

Becoming A Technical Leader:  
An Organic Problem-Solving Approach

# 技术领导之路

## ——全面解决问题的途径

【美】Gerald M. Weinberg 著  
余晟译

中英文  
对照



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——An Organic Problem-Solving Approach

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## 内 容 简 介

搞定技术问题并不简单，但与人打交道也并非易事。作为一个技术专家，你是否在走上管理岗位时遇到了各种不适“症状”？《技术领导之路：解决问题的有机方法》一书将帮助你成为一个成功的解决问题的领导者。书中温伯格从一个反思者的角度阐述了要成为一个成功的解决问题的领导者必备的 3 个技能——MOI，即激励（Motivation）、组织（Organization）和创新（Innovation）。同时还提供了一些方法以供读者对上述 3 个技能进行自我分析和自我完善，最终帮助你走上成功的解决问题的领导者之路。不同于其他讲述管理的图书，温伯格并没有大量阐释原理、定义，而是通过现实当中的故事启发读者自己找到最终的答案。本书在美国项目管理学会的《项目管理知识体系指南》（PMBOK）中，被确定为重要的参考文献。

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## 译者序

### 身份证掉了怎么办？捡起来

大概是 1992 年左右，我第一次见到“脑筋急转弯”，马上就被这种新鲜玩意迷住了。可惜，当年那些稀奇古怪的问题，如今都忘得差不多了，记得的只有一道题——身份证掉了怎么办？捡起来。

记得这道题，并不是因为它很难，而是因为，这些年来的许多经历，事后细细咀嚼起来，答案就象“身份证掉了怎么办？捡起来”一样简单、直白，又荒诞、无奈——或者怨天尤人，或者凭空慨叹；可是，薄薄的一张身份证，就是没法捡起来。

2006 年末我着手翻译《精通正则表达式（第三版）》的经历，就是如此。

试译的时候，我一晚上就交出了六页译稿。接下来约定全书的交稿时间，我不假思索地说，最多六个月。可书拿到手的那一瞬间，整个人就傻了——五百页，整整五百页，以前是轻松畅快的阅读体验，现在是堆积如山的任务列表！

照计划，我每天应该翻译四到五页，然而我只坚持了两天就中止了——每天下班累的要死，还得做这劳什子翻译，五百页何时能结束啊？

于是干脆自我放纵，过了一周“轻松加愉快”的生活，到周末，我甚至在想，原来生活这么美妙，干脆取消合同，交违约金算了吧。

然而，就在这一瞬间，我忽然又想到了那个脑筋急转弯——“身份证掉了怎么办？捡起来”。现在的这张身份证，无非就是在六个月内完成这本书的翻译嘛。而捡起来的方式，就是坚持每天翻译而已。答案简单到完全不存在其他的可能，简单到毫无风险。

于是我开始忍住内心的厌倦，慢慢捡起这张掉落身份证。五页，十页；一章，两章……每做一点点，我都安慰自己说，对了，我在一点点地捡起那张身份证。

说来也奇怪，日子一天天地过去，我反倒习惯了这样的生活，厌倦的感觉也渐渐消失了。

全书翻译就要结束的时候，一次误操作弄丢了上万字的译稿，怎样也无法恢复。痛惜了半小时之后，我忽地又一次想到了“身份证掉了怎么办”这个问题。好吧，既然无法挽回，重新来过就是了。

这一回，为什么恢复得这么快？是习惯使然吗？

这个问题，一直保持到去年翻译温伯格的《技术领导之路》：在第四章，温伯格用现身说法讲解了，我们在成长过程中必然会遭遇“峡谷”，他总结说：

高原-峡谷模型描述了一个轮回周期，也描述了一个元周期——也就是周期的周期，这是个螺旋，就好像鹦鹉螺上一圈圈的纹路。走出低谷，不仅仅是登上另一个高原，同时也是在另一个高原上前进，这就是学习如何成长的高原。我的确是在学习新的语言，但更重要的是，我在学习“如何学习计算机语言”。这种元学习(meta-learning)，清楚地说明了我对学习新语言的情绪。我不再焦虑，不再抵触，不再觉得毫无价值，而是感到激动，充满创造活力，能够处理几乎任何事情。

译到这里，我豁然开朗了：是的，现在我能更快地接受现实的解决办法，直接开始“捡身份证”，原因就在这里；我也发现，自己开始翻译《技术领导之路》的时候，已经没有了当初的煎熬：划分好进度，每日执行就是了。

《技术领导之路》一路翻译下来，我越来越赞同序言的说法：温伯格的这本书“卑之无甚高论”，并没有太多稀奇。如果“成为技术领导”是那张身份证，温伯格的书记就不是传说中的《九阴真经》、《葵花宝典》，他只是告诉你，怎样才能把它“捡”起来——你仍然需要弯腰，仍然需要伸手，而他所说的只是，如何弯腰更省力，怎样伸手更合理。这时候，更大的问题或许在于，你是否愿意（是否能）按部就班地去做。

譬如在第七章，温伯格介绍了一种加深自我认识的“不起眼”的办法，写日记：每天五分钟就可以，写下自己想写的内容，过一个月再回顾；第十章介绍了一种办法，照它一步步地分析，我们发现“小小的”误会背后，原来隐藏着长长的逻辑链条；第十三章给出了协调“自己跟自己过不去”的那些“做人原则”与现实的途径……

而温伯格的解法也是按部就班：通过持续的日记加深自我观察；通过分析交流的每个环节理解沟通的误会；通过每次一小点的转变化解自

已觉得“不可更改”的原则。这样的做法，很“蠢”，但很有效——这是我的现身说法。

类似的例子，在这本书中还有许多。读完这本书，你或许会明白，尽管我们奢望“取其精华、去其糟粕”，然而这世界上的许多问题的答案并没有完美的“精华”，真正的答案反而如同“捡起来”那样平凡而简单，这时候，困扰我们的，已经不再是一个智力的问题，而是自制力、毅力和决心的问题了，而温伯格做的，就是通过一些看似机械却很实用的步骤，培养你的自制力、毅力和决心。

如果你期望成为某个专业领域的领导，或者只是希望自己能有所进步，甚至仅仅是改掉自己的一些坏毛病；我都建议阅读温伯格的《技术领导之路》：不要空想，不要慨叹，而是按部就班地捡起自己的身份证。

余 晟

2009年5月6日

## Preface

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When Banzan was walking through a market he overheard a conversation between a butcher and his customer.

"Give me the best piece of meat you have," said the customer.

"Everything in my shop is the best," replied the butcher. "You cannot find here any piece of meat that is not the best."

At these words Banzan became enlightened.

——Paul Reps

"Everything Is Best"

from *Zen Flesh, Zen Bones*

This is a book about enlightenment, both mine and yours. Mine is still incomplete, but so far has taken rather longer than a walk through the market. This book, for instance, has been at least fifteen years in the making.

It started around 1970, when Don Gause, Dani Weinberg (my wife), and I spent a summer in Switzerland. Don and I were writing a book on problem solving (*Are Your Lights On? or How to Figure Out What the Problem Really Is*), and Dani was continuing her anthropological research on Swiss peasant communities. Over the years, Don and I had been studying successful and unsuccessful problem-solving efforts, particularly computing projects. Dani had been studying the ways in which new technology had been introduced into peasant communities. Comparing notes, we dreamed of a workshop that would have the maximum possible leverage on the successful introduction of new technical systems, but where was that leverage?

When we compared successful and unsuccessful systems, we quickly realized that almost all of the successes hinged on the performance of a small

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## 前 言

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Banzan 正在逛市场，无意中听到肉贩与顾客的对话。

“我要最好的肉。”顾客说。

“本店所有的肉都是最好的，”肉贩如是回答，“在这里，你根本找不到次点的肉。”

听到这里，Banzan 眼前一亮。

——Paul Reps

“Everything Is Best”

from Zen Flesh, Zen Bones

这是本关于领悟的书，既有读者的领悟，也有作者的领悟。我自己花在领悟上的时间比逛一圈市场要久得多，仍不敢满足。就拿这本书来说，为写它，我花的时间超过十五年。

那还是 1970 年，我和 Don Gause、Dani Weignberg（我妻子）在瑞士度了个夏天。Don 和我正在写那本关于解决问题的书<sup>①</sup>，而 Dani 在继续她关于瑞士农业社区的人类学研究。过去那些年，我和 Don 一直在研究那些解决问题或成或败的尝试，尤其是与计算机相关的项目。Dani 则在研究新技术引入农业社区的方式。相互沟通之后，我们希望成立一个学习班，为引进新技术系统提供最有力的帮助，可是，最重要的环节在哪里呢？

比较了成功的系统和失败的系统之后，我们很快意识到，大多数成

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<sup>①</sup> Are Your Lights On? or How to Figure Out What the Problem Really Is, 中文版即《你的灯亮着吗？——发现问题的真正所在》，清华大学出版社 2004 年 5 月版。



number of outstanding technical workers. Some of them were consistent sources of innovative technical ideas, some were interpreters of other people's ideas. Some were inventors, some were negotiators, some were teachers, some were team leaders. What distinguished them from their less successful colleagues was a rare *combination* of technical expertise and leadership skills. Today, we would say that they were high in innovation, but with sufficient motivational and organizational skills to use in making ideas effective.

These leaders were not the pure technicians produced by the engineering and science schools, nor were they the conventional leaders trained in the schools of management. They were a different breed, a hybrid. What they shared was a concern for the quality of ideas. Like the butcher, they wanted everything in their shop to be the best. We called them *technical leaders*.

Don, Dani, and I designed a new leadership workshop, called "Technical Leadership in Computer Programming," which was first given in Australia at the invitation of Dennis Davie. Fourteen out of fifteen participants rated it "the most profound educational experience I've ever had." The other one said it was merely "*one* of the most profound educational experiences I've ever had." We realized we had found our leverage.

In the years that followed, Daniel Freedman and a few others joined our team, and the workshop was given to hundreds of would-be technical leaders all over the world. A few electrical and mechanical engineers slipped in, as did some trainers. Except for some technical material, these newcomers found everything directly applicable to their work. As a result, we gradually dropped technical material and broadened our audience. We also broadened our vision of what was possible.

For one thing, we discovered that this technical leadership style was applicable to many problems that have nothing to do with technology. We began to hear stories from workshop graduates who had applied it to situations other than those arising from their technical work.

These people had transformed themselves from ordinary technical supervisors into problem-solving leaders with the power to make things happen. Many of them didn't understand their own transformation. It seemed as if one day they were supervisors and the next they were leaders, like Banzan in the marketplace. But if leadership were only attained through a sudden, mystical enlightenment, how could one learn to become a technical leader?

Over the years, the biggest lesson we have learned from our workshops is that becoming a leader is not something that happens to you, but something that you do. Often in a workshop, someone seems to attain a sudden enlightenment, but we have no more to do with that than the butcher had to do

功都倚赖少数杰出技术人员的表现。他们有些不断提出革新的技术理念，有些能充分利用其他人的想法。有些人擅长创新，有些擅长谈判，有些人是教师，有些是小组领导（team leader）。与不那么成功的同行相比，他们都具备一种少见的素质，就是能将专业技术知识和领导技巧结合起来。现在我们已经知道了，这类人很擅长创新，此外还掌握了足够的激励和组织技巧，把想法付诸实践。

他们可不是直接从工程学院、科技学院出来的技术专家，也不是管理学院培训出来的那类传统领导。他们属于一种不同的类型——他们是混血儿。这些人的共同特点是关注思维的质量。就像那个肉贩一样，他们希望自己的一切都是最好的。我们称这些人为“技术领导（technical leader）”。

Don、Dani 和我新开办了一个学习班，关注“计算机程序设计中的技术领导力”，第一次活动是应 Dennis Davie 之邀，在澳大利亚举行的。15 名学员中有 14 名评价它是“本人所接受的最有意义的教育”，剩下那位的评价是“本人所接受的最有意义的教育之一。”于是我们知道，我们找到了关键的一环。

之后那些年，Daniel Freedman 和其他一些人加入了我们的团队，学习班在世界各地帮助几百人成为技术领导。当然还包括少数电子和机械工程师，以及其他的培训师。这些人发现，学习班上获得的知识，除去少数关于专业技术的内容之外，其它都可以直接适用于自己的工作。于是，我们逐渐删去了技术性的内容，扩大了自己的听众范围。同时，我们自己的视野也在不断拓展。

首先，我们发现，这种形式的技术领导能力也适用于许多与技术无关的问题。我们开始听说，学习班的一些学员把学到的知识应用到了非技术性问题当中。

这些人已经从一般的技术主管转型为解决问题的领导，而这并非运气使然。他们中的许多人并没有察觉到这种转型过程。从表面上看，它们似乎前一天还是技术主管，后一天就成了领导，就好像逛市场的 Banzan 一样。但是如果领导力只能通过突然而神秘的启蒙来获得，一个人如何能够成长为技术领导呢？

这些年来，我们获得的最宝贵经验就是，成为领导不靠运气，而靠投入。在学习班上，常会有人好像忽然开了窍，其实我们并没有做太多

with the moment that completed Banzan's lifelong conversion. Our workshops do not teach people to become leaders; they merely give a boost to each person's unique experiential process of self-development. This book takes the same approach: Consider it as your personal leadership workshop.

From working with systems, I have learned that the process of change is always organic: It's never possible to change just one thing at a time. Each of my behaviors is the solution to some problem from my past. To learn, I add new behaviors to serve alongside these valuable old ones. Yet, like a seed, I already have all the behaviors needed to grow, so I merely need to cultivate them selectively.

I believe that leadership involves a nurturing process, not taking charge of people's lives, so this book is a guide to the process of taking charge of your own development. Its methods, like the methods of our workshops, are organic, designed to fit with the unique system that is you in a way that is gentle, realistic, and fun.

Nevertheless, the process of change won't always *feel* like fun. Because change is often difficult, the book is also designed to provide emotional support. I offer models of leadership, so you'll have an opportunity to let go of some old myths that may block your path. I offer models of change, so you'll understand better what's happening when old ideas fall away. I quote other people's remarks about their feelings as they've become technical leaders, so you'll know you're not alone. I know you will find your own unique enlightenment, and I hope this book will be a welcome companion on your walk through the marketplace.

*April 1986*  
*Lincoln, Nebraska*

G.M.W.

——屠户随便说的几句话，就促成了 Banzan 的人生转折。我们的学习班没有教人怎么成为领导，只是加速针对个人的自我成长过程。这本书也是如此：读者权且当它是专为自己开设的领导学习班即可。

在与系统打交道的过程中，我明白了，改变的过程通常是牵一发而动全身的：永远不可能一次只改变一小点。我的一举一动，其实都在重复之前某些问题的解决办法。为了进步，我使用不一样的做法来补充以前的行为。这就好像种子，我已经具备了所有值得培育的行为，剩下的只是择优养育。

我认为，领导能力的是一个培育的过程，而不是监管他人的生活，所以这本书只是指导读者驾驭自己的发展。其中的方法就好像我们学习班中的方法一样，不是用来生搬硬套的，而是针对你的具体情况的，它们温和、现实而充满乐趣。

尽管如此，转变的过程并不会感觉一帆风顺。因为转变是困难的，书中也提供了心理支持的内容。其中那些领导的榜样能帮助你破除先前阻碍自己的迷执。那些转变的榜样能告诉你，旧的观念被淘汰时会发生什么。另外还记录了一些人的叙说，介绍他们成为技术领袖时的感受，这样你就知道自己并不孤单。我知道，你会找到专属于自己的领悟，我希望这本书能贴心陪伴你，逛完整个市场。

G.M.W.

1986 年 6 月

Lincoln, Nebraska

## Foreword

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Jerry Weinberg tells a story about an astronomer giving a talk at a garden club. The astronomer is describing the "big bang" theory of how the universe began. At the end of the talk a woman in the back of the room speaks out, "Young man, that's not the way it is. The world is actually supported on the back of a large turtle."

The astronomer, somewhat used to unusual theories, replies calmly, "And what is that turtle resting on?" The woman responds just as calmly, "On another turtle, of course." Now the astronomer is sure he has her. "And what is that turtle resting on, pray tell?" The woman smiles serenely and says with absolute confidence, "Oh, no, you don't, it's turtles all the way down!"

Jerry Weinberg's books are often like his stories—turtles all the way down. His books are difficult to read at one sitting because each of his chapters, like his anecdotes, has multiple levels of meaning. Over and over I found myself stopping and thinking—thinking about what Jerry had just said, thinking about what I thought about what Jerry had said, thinking about what I was thinking about... you see what I mean. So the reader is forewarned: Jerry's approach to writing often induces serious thinking.

On one level, *Becoming a Technical Leader* is an extremely down-to-earth, how-to guide. On a second level, it is a set of parables, full of analogies that stick in the mind—the art of management taught through stories about pinball, tinkertoys, and electric blankets. On yet another level, this is a book about the philosophy and psychology of managing technical projects.

As much as I liked the book, there are some things wrong with it. The first thing is that it is too long. Jerry packs so many ideas and so many rules

# 序

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Jerry Weinberg 讲过一个故事：天文学家在花园俱乐部演讲，介绍宇宙起源的“大爆炸”理论。介绍结束，后排一位女士大声说：“年轻人，事情不是这样的。世界其实是驼在一只大龟背上的。”

这样的说法常人无法想象，天文学家却毫无意外，他冷静答道：“那么，大龟趴在哪里呢？”，女士的回答同样冷静：“显然，在另一只大龟身上。”天文学家觉得自己胜券在握了：“那么，请您告诉我们，这另一只大龟趴在哪里呢？”。女士平静地笑笑，信心满满，“不，别客气，海龟是一只一只叠起来的。”

Jerry Weinberg 的书很多时候类似他的故事——就好像层叠的海龟。他的书很难一口气读完，因为每一章的内容都像他讲的那些小故事，包含许多层的意思。我多次发现自己停下来思考——思考 Jerry 刚刚说过的话，思考我针对 Jerry 的话的思考，思考我针对思考的思考……我想你知道我要说什么。所以我先给读者提个醒：Jerry 的写法往往会引发严谨的思考。

一方面，《技术领导之路》是一份非常实用而详尽的指导。另一方面，全书又都在打比方，其中随处可见日常熟悉的事物——讲授管理技巧，靠的是关于弹子球、Tinkertoy 玩具<sup>2</sup>和电热毯的故事。再一个方面来说，这本书讲的是管理技术工程的哲学和心理学。

尽管本书令我偏爱有加，但也存在些问题。最重要的问题就是篇幅太长，Jerry 在每一章中开列了太多关于思考和管理的想法和规则，如果

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<sup>2</sup>一套组合玩具，孩子可以发挥想象力，拼装出各种结构和形状。——译注

for thinking and managing into each chapter that if you are asked to read it quickly, as I was to write an Enlightened Foreword, you simply can't do it. The second thing that's wrong with this book is that it is too short. Just when you think Jerry is going to tell you how to solve all the world's major problems, you have finished the book and have discovered that what Jerry has really given you is the recommendation that you think for yourself.

In retrospect, I think I was misled by the title. I suppose you could say the book does have to do with becoming a technical leader. But in reality, this book is ultimately about what all Jerry's books are about: how to think, and how to think about what you're thinking about while you're thinking. Turtle by turtle, Jerry points out that most of the obvious solutions to the real problems of managing and working with people tend to miss the mark. So he proposes simple, but radically different, ways of looking at things we all thought we knew.

Fortunately for us, Jerry Weinberg has made unraveling the complexities of technology and management his life's work, in particular, the curious mixture of the two that occurs in modern organizations. Everything he says touches home. Over and over, I found myself laughing and being embarrassed at the same time.

One final point. No self-respecting Foreword is complete unless the Foreworder recommends the book of the Forewordee to a specific audience. I have given this some thought. In doing so, I came to the conclusion that the only people to whom I could honestly recommend this book are those who (A) manage people, (B) are managed by people, or (C) live around or know people in category A or B. If you, by some chance of fate, fit into category A, B, or C, this book is a must for you.

*June 1986*  
*Topeka, Kansas*

Ken Orr, President  
Ken Orr & Associates, Inc.

你走马观花地看过去——为了写这篇序言，开始我就打算这么干——基本就会一无所获。问题之二是篇幅太短。你以为 Jerry 就要告诉你如何解决世界上的主要问题了，书也就读完了，你发现，其实 Jerry 只是鼓励你自主独立思考。

回头看看，我觉得自己是被标题误导了。我猜你甚至会说，这本书与成为技术领袖没什么关系。但是实际上，这本书的核心内容是与 Jerry 所有的书一样的：如何思考，以及如何审视你想问题的思维。循着层叠的海龟往下，Jerry 指出，在管理和人事协调的实际问题中，大多数显而易见的解决办法其实偏离了问题的核心。所以，他提出简单易行、但又截然不同的办法，来看待我们自认为已经了解的事物。

读者有幸，Jerry Weinberg 把剖析复杂的技术和管理问题——尤其是现代的组织中，两者不寻常的混合体——作为毕生的工作。他的每句话都直指要害。我一而再再而三地发现，自己一面开怀大笑，一面尴尬不已。

还有一点。任何一篇负责任的序言，都应该为书本推荐适合的读者群。本人当然也会这么做。对于这本书，我诚挚地将它推荐给：（A）管理者；（B）被管理者；（C）认识 A 类或 B 类人群，或是在他们身边的人。如果你有幸落入其中一类，这本书你必须读。

1986 年 6 月 Ken Orr, President  
Topeka, Kansas Ken Orr & Associates, Inc



# Contents

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**Preface..... iii**

**Foreword..... ix**

**Part One DEFINITION ..... 2**

**1 What Is Leadership, Anyway? ..... 4**

THE RELUCTANT LEADER ..... 6

FACING THE LEADERSHIP ISSUE ..... 8

A CONVENTIONAL BUT FLAWED VIEW OF LEADERSHIP..... 10

CONTRASTING MODELS OF THE WORLD ..... 12

Explanation of an event..... 14

Definition of a person..... 16

Definition of relationships..... 16

Attitude toward change ..... 18

AN ORGANIC DEFINITION OF LEADERSHIP..... 20

CHAPTER 1: QUESTIONS..... 24

**2 Models of leadership Style ..... 26**

MOTIVATION..... 28

IDEAS..... 30

ORGANIZATION ..... 30

THE MOI MODEL OF LEADERSHIP..... 32

WHAT TECHNICAL LEADERS DO ..... 34

FAITH IN A BETTER WAY ..... 38

CHAPTER 2: QUESTIONS..... 40

**3 A Problem-Solving Style..... 42**

UNDERSTANDING THE PROBLEM..... 44

MANAGING THE FLOW OF IDEAS ..... 48

CONTROLLING THE QUALITY ..... 52

CHAPTER 3: QUESTIONS..... 56