NOT A LEAP-OF-FAITH: COMPETENCIES AND SUCCESS RECIPES FOR TRADITIONAL SERVICE PROVIDERS IN THE TRANSFORMATIONAL OUTSOURCING SCENARIO

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE

FELLOW PROGRAM IN MANAGEMENT (INDUSTRY)

INDIAN INSTITUTE OF MANAGEMENT

INDORE

BY

SUDIPTO MAZUMDER

October 2019

Thesis Advisory Committee

Prof Swapnil Garg

(Chairman)

Prof Srinivas Gunta

(Member)

Prof Manish Popli

(Member)

Abstract

Literature has traditionally studied outsourcing of services as a make-buy decision in which an organization chooses to purchase a service that it previously performed in-house. (Monczka et al. 2005). By employing low-cost skilled resources and working to well-articulated performance contracts, the external service providers can deliver non-critical non-core and critical non-core services at low cost. However, there is an increasing trend towards outsourcing of activities closer to the core business, such that the service providers tend to become partners, being responsible for key business issues, problems, and outcomes, on an end-to-end basis. With the above-increased scope of activities, this new form has moved far and beyond traditional outsourcing as commonly understood. This new model, termed transformational outsourcing (Linder, 2004; Mazzawi, 2002) despite its growing significance in the industry, has been under-researched. Also, extant research on outsourcing has primarily taken a client-centric orientation, with limited attention paid to the providers' perspective. To address the above gaps taking a provider-centric view this research takes up the following three studies.

Essay I

One of the most popular and complex forms of the above new model is *transformational managed service*, sometimes loosely referred to as As-a-Service. This form of outsourcing demonstrates integrated traits of multiple prevalent outsourcing forms studied across literature streams. On the one hand, it incorporates facets of s*ubscription-based services delivered on-demand through cloud-enabled ecosystems* (Bharadwaj et al., 2010) *and managed services* (Deloitte, 2017) as studied in Information Systems literature. On the other hand, it also demonstrates traits of *Strategic and Transformational Outsourcing* (Ghodeswar and

Vaidyanathan, 2008, Brown and Wilson, 2007), *Solutions/Integrated Solutions* (Brady et al., 2005) and *Service Productization* (Chattopadhyay, 2012; Baines et al., 2007) as elaborated in Strategy literature. The above overlapping presence creates confusion in the minds of practitioners and academia about the true constituents of transformational managed service. To address this deficiency, the first research, using a grounded theory approach, through semi-structured personal interviews of 18 industry leaders across 5 firms, supported by 10 caselets built from archival data, identifies the relevant *necessary and sufficient* attributes (extant in Information Systems and Strategy literature as well as idiosyncratic ones) which ascertains transformational managed service outsourcing different from its prevalent traditional from. Furthermore, it endeavors to build a comprehensive and unambiguous definition of transformational managed service outsourcing for the benefit of all.

Essay II

In the outsourcing context, the scope of extant research on competencies of service providers (Feeny et al. 2005), has been primarily confined to the *traditional* model. Thus identification of required idiosyncratic competencies for *transformational outsourcing* which represents a step change from traditional (Kedia and Lahiri, 2007) remains a gap. The second research, using *transformational managed service* (As-a-service) as a representative of the above new form, endeavors to address the above deficiency. Following the same grounded theory methodology, as described in the prior research, through interviews of 18 senior leaders across 5 provider firms and supported by 10 caselets built using archival data from secondary sources, the second research identifies eight key competencies required by traditional providers to sustain and grow in the transformational outsourcing scenario. Subsequently, integrating extant understanding of literature on classification of competencies (Zollo and Winter, 2003), contextuality of

competencies (Zollo and Winter, 2003; Zahra et.al 2006) and performance impact of competencies (Karna et.al, 2016),the researcher built a framework categorizing the above-identified competencies into *learning mechanisms, dynamic and operational competencies*. Furthermore, the researcher classified the above dynamic competencies based on their roles played to sense, seize and reconfigure potential opportunities (Teece (2007) in the transformational outsourcing context.

Essay III

While the second research stopped at identifying and classifying the competencies required, the third research endeavors to extend the second through exploration of the *combinatorial recipes of competencies* required by traditional outsourcing service providers to succeed (and fail) in the transformational outsourcing scenario. Building on the premise that outcomes rarely have a single cause and causes rarely operate in siloes to deliver outcomes, especially in complex business scenarios, this study looks at causal combinations instead of isolated treatments. It uses the theoretical concept of equifinality which provides the persistence for a variety of design choices that can all lead to the desired outcome (Fiss 2011) and FsQCA (Fuzzy Set Qualitative Comparative Analysis) Ragin (2000,2007) as the methodology to identify and analyze the desired competency combinations. For this study, the research considered 26 among the top 50 ITeS (Business Process Outsourcing) firms globally by revenue (Everest 2016; Hfs 2016) as the context, supported by analyst reports (Hfs, Everest, Gartner) ,credible leading industry databases (CRISIL, Thomson One, FACTIVA) and other primary and secondary sources including annual reports, press releases and information available on the organizations' websites. The above enabled the research to categorize the above-identified competencies into *necessary and sufficient* for the new outsourcing context.

Furthermore, it identified two distinct paths followed by provider firms to succeed in the new model. While the *broad scope* firms primarily followed a path of *customized solution building* to address disparate client problems across industries, the *narrow scope* firms were found to strengthen further their traditional competency of *standardization* to succeed in the transformational outsourcing scenario. The researcher chose to identify the above categories of firms as *solution builders* and *hyper- standardizers*.

While the above-demonstrated paths to success, the analysis further revealed multiple avenues to fail in the new outsourcing context. For *broad scope* firms, the *absence of the ability to integrate multiple and diverse offering components* while *ensuring no enhancement in potential security breach threats* emerged as a core driver to deviate from the path to success in the new outsourcing scenario. For *narrow scope* provider firms, on the other hand, *limitation in the ability to acquire knowledge* from diverse internal and external sources as well as the *inability to generate and share critical business and operational insights* emerge as significant deterrents to the success path. The researcher chose to identify the above three categories of firms as *non-implementers*, *unawares* and *ignorants.*

Table of Contents

8 References

- Accorsi, R. (2011). Business process as a service: Chances for remote auditing. IEEE Computer Software and Applications Conference.
- Agarwal, R., & Selen, W. (2009). Dynamic capability building in service value networks for achieving service innovation. *Decision Sciences*, *40*(3), 431-475.
- Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2016). How to improve firm performance using big data analytics capability and business strategy alignment? *International Journal of Production Economics*, *182*, 113-131
- Alam, I., & Perry, C. (2002). A customer-oriented new service development process. *Journal of Services Marketing*, *16*(6), 515-534.
- Allen, J. (2005). *Governing for enterprise security* (No. CMU/SEI-2005-TN-023). CARNEGIE-MELLON UNIV PITTSBURGH PA SOFTWARE ENGINEERING INST
- Amit, R., & Schoemaker, P. J. (1993). Strategic assets and organizational rent. *Strategic management journal*, *14*(1), 33-46.
- Anderson, E. E., & Choobineh, J. (2008). Enterprise information security strategies. *Computers & Security*, *27*(1-2), 22-29.
- Andreini, D., Salo, J., Wendelin, R., Pezzotta, G., & Gaiardelli, P. (2015). From a service-dominant logic to a goods-dominant logic: Consequences for the buyer-seller relationships of a corporate bank. *IMP Journal*, *9*(3), 250-266.
- Baines, T. S., Lightfoot, H. W., Evans, S., Neely, A., Greenough, R., Peppard, J., & Alcock, J. R. (2007). State-of-the-art in product-service systems. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of engineering manufacture*, *221*(10), 1543-1552.
- Baines, T. S., Lightfoot, H. W., Evans, S., Neely, A., Greenough, R., Peppard, J., & Alcock, J. R. (2007). State-of-the-art in product-service systems. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of engineering manufacture*, *221*(10), 1543-1552
- Balaji, S., & Ranganathan, C. (2006). Exploring the key capabilities for offshore IS sourcing. *ICIS 2006 Proceedings*, 37
- Banerjee, A. V., & Duflo, E. (2000). Reputation effects and the limits of contracting: A study of the Indian software industry. *The Quarterly Journal of Economics*, *115*(3), 989-1017.
- Barber, F., & Strack, R. (2005). The surprising economics of a "people business." *Harvard business review*, *83*(6), 80-90
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, *17*(1), 99-120.
- Bask, A., Lipponen, M., Rajahonka, M., & Tinnilä, M. (2010). The concept of modularity: diffusion from manufacturing to service production. *Journal of Manufacturing Technology Management*, *21*(3), 355-375
- Bhattacharjee, S., & Chakrabarti, D. (2015). Indian IT outsourcing industry: Future threats and challenges - A reassessment. *Futures*, *67*, 11–21.
- Blyler, M., & Coff, R. W. (2003). Dynamic capabilities, social capital, and rent appropriation: Ties that split pies. *Strategic management journal*, *24*(7), 677-686
- Bonnemeier, S., Burianek, F., & Reichwald, R. (2010). Revenue models for integrated customer solutions: Concept and organizational implementation. *Journal of Revenue and Pricing Management*, *9*(3), 228-238.
- Borman, M. (2006). Applying multiple perspectives to the BPO decision: a case study of call centers in Australia. *Journal of Information Technology*, *21*(2), 99-115.
- Brady, T., Davies, A., & Gann, D. (2005). Can integrated solutions business models work in construction?. *Building Research & Information*, *33*(6), 571-579.
- Brown, D., & Wilson, S. (2007). *The black books of outsourcing: how to manage the changes, challenges, and opportunities*. John Wiley & Sons
- Brown, T. (2008). Definitions of design thinking. *Design Thinking: Thoughts by Tim Brown*, *7*.
- Brusoni, S., & Prencipe, A. (2001). Unpacking the black box of modularity: technologies, products, and organizations. *Industrial and Corporate Change*, *10*(1), 179-205.

- Bunyaratavej, K., Hahn, E. D., & Doh, J. P. (2008). Multinational investment and host country development: Location efficiencies for services offshoring. *Journal of World Business*, *43*(1), 227–242.
- Burgarth, S., Meissner, J., & Hongyan, L. (2008). Improving quality in business process outsourcing–achieve process and service quality with technology. *Sap Insight*, *50*.
- Caralli, R. A., Allen, J. H., Stevens, J. F., Willke, B. J., & Wilson, W. R. (2004). *Managing for enterprise security* (No. CMU/SEI-2004-TN-046). CARNEGIE-MELLON UNIV PITTSBURGH PA SOFTWARE ENGINEERING INST
- Carlborg, P., Kindström, D., & Kowalkowski, C. (2014). The evolution of service innovation research: a critical review and synthesis. *The Service Industries Journal*, *34*(5), 373-398
- Cepeda, G., & Vera, D. (2007). Dynamic capabilities and operational capabilities: A knowledge management perspective. *Journal of business research*, *60*(5), 426-437.
- Chae, B., Olson, D., & Sheu, C. (2014). The impact of supply chain analytics on operational performance: a resource-based view. *International Journal of Production Research*, *52*(16), 4695-4710
- Chakravarthy, S. B., & Chakravarthy, B. S. (1986). Measuring Strategic Performance : Summary. *Strategic Management Journal*, *7*(February 1984), 437–458.
- Chandrasekaran, N., & Ensing, G. (2004). ODC: a global IT services delivery model. *Communications of the ACM*, *47*(5), 47-49.
- Chattopadhyay, N. (2012). Productisation of service: a case study. *Editorial Preface*, *3*(12).
- Collis, D. J. (1994). Research note: how valuable are organizational capabilities? *Strategic management journal*, *15*(S1), 143-152.
- Contractor, F. J., Kumar, V., Kundu, S. K., & Pedersen, T. (2010). Reconceptualizing the firm in a world of outsourcing and offshoring: The organizational and geographical relocation of high-value company functions. *Journal of management studies*, *47*(8), 1417-1433.
- Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, *13*(1), 3-21.
- Crocker, K. J., & Reynolds, K. J. (1993). The efficiency of incomplete contracts: an empirical analysis of air force engine procurement. *The RAND journal of economics*, 126-146.
- Cyert, R. M., & March, J. G. (1963). A behavioral theory of the firm. *Englewood Cliffs, NJ*, *2*, 169-187.
- Davenport, T. H. (2006). Competing on analytics. *Harvard business review*, *84*(1), 98
- Davies, A. (2004). Moving base into high-value integrated solutions: a value stream approach. *Industrial and Corporate Change*, *13*(5), 727-756.
- Davies, A.; Brady, T.; Hobday, M. (2007): Organizing for solutions: Systems seller vs. systems integrator. Industrial Marketing Management 36, pp. 183-193.
- Davies, P. (2004). *What's This India Business: Offshoring, Outsourcing, and the Global Services Revolution*. Nicholas Brealey.
- Deloitte (2017. Managed Services: A Catalyst for transformation in banking: Deloitte University Press
- Den Hertog, P., Van der Aa, W., & De Jong, M. W. (2010). Capabilities for managing service innovation: towards a conceptual framework. *Journal of Service Management*, *21*(4), 490-514.
- Deng, C. P., Mao, J. Y., & Wang, G. S. (2013). An empirical study on the source of vendors' relational performance in offshore information systems outsourcing. *International Journal of Information Management*, *33*(1), 10-19.
- Dewey, J. (1997). *How we think*. Courier Corporation
- Doh, J. P. (2005). Offshore outsourcing: implications for international business and strategic management theory and practice. *Journal of Management Studies*, *42*(3), 695-704.
- Domschke, M., Lindberg, T., Meinel, C., & Zeier, A. (2009). Creative Usage of Distributed Knowledge: Adopting Design Thinking Methodology to Enhance Organizational Creativity. In *13th Asia Pacific Researchers in Organization Studies Conference*
- Doty, D. H., Glick, W. H., & Huber, G. P. (1993). Fit, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal*, *36*(6), 1196-1250

- Døving, E., & Gooderham, P. N. (2008). Dynamic capabilities as antecedents of the scope of related diversification: the case of small firm accountancy practices. *strategic management journal*, *29*(8), 841-857
- Dul, J. (2016). Necessary condition analysis (NCA) logic and methodology of "necessary but not sufficient" causality. *Organizational Research Methods*, *19*(1), 10-52.
- Dunne, D., & Martin, R. (2006). Design thinking and how it will change management education: An interview and discussion. *Academy of Management Learning & Education*, *5*(4), 512-523.
- Edvardsson, B., & Tronvoll, B. (2013). A new conceptualization of service innovation grounded in SD logic and service systems. *International Journal of Quality and Service Sciences*, *5*(1), 19-31.
- Economic Times (2012). Retrieved from website https://economictimes.indiatimes.com/tech/ites/infosys-bpo-leads-the-way-in-non-linear-track-set-to-double-revenue-from-5-years-ago/articleshow/12075628.cms
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic management journal*, *21*(10-11), 1105-1121
- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic management journal*, *21*(10-11), 1105-1121.
- Erber, G., & Sayed-Ahmed, A. (2005). Offshore outsourcing. *Intereconomics*, *40*(2), 100-112.
- Ethiraj, S. K., Kale, P., Krishnan, M. S., & Singh, J. V. (2005). Where do capabilities come from and how do they matter? A study in the software services industry. Strategic management journal, 26(1), 25-45.
- Everest (2016). BPS Top 50. Retrieved from www2.everestgrp.com/reports
- Everest (2017). BPS Top 50. Retrieved from www2.everestgrp.com/reports
- Ezingeard, J. N., McFadzean, E., & Birchall, D. (2005). A model of information assurance benefits. *Information Systems Management*, *22*(2), 20-29.
- Feeny, D., Lacity, M., & Willcocks, L. P. (2005). Taking the Measure of Outsourcing Providers. *MIT Sloan Management Review*, *46*(3), 41–48. https://doi.org/10.1002/jmv.20859
- Fischer, T., Gebauer, H., Gregory, M., Ren, G., & Fleisch, E. (2010). Exploitation or exploration in service business development? Insights from a dynamic capabilities perspective. *Journal of Service Management*, *21*(5), 591-624
- Fiss, Peer, C. (2011). Building Better Causal Theories: A Fuzzy Set Approach to Typologies in Organization Research. *Academy of Management Journal*, *54*(2), 393–420. https://doi.org/10.5465/amj.2011.60263120.
- Flamholtz, E. (1995). Managing organizational transitions: implications for corporate and human resource management. *European Management Journal*, *13*(1), 39-51.
- Flint, D. J., Woodruff, R. B., & Gardial, S. F. (2002). Exploring the phenomenon of customers' desired value change in a business-to-business context. *Journal of marketing*, *66*(4), 102-117.
- Fontana, A., & Frey, J. (1994). The art of science. *The handbook of qualitative research*, *361376*
- Four new IT Outsourcing models gain popularity: Extracted from https://www.cio.com/article/2397240/outsourcing/outsourcing-4-new-it-outsourcing-pricing-models-gain-popularity.html
- Fratto, M. (2009). 1 In 5 Companies Cutting IT Security Spending. *Information Week*
- Gallouj, F., & Weinstein, O. (1997). Innovation in services. *Research Policy*, *26*(4-5), 537-556
- Gartner(2016): Extracted from https://www.gartner.com/it-glossary/msp-management-service-provider
- Gebauer, H., Worch, H., & Truffer, B. (2012). Absorptive capacity, learning processes and combinative capabilities as determinants of strategic innovation. *European Management Journal*, *30*(1), 57-73
- Ghodeswar, B., & Vaidyanathan, J. (2008). Business process outsourcing: an approach to gain access to world-class capabilities. *Business process management journal*, *14*(1), 23-38.
- Gholz, E. (2003). Systems integration in the US defense industry: who does it and why is it important? *The business of systems integration*, 279-306
- Ghosh, S., Hughes, M., & Hughes, P. (2017). Developing dynamic transformation capabilities in a high-velocity environment: A study of industrial internet companies
- Goles, T. (2002). The impact of the client-vendor relationship on information systems outsourcing

success.
- Grant, R. M., & Baden-Fuller, C. (1995). A Knowledge-Based Theory of Inter-Firm Collaboration. *Academy of Management Journal*, 17–21. https://doi.org/10.5465/AMBPP.1995.17536229
- Greckhamer, T., Misangyi, V. F., Elms, H., & Lacey, R. (2008). Using qualitative comparative analysis in strategic management research: An examination of combinations of industry, corporate, and business-unit effects. *Organizational Research Methods*, *11*(4), 695–726. https://doi.org/10.1177/1094428107302907
- Gresov, C., & Drazin, R. (1997). Equifinality: Functional equivalence in organization design. *Academy of management review*, *22*(2), 403-428
- Grimpe, C., & Kaiser, U. (2010). Balancing Internal and External Knowledge Acquisition: The Gains and Pains from R&D Outsourcing C. Grimpe and U. Kaiser R&D Outsourcing. *Journal of Management Studies*, *47*(8), 1483–1509. https://doi.org/10.1111/j.1467-6486.2010.00946.x
- Grote, M. H., & Täube, F. A. (2007). When outsourcing is not an option: International relocation of investment bank research—Or isn't it?. *Journal of International Management*, *13*(1), 57-77.
- Gulati, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. *Strategic management journal*, *20*(5), 397-420.
- Gulati, R., & Kletter, D. (2005). Shrinking core, expanding periphery: The relational architecture of high-performing organizations. *California Management Review*, *47*(3), 77-104.
- Guthrie, J. P. (2001). High-involvement work practices, turnover, and productivity: Evidence from New Zealand. *Academy of Management Journal*, *44*(1), 180-190
- Hall, J. H., Sarkani, S., & Mazzuchi, T. A. (2011). Impacts of organizational capabilities in information security. *Information management & computer security*, *19*(3), 155-176.
- Harkonen, J., Haapasalo, H., & Hanninen, K. (2015). Productization: A review and research agenda. *International Journal of Production Economics*, *164*, 65-82.
- Harkonen, J., Tolonen, A., & Haapasalo, H. (2017). Service productization: systematizing and defining an offering. *Journal of Service Management*, *28*(5), 936-971.
- Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource-based view: Competency lifecycles. *Strategic management journal*, *24*(10), 997-1010.
- Hemple, G., Finch, J., & Pasternak, O. (2015, January). Productization as a Service: Innovation through Standards in B2B Relationships. In *ISPIM Conference Proceedings* (p. 1). The International Society for Professional Innovation Management (ISPIM).
- Henderson, R. M., & Clark, K. B. (1990). Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. *Administrative science quarterly*, 9-30
- Henderson, R., & Cockburn, I. (1994). Measuring Competence? Exploring firm effects in pharmaceutical research. *Strategic management journal*, *15*(S1), 63-84.
- Hfs(2016). BPO Top 50. Retrieved from the website, https://www.hfsresearch.com/market-analyses/hfs-bpo-top-50
- Hfs. https://www.hfsresearch.com/blueprint-reports
- Hfs. https://www.hfsresearch.com/oneoffice-vendor-assessments
- Hobday, M., Davies, A., & Prencipe, A. (2005). Systems integration: a core capability of the modern corporation. *Industrial and corporate change*, *14*(6), 1109-1143.
- Hogan, S. J., Soutar, G. N., McColl-Kennedy, J. R., & Sweeney, J. C. (2011). Reconceptualizing professional service firm innovation capability: Scale development. *Industrial marketing management*, *40*(8), 1264-1273
- Hussey, D., & Jenster, P. (2003). Outsourcing: the supplier viewpoint. *Strategic Change*, *12*(1), 7-20.
- Jaakkola, E. (2011), "Unraveling the practices of 'productization' in professional service firms "Scandinavian Journal of Management, Vol. 27 No. 2, pp. 221-230.
- Jacobs, M., Vickery, S. K., & Droge, C. (2007). The effects of product modularity on competitive performance: do integration strategies mediate the relationship? *International Journal of Operations & Production Management*, *27*(10), 1046-1068.
- Jarvenpaa, S. L., & Mao, J. Y. (2008). Operational capabilities development in mediated offshore software services models. *Journal of Information Technology*, *23*(1), 3–17. https://doi.org/10.1057/palgrave.jit.2000125

- Javalgi, R. R. G., Dixit, A., & Scherer, R. F. (2009). Outsourcing to emerging markets: Theoretical perspectives and policy implications. *Journal of International Management*, *15*(2), 156-168.
- Jensen, P. D. Ø. (2009). A learning perspective on the offshoring of advanced services. *Journal of International Management*, *15*(2), 181-193.
- Jose, A., & Tollenaere, M. (2005). Modular and platform methods for product family design: a literature analysis. *Journal of Intelligent Manufacturing*, *16*(3), 371-390
- Jun, L., Qiuzhen, W., & Qingguo, M. (2011). The effects of project uncertainty and risk management on IS development project performance: A vendor perspective. *International Journal of Project Management*, *29*(7), 923-933.
- Junior, C., de Freitas, M., & Campanário, M. D. A. (2014). Systems architecture, procedural knowledge, and learning by using: implications on systems integration capabilities. *BAR-Brazilian Administration Review*, *11*(1), 1-21
- Kankanhalli, A., Teo, H. H., Tan, B. C., & Wei, K. K. (2003). An integrative study of information systems security effectiveness. *International journal of information management*, *23*(2), 139-154
- Karna, A., Richter, A., & Riesenkampff, E. (2016). Revisiting the role of the environment in the capabilities–financial performance relationship: A meta-analysis. *Strategic Management Journal*, *37*(6), 1154-1173
- Kedia, B. L., & Lahiri, S. (2007). International outsourcing of services: A partnership model. *Journal of International Management*, *13*(1), 22-37
- Kedia, B. L., & Lahiri, S. (2007). International outsourcing of services: A partnership model. *Journal of International Management*, *13*(1), 22-37.
- Kedia, B. L., & Mukherjee, D. (2009). Understanding offshoring: A research framework based on disintegration, location and externalization advantages. *Journal of World Business*, *44*(3), 250-261.
- Kindström, D., & Kowalkowski, C. (2009). Development of industrial service offerings: a process framework. *Journal of Service Management*, *20*(2), 156-172.
- Kindström, D., Kowalkowski, C., & Sandberg, E. (2013). Enabling service innovation: A dynamic capabilities approach. *Journal of business research*, *66*(8), 1063-1073
- Kochhar, K., Kumar, U., Rajan, R., Subramanian, A., & Tokatlidis, I. (2006). India's pattern of development: What happened, what follows?. *Journal of Monetary Economics*, *53*(5), 981-1019.
- Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, *3*(3), 383-397.
- Kowalkowski, C., Gebauer, H., Kamp, B., & Parry, G. (2017). Servitization and deservitization: Overview, concepts, and definitions. *Industrial Marketing Management*, *60*, 4-10.
- Kranz, J. J., Hanelt, A., & Kolbe, L. M. (2016). Understanding the influence of absorptive capacity and ambidexterity on the process of business model change–the case of on-premise and cloud-computing software. *Information systems journal*, *26*(5), 477-517.
- Lacity, M. C., & Hirschheim, R. A. (1993). *Information systems outsourcing; myths, metaphors, and realities*. John Wiley & Sons, Inc.
- Lacity, M., & Willcocks, L. (2014). Business process outsourcing and dynamic innovation. *Strategic Outsourcing: An International Journal*, *7*(1), 66-92.
- Lahiri, S., & Kedia, B. L. (2009). The effects of internal resources and partnership quality on firm performance: An examination of Indian BPO providers. *Journal of International Management*, *15*(2), 209–224.
- Laursen, K., & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Management Journal*, *27*(2), 131–150.
- Lee, S., Yoo, S., & Kim, D. (2016). When is servitization a profitable competitive strategy? *International Journal of Production Economics*, *173*, 43-53
- Lehtonen, M. H., Jarvi, K., & Tuominen, T. (2015). Reflexivity in the productization of services. *International Journal of Work Innovation*, *1*(2), 161-184
- Leonard-Barton, D., 1992. Core capabilities and core rigidities: A paradox in managing new product development. *Strategic management journal*, *13*(S1), pp.111-125

- Lewin, A. Y., Massini, S., & Peeters, C. (2009). Why are companies offshoring innovation? The emerging global race for talent. *Journal of International Business Studies*, *40*(6), 901-925.
- Levina, N., & Ross, J. W. (2003). From the vendor's perspective: exploring the value proposition in information technology outsourcing. *MIS Quarterly*, 331-364.
- Liang, H., Wang, J. J., Xue, Y., & Cui, X. (2016). IT outsourcing research from 1992 to 2013: A literature review based on main path analysis. *Information & Management*, *53*(2), 227-251.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry* (Vol. 75). Sage
- Linder, J. C. (2004). Transformational outsourcing. *MIT Sloan management review*, *45*(2), 52.
- Linder, J.C., 2004a. Transformational outsourcing. Supply Chain Management Review 8, 54–61.
- Liu, S., & Deng, Z. (2015). How environment risks moderate the effect of control on performance in information technology projects: perspectives of project managers and user liaisons. *International Journal of Information Management*, *35*(1), 80-97.
- Loh, L., & Venkatraman, N. (1992). Determinants of information technology outsourcing: a cross-sectional analysis. *Journal of management information systems*, *9*(1), 7-24.
- Loh, L., & Venkatraman, N. (1992). Diffusion of information technology outsourcing: influence sources and the Kodak effect. *Information systems research*, *3*(4), 334-358.
- Loungani, M. P., Mishra, M. S., Papageorgiou, M. C., & Wang, K. (2017). *World trade in services: evidence from a new dataset*. International Monetary Fund.
- Luo, Y., Zheng, Q., & Jayaraman, V. (2010). Managing business process outsourcing. *Organizational Dynamics*, *3*(39), 205-217.
- Mahoney, C. (1997). Common qualitative techniques. *User-friendly handbook for mixed method evaluations*, 1-17
- Mäkilä, T., Järvi, A., Rönkkö, M., & Nissilä, J. (2010, June). How to define software-as-a-service–an empirical study of Finnish SaaS providers. In *International Conference on Software Business* (pp. 115-124). Springer, Berlin, Heidelberg.
- Manzini, E., & Vezzoli, C. (2003). A strategic design approach to develop sustainable product service systems: examples taken from the 'environmentally friendly innovation 'Italian prize. *Journal of cleaner production*, *11*(8), 851-857.
- Mao, J. Y., Lee, J. N., & Deng, C. P. (2008). Vendors' perspectives on trust and control in offshore information systems outsourcing. *Information & Management*, *45*(7), 482-492.
- Martin, R., & Martin, R. L. (2009). *The design of business: Why design thinking is the next competitive advantage*. Harvard Business Press
- Manning, S., Lewin, A. Y., & Schuerch, M. (2011). The stability of offshore outsourcing relationships. *Management International Review*, *51*(3), 381-406.
- Manning, S. (2013). New Silicon Valleys or a new species? Commoditization of knowledge work and the rise of knowledge services clusters. *Research Policy*, *42*(2), 379-390.
- Manning, S. (2014). Mitigate, tolerate or relocate? Offshoring challenges, strategic imperatives, and resource constraints. *Journal of World Business*, *49*(4), 522-535.
- Marx, A. (2010). Crisp-set qualitative comparative analysis (csQCA) and model specification: Benchmarks for future csQCA applications. *International Journal of Multiple Research Approaches*, *4*(2), 138-158.
- Matthyssens, P., & Vandenbempt, K. (2008). Moving from basic offerings to value-added solutions: Strategies, barriers and alignment. *Industrial Marketing Management*, *37*(3), 316-328.
- Mazzawi, E. (2002). Transformational outsourcing. *Business Strategy Review*, *13*(3), 39-43
- McFadzean, E., Ezingeard, J. N., & Birchall, D. (2007). Perception of risk and the strategic impact of existing IT on information security strategy at board level. *Online Information Review*, *31*(5), 622-660
- Manyika, J., Chui, M., Bughin, J., Dobbs, R., Bisson, P., & Marrs, A. (2013). *Disruptive technologies: Advances that will transform life, business, and the global economy* (Vol. 180). San Francisco, CA: McKinsey Global Institute.
- Mell, P., & Grance, T. (2009). The NIST definition of cloud computing. *National Institute of standards and technology*, *53*(6), 50.

- Miller, D., Hope, Q., Eisenstat, R., Foote, N., & Galbraith, J. (2002). The problem of solutions: balancing clients and capabilities. *Business Horizons*, *45*(2), 3-12.
- Mojsilović, A., Ray, B., Lawrence, R., & Takriti, S. (2007). A logistic regression framework for information technology outsourcing lifecycle management. *Computers & Operations Research*, *34*(12), 3609-3627
- Monczka, R. M., Markham, W. J., Carter, J. R., Blascovich, J. D., & Slaight, T. H. (2005). Outsourcing strategically for sustainable competitive advantage. *Center for Advanced Purchasing Studies, Tempe, Arizona*.
- Moorthi, Y. L. R. (2011). Non-linear growth: The road ahead for Indian IT outsourcing companies. *IIMB Management Review*, *23*(2), 91–101.
- Morelli, N. (2003). Product-service systems, a perspective shift for designers: A case study: the design of a telecentre. *Design Studies*, *24*(1), 73-99.
- Mudambi, S. M., & Tallman, S. (2010). Make, buy or ally? Theoretical perspectives on knowledge process outsourcing through alliances. *Journal of Management Studies*, *47*(8), 1434-1456.
- Mudambi, R., & Venzin, M. (2010). The strategic nexus of offshoring and outsourcing decisions. *Journal of Management Studies*, *47*(8), 1510-1533.
- Münstermann, B., Eckhardt, A., & Weitzel, T. (2010). The performance impact of business process standardization: An empirical evaluation of the recruitment process. *Business Process Management Journal*, *16*(1), 29-56
- Murray, J. Y., & Kotabe, M. (1999). Sourcing strategies of US service companies: a modified transaction–cost analysis. *Strategic Management Journal*, *20*(9), 791-809.
- Nagy, S. (2013). Service pyramid concept of knowledge-intensive business services in the small and medium-sized enterprises sector. *Editorial Preface*, *4*(11).
- Neely, A. (2009). Exploring the financial consequences of the servitization of manufacturing. Operations Management Research, 1(2), 103–118.
- Nieto, M. J., & Rodriguez, A. (2011). Offshoring of R&D: Looking abroad to improve innovation performance. *Journal of International Business Studies*, *42*(3), 345-361.
- Normann, R. (1991). *Service management: strategy and leadership in service business*. Wiley.
- Nyanchama, M. (2005). Enterprise Vulnerability Management and Its Role in Information Security Management. *Information Systems Security*, *14*(3), 29-56.
- O'Dwyer, J., & Renner, R. (2011). The promise of advanced supply chain analytics. *Supply Chain Management Review*, *15*(1).
- Park, S., & Ruighaver, T. (2008, January). Strategic approach to information security in organizations. In *Information Science and Security, 2008. ICISS. International Conference on* (pp. 26-31). IEEE
- Pavlou, P. A., & El Sawy, O. A. (2011). Understanding the elusive black box of dynamic capabilities. *Decision Sciences*, *42*(1), 239-273
- Payne, G. T. (2006). Examining configurations and firm performance in a suboptimal equifinality context. *Organization Science*, *17*(6), 756-770.
- Pekkarinen, S., & Ulkuniemi, P. (2008). Modularity in developing business services by platform approach. *The International Journal of Logistics Management*, *19*(1), 84-103.
- Pereira, V., & Anderson, V. (2012). A longitudinal examination of HRM in a human resources offshoring (HRO) organization operating from India. *Journal of World Business*, *47*(2), 223-231.
- Pöppelbuß, J., Plattfaut, R., Ortbach, K., Malsbender, A., Voigt, M., Niehaves, B. and Becker, J., 2011, September. Service innovation capability: Proposing a new framework. In *Computer Science and Information Systems (FedCSIS), 2011 Federated Conference on* (pp. 545-551). IEEE
- Prahalad, C. K., & Hamel, G. (1990, May-June). The core competence and the corporation. *Harvard Business Review*. 71-91.
- Qi, C., & Chau, P. Y. (2012). Relationship, contract, and IT outsourcing success: Evidence from two descriptive case studies. *Decision Support Systems*, *53*(4), 859-869.
- Ragin, C. C. (1998). The logic of qualitative comparative analysis. *International review of social history*, *43*(S6), 105-124.

- Ragin, C. C. (2000). *Fuzzy-set social science*. University of Chicago Press.
- Ragin, C. C. (2006). Set relations in social research: Evaluating their consistency and coverage. *Political Analysis*, *14*(3), 291-310.
- Ragin, C. C. (2007). Comparative methods. *The SAGE Handbook of Social Science Methodology Comparative Methods*, 67-82.
- Ragin, C. C. (2009). *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press.
- Ragin, Charles. "Redesigning social inquiry: Set relations in social research." *Chicago. Google Scholar* (2008).
- Balaji, S., & Ranganathan, C. (2006). Exploring the key capabilities for offshore IS sourcing. *ICIS 2006 Proceedings*, 37.
- Ritala, P., Hyötylä, M., Blomqvist, K., & Kosonen, M. (2013). Key capabilities in knowledge-intensive service business. *The Service Industries Journal*, *33*(5), 486-500.
- Rittel, H. & Webber, M. (1973). Dilemmas in a General Theory of Planning. Policy Science. 4, 155-169
- Salunke, S., Weerawardena, J., & McColl-Kennedy, J. R. (2011). Towards a model of dynamic capabilities in innovation-based competitive strategy: Insights from project-oriented service firms. *Industrial Marketing Management*, *40*(8), 1251-1263
- Sanchez, R., & Mahoney, J. T. (1996). Modularity, flexibility, and knowledge management in product and organization design. *Strategic management journal*, *17*(S2), 63-76...
- Schmenner, R. W. (2009). Manufacturing, service, and their integration: some history and theory. *International Journal of Operations & Production Management*, *29*(5), 431-443.
- Schneider, F., & Lenzelbauer, W. (1993). An inverse relationship between efficiency and profitability according to size of (Upper-) Austrian firms? Some further tentative results. *Small Business Economics*, *5*(1), 1-22.
- Schultz, E. E. (2006). From the Editor-in-Chief: The changing winds of information security. *Computers and Security*, *25*(5), 315-316
- Shah Bharadwaj, S., & Bhushan Saxena, K. C. (2010). Service Providers' Competencies in Business Process Outsourcing for Delivering Successful Outcome: An Exploratory Study. *Vikalpa*, *35*(3), 37–54. Retrieved from http://journals.sagepub.com.ezproxy.utu.fi/doi/pdf/10.1177/0256090920100303
- Simon, H. A. (1991). Bounded rationality and organizational learning. *Organization Science*, *2*(1), 125-134.
- Simula, H., Lehtimäki, T., & Salo, J. (2008, June). Re-thinking the product: from innovative technology to productized offering. In *Proceedings, Proceedings of the 19th International Society for Professional Innovation Management Conference, Tours, France*
- Skaaning, S. E. (2011). Assessing the robustness of crisp-set and fuzzy-set QCA results. *Sociological Methods & Research*, *40*(2), 391-408.
- Srikanth, K., & Puranam, P. (2011). Integrating distributed work: comparing task design, communication, and tacit coordination mechanisms. *Strategic Management Journal*, *32*(8), 849-875.
- Stack, M., & Downing, R. (2005). Another look at offshoring: Which jobs are at risk and why?. *Business Horizons*, *48*(6), 513-523.
- Steinar, K. (1996). Interviews: An introduction to qualitative research interviewing Sage Publications. *Thousand Oaks CA*
- Storbacka, K. (2011). A solution business model: Capabilities and management practices for integrated solutions. *Industrial Marketing Management*, *40*(5), 699-711.
- Straub Jr, D. W. (1990). Effective IS security: An empirical study. *Information Systems Research*, *1*(3), 255-276.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Sage publications.
- Sundbo, J. (1997). Management of innovation in services. *Service Industries Journal*, *17*(3), 432-455.
- Swartz (1997), extracted from https://www.sfu.ca/~swartz/conditions1.htm

- Tallman, S., 2003. The significance of Bruce Kogut's and Udo Zander's article, 'Knowledge of the firm and the evolutionary theory of the multinational corporation.' *Journal of International Business Studies*, *34*(6), pp.495-497.
- Tallon, P. P., Kraemer, K. L., & Gurbaxani, V. (2000). Executives' perceptions of the business value of information technology: a process-oriented approach. *Journal of Management Information Systems*, *16*(4), 145-173
- Taylor, H. (2007). Outsourced IT projects from the vendor perspective: different goals, different risks. *Journal of Global Information Management (JGIM)*, *15*(2), 1-27.
- Teece, D. J. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic management journal*, *28*(13), 1319-1350.
- Teece, D. J. (2014). A dynamic capabilities-based entrepreneurial theory of the multinational enterprise. *Journal of International Business Studies*, *45*(1), 8-37
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic management journal*, *18*(7), 509-533.
- Tervola, T. (2010). *Developing a productization model for Business-to-Business services as a means to enhance sales efficiency* (Doctoral dissertation, HELSINKI UNIVERSITY OF TECHNOLOGY)
- Trkman, P., McCormack, K., De Oliveira, M. P. V., & Ladeira, M. B. (2010). The impact of business analytics on supply chain performance. *Decision Support Systems*, *49*(3), 318-327
- Ungureanu, P., Bertolotti, F., Mattarelli, E., & Bellesia, F. (2018). Making matters worse by trying to make them better? Exploring vicious circles of decision in hybrid partnerships. *Organization Studies*, 0170840618765575.
- Valminen, K., & Toivonen, M. (2012). Seeking efficiency through productization: a case study of small KIBS participating in a productization project. *The Service Industries Journal*, *32*(2), 273-289.
- Van der Aa, W., & Elfring, T. (2002). Realizing innovation in services. *Scandinavian Journal of Management*, *18*(2), 155-171.
- Van Liere, D. W., Hagdorn, L., Hoogeweegen, M. R., & Vervest, P. H. (2004). Embedded coordination in a business network. *Journal of Information Technology*, *19*(4), 261-269
- Van Maanen, J. (1979). The fact of fiction in organizational ethnography. *Administrative science quarterly*, *24*(4), 539-550
- Vandermerwe, S., & Rada, J. (1988). Servitization of business: adding value by adding services. *European management journal*, *6*(4), 314-324.
- Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of marketing*, *68*(1), 1-17.
- Venkatesan, R. (1992). Strategic sourcing: To make or not to make. *Harvard business review*, *70*(6), 98-107
- Verschueren, N., Schroyens, W., Schaeken, W., & d'Ydewalle, G. (2004). The interpretation of the concepts 'necessity'and 'sufficiency'in forward unicausal relations. *Current psychology letters. Behaviour, brain & cognition*, (14, Vol. 3, 2004).
- Verweij, S., & Gerrits, L. (2012). Assessing the applicability of qualitative comparative analysis for the evaluation of complex projects
- Vorontsova, A., & Rusu, L. (2014). Determinants of IT outsourcing relationships: a recipient–provider perspective. *Procedia Technology*, *16*, 588-597.
- Wallendorf, M., & Belk, R. W. (1989). Assessing trustworthiness in naturalistic consumer research. *ACR Special Volumes*.
- Wallendorf, M., & Belk, R. W. (1989). Assessing trustworthiness in naturalistic consumer research. *ACR Special Volumes*
- Williamson, O. E. (1981). The economics of organization: The transaction cost approach. *American journal of sociology*, *87*(3), 548-577.
- Williamson, O. (1985). The Economic Institutions of Capitalism The Free Press New York. *Williamson OE (1993), Calculativeness, trust and economic organizationJournal of Law and Economics vol*, *36*, 453-486.

- Wang, M., Bandara, K. Y., & Pahl, C. (2010, July). Process as a service distributed multi-tenant policy-based process runtime governance. In *2010 IEEE International Conference on Services Computing* (pp. 578-585). IEEE.
- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic management journal*, *24*(10), 991-995
- Wong, M. T. N. (2004). *Implementation of innovative product service systems in the consumer goods industry* (Doctoral dissertation, University of Cambridge).
- Wood, C. C. (1993). Achieving competitive advantage with information security. *Managerial Auditing Journal*, *8*(2), I.
- Wood, C. C., & Banks Jr, W. W. (1993). Human error: an overlooked but significant information security problem. Computers & Security, 12(1), 51-60.
- Xu, P., & Jongwoo (Jonathan) Kim. (2014, June). Achieving Dynamic Capabilities with Business Intelligence. In PACIS (p. 330).
- Xue, Y., Sankar, C. S., & Mbarika, V. W. (2005). Information technology outsourcing and virtual team. *Journal of Computer Information Systems*, *45*(2), 9-16.
- Yang, H., & Tate, M. (2012). A descriptive literature review and classification of cloud computing research. *CAIS*, *31*, 2.
- Young, K. L., & Park, S. H. (2013). Regulatory Opportunism: Cross-national patterns in national banking regulatory responses following the global financial crisis. *Public Administration*, *91*(3), 561-581
- Zahra, S. A., Sapienza, H. J., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: A review, model and research agenda. Journal of Management Studies, 43(4), 917-955.
- Zhang, J. A., Garrett-Jones, S., & Szeto, R. (2013). Innovation capability and market performance: the moderating effect of industry dynamism. International Journal of Innovation Management, 17(02), 1350004.
- Zinn, W., & Parasuraman, A. (1997). Scope and intensity of logistics-based strategic alliances: a conceptual classification and managerial implications. *Industrial Marketing Management*, *26*(2), 137-147.
- Žitkienė, R., Kazlauskienė, E., & Deksnys, M. (2018). Dynamic Capabilities for Service Innovation.
- Zollo, M., & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. Organization Science, 13(3), 339-351.

9 List of abbreviations used

Abbreviation	Expansion
AI	Artificial Intelligence
AWS	Amazon Web Services
BDAC	Big Data Analytics Center
BPaaS	Business Process as a Service
BPO	Business Process Outsourcing
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
DPO	Days Payable Outstanding
DSO	Days Sales Outstanding
FsQCA	Fuzzy set Qualitative Comparative Analysis
Hfs	Horses for Sources
HR	Human Resource
IaaS	Infrastructure as a Service
IoT	Internet of Things
IP	Intellectual Property
IT	Information Technology
ITeS	Information Technology enabled Services
JV	Joint Venture
KPI	Key Performance Indicator
MD	Managing Director
ME	Minority Equity
NASSCOM	The National Association of Software and Services Companies
OPEX	Operational Expenditure
P&L	Profit and Loss
PaaS	Platform as a Service
PSS	Product Service Systems
QCA	Qualitative Comparative Analysis
ROI	Return on Investment
ROMI	Return On Marketing Investment
SaaS	Software as a Service
SLA	Service Level Agreement
T&M	Time and Material
TCO	Total Cost of Ownership
XaaS	Anything as a Service