DOCTORAL THESIS

A Culture-Oriented Framework for BPR Implementation: The Case Study of Saudi Arabia

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CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in this research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

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شكر وعرفان وامتنان

قال الله تعالى ((قُلْ هَلْ يَسْتَوِي الَّذِينَ يَعْلَمُونَ وَالَّذِينَ لا يَعْلَمُونَ)) الزمر:9

وقال الله تعالى((يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ وَاللَّهُ بِمَا تَعْمَلُونَ خَبِيرٌ)) المجادلة :11

قال رسول الله صلى الله عليه وسلم يقول: ((من سلك طريقاً يبتغي فيه علماً سهل الله له طريقاً إلى الجنة ، وإن الملائكة لتضعُ أجنحتها لطالب العلم رضًى بما يصنعُ ، وإن العالِمَ ليستغفر له من في السماوات ومن في الأرض، حتى الحيتان في الماء ، وفضل العالم على العابد كفضل القمر على سائر الكواكب ،وإن العلماء ورثة الأنبياء ، وإن الأنبياء لم يورثوا ديناراً ولا درهماً، وإنّما ورّثوا العلم، فمن أخذه أخذ بحظ وافر ..)) رواه أبو داود و الترمذي

جزيل الشكر والحمد والثناء والعرفان والسجود لله خالقي العزيز القدير الذي ألهمني وتفضل علينا وامتن علينا والذي لولا توفيقه ورحمته ما كنت قادرا علي إكمال مشواري البحثي وإتمام دراستي العلمية .

الشكر لله ثم إلي والدنا خادم الحرمين الشريفين الملك عبدالله بن عبدالعزيز آل سعود ملك المملكة العربية السعودية وولي عهده الأمين صاحب السمو الملكي الأمير نايف بن عبدالعزيز آل سعود حفظهم الله وحفظ بلدنا ووطنا الحبيب بعطائهم ودعمهم المتواصل و الشكر موصول لحكومة المملكة التي أمدتني بعطائها المعنوي والمادي الذي دعمني طوال فترة دراستي وعلمي .

أجمل كلمات ومعاني الشكر والعرفان أكنها نحو والدي الشيخ عبد القادر مهدي رحالي (رحمه الله) والذي كان له الفضل بعد الله في دعمنا وتزويدنا نحو العلم والتعلم والتربية و الفضل والشكر لوالدتي العزيزة السيدة المصونة رشيدة بنت عبدالفتاح شاكر والذي كان لها الفضل والامتنان بالدعاء بعد الله والصبر المتواصل والحكمة والدعم المعنوي واللذان الهمائي بالدعم المستمر

بالرغم من بعد المسافات وأنا في غربتي حتى تفضل الله علينا بهذا العمل والانجاز أدعو الله أن يساعدني علي أن أوفي بحقهما طيلة حياتهم ويمد في حياتها بالخير والسعادة والإيمان اللهم أمين ...

كل الحب والتقدير أقدمه لزوجتي الدكتورة : نرجس بنت إبراهيم دقنه , اقدر لها حبها, و اهتمامها و تفهمها , و تسامحها وصبرها و دعمها المتواصل وتشجيعها والذي كان له الأثر الكبير طوال فترة دراستي فلها كل الشكر والحب والتقدير وشكري وتقديري لأخواتي جميعهم : الأخ الكبير محمد (رحمة الله عليه) وخالد و شقيقتي الكبرى الأستاذة الفاضلة شفاء (رحمة الله عليها) و أخي وشقيقي وموجهي الأكبر الأستاذ عبد الفتاح و أخي الدكتور طارق و أخي المهندس طلعت وأختيّ العزيزتين وجنات ومنال لحبهم وتشجيعهم لي بالحب والتقدير لهم جميعاً .

الشكر والتقدير الجزيل لمشرفي الدراسي العزيز البروفسور الدكتور زينون شاكزكو لوقوفه بجانبي و إرشاده لي بالنصائح وتعاونه معي طوال فترة دراستي , كما أتقدم بالشكر الجزيل لمساعد المشرف د. ديفيد ديفيس لنصائحه القيمة وار شادتهم ونصحائهم المستمرة ....

ولا أنسي تقديم جزيل الشكر لطيور الجنة وعصافير بيتي بناتي الأعزاء الذين رافقوني طيلة فترة الدراسة والتحصيل العلمي الذي وهبني الله أياهم وملائكتي الصغار اللواتي كن مصدر السعادة و المرح والتشجيع المتواصل بالنسبة لي طيلة دراستي وحياتي الآنسات : هديل و وجدان ومودة وملك

وأخيرا كل الحب والشكر والامتنان لكلا من : جميع أعضاء سفارة وملحقيه خادم الحرمين الشريفين سفارة المملكة العربية السعودية في استراليا على دعمهم اللامحدود وتشجيعهم لنا والشكر موصول لكل الأصدقاء ولكل الأعزاء و الزملاء في جامعة سيدني للتكنولوجيا لمساعدتهم وتشجيعهم لي والشكر موصول لكلا من وقف بجانبي بالدعاء وبأجمل كلمات التشجيع علي مدي فترة دراستي من الصعب حصر أسمائهم ولكن أن يتقبلوا شكري الحار وتقديري .

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الباحث

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Abstract

The Kingdom of Saudi Arabia has a promising well-resourced economy with one of the highest growth rates among the Gulf region countries. The government of Saudi Arabia is targeting sustainable industrial growth through effective reengineering of industrial management using modern techniques, technologies and through building new industrial cities. However this country is still not well-advanced industrially and technologically compared to developed countries. This research utilises the Kingdom of Saudi Arabia (KSA) as a case study and explores culture-related adoption factors of Business Process Reengineering (BPR), or Alhendrah (Arabic for BPR) as it is known in Saudi Arabia, with a principal focus on the manufacturing industry in KSA.A combination of quantitative and qualitative methods was used, and an extensive literature review was undertaken in order to highlight major issues involved in the research problem. As a result, three web-based surveys were carried out as well as online interviews with selected representatives of manufacturing industries in KSA. A number of challenges were identified and as a consequence a new *culture-oriented* framework for BPR, as applied in the manufacturing industries in KSA, has been proposed by this thesis.

The developed framework utilizes Six Sigma methodology and employs Holonic modelling, focusing on quality improvements in both *quality of management* (QoM) and *quality of product* (QoP). The framework was tested by a simulated case study of processes used by selected manufacturing industries in KSA, before and after reengineering, is presented and analysed.

Abbreviations

ACA	Accountability Centred Approach
AI	Artificial Intelligence
APL	A Programming Language
BPE	Business Process Engineering
BPR	Business Process Reengineering
BPM	Business Process Management
CAD	Computer Aided Design
CPI	Continues Process Improvement
CIM	Computer integrated Manufacturing
DB	Database File
GPRA	Government Performance and Result ACT
GST	General System Theory
HIS	Holonic Information System
HMS	Holonic Manufacturing System
HO	Hierarchical Organisation
HR	Human Resource
IMS	Intelligent Manufacturing System
IS	Information System
IT	Information Technology
JIT	Just In Time
NOC	Network Operations Centre
NC	National Culture
MAA	Mobile Agent Architecture
MAS	Multi Agent System

RFID	Radio Frequency Identification
MM	Matrix Management
TMF	Teleonic Management Framework
TQM	Total Quality Management
OC	Organisational Culture
QoM	Quality of Management
OMCs	Operation and Maintenance Centres
QoP	Quality of Product
OSS	Operational Support Systems
SABIC	Saudi Arabian Basic Industries Corporation
SIDF	Saudi Industrial Development Fund
PD	Power Distance
IC	Individualism-Collectivism
MF	Masculinity Femininity
UAI	Uncertainty/Avoidance Index
LTO	Long Term Orientation

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3. Rahali, E., Wei J. Chong, Chaczko Z., BraunR.,2011 "Teleholonic Approach for Modeling Business Process Management in Telecommunications", Proceedings of the IEEE 10th International Conference on Information Technology Based Higher Education and Training, ITHET 2011, Kusadasi, Turkey.

4. Rahali, E.,2010, "A Simulation Study of Six Sigma and Holonic Approach into BPR Process in Saudi Arabia", Proceedings of the 4th Arab Conference for Industrial Information Networks, 2010.
5. Rahali, E., Degnah,N.,2009, "Reengineering Training and Education in Saudi Arabia", Proceedings of the 5th Saudi Technical Conference and Exhibition 2009.

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