

Preface

From Lean Production to Lean Solutions

In the summer of 1982 we had a revelation. We were visiting a series of companies in Japan, trying to understand why they were winning in global competition. Then we encountered Toyota.

We quickly realized that this company was quite different from the others we had seen. Toyota's success lay in brilliant management of its core processes: the series of actions conducted properly in the correct sequence at the right time to create value for customers. Its management of product development and production and its collaboration with suppliers and customers in Japan were far better than anything we had ever encountered.

At the moment of revelation we turned to each other and said, "It's not brilliant product innovations or culture or a weak currency or strong government support that makes this company stand out in global competition. It's the brilliant focus on core processes." This was an exceedingly useful insight, because quirky product brilliance or culture-specific advantages can't be copied. But superior process management can.

It took us a while, but by 1990 we were able to describe

these processes in *The Machine That Changed the World*.¹ We presented exhaustive evidence that Toyota's key value-creating activities were better on every significant dimension, not only in comparison with foreign auto companies but with other Japanese companies. Toyota's product development, supplier management, customer support, and manufacturing processes were collectively the "machine" that was changing the world. This conclusion naturally raised the question of how companies in any industry in any country could also achieve process brilliance, a question we tried to answer in our next book, *Lean Thinking*.²

We proposed five simple principles to guide any firm:

Provide the *value* actually desired by customers. Resist the urge to work forward from existing organization, assets, and knowledge to convince customers that they want what the firm finds easiest to provide.

Identify the *value stream* for each product. This is the sequence of actions (the process) needed to bring a good or service from concept to launch (through the development process) and from an order into the hands of the customer (through the fulfillment process). Challenge every step in these processes to see if they really create value for the customer. Eliminate the steps that don't.

Line up the remaining steps in a continuous *flow*. Eliminate waiting and inventories between steps to slash development and response times.

Let the customer *pull* value from the firm. Reverse the push methods used by firms with long response times, which try to convince customers that they want what the firm has already designed or produced.

Finally, once value, the value stream, flow, and pull are established, start over from the beginning in an endless search for *perfection*, the happy situation of perfect value provided with zero waste.

The Triumph of Lean Production

As the years have passed, we have been cheered that the internal processes in many organizations are improving. The simplest indicator is that most manufactured goods work a lot better today and cost less to buy than when we started our collaboration. For example, defects per car have fallen steadily in the auto industry, even as the real price of a motor vehicle of a given specification continues to decline.³ And we have been equally gratified to discover that lean production works in every company, industry, and country where it is seriously tried.

Meanwhile, Toyota marches from victory to victory in global competition as it closes in on General Motors for the leadership of the world car industry. By contrast, most of the other Japanese firms we encountered on our 1982 visit have failed or fallen by the wayside. (Honda is still independent and healthy, but Nissan is controlled by Renault; Mazda is part of Ford; Subaru, Suzuki, and Isuzu are tightly tied to GM; and Mitsubishi has suffered a dramatic loss of market share.)

But curiously, despite a growing variety of better products with fewer defects at lower cost available from a growing range of sales channels, the experiences of consumers seem to be deteriorating. In recent years, we've frequently found ourselves discussing this phenomenon with managers. They report that when they are wearing their producer hats in the office or the factory, things seem to be getting better. But when they go home and put on their consumer hats, things seem to be getting worse.

And we have felt this acutely in our own lives. It seems that every conversation the two of us have, working as busy authors separated by an ocean, starts with an account of a consumer frustration that has gotten in the way of getting our work done:

- The custom-built, delivered-in-three-days computer that refuses to work with the printer, the other computers in our home offices, and the software from different providers.
- The car repair requiring many loops of miscommunication, waiting, and complaints about work done wrong.
- The long drive to the “big box” retailer, stocking tens of thousands of different items—most of them better and cheaper than those available 25 years ago, only to return home without the one item we actually wanted.
- The medical procedure that was deeply impressive from a technical standpoint yet unpleasant and time-consuming from a personal standpoint.
- The business trip with endless queues, handoffs, and delays.
- The exasperation of “help desks” and “support centers” that neither help nor support.

Consumption should be easier and more satisfying due to better, cheaper products. Instead it requires growing time and hassle to get all of our goods and services to work properly and work together. Stated another way, today’s consumers are often drowning in a sea of brilliant objects. And this seems very strange when we stop to consider that satisfying consumption—not just making brilliant products—is the whole point of lean production.

The Emerging Challenges of Consumption

In the late 1990s, we passed off these observations as short-term phenomena, the consequence of the bubble economy when consumers were offered many new

capabilities supported by immature technologies. Surely things would get better in the future.

By the end of the bubble, however, we could see that these consumer problems weren't anomalies; they were normal. We then asked a very simple question: What's going on in the world that we should come to feel this way, gradually shifting our view of the next big challenge for business from producing better products to making consumption more satisfying?

As we reflected on consumption problems, we began to see five key trends that collectively create the challenge now facing consumers:

First, producers are relentlessly adding choices as they "mass customize" their product offerings⁴ and steadily increase the number of channels through which products can be obtained. Choice is wonderful but it requires more and more decision time from the consumer.

Second, the regulated economy of the mass production age is steadily contracting. This gives all of us more freedom—which is good.⁵ But it also gives us many more activities to manage and decisions to make: How do we invest our pension funds? Which telecommunications providers do we sign up with? What airline/rental car/hotel combination do we pick? The cost associated with making the right choice from this busy menu can easily exceed the time and energy required to make it.

Third, we are shifting from a service to a self-service economy in which we obtain more and more personal capital goods to manufacture our own value—like the computers, printers, scanners, personal digital assistants, and software that surround us as we write this book. (Our fathers and mothers had secretaries with typewriters; we have PDAs and PCs.) And we don't just obtain these personal capital goods. We must also install, maintain, upgrade, and recycle them,

often integrating goods and services from many vendors, using our own time and energy.

Fourth, households are changing in every advanced economy in ways that create time and energy pressure for consumers. Workforce participation has risen dramatically, meaning that in two-adult households the member of the household (typically female) who previously managed consumption is now working. And in a growing fraction of households there is only one adult present to earn the living and to manage the consumption. This may mean more money per capita to buy more goods and services, but there is less time to manage them.

Fifth, and finally, the advance of the Internet and information technology are steadily blurring the distinction between consumption and production, often pulling the customer into the provision process. For example, one of our wives recently ordered office equipment online from a well-known manufacturer. Due to confusion about a taxpayer identification number, the order was rejected, but no e-mail with this information was sent. When the equipment failed to arrive on the promised day several weeks later, a trip to the web showed that the order had been canceled. When a human was finally reached at the manufacturer's help desk to discuss how this could have happened, the "customer relationship manager" explained that it is now the customer's responsibility to check the web frequently to make sure the production and shipment process is proceeding to plan. As the wife noted, "I had been appointed operations manager at this company at zero pay, but they forgot to tell me."

This widespread trend toward transparency and direct participation by the consumer in the production process is touted by providers as an unalloyed boon. But to busy consumers with other priorities, it often feels like the gift of unpaid work.

Today's situation of more choices and more knowledge for the consumer, gained at the expense of more responsibility and more decision and management time, can be summed up very simply:

(1) There are more and more consumption decisions for consumers to make—more categories of products from more suppliers available through more channels to be obtained, installed, integrated, maintained, repaired, upgraded, and recycled.

Plus,

(2) The evolution of the production process, facilitated by information technology and the steady introduction of more personal capital goods, claims more of the consumer's (unpaid) time and energy while blurring the boundary between consumption and production.

But,

(3) Consumers will never have more time in their day (the one real constant and constraint in life) and most consumers will actually have less useful time and energy in the years ahead because of changing households and aging populations in all advanced economies.

Collectively, these forces constitute the consumer's dilemma in the 21st century.

Rethinking Value

As we grasped this situation, we realized that we needed to heed our principles of lean production by returning to the starting point, the question of value. We needed to ask what

consumers really want in the era ahead. Then we needed to rethink consumption from first principles as a process—like production, but from the opposite direction—in order to discover a better way for consumers to obtain the goods and services they now want. We call this improved process *lean consumption*.

Lean consumption must have a companion process. Firms must provide the goods and services consumers actually want, when and where they are wanted without burdening the consumer. We've used the term "lean production" in the past, but too many managers act as if production stops at the office door or the factory gate. So we now use the term *lean provision*, which comprises all of the steps required to deliver the desired value from producer to customer, often running through a number of organizations.

Most of us find it easy to think about consumption when we are consumers and easy to think about provision when we are at work. But all of us find it difficult to see these interlocking processes together as a unified value stream. As we have walked through a range of industries in recent years, from airlines to healthcare to insurance to automotive repair services, we have repeatedly observed consumers and employees struggling valiantly with misaligned consumption and provision processes that alienate customers, drain away profits, and burden staff with feelings of rage and despair. Yet they soldier on in a fog of mutual incomprehension.

As we continued our investigations—visiting many companies in many industries in many countries—we began to see that if truly lean provision can be married to truly lean consumption, life can be better for consumers, more satisfying for employees, and more profitable for providers. A win-win-win is possible in which providers, employees, and consumers create lean solutions together. This fundamental insight led directly to this book.

Introduction

Lean Consumption Meets Lean Provision

Consumption. It sounds so easy. Indeed, in advanced market economies, it's often portrayed as effortless. Consumers can get just what they want easily, even instantly. And yet, the problem is that consumption often isn't easy and consumers can't get what they desire. And this is true in every category of consumption, for all types of goods and services. In this book we will see why consumption is often hard work for the consumer and is unpaid work to boot.

Consumption Is a Problem-Solving Process

Let's start with a very simple observation. Consumption is a continuing process—a set of actions taken over an extended period—to solve a problem. It involves searching for, obtaining, installing, maintaining, repairing, upgrading, and, eventually, disposing of many goods and services. All of this obtaining, installing, maintaining, and disposing involves time, effort, and—far too often—hassle for the consumer. To make this clear, let's look at the process followed in one

simple act of consumption.

As we set out to write this book, Dan needed a new computer and went to the web to do a bit of research on competing products. He gave the matter some thought, then went back to the web, reached the preferred manufacturer's web site, and typed in all the information necessary to make the purchase and arrange a shipment date within his acceptable wait time. The manufacturer shipped the product as promised, and it arrived on the promised date. So far, so good.

But the software installed was not all of the software needed, and when additional software was installed for additional applications, the computer didn't work. This led to a visit to the manufacturer's web site and then a call to the manufacturer's help line. After a considerable wait, Dan was told that the problem was with the new software. This triggered a call to the help line of the new software provider—who blamed the hardware maker. This caused a search for a computer expert with experience with this problem and a service call to fix it. Unfortunately the expert, after much time, some money, and many false leads, was stumped. This caused a search for a second expert who finally solved the problem.

Dan's computer finally worked, but his consumption was hard work, time-consuming, and exasperating. On the next page, a list of the steps, time, and experience involved shows the complete consumption process.

Note that this simple act of consumption was actually an extended process involving 11 steps over seven days. Of these steps, four actually created value in some way, but seven were pure waste. One was fun, two were tolerable, and the rest produced anxiety and exasperation in varying degrees. (The two "help" lines were particularly exasperating.) What should have consumed no more than three hours and 30 minutes of Dan's time—still a surprisingly large amount for "effortless" web-based consumption—actually burned up 11 hours and

Steps	Dan's time	Dan's experience
Day 1		
1. Web search for information	1 hr.	Fun. "Lot's of interesting new stuff out there, and I never left home!"
2. Product selection, option selection, and order entry	30 min.	OK—"But I do begin to feel a bit like a file clerk as the novelty of web ordering wears off. Why do I need this tracking number to check on my order? Aren't they responsible for getting it to me on time?"
Day 4		
3. Receipt of product and unpack	1 hr.	OK—"Bit of tension as I try to follow all the instructions, but the computer does turn on and boots up."
4. Load additional software	1 hr.	Some frustration—"Seems like this should be easier at this point in the computer age."
5. Test complete, but hardware/software "product" quits working	1 hr.	Extreme frustration—"It was working, but now it boots up and suddenly shuts down."
6. Visit to manufacturer web site and call to help line	1 hr.	Exasperation—"How can I spend an hour, mostly on hold, to learn that the problem is someone else's fault?"
7. Call to help line of software vendor	1 hr.	Extreme exasperation—"How can this industry survive when nothing works and no one takes responsibility?"
Day 5		
8. Search for an expert	1 hr.	Mild frustration—"How come you can't figure out in advance what anyone wanting to work on your computer systems really knows?"
9. Expert visit	2 hr.	Extreme exasperation—"I love the way my time and money become this guy's learning curve."
Day 6		
10. Search for a new expert	1 hr.	Extreme exasperation—"The web sure isn't helping me now; I'm reduced to desperate calls and e-mails to friends."
Day 7		
11. Expert visit	1 hr.	Anxiety followed by relief—"Will this 'expert' be any better?" followed by "I can finally get some work done!"

30 minutes, nearly one and a half standard working days.

But this is not the end. Dan's real objective is not to own a computer. It is to solve the problem of processing words and images, transferring them to others as necessary. The computer, its software, and the technical support required are only a means, not an end, and are only a first step.

The complete consumption process to solve Dan's problem over several years will involve not just one "buy and install loop," but also a number of repair and upgrade loops, followed by a replacement and disposal loop. The steps involved in each of these loops will be very similar: many actions (a few of them value creating) and lots of personal time (much of it exasperating). All to solve the simple problem of processing words and fashioning images for books and articles.

On one level, personal computing is a miracle. We know because we started writing books together years ago on IBM Selectric typewriters, exchanging drafts by mail and then by fax. But on a different level it's highly exasperating. The individual products involved are often very impressive—once you get them to work right and to cooperate with each other. But the overall experience is full of frustration.

If this typical experience is the current negative, let's think about the future positive. What would we really like to experience as consumers? What are the objectives of what we term lean consumption?

What Do Consumers Really Want?

First, we need to remember that most of us consume in order to solve problems. These may be little problems, such as finding, buying, and using the apparatus needed to enjoy music as we go through the day; or they may be big problems,

like finding, buying, and maintaining a comfortable home in which to live and work. Often we aren't as interested in the goods and services themselves—the iPod or even the house—as we are in what they can do for our lives. Therefore, it follows that our acts of consumption must actually solve the problem, from our simple music problem to our complicated shelter problem. A partial solution—a new computer that won't talk to the printer, or a health maintenance organization (HMO) that can't find an appropriate specialist in a timely manner—is no solution. We want our problems solved completely.

Second, we would like our problem solved cost-effectively, with minimum expenditure of our time and effort. As society develops and standards of living rise, the one item we never have more of is time. (To the best of our knowledge there is no research underway in any laboratory anywhere on increasing the numbers of hours in the day or days in the week.¹) Thus the conservation of personal time and effort for more valued uses becomes an ever more important objective.²

Third, we would like to obtain exactly what we need to solve our problem, including all the necessary goods and services in the exact specification required. We don't want to make substitutions or go away empty-handed.

Fourth, we want to solve our problems where we need them solved. In a bygone age of personal services, items were often brought to the customer: the cleaner, the grocer, the butcher, the vegetable gardener, and the doctor all made house calls. In the more recent age of self-service, the customer has either gone to the store or ordered directly from the producer. We believe that in the emerging age of lean consumption many products will be available at multiple locations for comparable prices. That is to say, you will be able to solve your food problem by going to the “big box” warehouse, the traditional grocery store, or the small convenience store, or get home delivery with web-based

ordering. You will diagnose your health problem by going to the HMO or the stand-alone medical lab, or perform tests at home with personal capital goods. You will have the choice of buying life insurance from the agent at your dining room table or by filing the application yourself over the web.

Fifth, we want to solve our problem when we need it solved. As we will see, current provision systems typically involve strangers ordering goods and services from strangers. It's not surprising, therefore, that most consumers give the provider no warning that an order is coming. Unfortunately, typical production systems—including even the touted build-to-order systems of companies like Dell—can't provide a high level of service in this environment. And, as we will see, consumer desires are actually much more complex. It turns out that in the world of lean consumption, the notion of when means very different things to different consumers.

Finally, many of us would like to reduce the total number of problems we must solve. The obvious means is to bundle them. For example, many of us might appreciate a “solution provider” to put the vehicles we need in our driveway for a simple usage fee in order to solve our mobility problem without our ever having to think about it. Or a shelter provider to cost-effectively maintain our homes without any of our mindshare or emotion-share. How about a shopping solution so the items needed arrive at our homes when we need them, without fetching them ourselves nights and weekends? Or a single computing and communication provider so we deal only with a single party and expend no time on the solution? Moving the fundamental unit of consumption from many individual items to a few aggregated solutions is a major leap. But it is a leap that we believe is the end destination of lean consumption.

The Principles of Lean Consumption

These six simple principles of lean consumption provide a new definition of value for today's consumer, which we'll express in the voice of the customer:

- Solve my problem completely.
- Don't waste my time (minimize my total cost of consumption, which is the price I pay plus my time and hassle).
- Provide exactly what I want.
- Deliver value where I want it.
- Supply value when I want it.
- Reduce the number of decisions I must make to solve my problems.

Note that none of these principles focuses on the specific attributes or performance of products themselves: the car, the software, the insurance policy. Today the product is often not the problem. Unfortunately, many firms making goods and providing services cling to a product-centric focus. Because they oversee only one element of the total consumption process, they often overlook the consumer's total experience in finding, obtaining, installing, maintaining, upgrading, and disposing of the products needed to solve the problem. And they are seemingly oblivious to the total cost of a solution, including the consumer's time and hassle.

The Challenge for Lean Provision

Provision. Like consumption, it also sounds so easy. Surely with modern technology—especially information technology—providers can supply the value desired by consumers easily,

even effortlessly. The problem is that provision is actually very hard and few firms today do it well. Indeed, as consumers struggle with broken consumption processes, providers struggle with defective provision processes. The evidence is everywhere:

- Growing spending on product features and options that fail to attract new customers.
- Unrealistic delivery promises, which providers feel they must make to be competitive.
- High levels of out-of-stocks (due to too few goods) and remaindering (due to too many).
- Increasing spending to retain customer loyalty, even as customers become less loyal.
- Larger investments in bigger assets (big stores, big distribution centers, big computer systems), which have shrinking ability to create competitive advantage.
- Spiraling spending on help desks and other forms of customer support, now outsourced so that direct customer contact is lost.
- Chronic employee dissatisfaction in almost every activity with intensive customer interface, causing high turnover and training costs and low customer satisfaction.

No provider wants any of these outcomes, but with current provision processes most of them are unavoidable. And most providers seem to think that actually solving customer problems while providing value when and where the customer wants would cost much more. As a result they have pushed harder down the traditional path of mass consumption. They offer ever more brilliant products in splendid isolation at steadily lower prices, even as consumers signal they really want something else.

Fortunately, as we will see in the pages ahead, a few firms have learned a new way to think about consumers and providers and how they can create lean solutions together. They have discovered that just as high quality costs less, not more, we now know how to provide the value that consumers really want and at lower total cost. The simple objective of this book is to demonstrate this new approach—marrying lean provision to lean consumption—so we can all progress from mass to lean.

