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REVIEW

of dissertation Yasha Chawli, M.Sc. „*Social Media Management for Consumer Willingness and Acceptance of Smart Meters*”

Introduction

The present review became worked out on the ground ,orders from the day 28.04.2020, being a result of the resolution of Committee on Research Degree Discipline Science at Management and Quality of Faculty of Computer Science and Management of Wrocław University of Technology .

The review contains succeeding parts:

1. General characteristics of the dissertation,
2. Characteristics of the theme and argumentation,
3. Solution to a scientific problem,
4. Remarks and controversial topics,
5. Evaluation,
6. Conclusion.

1. General characteristics of the dissertation

The dissertation contains 31 pages of an elementary text . It is separated into 4 chapters, Summary, Acknowledgements, Bibliography (70 items). As the whole it include Appendix A: Paper 1-7, being the repertory attributable to one main subject of scientific research, Appendix B: Co-authorship declarations.

The work focused on energy markets, around the world, have been experiencing significant change and an influx of innovative technologies, such as electricity Smart Meters, which are an integral element of Smart Grids. This compilation analysis of the consumer willingness and acceptance of smart metering , their preferred communication channels and recommends a social media management plan that would be effective for intensifying diffusion of SM. Results derived through an empirical survey among social media users, in

four countries, show that there is still a deficit of knowledge about Smart Meters and more marketing communications are required to facilitate the acceptance of SM. Social media can perform a major role in these mix marketing communications and its effective strategy has also been investigated with empirical and experiments in real business environment, specially on utilities.

The present work consists of following chapters: Chapter 1- *Introduction*, determines an introduction to a main research of Author in the frame of innovations in two aspects: technical and social, it consist the background sources about this problems. Because this knowledge is incomplete , this situation was for Author good opportunity and especially motivation to change this status.

Author put the following research objectives:

RO1, To investigate the consumer`s awareness, preferences, concerns and willingness to accept SM, among social media users,

RO2 , To explore the various sources of information regarding electricity in general and SM in particular,

RO3, To test the effectiveness of different types of content on social media and device metrics, through which managers can interpret the results of their campaigns,

RO4, To create a social media management plan that would be useful for energy companies to enhance the diffusion of Smart Meters.

For intellectualising Author use methodology separate research into two part, first concentrated on SM, second on social media, especially the marketing media.

Chapter 2 – *Innovation and marketing* present investigation about literature focused on subject Management Sciences, acknowledge on aspects of innovation management. Author enable possibility intellectual insight into innovative products eg. Smart Electricity Meters, transparent kind of researchers of Author, give Figure 2.1. as the basic platform to appropriate enquire.

Chapter 3 –*Summary of results and core article*, it is more valuable part of thesis, when Author presented report on owner research lie in 7 paper go to make on dissertation, there one:

1. Y. Chawla, A. Kowalska – Pyzalska, B. Oralhan, *Attitudes and opinions of social media users towards smart meters`rollout in turkey*, *Energies*, 13(3), 732, 2020
2. Y. Chawla, A. Kowalska – Pyzalska, P.D. Silveria, *Marketing and communications channels for diffusion of electricity smart meters in Portugal*, *Telematics and Informatics*, <https://doi.org/10.1016/j.tele.2020.101385>
3. Y. Chawla, A. Kowalska – Pyzalska, *Public Awareness and consumer acceptance of smart meters among Polish social media users*, *Energies*, 12 (14), 2759, 2020

4. Y. Chawla, A. Kowalska – Pyzalska., W. Widayat, *Consumer willingness and acceptance of smart meters in Indonesia*, Resources,8(4), 177, 2019
5. G. Chodak, Y. Chawla, A. Dzikowski, K. Ludwikowska, *The effectiveness of marketing communication in social media*, Proceedings of the 6th European Conference on Social Media, ECSM 2019, University of Brighton, Uk, 13-14 June 2019, /by wybe popma and Stuart Francis, Sonning Common: Academic Conferences and Publishing International Limited, pp.73-81
6. Y. Chawla, G. Chodak, *Social media marketing for business: Organic promotion of web-links on facebook*, Journal of Bussiness Research, 2020
7. Y. Chawla, G. Chodak, *Recommendations for social media activities to positively influence the economic factors*, In Double- blind peer-reviewed proceeding part I.of international scientific conference Hracec Economic day 2018, January 30-31, 2018, Hradec Kralowe / [ed by Pavel Jedliczka, petra maresova, Ivan Soucal], Hradec Kralove: University of Hradec Kralove, 2018, s. 328-338 (Hradec Economic Day, ISSN 2464-6059, vol.8(1)

Practically all papers was edited in prestigious journals, indexed in ISI Web of Science, but all are common works, which reduce my opinion about individual nature this thesis. Fortunately the contribution of Author in presented core articles is predominant , evaluate by reviewer Holistic Participation Ratio amount to 56% - it is evidence about crucial influence them.

This chapter give additionally information about auxiliary results of Author`s activity during his doctoral studies course.

Chapter 4 – *Conclusion*, first of all Author verify that the main aim of thesis was achieved , and summarize this thesis certify – a social media management plan was devised, which can used by energy companies to enhance the diffusion of SM. The novel plan, derived in the thesis fill the identified gap in the management science literature as well as open new horizons for further research . The flexible nature of the pla , and its non geographical bonding scope, warrants that it can be implemented by energy companies in various countries. This is the case because the plan takes into account specific target consumers and also the business environment where the energy company is located, so the managerial implication of the outcome in Mr Chawla`s thesis has large potential and application level.

2. Characteristics of the theme and argumentation.

The subject of the doctor's dissertation entitled . „*Social Media Management for Consumer Willingness and Acceptance of Smart Meters*” is essential on both scientific as and

practical point of view. To achieve the goal the Author proposed new kind of solution, which give new dimension on relationship in energy sector. This work consists of following elements of research:

- products innovation,
- process innovation, marketing and innovation electricity management system,
- modeling energy innovation diffusion,
- strengths and weaknesses diffusion of energy innovations,
- influence of social media on consumer awareness in point of view acceptance of smart meters.

Proceeding from foregoing, the proposed work is relevant and important from scientific and practical point of view.

My opinion about this dissertation is very positive, the fact that Author for a doctor's degree undertook such complicated and very important current problem, and presented it in complete and best way is crucial. Such holistic look gives the affirmative impulse to further research in this area. The methodology elaborated by Author permits the wider usage in other utilization. The problem was solved by investigation in 5 countries Austria, Spain, Germany Russia and Malaysia. I am assured that the methodology elaborated by Author can be implement in Poland, especially in Wrocław – the polish biggest testing ground of smart metering

Considering all the aspects included above, I would like to declare, that the doctoral thesis of MSc Yash Chawla talks about current issues and pays attention to important problems in the power engineering and the marketing.

The candidate for a doctor's degree undertook the difficult task. He proved technical possibilities and solution regarding the problem. Elaborated by Author coherent methodology in connections to conditionings technical and economic is wise and modern. The Author's goals are original and represent a scientific problem that is current and important, especially in the present period.

3. Solution to a scientific problem.

The scientific problem introduced by the Author has been solved in chapters 3 and 4, where in sequence of the main methodological assumptions are specified and owner methodology of to find the best way for acceptance of smart meters, this direction establish wide range utilization of social media management – Author devised novel approach in this area. The problem solving path is appropriately described and clear and the investigation is well proven.

The catalogue of innovative compositions executed by the Candidate for a doctor's degree is impressive and innovative. I would like to acknowledge:

- there being a low awareness and acceptance of SM among consumers in Poland, Portugal, Indonesia and Turkey,
- increases in knowledge or awareness positively impact acceptance and reduces concerns,
- privacy concerns, regarding SM, are lower among social media users,
- consumer previously having invested in energy saving, or energy saving devices and having other smart devices at home are likely to accept SM,
- less than half the respondent, possessing knowledge of SM, were willing to pay for SM,
- even though the study was conducted among social media users, they preferred using a variety of communication channels to get information regarding SM,
- there is scope for energy companies to use social media to enhance the diffusion of SM,
- the insight of post performance given by Facebook can be misleading, hence performance should be judged through the proposed metrics,
- post with videos were found to be more effective, as compared to images or photo albums on Facebook,
- posts which have text in the caption and web link as a comment, were more effective, as compared to posts where the links were in the caption.

Summing up the above accomplishments, one ought to mark that The Applicant took under consideration a very large investigative area, yet the work is coherently elaborated, thoughtful with the results are implemented well.

4. Attentions and controversial topics

As the reviewer of the dissertation I bring up following problems and controversial issues:

A. General comments:

1. The thesis be out of summary in Polish, it is big shortcoming – regulations of statute need one
2. Thesis consist only small portion of using paper, by reviewer the presentation should be much I energy problem needs further discussion.
3. Very positive aspect of dissertation is Research Framework presented on Figure 1, it is very innovative kind of creation background to future investigations.

B. Detail comments::

The reviewer recommends better accuracy in the final edited text. The mistakes (really minor) don't influence the scientific value of the presented work.

5. Evaluation.

After revision of the content presented in the work, I declare :

The candidate for a doctor's degree sufficiently formulated the scientific problem using appropriate scientific methods. The range of knowledge and the Candidate in the area of scientific discipline is large and well presented. The sufficiency in both theoretical and practical area is clear and vivid. The problems are solved independently with the use of appropriate methods. The knowledge about SM I Social Media is analyzed presented and utilized, he created the recommended plan by collaborating with energy companies and intend scope of application for this thesis for the countries at early stages of SM diffusion. The candidate for a doctor's degree captured a good technique of writing scientific papers and is ready to work independently and take a leadership on a project.

6. Conclusion

Reviewed doctor's dissertation . „*Social Media Management for Consumer Willingness and Acceptance of Smart Meters*” M.Sc. Yash Chawla **meets legal requirements concerning doctor's dissertations** contracted in legal acts: Ustawa z dnia 20 lipca 2018 r. Prawo o szkolnictwie wyższym i nauce (Dz. U. 2018.poz.1668), Ustawa z dnia 3 lipca 2018 r. Przepisy wprowadzające ustawę – Prawo o szkolnictwie wyższym i nauce (Dz.U. 2018, poz. 1669), Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego z dnia 19 stycznia 2018 r. w sprawie szczegółowego trybu i warunków przeprowadzenia czynności w przewodzie doktorskim, postępowaniu habilitacyjnym oraz postępowaniu o nadanie tytułu profesora (Dz. U. poz. 261).

Presented dissertation is an innovative solution to a scientific problem presented by the Author. It confirms the extensive knowledge in the discipline of **science management and quality** and also warrant the ability of solving scientific problems. In connection with above **I put definitely for let to public defense of doctoral thesis of M.Sc. Yash Chawla.**

