

Redefining IT Leadership in the Modern Enterprise
- 2017 Edition -



The Agile CIO

By Todd A. Jacobs

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Redefining IT Leadership in the Modern Enterprise, 2017 Edition

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For Kimberly

My partner in everything I do. You are the foundation of my success.

&

For Avi

My pride and my joy. You are the reason I want to leave the world a better place than I found it.

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Supplemental Table of Contents



Due to limitations of the Leanpub platform, this sample doesn't contain the complete table of contents from the actual book. Please view the up-to-date table of contents at <https://leanpub.com/agilecio>, or refer to the high-level list of chapter topics below.

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Preface

The journey of a thousand miles begins with a single step.

– Lao Tzu

In almost three decades of technical and strategic consulting, I have found only one constant: change. Technology changes. Work culture changes. Economic models and theories of management change. And business drivers change to, as they race to keep up with all the other changes.

In my career, I've seen information technology's first tentative steps into the business world, followed by its never-ending evolution into the engine that powers the modern information and consumer economies. As more and more business functions came to rely on IT, a new executive role emerged to tame this unstoppable hydra: the Chief Information Officer (CIO).

The role of Chief Information Officer began its rise to prominence in the early 1980s, but it's arguably in the past 20 years that the CIO has become an indispensable part of modern, post-startup organizations with responsibilities well beyond the purchase and integration of key pieces of technology. Today, with information technology touching almost every aspect of business, the CIO is often a full partner in a company's executive committee and a driving force in shaping a company's organizational strategy.

As the scope of the CIO's responsibility continues to expand and evolve, changes in the marketplace and the workforce have created a paradigm shift. This shift requires a new management model to harness the power of the new paradigm, so that today's CIO can power business innovation rather than attempt to hold back the tide. That model is *agility*.

The values and principles of agility were formalized in 2001, in a document colloquially known as the Agile Manifesto. Originally rooted in the domain of software development, the manifesto has gained increasing relevance to the practice of IT management and strategic leadership, and that trend is likely to accelerate in years to come.

Because the manifesto originated with software development, it's very easy to find books, blogs, training seminars, and other resources focused on how to apply agile principles to programming or web development. There are also books on agile principles as applied to manufacturing, project management, and (to a lesser extent) product or program management. There are even a few books on agile business strategy, especially using the Lean methodology. However, there is almost nothing in the marketplace focused on the pivotal role the modern CIO plays in an agile context.

Having spent more and more time in recent years helping senior executives transform their organization to take advantage of this new paradigm, I realized that there was a deep need to educate the denizens of "Mahogany Row" on how to incorporate agility into their day-to-day roles within the organization, and to show the modern CIO the bright future that lies ahead by transforming from a traditional or modern CIO into an *agile* CIO.

The CIO is a critical strategic leader for many organizations, and is woefully underserved by the amount of information that specifically targets the CIO role. That is the problem I set out to solve, and this book is my answer.

Within these pages, you will find a condensed version of the advice I have been providing to CIOs and other senior executives across the country and around the world. For the cost of a book, you can discover knowledge that other companies have paid millions of dollars in business process re-engineering and organizational transformation to learn.

It's my hope that this book helps you become the agile CIO your

company needs you to be *today*. Furthermore, I hope it enables you to forge the future of IT for yourself and others.

As every journey requires a first step, I hope this book will serve as yours. I wish you every success!

Todd A. Jacobs

Baltimore, MD. Spring, 2017.

Who Should Read This Book?

This book targets anyone responsible for IT executive management. Chief Information Officers in companies that are looking to improve alignment and efficiencies within IT will likely benefit most from this book, but other governance and service delivery roles will benefit as well. Whether you're a VP of Engineering looking to improve time to market, a VP of Infrastructure that needs to reduce your labor or capital costs, or a Chief Information Security Officer that needs to ensure that security controls are implemented throughout the IT organization, there's valuable information here for you too!

This book is also designed to assist business process consultants and agile evangelists in working with leadership to transform the organization through a practical application of the Agile Manifesto at the executive level. Most of the available literature focuses on team-based engineering and project management techniques, but this book makes the same values and principles relevant to those entrusted with steering the organization. A more agile "tone at the top" can help teams and senior leadership collaborate more effectively, and this book can help shape that collaboration.

In short, anyone who values a more effective IT organization will benefit from this book.

1. The Modern Enterprise

Remember those classic Oldsmobile commercials that said, “This is not your father’s Oldsmobile?” While information technology (IT) today has the same mission it has always had, the culture, ecosystem, and organizational needs that it serves have evolved drastically over the past 20-30 years.

The sheer scope of enterprise technology has far outgrown historical models of management, and today’s Chief Information Officer (CIO) needs to stay ahead of the curve. Sometimes this means betting on a technology or service, but more often than not it means adjusting to the modern marketplace where delivery cycles are often measured in weeks rather than months or years.

In my father’s time, IT was a “thing” that was replacing people or less efficient tools. His stenographer was replaced with a Dictaphone, and then eventually by a do-it-yourself word processor. This was both empowering and frustrating, because it enabled greater levels of self-service to more people while removing organizational bottlenecks, but it also required shifts in the way people thought about and performed their jobs.

Perhaps that shift in technology is hard to fathom today, when the smartphone in your pocket has more functionality and raw processing power than an entire office had back in the early days of computing. But that shift is *still* going on today, and continues to accelerate. Today we’re replacing *our* Dictaphones with word processors by:

- Replacing on-premises servers and datacenter management with cloud services.
- Abstracting “things” like server racks into virtualized resources such as compute and storage nodes, containerized

services, and even “serverless” computing (e.g. AWS Lambda).

- Outsourcing commodity IT services like DNS, backups, hierarchical storage, and web services.
- Relying more and more on vendors, platform providers, service providers, and open-source software to build and maintain things that were once managed solely in-house.

This is nowhere near to an exhaustive list, nor is it meant to be. It simply highlights that the pace of change, and especially the introduction of new paradigms in IT, continue to increase over time. New (and sometimes disruptive) technologies are also forcing new paradigms on enterprise IT management, and the modern CIO no longer controls the tap through which new technology appears. Instead, the mission has become one of creating a healthy, dynamic framework through which the organization can sip from a technology firehose without drowning in the deluge.

This requires a shift in thinking from old models of centralized service delivery to one of empowerment through self-service. The need for IT governance and strategic curation has not gone away; in fact, it has increased dramatically! But the new paradigm to enable it is a tripod that rests on three legs:

- automation,
- self-service, and
- team-based empowerment.

Like DNA, the agile CIO can successfully combine and recombine these key elements in creative ways to build the right culture, infrastructure, and services to take an organization to the next level. But before a CIO can be an effective agent of change within the organization, it may be useful to examine the *role* of the modern CIO in more detail.

2. The Role of the Modern CIO

Times have changed, as has technology and its central relevance to the modern enterprise. So, it seems appropriate to pause to look at how those changes have impacted the role of CIO. To be successful, it's critical that everyone in the organization understands what the modern CIO has become, and how effective an agile CIO can be within this new context.

In times past, the CIO was often responsible for choosing the computer and software systems available within the organization, and tasked with the responsibility of managing IT assets and service delivery. While some of this remains true, the role has broadened in the modern context.

Some of these changes are driven by trends in enterprise technology, but others are being driven by changes in workforce culture, commoditization of personal technology, new project and product management paradigms, and the rise of information security as a distinct role within the organization. Before we can talk about how these changes have affected the role of the CIO, we should look at a few key examples to give us context.

Workforce Culture

Shifts in company culture are ongoing and evolving. Today's workplace is dramatically different than it was when many of today's senior CIOs entered the workforce.

In many companies, hierarchies have flattened, and in today's marketplace respect is more often a function of a meritocracy rather

than one's position in the organizational chart. Some companies have done away with offices in favor of open-office plans, and "Mahogany Row" is more of a concept than an actual location now.

In some companies, "office casual" has replaced suits and ties even at the board level. Even sales people rarely dress formally, unless they're visiting a client with a very traditional culture. Especially in places like Silicon Valley and technology startups, comfort and casualwear are the order of the day.

And when was the last time you called your boss, or even the CEO of the company, by anything other than first name? There are doubtless still companies where C-level executives are addressed as Mr. or Ms., but they're a vanishing breed. And even in those companies, the rest of the organization continues to become (at least in theory) more egalitarian and much less formal.

Incentives and leadership have changed, too. Companies lost a great deal of top-down power when workplace culture shifted from long-term employment rewarded by raises, canalized career paths, and funded retirements to an at-will, free-agency model. While this has created benefits for both companies and employees, today's competitive companies know that they need modernize their incentive structure and leadership style to attract the best of today's modern workforce.

Companies can't hold onto experienced Gen X people or upwardly mobile Millennials through promises of a gold watch and a retirement party the way they could in my father's day. Instead, new workplace norms like telecommuting, work-life balance, and employee empowerment are the tools that agile CIOs can leverage to attract (and keep!) the best and brightest.

Your personal experience may be different from this view of the modern workforce. There are always exceptions to any generalization. However, it's important to acknowledge these shifts in the workforce and workplace attitudes to understand the agile CIO's role in the modern era.

Personal Technology

Time was that all technology within a company needed to be blessed by senior management. Did you need a database? The CIO would negotiate for one. Did you want a new tool for software development? The VP of Engineering would ask for funding to buy commercial licenses.

Today, the monoculture of the past has been replaced by the complex intersection of:

- enterprise systems with employee-owned hardware like cell phones and WiFi-enabled devices; and
- mashups of corporate-owned IT systems and user-installed software and external web applications.

This can present a support or security challenge for a traditional CIO. Rather than hand-selecting every piece of hardware and software for the organization, today's modern CIO focuses more on curation, integration strategies, and enabling self-service delivery to ensure corporate interests are served while simultaneously preventing the IT organization itself from becoming a bottleneck.

This culture shift isn't only about technology, though. It's also part of the workforce culture shift discussed previously. Today's employees are often expected to be highly available, whether at home or at work, and so striking the correct balance between embracing personal technology and maintaining adequate governance is as much art as science, but the agile CIO *collaborates* to ensure the right balance is found for each organization.

Delivery Paradigms

In days gone by, software and service delivery had a slower cadence, with a great deal of up-front design and specification for projects

that could span years. Today, a CIO would be hard-pressed to defend delivery of a strategic resource that exceeded 18 months. In fact, many agile IT shops currently target 30 days or less for a functional deliverable, and a growing percentage are embracing paradigms such as Continuous Delivery and Continuous Deployment to reduce lead time to almost nothing.

These changes don't come without cost. The table stakes for this paradigm shift is an investment in automation, culture change, and continuous process improvement. However, the agile CIO has more visibility into every level of the IT organization and its ongoing initiatives than ever before, and is better able to pivot strategically to meet changing business needs or disruptive technologies.

Information Security

The scope and importance of information security has grown dramatically in the past several decades. Thanks in part to private sector regulations such as Sarbanes-Oxley (SOX) and the Payment Card Industry Data Security Standard (PCI DSS), security compliance has become an integral part of IT infrastructure and service delivery.

Some companies have managed this growing need through the creation of Chief Security Officer (CSO) or Chief Information Security Officer (CISO) as distinct roles within organizations, while others have expanded the role of CIO to encompass the additional responsibilities. However, even with a dedicated CSO or CISO, responsibility for *implementing* the organization's security policies within enterprise systems rests firmly with the CIO.

Whether security and audit roles report into the CIO or not, the modern CIO must carefully balance the requirements of IT service delivery with security compliance. This adds complexity to the CIO's role, but modern agile practices can reduce that complexity

to manageable levels once again.

Redefining the CIO Role for Today's Workplace

As the pace of technology continues to increase, and the complexity and ubiquity of IT continues to grow, the modern workplace demands a redefinition of the CIO role. The modern context also requires a paradigm shift in the *way* that today's CIO provides strategic leadership within the organization. Based on experience within a large cross-section of industries, the emerging trend towards agility at the executive level seems clear.

This new paradigm requires the application of agile principles to strategic planning and thought leadership at the C-level, and nowhere is this more apparent than in the pivotal role of CIO. By adopting iterative strategic plans, emergent design of enterprise-scale IT workflows, and empowerment of business units through self-service technology, the agile CIO can align enterprise service delivery in ways that were difficult to imagine even ten years ago.

So how does one adapt to this new workplace reality and become an *agile* CIO? Subsequent sections of this book will unpack the concepts of the agile paradigm shift in greater detail, and lay out a roadmap for becoming the agile CIO your company (and your career) need you to be.



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About the Author



May 2017

Todd A. Jacobs is President and CIO of CodeGnome Consulting, LTD. CodeGnome is a boutique consulting firm that specializes in CIO advisory services and DevOps transformations. He also currently serves as President of Maryland Mensa.

His latest book, *The Agile CIO*, is currently available exclusively on [Leanpub¹](https://leanpub.com/agilecio). Other IT-related publishing credits include:

- “Managing Docker Instances with Puppet”, *Linux Journal* 274 (February 2017): 92-111.
- “Provisioning Docker with Puppet”, *Linux Journal* 272 (December 2016): 72-80.
- “Secure Token-Based Authentication with YubiKey 4”, *Linux Journal* 265 (May 2016): 82-102.
- “Configuring One-Time Password Authentication with OTPW”, *Linux Journal* 225 (January 2013): 76-88.
- “Understanding NTP Reachability Statistics”, *Linux Journal*, January 2004. <https://www.linuxjournal.com/article/6812>.
- “Improving SSH with Keychain”, *Sys Admin Magazine* 12, no. 1 (January 2003): 21-24.

In addition to his deep expertise in IT and security management, Todd is also passionate about technology and process. He loves working with Linux, Docker, and Puppet, and enjoys programming in Ruby. He’s also a top contributor and community moderator on [Project Management Stack Exchange²](https://pm.stackexchange.com).

He currently lives with his wife and son in the greater Baltimore area, but travels frequently for business and public speaking engagements. In his rare but treasured free time, he enjoys reading, writing, gaming, fine dining, and Netflix binging.

¹<https://leanpub.com/agilecio>

²<https://pm.stackexchange.com>