

SUCCESSFUL  
HIGHLY  
ENGINEERING  
Design  
Projects

An Actionable  
Engineering  
Design Journal

Walt  
Maclay



Visit

<https://volersystems.com/category/design-tips>  
for more information on project management  
of design and sample documents. We can help  
you complete your electronic design or firmware  
project on time and on budget using the project  
management techniques in the book.

# **Highly Successful Engineering Design Projects (Book Excerpt)**

Keys to Staying on Budget, on Time, Every Time

**Walt Maclay**

**THiNKaha<sup>®</sup>**

**An Actionable Engineering Design Journal**

E-mail: [info@thinkaha.com](mailto:info@thinkaha.com)  
20660 Stevens Creek Blvd., Suite 210  
Cupertino, CA 95014

Copyright © 2019, Walt Maclay

All rights reserved. No part of this book shall be reproduced, stored in a retrieval system, or transmitted by any means other than through the AHAtat platform or with the same attribution shown in AHAtat without written permission from the publisher.

⇒ Please go to  
<http://aha.pub/EngineeringDesignProjects> to read  
this AHAbook and to share the individual  
AHAmessages that resonate with you.

Published by THiNKaha®  
20660 Stevens Creek Blvd., Suite 210, Cupertino, CA 95014  
<http://thinkaha.com>  
E-mail: [info@thinkaha.com](mailto:info@thinkaha.com)

First Printing: July 2019  
Hardcover ISBN: 978-1-61699-323-8 1-61699-323-5  
Paperback ISBN: 978-1-61699-322-1 1-61699-322-7  
eBook ISBN: 978-1-61699-321-4 1-61699-321-9  
Place of Publication: Silicon Valley, California, USA  
Paperback Library of Congress Number: 2019907893

### **Trademarks**

All terms mentioned in this book that are known to be trademarks or service marks have been appropriately capitalized. Neither THiNKaha, nor any of its imprints, can attest to the accuracy of this information. Use of a term in this book should not be regarded as affecting the validity of any trademark or service mark.

### **Warning and Disclaimer**

Every effort has been made to make this book as complete and as accurate as possible. The information provided is on an “as is” basis. The author(s), publisher, and their agents assume no responsibility for errors or omissions. Nor do they assume liability or responsibility to any person or entity with respect to any loss or damages arising from the use of information contained herein.

## **Acknowledgement**

John Dring, VP of engineering at Voler Systems, contributed much of his great knowledge and experience. He consistently completes projects on time and on budget, and the products are easy to manufacture. John is well qualified to contribute!

Kimberly Wiefli g, founder and president of Wiefli g Consulting, edited and contributed a great deal. She is a noted project manager who advises design teams around the world.

# How to Read a THiNKaha® Book

## A Note from the Publisher

The AHAt that/THiNKaha series is the Cliffs Notes of the 21st century. These books are contextual in nature. Although the actual words won't change, their meaning will every time you read one as your context will change. Be ready, you will experience your own AHA moments as you read the AHA messages™ in this book. They are designed to be stand-alone actionable messages that will help you think about a project you're working on, an event, a sales deal, a personal issue, etc. differently. As you read this book, please think about the following:

1. It should only take 15-20 minutes to read this book the first time out. When you're reading, write in the underlined area one to three action items that resonate with you.
2. Mark your calendar to re-read this book again in 30 days.
3. Repeat step #1 and mark one to three more AHA messages that resonate. They will most likely be different than the first time. BTW: this is also a great time to reflect on the AHA messages that resonated with you during your last reading.

After reading a THiNKaha book, marking your AHA messages, re-reading it, and marking more AHA messages, you'll begin to see how these books contextually apply to you. AHAt that/THiNKaha books advocate for continuous, lifelong learning. They will help you transform your AHAs into actionable items with tangible results until you no longer have to say AHA to these moments—they'll become part of your daily practice as you continue to grow and learn.

Mitchell Levy, The AHA Guy at AHAt that  
[publisher@thinkaha.com](mailto:publisher@thinkaha.com)

The logo for THiNKaha features the word "THiNKaha" in a blue, sans-serif font. The letter "i" is lowercase and green. The "aha" portion is in a green, lowercase, sans-serif font. A green swoosh underline is positioned beneath the "aha" part. A registered trademark symbol (®) is located to the upper right of the "a".

## **BOOK EXCERPT Table of Contents**

Introduction

Section I. Characteristics of Highly Successful  
Engineering Design Projects

About the Author

---

## Contents

*This is the Table of Contents (TOC) from the book for your reference.*

Section I Characteristics of Highly Successful Engineering Design Projects	11
Section II Critical Steps to Take before Starting a Project	21
Section III Medical Device Requirements	49
Section IV Essential Actions Required during Highly Successful Engineering Design Projects	63
Section V Warning Signs to Watch for during Highly Successful Design Projects	79
Section VI Ensuring a Successful Transfer to Manufacturing	93
Section VII Integrating Learning to Get Better with Every Project	111
About the Author	119



**Highly successful #EngineeringDesign projects  
make the company successful.  
#SuccessfulProjects**

**Walt Maclay**

<http://aha.pub/EngineeringDesignProjects>

Share the AHA messages from this book socially by going to

<http://aha.pub/EngineeringDesignProjects>

## Section I

### Characteristics of Highly Successful Engineering Design Projects

How do you know if you have a successful engineering design project or if you have room to improve? Learn more about what a successful project looks like.



# 1

Everyone can learn to have highly successful #EngineeringDesign projects.  
#SuccessfulProjects

---

---

---

# 2

Highly successful #EngineeringDesign projects are completed on time.  
#SuccessfulProjects

---

---

---

---

# 3

Highly successful #EngineeringDesign projects are completed on budget.  
#SuccessfulProjects

---

---

---

# 4

Highly successful #EngineeringDesign projects result in products that are easy to manufacture. #SuccessfulProjects

---

---

---

# 5

Highly successful #EngineeringDesign projects are adaptable to change.  
#SuccessfulProjects

---

---

---

---

# 6

Scalable #EngineeringDesign projects  
don't require re-design to adapt and grow.  
#SuccessfulProjects

---

---

---

# 7

Highly successful #EngineeringDesign  
projects result in high-quality products.  
#SuccessfulProjects

---

---

---

# 8

Highly successful #EngineeringDesign projects make team members happy.  
#SuccessfulProjects

---

---

---

# 9

Highly successful #EngineeringDesign projects make management happy.  
#SuccessfulProjects

---

---

---

---

# 10

Highly successful #EngineeringDesign projects make the project leader happy and successful. #SuccessfulProjects

---

---

---

# 11

Highly successful #EngineeringDesign projects become the models for other projects. #SuccessfulProjects

---

---

---

---

# 12

Highly successful #EngineeringDesign  
projects make the company successful.  
#SuccessfulProjects

---

---

---

## About the Author



**Walt Maclay** is the president and founder of Voler Systems in 1979, now one of the top electronic design firms in Silicon Valley, and is committed to delivering quality electronic products that are easy to manufacture on time and on budget. Voler Systems provides design, development, risk assessment, and verification of new devices for medical, consumer, and industrial applications. Voler is particularly experienced in designing wearable and IoT devices, using its skill with sensors and wireless technology.

Mr. Maclay has been active in several consultant organizations and is a senior life member of the Institute of Electrical and Electronic Engineers (IEEE). He is a reviewer for NSF SBIR grants and has mentored dozens of startup companies. Voler Systems is a member of a technology consortium, the Product Realization Group, which provides all the services to design and introduce new hardware products. Mr. Maclay holds a BSEE degree in electrical engineering from Syracuse University.

### **Contributors:**

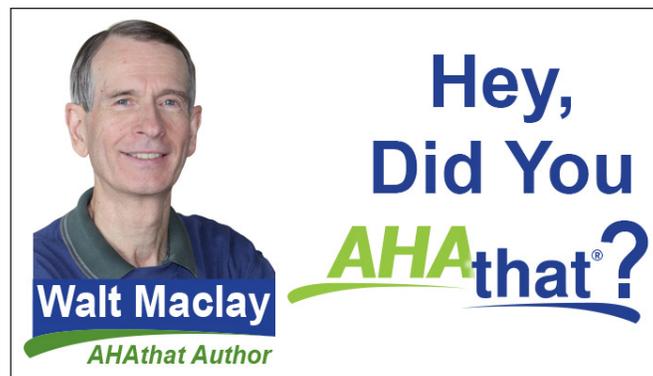
**John Dring**, VP of Engineering at Voler Systems, contributed his great knowledge and experience.

**Kimberly Wiefli g**, founder and president of Wiefli g Consulting, edited and contributed a great deal.



THiNKaha has created AHAthat for you to share content from this book.

- ➔ Share each AHA message socially: <http://aha.pub/EngineeringDesignProjects>
- ➔ Share additional content: <https://AHAthat.com>
- ➔ Info on authoring: <https://AHAthat.com/Author>



Everyone can learn to have highly successful  
#EngineeringDesign projects. #SuccessfulProjects

Highly successful #EngineeringDesign projects have  
complete requirements to ensure a successful transfer to  
manufacturing. #SuccessfulProjects

Build margin at the end of the #EngineeringDesign  
program to improve the confidence to higher than 50%.  
#SuccessfulProjects

Before making a change to an #EngineeringDesign  
project, list all the things that need to be done when that  
change is made, including the impact to the cost,  
schedule, and risk. #SuccessfulProjects

Learning how to improve is motivating and can lead to  
more successful #EngineeringDesign projects.  
#SuccessfulProjects



**Walt MacLay**, president and founder of Veler Systems in 1979, now one of the top electronic design firms in Silicon Valley, is committed to delivering quality electronic products on time and on budget that are easy to manufacture. He is active in consultant organizations, does SBIR grant reviews for the NSF, and mentors startup CEOs.

BUSINESS & ECONOMICS : PRODUCTION & OPERATIONS MANAGEMENT

**THiNKaha**<sup>®</sup>

<https://THiNKaha.com>

