Amrita School of Business
Lean and Agile Systems
Ph.D., Programme Course, December, 2016 - January 2017
Course Plan

Faculty: Dr. Suresh M

Total No. of hours: 45

Course Description:

Modern industry requires managers who can effectively deploy innovative approaches to manufacturing process. Among recent innovative approaches, lean and agile manufacturing practices have gained substantial attention because of its impact on profitability and efficiency. Manufacturing firms are increasingly adopting the combination of lean and agile systems to gain competitive advantage. While lean eliminates wastes and streamlines the manufacturing process, agile systems enable flexible production and delivery of customized products at a reasonable cost. Although many manufacturing organizations around the world have incorporated a combination of lean and agile systems into the manufacturing practices, cohesive procedures are yet to evolve for its successful assimilation. In this context, this course is designed to impart knowledge on Lean and Agile systems in manufacturing as well as service industries. The course is organised in two modules. First, it opens with the basic concepts of Lean System, and goes on to focus on lean manufacturing/service principles with application procedures in both traditional and modern organisations and second, it focuses on the agile systems principles and its implementation methods. The emphasis of the course is on application of lean, agile and leagility systems in manufacturing and service sectors with an objective to develop lean thinking and agile concept application in manufacturing, hospitals, and other service delivery organizations. The course outcome would be analysis of the preeminent works pertaining to the field and then add on to the body of knowledge by augmenting the existing lean and agile methods.

Learning objectives:

On successful completion of this course the research scholar should be able to:

- Analyse and evaluate the operational/service issues of the value addition processes of an organisation;
- Identify and recommend the determinants of effective and efficient way of lean implementations.
- How to evaluate the efficiency and effectiveness of the lean, agile, leagility system and its components
- Advocate the importance of the role of lean-agility in service operations

Pedagogy:
The course will closely follow the way the prescribed research articles are organized. The pedagogy would be broadly lecture based supported primarily by research discussions and term paper writing.

Assessment:
The specific evaluation components will be as follows:

- Final Exam **40**%
- Term Paper **60**%

Course Requirements:
Regular attendance in the class, careful listening, active participation, and meticulous class preparation (all of which are evaluated). Throughout this course, the research scholars are expected to demonstrate highest levels of involvement and commitment, in terms of efforts, quality of term paper. The potential of making learning interesting and effective lies primarily in the hands of the research scholars and are expected to use the same for this course throughout the semester.

Structure of the course:

Session	Topic	Research Paper
1	The genealogy of lean production	Holweg (2007)
2	Towards a theory for lean implementation in supply networks	Bortolotti, et al. (2016)
3	Internal lean practices and performance: The role of technological turbulence	Chavez, R, et al. (2015)
4	Successful lean implementation: Organizational culture and soft lean practices	Bortolotti, et al. (2015)
5	The lean-performance relationship in services: a theoretical model	Hadid & Afshin Mansouri, (2014)
6	Defining and developing measures of lean production	Shah & Ward (2007)
7	The effect of environmental complexity and environmental dynamism on lean practices	Azadegan, et al. (2013)
8	Lean competence: integration of theories in operations management practice	Parry, et al. (2010)
9	The moderation of lean manufacturing effectiveness by dimensions of national culture: testing practice-culture congruence hypotheses	Kull, et al. (2014).

10	Lean service operations: reflections and new directions for capacity expansion in outpatient clinics	LaGanga, (2011)
11	Factors influencing employee perceptions in lean transformations	Losonci, et al. (2011)
12	Applying lean principles to the design of healthcare facilities	Hicks, et al. (2015)
13	An instrument for assessing lean service adoption	Malmbrandt & Ahlstrom (2013)
14	Implementing corporate lean programs: the effect of management control practices	Netland, et al. (2015)
15	The relationship between lean operations and sustainable operations	Piercy & Rich (2015)
16	Examining pathways to safety and financial performance in hospitals: A study of lean in professional service operations	Dobrzykowski, et al. (2016)
17	Impact of lean manufacturing and environmental management on business performance: An empirical study of manufacturing firms	Yang, et al. (2011)
18	Agile manufacturing in practice-Application of a methodology	Sharifi & Zhang (2001)
19	How to make the whole organization Agile	Denning (2015)
20	Agility drivers, enablers and outcomes	Vazques-Bustelo, et al. (2007)
21	Lean vs agile in the context of complexity management in organizations	Putnik & Putnik (2012)
22	The strategic integration of agile and lean supply	Stratton & Warburton (2003)
23	Agile, a guiding principle for health care improvement?	Tolf ,et al. (2015)
24	Lean vs agile from an organizational sustainability, complexity and learning perspective	Putnik (2012)
25	Lean and agile manufacturing: external and internal drivers and performance outcomes	Hallgren & Olhager (2009)
26	Developing lean and agile health care supply chains	Aronsson, et al. (2011)
27	The development of a lean, agile and leagile supply network taxonomy	Purvis, et al. (2014)

	based on differing types of flexibility	
28	Lean and agile: an epistemological reflection	Browaeys & Fisser (2012)
29	Supply chain leagility in professional services: how to apply decoupling point concept in healthcare delivery system	Rahimnia & Moghadasian (2010)
30	Quantifying the degree of leanness and agility at any point within a supply chain	Bezuidenhout (2016)
31	Research and Concepts: The integration of lean management and Six Sigma	Arnheiter & Maleyeff (2005)
32	Lean and green product development: two sides of the same coin?	Johansson & Sundin (2014)
33	Total agile design system model via literature exploration	Vinodh et al. (2009)
34-35	Term paper : Research Question	
36-38	Term paper: Literature survey	
39-45	Term paper: Model development	

Contact hours for students

Contact Hours: All Wednesdays and Saturdays, from 3 p.m. to 5 p.m. in my office room.

Extra Contact Hours: Research Scholars are welcome to discuss their questions, seek clarifications, on all Mondays (3 p.m. to 5 p.m.)

The PhD course, learning goal: Critical and Integrative Thinking.

Communication information of the instructor:

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Reference Papers

Arnheiter, E. D., & Maleyeff, J. (2005). The integration of lean management and Six Sigma. *The TQM magazine*, *17*(1), 5-18.

Aronsson, H., Abrahamsson, M., & Spens, K. (2011). Developing lean and agile health care supply chains. *Supply Chain Management: An International Journal*, *16*(3), 176-183.

Azadegan, A., Patel, P. C., Zangoueinezhad, A., & Linderman, K. (2013). The effect of environmental complexity and environmental dynamism on lean practices. *Journal of Operations Management*, *31*(4), 193-212.

Bezuidenhout, C. N. (2016). Quantifying the degree of leanness and agility at any point within a supply chain. *British Food Journal*, *118*(1), 60-69.

Bortolotti, T., Boscari, S., & Danese, P. (2015). Successful lean implementation: Organizational culture and soft lean practices. *International Journal of Production Economics*, *160*, 182-201.

Bortolotti, T., Romano, P., Martínez-Jurado, P. J., & Moyano-Fuentes, J. (2016). Towards a theory for lean implementation in supply networks. *International Journal of Production Economics*, *175*, 182-196.

Browaeys, M. J., & Fisser, S. (2012). Lean and agile: an epistemological reflection. *The Learning Organization*, *19*(3), 207-218.

Chavez, R., Yu, W., Jacobs, M., Fynes, B., Wiengarten, F., & Lecuna, A. (2015). Internal lean practices and performance: The role of technological turbulence. *International Journal of Production Economics*, *160*, 157-171.

Denning, S. (2015). How to make the whole organization Agile. *Strategy & Leadership*, *43*(6), 10-17.

Dobrzykowski, D. D., McFadden, K. L., & Vonderembse, M. A. (2016). Examining pathways to safety and financial performance in hospitals: A study of lean in professional service operations. *Journal of Operations Management*, *42*, 39-51.

Hadid, W., & Afshin Mansouri, S. (2014). The lean-performance relationship in services: a theoretical model. *International Journal of Operations & Production Management*, *34*(6), 750-785.

Hallgren, M., & Olhager, J. (2009). Lean and agile manufacturing: external and internal drivers and performance outcomes. *International Journal of Operations & Production Management*, *29*(10), 976-999.

Hicks, C., McGovern, T., Prior, G., & Smith, I. (2015). Applying lean principles to the design of healthcare facilities. *International Journal of Production Economics*, *170*, 677-686.

Holweg, M. (2007). The genealogy of lean production. *Journal of operations management*, *25*(2), 420-437.

Johansson, G., & Sundin, E. (2014). Lean and green product development: two sides of the same coin?. *Journal of Cleaner Production*, *85*, 104-121.

Kull, T. J., Yan, T., Liu, Z., & Wacker, J. G. (2014). The moderation of lean manufacturing effectiveness by dimensions of national culture: testing practice-culture congruence hypotheses. *International Journal of Production Economics*, *153*, 1-12.

LaGanga, L. R. (2011). Lean service operations: reflections and new directions for capacity expansion in outpatient clinics. *Journal of Operations Management*, *29*(5), 422-433.

Losonci, D., Demeter, K., & Jenei, I. (2011). Factors influencing employee perceptions in lean transformations. *International Journal of Production Economics*, *131*(1), 30-43.

Malmbrandt, M., & Ahlstrom, P. (2013). An instrument for assessing lean service adoption. *International Journal of Operations & Production Management*, *33*(9), 1131-1165.

Netland, T. H., Schloetzer, J. D., & Ferdows, K. (2015). Implementing corporate lean programs: the effect of management control practices. *Journal of Operations Management*, *36*, 90-102.

Parry, G., Mills, J., & Turner, C. (2010). Lean competence: integration of theories in operations management practice. *Supply Chain Management: An International Journal*, *15*(3), 216-226.

Piercy, N., & Rich, N. (2015). The relationship between lean operations and sustainable operations. *International Journal of Operations & Production Management*, *35*(2), 282-315.

Purvis, L., Gosling, J., & Naim, M. M. (2014). The development of a lean, agile and leagile supply network taxonomy based on differing types of flexibility. *International Journal of Production Economics*, *151*, 100-111.

Putnik, G. D. (2012). Lean vs agile from an organizational sustainability, complexity and learning perspective. *The Learning Organization*, *19*(3), 176-182.

Putnik, G. D., & Putnik, Z. (2012). Lean vs agile in the context of complexity management in organizations. *The Learning Organization*, *19*(3), 248-266.

Rahimnia, F., & Moghadasian, M. (2010). Supply chain leagility in professional services: how to apply decoupling point concept in healthcare delivery system. *Supply Chain Management: An International Journal*, *15*(1), 80-91.

Shah, R., & Ward, P. T. (2007). Defining and developing measures of lean production. *Journal of operations management*, *25*(4), 785-805.

Stratton, R., & Warburton, R. D. (2003). The strategic integration of agile and lean supply. *International Journal of Production Economics*, *85*(2), 183-198.

Sharifi, H., & Zhang, Z. (2001). Agile manufacturing in practice-Application of a methodology. *International Journal of Operations & Production Management*, *21*(5/6), 772-794.

Tolf, S., Nyström, M. E., Tishelman, C., Brommels, M., & Hansson, J. (2015). Agile, a guiding principle for health care improvement?. *International journal of health care quality assurance*, *28*(5), 468-493.

Vazques-Bustelo, D., Avella, L., & Fernandez, E. (2007). Agility drivers, enablers and outcomes. *International Journal of Operations & Production Management*, *27*(12), 1303-1332.

Vinodh, S., Sundararaj, G., & Devadasan, S. R. (2009). Total agile design system model via literature exploration. *Industrial Management & Data Systems*, *109*(4), 570-588.

Yang, M. G. M., Hong, P., & Modi, S. B. (2011). Impact of lean manufacturing and environmental management on business performance: An empirical study of manufacturing firms. *International Journal of Production Economics*, *129*(2), 251-261.