

Kanban in Action

MARCUS HAMMARBERG
JOAKIM SUNDÉN



MANNING
SHELTER ISLAND

brief contents

PART 1 LEARNING KANBAN 1

- 1 ▪ Team Kanbaneros gets started 3

PART 2 UNDERSTANDING KANBAN 45

- 2 ▪ Kanban principles 47
- 3 ▪ Visualizing your work 56
- 4 ▪ Work items 70
- 5 ▪ Work in process 92
- 6 ▪ Limiting work in process 109
- 7 ▪ Managing flow 130

PART 3 ADVANCED KANBAN 165

- 8 ▪ Classes of service 167
- 9 ▪ Planning and estimating 185
- 10 ▪ Process improvement 216
- 11 ▪ Using metrics to guide improvements 237
- 12 ▪ Kanban pitfalls 270
- 13 ▪ Teaching kanban through games 286

contents

foreword xiii
preface xvii
about this book xix
about the authors xxiii
about the cover illustration xxv
acknowledgments xxvi

PART1 LEARNING KANBAN 1

1 *Team Kanbaneros gets started* 3

1.1 Introductions 5
1.2 The board 8
1.3 Mapping the workflow 12
1.4 Work items 18
1.5 Pass the Pennies 22
1.6 Work in process 27
1.7 Expedite items 35
1.8 Metrics 38
1.9 The sendoff 41
1.10 Summary 42

PART 2 UNDERSTANDING KANBAN 45**2 Kanban principles 47**

- 2.1 The principles of kanban 49
- 2.2 Get started right away 53
- 2.3 Summary 55

3 Visualizing your work 56

- 3.1 Making policies explicit 58
 - Information radiator* 59
- 3.2 The kanban board 63
 - The board* 63 ■ *Mapping your workflow to the board* 66
- 3.3 Queues 67
- 3.4 Summary 69

4 Work items 70

- 4.1 Design principles for creating your cards 72
 - Facilitate decision making* 72 ■ *Help team members optimize outcomes* 73
- 4.2 Work-item cards 75
 - Work-item description* 75 ■ *Avatars* 78 ■ *Deadlines* 79
 - Tracking IDs* 80 ■ *Blockers* 81
- 4.3 Types of work 83
- 4.4 Progress indicators 85
- 4.5 Work-item size 86
- 4.6 Gathering workflow data 87
 - Gathering workflow metrics* 87 ■ *Gathering emotions* 89
- 4.7 Creating your own work-item cards 90
- 4.8 Summary 90

5 Work in process 92

- 5.1 Understanding work in process 93
 - What is work in process?* 93 ■ *What is work in process for software development?* 96

- 5.2 Effects of too much WIP 99
 - Context switching* 99
 - *Delay causes extra work* 101
 - Increased risk* 103
 - *More overhead* 104
 - Lower quality* 105
 - *Decreased motivation* 106
- 5.3 Summary 107

6 *Limiting work in process* 109

- 6.1 The search for WIP limits 110
 - Lower is better than higher* 110
 - *People idle or work idle* 111
 - No limits is not the answer* 111
- 6.2 Principles for setting limits 112
 - Stop starting, start finishing* 112
 - *One is not the answer* 113
- 6.3 Whole board, whole team approach 115
 - Take one! Take two!* 115
 - *Come together* 116
 - *Drop down and give me 20* 117
 - *Pick a number, and dance* 118
- 6.4 Limiting WIP based on columns 119
 - Start from the bottleneck* 119
 - *Pick a column that will help you improve* 120
 - *A limited story, please* 120
 - *How to visualize WIP limits* 122
- 6.5 Limiting WIP based on people 123
 - Common ways to limit WIP per person* 123
- 6.6 Frequently asked questions 126
 - Work items or tasks—what are you limiting?* 126
 - *Should you count queues against the WIP limit?* 127
- 6.7 Exercise: WIP it, WIP it real good 128
- 6.8 Summary 128

7 *Managing flow* 130

- 7.1 Why flow? 132
 - Eliminating waste* 132
 - *The seven wastes of software development* 133
- 7.2 Helping the work to flow 134
 - Limiting work in process* 134
 - *Reducing waiting time* 135
 - Removing blockers* 137
 - *Avoiding rework* 140
 - Cross-functional teams* 141
 - *SLA or lead-time target* 143

- 7.3 Daily standup 143
 - Common good practices around standups* 144 ■ *Kanban practices around daily standups* 146 ■ *Get the most out of your standup* 148 ■ *Scaling standups* 151
- 7.4 What should I be doing next? 154
- 7.5 Managing bottlenecks 158
 - Theory of Constraints: a brief introduction* 159
- 7.6 Summary 163

PART 3 ADVANCED KANBAN 165

8 *Classes of service* 167

- 8.1 The urgent case 168
- 8.2 What is a class of service? 170
 - Aspects to consider when creating a class of service* 170
 - Common classes of service* 171 ■ *Putting classes of services to use* 177
- 8.3 Managing classes of services 181
- 8.4 Exercise: classify this! 184
- 8.5 Summary 184

9 *Planning and estimating* 185

- 9.1 Planning scheduling: when should you plan? 187
 - Just-in-time planning* 188 ■ *Order point* 189 ■ *Priority filter: visualizing what's important* 191 ■ *Disneyland wait times* 194
- 9.2 Estimating work—relatively speaking 196
 - Story points* 197 ■ *T-shirt sizes* 199
- 9.3 Estimation techniques 201
 - A line of cards* 202 ■ *Planning Poker* 203
 - Goldilocks* 206
- 9.4 Cadence 208
- 9.5 Planning the kanban way: less pain, more gain 210
 - The need diminishes* 211 ■ *Reasoning logically: the customer's plea* 212 ■ *#NoEstimates—could you do without this altogether?* 213
- 9.6 Summary 215

10 **Process improvement 216**

- 10.1 Retrospectives 218
 - What is a retrospective?* 218 ■ *How does it work?* 219
- 10.2 Root-cause analysis 222
 - How it works* 223
- 10.3 Kanban Kata 228
 - What is Kanban Kata?* 229 ■ *What happened* 234
 - Why does this work?* 234
- 10.4 Summary 236

11 **Using metrics to guide improvements 237**

- 11.1 Common metrics 238
 - Cycle and lead times* 238 ■ *Throughput* 243 ■ *Issues and blocked work items* 245 ■ *Due-date performance* 247
 - Quality* 249 ■ *Value demand and failure demand* 251
 - Abandoned and discarded ideas* 252
- 11.2 Two powerful visualizations 254
 - Statistical process control (SPC)* 254 ■ *Cumulative flow diagram (CFD)* 260
- 11.3 Metrics as improvement guides 264
- 11.4 Exercise: measure up! 269
- 11.5 Summary 269

12 **Kanban pitfalls 270**

- 12.1 All work and no play makes Jack a dull boy 271
 - Creating cadences for celebration* 274
- 12.2 Timeboxing is good for you 275
- 12.3 The necessary revolution 279
- 12.4 Don't allow kanban to become an excuse to be lazy 281
- 12.5 Summary 285

13 **Teaching kanban through games 286**

- 13.1 Pass the Pennies 288
 - What you need to play the game* 288 ■ *How to play* 288
 - Questions for discussion* 290 ■ *Main take-aways* 291
 - Tips and variants* 291

13.2	The Number Multitasking Game	291
	<i>What you need to play the game</i>	292
	<i>How to play</i>	292
	<i>Questions for discussion</i>	294
	<i>Main take-aways</i>	294
13.3	The Dot Game	295
	<i>What you need to play the game</i>	295
	<i>How to play</i>	296
	<i>First iteration</i>	297
	<i>Second iteration</i>	299
	<i>Third (and final) iteration</i>	300
	<i>Main take-aways</i>	301
	<i>Tips and variants</i>	302
13.4	The Bottleneck Game	302
	<i>What you need to play the game</i>	303
	<i>How to play</i>	303
	<i>Questions for discussion</i>	304
	<i>Main take-aways</i>	304
13.5	getKanban	304
	<i>What you need to play the game</i>	305
	<i>How the game is played</i>	305
	<i>Questions for discussion</i>	306
	<i>Tips and variants</i>	306
	<i>Main take-aways</i>	306
13.6	The Kanban Pizza Game	307
	<i>What you need to play the game</i>	307
	<i>How to play</i>	307
	<i>Questions for discussion</i>	308
	<i>Main take-aways</i>	308
13.7	Summary	309
<i>appendix A</i>	<i>Recommended reading and other resources</i>	311
<i>appendix B</i>	<i>Kanban tools</i>	316
	<i>index</i>	323