THE COOPERATION PROJECT:
OBJECTIVES, ACCOMPLISHMENTS, AND PROPOSALS

OBJECTIVES OF THE COOPERATION PROJECT

New knowledge about the nature of cooperation could alleviate suffering and create wealth. Toward those ends, the Cooperation Project (CP):

- *Catalyzes* interdisciplinary study of cooperation through workshops, seminars, and online knowledge communities.

- *Maps* the findings emerging from cooperation studies onto graphical representations and visual interfaces.

- *Educates* the perceptions of practitioners in person and online with workshops, conceptual toolkits, games, and simulations.

- *Applies* this knowledge to real world problems in partnership with practitioners.

Problems of health care, economic development, political and interpersonal conflict, environmental sustainability, resource allocation, disaster relief, urban planning, civil society, democratic governance, technological innovation, intellectual property, public education—the most critical problems of our time—involve social dilemmas and institutions for collective action that are not yet well-understood.

Evidence from biology, sociology, economics, political science, computer science, and psychology suggest the feasibility of building an interdisciplinary framework for understanding cooperation. Because of institutional specialization, a program of cooperation studies will not happen without purposeful action. In order to catalyze the growth of this enterprise, the CP has created:

- An open, shared, knowledge base of insights and resources relevant to cooperation and collective action: the Knowledge Commons

- Several visual maps for customized navigation of the cooperation studies landscape

- A university course with publicly available lecture videos and readings

- A workshop and guidebook for re-perceiving the role of cooperation in business and the technologies that enable it

- The beginnings of a social network of cooperation researchers

The CP has convened expert workshops, published a syllabus, launched online discussion communities, compiled reports, created and published video lectures, and built software prototypes—the beginnings of a Cooperation Toolset. Now we seek to:

- Test and refine these instruments through workshops and further research— attracting the best minds in cooperation-related disciplines to help.

- Learn how practitioners can use the knowledge and tools in their domains.

- Make these resources public and invite broad participation.

FIRST STEPS ACCOMPLISHED: 2003–2005

1. Toward a New Literacy of Cooperation in Business

Companies in high-tech industries have learned that working with competitors can build markets and help avoid costly standards wars. The open source movement has shown that world-class software can be built without corporate oversight or market incentives. Google and Amazon have built fortunes for themselves and thousands of partners by using the Internet to support a "sharing economy" that enriches by expanding the population of partners rather than decreasing the number of competitors. Outsourcing has turned competitors into common customers of design firms and contract manufacturers.

Connective and pervasive technologies are enabling new forms of human and machine interactions and relationships; technologies and methodologies of cooperation will present business institutions with a host of new opportunities and challenges for organizing people, processes, relationships and knowledge. Increasing numbers of enterprises using new forms of production and commerce could change the entire economic framework, the way printing, banking, joint stock ownership companies, and double-entry bookkeeping made capitalism possible a few centuries ago.
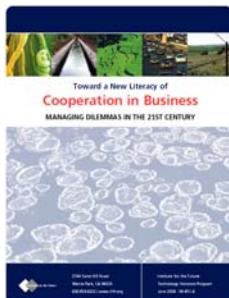

In the report, *Toward a New Literacy of Cooperation in Business: Managing Dilemmas in the 21st Century*, we looked for ways to think about two key business questions. How can new insights about the dynamics of cooperation help identify new and valuable models for organizing production and wealth creation? And how can organizations enhance their creativity and stimulate innovation with cooperation-based strategic models?

2. Map of the Cooperation Studies Landscape

Interdisciplinary research is difficult to accomplish in part because universities, research laboratories, and foundations are organized around specialization, and in part because different disciplines use different vocabularies and share different mental models of similar phenomena. A graphic representation of the knowledge landscape can provide a shared, manipulable mental model that can serve as a stage for real discourse: discussing how to improve the map could channel the first conversations among convened experts toward a convergence on shared practical problems.

At the center of the map is the *social dilemma*, surrounded by *seven lenses* that use key concepts from the various disciplines to understand the process of cooperation. These concepts—*synchrony, symbiosis, group selection, catalysis, commons, collective action,* and *collective intelligence*—describe dynamics that can be tuned to foster cooperative behavior. Arrayed around these core concepts are more related concepts that suggest ways to alter the dynamics of cooperation. We have plotted them in seven bands that represent what we think are key *levers* for adjusting cooperative behavior: *structure, rules, resources, thresholds, feedback, memory,* and *identity*.
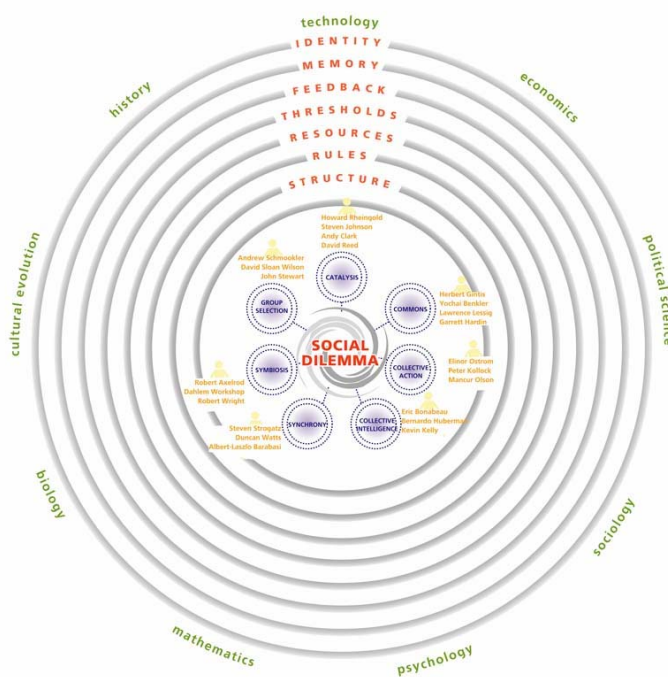
Together, the lenses and the levers provide a multidisciplinary framework for thinking about cooperation and cooperative strategies. They offer both an overview of the key studies to date and a palette of choices for tuning cooperative systems—a toolset for imagining new solutions to social dilemmas. We must be cautious, however, in applying this tool. The field of cooperative studies is young, and this map represents only the most summary view of it. A lens is something you see through; it's a tool for understanding, not a tool for engineering. With his in mind, we present the map as a way to reexamine present problems and to think about the cooperative potential of groups in new ways.

3. Technologies of Cooperation

Emerging digital technologies present new opportunities for developing complex cooperative strategies that change the way people work together to solve problems and generate wealth. Central to this class of cooperation-amplifying technologies are eight key clusters, each with distinctive contributions to cooperative strategy:

Self-organizing mesh networks define architectural principles for building both tools and processes that grow from the edges without obvious limits, that distribute the burden of the infrastructure throughout the population of participants, and that establish the foundation for the emergence of swarm intelligence in systems of people and devices.

Community computing grids provide models for recovering currently squandered resources from distributed sources and for providing mutual security within a network of people and/or devices, supported by explicit choices about when and how to foster cooperation versus competition.

Peer production networks create a framework for volunteer communities to accomplish productive work in parallel. These potentially unbounded communities create new value by rapidly solving problems that would tax or stymie smaller workgroups; self-organization dramatically reduces coordination costs.

Social mobile computing includes a cluster of technologies and principles that allow large or small groups of people—even if they are strangers —to act in a coherent and coordinated fashion in place and space, supported by information accessed in real time and real space.

Group-forming networks support the emergence of self-organized subgroups within a large-scale network, creating exponential growth of the network and shortening the social distance among members of the network.

Social software makes explicit, amplifies, and extends many of the informal cooperative structures and processes that have evolved as part of human culture, providing the tools and awareness to guide people in intelligently constructing and managing these processes to specific ends.

Social accounting tools suggest methods and structures to measure social connectedness and establish trust among large communities of strangers, building reputation along dimensions that are appropriate to a specific context and creating a visible history of individual behavior within a community.

Knowledge collectives model the structures, rules, and practices for managing a constantly changing resource as a commons, for securing it against deliberate or accidental destruction and degradation, multiplying its productivity, and for making it easily accessible for wide ranging uses.

Each of these technology clusters can be viewed not only as a template for design of cooperative systems, but also as tools people can use to tune organizations, projects, processes, and markets for increased cooperation. Specifically, each can be used in distinctive ways to alter the key dimensions of cooperative systems—structure, rules, resources, thresholds, feedback, memory, and identity.

4. Toward a Literacy of Cooperation: Stanford Course

A first step toward growing a literacy and interdisciplinary vocabulary was "Toward a Literacy of Cooperation," a ten-week course of lectures, class discussions, and online discourse sponsored by the Stanford Humanities Lab in Winter 2005. Andrea Saveri and Howard Rheingold were the instructors, with guest lectures by some of the best minds in the sociology, biology, economics, and computer science of cooperation. The lecture videos and audio tracks were streamed online and are being edited for downloading. The course description is at http://shl.stanford.edu/hum202.html and the record of the class group blog, with links to resources, is at http://cooperation.rheingold.com. The syllabus is at http://shl.stanford.edu/hum202_syllabus.html. Douglas Schuler at Evergreen College is replicating the course, and Zephyr Teachout, former Internet coordinator for the Howard Dean campaign, has proposed offering it at Stanford. Saveri and Rheingold are in discussion with U.C. Berkeley to present a version of the course in the future. As we develop the curriculum for introductory cooperation studies, we make our syllabi, online discussions, instructors' notes, audio and video lectures, PowerPoint slides freely available online. In addition to inspiring and provisioning other teachers, the course is ongoing research into the methods of using our maps, exercises, and vocabularies to educate perception—and serves as an organizing node for a social network of cooperation studies teachers. Although we have a long way to go to understand the complexities of human social behavior, first-rate thinkers in a number of disciplines have provided excellent places to start. If there is to be a future generation of cooperation studies researchers, courses like t his are needed to spark their vision and introduce them to essential ideas.

5. The Knowledge Commons

The Knowledge Commons (KC), an online database and interface that allows users to store, create, find, and collate, and discuss information, is being created to support an ongoing interdisciplinary study of cooperation and collective action .It is designed and licensed to allow any population to use it for any knowledge domain

The components of the knowledge commons system are:

- Numerous interfaces including graphic "cooperation maps"

- A database of texts, summaries, findings, interviews, audio and video lectures, discussions, games, and simulations

- An open-access system that enables users to add and refine content

- Ranking/reputation systems by which useful information is made more visible and less useful data less so; user-defined filters that can rank according to user-defined populations of critics.

A user accesses the knowledge commons by clicking on one of the many interfaces available. The interface presents the user with a tool for visualizing the objects and relations in the system. For example, the initial interface is a graphical map of cooperation literature as well as "findings" extracted from that literature. At this point there are several branching possibilities for the user:

- The user moves the cursor around the graphic interface (the mandala map, for example), and as it moves over key concepts, a hotspot becomes visible.

- Hovering on the hotspot pops up a balloon with a one-sentence description of the node—a key concept, author, activity, archive, source material.

- Holding down the mouse button on the hotspot pops up a menu of choices: One paragraph and one page summary, key findings/insights, animation, simulation, source material index, related discussions, related bookmarks, networks of people who indicate interest in that node.

- If the user clicks on a finding, article, or interview, he will be presented with the content. The "relations," or things which that content is related to, such as author, publication year, topic, and keywords will be presented in the interface as further pathways for exploration.

- If the user clicks on a "relation," the system presents all data that instantiates the relation. For example, if the user clicks on a "topic" (which connects related material), then the system will show all of the material in that topic.

Users may add new substantive content (an article reference or interview, summary or insight) including labeling or tagging it with relations to other content. Many items in the KC will have discussions attached in the form of "posts" threaded underneath a single item or linked to multiple items, such as a discussion comparing three different articles.

Because the knowledge commons is pluralistic, new relations emerge over time as different viewpoints refine the content. As these new "knowledge webs" emerge, new interfaces, or lenses, expand the ways that users can view and interact with the knowledge content. These webs become instruments for educational and analytic methods.

A basic working prototype of the KC has been created using open source tools, and populated with an initial database of summaries and key insights from 50 fundamental texts, and six edited video lectures from our Stanford Course. Several different visual interfaces have been sketched but not fully implemented.

6. The Cooperation Network

Scientific, scholarly, and policy disciplines grow out of and are maintained by social networks. Networks that span more than half a dozen separate disciplinary boundaries are not likely to grow without deliberate positive action. The face-to-face workshops, college courses, and online discussions conducted during the accomplishment of the first phase of the Cooperation Project began the process of growing a social network. As the Cooperation Toolset grows as an object to think with, and the project uses its past accomplishment to attract the best minds to future workshops, courses, discussions, and joint ventures, the social network of cooperation researchers, educators, and practitioners will grow. In the next stage of development, the Knowledge Commons will afford ongoing online discussions to maintain the relationships that began in CP-related events.

NEXT STEPS: 2005–2007

Workshopping and Expanding the Knowledge Commons

The Knowledge Commons is a scaffold for learning and interdisciplinary exchange, an educational resource for scientists and public policy makers, a publishing medium for the emerging interdiscipline, and a tool that can be used for other knowledge domains besides cooperation studies. A researcher in a particular specialty can use the visual interfaces and filters to get quick perspectives of the landscape in other disciplines, through carefully prepared summaries and insights from the top 100 fundamental documents, or delve deeper into hundreds of reports, links, bibliographies, and videos. A community of contributors, similar to the Wikipedia community, will be encouraged to

grow the KC when it is made public. Before this can be done, however, fundamental problems must be solved: how are blogs and threaded discussions to be related to issues and documents, providing a medium for ongoing discourse? What qualifications should be set for becoming a contributor? What kind of reputation systems could make it possible to invite the widest pool of contributors, and at the same time float the most valid contributions to the top? How are GPL-like or Creative Commons licenses to be applied to the KC? A number of workshops will be necessary to bring the present prototype to the point where the best researchers in related fields, and their students, will want to swarm on it.

As our social network of cooperation researchers grows, the initial knowledge base of 50 texts and six videos will expand to 200 summarized resources, with a bibliographic collection of several hundred more—ready for summarization and/or distillation of insights by the growing network in the future. We intend to extend our work with face-to-face cooperation and public goods games and incorporate online simulation games to the knowledge commons.

Refining the Maps and Visual Interfaces

A click-and-drag version of the first draft map could serve as a kind of graphical Delphi tool for harvesting the judgment of a community of experts, each of whom could re-arrange the map to suit their particular understanding. The graphic map is also the design for a point-and-click front end for the database. The map is what Seymour Papert called "an object to think with." Taken together with the methodologies for using the toolset, the input and resource functions of the Knowledge Commons, and the cooperation games, the graphic map is part of a comprehensive instrument for enabling exploration and encouraging insight. But the first maps are starting points, not definitive end-points. Our next step must involve diverse communities of users, graphic designers, and domain experts. Are other visualizations possible or even better? How can the static sketches become interactive instruments? What do the best thinkers in cooperation-affiliated domains think about the map? Are the levers and lenses accurate? Are there others that we've missed? A program of expert workshops, user studies, and design exercises will enable us to bring the maps to a broader population, with some confidence in their rigor, accuracy, and utility.

Designing and Developing Educational Methods and Practices

The most important aspect of cooperation/collective action models lies in understanding how to use them—for insight, rather than control. Playing the games or knowing the theory or seeing the graphical map or studying the knowledge base is not going to confer any magical ability to design or intervene in human social activities. However, as a tool for seeing and medium for discussion, the Cooperation Toolset can serve as a test bed for insight methodologies by practitioners in a wide variety of practices: conflict resolution, business strategy, sustainability planning, resource allocation, leadership training, distributed decision-making and forecasting. From the encounter of practitioners and the Toolset, methodologies can be learned and designed—methods of using the Toolset that

provoke insight and provide practitioners with internal models and heuristics for better understanding the social dilemmas in their own fields. The Toolset, the body of knowledge it makes available and navigable, the contributors and practitioners who use it, change it, and grow it, constitute a technosocial system in which the human element is always central. Just as a microscope or telescope magnify aspects of the natural world to make them more visible and, together with a logical methodology, thus understandable, the Toolset should make the dynamics of cooperation more visible and, together with the experience and discourse of practitioners, more understandable. No model of human collective action can be applied automatically to any specific group of human, but can only serve to inform the people who end up making the decisions, or whose behavior aggregates into something collectively decisive.

We've used blogs, wikis, and message boards in our learning groups, and plan to continue to refine our immersive online learning methods through the discursive capabilities we will build into the Knowledge Commons.

In our work with businesses and college students, we found that the experiential component gained by playing cooperation games was successful in both motivating and equipping learners. Working together with Stanford post-doctoral student, Scott Brave, we illustrated fundamental principles of game theory, social dilemmas, and public goods, using paper cups, chairs, and poker chips as props.

We've also developed several face-to-face interactive workshop processes for business and nonprofit organizations that involve hands on engagement with key concepts and frameworks in the cooperation toolkit to increase their understanding of cooperation and insights about their own organization's cooperative possibilities.

We plan to continue to explore both face-to-face and online games and simulations, workshop processes, and other immersive and reflective activities as learning vehicles for the cooperation toolkit.

Working with Practitioners: Using the Cooperation Toolset

If knowledge truly is a scaffold for power, those who work to enact change in the world could benefit from thinking tools that show the dynamics of cooperation in new ways. Drawn from a multitude of disciplines, this Cooperation Toolset is meant to act more like a lens than a formula, designed to educate the perceptions of practitioners, not to give them a scientific recipe for social engineering.

Practitioners who seek to improve civil society, resolve conflicts, foster international understanding, plan sustainable development, design regulatory regimes for intellectual property and public goods, design technologies, must necessarily work from personal experience and specialized training. It's not easy to keep up with theory when you are in the field, much of the most salient theory is found in a number of disconnected disciplines, and much of it is expressed in difficult technical terminology. How will practitioners improve their success rate when they can quickly grasp a synthesis of what

the best minds in sociology, biology, economics, political and computer sciences have discovered about cooperation? If they could engage in structured discourse and directly experience cooperation-based games, could they engage theory in more concrete ways—and use appropriate aspects of that theory to inform their practice? How might their experience in attempts to facilitate collective action feed the Knowledge Commons, for the benefit of other theorists and other practitioners? Can we use forms of collective action to better understand collective action? One of our first practitioner partnerships focuses on the health care community.

Catalyzing Innovation in the Health Community

The CP is working with the Robert Wood Johnson Foundation to catalyze breakthrough innovations among a diverse group of stakeholders that will lead to improved health and health care by fostering the development of:

- A new awareness and literacy of cooperative strategy in the extended health community

- A reflexive application of that cooperative strategy in creating RWJF's own ongoing, collective knowledge commons—an online repository of diverse, relevant innovations and interpersonal network of innovators that will serve as a dynamic, public resource for ongoing discussion and discovery of opportunities for transformation in health and health care

Our approach incorporates the best new knowledge about cooperative strategy, collective organizational dynamics, and commons-based value creation to provide a framework for prioritizing research that will significantly transform the broader health arena. We are developing the outline of a dynamic knowledge community that RWJF can implement to disseminate our findings and attract a community of pioneers who will grow this knowledge base and apply it to the most pressing problems related to health and health care. Our strategy is to position RWJF as a dedicated leader in engaging a community of pioneers to develop the best collective wisdom about meaningful innovation in health, enhance cross-organizational and cross industry cooperation, and improve those organizations' ability to see opportunities for individual and collective success.

Application to Strategic Planning

The CP has worked with the Herman Miller Company to explore the application of cooperation studies to the strategic planning process of a for-profit corporation, we are in discussions with other business enterprises, and we seek other partners to not only support further research, but to provide practical, real-world problems to test the Cooperation Toolset.

We also seek partners in the NPO, NGO, and foundation worlds, who are working on solving public problems that entail social dilemmas or commons issues, or could benefit from applied use of cooperation technologies.

Working with Practitioners: Expansion Plans

We have several proposals in development to expand our work with practitioners of all kinds.

1. Using Cooperative Strategy to Grow Community Wealth

The goal of the proposed project is to develop a theoretical framework and practical toolkit for enabling local communities and regions to leverage and grow community assets to create more sustainable wealth creation that reflects the values of the community.

Local communities, especially those in inner cities, marginalized rural areas, and regions experiencing rapid urbanization, face severe challenges of economic stagnation or instability and loss of community control over resources and assets. One only needs to look at rust belt communities or those with a new WalMart to see the shifts in economic power and the imbalance of wealth creation.

At the same time, experiments in new bottom–up economic structures are emerging and presenting a new vision of social and economic organization and wealth creation. Open source software, Wikipedia, Google, eBay, Craig's List, the Creative Commons—the first successful pioneers of Internet-enabled sharing economies—have begun to exploit the economic opportunities that network technologies and new methods of social networking have made possible. Might these be the earliest instances of new economic forms, enabled by new social technologies—just as capitalism was enabled by printing, stock corporations, insurance companies, double-entry bookkeeping?

Using the Interra card rollout in Spring 2005 (Interra provides a payment card for use with local merchants that also serves as a vehicle to "empower a community-based movement of citizen consumers by providing tools for direct alignment between daily economic activities and our deepest human values."), the project will evaluate Interra's offerings and assess the prospects for broader diffusion. The project will use Interra as a case study to analyze the implications of an emerging sharing economy—an alternative economic structure based on principles of bottom up, open, peer-to-peer interactions, and intensive social, technical, and transactional networking.

2. Creating Wealth through Cooperative Relationships

New business and production structures are beginning to provide compelling evidence that diverse property and ownership rights can effectively catalyze new methods of wealth creation. One only needs to look at the Internet's Amazon and eBay, open source software production, Wikipedia, and other examples of peer based commons production, knowledge collectives, and resource collective to see that wealth and value can be

generated through cooperative means, many times under conditions that would not be productive using proprietary, competitive strategies. The difficulty for business and other organizations is knowing when and how to use open, bottom–up strategies of production and sharing. How does an organization systematically assess appropriate integration points with the sharing economy?

The purpose of this project is to develop a strategic framework for making the open vs. closed property rights decision. We will develop a set of thinking frameworks and decision guidelines that help organizations (1) understand when and how to utilize cooperative strategy, commons based production, and collective processes of bottom–up value creation; and (2) how to deploy diverse property regimes across the organization to create widespread wealth, perhaps even new sources of wealth. One important part of the strategic framework will be a graphic map that helps practitioners think critically about the social dilemmas they face in their communities, markets, and industries and the choices, threats, and challenges posed by those social dilemmas. This will be an important starting point for understanding the incentives and payoffs of various property regimes and structural relationships.

3. Participatory Media and China's Democratic Transition

The goal of this project is to explore interactive digital media and communication technologies in order to advance the world's understanding of China, and to promote the knowledge, culture and social practices of those technologies, which will facilitate China's democratic transition, sustainable development and peaceful emergence in the global community.

China is in the nascent stages of a momentous transition that will shape the world of the 21st century and beyond. Over 94 million Chinese are now online, and 330 million cell phones are in use in the country. Participatory media technologies such as Weblogs, Wikis and RSS are transforming communication, publishing and social organizations in profound ways. This digital revolution has already altered the course of China's ongoing social and economic reforms while also creating unprecedented opportunities for journalists and researchers to cover this complex and rapidly changing country.

How can we apply the participatory media approach—i.e. harness the distributive powers of the Internet by utilizing both traditional media and user-generated content—to enhance the world's knowledge of China? How can new communication technologies, culture and social practices be developed and applied to help grow civil society and create emerging democratic institutions? Which technologies, methods of implementation, and culture of social practices will encourage China's transition towards a more open, humane and democratic society? And finally, what are the ways to effectively promote new knowledge and practices that will systematically facilitate massive adaptation of such technologies and practices?

4. Defining the Emerging Health Commons

Health and health care account for a large and growing part of the U.S. economy and suffer from numerous well-documented challenges. Often, these challenges reflect what UCLA sociologist Peter Kollock calls *social dilemmas*: situations in which individual rationality leads to collective irrationality, or more simply put, what seems best for you isn't best for the collective (including you).

Health and health care is rife with these complex social dilemmas. The domain is characterized by complex interdependence among diverse stakeholders with distinct, sometimes conflicting objectives. Many times individual stakeholders end up acting in ways that optimize locally and for the short term, rather than globally and for the long term.

The Institute for the Future (IFTF) proposes to build a landscape map of the emerging health commons that will identify key areas of innovation in the application of cooperative strategy to complex health dilemmas. Current experiments suggest new cooperative arrangements and approaches for improving the allocation of scarce resources, stimulating new behaviors to create collective benefit, and catalyze innovations in health services. Some examples of new cooperative arrangements and health commons in the next 5–10 years include:

- Genetic and other biotech and life science research commons to increase the pace and diversity of meaningful innovations in drug discovery and therapeutic developments

- Equitable employee incentives, reward structures, monitoring and sanctions that that lower the barriers to making healthy behavior choices, and the collective costs of illness, lower health premiums, and increase employee health.

- Health consumers knowledge commons that collectively share and aggregate personal health information (diagnosis, medical record data, and other medical)

- Collective intelligence processes that focus on diagnostic challenges for remote practitioners and complex symptoms

- Decision markets for R&D labs that are strapped for financial resources or need to tap broad sets of expertise to solve difficult research problems

- Processes of aggregation of clinical trial data to develop valid data sets of hard to find cases more rapidly