



AN ENGINEERING APPROACH TO THE DIVERSIFICATION AND REFOCUSING OF ORGANISATIONS

PIERRE LEONARD

A dissertation submitted in partial fulfilment of the requirements for the degree of

MASTER OF ENGINEERING (INDUSTRIAL ENGINEERING)

in the

FACULTY OF ENGINEERING
UNIVERSITY OF PRETORIA

October 1999



Table of Contents

Dissertation Summary	vi
Samevatting van Verhandeling	viii
Acknowledgements.....	x
Part One – Introduction and Overview	1
<i>TABLE OF CONTENTS.....</i>	<i>1</i>
1 OBJECTIVES	3
2 BACKGROUND	5
3 SCOPE OF THE DISSERTATION	7
4 APPROACH	9
5 RESEARCH METHODOLOGY	13
6 CONCLUSION	14
7 REFERENCES	16

Part Two – Fundamentals	17
<i>TABLE OF CONTENTS</i>	<i>17</i>
1 OBJECTIVES.....	21
2 THE BUSINESS ENGINEERING THEORY.....	23
3 STRATEGIC CONCEPTS	36
4 DIVERSIFICATION FUNDAMENTALS	42
5 REFOCUSING FUNDAMENTALS	50
6 COMMONLY USED PORTFOLIO EVALUATION TECHNIQUES.....	55
7 CONTINUOUS EVALUATION OF DIVERSIFIED COMPANIES	67
8 THE ORGANISATIONAL LIFE CYCLE	68
9 CONCLUSION.....	70
10 REFERENCES	71

Part Three – Methodology 73

<i>TABLE OF CONTENTS</i>	73
1 OBJECTIVES.....	76
2 METHODOLOGY.....	78
3 THE BUSINESS ENGINEERING APPROACH	79
4 BUSINESS ANALYSIS.....	80
5 BUSINESS DESIGN	107
6 BUSINESS TRANSFORMATION	118
7 CONCLUSION.....	120
8 REFERENCES	121



Part Four – Conclusion	123
TABLE OF CONTENTS	123
1 OBJECTIVES	125
2 OVERVIEW.....	125
3 CONTRIBUTION	131

Dissertation Summary

AN ENGINEERING APPROACH TO THE DIVERSIFICATION AND REFOCUSING OF ORGANISATIONS

PIERRE LEONARD

SUPERVISOR: Prof. Paul S. Kruger

DEPARTMENT: Department of Industrial and Systems Engineering, Faculty of Engineering, University of Pretoria.

DEGREE: Master of Engineering (Industrial Engineering)

KEYWORDS: Diversification, Refocusing, Business Engineering, Industrial Engineering, Engineering approach, Corporate Strategy, Strategy, Organisation, Transformation.

Organisations are inevitably bound by the industries that they serve and in turn industries' relationships with their environments are based on a life cycle curve. This makes organisations vulnerable to environmental changes that affects their industries. Organisations that recognise the need to align and continuously realign to the increasing rate of environmental change, seems to live longer. One of the ways of addressing environmental change, in order to align and continuously realign, is by diversifying or refocusing an organisation's portfolio.

Business Engineering is seen as the academic context for this study based on its relationship to organisational transformation. By combining a diversification and refocusing methodology with this engineering approach, engineering skills could be utilised in addressing this business transformational issue. This integrated diversification and refocusing methodology is based on a three phased approach namely; business analysis, business design and business transformation.

The business analysis phase is aimed at defining and understanding the environment of which the organisation is part. Analysis starts by defining the organisation's portfolio based on its range of products or commodities, geographical distribution and extent of vertical integration. The organisational portfolio can now be analysed in order to understand its current reality. These analyses are inline with the Business Engineering approach and focus on the external environment, business environment and internal environment. From these analyses strategic issues can be identified that will be addressed in the design process.

Business design focuses on designing a future portfolio and defining specific strategic initiatives that will enable the organisation to align with the changing environment. A design methodology can be applied to these strategic issues in order to define a future portfolio that is inline with the changed environment. Five broad areas can be defined within this design methodology: Co-operation (agreements, alliances and Joint Ventures); Refocusing; Internal investment (Including vertical integration); “Cash cows” and Diversification. This design methodology should only be used as a guideline, as this can not replace the creative thinking required in the architectural design of the portfolio.

Implementation forms the bases of Business Transformation. This phase is aimed at ensuring the successful transformation from the current reality of an organisation, to the desired future reality that is aligned with the changed environment. In order to achieve this, defining an implementation plan, measuring the performance against this plan and creating a series of strategic supportive “fits” are crucial elements in Business Transformation.

The most significant contributions of this dissertation are the integrated methodology, based on a combination of existing business diversification and refocusing principles and the Business Engineering approach, as well as various adapted, refined and developed processes and methods.

Samevatting van Verhandeling

'n INGENIEURSBENADERING TOT DIE DIVERSIFISERING EN HERFOKUSSERING VAN ORGANISASIES

PIERRE LEONARD

STUDIE LEIER: Prof. Paul S. Kruger

DEPARTEMENT: Departement Bedryfs- en Sisteemingenieurswese, Fakulteit Ingenieurswese, Universiteit van Pretoria.

GRAAD: Magister in Ingenieurswese (Bedryfsingenieurswese)

SLEUTELWOORDE: Diversifisering, Herfokusering, Besigheidsingenieurswese, Bedryfsingenieurswese, Ingenieursbenadering, Strategie, Korporatiewe strategie, Organisasie, Transformasie.

Organisasies is onomwonde verbind aan die industrieë wat hulle bedien en hierdie industrieë se verwantskap met hulle omgewings is gebaseer op 'n lewenssikluskurwe. Hierdie verwantskappe stel organisasies bloot aan omgewingsveranderinge wat plaasvind binne hulle industrieë. Dit blyk dat organisasies wat die behoefte herken om deurentyd te belyn en te herbelyn, langer leef. Een van die metodes om omgewingsverandering aan te spreek, met die doel om te herbelyn, is om die organisasie se portefeuilje te diversifieer of te herfokus.

Besigheidsingenieurswese word gesien as die akademiese konteks van hierdie studie as gevolg van die verwantskap met besigheidstransformasie. Deur 'n diversifiserings- en herfokuseringsmetodologie te kombineer met hierdie ingenieursbenadering kan ingenieursvaardighede gebruik word om hierdie besigheidstransformasie probleem aan te spreek. Die geïntegreerde metodologie is gebaseer op drie fases; besigheidsanalise, besigheidsontwerp en besigheidstransformasie.

Die besigheidsanalisefase is gemik op die definiering en verstaan van 'n organisasie se omgewing. Die analisefase begin by die definiering van die organisasie se portefeuilje, wat gebaseer is op die reeks produkte of kommoditeite, die geografiese verspreiding en die mate van vertikale integrasie. Die organisasie se portefeuilje kan nou geanalyseer word om die huidige realiteit beter te verstaan. Hierdie analyses is inlyn met die Besigheidsingenieurswesebenadering en fokus op die eksterne-, besigheids- en interne omgewings. Strategiese kwelpunte word deur die analyses uitgewys en dien as insette tot die ontwerpfasie.

Besigheidsontwerp fokus op die ontwerp van 'n toekomstige portefeuilje en die definiering van strategiese inisiatiewe wat die organisasie in staat sal stel om met die veranderde omgewing te belyn. Die strategiese kwelpunte word aangespreek deur 'n ontwerpmetodologie aan te wend, met die doel om 'n toekomstige portefeuilje te definieer wat belyn is met die veranderde omgewing. Vyf areas kan breedweg binne hierdie metodologie geïdentifiseer word: Samewerking (ooreenkoms, alliansies en Gesamentlike Ondernemings); Herfokussering; Interne investering (Insluitende vertikale integrasie); "Cash cows" en Diversifisering. Hierdie metodologie behoort slegs as 'n riglyn te dien, aangesien dit nie die kreatieve denke kan vervang wat benodig word by die argitektoniese ontwerp van die portefeuilje nie.

Implimentering vorm die basis van besigheidstransformasie. Hierdie fase is daarop gemik om suksesvolle transformasie van die huidige realiteit van die organisasie na die gewensde toekomstige realiteit, wat inlyn is met die veranderde omgewing, te verseker. Die kritiese aspekte, om suksesvolle transformasie te bewerkstellig, is die opstel van 'n implementeringsplan, die meting van prestasie teenoor hierdie plan en die skepping van strategiese ondersteuning.

Die mees betekenisvolle bydrae van hierdie verhandeling is die geïntegreerde metodologie, wat gebaseer is op die kombinering van bestaande diversifisering- en herfokusseringsbeginsel met die Besigheidsingenieurswese benadering, asook die gewysigde, verfynde en ontwikkelde prosesse en metodes.



Acknowledgements

I wish to express my sincerest gratitude towards the following individuals for their valuable contributions and support in completing this dissertation:

- My Creator without whom nothing is possible;
- my wife, Ciska for her support, understanding and insightful conversations;
- my parents for their interest and valuable inputs;
- my superiors, Dr. Mellet Moll and Pieter Britz for opportunities and continuous guidance;
- my colleagues, Jason Beneke and Pieter le Roux for their contributions and intellectual conversations; and
- my supervisor, professor Paul S. Kruger for his assistance in making this dissertation possible.