis of InTouch within Schlumberger (17)

Elements of innovative cultures (37)

Organisational forms and knowledge management: one size fits all? (15)

A survey of critical success factors in e-Banking: An organisational perspective (18)

Diffusing management information for legal compliance: The role of the is organization within the Sarbanes-Oxley Act (5)

Informing strategic IS change: Towards a 'meta-learning' framework (7)

2.89. Outros artigos significativos (mais citados) neste tema: NADA

2.90. Co-autores recorrentes

Gillon, Anne Clare (4)
McCauley-Smith, Catherine (4)
Williams, Sharon Jayne (4)
Hackney, Ray A. (3)
Tanudjojo, Satrijo (3)
Desouza-, Kevin C. (2)
Franken, Arnoud R C (2)
Ngosi, Theodora N. (2)
Alcock, Jeffrey R. (1)
Ali, Maged (1)

Ashutosh Tiwari

2.91. Tipo: Professor

2.92. Idade: 42

2.93. Anos pesquisando no assunto: 20 anos (artigo em 2007, mas não é o foco da pesquisa dele)

2.94. Instituição: University of Sheffield

2.95. Índice-h: 50

2.96. Colegas da mesma instituição:

Lyudmila Mihaylova, Peter Fleming, Z. Q. Lang, Roderich Groß, Yuzhu Guo, Kennedy J. Ofor, Hua-Liang Wei, Jonathan Maxwell Aitken, Sapto Wibowo.

2.97. Quantidade de artigos já publicados: 601

2.98. Outros artigos significativos (mais citados) sobre outros temas:

Recent advances in oxide thermoelectric materials and modules (3)

Fabrication and characterization of transparent wood for next generation smart building applications (2)

Electrocatalytic biofuel cell based on highly efficient metal-polymer nano-architected bioelectrodes (4)

2.99. Outros artigos significativos (mais citados) neste tema: NADA

2.100. Co-autores recorrentes

Narayan, Jagdish A. (49)
Turner, Christopher J. (40)
Turner, Anthony P. F. (38)
Roy, Rajkumar (34)
Alcock, Jeffrey R. (22)
Singh, Vandana (22)
Hutabarat, Windo (20)
Li, Songjun (20)
Kumar, Dhananjay (17)
Prestgard, Megan Campbell (16)

Jeffrey Robert Alcock

2.101. Tipo: Professor

2.102. Idade: -

2.103. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)

- 2.104. Instituição: Cranfield Univesity
- 2.105. Índice-h: 19
- 2.106. Colegas da mesma instituição:
Stephenson, Professor T; Gao, Professor JX; Harrison, Professor A; Neely, Professor A; Greenough, Professor R; Jin, Dr T; Tranfield, Professor D; Wainwright, Dr CER; Shore, Professor P; Cartie, Dr DDR; Fan, Dr IS; Stephenson, Professor D; Allen, Professor D; Baines, Professor T; Julien, Dr DM; Mills, Mr AR; Partridge, Professor IK.
- 2.107. Quantidade de artigos já publicados: 72
- 2.108. Outros artigos significativos (mais citados) sobre outros temas:
Review of factors that affect shrinkage of molded part in injection molding (29)
Modelling information flow for organisations: A review of approaches and future challenges (14)
A methodology for shrinkage measurement in micro-injection moulding (12)
Fabrication of hollow, 3D, micro-scale metallic structures by micro-powder injection moulding (10)
- 2.109. Outros artigos significativos (mais citados) neste tema: NADA
- 2.110. Co-autores recorrentes
Tiwari, Ashutosh (22)
Attia, Usama M. (16)
Durugbo, Christopher (10)
Stephenson, David J. (9)
Whatmore, Roger W. (8)
Annicchiarico, Daniele (5)
Navarro, Asunción (5)
Shaw, Christopher P. (5)
Sörensen, Ole Toft (4)
Adeogun, Oluseun (3)

J. P. Angus

- 2.111. Tipo: Partner of enterprise Rolls Royce plc
- 2.112. Idade: -
- 2.113. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco dele)
- 2.114. Instituição: -
- 2.115. Índice-h: -
- 2.116. Colegas da mesma instituição: -
- 2.117. Quantidade de artigos já publicados: 2
- 2.118. Outros artigos significativos (mais citados) sobre outros temas:
Aero Engine Ceramics—the Vision, the Reality and the Progress (2)
- 2.119. Outros artigos significativos (mais citados) neste tema: NADA
- 2.120. Co-autores recorrentes: -

Marko Bastl

- 2.121. Tipo: senior Assistant Professor
- 2.122. Idade: 41
- 2.123. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)
- 2.124. Instituição: Marquette University, Milwaukee, United States
- 2.125. Índice-h: 7

- 2.126. Colegas da mesma instituição:
Doug Fisher, Melanie Roepke, Kelly Wesolowski
- 2.127. Quantidade de artigos já publicados: 10
- 2.128. Outros artigos significativos (mais citados) sobre outros temas:
An exploration of supply chain integration in the retail product returns process (15)
Who's Seeking Whom? Coalition Behavior of a Weaker Player in Buyer-Supplier Relationships (27)
Towards the integrative supply Chain model (13)
Inter-organisational costing approaches: The inhibiting factors (9)
- 2.129. Outros artigos significativos (mais citados) neste tema:
Buyer-supplier relationships in a servitized environment: An examination with Cannon and Perreault's framework (50)
Product Service Systems and supply network relationships: An exploratory case study (49)
Challenges in transforming manufacturing organisations into product-service providers (176)
- 2.130. Co-autores recorrentes
Johnson, Mark A. (4)
Evans, Steve A. (2)
Fan, Ip Shing (2)
Grubic, Tonci (2)
Harrison, Alan (2)
Templar, Simon (2)
Allaoui, Hamid (1)
Bernon, Mike (1)
Bloemhof, Jacqueline M. (1)
Choi, Thomas Y. (1)
- Alan Cousens**
- 2.131. Tipo: industrial practioner
- 2.132. Idade: -
- 2.133. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco dele)
- 2.134. Instituição: Institute for Manufacturing, Education and Consultancy Services, Cambridge, United Kingdom
- 2.135. Índice-h: 3
- 2.136. Colegas da mesma instituição: -
- 2.137. Quantidade de artigos já publicados: 4
- 2.138. Outros artigos significativos (mais citados) sobre outros temas:
A process for managing manufacturing flexibility (27)
Teaching New Product Development Using the 'CityCar' Simulation (6)
The strategic management of manufacturing networks (2)
- 2.139. Outros artigos significativos (mais citados) neste tema: NADA
- 2.140. Co-autores recorrentes
Szwejcowski, Marek (3)
Sweeney, Michael T. (2)
Alcock, Jeffrey R. (1)

Phil Irving

- 2.141. Tipo: industrial practitioner
- 2.142. Idade: 48
- 2.143. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco dele)
- 2.144. Instituição: Environment Agency, Bristol, United Kingdom
- 2.145. Índice-h: 4
- 2.146. Colegas da mesma instituição: -
- 2.147. Quantidade de artigos já publicados: 5
- 2.148. Outros artigos significativos (mais citados) sobre outros temas:

The risks of risk-based regulation: Insights from the environmental policy domain (39)

Exposure assessment of carcass disposal option in the event of a notifiable exotic animal disease: Application to avian influenza virus (15)

Intervention strategies for carcass disposal: Pareto analysis of exposures for exotic disease outbreaks (3)

Character of environmental harms: Overcoming implementation challenges with policy makers and regulators (14)

- 2.149. Outros artigos significativos (mais citados) neste tema: NADA
- 2.150. Co-autores recorrentes

Pollard, Simon J.T. (3)

Gauntlett, Daniel M. (2)

Hart, Alwyn (2)

Hickman, Gordon A.W. (2)

Howson, Simon F. (2)

Alcock, Jeffrey R. (1)

Mark Johnson

- 2.151. Tipo: Associate Professor
- 2.152. Idade: 43
- 2.153. Anos pesquisando no assunto: 16 anos
- 2.154. Instituição: The University of Warwick, Coventry, United Kingdom
- 2.155. Índice-h: 13
- 2.156. Colegas da mesma instituição:

Janet Godsell, Pietro Micheli, Mehmet Chakkol, Vikki Abusidualghoul, Haley Beer, Nicola Burgess, Emily Jamieson, Max Finne, Ross Ritchie, Rhian Silvestro, Chris Voss, Giovanni Radaelli

- 2.157. Quantidade de artigos já publicados: 21

- 2.158. Outros artigos significativos (mais citados) sobre outros temas:

Integrating the Supply Chain ... 25 years on (16)

From goods to solutions: How does the content of an offering affect network configuration? (13)

Who's Seeking Whom? Coalition Behavior of a Weaker Player in Buyer-Supplier Relationships (27)

Navigating the impact-innovation double hurdle: The case of a climate change research fund (6)

Changing chains: Three case studies of the change management needed to reconfigure European supply chains (3)

- 2.159. Outros artigos significativos (mais citados) neste tema:

Towards an operations strategy for product-centric servitization (179)

Supply chain management for servitised products: A multi-industry case study (87)

Buyer-supplier relationships in a servitized environment: An examination with Cannon and Perreault's framework (50)

Product Service Systems and supply network relationships: An exploratory case study (49)

Organizing for servitization: examining front- and back-end design configurations (2)

2.160. Co-autores recorrentes

Bastl, Marko (4)

Chakkol, Mehmet (3)

Lightfoot, Howard W. (3)

Van Hoek, Remko I. (3)

Baines, Tim (2)

Evans, Steve A. (2)

Godsell, Janet (2)

Karatzas, Antonios (2)

Lockett, Helen Louise (2)

Peppard, Joe W. (2)

Jennifer Kingston

2.161. Tipo: Lecturer

2.162. Idade: 45

2.163. Anos pesquisando no assunto: 11 anos (artigos em 2007 e 2010, mas não é o foco da pesquisa dela)

2.164. Instituição: Cranfield University

2.165. Índice-h: 2

2.166. Colegas da mesma instituição:

Stephenson, Professor T; Gao, Professor JX; Harrison, Professor A; Neely, Professor A; Greenough, Professor R; Jin, Dr T; Tranfield, Professor D; Wainwright, Dr CER; Shore, Professor P; Cartie, Dr DDR; Fan, Dr IS; Stephenson, Professor D; Allen, Professor D; Baines, Professor T; Julien, Dr DM; Mills, Mr AR; Partridge, Professor IK.

2.167. Quantidade de artigos já publicados: 3

2.168. Outros artigos significativos (mais citados) sobre outros temas: NADA

2.169. Outros artigos significativos (mais citados) neste tema:

Challenges in transforming manufacturing organisations into product-service providers (176)

ISIR: Informed sensitised intelligent response - A PSS conceptual design framework using service characteristics (0)

2.170. Co-autores recorrentes

Alcock, Jeffrey R. (2)

Evans, Stephen P. (2)

Lockett, Helen Louise (2)

Martinez, Veronica (2)

Angus, J. P. (1)

Helen Louise Lockett

2.171. Tipo: Senior Lecturer

2.172. Idade: -

2.173. Anos pesquisando no assunto: 11 anos (artigos em 2007 e 2011, mas não é o foco da pesquisa dela)

- 2.174. Instituição: Open University, Faculty of STEM, Milton Keynes, United Kingdom
- 2.175. Índice-h: 8
- 2.176. Colegas da mesma instituição:
Marty Hammersley, Mike Sharples, Kenneth Alfred Thompson, Kevin James McConway, Martin Holborn, Claudia M. Eckert, John Storey, David Scott, Claire M Hewson, Steven Rose.
- 2.177. Quantidade de artigos já publicados: 22
- 2.178. Outros artigos significativos (mais citados) sobre outros temas:
Graph-based feature recognition for injection moulding based on a mid-surface approach (58)
Similarity measures for mid-surface quality evaluation (15)
Fabrication of geometrical features using wire and arc additive manufacture (41)
- 2.179. Outros artigos significativos (mais citados) neste tema:
Product Service Systems and supply network relationships: An exploratory case study (49)
A framework to inform PSS Conceptual Design by using system-in-use data (17)
- 2.180. Co-autores recorrentes
Guenov, Marin Dimitrov (6)
Ding, Jialuo (3)
Kazanas, Panagiotis (3)
Martinez, Veronica (3)
Alcock, Jeffrey R. (2)
Bartholomew, Peter (2)
Gallop, Julian R. (2)
Hussain, Romana (2)
Johnson, Mark A. (2)
Kingston, Jennifer (2)
- Veronica Martinez**
- 2.181. Tipo: Senior Research Associate
- 2.182. Idade: -
- 2.183. Anos pesquisando no assunto: mais de 11 anos
- 2.184. Instituição: University of Cambridge
- 2.185. Índice-h: 11
- 2.186. Colegas da mesma instituição:
Keith Seffen, Andy Neely, P. John Clarkson, Ioannis Brilakis, Malcolm D. Bolton, Gehan Amaratunga, Stuart Kenneth Haigh, Steve Young
- 2.187. Quantidade de artigos já publicados: 27
- 2.188. Outros artigos significativos (mais citados) sobre outros temas:
Towards a definition of a business performance measurement system (172)
Aligning value propositions in supply chains (29)
Assessing value-in-use: A conceptual framework and exploratory study (71)
- 2.189. Outros artigos significativos (mais citados) neste tema:
Achieving customer satisfaction through integrated products and services: An exploratory study (25)
A classification model for product-service offerings (61)
Exploring the journey to services (2)
- 2.190. Co-autores recorrentes
Bititci, Umit Sezer (8)
Albores, Pável A. (6)

Raja, Jawwad Z. (5)
Neely, Andy D. (4)
Evans, Stephen P. (3)
Kennerley, Mike P. (3)
Lockett, Helen Louise (3)
Toossi, Amir (3)
Bourne, Mike C. (2)
Franco-Santos, Monica (2)

Pietro Michele

- 2.191. Tipo: Professor
2.192. Idade: 42
2.193. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)
2.194. Instituição: The University of Warwick, Coventry, United Kingdom
2.195. Índice-h: 10
2.196. Colegas da mesma instituição:
Janet Godsell, Mehmet Chakkol, Vikki Abusidualghoul, Haley Beer, Nicola Burgess, Emily Jamieson, Max Finne, Ross Ritchie, Rhian Silvestro, Chris Voss, Giovanni Radaelli
2.197. Quantidade de artigos já publicados: 22
2.198. Outros artigos significativos (mais citados) sobre outros temas:
Signaling Strategies for Innovative Design: A Study on Design Tradition and Expert Attention (7)
The roles and effectiveness of design in new product development: A study of Irish manufacturers (4)
Reconciling the tension between consistency and relevance: design thinking as a mechanism for brand ambidexterity (9)
The theory and practice of performance measurement (25)
Perceptions of industrial design: The "means" and the "ends" (21)
Strategic performance measurement: Benefits, limitations and paradoxes (56)
2.199. Outros artigos significativos (mais citados) neste tema: NADA
2.200. Co-autores recorrentes
Shehab, Essam M. (7)
Edwards, Chris (6)
Hassan, Hend S H (5)
Rylander, Anna (5)
Ward, John M. (4)
Gerth, Anthony B. (3)
Lambert, Rob (3)
Ashurst, Colin (2)
Baines, Tim (2)
Breu, Karin (2)

David R. Tranfield

- 2.201. Tipo: Emeritus Professor
2.202. Idade: 70
2.203. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)
2.204. Instituição: Cranfield University

- 2.205. Índice-h: 15
- 2.206. Colegas da mesma instituição:
Stephenson, Professor T; Gao, Professor JX; Harrison, Professor A; Neely, Professor A;
Greenough, Professor R; Jin, Dr T; Tranfield, Professor D; Wainwright, Dr CER; Shore,
Professor P; Cartie, Dr DDR; Fan, Dr IS; Stephenson, Professor D; Allen, Professor D;
Baines, Professor T; Julien, Dr DM; Mills, Mr AR; Partridge, Professor IK.

2.207. Quantidade de artigos já publicados: 47

2.208. Outros artigos significativos (mais citados) sobre outros temas:

Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means
of Systematic Review (1287)

Developing design propositions through research synthesis (176)

Using qualitative research synthesis to build an actionable knowledge base (80)

A multitude of syntheses: A comparison of five approaches from diverse policy fields (26)

Talented suppliers? Strategic change and innovation in the UK aerospace industry (37)

Co-producing management knowledge (43)

2.209. Outros artigos significativos (mais citados) neste tema: NADA

2.210. Co-autores recorrentes

Smith, Stuart (17)

Denyer, David (9)

Foster, Morris (8)

Bessant, John R. (6)

Levy, Paul (5)

Wilson, Sarah (5)

Adams, Richard J. (4)

Ley, Clive (4)

Parry, Ivor J. (4)

Smart, Palie K. (4)

I. M. Walton

2.211. Tipo: Practitioner

2.212. Idade: -

2.213. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da
pesquisa dele)

2.214. Instituição: -

2.215. Índice-h: 4

2.216. Colegas da mesma instituição: -

2.217. Quantidade de artigos já publicados: 6

2.218. Outros artigos significativos (mais citados) sobre outros temas:

A high material removal rate grinding process for the production of automotive crankshafts
(24)

The measurement of grinding temperatures at high specific material removal rates (13)

Temperature measurement in high efficiency deep grinding (HEDG) using enhanced single pole
thermocouple and PVD coating techniques (4)

Creating movable interfaces by micro-powder injection moulding (3)

2.219. Outros artigos significativos (mais citados) neste tema: NADA

2.220. Co-autores recorrentes

Alcock, Jeffrey R. (2)

Jin, Tan (2)

Stephenson, David J. (2)

Angus, J. P. (1)

Hugh N Wilson

2.221. Tipo: Professor

2.222. Idade: -

2.223. Anos pesquisando no assunto: 11 anos (artigo em 2007, mas não é o foco da pesquisa dele)

2.224. Instituição: Cranfield University

2.225. Índice-h: 18

2.226. Colegas da mesma instituição:

Stephenson, Professor T; Gao, Professor JX; Harrison, Professor A; Neely, Professor A; Greenough, Professor R; Jin, Dr T; Tranfield, Professor D; Wainwright, Dr CER; Shore, Professor P; Cartie, Dr DDR; Fan, Dr IS; Stephenson, Professor D; Allen, Professor D; Baines, Professor T; Julien, Dr DM; Mills, Mr AR; Partridge, Professor IK.

2.227. Quantidade de artigos já publicados: 35

2.228. Outros artigos significativos (mais citados) sobre outros temas:

The governance of supply networks: A systematic literature review (61)

Customer experience quality: An exploration in business and consumer contexts using repertory grid technique (161)

Assessing value-in-use: A conceptual framework and exploratory study (71)

Engagement, telepresence and interactivity in online consumer experience: Reconciling scholastic and managerial perspectives (221)

Factors influencing the adoption of online recruitment (26)

2.229. Outros artigos significativos (mais citados) neste tema:

The implications of service-dominant logic and integrated solutions on the sales function (12)

2.230. Co-autores recorrentes

Macdonald, Emma K. (9)

Daniel, Elizabeth Mary (6)

Clark, Moira E. (4)

McDonald, Malcolm H.B. (3)

Palmer, Roger A. (3)

Baines, Paul R. (2)

Baumann, Jasmin (2)

Champanis, Guy (2)

Dimitriu, Radu M. (2)

Johnson, Mark A. (2)

3. Estrutura do abstract (contextualização, gap/lacuna, objetivo, metodologia, resultados e conclusão)

contextualização: "A Product-Service System (PSS) is an integrated combination of products and services. This Western concept embraces a service-led competitive strategy, environmental sustainability, and the basis to differentiate from competitors who simply offer lower priced products." [p. 1]

gap/lacuna: NADA

Objetivo: "This paper aims to report the state-of-the-art of PSS research" [p. 1]

Metodologia: “presenting a clinical review of literature currently available on this topic. The literature is classified and the major outcomes of each study are addressed and analysed.” [p. 1]

Resultados e conclusão: “On this basis, this paper defines the PSS concept, reports on its origin and features, gives examples of applications along with potential benefits and barriers to adoption, summarizes available tools and methodologies, and identifies future research challenges.” [p. 1]

4. Palavras-chaves e se foram citadas no abstract.

Key-words: product-service system, servitization, review

Except for servitization the words were included in the abstract.

5. Introdução e/ou revisão bibliográfica introdutória, afirmações / constatações (tipo) versus citações (essa lista pode ser longa, por isso coloquei em forma de tabela)

Afirmação / Constatação	Tipo (*1)	Referência (*2)
The concept of a Product-Service System (PSS) is a special case of servitization. A PSS can be thought of as a market proposition that extends the traditional functionality of a product by incorporating additional services. Here the emphasis is on the ‘sale of use’ rather than the ‘sale of product’. The customer pays for using an asset, rather than its purchase, and so benefits from a restructuring of the risks, responsibilities, and costs traditionally associated with ownership.	C	-
Similarly, the supplier/manufacturer can improve their competitiveness as these ‘solutions’ may be clearly differentiated from product-based offerings while simultaneously retaining asset ownership that can enhance utilization, reliability, design, and protection.	C	-
For some authors the concept of a PSS also embraces sustainability. The underpinning expectation is that a pure PSS will have a lower environmental impact than, simply, a more traditional transaction where an enterprise manufactures products but then transfers responsibilities of ownership and use to the customer.	C	-
An illustration of both the business and environmental benefits of a PSS is apparent in the Total-Care Package offered to airlines by Rolls-Royce plc. Here, rather than transferring ownership of the gas turbine engine to the airline, Rolls-Royce (R-R) deliver ‘power-by-the-hour’. The gas turbine technology is world leading and the spares and maintenance service they offer exemplary.	C	-
Furthermore, as R-R maintains direct access to the asset they can collect data on product performance and use.	C	-
Such data can then enable the improvement of performance parameters (for example, maintenance schedules etc.) to improve engine efficiency, improve asset utilization, and so reduce total costs and the environmental impact.	C	-
PSS is a potentially valuable concept for manufacturers based in developed economies. Manufacturing industries worldwide continue to undergo colossal	C	-

change.		
Many traditional producers are increasingly challenged by countries with a low-cost labour base, with the survival of many European operations continuously in doubt, and the relocation of production facilities prolific.	C	-
There is, however, still a strong desire that the UK should retain a viable manufacturing capability.	C	-
Manufacturing directly underpins exports, strengthens the service-based economy, and complements the science and engineering research base.	C	-
Thus, the popular advice to manufacturers is that, to sustain competitiveness, they should 'move up the value chain' and focus on delivering knowledge intensive products and services [1]. Such actions are entirely consistent with the adoption of a PSS-based competitive strategy that uses deep product, process, and customer knowledge to reduce the total cost of a product.	C	Hewitt, 2002
The concept of PSS has been openly discussed in the literature for over a decade (see, for example, Goedkoop et al. [2], Mont [3], Meijkamp [4], Manzini and Vezzoli [5]), yet the uptake of such ideas by industry appears limited.	C	(Goedkoop, M., van Haler, C., te Riele, H., and Rommers, P.; 1999); (Mont, O., 2000); (Meijkamp, R., 2000); (Manzini, E. and Vezzoli, C., 2003)
Although many benefits are apparent from the literature and existing cases, some major inhibitors are reported to arise across the design and management of engineering, manufacturing, and supply chain operations.	C	-
However, a concerted and coordinated research programme could address many of these issues and provide a platform of knowledge and technologies that enable the wide scale adoption by manufacturers of competitive strategies centred on PSS.	J	-
Such research itself requires a thorough and precise understanding of existing work and so the purpose of this paper is to describe the state-of-the art with PSS.	Objetivo	-
The study described in this paper has taken the form of a rigorous literature review.	Metodologia	-
The methodology consisted of identifying relevant publication databases, searching these using a wide range of key words and phrases associated with PSS, and fully reviewing each article identified.	Metodologia	-
From these reviews it was possible to compile a set of key findings. These findings and their implications for research are all described in the paper.	-	-
Hence, this paper is structured as follows. First, the research methods are described and the initial results of the search for relevant literature are summarized. Key findings are then presented through analysis of the literature. Finally, the results of this analysis are summarized and discussed, and conclusions are drawn.	-	-

(*1) Tipos de afirmação / constatação: G (geral), C (contexto), J (justifica o artigo / pesquisa), L (explicita a lacuna). A constatação da lacuna é muito importante. Mas é difícil diferenciar J de L.; (*2) Inserir somente autor(es) e ano. A referência completa encontra-se no próprio artigo

6. Casos citados e principais características dos casos

“Total-Care Package offered to airlines by Rolls-Royce plc. Here, rather than transferring ownership of the gas turbine engine to the airline, Rolls-Royce (R-R) deliver ‘power-by-the-hour’. The gas turbine technology is world leading and the spares and maintenance service they offer exemplary. Furthermore, as R-R maintains direct access to the asset they can collect data on product performance and use. Such data can then enable the improvement of performance parameters (for example, maintenance schedules etc.) to improve engine efficiency, improve asset utilization, and so reduce total costs and the environmental impact.” (Tabela 2, p. 1543)

7. Questão da pesquisa, Foco (escopo) e Objetivos (geral primário e secundários)

Foco: state-of-art of PSS

Objetivo primário: define PSS, define the strengths and weaknesses in the existing literature; “The aim of the research presented in this paper has been to identify, interpret, and summarize the literature currently available on PSS.” [p. 1544]

Objetivo secundário: NADA

Questões de pesquisa:

“In terms of research questions, this study was approached by posing the following questions.

1. What is a PSS and how is it commonly defined?
2. How does an enterprise that deliberately configures itself around PSS differ from a conventional design and make enterprise, and what are the consequences?
3. Where are the leading examples of PSS practice?
4. Where are the strengths and weaknesses in the existing literature?” [p. 1544]

8. Qual o diferencial deste artigo (análise da revisão) com relação a outras revisões e/ou surveys? (segundo o autor, caso ele tenha citado). Avaliar uma por uma, caso o autor tenha feito isso. Pode montar uma tabela se for o caso.

There is no comparison with other articles, but the outline consists of a rigorous literature review with a **full review of each article identified.**

9. Metodologia

9.1. Descrição Geral: Nome do(s) método(s); se é qualitativo, quantitativo ou combinação de ambos

Rigorous literature review: qualitative.

9.2. Período de análise das referências (publicações desde que ano)

Initially, this study focused on **literature published between 1995 and 2006**, with their citations being cross-checked to ensure that any earlier publications were also captured. [p. 1544]

9.3. Tamanho da amostra analisada

40 references.

9.4. Quantidade de referências citadas

Total: 49

9.5. Foram realizadas observações complementares?

NADA

9.6. Fontes da revisão (casos, periódicos específicos, e quais bases de dados). Quais as justificativas para escolher essas fontes.

“Initially a very broad selection of databases were identified, **to cover a diverse range of publication formats** including **journal articles, conference proceedings, theses, books, and articles from trade journals**. These databases included **Compendex, Inspec, and Emerald**, along with the more traditional library cataloguing systems providing access to a variety of publications from the **Harvard Business Review** through to the **Journal of Cleaner Production, Journal of Design Research, and Proceedings of Eco-design**. In addition, they provide access to **international reports**, such as those by the United Nations Environmental Programme and the Dutch and Swedish government departments.” [p. 1544]

9.7. Estratégia para construção da string de busca

“The search strategy initially **identified keywords that could be associated with PSS**. Examples of these include: **servitization, sustainability, service economy, remanufacturing, service design, productization, product substituting service, dematerialization, system solution, and functional economy**.” [p. 1544]

9.8. String de busca

The article does not provide the official strings used, but says that **keywords associated with PSS** were identified and used, examples of these include: **servitization, sustainability, service economy, remanufacturing, service design, productization, product substituting service, dematerialization, system solution, and functional economy**. [p. 1544]

9.9. Filtros

Initially identified **80 articles**, reports, and theses, after the first filter **33 documents** were directly relevant, and finally after a cross-checking of references increased the list to **40** were defined. [p. 1545]

First filter: identified the directly relevant;

Second filter: cross-checking of references.

9.10. Técnica / método de análise utilizada

“Initially, this study focused on literature published between 1995 and 2006, with **their citations being cross-checked to ensure that any earlier publications were also captured**. The principal **research databases were then searched using a range of combinations of these keywords**. The **lists of hits for each search string were first edited to remove any duplicate records** that appeared, the **titles were checked to ensure relevance to the review**, and then the **abstracts of all other articles and papers were reviewed** before selecting publications for a full review.” [p. 1544]

“The **lists of hits for each search string were first edited to remove any duplicate records** that appeared, the **titles were checked** to ensure relevance to the review, and

then **the abstracts of all other articles and papers were reviewed before selecting publications for a full review.**" [p. 1544]

"For completeness an **Internet search was also conducted using a similar process to that used with the library databases.**" [p. 1544]

"The analysis of the **40 articles** was aided by **applying mindmapping techniques** to capture and cluster the **main themes and contributions**. These were then **presented at an industrial seminar** which helped the researchers to test the clarity and completeness of their findings." [p. 1545]

9.11. Metodologia para definição de pesquisas futuras

NADA

10. Resultados

10.1. Quantidades resultantes antes e após cada filtro

80 articles (First Filter)-> 33 documents (Second Filter)-> 40 documents

First Filter: identified the directly relevant;

Second Filter: Cross-checking of references.

10.2. Definições (resultantes da análise ou mesmo adotadas como premissas no início da publicação)

- **"PSS is an integrated product and service offering that delivers value in use"** [p. 545]. **A set of definitions is available in item 13 (Table 1), but the written is the one used in this article.**
- **" 'servitization' as the evolution of product identity based on material content to a position where the material component is inseparable from the service system."** [p. 1546]
- **" 'productization' is the evolution of the services component to include a product or a new service component marketed as a product."** [p. 1546]
- **"Product-oriented PSS:** promoting/selling the product in a traditional manner, while including in the original act of sale additional services such as after-sales service to guarantee functionality and durability of the product owned by the customer (maintenance, repair, reuse and recycling, and helping customers optimize the application of a product through training and consulting). The company is motivated to introduce a PSS to minimize costs for a long-lasting, well-functioning product and to design products to take account of product end-of-life (re-usable/easily replaceable/recyclable parts)." [p. 1547]
- **"Use-oriented PSS:** selling the use or availability of a product that is not owned by the customer (e.g. leasing, sharing). In this case the company is motivated to create a PSS to maximize the use of the product needed to meet demand and to extend the life of the product and materials used to produce it." [p. 1547]
- **"Result-oriented PSS:** selling a result or capability instead of a product (e.g. Web information replacing directories, selling laundered clothes instead of a washing machine). Companies offer a customized mix of services where the producer maintains ownership of the product and the customer pays only for the provision of agreed results." [p. 1547]

10.3. Evolução da pesquisa / das publicações no assunto

- Mark Goedkoop et al. in 1999 ('Product Service-Systems –Ecological and Economic Basics') [p. 1546];
- Oksana Mont, with Meijkamp, Manzini and Vezzoli and Manzini et al. also making large contributions [p. 1546];
- Number of articles on PSS grew steadily, peaking in 2003/4 when 11 papers were published [p. 1546];
- Since then, there has been a decline in contributions, with the most recent being within a special edition of the Journal of Cleaner Production (volume 14) in 2006 [p. 1546];

10.4. Comunidades / “tribos” / “igrejas”/ áreas de conhecimento / disciplinas identificadas
Manufacturing, Engineering, Design, and Management.

10.5. Características de cada tribo (os atributos e/ou explicações são definidos pelo próprio artigo)
NADA

10.6. Principais “achados” (*findings*)
Goedkoop et al. defines the key elements of a PSS; namely the following [p. 1545].

1. Product: a tangible commodity manufactured to be sold. It is capable of ‘falling on your toes’ and of fulfilling a user’s needs.
2. Service: an activity (work) done for others with an economic value and often done on a commercial basis.
3. System: a collection of elements including their relations.

Definition of a PSS

“**Finding 1:** A PSS offers the opportunity to decouple economic success from material consumption and hence **reduce the environmental impact** of economic activity. The PSS logic is premised on **utilizing the knowledge of the designer-manufacturer to both increase value as an output and decrease material and other costs** as an input to a system.” [p. 1545]

“The **first formal definition of a PSS was given in [2]** Since then, most contributors have broadly adopted this definition (see Table 1), and generally interpret a PSS as a ‘**product(s) and service(s) combined in a system to deliver required user functionality in a way that reduces the impact on the environment**’. Goedkoop et al. [2] add further clarity by also defining the key elements of a PSS; namely the following.” [p. 1545] (Definition [2] is the first in Table 1, available in item 13)

Percentage of publications	Subject
20%	describing business benefits and drivers
20%	reviewing the characteristics of PSS
35%	focusing on case studies and examples
25%	Other topics are related to product life cycle, service design methods, and service engineering

Evolution of the PSS concept

“Finding 2: PSS originated in Northern Europe (principally The Netherlands and Scandinavia) in the late 1990s and, to date, **most contributors have been academics from environmental and social sciences** who typically published in the Journal of Cleaner Production between 2000 and 2004.” [p. 1546]

‘servitization’+‘productization’: The convergence of these trends is the consideration of a product and a service as a single offering.[p. 1545]

Features of a PSS

“Finding 3: A PSS is a special case in servitization, which values asset performance or utilization rather than ownership, and achieves differentiation through the integration of product and services that provide value in use to the customer.” [p. 1547]

Table 2 provides a variety of case studies of PSS available.

Applications of PSSs

“Finding 4: There is a diverse range of PSS examples in the literature, apparently demonstrating economic success but tending to emphasize the environmental and social gains.” [p. 1548]

“The fundamental business benefit of a PSS is an improvement in total value for the customer through increasing service elements.” [p. 1548]

“For the customer, a PSS is seen to provide value through more customization and higher quality (e.g. improved machine availability for a machine tool within a specific factory context). The service component, being flexible, can also deliver new functionality better to suit customer needs and is often described as removing administrative or monitoring tasks away from the customer and back to the manufacturer.” [p. 1548]

“Adoption of PSS can lead to reduced resource use and reduced waste generated since fewer products are manufactured using fewer materials per use. Similarly, successful PSS applications can, through the increase in sales and service activities, offset the loss of jobs in traditional manufacturing; and as public pressure on environmental issues grows, the widespread promotion and adoption of PSS is favoured by government bodies.” [p. 1548]

The benefits of a PSS

“Finding 5: There are a wide range of benefits of a PSS; to the producer it means an offering of higher value that is more easily differentiated, to the customer it is a release from the responsibilities of asset ownership, and to society at large a more sustainable approach to business.” [p. 1548]

“The main barrier to the adoption of a PSS as the cultural shift necessary, for a consumer to place value on having a need met as opposed to owning a product.’ [p. 1549]

Barriers to the adoption of a PSS

“Finding 6: The principal barriers to the adoption of PSS are positioned at both sides of the dyad: consumers may not be enthusiastic about ownerless consumption, and the manufacturers may be concerned with pricing, absorbing risks, and shifts in the”organization, which require time and money to facilitate.” [p. 1549]

“A PSS must be designed, made, and delivered on a case-by-case basis and viewed from the client’s perspective.” [p. 1549]

“When designing a PSS, a company must move from ‘product thinking’ to ‘system thinking’, and breakdown the ‘business as usual’ attitude.” [p. 1549]

“Frequently, organizations need to change their traditional structures to accommodate their involvement with the customer and other partner/supplier organizations in the infrastructure.” [p. 1549]

“The relationship between the customer and the company plays a key role in the design of an effective PSS. Early involvement with the customer is essential to achieve a solution that responds to customer wants and needs.” [p. 1549]

Features in the effective design of a PSS

“**Finding 7: A successful PSS needs to be designed at the systemic level from the client perspective and requires early involvement with the customer and changes in the organizational structures of the provider.**” [p. 1549]

“MEPSS Handbook offers a methodology and toolkit for developing a PSS model.” [p. 1549]

“Mont proposes that a PSS may be created in a step-by-step fashion based on the Deming cycle” [p. 1549]

“Aurich et al. develop a process for the systematic design of technical services supporting a product” [p. 1549]

“Goedkoop et al. offer a four-axis model for auditing a PSS.” [p. 1549]

“Mont in the editorial for the special edition of the Journal of Cleaner Production in 2006 considers the development of generic methodologies as unlikely and unnecessary.” [p. 1550]

Tools and methodologies for designing a PSS

“**Finding 8: A range of tools and methodologies exist for designing PSS; however, these tend to lack a critical and in-depth evaluation of their performance in practice; they are typically a subtle development of more conventional processes; and there is a lack of evidence for the completeness of the set of tools and methods proposed.**” [p. 1550]

“Understanding the management of the transition, as an organization moves from a traditional product–sale model to a PSS model, is also a growing subject.” [p. 1550]

“In the literature it is recognized that there has been insufficient work carried out to capture and present successful PSS applications.” [p. 1550]

Future research challenges in the PSS literature

“**Finding 9: The PSS literature highlights that in-depth and rigorous research is needed to develop models, methods, and theories. More widespread adoption of the PSS concept needs better understanding of PSS practices, of methods to assess value, and of organizational transitions.**” [p. 1550]

- 10.7. Outros tópicos que não foram tratados aqui (sugestão para nova meta-informação ou resultados significativos)

NADA

- 10.8. Proposições de pesquisas futuras (geral)

“**Better understanding of PSS practices, of methods to assess value, and of organizational transitions.**” [p. 1550]

“The principal issues concern the lack of well-developed tools and methodologies that can provide manufacturers with a business-wide guide for the implementation of PSSs.” [p. 1550]

“The following research questions can be posed.

- 1. How are servitized organizations and PSSs designed?**

- 2. How are servitized organizations and PSSs built and delivered?
- 3. How are servitized organizations and PSSs sustained by the network?
- 4. How can the value-in-use delivered by PSSs be assessed?
- 5. How can 'traditional' manufacturing firms make the transition to servitized organizations?

The authors' own research will now set out to address these points and in doing so will undoubtedly raise other questions." [p. 1551]

10.9. Contribuições (para academia / prática / ambas?)

Academic: The findings and issues raised in this paper provide a **useful platform on which to base more in-depth research.** [p. 1550]

Practice: "To be both effective and efficient, manufacturers need, for example, to be able to understand how their customers will value their services. Similarly, they will need to be able to configure their products, technologies, operations, and supply chain to support this value offering. Yet, as this paper has gone some way to demonstrate, there is little guidance available for manufacturers in this situation." [p. 1550] (**Shows the gap between practice and theory**).

11. Conclusões

11.1. Trabalhos futuros (que o autor se propõe, diferente das proposições futuras)

NADA

11.2. Limitações

NADA

12. SUA ANÁLISE

12.1. Pontos fortes

The comparison of PSS definitions, the table containing the case studies and its analysis, the analysis in general is great, the examples, and definitions. In the findings it can be seen the line of thought really leads to what it is about to be concluded. The article is written focusing on practitioners, full of examples, case studies and even the weak spots leads to this idea, but the academics and practitioners create a good outcome related to future research questions.

12.2. Pontos fracos

Analysis of 30 documents, the introduction is underdeveloped, it lacks references and relies only on the author's words, since they analysed 40 authors, it was expected a better development in the beginning of the article, with more references, some sentences lack literature proof.

12.3. Sugestões para melhoria do artigo

Improve the beginning of the article introducing literature proof for the important ideas. Also increase the amount of documents analysed, since there were nearly 20 authors it is expected a greater amount of work here. Another point is to state a stronger gap and explanation for this research.

13. Figuras ou tabelas importantes (caso você queira copiar e citar nos tópicos anteriores)

Table 1 Popular definitions of a Product Service-System

Author (date)	Definition of Product Service-System
Goedkoop <i>et al.</i> (1999)	'A product service-system is a system of products, services, networks of "players" and supporting infrastructure that continuously strives to be competitive, satisfy customer needs and have a lower environmental impact than traditional business models'.
Centre for Sustainable Design (2001)	'A pre-designed system of products, supporting infrastructure and necessary networks that fulfil a users needs on the market, have a smaller environmental impact than separate product and services with the same function fulfilment and are self learning'.
Mont (2001)	'A system of products, services, supporting networks and infrastructure that is designed to be: competitive, satisfy customer needs and have a lower environmental impact than traditional business models'.
Manzini (2003)	'An innovation strategy, shifting the business focus from designing (and selling) physical products only, to designing (and selling) a system of products and services which are jointly capable of fulfilling specific client demands'.
Brandsotter (2003)	'A PSS consists of tangible products and intangible services, designed and combined so that they are jointly capable of fulfilling specific customer needs. Additionally PSS tries to reach the goals of sustainable development'.
Wong (2004)	'Product Service-Systems (PSS) may be defined as a solution offered for sale that involves both a product <i>and</i> a service element, to deliver the required functionality'.
ELIMA (2005)	'A product service-system is defined as a system of products, services, supporting networks and infrastructure that is designed to [be]: Competitive, Satisfy customer needs, & Have a lower environmental impact than traditional business models'.

Table 2 Examples of successful Product Service-Systems

Organization	Description	Link
Xerox International	Products are sold guaranteeing fixed price per copy from products/processes designed for remanufacturing.	http://www.xerox.com
Parkersell (UK)	Parkersell developed a product service integrated lighting system solution for Sainsbury's more efficient in life cycle costing and environmental improvement.	http://www.pss-info.com
Castrol Inc. (USA)	Lubricant service packages reducing lubricant consumption. Profit from cost saving not consumption.	http://castrolindustrial.com
Eastern Energy (UK)	Not just energy. Energy management, consumption and process monitoring and utility awareness and training.	http://www.eastern-energy.co.uk
Electrolux (Sweden)	Initial fee then pay per wash from remotely monitored energy efficient machine and laundrette system solutions including maintenance, repair and finance services.	http://www.corporate.electrolux.com
Mobility (Switzerland)	Vehicle sharing group – 1400 cars, 850 locations, 350 communities. Less than 1500/yr saves money.	http://www.mobility.ch