

CONTENTS

FOREWORD.....	v
1 WHY IS STATISTICAL THINKING IMPORTANT?.....	1
Chapter 1 Introduction.....	3
Chapter 2 Case Study: Time's Running Out	7
2 WHAT IS STATISTICAL THINKING?.....	11
Chapter 3 Statistical Thinking Defined	13
<i>Statistical Thinking Is a Philosophy of Learning and Action.....</i>	<i>14</i>
<i>All Works Occurs in a System of Interconnected Processes</i>	<i>15</i>
<i>Variation Exists in All Processes</i>	<i>19</i>
<i>Understanding and Reducing Variation Are Keys to Success</i>	<i>20</i>
Chapter 4 Improvement Using Statistical Thinking	23
<i>The Integration of Statistical Thinking and Statistical Methods.....</i>	<i>23</i>
<i>Philosophy, Analysis, and Action</i>	<i>23</i>
<i>Process, Variation, and Data</i>	<i>25</i>
Chapter 5 More About Variation and Data	29
Case Study: You Want It When?!?	29
Improvement Strategies for Common and Special Causes	36
Variations and Targets.....	38
Less Traditional Variation.....	40
The Role of Data.....	40
Sample Size and Strategy.....	43
Chapter 6 Statistical Thinking at Various Organizational Levels	45
Strategic Level	45
Case Study: Excellence Plus.....	48
Managerial Level.....	50
Case Study: Statistical Thinking and Customer Complaints.....	52
Operational Level.....	54
Case Study: Statistical Thinking—A Personal Application	56
3 HOW DO YOU APPLY STATISTICAL THINKING?	65
Chapter 7 A Model For Applying Statistical Thinking.....	67
The Statistical Thinking Model	68
Diabetes and the Statistical Thinking Model.....	69
The Statistical Thinking Model, the Scientific Method, and PDCA.....	71

Chapter 8 The Process Improvement Strategy.....	75
Case Study: Resin Variation Reduction.....	75
The Process Improvement Strategy.....	82
The Process Improvement Strategy and the Statistical Thinking Model.....	90
Chapter 9 The Problem Solving Strategy.....	91
Case Study: Resolving Customer Complaints of Baby Wipe Flushability.....	91
The Problem Solving Strategy.....	97
The Problem Solving Strategy and the Statistical Thinking Model.....	103
Chapter 10 The Realized Revenue Fiasco.....	105
Case Study: The Realized Revenue Fiasco.....	105
Chapter 11 Tools Used in Statistical Thinking.....	115
Statistical Thinking Tools not in Memory Jogger II.....	115
Comments on Control Charts.....	123
 4 IMPLEMENTING STATISTICAL THINKING CAPABILITY	127
Chapter 12 Organizational Tips	129
Identify Priorities for Statistical Thinking Applications.....	129
Use Group Thinking for Improvement and Innovation	131
Educate Recognizing a Diversity of Learning Styles	133
Chapter 13 New Management Tools to Identify Implementation Barriers.....	135
Affinity Diagrams.....	135
Interrelationship Digraph	138
Chapter 14 Practice Scenarios	143
Where's the Beef?	143
Golden Acres.....	144
Right Illness, Wrong Prescription	145
Sales Rep of the Year	147
 5 SUMMARY.....	151
Summary.....	153
Why Is Statistical Thinking Important?	153
What Is Statistical Thinking?	153
How Is Statistical Thinking Applied?.....	155
How Is Statistical Thinking Implemented?.....	156
 APPENDIX: PRACTICE SCENARIOS—THINGS TO CONSIDER	157
REFERENCES	161