CONTENTS

ACKNOWLEDGEMENT ........................................... i

MODE OF TRANSLITERATION ................................ ii

INTRODUCTION ............................................. 1

Chapter I:

ARTIFICIAL INTELLIGENCE, COMPUTATIONAL
LINGUISTICS, MACHINE TRANSLATION and
LEXICAL CONCEPTUAL STRUCTURE 5-51

1.1 AI, COLING and MT .................................... 5
   1.1.1 History and background ............................ 5
   1.1.2 Current status of research ....................... 8
   1.1.2.1 AI/COLING/MT researches abroad ................. 8
   1.1.2.2 AI/COLING/MT researches in India ............... 9
   1.1.3 Need for Interdisciplinary research ............. 12

1.2 Machine Translation (MT) ........................... 14
   1.2.1 The problem ......................................... 14
   1.2.2 Mind & machine: similar ways .................... 15
   1.2.3 Approaches to MT: interlingual translation ....... 17
   1.2.4 Evolution of MT systems ........................... 19
   1.2.4.1 Categories of MT ................................ 20
   1.2.5 LCS-based interlingual approach ................. 22

1.3 Conceptual semantics and LCS ...................... 23
   1.3.1 Introduction ......................................... 23
   1.3.2 Lexical Conceptual Structure (LCS) ............... 23
   1.3.3 Jackendoff’s formalism ............................ 31
   1.3.4 Extensions to Jackendoff’s work ................. 38

1.4 LCS-based interlingua ................................ 38
   1.4.1 Introduction ......................................... 39
   1.4.2 LCS based interlingua ............................. 39
   1.4.3 LCS vs CD for interlingua ....................... 41
1.4.4 Structure of interlingua
1.4.5 LCS and syntactic mapping
1.5 Syntactic representation
1.5.1 Necessity for abstracting general principles
1.5.2 Parameterisation
1.5.3 Syntactic mapping procedures

Chapter II:

DOMAIN ANALYSIS AND METHODOLOGY 52-82

2.1 Domain-based MT: English-Hindi in share-market
2.1.1 Need for domain-based MTSs
2.1.2 English-Hindi MTS for share-market
2.1.3 LSC for English-Hindi MTS for share-market
2.2 Domain analysis and divergences
2.2.1 Methodology followed
2.2.2 Typicality of the register
2.2.3 Fixing lexical equivalences
2.2.4 On Hindi syntax
2.2.5 Problem of translating
2.2.5.i Handling metaphorical usage
2.2.5.ii Linguistic divergences

Chapter III:

LEXICAL SEMANTIC COMPONENT FOR SHARE-MARKET DOMAIN 83-131

3.1 Conceptual structure and verb
3.1.1 Centrality of verb in conceptual representation
3.1.2 Analyzing share-market verbs
3.1.3 Linguistic and LCS classifications
3.2 LCSs of verbs for the Lexical Semantic Component (LSC)
3.2.1 Format of the LSC
3.2.2 Lexical entries using LCS
3.2.3 LCS representation of selected verbs
3.3 LCSs for the share-market nominals

3.3.1 Share-market nominals
3.3.2 Handling metaphorical nominals

Chapter IV:

IMPLEMENTATION ASPECTS, and FURTHER RESEARCH 132-156

4.1 Implementation aspects

4.1.1 Program model
4.1.2 Location of LSC in the MTS
4.1.3 Choice of algorithm

4.2 Future research

CONCLUSION 157

APPENDIX: Sample share-market vocabulary 163

SELECT BIBLIOGRAPHY 193