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The ThoughtWorks Anthology

Essays on Software Technology and Innovation

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Contents

1	Introduction	11
2	Solving the Business Software “Last Mile”	15
	<i>by Roy Singham and Michael Robinson</i>	
2.1	The Source of the “Last Mile” Problem	15
2.2	Understanding the Problem	16
2.3	Solving the “Last Mile” Problem	18
2.4	People	18
2.5	Automation	19
2.6	Design for Automated Testing of Nonfunctional Requirements	20
2.7	Decouple Design from Production Environment	22
2.8	Versionless Software	23
3	One Lair and Twenty Ruby DSLs	25
	<i>by Martin Fowler</i>	
3.1	My Lair Example	25
3.2	Using Global Functions	28
3.3	Using Objects	31
3.4	Using Closures	37
3.5	Evaluation Context	38
3.6	Literal Collections	41
3.7	Dynamic Reception	46
3.8	Final Thoughts	48
4	The Lush Landscape of Languages	49
	<i>by Rebecca J. Parsons</i>	
4.1	Introduction	49
4.2	The Specimens	49
4.3	The Variety of Varieties	53
4.4	The Tree of Life for Languages	57
4.5	That’s All Very Interesting, But Why Should You Care?	59

5 Polyglot Programming	60
<i>by Neal Ford</i>	
5.1 Polyglot Programming	61
5.2 Reading Files the Groovy Way	61
5.3 JRuby and isBlank	63
5.4 Jaskell and Functional Programming	64
5.5 Testing Java	67
5.6 Polyglot Programming the Future	69
6 Object Calisthenics	70
<i>by Jeff Bay</i>	
6.1 Nine Steps to Better Software Design Today	70
6.2 The Exercise	71
6.3 Conclusion	79
7 What Is an Iteration Manager Anyway?	81
<i>by Tiffany Lentz</i>	
7.1 What Is an Iteration Manager?	81
7.2 What Makes a Good Iteration Manager?	82
7.3 What an Iteration Manager Is Not	83
7.4 The Iteration Manager and the Team	84
7.5 The Iteration Manager and the Customer	85
7.6 The Iteration Manager and the Iteration	86
7.7 The Iteration Manager and the Project	87
7.8 Conclusion	88
8 Project Vital Signs	89
<i>by Stelios Pantazopoulos</i>	
8.1 Project Vital Signs	89
8.2 Project Vital Signs vs. Project Health	90
8.3 Project Vital Signs vs. Information Radiator	90
8.4 Project Vital Sign: Scope Burn-Up	91
8.5 Project Vital Sign: Delivery Quality	94
8.6 Project Vital Sign: Budget Burn-Down	95
8.7 Project Vital Sign: Current State of Implementation	97
8.8 Project Vital Sign: Team Perceptions	100
9 Consumer-Driven Contracts: A Service Evolution Pattern	101
<i>by Ian Robinson</i>	
9.1 Evolving a Service: An Example	103
9.2 Schema Versioning	104

9.3	Breaking Changes	109
9.4	Consumer-Driven Contracts	111
10	Domain Annotations	121
	<i>by Erik Doernenburg</i>	
10.1	Domain-Driven Design Meets Annotations	121
10.2	Case Study: Leroy's Lorries	126
10.3	Summary	140
11	Refactoring Ant Build Files	142
	<i>by Julian Simpson</i>	
11.1	Introduction	142
11.2	Ant Refactoring Catalog	144
11.3	Summary	171
11.4	References	171
11.5	Resources	171
12	Single-Click Software Release	172
	<i>by Dave Farley</i>	
12.1	Continuous Build	172
12.2	Beyond Continuous Build	173
12.3	Full Lifecycle Continuous Integration	174
12.4	The Check-in Gate	175
12.5	The Acceptance Test Gate	177
12.6	Preparing to Deploy	177
12.7	Subsequent Test Stages	180
12.8	Automating the Process	181
12.9	Conclusion	181
13	Agile vs. Waterfall Testing for Enterprise Web Apps	183
	<i>by Kristan Vingrys</i>	
13.1	Introduction	183
13.2	Testing Life Cycle	184

13.3	Types of Testing	187
13.4	Environments	193
13.5	Issue Management	196
13.6	Tools	197
13.7	Reports and Metrics	198
13.8	Testing Roles	199
13.9	References	201
14	Pragmatic Performance Testing	202
	<i>by James Bull</i>	
14.1	What Is Performance Testing?	202
14.2	Requirements Gathering	203
14.3	Running the Tests	208
14.4	Communication	214
14.5	Process	216
14.6	Summary	218
	Bibliography	219
	Index	220

Chapter 1

Introduction

ThoughtWorks is a collection of passionate, driven, intelligent individuals that delivers custom applications and no-nonsense consulting. Ask a ThoughtWorker what they like most about the company, and they will likely say it is the other ThoughtWorkers they get to meet, work with, and learn from. We're a mixture of geeks, managers, analysts, programmers, testers, and operations folks with varied cultural, ethnic, and educational backgrounds. This diversity of background and perspective, coupled with a passion for ideas that we share, can result in some pretty lively debates.

We have created a successful company with nearly 1,000 smart, opinionated people in six countries organized with little hierarchy and a fanatical commitment to transparency. Of course, our definition of success is not the typical one either; success must encompass client satisfaction, impact on our industry, and impact on our society. We do aim high.

The voices of many ThoughtWorkers are heard in the blogosphere, on the conference circuit, on the Web, and on the bookshelves. Indeed, part of our commitment to excellence involves ruthlessly critiquing what we've done and how we've done it to see how to improve it the next time. We're a tough bunch to satisfy. Once we've learned something, we want to tell others about it.

Our battle scars come from myriad projects in different domains, technologies, and platform choices. Although we do think (a lot) about what we do, that thinking is grounded in the real world of delivering lots of software for people. There's purity to our function that has allowed us to focus on developing software.

One doesn't generally pay a consultant to sit in meetings discussing the new HR policies, so our workdays are far more focused on delivering software than most IT professionals, resulting in a combination of pragmatism and rigor.

This anthology provides a great snapshot into the incredibly diverse set of IT problems on which ThoughtWorkers are working. This anthology strives to do more than simply present a few ways to produce better software; it grapples with the problems of realizing actual business value from the IT efforts that organizations take on. Roy's opening essay sets the tone with his call to arms for bringing about a change in the "last mile" of getting a system into the production environment. His program is broad and ambitious—nothing less than making those operational and deployment issues as core to the development process as the requirements gathering and coding itself. By remembering that success is not merely getting your code to pass your QA department and have it ready to toss over the wall at an operations team that deals with production, deployment, and the like, the team building the software knows they're not "done" until they've seen the software to the end. And Roy's advocacy goes past simply some clever redefinitions of *completion* and *success*. He calls for a rethinking of how and when stakeholders get involved. All the genius that has gone into making tools better for the coding process (for example, tools for automated builds and scripted testing, as well as refactoring) can be applied to tackling much of the "last mile" problem.

As you read through the collection, you'll see that his call gets answered repeatedly. For example, James takes on performance testing, an area that is habitually neglected and put off until the late stages of a project, when so many design decisions have been baked into the code that undoing them without damaging the hard-won working business functionality for the sake of tackling performance feels like an undertaking in violation of the Second Law of Thermodynamics. James takes a suitably pragmatic approach, not simply arguing that we need the performance requirements up front (who can argue with this?) but discussing ways to get useful requirements from the stakeholders. He doesn't simply say "test early!" but actually discusses how and where these tests can be run.

Julian takes on Ant refactoring by cataloging a large number of standard refactorings and then providing clear examples for each. His essay is an excellent reference for anyone dealing with a growing and evol-

ing build script. Dave's essay provides nice bookend symmetry to Roy's opening with his outlining of the conceptual framework around single-click deployment. He takes on some big issues, such as managing the large, unwieldy binaries that get generated and integration in the heterogeneous environments in which software is typically deployed. All the techniques that work to make business-software development effective will eventually migrate into the world of the deployment tools. Dave's essay takes that program forward.

Stelios's essay takes on communication techniques for conveying project health. He puts forth some metrics, both objective and subjective, and discusses effective ways to present them so that everyone involved has the same "dashboard" to work from every day. He's bringing the visibility of the project's vital signs to as many stakeholders as possible. This connects to another notion: a sort of project anthropology. Tiffany's essay reads like Margaret Mead reporting on her findings in Samoa. She has stumbled upon a whole new kind of project team member, the iteration manager, and tells us about how it fits into the tribe. She sees a chance to address how to organize the team a little differently to make it more effective, and hence we have a role to help work through this. Jeff's "nine rules of thumb" essay reminds me of some master talking to disciples about the Tao of programming. The rules are simple and elegant and maddeningly hard to adhere to (especially because they require any coder to "unlearn" so many habits). Rebecca's essay feels to me like she sneaks in a strong stance on the issue of "language wars" by starting out as an engaging read on classifying various languages. At first you read along, imagining Linnaeus strolling through a garden, looking at particular characteristics of the plants he sees, and then generalizing them to a framework for classifying any plant he comes along in the future. Rebecca lays down a great foundation. But her surprise comes at the end: this isn't just some survey course in some languages currently in vogue but instead a demonstration of the diversity of tools out there and that any particular "Java vs. .NET" language dispute is just the latest iteration in a never-ending conversation. But what matters is knowing what kind of problem you're trying to solve and what kind of tools you have at your disposal for tackling them. I feel like she came into a cluttered workshop, sorted the wrenches from the hammers, and put them in drawers with some labels that tell you what the items within are good for.

The remaining essays are a lot more technically focused but demonstrate more of the diversity of talent that I get to call fellow co-workers.

Ian lays out a comprehensive approach for thinking about SOA contracts that are consumer, rather than customer, driven. His essay takes another whack at the eternal problem of how to build and evolve shared services that need to adapt over time to changing business needs and do so in a way that doesn't cripple the existing consumers of that service. And Erik considers a similar problem. In a well-designed system, you decouple the domain model from infrastructure layers, but this requires that the infrastructure layer use the metadata present in the domain model. Some implicit metadata can be gleaned from what's in there such as the choice of classes to represent certain domain elements, but it doesn't really provide enough information for really rich stuff like validations. Some modern languages such as Java and C# provide for more metadata in the form annotations and attributes, and Erik explores how to exploit these features through a case study. And Martin's playful romp through various DSLs for evil megalomaniacs reminded me of when I was learning C so long ago. My reference was Kernighan and Ritchie, and I watched in amazement as they worked through a few iterations of a string copy function to bring it to a level of simplicity and elegance that seemed to elude me through all my subsequent programming efforts.

The threads of connection are everywhere in this anthology. These essays explore an ecosystem of IT problems and yet link together in all sorts of obvious and surprising ways. The breadth of topics and variety of approaches for solving them reflect the health of an environment of ideas that exists at the organization that all these authors are part of. Seeing a slice of it in the form of this collection leaves me hungry to see what else we're capable of doing.

Mike Aguilar (Vice President, ThoughtWorks)

February 15, 2008

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