In this chapter, we will explore the basics of hoshin kanri. Table 1-1 shows the hoshin kanri road map—Scan, Plan, Do, Check, and Act—that the various teams will follow as they use the team exercises to implement hoshin. As mentioned in the introduction, the workbook follows the Plan, Do, Check, Act (PDCA) cycle, along with the step-by-step progression of the hoshin process. Scan represents some of the preplan work the hoshin team must perform before moving into the PDCA cycle of hoshin kanri. Plan includes designing a business strategy or experiment, chartering teams, and assigning responsibilities to the four planning and implementation teams. Do develops leaders and implements the plan through project management and training. Check conducts periodic reviews. And Act makes hoshin kanri part of your business culture through standardization and continuous improvement.

The hoshin kanri road map also directs the practitioner to charter a series of teams, each of which are responsible for one or more of the seven experiments of strategy described below. The first team you will charter is the “hoshin team.” The hoshin team is usually a management team in charge of a business unit: an entire company, division, brand, product line, department, physical site, or value stream. For the purpose of this workbook, the management team is the hoshin management team or hoshin team. Later in this chapter, you will choose the members for the hoshin team.

For the Cybernautx case study that illustrates the hoshin process, we chose a hoshin management team in charge of an entire value stream. The fact is you can choose any starting point that fits your circumstance. For example, the hoshin team might be the partners of a private equity firm, forming a strategy for increasing the value of its many holdings. Or it might be, as in my book Implementing a Lean Management System, a plant manager and her direct reports, forming a plan for implementing TPM. Or it might be a departmental manager and his direct reports, forming a strategy for departmental improvement. Wherever you choose to begin the hoshin process, the hoshin management team should represent stakeholders of the business unit to which the hoshin or strategy will be deployed. Normally this means that the team should be cross-functional or, in the case of the value stream illustrated in the Cybernautx case study, interorganizational (that is, with members drawn from different companies).

Before chartering a team, the company will need to scan the environment to define a problem or challenge for strategy to address. The hoshin team can perform the scan or you can delegate it to functional experts. (For this workbook, the hoshin team will perform the scan.) Once you have performed the scan, the hoshin team designs a strategy with the X-matrix so the company can turn its business strategy into an experimental design, consisting of the seven hoshin experiments, to address the problem or challenge. In designing a
### Hoshin Kanri for the Lean Enterprise

#### Table 1-1.

<table>
<thead>
<tr>
<th>Hoshin Kanri Plan</th>
<th>Tactical Teams</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scan</strong></td>
<td><strong>Operational teams</strong></td>
</tr>
<tr>
<td>Design strategy with the X-matrix</td>
<td><strong>Operation catchball rounds 1, 2, &amp; 5</strong></td>
</tr>
</tbody>
</table>
| Charter successful teams through policy deployment | 1. Prepare for the meeting  
2. Introduce the tactical project plan  
3. Discuss the operations plan  
4. Charter operations teams  
5. Study the plan  
6. Complete and confirm the operations plan |

**Hoshin Kanri Plan**

1. Define a problem or challenge and design an experiment to address it
2. Design strategy with the X-matrix
3. Charter successful teams through policy deployment

**Hoshin Kanri Plan**

1. Define the elements of strategic intent  
   - Mission & vision  
   - Long-term strategy
2. Scan environment with 6 smart tools
   1. Porter matrix  
   2. Product/market matrix  
   3. Market/technology matrix  
   4. Value stream P&L statement  
   5. Value stream maps  
   6. The president’s diagnosis
3. Build a midterm strategy and the annual hoshin
   1. Identify 3- to 5-year breakthrough opportunities
   2. Forecast financial results
   3. Determine measures of process improvement
   4. Study interdependencies
   5. Identify 6- to 12-month tactics
   6. Establish annual targets for process and results
   7. Study new interdependencies

**Hoshin Kanri Plan**

1. Prepare for the meeting  
2. Introduce the hoshin  
3. Discuss the plan  
4. Charter tactical teams  
5. Study the plan  
6. Complete and confirm the tactical plans

**Hoshin Kanri Plan**

1. Value stream managers
   1. Define the elements of strategic intent  
   2. Scan environment with 6 smart tools
   3. Build a midterm strategy and the annual hoshin
   4. Charter successful teams through policy deployment

2. Middle managers
   1. Define the elements of strategic intent  
   2. Scan environment with 6 smart tools
   3. Build a midterm strategy and the annual hoshin
   4. Charter successful teams through policy deployment

3. Supervisors & team leaders
   1. Inclusion in planning phase optional; not recommended for companies just starting to implement hoshin kanri

4. Staff & hourly associates
   1. Included in implementation but not in the planning

---

**Value stream managers**

- Inclusion in planning phase optional; not recommended for companies just starting to implement hoshin kanri

**Middle managers**

- Inclusion in planning phase optional; not recommended for companies just starting to implement hoshin kanri

**Supervisors & team leaders**

- Included in implementation but not in the planning

**Staff & hourly associates**

- Included in implementation but not in the planning
Hoshin Kanri Basics—Nested Experiments, X-Matrix, and Chartering Teams

Table 1-1.

road map

<table>
<thead>
<tr>
<th>do</th>
<th>check</th>
<th>act</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct the experiment under controlled conditions</td>
<td>validate the experiment</td>
<td>institutionalize lean thinking</td>
</tr>
<tr>
<td>Transform the mass production organization through training</td>
<td>Check progress in real time</td>
<td>Conduct the president’s diagnosis</td>
</tr>
</tbody>
</table>

Standardized work provides controlled conditions for execution of the experiment. Otherwise, promote adherence through intensive training in productivity and quality methods before initiating continuous improvement.

Empower your workforce of scientists to check results and make adjustments in real time. Manage exceptions through your business operating system. Make new knowledge part of standardized work through PDCA embedded in daily operations. Coach and mentor to develop leaders at every level.

Action teams

1. Finalize project plans
2. Apply PDCA methods
3. Eliminate waste/reduce variability
4. Manage internal and external customer connections visually and unambiguously
5. Use scientific methods and tools

Hoshin team

Develop leaders who can teach
- apprenticeship
- kaizen blitz
- train-the-trainer
- quasi-apprenticeship
- six sigma

Note: Teams at all levels participate in leadership development, but responsibility lies with the hoshin team leader.

 Becoming lean cannot be delegated.

Action teams

1. Coach and mentor
2. Conduct the president’s diagnosis
3. Prepare for the president’s diagnosis
4. Site visits
5. Analyze and score development
6. Recognize achievement
7. Repeat the hoshin cycle

1. Manage visually
   - OPC
   - Visual project
   - Visual hoshin
2. Conduct hoshin
   - Daily 5-minute meeting
   - Daily management review
   - Weekly
   - Monthly
   - Quarterly
   - Annual
strategy, the hoshin team will define the elements of strategic intent, which includes identifying the first of seven hoshin experiments discussed below.

**THE SEVEN EXPERIMENTS OF HOSHIN KANRI**

Because no one can know the outcome of a strategy in advance, especially a dynamic strategy that involves improving the way you do business, *strategy is like a scientific hypothesis*. You have to implement it to find out what will happen. In this scientific sense, your plans become “experiments” where, under the controlled conditions of *standardized work*, the hoshin process involves every manager and employee in *testing* your company’s hypothesis about its strategy.

The experiments of hoshin are carried out by a network of teams that eventually include top management, middle management, and ultimately, in the *Do* stage of the hoshin process, the entire workforce. Each PDCA experiment in the hoshin system has a different purpose, depending upon its duration and relation to the organization’s overall goals. In general, the longer the cycle, the higher the level of responsibility in the management hierarchy. Furthermore, the hoshin kanri process never ends. Strategic improvement cycles repeat once a year. Companies that are just beginning their lean or six sigma transformations may take up to 18 months to complete the first cycle. Others operating at faster “clockspeeds” may repeat the cycle twice a year to accelerate organization learning.

Table 1-2 defines the four types of hoshin teams and hoshin’s seven types of PDCA cycles or experiments, which are nested one within the other. The four teams and basic responsibilities are as follows:

1. The *hoshin team* has the overall responsibility for the strategic planning and implementation process and designs and guides the first three experiments: (1) long-term strategy, (2) midterm strategy, and (3) annual hoshin. These three experiments normally focus on the improvement of companywide business processes that require cross-functional coordination or coordination between the company and its suppliers and customers.

2. The *tactical teams*, chartered by the hoshin team, design and guide the fourth hoshin experiment: tactical initiatives to develop particular competitive capabilities. Tactical initiatives normally focus on the improvement of functional business processes, i.e., the process of marketing, engineering, manufacturing, etc., but also address any important elements of cross-functional coordination required for successful implementation.

3. The *operational teams*, chartered by the tactical teams, design and guide the fifth hoshin experiment: operational projects to improve particular products and processes. Operational projects also focus on the improvement of functional business processes and address the cross-functional coordination required for successful implementation.

4. The *action teams*, chartered by the operational teams, conduct the sixth and seventh hoshin experiments. The sixth experiment is to implement periodic improvements of relatively large magnitude—called *kaikaku*; and the seventh experiment is to implement continuous, incremental improvements—called *kaizen*.

In a mature lean enterprise, these four teams ultimately include every manager at every level of the organization, and by extension every employee. In fact, you can define a lean enterprise as a network of hoshin teams. The seven experiments of hoshin represent the actual work that the teams need to do in order to implement the experimental design of business strategy to resolve emerging problems or challenges (see Figure 1-1).
### Table 1-2. The 4 Teams and the 7 Experiments

<table>
<thead>
<tr>
<th>4 Teams</th>
<th>7 Experiments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hoshin Team</strong></td>
<td>Long-term strategy A general plan of action that aims over a very long period of time—5 to 100 years—to make major changes or adjustments in the mission and/or vision of the business.</td>
</tr>
<tr>
<td>1</td>
<td>Midterm strategy A partially complete plan of action including financial targets and measures of process improvement that aims over 3 to 5 years to develop capabilities and align the trajectory of business operations with the long-term strategy.</td>
</tr>
<tr>
<td>2</td>
<td>Annual hoshin A highly concrete plan of action that aims over the next 6 to 18 months to develop competitive capabilities and align the trajectory of business operations in accordance with the midterm strategy.</td>
</tr>
<tr>
<td><strong>Tactical Teams</strong></td>
<td>Tactics Concrete initiatives of 6 to 18 months, defined by the annual hoshin, undertaken to develop specific new capabilities by applying new technologies and methodologies to general business processes.</td>
</tr>
<tr>
<td>3</td>
<td>Operations Concrete projects of 3 to 6 months, defined by the annual hoshin, undertaken to apply new technologies and methodologies to standardized processes of specific business functions.</td>
</tr>
<tr>
<td><strong>Operational Teams</strong></td>
<td>Kaikaku Concrete projects of 1 week to 3 months, usually defined after the deployment of the annual hoshin, undertaken to apply new tools and techniques in standardized daily work.</td>
</tr>
<tr>
<td><strong>Action Teams</strong></td>
<td>Kaizen Problem-solving in more or less real time to address defects, errors, and abnormalities that arise in the course of standardized daily work, as well as improvements resulting from employee suggestions.</td>
</tr>
</tbody>
</table>
As we explained above, the hoshin team takes responsibility for the first three experiments of the hoshin system. Once in the Plan stage, the hoshin team will help form and hand off responsibility for the last four experiments to the other three types of teams that will have their own set of duties within each Plan, Do, Check, Act cycle. There will be several tactical teams—roughly one for every member on the hoshin team, even more operational teams, and an even larger number of action teams. By the end of the Plan phase, you may engage every manager in the hoshin process. Ultimately, in the Do phase of the hoshin process with its action teams, you will engage the entire workforce at every level in the organization.

**Workbook Tip:** To assist the reader, beginning with Chapter 2, an icon representing the experiment you are engaged in is at the beginning of each chapter—a total of seven icons for seven experiments.

---

**DESIGN OF STRATEGY—ANATOMY OF AN X-MATRIX**

A strategic plan is a detailed, documented course of action. Most companies already have missions, visions, and long-term strategies. So, this workbook concentrates on helping the hoshin team document its midterm strategy, annual hoshin, and tactical improvement projects (Experiments 2, 3, and 4 respectively) with the X-matrix. Hoshin kanri requires management teams at various levels within an organization to cooperate in designing the experiments for strategy, tactics, and operations. The design of strategy strives to optimize overall system per-
formance by identifying the factors critical to the company’s success and the interdependencies or linkages among them.

The hoshin team guides the process of strategy design, and records the results on a memorandum called an X-matrix. (We will discuss this in Chapter 3 and 4.) As Table 1-3 shows, the X-matrix has the unique advantage of visualizing the design of strategy on one piece of paper. It is essentially a memorandum on which you record the decisions—and supporting discussions—needed to articulate and execute an effective strategy. The X-matrix is on one side of the document and easy-to-follow instructions appear on the back. The instructions in each part of the workbook refer to your X-matrix and related team charters. (The instructions for the X-matrix are included on a separate page on the companion CD.)

Table 1-3. Anatomy of an X-matrix

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Tactics</th>
<th>Results</th>
<th>Correlation</th>
<th>Contribution</th>
<th>Accountability</th>
</tr>
</thead>
<tbody>
<tr>
<td>The prime mover on the matrix is strategy, recorded to the left of the “X” in the middle of the matrix. Strategies are high-priority and company-wide improvement strategies or “breakthroughs” for the current period and the following 2 to 3 years.</td>
<td>Strategy gives rise to tactics, recorded at the top of the matrix. Tactics are tactical improvement projects for the current period initiatives and projects for the current period (6 to 18 months).</td>
<td>Tactics require measures of process improvement, recorded to the right of the “X.” Establish improvement-friendly measures that indicate the development of business processes and relationships critical to the business model.</td>
<td>Correlation matrices within the X-matrix record interrelationships between critical factors in your business strategy.</td>
<td>The proper management of process yields results, recorded below the “X.” Estimate financial impacts of investments in business processes and other assets.</td>
<td>One of the most important features about the X-matrix is that it records important relationships among individuals, teams, departments, and your suppliers.</td>
</tr>
</tbody>
</table>
| It's the people who make it all happen. Here's where you establish the pattern of cooperation—known as alignment—among individuals, teams, departments, and divisions required for the company to achieve its targets.
Hoshin Team Exercise: Before choosing members for your hoshin team, review the Hoshin Kanri Road Map and the purpose of the four teams and seven experiments. From the CD companion, print out the X-matrix and instructions (CD Form 1-2). Review the instructions. Become familiar with the format. Once management determines who is on the hoshin team, the team will begin using the X-matrix to record breakthrough objectives, and later to help build its midterm strategy and annual hoshin (Chapter 3). Later, various tactical and operational team leaders and their teams will continue to revise and populate this X-matrix. Normally, the team leader does the prework or delegates it to another team member.

THE A3: BUSINESS MEMORANDUM OF THE 21ST CENTURY

When I teach the X-matrix to my clients, I often refer to it as “the business memo of the 21st century.” That is only part of the story. Many companies now support strategic planning and problem solving with a unique suite of documents that have come to be known as A3s because in Japan they are printed on one side of a sheets of European A3 size paper (equivalent to American tabloid [11” x 17”] paper). The A3 is a technical writing format designed for communicating the story of continuous improvement succinctly, visually, and in a standardized way. Printed on tabloid paper, as I encourage my clients to do, the X-matrix itself becomes an A3. But there are others, too.

Toyota, the originator of the A3 format, actually employs several different types of what we may call “classic” A3 story forms, including a team charter proposal, an information report, problem solving report, and status reportA3. Most of Toyota’s A3 forms (at least those that have been published) contain nine typical elements critical to good project management.

1. Theme (thesis at the top of the form stating the problem or challenge)
2. Problem statement (or including an initial current state) defining the motive of the project
3. Target statement (or future state) defining the scope of the project
4. A scientific process (PDCA)PDCA (i.e., scientific) process of investigating the problem
5. Systematic analysis (5 whys, cost benefit, cause-and-effect diagram, design of experiments, etc.)
6. Proposed solution (including any cross-functional coordination of resources)
7. Implementation timeline (including the action, who is responsible parties, and deliverable dated of the action)
8. Graphic illustrations to convey information at-a-glance.
9. Date and reporting unit or owner at the bottom of the form (the individual or team responsible for this particular A3).

The A3 format sharpens thinking, forcing managers to know their audience and flow their stories logically so they can succinctly document what they have to say to fit on one page. Quality and Productivity guru, Ryuji Fukuda, and other pragmatically minded Japanese consultants also have recommended this practice.

This workbook presents six different types of A3 documents (see Table 1-4). Four are based on Toyota’s original four A3 forms; a fifth A3 is based on Fukuda’s X-matrix (see Fukuda’s Building Organizational Fitness (Productivity Press); see also my Implementing A Lean Management System (Productivity Press), and a sixth A3 is based on summary status
Hoshin Kanri Basics—Nested Experiments, X-Matrix, and Chartering Teams

reports found in my Implementing a Lean Management System (Productivity Press). Each A3 form has corresponding how-to instructions that you can print on the back of a blank A3 when using the forms for the first time.

Toyota’s and Fukuda’s all-on-one page documents rely heavily on the graphic illustrations (instead of textual descriptions) of processes, such as value stream maps, which condense information into visual form to facilitate quick comprehension when communicating with others. In addition to value stream maps, you will find many graphics illustrations throughout this workbook (fishbone diagrams, interrelationship diagrams, simple bar charts, milestone charts, radar charts, etc.) that you can incorporate into your own A3s. The graphic presentation of complex information is not a trivial subject. As such, it is beyond the scope of this workbook. People who are serious about visual communication should visit the website of Yale University Professor Edward Tufte at http://www.edwardtufte.com for a list of his wonderfully illustrated books plus pages of useful resources.

Presentation Tip: In some companies, PowerPoint and the ubiquitous LCD projector have almost entirely displaced the important practice of technical writing. Some managers actually manage to combine all the information found on an A3 onto a single presentation slide for review meetings. You should resist this apparently universal urge. Do not convert A3’s into presentation slides! The A3 is perfectly useful as a handout, but it is “death by PowerPoint.” Good presentations emphasize simple pictures and graphics that people, even those unfamiliar with the problem or issue, can easily grasp at a glance. Avoid text—especially text “builds,” and use big fonts when text is required. See Tufte’s web site for more information and discussion about the proper, limited role of presentation software in the management process.

Not only is the A3 highly visual, its one-page format is highly portable, so it facilitates “managing by walking around,” a practice that encourages managers to discuss progress towards company goals frequently, face-to-face with their direct reports as well as their superiors. Some managers punch holes in their A3s and insert them into 3-ring binders, or carry their A3s in their back pocket. Some managers have so much to do that they use both sides of the A3 form. The A3 will never be as good as “managing by walking around,” but it should be the next best thing.

Practitioners sometimes discuss the A3 form as if it were a scientific process. It is, however, purely a format for encouraging good technical writing about scientific investigation and project management. Toyota favors using the PDCA process in its investigations, and we have standardized more or less on PDCA throughout this workbook. In writing A3 reports about hoshin projects or problems, however, a company can use any world class problem-solving process as a framework for scientific investigation. Generally speaking, all the A3s discussed in this workbook are consistent with PDCA, CEDAC, six sigma’s DMAIC, and any other methodology based on scientific principles of hypothesis testing. As Table I-1 (in the Introduction to this workbook) demonstrates, the similarities between these methods are more striking than the differences. If your company has already adopted one of these problem-solving processes as a standard, there is no need to change to another process to use the A3 format. Instead, you should revise the terminology in the A3 reports as necessary to reflect the standard method that you use. This is one of beauties of the A3 format, it is extremely flexible, and, as it spreads to other types of businesses and industries, such as healthcare, it can be easily adapted to suit any need.

The six A3s presented in this workbook are designed as an integrated set to promote good technical writing and, more importantly, to support organizational learning about the processes of hoshin kanri and companywide problem solving. Below is a short description of
**Table 1-4. Hoshin Kanri A3 Starter Set**

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
</table>
| **A3-i** | **Intelligence report**  
Designed to build consensus about changes in the conditions of demand and supply before building the A3-X. Used in the “scan” phase of the hoshin process. | ![Intelligence report](image1) |
| **A3-X** | **X-matrix**  
Designed to bundle several A3-Ts together, explore interdependencies, and relate them all to bottom line results. Used in the “plan” phase of the hoshin process. | ![X-matrix](image2) |
| **A3-T** | **Team charter**  
Proposal to conduct a strategic, tactical, or operational hoshin experiment; A3-Ts appear as “tactics” in the A3-X. Used in the “plan” phase of the hoshin process. | ![Team charter](image3) |
### Table 1-4. Hoshin Kanri A3 Starter Set, continued

<table>
<thead>
<tr>
<th>Document</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A3-SR</strong></td>
<td><strong>Status report</strong>&lt;br&gt;Monthly, quantitative progress report on a PDCA investigation linked to specific A3-Ts and A3-Ps. Used in the “check” phase of the hoshin process.</td>
<td><img src="image" alt="Status report Example" /></td>
</tr>
<tr>
<td><strong>A3-P</strong></td>
<td><strong>Problem report</strong>&lt;br&gt;Proposal to charter a team to solve an immediate problem not contemplated by the annual hoshin. Used in the “check” phase of the hoshin process.</td>
<td><img src="image" alt="Problem report Example" /></td>
</tr>
<tr>
<td><strong>A3-SSR</strong></td>
<td><strong>Summary status report</strong>&lt;br&gt;A periodic summary status report (based on A3-Rs) of progress on A3-Ts bundled in an A3-X (plus related A3-Ps). Used in the “check” phase of the hoshin process.</td>
<td><img src="image" alt="Summary status report Example" /></td>
</tr>
</tbody>
</table>
each A3, roughly in the order they are used to manage the hoshin process, along with references to the figures in the workbook and the templates on the CD companion. Instructions for printing A3 documents on the companion CD and a “tip” are on page 00.

**A3-II: Competitive Information Report**

*See Figure 2-4 and companion CD Form 1-1.* The A3-II is a free form but concise report on important developments in the competitive environment. You can use the form at any point during the hoshin process to raise awareness about changing business conditions that should be reflected in your strategy. The form is processed during the scan phase of the hoshin process (see Chapter 2).

**A3-X: The X-matrix**

*See Table 1-2 and Companion CD Form 1-2.* This A3 form supports the hoshin process for planning the mid-term strategy and annual hoshin, and deploying the annual hoshin to tactical and operational teams. You use this form to build and deploy the company’s mid-term strategy and annual hoshin (see Chapters 3, 4, and 5). The A3-X is actually an A3 of A3s, because it links all of your many A3-Ts (see below) into a single, grand experiment focused on realizing strategic intent. Managers who carry A3-Xs are responsible for coordinating and monitoring the projects listed in the “tactics” section of the X-matrix, each of which refers to its own A3-T.

**A3-T: The Team Charter**

*See Figure 1-5 and companion CD Form 1-4.* The A3-T patterns after the “classic” proposal A3 that supports action planning at all levels of the organization. In this workbook, we use it to support action planning in the hoshin process of catchball. Managers who carry A3-Ts or team charter A3s are responsible for the execution of a project or initiative listed as a tactic on the A3-X or X-matrix of their team leader. Managers can print their related A3-Xs and A3-Ts back-to-back for convenience. Managers who are responsible for managing more than one project may carry more than one team charter A3-T or print them back-to-back and carry the A3-X separately.

**A3-R: The Status Report**

*See Figure 7-5 and companion CD Form 1-4.* The A3-R or status report A3 is designed as a monthly report for managers to summarize progress made on an individual project defined by an A3-T or an A3-P, and to list obstacles encountered in implementation and plans on how to overcome them. To improve acceptance of the A3 writing method by new practitioners, some practitioners incorporate reporting elements of the A3-R into their A3-Ts and A3-Ps. After the method of hoshin planning and disciplined project management and problem solving have been accepted, however, it is a good idea to switch to more complete progress reports. This encourages the habit of careful reflection, which is one of the requirements of an effective “check” phase in the hoshin kanri cycle (see Chapter 7).

**A3-SSR: The Summary Status Report**

*See Figure 7-6 and companion CD Form 1-5.* The A3-SSR or summary status report A3 is designed as a periodic (monthly, bi-monthly, or quarterly) report for managers to summarize progress made in multiple hoshin projects listed as tactics on an A3-X. You should use this form during the check phase of the hoshin process (see Chapter 7). You can print the A3-SSR back-to-back with the A3-X to which it is related.
A3-P: The Problem Solving Report

See Figure 7-7 and companion CD Form 1-6. This is another “classic” A3, one that supports problem solving at all levels of the organization. The format is almost identical to that of the A3-T. You can use this form at any point during the hoshin process, but it is probably most useful during the check phase (see Chapter 7). This is when you may need to address failures to meet critical milestones associated with an A3-T linked to the annual hoshin, or address unanticipated problems not contemplated by the annual hoshin, such as the failure of an existing product or process that no-one thought was in trouble.

Hoshin Tip: Don’t adopt it; adapt it! In the 1980s, when Americans were making the pilgrimage to Japan to learn about Toyota, a friend of mine once asked a Toyota manager why his company was willing to permit foreigners to visit its best plants and even to take photographs. “It doesn’t really matter,” said the manager. “Everything you see will be different by the time you get home, anyway.” So, consider this workbook’s suite of A3s as a starter set. You should plan to adapt these documents to your company’s own culture and conditions, based upon your own PDCA learning process. Never attempt to copy Toyota or imitate “best practices,” because when you think you’ve pinned down Toyota or “best practices,” they will have changed.

Tip on Printing Forms off the CD Companion: The documents included on the CD Companion have been formatted as Adobe pdf (portable document format) files so that they may be printed from practically any computer on practically any printer. We recommend that you print the documents using Adobe Reader, which is available in as a free download on the web at http:\www.adobe.com. Once you have installed Adobe Reader, you can easily print all of the documents on the CD Companion. Please note, however, that the documents have been formatted for various sizes of paper, including US letter (8½″ × 11″), US legal (11″ × 14″), and in some cases tabloid size paper (11″ × 17″). When you print, use Adobe Reader’s “page setup” function (available from the pull-down “file” menu) to verify the size for which the document you are printing has been formatted. Also check that your printer is capable of printing that paper size and is loaded with the correct paper. If your printer is not capable of printing tabloid size paper, you must do two things to shrink tabloid-size documents to letter-size: 1) change the paper size setting in the “page setup” window to “US letter” and 2) choose “Reduce to Printer Margins” in the “page scaling” function, which appears halfway down the “print” window (in Adobe Reader 7). Note that letter- and tabloid-size pages are proportional to one another, but not to legal-size pages.

Preparing for the Hoshin Process

The focus in a lean enterprise, and the focus of the hoshin process, is the empowerment of frontline decision makers who add value to your products and services. Perhaps the best way to visualize this is the circular organization chart (see Figure 1-2). At the center of the chart are the value-adding employees who actually shape the final product or service for the external customer.

The point to the circular organization chart is that every business function at every level of the organization must support the value-adder, or else the customer won’t be satisfied and the company won’t make money.
Hoshin Kanri for the Lean Enterprise

Hoshin Team Exercise: An excellent way to prepare for the hoshin process and decide the members for the hoshin, tactical, and operational teams, is to build a circular organization chart. (In the next exercise, you will select the appropriate members for this hoshin team.) You must gear the hoshin process to supporting actions teams and, ultimately, the value-adding employees on the front line. Below are seven steps for building a circular organization chart for your implementation of hoshin kanri.

1. Identify the business unit for which you will plan and implement strategy. Is it a brand? A product or product line? A manufacturing facility or technical center? The circular organization chart here has been drawn for the business unit in our case study, the Cybernautx Division of New Directions, Inc. Cybernautx manages a single value stream.

2. Identify the leader of the business unit you have chosen. This person should be the hoshin team leader. At the very least, the hoshin team leader should report directly to the business unit leader. In the case of Cybernautx, the hoshin team leader is the value stream manager, who is also the president of the Cybernautx Division.

3. Identify the value-adding work that your strategy will support within the business unit you have chosen. Is it physical work on the manufacturing shop floor? Is it the administrative work of marketing or engineering? Place the value-adding
operation you identify at the center of your chart. In the example, the value-
adding work is the work of manufacturing associates who assemble Cyber-
nautx’s products. Alternatively, if the focus of the case study were on engineering 
alone, the value adders in the circular organization chart would be the engineer-
ing staff members. Note that value-adding associates are not members of any of 
the four types of hoshin teams and as such do not participate directly in the 
hoshin process.

4. Identify the individuals who supervise this value-adding work. They may be 
known by many different titles: supervisors, project managers, team leaders, 
group leaders, or may be other individuals who manage the activities of groups 
of value-adding employees. At this point, you must begin to think beyond the 
management hierarchy and include informal leaders of value-adding activities. 
These individuals should become members of the hoshin action teams. The 
number of action team leaders will determine the number of action teams you 
will create through the hoshin process. Be sure to make a list of action teams, 
including leaders and members.

5. Ask the following question: “Who, at the next level in the management hierarchy, 
should support the value adder, by providing tools, material, or information?” 
Another way to look at this is to ask: “If I were an hourly associate or staff mem-
ber, whom would my supervisor or project leader have to ask for tools, material, 
or information in order to change how I do things?” You will probably identify a 
number of areas or business functions and maybe some informal leaders that 
need to be involved to make things go smoothly. The leaders—formal or infor-
mal—of these areas or functions should be members of operational teams and 
leaders of action teams. Make a list of operational teams, including leaders 
and members.

6. Ask, “Who, at the next level in the management hierarchy, should support the 
operational team leaders, by providing tools, material, or information?” You will 
probably identify a number of corporate functions, the leaders of which are often 
members of tactical teams. Once again, be sure to identify informal as well as 
formal leaders. Both types of leaders must be involved in the hoshin process for 
it to work well.

7. Assign tactical team leaders. The tactical team leaders are by definition members 
of the hoshin team, because they report to the leader of the business unit that is 
the subject of the hoshin exercise.

You may identify more than four levels of teams in your organization. In this case, plan 
on having two levels of tactical and/or operational teams. If your organizational structure is 
complex, you may also build more than one circular organization chart. The point is to 
understand who must be involved in supporting the empowerment of frontline value-adding 
work, be it in the form of assembly, fabrication, providing services, or crafting documents. 
These are the same business units and individuals that should participate in the hoshin 
process. Once you have identified and grouped them into teams, you may create whatever 
terminology you need to keep the levels and relationships between these teams straight for 
all participants in the hoshin process.
CHARTERING TEAMS WITH THE A3-T

The basic document of the hoshin process is the team charter, which is summarized on an A3-T team charter proposal form (see Figures 1-4 and 1-5). Essentially, a team charter is a binding contract between the company and members of a team to undertake a project to achieve certain targets by applying certain means. Through the hoshin process, the company (and ultimately the hoshin team) formally charters teams throughout the organization to experiment with the company’s business processes. In fact, hoshin kanri is about writing team charters—lots and lots of team charters, contracts for every experiment in the hoshin system, and at least one for every department, every cross-functional team, and (eventually) every key supplier in the company’s value stream.

Hoshin kanri is also about planning projects, which means every team charter in the hoshin system establishes an improvement project, with a work breakdown, schedule, and budget. Table 1-5 describes the anatomy of a classic A3-T or team charter, with a graphic example of the actual form that you will use. (The instructions for the A3-T are included on a separate page on the companion CD.)

The chartering process is fully consistent with the leading problem-solving methodologies, including PDCA, 8-Ds, CEDAC®, (cause-and-effect diagram with the addition of cards), DMAIC (Define, Measure, Analyze, Improve, Control), and Toyota’s A3 format, so your teams will have all the necessary information to conduct truly scientific experiments on the processes you want to improve.

A Community of Scientists—Cross-Functional Management

Lean enterprises and six sigma organizations distinguish themselves from traditional enterprises and organizations in that they have communities of practically minded scientists with a shared vision, a vision that transcends organizational boundaries. Lean and six sigma recognize that technologies and markets have become so complex that in order for customers to be happy and businesses to make money, everyone involved in producing and consuming a product must share information throughout a product’s lifecycle. Complex systems give birth to chronic problems, caused by a host of small, interacting causes that are difficult to identify and analyze. To find the root causes of such problems, both research and corrective action must be interdisciplinary. Therefore, you must make problem-solving teams cross-functional and supply chain management teams interorganizational. Through hoshin, your teams cross boundaries—any boundaries that interrupt the flow of information vital to solving problems in real time—and take lessons learned forward through strategic planning.

Toyota, one of the first companies to practice the new concept of cross-functional management (also called matrix management), introduced the well-known cross-functional management chart. Table 1-6 shows how Toyota linked quality, production control, and cost management activities. Hoshin is how Toyota and other practitioners of cross-functional management successfully charter and manage cross-functional teams.

The cross-functional chart is more of an organizational value stream map representing all players in the order in which they become engaged in a process, for example, in a new product launch. As this workbook is more about helping organizations continue their transition from the charter of mass production to the charter of lean enterprise, from functional silos to cross-functional teams, from bosses to leaders who develop leaders, from command-and-control to radical decentralization, we will not delve into building cross-functional problem-solving teams and interorganizational supply-chain management teams. For a good example of how to do this, see the value stream maps in The Complete Lean Enterprise by Beau Keyte and Drew Locher, as well as other resources in the Appendix listed under value stream mapping.
The A3 technical writing format incorporates PDCA problem-solving methodology.

**Plan.** Completing the A3-T requires the author to create a problem statement that defines the problem, a target statement that defines the scope of improvement, and an analysis that articulates the root cause of the problem.

**Do.** The A3-T articulates proposed actions and specify an implementation plan that addresses the root cause of the problem.

**Check and Act.** The A3-T establishes a timeline for verifying implementation and ensuring follow up to ensure adherence to new standards.

<table>
<thead>
<tr>
<th><strong>Problem statement:</strong> Include a problem or gap statement that describes the reason why improvement is required. The problem statement includes an exact timeframe and one or more measures of the gap.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Statement:</strong> Enter a complete sentence or short paragraph that incorporates the team’s main targets. You may want to summarize your targets by listing your value stream profit target.</td>
</tr>
<tr>
<td><strong>Analysis:</strong> Succinctly describe the root cause analysis that supports your proposed action.</td>
</tr>
</tbody>
</table>

**Check and Act:** Create a visual timeline to facilitate verification of implementation and follow up to ensure adherence to new standards.

**Proposed Action:** Enter suggested tactics for achieving the targets you’ve set in the target statement. You may already have listed these on the problem statements you developed for your mid-term strategies.

**Implementation plan:** Specify actions, parties responsible for implementation, and projected completion dates.

---

**Table 1-5. Anatomy of a “Classic” A3 Team Charter Proposal**

<table>
<thead>
<tr>
<th>PDCA methodology: The A3 technical writing format incorporates PDCA problem-solving methodology.</th>
<th>Improvement Theme: List the team’s improvement theme, which will often be derived from the annual hoshin.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plan.</strong> Completing the A3-T requires the author to create a problem statement that defines the problem, a target statement that defines the scope of improvement, and an analysis that articulates the root cause of the problem.</td>
<td></td>
</tr>
<tr>
<td><strong>Do.</strong> The A3-T articulates proposed actions and specify an implementation plan that addresses the root cause of the problem.</td>
<td></td>
</tr>
</tbody>
</table>

**Note on visual management:** A3 documents are part of your visual management system for self-managed team activity (see Chapter 7 on the “check” phase of the hoshin process). For example, you may establish a project management board and post your A3-T. The board should also contain charts for each of your major target values as well as a draft schedule or Gantt chart. The management board will be a focal point of the deployment process, as well as for reviewing and taking corrective action that is needed to execute the hoshin. As part of your visual management system, you can also create a web page on your company’s web site to mirror the information on your management board.
**Hoshin Kanri for the Lean Enterprise**

Hoshin Team Exercise: Print out the blank A3-T with the instructions from the companion CD, CD Form 1-3. Construct the team charter with an eye to the hoshin team becoming a dedicated cross-functional and, eventually, interorganizational team. Choose and expand your hoshin team to six to twelve managers. Remember, the hoshin team should represent stakeholders of the business unit to which the hoshin or strategy will be deployed.

Then have the members review the circular organization chart. The purpose of reviewing the circular organization chart is not so much to change the composition of the team as to prepare those managers chosen for the team to accept the new paradigm of lean thinking. They are there to solve complex problems together and to develop leaders of lean, that is to say, to utilize and to teach the PDCA thinking processes executed ultimately by the value adders at the center of the circle. The circular organization chart comes as close to representing the choreography of cross-functional management as possible.

To implement the first three experiments and begin adopting hoshin as the company’s next operating businesses system, the hoshin team will need to dedicate a minimum of six to eight weeks to these activities:

- **Scanning the environment.** This is research that the team should complete before anything else. It is also an activity the team should be doing all year long.
• **Designing a midterm strategy.** The hoshin team should spend one solid week building the midterm strategy and discussing the intricacies of process measures and financial results.

• **Designing the annual hoshin.** This requires an additional week to populate the $X$-matrix, and, as most of the hoshin team members are tactical team leaders, to establish tactical teams. Deploying the hoshin to the other teams will take roughly one week per level of deployment, plus one more week to hold the final hoshin team meeting—another four weeks in total. The process may take more time if the organization has many sites in different states or countries, and the involvement of suppliers will require even more time.

**THE MISUSE OF HOSHIN KANRI**

As this chapter demonstrates, hoshin kanri has many uses, and because of this, you can easily misuse it. One widespread misuse frequently occurs in six sigma. Six sigma programs use hoshin tools under the heading of “breakthrough strategy,” which frequently focuses on large, short-term cost reductions, not necessarily on the development of the intangible resources required for future competitiveness. Typically, projects become worthy of the title “breakthrough” only if they can deliver at least $250,000 in bottom-line cost savings. Traditional accounting rules may complicate the focus on cost savings. For example, we know of one six sigma company in which a substantial increase in capacity in a production unit could not be counted as a six sigma “savings.” As a cost center, the production unit did not formally have authority to sell its extra production. Thus, the rules of accounting did not permit the production unit to “take credit” for creating extra capacity, even when the capacity was needed. The moral of this story is that, when applied inappropriately, hoshin kanri can destroy competitive capability rather than create it.

To avoid misusing hoshin, a company must work hard to achieve a systems perspective, that is, to understand your strategic intent—mission, vision, and long-term strategy. This is one of the purposes of the hoshin Plan cycle, where you define a problem of designing a strategy. Only when you know your strategic intent are you in a position to make good business judgments in picking your improvement projects.

**CYBERNAUTX CASE STUDY DEFINED**

To illustrate how the hoshin process works and how the various documents in the hoshin system are used, we have developed a case study about a fictional company named Cybernautx. Throughout this workbook, the Cybernautx case study will help the teams to use hoshin planning to create, deploy, implement, and monitor a successful strategic plan to manage profit proactively.
Cybernautx Case Study Defined

Cybernautx is a division of New Directions, Inc., producer of electronic navigation equipment and other high-tech applications. Cybernautx is an engineer-to-order outfit that produces electronic guidance systems for the aerospace industry. It plans to integrate its design for six sigma and lean manufacturing programs to create a truly lean value stream. From the voice of the customer to product concept, through prototype, launch, and production, Cybernautx must improve all its processes and link them together, in order to compete against new competitors emerging in India and China. Cybernautx even gets one of its key suppliers, Nonesuch Casting, involved in the project.

In my earlier book on hoshin kanri, Implementing a Lean Management System, I developed a case study based on my experience with Nissan Casting (Australia). The company in the case study was named Nonesuch Casting. Nonesuch returns in the Cybernautx case study as a supplier of cast aluminum casings for Cybernautx's high tech aerospace guidance equipment. Nonesuch has previously used hoshin kanri to implement total productive maintenance, an important element of lean manufacturing.

Readers familiar with my earlier book will notice that where lean manufacturing is concerned, Nonesuch hasn't progressed far beyond where we left them in 1996. Although Nonesuch was on the path of virtue, a corporate reorganization placed a pal of fellow Australian Jacques Nasser in charge of the company. Nasser became CEO of Ford Motor Company in 1998, and promoted six sigma at Ford with great fanfare, some say at the expense of Ford's valiant attempt to implement lean manufacturing. Under Nasser's influence, both Ford's and Nonesuch's commitment to lean manufacturing weakened.

While Nonesuch trained lots of black belts and made important improvements in the area of quality—it lost its focus on material flow. Ironically, Cybernautx originally chose Nonesuch as a supplier based on its superb quality. But now Cybernautx is focused on building a lean supply chain. So Cybernautx will now use hoshin kanri to integrate lean and six sigma in a new, lean six sigma program, in which Nonesuch will play a supporting role.

Finally, this case study is as simple as can be, but no simpler. Boiled down to basics, hoshin kanri is simple. Applied to a complex organizational culture, it can be daunting to a beginner. But once you understand how to manage hoshin kanri for a single value stream, the application to multiple value streams is straightforward. At each step in the hoshin process, we will use the documents and planning tools in this workbook to show you how Cybernautx and Nonesuch did it.