

"AN AMAZING BOOK"
Dan Wieden

A BEAUTIFUL CONSTRAINT

How To Transform Your Limitations Into Advantages,
and Why It's Everyone's Business

ADAM MORGAN & MARK BARDEN

WILEY

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For Cleo, Josie, Will, and Louis

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INTRODUCTION

The beauty in constraint, and why it matters

A few years ago, the Internet meme “Do Your Best Jagger” sprung from the game of the same name. The rules were not complicated: players could challenge each other, at any time, in any place, in any medium they liked, to do an impression of Mick Jagger of the Rolling Stones performing on stage.

As soon as you received the challenge, you were obliged to do your impression. There was no waiting until you were somewhere a bit more private, or until you had taken your coat off, or finished your falafel. You had to channel your inner Mick there and then, in front of whatever audience you found yourself—and in the consequent video lay the success of the meme.

The interesting question is not so much why one would ever start on this kind of madness, but why the game worked so well. How was it that, even when imitated poorly by a reluctant amateur at the counter in Subway, the audience understood that Sir Michael Philip Jagger was briefly in their midst? How did the veteran rocker come to create an onstage routine recognizable to anyone with even the briefest acquaintance with a Rolling Stones concert?

The answer lies in the beneficial effect of a constraint.

In Keith Richards’ autobiography, *Life*, Jagger’s fellow Stone explains how this distinctively flamboyant style came about. When the Stones started, he says, they played very, very small venues, and by the time the equipment was set up and the audience in place the singer often had a space no bigger than the size of a table to perform in. But as the front man of a band ambitious to break through, Jagger learned to work it, even in such a confined area, and it was from this combination of desire and restriction that his unique moves evolved.

At some point, consciously or unconsciously, the young singer made a decision about how to respond to the space constraint. It could have led him to be static, restricted, somehow less; instead he used it as stimulus to be more dramatic, engaging, distinctive, compelling. He used it to make him more.¹

Beauty or the beast?

Constraints have a bad rap. Constraint is, by definition, a negative thing. Its imposition prevents us from acting as we would like to, because it restricts us in some important way. Constraints hold us down, knock us back, make us fail. “Don’t fence me in,” the old song says: if you want me to show what I can do, then leave me unconstrained.

This book’s aim is to show how and why the opposite is true. How constraints can be fertile, enabling, desirable. Why they are catalytic forces that stimulate exciting new approaches and possibilities. How they can, in fact, make us more than we were, rather than less than we could be. Why we should see in them beauty, rather than the beast, and why that is more important now than ever.

The invisible gift

The beneficial power of constraint is all around us, whether we recognize it or not. In lifelong relationships, we commit to one partner to the exclusion of others; the constraint we put on ourselves allows us to focus our emotional energy on building a life with that person, and gives us a deeper level of intimacy and security in return. In play, we understand that the limitations our favorite game’s rules impose also give that game its unique character, energy, and pleasure; to relax those parameters means less of each. And a critical part of good parenting lies in understanding what limits are beneficial both to our children and to our family life—and then staying true to them, whether they are welcomed by our adorable little digital natives or not.

In business, the forced but delicious fruits of constraint are all around us, their starting impetus now all but forgotten. Google’s home page is as simple as it is because that was the limit of Larry Page’s coding ability at the time. He couldn’t afford external resources, and all he knew how to do was create a search box and a logo—so while the rest of the search brands visually cluttered their home pages, Google’s simplicity stood out for its understated respect for the user. Mario, the most famous character in the

world's largest entertainment business, is as colorful as he is because of the challenges of eight-bit technology: to compensate for poor pixilation definition, designer Shigeru Miyamoto gave the character a large nose to emphasize his humanity, a mustache to obviate the need for a mouth and facial expressions, overalls to make it easier to see his arms in relation to his body, and a cap to free him from the problems of animating hair; the most recognizable character in video game history was born of technical constraints. Basketball owes much of its relentless energy to the introduction of the 24-second shot clock in 1954. And Twitter—well, we all know about Twitter. Which of us would be using Twitter at all today, if it had a limit of 14,000 characters rather than 140?

While the benefits differ, each of these constraints prompted a kind of enhancement. The people working with them made their constraints beautiful.

New realities that call for a renewed inventiveness

Any good business has always worked within clear parameters. The whole concept of a brand, for instance, is in effect a beautiful constraint. It is the clarity on what that brand is not, as much as what it is, that allows a team to focus on finding fresh, relevant, and inventive ways to be true to what it stands for. When a brand stops respecting those limits and tries to become something it is not, it becomes weaker.

As authors and practitioners, we have spent most of our professional lives thinking about strategy and constraint. Our company specializes in challenger brands and businesses, for whom an ability to turn constraints to their advantage is particularly important. Challengers always have ambitions larger than their resources, and often lack what conventional wisdom would consider to be critical: a marketing budget, an R&D department, or a certain kind of functionality, for instance. They have to work with their constraints, reframing the conversation, creating a different marketing or business model. Indeed, how a challenger can make constraints beautiful often lies, for them, at the heart of a successful strategy.

In the sixteen years since we started eatbigfish, there has been a broader shift toward thinking like a challenger. It has become common to hear established market leaders talking about the need to maintain a challenger mindset as they seek to keep pace with a changing world, alert to insurgents keen to eat their lunch. Forced to

compete for growth with ever-leaner headcount, resources and time, the injunction to “do more with less” has entered the mainstream—albeit without any real definition of what that means or how to do it. Regardless of the nature or size of the business, constraints of time, resources, and people are here to stay. One of the leadership challenges of today, like it or not, is the requirement to grow within constraints.

There is no shortage of stimuli here. All around us we see a new generation of inventiveness with constraint at its heart. Cars that go faster while using less fuel, fast food that’s healthier, farming methods that create greater yields while using less water.

Sometimes these businesses are responding to constraints imposed on them. A new beer company, launched in the recession, lacked a marketing budget and was denied a bank loan. So instead they shared equity for cash, multiplying customer loyalty and advocacy, and became the fastest growing food-and-drink brand in the UK. Four California schools found a way to catch students up three grade levels in a year while biting down on a reduced budget. An unloved, long-struggling detergent brand, denied access to superior cleaning ingredients, found a different way to create value, and became Unilever’s fastest-growing global brand.

Often, though, they are businesses that look to create breakthroughs and competitive advantages by imposing challenging constraints upon themselves. A new boutique hotel chain created a high-end yet affordable experience by denying itself many of the givens of a great hotel, such as the reception desk and restaurant. A seventy-year-old furniture

The injunction to “do more with less” has entered the mainstream—albeit without any real definition of what that means or how to do it.

company set itself the target of producing a coffee table for just twice the price of a latte to put on it, and found an entirely new way to make a table. The ruling body of a motor sport precipitated a clutch of new innovations by requiring every competing team to produce engines that were 30 percent more fuel efficient, while maintaining the speeds that keep audiences excited.

We are living in an era of extraordinary people rewriting our sense of what is possible. They make an unarguable case that a constraint should be regarded as a stimulus for positive change—we can choose to use it as an impetus to explore something new and arrive at a breakthrough. Not in spite of the constraint, but because of it.

The Age of Scarcity, The Age of Abundance

We sit at a nexus between an abundance of possibilities on one hand, and the reality of scarcities on the other. As business people, there is so much insight and opportunity available to us today. If we care to, we can learn how dynamic companies are breaking through, anywhere on earth. We have unprecedented opportunities to connect with our

customers. Scores of potential partners could help us rethink, retool, manufacture, source, create, connect, and grow. And we can access the knowledge of everybody in our business, 24/7, if they would only take the time to reply to us. Which is where scarcity, the other reality, kicks in. Because, like us, they are all under pressure to do more with less, to manage an abundance of choices with tight budgets and lean teams. And these are only the current constraints. Fluctuating raw-material costs, retailers looking to recoup their own reversals in fortune from us, changes in the regulatory landscape, emerging new competitors from unexpected sources—every year offers a fresh series of constraints that will shape our trajectory forward, for better or worse.

Our personal and social lives are defined by the same dynamic of expanded opportunity and keenly felt limitation. We have access to more entertainment, knowledge, and personal development options than we will ever have time to use. Technology puts us in touch with an ever-expanding number of people. The ability to explore and share what we are passionate about is exponentially greater than it was even fifteen years ago. And yet we also feel short of time, energy, and attention. As Arianna Huffington has put it: “A world of too much data, too many choices, too many possibilities and too little time is forcing us to decide what we value.”²

And as global citizens, we participate in a world of finite natural resources, with an increasing global population and increased demands from a new wave of ambitious economies. Potential new sources of abundance—cheap energy from solar, or more ideas from greater access to knowledge, for example—have yet to fully answer the challenges. We will need to learn to live with new kinds of constraints if we want the planet to support the next generation in the way it has supported ours.

So are things getting better, or are they getting worse? The answer, we have to believe, lies in our own hands. It hinges on how we choose to approach these new and emerging constraints, and whether we have the confidence to choose the path toward stimulating new possibilities. We are the stories we tell ourselves, according to psychologist Timothy Wilson; if we believe constraints only limit us, then they will. But Wilson also notes our remarkable capacity to redirect our narrative by taking small steps in a new direction, which become self-sustaining when they pay off. Our hope is to provide those steps, and start to change the narrative, so we can all grow to make constraints beautiful.³

What is a constraint? And what do we mean by making it beautiful?

So where do we begin? It is striking that, while the world is full of encouragement in this regard (most cultures have an expression equivalent to “every cloud has a silver lining”), it’s harder to find practical ways to translate that encouragement into action. The first version of the old American expression “When life gives you lemons, make lemonade” dates back to 1915; yet in the intervening hundred years of human experience nobody seems to have sat down to write a second part to the saying: what the recipe for making lemonade might actually be.

There is a body of influential work on the modern relevance of lean,⁴ frugal innovation,⁵ Jugaad,⁶ and even the value of dyslexia to entrepreneurs.⁷ Each of these offers insights into a different part of what it means to thrive within a particular set of constraints. Where substantive work has been done specifically about constraints in business, its focus is different from ours. *The Theory of Constraints* (known as TOC), first introduced in 1984, differs significantly from our ambition, both in its narrow definition of a constraint and in the type of response it proposes. It defines a constraint in terms of a performance-limiting restriction on a system, and specifically the one that is most limiting—the organization’s weakest link. TOC proposes solutions for restructuring the organization, or key processes within it, in order to manage that constraint, eliminating its negative effect. Once this weakest link has been removed, what now becomes the new weakest link in the system becomes the next constraint on which to focus.⁸

TOC is a successful approach for some situations and businesses. Our interest, though, is not in eliminating constraints, but in positively leveraging them. We are proposing broader definitions of constraints and the situations in which we encounter them, and describing methods that can unlock a constraint’s transformative benefits to make it a beautiful source of possibility and opportunity.

It will help to define first what we mean by a constraint, and what we mean by making it beautiful.

In this book, a constraint is a limitation, imposed by outside circumstances or by ourselves, that materially affects our ability to do something. Constraints fall into four different groups: constraints of foundation (where we are limited in something that is usually seen as a foundational element for success); constraints of resource (where we

are limited in an important resource, such as money or people); constraints of time (where we are limited in the amount of time we have to do something); and constraints of method (where we are limited by having to do something in a certain way). An example of a constraint of foundation would be starting a shoe store without being able to let customers try shoes on before purchase (because you are an online retailer). A constraint of resource might be an airline having to fly a four-plane route, but having only three planes to do it with. Constraints of time need the least explanation here; we will all recognize these in our lives. And an example of a constraint of method might be making a hospital apply the systems of serving fast food to the way it performs life-changing eye surgeries.

By making a constraint beautiful, we mean seeing it as an opportunity, not a punitive restriction, and using it as a stimulus to see a new or better way of achieving our ambition. You will probably be familiar with the examples we have used above to illustrate the point.

The first example, the shoe store that wasn't able to offer customers the chance to try before buying, was, of course, Zappos. That limitation spurred them to introduce two important dimensions to the Zappos experience: first, a "we'll pay all shipping and make it really easy for you to return" process and, second, what they famously call "wow" customer service: warm, friendly interactions that have made customers not only comfortable buying shoes in this way, but evangelists for Zappos, with Net Promoter Scores typically in the early 90s. CEO Tony Hsieh now describes Zappos as a customer service business that happens to be selling shoes. They could, he says, just as well go into the airline business.

The second example, a constraint of resource, is about Southwest Airlines. In the 1970s, they had to sell one of their four planes, but were determined not to lose any of the routes they had acquired. To keep them, they were forced to find a way to fly four routes with three planes. This led them to a different constraint, one of time: they worked out that they could fly a four-plane route with three planes only if they could hit a ten-minute turnaround time. They had to get all the arriving passengers and luggage off, clean the plane, and get the departing passengers and luggage on within ten minutes—when the average U.S. domestic airline turnaround time was an hour. The ways they found to do this (introducing the then unfamiliar concept

of unallocated seating, for example), allowed them to maintain their four routes and even bring in new customers, who loved not sitting around on the tarmac as they did on other airlines.⁹ New practices became parts of their longer-term model as a low-cost airline and the record years of profitability that followed. And the moment defined for the company what made them special: a few years ago when we interviewed Colleen Barrett, then President of Southwest, and asked her what best captured the spirit of Southwest for her, this was the story she told—a story of constraint-driven inventiveness some thirty years before.

The third example, of a constraint around method, is about Aravind eye hospitals. Their founder set himself the ambition of delivering mass-market, high-quality eye surgery for poor Indians at a fraction of what a comparable operation would cost in the West. His obsession with efficiency famously led him to emulate the assembly-line discipline he saw at McDonald's Hamburger University. Now Aravind can carry out 60 percent as many eye operations as Britain's NHS every year, at a thousandth of the cost, and with half the rate of surgical complications experienced in eye surgeries in the UK.¹⁰

In each of these long-established businesses, constraint linked to ambition has spurred better practices or even transformations. In each case, the people involved accepted the constraint and found a new opportunity in it.

We are not suggesting that all constraints have the potential to be beneficial. The latest research into the psychology of scarcity, which we will explore later, has shown the disabling effect of extreme poverty, creating a kind of tunnel vision that prevents people from being able to focus on anything else, or have any real insight on how to improve their situation. Extreme constraints like this, so fully dominating a life, are not constraints with a potential beauty, and this book does not attempt to encompass them. But most of us are fortunate not to be in this position; it is the broader set of constraints in our lives that we will focus on.

The learning journey: Five groups for whom constraint means more

Are the people behind cases like the ones above just a few brilliant individuals, or is there an underlying approach we can all learn from? We weren't expecting to find a formula, but we thought we could, at least, establish whether the ability to make

constraints transformative was an intuitive process—the unique gift of an exceptional individual—that could not be transferred, or whether we could uncover and develop just enough process to be useful to a broader group. Three years of research took us to five different sources of learning:

1. Creative and problem-solving professionals

For engineers, designers and other creative problem-solvers, a formal definition of the constraints within which they must work is essential to channel energies and expand creativity. It was David Ogilvy, eponymous founder of the iconic advertising agency, who celebrated this relationship with the remark, “Give me the freedom of a tight brief.” We went to talk to some of the most admired in their field: Michael Bierut, a principal of the design firm Pentagram, whose clients include Saks Fifth Avenue and the *New York Times*; Dan Wieden, the adman who created Nike’s advertising; and Yves Behar, the product designer behind One Laptop Per Child and Jawbone. Alongside this group of “creatives” we added the likes of Farm Input Promotions Africa (FIPS-Africa), who are finding ways to increase productivity for smallholder farmers in Kenya, and the principals of Stanford University’s Design for Extreme Affordability course, who teach students to develop products and services for the world’s poor.

2. Challengers in Business who indeed do more with less

We drew on our own research over the last sixteen years for the Challenger Project, a study in which we have interviewed over two hundred brand owners and business leaders who achieved significant growth in the face of different kinds of constraints. Over the same period, our consultancy has also worked with many different types of companies and challenges; our experience is hands-on and practical, not simply that of the ivory tower; it was this very experience, in fact, that drew us to this subject in the first place.¹¹

3. Academic research

There are over 70 academic studies relating to the effects of constraints on creativity. Janina Marguc at the University of Amsterdam helped us explore them all. Several of these were illuminating, and we have referenced them where they added insights, or helped more fully explain some of our own findings or beliefs.¹²

4. Cultures and ideas explicitly linked to overcoming constraints

There are interesting subcultures that deal with constraints. In computer science, the concept of kludging (finding a quick and dirty solution because you have no other option) is related to the hacker ethic, and the French have the related concept of *Système D*. Some countries have similar, farming-led cultures around a “can-do” attitude towards constraints—South Africa’s Afrikaans expression “a farmer makes a plan” (essentially working one’s way round an obstacle or setback) is not far from the Indian culture of *Jugaad*, and finding a solution to a challenge with whatever you have at your disposal. Each of these is a way of thinking about tackling a problem, rather than a process, but provided useful learnings nonetheless.

5. Old dogs learning new tricks

We also looked at large companies that had learned to use constraints productively in different areas of their businesses. From these we gained confidence that something like the “just enough process” we were seeking to define could also be learned and applied within large organizations that had not always behaved in this way.

Our journey took us to San Francisco and to New York University to talk to leaders of some of the most influential studies on the effects of constraints on creativity, to Johannesburg to learn how the South African mining industry communicates critical safety messages to audiences with limited common language, and to Mumbai to understand how a retailer made a success of a western franchise whose products neither its consumers nor its staff understood. We looked at the invention of the aircraft carrier, the transformation of healthcare in Alaska, and the creation of human capital in Taiwan. We learned from people who had sudden epiphanies and people whose breakthroughs came one step at a time over twenty years. We visited corporate cultures that routinely ask employees to tackle questions they have no idea how to answer, and succeed. We met supply-chain directors, pit stop mechanics, marketers, bakers, entrepreneurs, educators, start-up founders, scientists, designers, agronomists, and engineers, all of whom were ambitious and determined enough to have found ways to use constraints to their advantage, and from whom we learned what we needed to develop tools and frameworks for applying the learning to other situations.

**Ten years from now, we
would like to search Google
for a definition of constraint
and see it include this:
*a limitation or defining
parameter, often the stimulus
to find a better way
of doing something.***

Because inspiration, stories, and principles will only get us so far, we needed to be able to translate this way of seeing into a way of doing, of applying, of leading. The book offers six tools to help work through how to turn our own constraints into sources of possibility and advantage. And it offers a simple overachieving process to frame those tools, not because there is a formula for success, but because if we want to apply this to our organizations as well as ourselves, we will need to bring others along with a common understanding.

With this book, we want to make the questions “Where is the beauty in this constraint?” or “How can we make this constraint beautiful?” both natural to ask and reflective of a new way of seeing constraints—one that is alight to their possibilities rather than shadowed by their threat. To capture the capability to realize that potential, we hope to reclaim the word

and the idea of *inventiveness*, and make it a concept that’s more accessible for more people, in more domains. In the business world, innovation seems to have become a little elitist, something for special departments in corporations, or those whiz kids in Silicon Valley, all of whom work on Big Ideas. We are proposing that inventiveness can sit alongside that, but as a generalist rather than specialist capability, one brought into the activities of every one of us around constraints. While we will focus primarily on the application of this inventiveness to constraints in business and enterprise, we will also have half an eye on a more personal application, and a perspective on how it relates to some of the bigger issues we face as global citizens.

The structure of the book, and how to use it

PART ONE: The process of making constraints beautiful

The first part of the book unpacks the mindset, method, and motivation needed to find the beauty in a constraint. These six steps define the ABC approach.

In Chapters One and Two we explore how to understand and create the right mindset about constraints: what is blocking us from having that open, optimistic sense of possibility, and how we can become unblocked. We begin in **Chapter One: Transformers, Neutralizers, and Victims** by looking at three different perspectives on the impact of a constraint on an ambition, and whether they are personality types or just perceptual stages that we can actually move between. **Chapter Two: Path Dependence** explores how our habitual ways of behaving prevent us from finding new ways to solve new problems, and how we often remain blind to these habits, making it harder to break them.

The section on method in **Chapter Three: Propelling Questions** begins with an exploration of the most productive kinds of questions we can ask, and what makes them so powerful in addressing constraints. In **Chapter Four: Can-If** we look at how to answer those questions in a way that keeps optimism, as well as sustained creative thinking, alive in the solution phase. This group of chapters concludes with **Chapter Five: Creating Abundance**, an exploration of what it really means to be resourceful in a business culture that has largely forgotten what resourcefulness is, and offers a tool for seeing afresh our real potential here.

Chapter Six: Activating Emotions looks at the third of our key elements, motivation, and in particular at the theory and practice of engagement with constraints: why emotions are so important, which we should be focusing on, and why.

Figure 0: Chapters One through Six—The six steps that define the ABC Approach



PART TWO: The application of the concept, and why it matters now

We then pressure test our emerging point of view with two challenges. **Chapter Seven: The Fertile Zero** looks at brands and businesses that have been constrained to the point of having next to nothing of a key resource: is it possible for even this extreme nature of constraint to be fertile and, if so, how? And the second, **Chapter Eight: Constraint-Driven Cultures**, asks whether we are simply telling a story of one-offs from remarkable people. What's the evidence that this kind of mindset can take root in a large organization and become a repeatable method?

Chapter Nine: Scarcity and Abundance explores in more detail the critical context we have only touched on in this introduction: why the ability to embrace constraints will be more important than ever as we live in the tension between scarcity and abundance.

Chapter Ten: Making Constraints Beautiful draws together a summary of the learnings of the book and proposes a range of ways that we can use it ourselves. And **Chapter Eleven: Leadership and the Future of Constraints** concludes the book with a perspective on what transforming constraints in this way demands of a leader.

While there is a narrative across the book, it is not necessary to read it in order, although we would recommend that Chapters Three, Four, and Five be read in sequence. For those who find themselves constrained in attention, the beginning of each chapter lists the key questions that will be addressed in the pages that follow; you can browse and see if you are curious about the answers to those questions before reading the rest. For those constrained in time, there is a brief summary of the key points at the end of each chapter; these are boxed in red, to make them easy to find and reference. Collectively they can be read in 21 minutes and 20 seconds.

Let's go.

INTRODUCTION: CHAPTER SUMMARY

- Most of us tend to see constraints as restrictive and adversely limiting. This book shows how and why the opposite is true: they are actually fertile forces of enhancement, stimulating new possibilities.
- We can, in fact, see the beneficial effects of constraints all around us in popular and business culture, from the video-game character Mario to the principles of good parenting.
- We define a constraint as a limitation that materially affects our ability to do something. In the chapters that follow, we will see constraints falling into one of four groups: constraints of foundation, resource, time, and method.
- In some cases, the people we discuss were responding to constraints imposed on them; in others, they have deliberately imposed a constraint on themselves to spur a new breakthrough.
- The capability to make constraints beautiful is increasingly important to all of us. We all live at the nexus of scarcity and abundance, and the capability to turn constraints into sources of opportunity will increasingly be a key definer of progress in our personal as well as our business lives.

1 VICTIM, NEUTRALIZER, & TRANSFORMER

Our starting relationship with constraints

THIS CHAPTER FOCUSES ON:

1. How can we best assess our own starting relationship with constraints?
2. What are the keys to moving to a very different kind of relationship with constraints, one that would make us more able to take advantage of them?
3. What can a broader group of us learn from people who see constraints as inherently beneficial?

Constraint and ambition

Imagine you could develop a new system that enabled your business to use 50 percent less of your most precious resource, while at the same time driving 20 percent growth. Not a promise of future growth, but immediate growth. What would that be worth to you?

To increase output by double digits while halving inputs in one year—even in today's efficiency-obsessed economy—this, surely, is almost impossible. If a team had found a way to achieve it, we would know about it; they would be on the cover of every business magazine.

And yet, somehow, they are not.

But while modern drip irrigation may so far have failed to set the dinner tables of the Twitterati alight (you are welcome to try it this evening), it remains a remarkable and ongoing story of growth in the face of constraints.

Until the mid-1960s, the Kibbutz Hatzerim eked out a living farming in the Negev desert of Southern Israel (Negev is the Hebrew word for dry). Though committed to farming, they realized that to thrive they would need to bolster their fragile existence with a business alongside their agriculture. Determined to find an industry that leveraged their expertise as farmers, they partnered with an engineer, Simcha Blass, to build and sell a new kind of irrigation system. Years earlier, Blass had noticed a line of trees, all planted at the same time, in which one tree stood considerably taller and fuller than the rest. Investigating, he discovered a small leak in a pipe that dripped constantly near the roots of the tree. Experiments led him to realize that drip irrigation, giving as it could just enough water at regular intervals, was both superior in growth effects to flood and even sprinkler irrigation, and vastly more efficient in water consumption. But it wasn't till plastic tubing became commercially available that he and the farmers of Hatzerim were able to commercialize his insight.

During initial trials of the dripperlines, their new plastic piping system, on Hatzerim's own crops, water use fell by 50 percent, while yields of peaches, pears, and apricots improved so dramatically that some of the kibbutz argued excitedly that they should keep the technology a secret, and just use it for themselves; many of them still, after all, simply thought of themselves as farmers. But there was a greater ambition at play—it was clear that this was an opportunity to launch a new industry, with much



bigger benefits for the kibbutz than simply boosting their own crop. The joint venture between Blass and the kibbutz was called Netafim.

Netafim is now an \$800 million company. Its success has been driven by the tension between ambition and constraint, above and beyond the initial need to grow crops in a desert. The company's growth put a strain on the resources of the kibbutz, who refused to compromise on one of their founding principles: that they wouldn't use hired help. So with only fourteen full time people assigned to work in the factory where they manufactured their drip systems, the only way to handle Netafim's growth and simultaneously maintain their principles was for everyone in the kibbutz to put in one shift a week on the production line, in addition to their other jobs. This in turn meant that everyone in the kibbutz became more connected to, and knowledgeable about, this new initiative that would be so critical to their future.

The new drip irrigation system boosted the kibbutz's (and the country's) fruit and vegetable production so much that they could begin exporting. But political tensions in the region meant that their neighboring countries wouldn't buy from them—a constraint requiring them to develop and grow fruits and vegetables with longer shelf lives, for export to Europe. And, finally, the challenges of clogging within the drippers forced a continuous quest for superior pressure-compensation and self-cleaning technology within the dripperlines themselves; what may look like a hosepipe with holes is a deceptively brilliant piece of engineering.

Netafim is now ambitious to have greater global impact. Their systems can contribute to food security in countries that must use less water but feed growing populations on finite arable land. They can help lift subsistence farmers out of poverty, and help solve gender issues: with drip irrigation, women in rural communities spend less time each day walking to collect water, and can spend that time instead developing new skills as well as being with their families.

Yet today only 5 percent of the world's irrigated fields use drip irrigation, in part because the system's initial cost is a barrier for the world's 500 million smallholder farmers. This tension between global ambitions and the constraint of price has driven the next stage of innovation for Netafim. Now they are aiming to produce cheaper systems, while developing programs with the Indian government to subsidize them with grants. Once they are able to demonstrate the impact of their systems, not just

on yields and water use, but on the wider community, they believe they will be able to open up many more new markets.

Keeping the ambition high in the face of a succession of constraints, it seems, has been at the heart of much of Netafim's fertility.¹

Stages or personalities?

Michael Bierut routinely deals with constraints, although lack of water has yet to be one of them. A partner at the design firm Pentagram, he is one of the world's most successful graphic designers, creating elegant, inventive solutions to challenging briefs for the *New York Times*, Saks Fifth Avenue, Disney, and The Clinton Foundation.

When we met with him, the importance of the relationship between ambition and constraint had already become clear. Those who refused to scale back ambition in the face of constraint, like Netafim, seemed to be the ones most likely to find a way to make the constraint beautiful, whereas those who reduced their ambition were more likely to find the constraint constricting.

For the first group, the ambition was the vital, even dominant, part of their mindset. While they might not always know how to make the constraint work to their advantage, they used the tension between the scale of the ambition and the nature of the constraint to fuel the search. They had to make it work.

For the less ambitious, the opposite was the case; the constraint was the dominant dynamic. They looked to reduce the tension between the ambition and the constraint by trimming their ambition in line with the severity of the constraint. The constraint was allowed to limit them.

Our hypothesis at the time was that there were three kinds of people:

1. **Victim:** Someone who lowers their ambition when faced with a constraint.
2. **Neutralizer:** Someone who refuses to lower the ambition, but finds a different way to deliver the ambition instead.
3. **Transformer:** Someone who finds a way to use a constraint as an opportunity, possibly even increasing their ambition along the way.

But listening to us describe these different types, Bierut offered an alternative interpretation based on his own experience. He recognized, he said, all three types in himself; even