

The Tao of **Innovation**

By Dr. David A. Bishop

AGILE  WORX[®]

How are technology products developed?

Simply put, technology products are developed using a "process". Such processes have changed over the years, beginning with the stage gate process that came from the space program in the 1960's, to the famed Toyota production system of the late 70's which touted "lean manufacturing" techniques and the concept of "continuous improvement." At the dawn of the new millennium, lean-manufacturing concepts began making their way into software development in the form of "Agile Methods". Today virtually every vendor of technology products, from cellphones to software, utilizes some form of agile method to create and bring their products to market.

What are some of the challenges encountered with technology development processes

1. Adopting Innovation:

Technology is constantly changing, and vendors are always seeking out ways to tweak their process so that they can get new innovative technologies to market quicker.

2. Responding to Market

Pressure: Customers want the latest technologies, and there are always competitors out there that are working just as fast as you are to get those new technologies to market. Often the first out of the gate will have the best chance at capturing the largest market share.

3. Overcoming Organizational resistance:

Vendors must make the necessary changes within their organizations in order for the "improved process" to work. This is often easier said than done.

4. Maintaining Quality:

Customers don't want mediocrity. Period. More specifically, quality is defined as giving the customer what they really want. Steve Jobs was successful because he had an intuitive sense of what customers wanted, and provided it.

How do technology vendors address these challenges?

Over the past ten years we've conducted several case studies of technology developers who became #1 in their market. These research studies have been peer-reviewed by top scientists and published in engineering and business journals, and have been developed into a methodology that other companies can use to duplicate the same success. Using this "Metagility"™ approach, other companies can gain the competitive edge they need to get products to market faster, adopt the

latest technologies quicker, make their customers happier, and become #1 in their respective market.

Sound too good to be true? Well it isn't. The subjects of our case studies have done it!

So haven't these problems always existed?
What's so special about today's climate, and these case studies?

The short answer is that it is becoming more and more difficult to stay ahead. Technology today is changing at an ever-accelerating rate. In his essay "The Law of Accelerating Returns" futurist Ray Kurzweil said that this rate of acceleration is occurring exponentially and could eventually result in "technological change so rapid and profound it represents a rupture in the fabric of human history." We see evidence of this change in our everyday lives, not just technology. Companies must work harder and harder to keep up, tweaking ever more agility out of their processes and teams.

A Case Study with Industrial IoT: Becoming #1 in Hyper-Accelerated Markets

This acceleration has been found to create "agile whirlpools" in some markets. One case study in our research experienced a "hyper-accelerated market" which created some very unique conditions. This provided us with an excellent laboratory under which we were able to observe how a company achieved "optimum" performance, or essentially "agile nirvana". We call this phenomenon reaching the point of "agile vorticity".

In this case study, the technology developers were in the IIoT market, developing smart devices for power utilities that wanted to upgrade their grids to the latest "green technologies". Not only does this technology save money and protect the environment, it provides greater security as well. The subject of our case study faced a number of challenges:

Extreme innovation



1. Communication technology was rapidly changing.

From low power RF signals to cellular to Power Line Carrier, there are a host of communication methods that could be used to transport data from the field to the utility. Adopting the best technology could make or break a company. Our case study had invested deeply into RF technology, and was constantly faced with new threats.



2. Device capabilities dramatically increasing.

Originally a fairly dumb device, electric, gas, and even water meters were acquiring the ability to manage zigbee devices throughout the home, communicate pricing to customers, and perform detailed event and power data. Our case study was rushing to create the smartest IIoT devices of all!

Extreme Market Pressure

Governments provided utilities with incentives to switch to smart grid technology. At the same time, these smart devices had a long life span of up to 10 to 20 years, so once a utility selected a vendor, they had a customer virtually for life. There were several relatively small vendors and only a fixed number of "big utilities". This created a "land grab" situation where each vendor was rushing to capture as many big utilities as they could. Who-



ever won, would dominate the market for years to come. These conditions of extreme market pressure and extreme innovation created a hyper-accelerated market.

One in which innovation and market pressure are so great, that they result in a virtual hurricane for vendors to navigate.

This is important because hyper-accelerated markets are becoming more and more frequent and the method of responding to them may become the operational standard for technology developers. Just as our own weather is slowly becoming more turbulent with greater occurrences of hurricanes and tornados, so are markets becoming more volatile.

Achieving "Agile Vorticity"

So what did the company in our case study do in this situation? The short answer is that they made specific changes in their process to create a "super agile adaptation", which allowed them to become #1 in their market. Through a series of organizational and product management changes, they managed themselves into a "sweet spot" which we refer to as "Agile Vorticity". The process of affecting this change to achieve agile vorticity is called "Metagility"™ which is a patent pending methodology based on scientific research. Agile Worx provides an ecosystem of products and services to help other companies achieve the same results as our most successful case studies.

How does Agile Worx® help?

Agile Worx® delivers the most comprehensive ecosystem of training, consulting, and tools available for scaling agile to support complex and highly innovative product development. Essentially, it productizes the systems and methods used by our most successful case studies to achieve "agile vorticity" and become leaders in their respective markets.

Let Agile Worx show you how to be THE leader in YOUR market.



The Methodology

Agile Worx® is the only agile consulting and training firm that has created its own “bible”.

Metagility: *Managing Agile Development for Competitive Advantage* is the first book to provide a comprehensive approach for managing a new and highly effective breed of agility from the executive level on down. Based on scientific theory and practitioner research, it is the definitive playbook for those seeking the optimal solution for adapting agile to more complex product development and organizational contexts. This desk reference shows organizations how to manage both agile and waterfall techniques to outperform their competition in industries with very high technological change, turbulent markets, and innovation.



Key Features:

- Provides valuable insights and guidance on how to manage hybrid agile implementations in situations where traditional agile methods typically fall short, such as with embedded systems where the hardware, firmware, and software are developed in tandem, and for large enterprises and distributed teams
- Presents new language for understanding agility including concepts

such as business momentum and agile vorticity that provides cutting-edge insights into a company's position in its market

- Describes a method to determine what true agility means and how to achieve it for your company both within your internal organization and your position in the marketplace
- Shows how to determine the proper mix of agile and waterfall characteristics for your organization to help you get the most out of your agile strategy

in today's highly competitive and innovative markets

- Supplies tools that provide not only the monitors and gauges, but also the dials and knobs executives can utilize to affect change and achieve optimal results from their agile implementation
- WAV offers an agile metric calculator, agile artifact template, user story workflow info-graphic, and other valuable resources—**available from the Web Added Value™ Download Resource Center at www.jrosspub.com**

Read the Reviews



“This is a must read for software practitioners and their management. The book provides a blueprint on how to implement agile software development practices. Significantly, the book also focused on the culture change and leadership principles to be adopted by senior management that have proven useful by many organizations. This is a key “how to” manual for any organization seeking to be more effective in the use of software technologies in their business. Though I have been a software professional for 40 years, I learned a lot by reading this book.” — **Stephen E. Cross, Ph.D., Executive Vice President for Research at Georgia Institute of Technology**



“Dr. Bishop's book offers tremendous value to executives tasked with leading others to improve speed to market. Lessons drawn from careful study of a number of organizations are thoughtfully deployed to create a toolkit that readers can use to develop and leverage agility. It's a guide that will make the reader a better leader.”
— **Nathan Bennett, Ph.D., Co-author of Riding Shotgun and Academic Advisor to the COO Circle**



“Bishop's Metagility uses a vortex as a means to coordinate parallel product development activities. It's an exciting new way to think about managing software development in the age of digitalization.”
— **Richard Baskerville, Regents' Professor, Georgia State University**



“Metagility is a must read for organizations going through an agile transformation. It is full of useful, research-based information that is critical to implementing agile enterprise wide. This is the best guide available for leveraging agile principles across the entire organization to maximize business value.”
— **Hank Caughman, Director of US Development, Urjanet**



“Whether your organization is in the midst of an agile transformation or you are looking to become more agile than you already are, this guide clearly shows how to achieve both within today's most challenging situations.”
— **Dr. Neda Barqawi, Founder of Knovalytics and Serial Entrepreneur**

Training Courses

Metagility™ courses provided by Agile Worx® are designed to facilitate organizations, individuals, and teams in transitioning from a traditional waterfall development environment, to a more agile state. While the bulk of training available in the industry today focuses on mere agile basics, Metagility™ courses target the most pervasive, and difficult challenges facing individuals and organizations undergoing agile transformation. These include, but are not limited to:

- Managing agility in embedded systems development
- Hybrid Agile approaches: How to implement them and determine the best “mix” of waterfall and agile techniques.
- How to measure agility? How do I know how my organization is REALLY doing from an agile perspective?
- How to overcome common barriers to Agile transformation?
- Agile Requirements Management and Product Ownership

...And much more!

Our courses are taught by professionally trained executive educators. Need a customized program tailored to your organization? Contact us for more information.

Consulting Services

Our consultants are not “coaches”, they are ABET accredited engineers, management professionals, and PhD Level executive advisors. Whereas most agile consulting available today is focused around motivational speaking, scrum rituals, and team organization, Agile Worx® consultants focus on

science, engineering, training, and leadership. Our consultants perform a scientific qualitative assessment, and work with your executive management team to develop and implement a roadmap for success based on our patent pending “Metagility”™ approach.

Software Tools

Agile Worx® software transforms the way organizations enable and manage agile productivity across their enterprise, programs, projects, and teams by aligning business strategy with technical execution. The Agile Worx® program and project management application (PPM) combines sophisticated planning, analysis, forecasting, and visualization tools with robust multi-level management based on Metagility™. The Agile Worx® ecosystem complements and extends existing agile tools, methods, and processes and can be deployed via the cloud or on premises.



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