

SpringerBriefs in Business

More information about this series at <http://www.springer.com/series/8860>

Hanadi Mubarak Al-Mubaraki
Ali Husain Muhammad · Michael Busler

Innovation and Entrepreneurship

Powerful Tools for a Modern
Knowledge-Based Economy

 Springer

Hanadi Mubarak Al-Mubarak
College of Engineering
Kuwait University
Kuwait
Kuwait

Michael Busler
Richard Stockton College
Galloway, NJ
USA

Ali Husain Muhammad
College of Business Administration
Kuwait University
Kuwait
Kuwait

Translated by Arch Tait

ISSN 2191-5482

SpringerBriefs in Business

ISBN 978-3-319-13682-0

DOI 10.1007/978-3-319-13683-7

ISSN 2191-5490 (electronic)

ISBN 978-3-319-13683-7 (eBook)

Library of Congress Control Number: 2014955794

Springer Cham Heidelberg New York Dordrecht London

© The Author(s) 2015

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

Springer International Publishing AG Switzerland is part of Springer Science+Business Media (www.springer.com)

Preface

Today there is a broad recognition that entrepreneurial, knowledge-based enterprises are prime creators of economic growth and that such ventures need unique business development services. Innovation is a powerful engine for expansion and for addressing societal and global challenges. Innovation drives economic growth and job creation and is important not only for high-tech sectors but for all economic sectors. While economists and policymakers worldwide have recognized the importance of technological innovation for growth, the relationship between innovation and entrepreneurship has been appreciated only recently, specifically with regard to the important role entrepreneurs play in fomenting innovation.

The objective of this research is threefold: (1) to identify the impact of innovation, incubators, and entrepreneurship in economic development from different perspectives; (2) to identify the key performance indicators of innovation, incubators, and entrepreneurship including economics, policy, industry, and culture; and (3) to establish a roadmap for shaping economic development as a modern economy based on knowledge.

The research methodology to be used is a mixed-methods approach with quantitative (survey) and qualitative (multi-case study and interview) components to examine the innovation and incubator best practices worldwide.

Although the research analysis focuses on ten case studies from developed countries, all of the cases presented here underscore the value of innovation and business incubators. Each case study analysis includes the ratio of performance indicators over the years a particular program has been in operation since the early 1980s. It is evident that some innovation centers and incubation programs are performing better than others. Austria presents the highest rate of job creation and graduate companies, at 25 and 12.63, respectively, per year. Also, the UK presents the highest rate of client companies, at 5.53, and Austria indicates the oldest operating program, at 32 years.

The results of ten international interviews conducted by the authors in 2013–2014 of incubator programs located in the US, UK, and GCC focused on the four categories, include cultural, economic, policy, and industry using 16 indicators to measure all the categories. In 2013–2014, the authors studied ten incubator

programs in the US, UK, and GCC member states. Sixteen key performance indicators (KPI) in the four categories of economic development, policy, cultural change, and industry change were used to analyze the success of the incubators. All the interview respondents presented positive impacts from different contexts, including economic development, innovation, entrepreneurship, technology transfer, and commercialization.

Analysis of the survey, case studies, radar charts (international interview), and literature review resulted in the following key findings:

1. The case studies of innovation centers and incubation programs indicated that programs tend to become more successful with experience and maturity, making years in operation a very important metric.
2. Innovation centers and incubation programs that construct strategic relationships with an international organization such as the European Business and Innovation Centre Network (EBN) and governmental bodies are more successful in technology transfer.
3. Innovation centers and incubator programs that provide continuing tangible and intangible services are able to add value to the companies they support. This leads to a high number of tenants in incubator programs and a high number of start-up companies.
4. The most common outcome from innovation is economic growth.
5. Innovation systems in developed and developing countries lead to a platform for policy decisions and high technology derivatives.

Seventy-four incubators and innovation centers from both developed and developing countries participated in a survey. A descriptive analysis of the survey responses revealed the following:

1. Two-thirds (67 %) of the services offered by incubators were strong tangible and specialized services.
2. Three-fourths (73 %) of incubators' goals focused on the entrepreneurial climate.
3. The main sponsors of incubators were non-profit economic development (48.0 %).
4. Most incubators (72.0 %) have a staff of one to five persons.
5. The majority of incubators (59.0 %) reported creating more than 50 jobs.
6. A high percentage (43.0 %) reported having graduated between six and twenty-five companies.
7. A majority of respondents (55.0 %) indicated a low increment of incubators worldwide.
8. Half of the incubators surveyed (50.0 %) indicated having tenants in the range of six to twenty-five.
9. Half of the incubators and innovation centers (49.0 %) indicated that the survival rate of their tenants ranged between 81 and 90 %.
10. Nearly half (45.0 %) of the incubators and innovation centers indicated a poor role of science parks.
11. One-third (34.0 %) of the programs indicated active cooperation with R&D.

12. A high percentage (72.0 %) of programs indicated fostering entrepreneurship at the market rate.
13. A significant percentage of programs (40.0 %) indicated a very active role for innovation.
14. Nearly half (48.0 %) of incubators and innovation centers indicated technology transfer at a modest level.
15. Most incubators and innovation centers present low rate of patents (48.0 %).
16. Low rate of licensed intellectual property (IP) in most of the innovation and incubators (47.0 %).

In addition, some of the leading rankings revealed in the study were as follows:

1. Among the ten programs located in the US, UK, and GCC that were interviewed based on selected best practices, Sussex Innovation Centre presented the highest outcomes (93 %) with respect to the other innovation centers.
2. An Austrian organization, Styrian Business Promotion Agency, SFG, was the oldest program studied, at 32 years.
3. The Austrian case study also presented the highest ratio of jobs creation, at 25.00 per year.
4. The UK case study demonstrated the highest ranking based on the ratio of client companies, at 6 per year.

In summary, the study recommends guidelines for practitioners such as government, policymakers, funding organizations, and academic institutions. Implementation of the insights from this study can be expected to result in: (1) enhanced economic development through job creation, (2) a stronger entrepreneurship climate, (3) technology commercialization and transfer for graduated companies, (4) sustainability of graduated companies in the market with high rate of survival, (5) innovation acceleration with smart product and services, and (6) diversification of the economy from companies' outcomes such as innovation and technology.

Acknowledgments

The project team would like to express their genuine appreciation to the Kuwait Foundation for the Advancement of Sciences (KFAS) for the financial support provided for the project (2012-1103-01). A special acknowledgment and appreciation is due to Prof. Rashed Al-Ajmei, Dean of the College of Business Administration, Kuwait University and Chairman of Center of Excellence in Management (CEM) for all managerial advice and support required for the project. The team also provides deep thanks to the National Business Incubation Association (NBIA) and the United Kingdom Business Incubation (UKBI) for providing successful international programs to be interviewed.

Contents

1	Introduction	1
1.1	Problem Statement	3
1.2	Project Objectives	4
1.3	Research Question	4
1.4	Research Methodology	4
2	Literature Review	7
3	Data Collection	13
3.1	Interview Design	14
3.2	International Case Studies	15
3.2.1	US Case Study	15
3.2.2	UK Case Study	17
3.2.3	France Case Study	17
3.2.4	Germany Case Study	18
3.2.5	Spain Case Study	19
3.2.6	Italy Case Study	19
3.2.7	Austria Case Study	20
3.2.8	Netherlands Case Study	21
3.2.9	Luxemburg Case Study	21
3.2.10	Belgium Case Study	22
3.3	International Interviews	23
3.4	Survey	24
4	Data Analysis	27
4.1	International Cases Studies	27
4.2	International Interview	30
4.2.1	Interview 1: High Tech Rochester Inc.	31
4.2.2	Interview 2: Blue Valley Schools—Center for Advanced Professional Studies—“CAPS Incubator” . . .	31

- 4.2.3 Interview 3: South Side Innovation Center—“Inclusive Entrepreneurship” 33
- 4.2.4 Interview 4: Qatar Science and Technology Park, Doha, Qatar 33
- 4.2.5 Interview 5: Institute of Knowledge Transfer 35
- 4.2.6 Interview 6: Sussex Innovation Center, University of Sussex, Brighton, UK. 37
- 4.2.7 Interview 7: St. John’s Innovation Centre 38
- 4.2.8 Interview 8: The Petchey Center of Entrepreneurship, University of East London 40
- 4.2.9 Interview 9: University of Birmingham, UK. 44
- 4.2.10 Interview 10: Southampton Management School, University of Southampton. 48
- 4.3 Survey Results 50
 - 4.3.1 Services of Incubator 50
 - 4.3.2 Goals of Incubator 51
 - 4.3.3 Sponsors of Incubator. 52
 - 4.3.4 Staff of Incubator 52
 - 4.3.5 No. of Jobs Creation from the Incubator 53
 - 4.3.6 No. of Graduate Companies from Incubator 53
 - 4.3.7 No. of Incubators Worldwide 54
 - 4.3.8 No. of Tenants Inside the Incubator 55
 - 4.3.9 Survival Rate of Tenants. 55
 - 4.3.10 Incubators Focus. 56
 - 4.3.11 The Role of Science Park 57
 - 4.3.12 The Role of Cooperation of R&D 58
 - 4.3.13 The Rate of Fostering Entrepreneurship 59
 - 4.3.14 The Role of Innovation. 59
 - 4.3.15 The Technology Transfer of Incubator. 60
 - 4.3.16 The Rate of Patents. 61
 - 4.3.17 The Rate of Licensed Intellectual Property (IP) 61
- 4.4 Summary 62
 - 4.4.1 Summary of Surveys 62
 - 4.4.2 Summary of Interviews 63
 - 4.4.3 Summary of Case Studies 63
- 5 Conclusion and Recommendation 67**
 - 5.1 Overview 67
 - 5.2 Key Findings 68
 - 5.3 Policy Recommendations 69
 - 5.4 Kuwait Implications Policy 70
 - 5.5 Proposed Model 71
 - 5.6 Future Studies 71
- References 73**

About the Authors



Dr. Hanadi Mubarak Al-Mubarak is an Assistant Professor in Kuwait University. She teaches project management in civil engineering for undergraduate and graduate courses as well as management course in business schools. She has published scientific articles in different academic journals and a book and has presented her research papers in many countries. Dr. Al-Mubarak is the recipient of several international awards and medals for contribution to International Scientific Research in the Who's Who in the World 2009, 2010, 2011 and 2012 and Deputy Director General of Asia—IBC, Life Fellowship—IBA, International

Peace Prize—United Cultural Conventions—UN, IBC Illuminated Diploma of honors of Professional Education twenty-first century award for Achievement, International Educators of the year 2004, Medal 2005, International Who's Who of Professional Educators 2003, 2004, 2005, 2006, 2007, 2012, Madison Who's Who professionals Life Fellowship, Marquis Who's Who, Master Degree Honor Medal 1996—Kuwait University from HH Sheikh Jaber Al-Ahmed Al-Sabah, the Amir of Kuwait. Dr. Al-Mubarak serves on the Editorial Board of several international journals: Business, Economic Development, Management and International Business Entrepreneurship. She has substantial experience in research innovation and Entrepreneurship in developing countries, Economic Development, Green Economy, application of business incubators Worldwide, in-depth case studies, lessons learnt with best practical Incubators implications for strategy worldwide, relationships between innovation and technological transfer, sustainable development approaches and methods.



Dr. Ali Husain Muhammad is an Associate Professor of Management and head of the Management and Marketing Department in Kuwait University. He teaches management courses in the business school for undergraduate and graduate students. He has published scientific articles in different academic journals. Dr. Muhammad worked as consultant in developing work systems and organizational structures for a number of public and private organizations in Kuwait. His research interests include organizational development, organizational design, and employees' attitudes and behaviour.



Professor Michael Busler is an Associate Professor of Finance, Finance Track Coordinator and a Fellow at the William J. Hughes Center for Public Policy at Richard Stockton College. He teaches undergraduate courses in Finance and Game Theory as well as Managerial Economics and Corporate Finance in the MBA Program. He has published in eight different academic journals and has presented his research in ten countries. In addition, he has worked as a Financial Analyst for Ford Motor Company and FMC Corporation and has been an entrepreneur having owned several businesses mostly in the Real Estate development field. He earned his Doctorate at Drexel University.

Abstract

Innovation is the process of making change, difference, and novelty in products and services, to create economic and social benefits such as entrepreneurship. Innovation will create new jobs and catalyze broadly shared economic growth. The aim of this paper is to investigate and identify key factors of innovation and entrepreneurship that facilitate the outcomes of successful implementation of business incubation programs. To achieve the aim, the research uses a mixed-method approach consisting of a review of the literature, survey questionnaires, case studies, and international interviews. The research findings suggest a roadmap of the best practices for innovation and entrepreneurship worldwide. The adoption of such elements will add value to the economic development in Kuwait and other GCC member states. The research adds to the body of the current literature on sustainability of innovation and entrepreneurship as powerful tools for a modern economy. Policy makers, governments, and practitioners will benefit from the knowledge of experiences of worldwide successful implementation of innovation and incubator programs.

Keywords Innovation · Entrepreneurship · Incubators · Modern economy · Economic development · Technology transfer · Gulf cooperation council states