Business Process Crowdsourcing

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Business process crowdsourcing concerns the integration of the crowdsourcing strategy and business process management. Crowdsourcing is often an ad-hoc endeavor, e.g., allowing crowd workers to perform simple, independent tasks. Business process crowdsourcing empowers organizations to use crowdsourcing on a long-term, recurrent basis.

We defined an ontology of business process crowdsourcing, which regards crowdsourcing from a business process management perspective [1]. The ontology was built from a literature review on crowdsourcing. The ontology was evaluated against two automated ontologies generated from the same sources. These ontologies provide a holistic view over business process crowdsourcing.

We have also done an extensive literature review on business process crowdsourcing, which covers multiple fields of research. The results identify a set of fundamental factors influencing the decision to crowdsource [2], [3].

We have developed a process model of business process crowdsourcing [4], [5]. The model helps organizations establish repeated business process crowdsourcing patterns.

Based on the business process crowdsourcing ontology, we developed a tool helping organizations to make the decision to crowdsource [6]–[9]. The tool has been extensively evaluated, showing that organizations may benefit from its use [6], [8]. The major evaluation action involved about 200 participants making the decision to crowdsource [6].

The tool supporting the decision to crowdsource has been developed using the design science research paradigm [1], [10], [11]. The tool development has been extended and generalized beyond crowdsourcing to consider the support to evidence-based management [12].

In a related research stream, we researched how to bring crowdsourcing into research methodology, focusing in particular on theory testing [13]–[17].

References

- [1] N. Thuan, P. Antunes, D. Johnstone, and A. Son, "Building an Enterprise Ontology of Business Process Crowdsourcing: A Design Science Approach," Singapore, 2015. doi: http://aisel.aisnet.org/pacis2015/112.
- [2] N. Thuan, P. Antunes, and D. Johnstone, "Factors Influencing the Decision to Crowdsource: A Systematic Literature Review," *Information Systems Frontiers*, vol. 18, no. 1, pp. 47–68, 2016, doi: 10.1007/s10796-015-9578-x.
- [3] N. Thuan, P. Antunes, and D. Johnstone, "Factors Influencing the Decision to Crowdsource," in *Collaboration and Technology, 19th International Conference, Wellington, New Zealand*, vol. 8224, P. Antunes, M. Gerosa, A. Sylvester, J. Vassileva, and G. de Vreede, Eds. Heidelberg: Springer, 2013, pp. 110–125.
- [4] N. Thuan, P. Antunes, and D. Johnstone, "Toward a Nexus Model Supporting the Establishment of Business Process Crowdsourcing," in *1st International Conference on Future Data and Security Engineering. Ho Chi Minh City, Vietnam*, vol. 8860, T. Dang, R. Wagner, E. Neuhold, M. Takizawa, and J. Küng, Eds. Heidelberg: Springer, 2014, pp. 136–150.
- [5] N. Thuan, P. Antunes, and D. Johnstone, "A Process Model for Establishing Business Process Crowdsourcing," *Australasian Journal of Information Systems*, vol. 21, pp. 1–21, 2017, doi: https://doi.org/10.3127/ajis.v21i0.1392.
- [6] N. Thuan, P. Antunes, and D. Johnstone, "A Decision Tool for Business Process Crowdsourcing: Ontology, Design, and Evaluation," *Group Decision and Negotiation*, vol. 27, no. 2, pp. 285–312, 2018, doi: https://doi.org/10.1007/s10726-018-9557-y.
- [7] N. Thuan, P. Antunes, and D. Johnstone, "Establishing a Decision Tool for Business Process Crowdsourcing," in 2nd International Conference on Future Data and Security Engineering. Ho Chi Minh City, Vietnam, Heidelberg, 2015, vol. 9446. doi: 10.1007/978-3-319-26135-5 7.

- [8] N. Thuan, P. Antunes, and D. Johnstone, "Pilot Experiments on a Designed Crowdsourcing Decision Tool," Nanchang, China, 2016. doi: 10.1109/CSCWD.2016.7566058.
- [9] T. Antunes, P. Antunes, D. Johnstone, V. Nghia, and N. Thuan, "A Tool for Modelling Business Behaviour Using Decision Tables," Ho Chi Minh City, Vietnam, 2019. doi: 10.1109/ISCIT.2019.8905161.
- [10] N. Thuan, P. Antunes, and D. Johnstone, "A Design Science Method for Emerging Decision Support Environments," Adelaide, Australia, 2015. doi: arXiv:1605.04725v1.
- [11] N. Thuan, A. Drechsler, and P. Antunes, "Construction of Design Science Research Questions," Communications of the Association for Information Systems, vol. 44, 2019, doi: 10.17705/1CAIS.04420.
- [12] P. Antunes, D. Johnstone, N. Thuan, and G. Vreede, "Delivering Evidence-Based Management Services: Rising to the Challenge Using Design Science," *Knowledge Management Research & Practice*, 2022, doi: 10.1080/14778238.2022.2064350.
- [13] I. Enwereuzo, P. Antunes, and D. Johnstone, "On the Adoption of Crowdsourcing for Theory Testing," Portsmouth, UK, 2018. doi: https://aisel.aisnet.org/ecis2018_rp/179.
- [14] I. Enwereuzo, P. Antunes, and D. Johnstone, "Towards the Development of a DSS Supporting the Integration of Crowdsourcing in Theory Testing: Conceptual Framework and Model," Hobart, Australia, 2017. doi: https://aisel.aisnet.org/acis2017/66.
- [15] I. Enwereuzo, P. Antunes, and D. Johnstone, "Patterns of Testing Theory with Human Subjects:

 A Design Science Perspective," Cancun, Mexico, 2019. doi: https://aisel.aisnet.org/amcis2019/systems_analysis_design/systems_analysis_design/3.
- [16] I. Enwereuzo, P. Antunes, D. Johnstone, and G. de Vreede, "Design and Development of a DSS Supporting the Integration of Crowdsourcing in Theory Testing: A Design Science Perspective," Xi'an, China, 2019. doi: https://aisel.aisnet.org/pacis2019/172.
- [17] I. Enwereuzo, P. Antunes, and D. Johnstone, "Towards the Development of a DSS Supporting the Integration of Crowdsourcing in Theory Testing: Analytical Framework Design," Cancun, Mexico, 2019. doi: https://aisel.aisnet.org/acis2017/66.