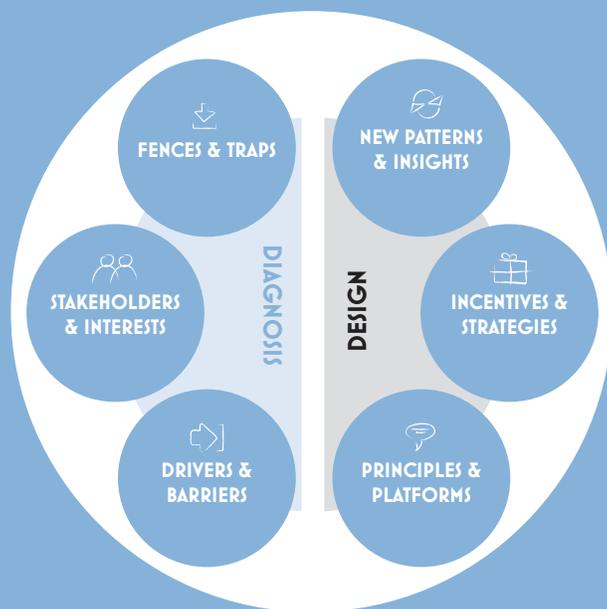


METHODOLOGY:

THE OPEN ECONOMY TOOLKIT

The open economy is rooted in the convergence of three forces for change: the rise of flexible network structures, the dynamics of self-organizing groups and systems, and the practices and principles of cooperation. Today, the combination of these forces presents a powerful shift in social, economic, and cultural production. New forms of production leverage individual creativity and self-interest. They create value out of shared, open resources. And they distribute decision making and management away from the top or center of systems and out to the edges.

A major challenge for creating sustainable organizations, communities, and systems in this new environment is moving from current practices and processes to new strategies that will take advantage of the open economy and the new sources of value it promises. The Open Economy Toolkit is designed to help people meet this challenge—whether they are trying to develop innovative business strategies or solve complex social problems.



The Open Economy Toolkit is a six-step process for rethinking complex issues in new terms—to resolve tensions in seemingly intractable dilemmas. It includes thinking tools, exercises, and a process for designing open economy strategies. It incorporates a series of frameworks for:

- Analyzing complex systems—especially the so-called social dilemmas where the open economy can provide innovative solutions and generate new value
- Tuning organizations and situations for better cooperation—drawing on the research of scientists across the leading disciplines
- Understanding design choices—and the technologies that can support them

This document describes the toolkit. To see how it might be applied in diagnosing a complex social situation, see “Education: Open Economy Makeover.”

This work was supported by IFTF’s Ten-Year Forecast Program, under the leadership of Andrea Saveri and Kathi Vian, in collaboration with Jamais Cascio, Peter Kollock, Jerry Michalski, and Howard Rheingold. To use The Open Economy Toolkit in your organization, contact **Andrea Saveri** (asaveri@iftf.org).



THE OPEN ECONOMY
TOOLKIT IS A SIX-STEP
PROCESS FOR
RETHINKING COMPLEX
ISSUES IN NEW TERMS



TEN-YEAR FORECAST
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THE TOOLKIT: SIX STEPS TO AN OPEN ECONOMY STRATEGY

The Open Economy Toolkit is a six-step process for systematically diagnosing opportunities for innovation and designing strategies that take advantage of the open economy principles. It's an iterative process that can be integrated into corporate strategic planning, community development efforts, public policy, or even forecasting exercises. It is not a one-time, one-afternoon project, but rather a way of thinking about problems that can become a basic toolkit for business, government, and social entrepreneurs.

Just as traditional economics requires a basic understanding of supply and demand, of inputs and outputs, and of market dynamics, the open economy requires an understanding of four key dynamics: social dilemmas, networks, self-organizing systems, and cooperative theory. These basic forces shape both the problems to be solved in the open economy and the opportunities for innovation. They also provide a foundation for the thinking tools and strategies in The Open Economy Toolkit.

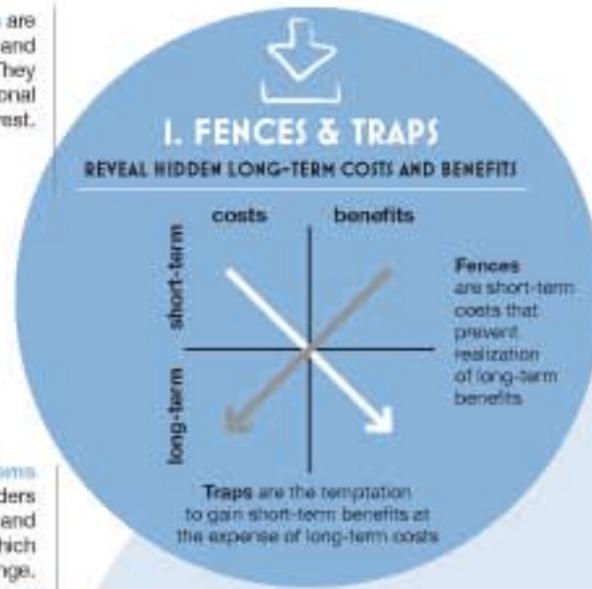
SOCIAL DILEMMAS

A core assumption of The Open Economy Toolkit is that many challenges and opportunities we will face as we adapt to the open economy stem from the tensions of so-called social dilemmas—tensions between the interests of the individuals (or groups) and the whole. According to sociologist Peter Kollock, such dilemmas arise when individual rational behavior leads to irrational outcomes in which everyone is worse off. Social dilemmas have been described in the literature in terms of three classic narratives:

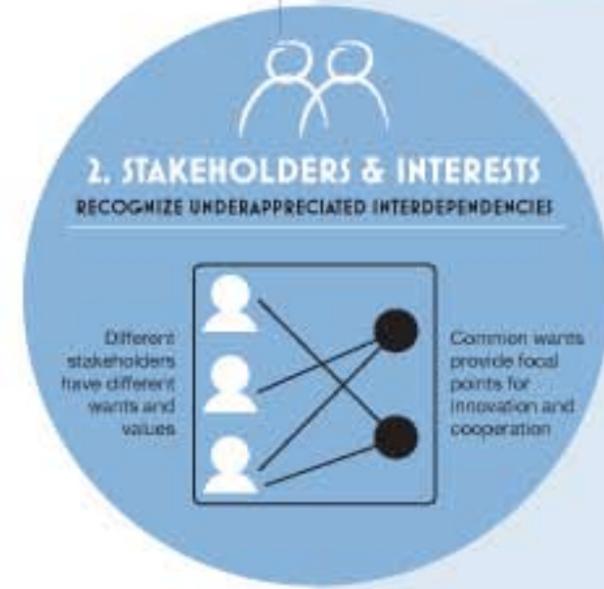
- The prisoner's dilemma, which illustrates the failure to cooperate in a transaction with incomplete information.
- The tragedy of the commons, which illustrates the temptation to abuse a common-pool resource that is easily depleted.
- The failure of public goods, which illustrates the challenge of reaching and maintaining a threshold of participants to contribute to the creation of a public resource, knowing that some users of the resource will not contribute and become free riders.

Social dilemmas have always existed, but in a world of increasing network connectivity, group formation, and personal empowerment and expression through social media, they are likely to become more widespread across many domains, institutions, and levels in our society.

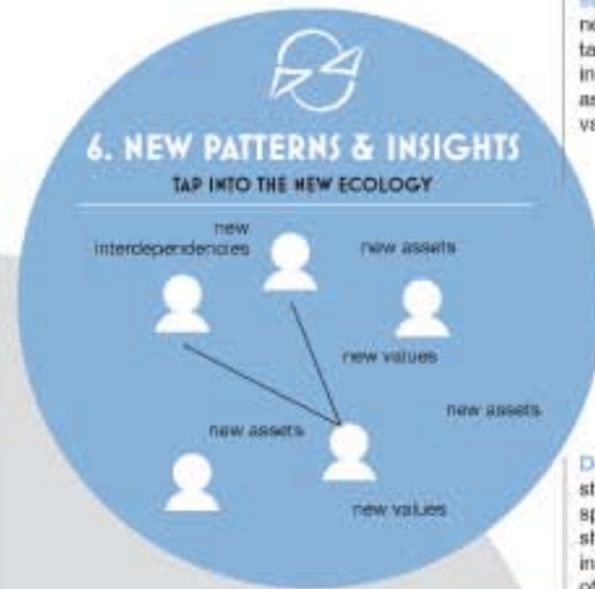
Fences and traps are about hidden costs and lost opportunities. They reveal the limits of rational short-term self-interest.



Complex problems involve multiple stakeholders with diverse interests and interdependencies—which reveal focal points for change.

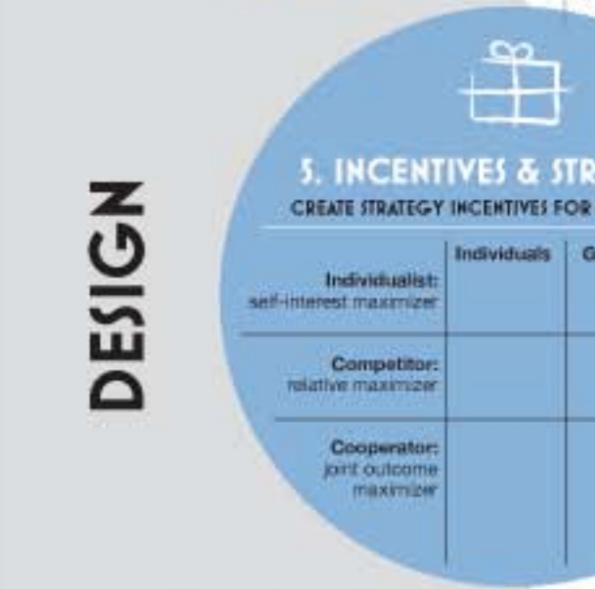


The stakeholder context is a system of drivers and barriers that can be analyzed—and ultimately tuned—using seven key levers.



New open economy strategies should lead to new ecologies that can be tapped by mapping new interdependencies, new assets, and new social values.

Design choices set the strategic direction, but not specific strategies—which should align with the incentives and motivations of stakeholders.



DESIGN



Open economy principles and platforms can inspire new scenarios for complex systems.

FLEXIBLE NETWORK STRUCTURES

As Walter W. Powell has argued, networks are a distinct organizational form, different from either the hierarchies of nation-states or the markets of the commercial world. Networks, like dilemmas, have always existed, but new technologies have made it easier to build, visualize, monitor, and even monetize networks. They have elevated so-called smart networking to a basic skill set for everyone from the most sophisticated business consultant to youths moving from the rural villages of China into its urban manufacturing economies.

Networks tend to diversify and scale more quickly than hierarchies because they cross boundaries more easily and distribute intelligence to the edges. This tendency makes them natural disruptors for business and social strategies that focus on centralized leadership and effective boundary control. Networks also have a resilience that hierarchical organizations achieve only at considerable overhead costs. Taking out a leadership node does not destroy a network, which simply reforms around a new node. In the open economy, the explosion of social media has amplified the disruptive potential of networks, enabling individual agents to find each other and form affinity groups. Blogs, wikis, social software, instant messaging, and buddy lists all make this process both easier and more visible—and, perhaps most important, self-organizing.

SELF-ORGANIZING SYSTEMS

Self-organization is the process under which an adaptive system redesigns itself when it has been disrupted by internal or external factors and has lost its equilibrium. Typically the new state is emergent, rather than planned because it has not been experienced before and cannot be engineered with existing knowledge and skills. Emergence is the outcome—a new state or condition. Examples of emergent self-organization include the swarming behavior of bees or our immune system's resistance to influenza.

Bottom-up emergent systems can provide solutions to complex problems and mobilize resources rapidly. Yet directing an ad hoc distributed system is difficult. Tapping the power of self-organizing systems thus requires a new set of skills and strategies—many of which emerge from the nascent theory of cooperation.

COOPERATIVE STRATEGY

Over the last few decades, scientists and researchers from many fields have begun to create the building blocks of a new interdisciplinary theory of cooperation—as well as specific practices and principles to enhance cooperative behavior. This work on cooperation suggests new strategies for creating wealth and forms of value by assuring shared advantages and increasing resources for the whole. In general, cooperative theory reframes competitive situations as non-zero-sum games.

A key challenge of cooperative strategy is to enlist selfish interests to build and maintain a common pool of resources. By carefully restructuring incentives, groups can create conditions where so-called free riding can become a benefit rather than a detriment to the commons. Indeed, this ability to recast free riders as resources in the system has been central to many of the commercial and social successes of the internet.

BEFORE YOU START

Most people come to a strategic design process with a general sense of a problem to be solved or a need to be addressed. They also often arrive with many possible responses or solutions. The Open Economy Toolkit takes these basic inputs—the problem statement and possible responses—and uses them to reveal the embedded social dilemmas and ultimately to discover open economy designs that can transform those dilemmas.

So even before you start the toolkit process, you should:

- Describe the problem in general terms
- List the key solutions or responses that have been proposed

Ultimately the toolkit will lead you away from this problem-solution mindset to one in which you understand the complexity of the situation and use that complexity to inspire new kinds of thinking and create new kinds of value. But it's important to start with a problem and a list of possible solutions or responses. This will provide the focus for the in-depth diagnosis and design activities in the toolkit.

A MARKETPLACE EXAMPLE: ORPHAN-DISEASES

The problem: One of the ongoing problems in the pharmaceutical industry is the lack of attention paid to so-called orphan diseases—those that afflict relatively small populations or very large populations that can't afford to compensate drug companies for their investment in research, development, and testing.

Some responses:

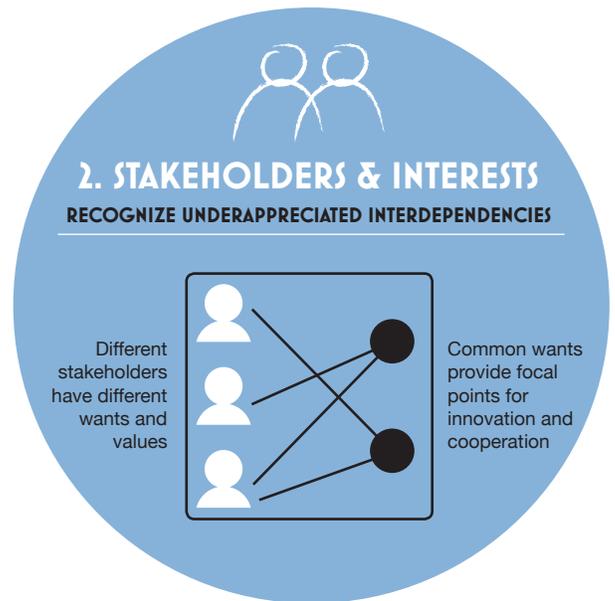
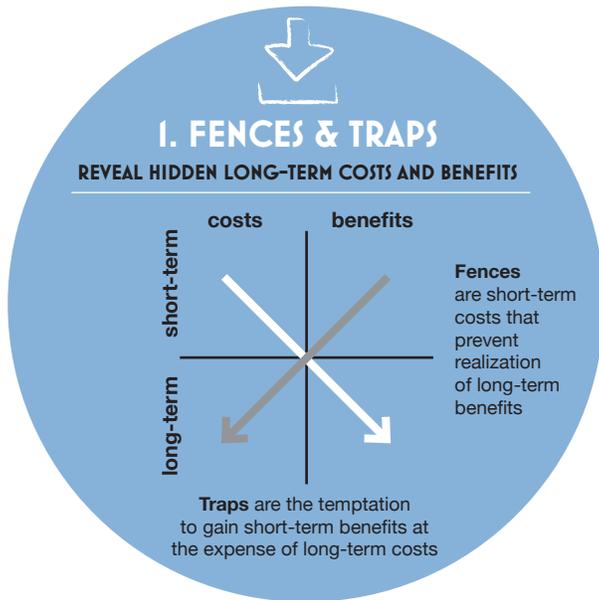
- Government and institutional investment in medical research
- Transnational community-based R&D programs like the Tropical Disease Initiative
- R&D solutions markets
- The mirror-image practices of restrictive patents on one hand and piracy on the other
- Distributed desktop R&D or so-called laptop science

A SOCIETAL EXAMPLE: K-12 PUBLIC EDUCATION

The problem: The public has lost much of its faith in the ability of public education to provide broad access to quality education and learning for all students. Families with economic means are increasingly opting out of public schools while dropout rates for students and teachers are high. People question the value of public education for both civic and career preparedness, and in general, there is growing disrespect for K-12 education as a public institution.

Some responses:

- Charter schools
- National accountability system
- Smaller schools
- Schools as community centers
- Financial reform



STEP 1

Fences and traps are about hidden costs and lost opportunities. They reveal the limits of rational short-term self-interest.

EXERCISE:

Identify the short- and long-term costs and benefits of each suggested response. Pay special attention to the diagonal relationships as you move from short to long term. These are the tensions that create social dilemmas.

For each short-term cost, identify the possible long-term benefits of this cost that could emerge over time and in the aggregate. These are fences.

Example:

In the K-12 education, charter schools are often criticized for diverting dollars from public schools. But these short-term costs could create greater autonomy and innovation in education in the long term.

For each short-term benefit, identify the possible costs that could arise over the long term and in the aggregate. These are traps.

Example:

In the orphan-disease example, the short-term benefits of solutions markets, with cheaper solutions based on volunteer labor and individual rewards to the prize winner, mask the long-term costs that accrue from the failure to develop a shared body of knowledge (either within a company or across institutions); this shared resource could be used to address other disease situations.

STEP 2

The second step is about recognizing the interdependencies of diverse stakeholders—by analyzing their various wants and values. Playing a connect-the-dots game across these stakeholder objectives will reveal focal points for innovative solutions.

EXERCISE:

For each possible solution, describe the wants and values of various stakeholders. Then identify where some of these wants and values converge—these are key interdependencies that can form the basis of cooperative strategies.

- Who are the major stakeholders in the problem?
- What are the wants and values that drive their short-term actions?
- What are their interdependencies—shared wants or values—that could form the basis of cooperation for overcoming fences and traps to achieve long-term benefits or avoid long-term costs?

Example:

In the case of orphan diseases, the stakeholders include entrepreneurial scientists who want to solve problems, make a distinct contribution, and win prizes; pharmaceutical companies who want to leverage their marketing expertise and minimize their development costs as well as meet demands for globally responsible practices; individuals or regions who struggle with orphan diseases and want solutions; and national health institutes who want to build the body of medical science. A common focal point for scientists, pharma companies, and national institutes is the need for a body of knowledge that can be leveraged to find rare-disease solutions.



3. DRIVERS & BARRIERS

EVALUATE THE CONTEXT OF STAKEHOLDER ACTION

STRUCTURE: from static to dynamic

RULES: from external to internal

RESOURCES: from private to public

THRESHOLDS: from high to low

FEEDBACK: from local to systemic

MEMORY: from ephemeral to persistent

IDENTITY: from individual to group

STEP 3

Stakeholders make choices and take actions in an institutional context that has its own drivers and barriers. Cooperative theory tells us that these drivers and barriers can be altered by making changes in seven key dimensions of this context, shown above. We can think of these as tuning levers that can tune up the system for cooperation. But first, we must understand the current drivers and barriers.

EXERCISE:

Use the cooperation levers to help describe the institutional context of each stakeholder and their interests related to the fences and traps.

- How does each lever act as a barrier or an enabler to resolving the tensions of the fences and traps?
- Which levers offer the most promise for changing the context of stakeholders and their incentives for action?
- Which levers create the most problems for resolving social-dilemma tensions?

Example:

In the case of K–12 education, charter schools suffer from the lack of systemic feedback and shared identity, and the prevalence of competitive resource strategies prevents public school districts from learning from charter school innovations.



4. PRINCIPLES & PLATFORMS

DESIGN FOR OPENESS

AD HOC PEER-TO-PEER DESIGN

DISTRIBUTED AUTHORITY

COMMON-POOL RESOURCES

VISIBLE TRIGGER POINTS

COORDINATION MECHANISMS

SOCIAL ACCOUNTING

GROUP-ALIGNED SELF-INTEREST

STEP 4

This step begins the shift from diagnosis to design as we examine how some key design components of the open economy can help support the drivers and overcome the barriers identified in Step 3. Open economy experiments have already demonstrated the potential for transforming dilemmas and creating wealth through seven key design principles, shown above.

EXERCISE:

Identify and describe how specific design choices can help lower fences and avoid traps.

- Which design choices can leverage drivers to help resolve the social-dilemma tensions?
- Which design choices would tackle the biggest barriers to resolving these tensions?
- What changes would need to be made in the organization/system to implement these design choices?
- How will specific levers need to change to achieve distinct design choices?

Example:

In the case of both education and orphan diseases, social accounting systems could be used to encourage contributions to a common-pool resource of innovative knowledge as well as evaluate the quality of solutions, whether educational or medical.



5. INCENTIVES & STRATEGIES

CREATE STRATEGY INCENTIVES FOR COOPERATION

	Individuals	Groups	Institutions
Individualist: self-interest maximizer			
Competitor: relative maximizer			
Cooperator: joint-outcome maximizer			

STEP 5

Design choices offer strategic direction but do not specify actions. Actions are driven by incentives and perceived outcomes or payoffs. Step 5 focuses on describing the incentives that will motivate individuals, groups, and institutions and help make design strategies successful. These strategies must recognize three classes of actors—individualists, competitors, and cooperators—and look for implementations of the design principles that provide incentives for these types of actors.

EXERCISE:

Map incentives of major stakeholders—individuals, groups, and institutions—that will drive successful implementation of strategic design choices. Then design your strategy to maximize those incentives.

- Which stakeholders, in which situations, are acting as individualists, competitors, and cooperators?
- How can you use these incentives in an open economy design to take advantage of these behaviors in a way that will create greater value for everyone?

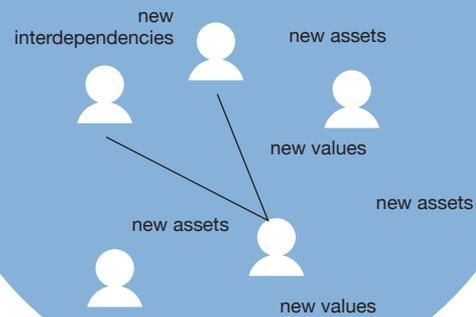
Example:

In the case of education, PTAs act as competitors for resources in the district, but a district-wide competition could bring them together to share fundraising strategies and increase the effectiveness of all the PTAs—as well as the overall flow of educational funding in the district.



6. NEW PATTERNS & INSIGHTS

TAP INTO THE NEW ECOLOGY



STEP 6

Once a strategy is implemented, traditional problem-solving approaches tend to focus on evaluation, but open economy approaches anticipate new dilemmas and look for new opportunities for value creation. These opportunities are likely to be found in new interdependencies among the stakeholders, in new assets and resource flows in the system, and in new values that emerge from the new practices and relationships in the system.

EXERCISE:

Actively scan for new patterns of interaction and flows of resources that suggest new dilemmas and new opportunities for innovation and new value creation.

- Map new social networks and relationships across stakeholders.
- Identify tangible and intangible assets across stakeholders.
- Identify new kinds of resources, values, and stakeholders.
- Iterate the entire six-step process to identify new fences and traps, shifting stakeholder interests, and design innovations.

Example:

In the case of charter schools, a shared innovation commons with social accounting processes might highlight the best contributors in a district and create the opportunity to link them to donors who might support future distributed innovation efforts by these contributors.

TUNING UP FOR COOPERATION:

SEVEN LEVERS

Over the last 50 years, researchers in such diverse fields as mathematics and political science, biology and sociology have been studying cooperation, deriving principles that have great relevance to the open economy.

From this work, we have identified seven key levers that can be used to understand the cooperative potential of an organization, institution, or strategy—and ultimately guide us in designing new institutions and strategies. The seven levers are:

- 1. Structure** refers to the configuration of actors and processes in an organization and their inter-relationship. Structure can range from static to dynamic.
- 2. Rules** provide a framework for interaction in a system, setting the boundaries that delineate acceptable behavior. Rules range from external to internal.
- 3. Resources** can be organized according to various regimes that set the conditions and rights for their use. Resource regimes range from private to public.
- 4. Thresholds** reflect points of transition in a system. Threshold trigger points range from high to low.
- 5. Feedback** frames the information context of a system and the knowledge horizon of its actors. Feedback flows range from local to systemic.
- 6. Memory** is a form of stored knowledge that generates future action. Memory about people, places, actions, and things ranges from ephemeral to persistent.
- 7. Identity** helps delineate group boundaries and establish trust. Forms of identity range from individual to group.

DESIGNING FOR AN OPEN ECONOMY:

SEVEN DESIGN CHOICES

The open economy embodies the principles of networks, self-organizing systems, and new cooperative strategies. These offer design choices that can overcome fences and traps—and provide platforms for success in the emerging economy. Seven key design choices that have already demonstrated the capacity to change system behavior and create new value are:

- 1. Ad hoc, peer-to-peer production** aggregates distributed resources and local expertise.
- 2. Distributed authority** pushes rule making, monitoring, and sanctioning to the periphery.
- 3. Common-pool resources** aggregate critical shared resources sustained by collective action and leverage free riders rather than punish them.
- 4. Visible trigger points** signal transition to new conditions and spur actors in the system to new behaviors without centralized control or top-down monitoring.
- 5. Coordination mechanisms** allow local and system-wide functions or processes to work together without depending on economies of scale or centralized control.
- 6. Social accounting** establishes trust, reduces uncertainties, and reveals the most valuable players, contributions, or assets in a system.
- 7. Group-aligned self-interest** connects individual self-interest with collective benefit, assuring payoffs for the system as well as the individual.

For more information about how to apply the toolkit to strategic-planning challenges in your organization, please contact **Andrea Saveri** (asaveri@iff.org).