STARLab
Socio-Technical Action Research Lab

Socio-Technical Action Research Lab

Design Lab Description and Process

Stu Winby (Spring Network); Chris Worley (USC);
Sue Mohrman (USC); and Bill Pasmore (CCL)

INNOVATION RESOURCE CENTER for HUMAN RESOURCES

The development of this report was funded by a grant from IRC4HR®

SPRING NETWORK

USC Marshall School of Business
Center for Effective Organizations

Center for Creative Leadership

Socio-Technical Action Research Lab[1,2]

Design Lab Description and Process

Stu Winby (Spring Network); Chris Worley (USC);
Sue Mohrman (USC); and Bill Pasmore (CCL)

The STARLab acronym "Socio-technical Action Research Lab" points to a specific type of lab which is designed to create socio-technical action research. This paper outlines the distinctive features of the socio-technical action research lab. First, it outlines the ideas that provide a foundation for STARLab, along with the essential concepts of tacit knowledge and design thinking. Next, it provides a brief background of the origin of the design lab methodology. Last is a description of how the lab works – planning, environment, and process.

STARLab Alliance and Socio-technical Action Research

The STARLab Alliance is a network of company executives and professionals, external practitioners, and sponsor research partners working together to advance our collective knowledge and understanding of the impact of digital technology on organization design theory and practice. The STARLab Alliance uses an action research approach to discover and create new knowledge and practices regarding the implications of digital technology on organization design. A socio-technical design perspective is also used in conjunction with action research, which incorporates both theoretical and procedural elements in its approach to developing high performance organizations and offers a greater balance between organization and technology than alternative organization design methodologies. The STARLab Alliance combines both socio-technical design and action research into a novel form of inquiry and learning, referred to as the socio-technical action research lab.

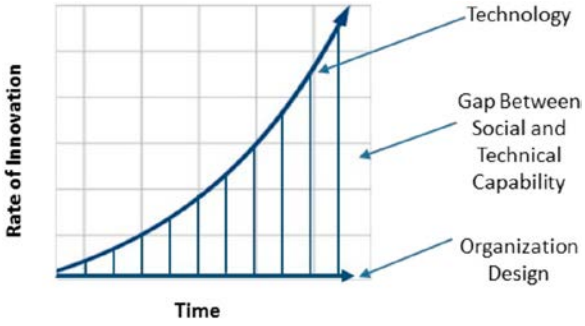
Socio-technical Action Research is an interactive inquiry process that balances design thinking and problem-solving actions. Action research is implemented in a collaborative context with

[1] We gratefully acknowledge the support and funding for this project from Innovation Resource Center for Human Resources (IRC4HR®)

data-driven analysis to understand underlying causes enabling future predictions about organizational design and change. STARLab Alliance company members, practitioners, and researchers interact in a structured design lab to explore possible solutions, develop explanations for the phenomena under investigation, elaborate on concepts and processes, and evaluate or assess their understandings in the light of available evidence.

The impetus for the STARLab approach is the realization of the widening gap between increasingly new waves of digital technology innovation and slow to change organization designs. This creates a lead-lag relationship between new digital technology deployment and legacy organization design. See Figure 1. Socio-technical theory and design explicitly addresses the technical and social subsystems of work and their interrelation. The social subsystem and technical subsystem must be designed to enhance each other, to establish alignment or "best fit" to achieve high performance. Both in the literature and practice it appears that new innovative organizational models to accommodate rapidly emerging digital technology are lacking, resulting in a need to close the gap by accelerating learning and experimentation in organization design. The STARLab model was designed as a specific socio-technical action research approach to accelerate research and practice-based learning.

Figure 1.



STARLab is a one-year learning journey. The Lab starts with company orientations and data collection, followed by the first Lab event which is designed, in part, on findings from pre-lab company data collection. Following the first Lab event are six to eight-months of company digital organization design experimentation and learning. During this time companies work on internal digital organization design projects and participate in cross-company community of practice sessions. Next is a second two-day Lab event. Following the second Lab event, contact between researchers and company members is done via the STARLab website, where papers, articles, tools and videos are posted.

Tacit Knowledge and Design Thinking

The design lab is based on two key concepts and practices, tacit knowledge and design thinking. What makes the design lab unique as a socio-technical action research methodology is the integration of tacit knowledge and design thinking tools used for problem solving and sense making in the lab environment.

Tacit knowledge can be defined as skills, ideas and experiences that people have but are not codified and may not necessarily be easily expressed. It is the kind of knowledge that is difficult to transfer to another person by means of writing it down or verbalizing it. Tacit knowledge is considered a gold mine of untapped knowledge and know-how that resides with knowledge workers. Effective transfer of tacit knowledge generally requires personal contact, a specific type of interaction, and trust. STARLab has been designed to convert tacit knowledge into specific value-add artifacts (video presentations, white board photos, and documented narratives), targeted to address specific problems and opportunities in the digital technology and organization design space.

The essence of creating value through tacit interaction is getting the right people, with the right tacit experience and knowledge, with the information they need, to have the right conversation, to solve the problem presented to them. This requires a specific type of work design. Based on the Lab's purpose, objectives and deliverables a tacit knowledge-based work design is created. The work design task is to identify the right mix of individuals, each having a specific knowledge and experience base, coupled with specific shared information that is required to solve the problem at hand. Carefully constructed assignments, or deliberations, are written for participants to work through to arrive at the group's point-of-view solution.

In today's digital environment the essence of the work of executives and professionals is collaborative, complex problem-solving. These are "tacit" activities - Involving the exchange of information, the making of judgments, and drawing on multi-faceted forms of knowledge and exchanges with coworkers, customers, and other members of their ecosystem. The design lab when defined as a network is the organizational form needed to extract value from these types of interactions.

Design thinking is an approach to problem solving that uses tools traditionally utilized by designers of commercial products, processes, and environments. Building on frameworks of

product and architectural design early proponents of design thinking suggested that "thinking like a designer" to solve "wicked problems" could be leveraged in organizations – hence organizational problem solving and strategic innovation practices. Design thinking is a systematic approach to problem solving that employs design tools such as rapid prototyping, user observation, visualization of ideas, and brainstorming. These "designer tools" are used to solve a wide variety of organizational problems. For example, sense-making processes, that is, the cognitive processes of understanding "what is going on here" and used in foresight – insight activities and especially useful in the STARLab environment.

In the design lab the use of design thinking tools triggers an experiential learning process that ultimately supports the tacit knowledge work design. The tools support a user-centric focus, collaboration, risk taking, and learning. The physical artifacts and emotional experiences that result from the use of design thinking tools provide sources of reflection that support the action research process. Design thinking tools also facilitate the development of shared understandings about future-oriented solutions to design problems. Essentially, the use of design thinking tools facilitates and supports collective cognition through the experiential processes it promotes.

The STARLab has been created as a tacit-based research and innovation lab. Digital technology and organization design challenges and problems are presented to a mix of highly skilled and knowledgeable executives and professionals who collaborate, and problem solve solutions. Learning is optimized through multiple iterations and by changing the mix of individuals working specific problem solutions. These solutions are then taken back to their companies to experiment and implement on real company challenges. Company learning and examples are discussed among companies and researchers and brought back to a second lab for additional investigation and ongoing learning.

Origins

The design lab has its roots in a management process called a "Decision Accelerator" (DA) piloted in the Silicon Valley in 1997. The DA was initially used as a powerful tool to improve time-to-market performance. The DA evolved into a more sophisticated design process referred to as an "Adaptive Work System". The Adaptive Work System is an organization network platform that accommodates product, service, organization, business model, and

experience design applications. These design applications are design thinking tools coupled with business, organization, and change processes that can be configured to addresses problems and project objectives. See the STARLab paper on *Fast Scaling* for a description of the Adaptive Work System and additional article references. The Adaptive Work System methodology was leveraged to define the STARLab model.

How the LAB Works

Planning

Lab one was designed by the researchers, based in part on company data collected and analyzed in the initial phase of the STARLab program. Lab two, however, enlisted a design team of STARLab company representatives to help with the design of the second lab event. In each case, the lab event purpose, objectives, and deliverables were identified. Next a process design was created to execute on objectives resulting in specific measurable deliverables. Various design tools were used, and a sequence of "deliberation" created to support the process design.

Roles and responsibilities were assigned to a lab operation team. The operations team included lab director/facilitator, process manager, graphic artist, documenters/website proceedings, video and music, and environment.

Participants

Based on Lab purpose, objectives and deliverables, a multifunctional set of participants from each company were invited to attend. Each company had an average of five participants representing the following roles and functions: executive P&L owner, digital technology executive/manager, software design professional, human resources executive/manager, and organization design professional. The second lab event had some of the same people and roles, but with more of an emphasis on implementation and operations roles.

The multifunctional roles in each of the eight STARLab companies addressed the digital technology and organization challenge in different ways. Some companies brought a detailed digital plan with defined collaborative platforms, while others were experimenting with digital applications in isolated functional areas. It is important to note that the diversity of roles and company approaches reinforces the value created through tacit knowledge.

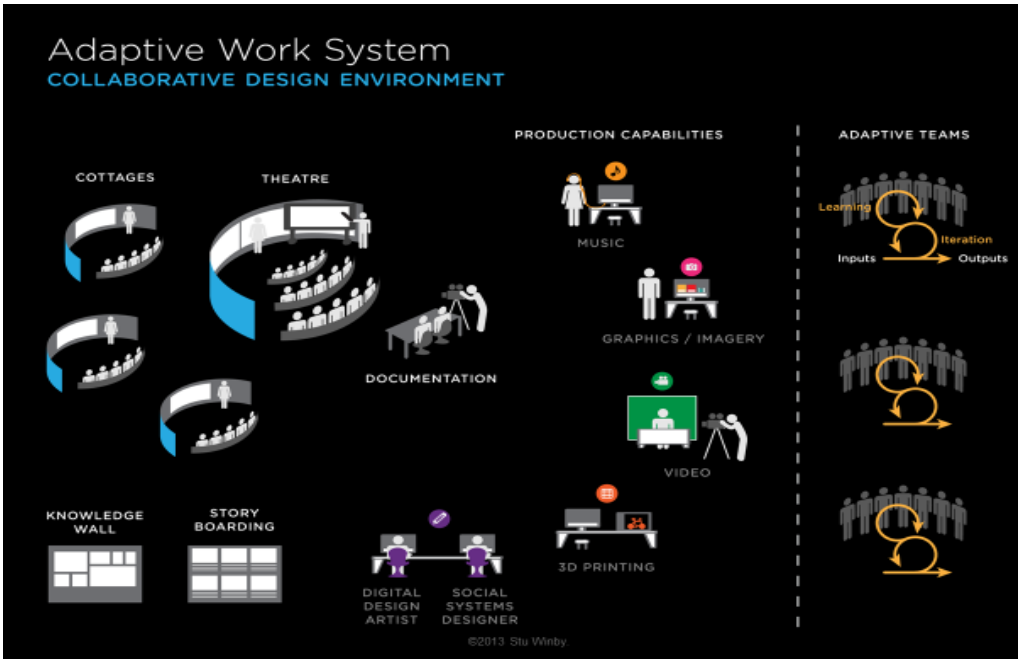
Company members learn from each other, create solutions not evident to anyone, and return to their organizations with a broader informed view of possibilities.

Environment

The lab space is physically designed to enable high levels of collaborative problem solving and decision making. This includes a theater where participants as a whole system hear report-outs from small group "cottages" on their work products. Insight and foresight ideas are created by participant large group dialogue by making sense of the integration of the data across the cottages, connecting the dots. Cottages are arranged in the work environment for small groups to deliberate in a time-box fashion and create a product. A product is a cottage small group response to an assignment and its specs. The theater – cottage arrangement is based on software development processes of focusing on the part and then seeing the whole and then back to the part, creating contextual meaning for the cottage work, and also speeds information processing.

The lab is designed as an information processing engine. Presentations are videoed as well as captured by documenters. White board outputs are photographed as artifacts. Everything is posted on a dedicated website real time. A green room is used to create video products based on a pre-designed storyboard. Areas of the room have data readily available for group problem solving. See Figure 2 for a depiction of the lab environment.

Figure 2 – Adaptive Work System: Collaborative Design Environment



Process

The two-day lab event generally follows a four-phase process.

- *Phase One*: Pre-event planning - clarifying the opportunity/problem to be addressed and identifying the right participants to attend
- *Phase Two*: Day one focus - building context by encouraging participants to work well beyond their usual boundaries, uncovering assumptions and establishing the context.
- *Phase Three*: Focuses on multiple iterations by testing assumptions, problem solving solutions, and strategically positioning the organizational system.
- *Phase Four*: Afternoon of day two - works the strategic view into tactical steps, establishing goals, work processes, projects, and time lines.

Results

The design lab is in service of meeting the objectives of the STARLab Alliance company members and researchers. The lab aims to achieve the following results:

- *Concrete Deliverables:* Documented artifacts (documents, video, slides, photos, graphic illustrations, etc.) for each specified deliverable. Comprehensive session proceedings. Documented prototypes and solutions.
- *Participant Learning:* Participants experience working in a different way, learning new knowledge through small cottage deliberations and large group discussions, and receiving new fresh solutions to problems and challenges.
- *Increasing social capital*: Building cross-company relationships so members can continue to learn from each other.

Summary

The design lab has been the core vehicle for the STAR Alliance to generate new knowledge and insight into the emerging new relationship between digital technology and organization design. The primary lab design objective has been to integrate a perfect mix of tacit knowledge with the right design tools and deliberations to create new insights and innovative solutions to technology - organization design problems. The design lab introduces a novel approach to action research, and also presents a model of how organizational networks can work in the future.

STARLab Alliance, Inc.

2297 Oberlin Street
Palo Alto, CA – 94396

1.443.845.3903
https://starlab-alliance.com

The STARLab Alliance is a non-profit learning consortium focused on creating next generation organization design and leadership models

The **Digital Organization Design STARLab** is a year-long learning experience that allows participants and subject matter experts to collectively explore and prototype practical and innovative responses to digitalization. STARLab Participants include 3-6 senior leaders from 10 companies, well-into the digital transition of their business models, who will partner with leadership and organization experts. The STARLab accelerates learning and creates organization design solutions that optimize the application of advanced technologies and human capital approaches to achieve agility and sustainable effectiveness.

STARLab Alliance Sponsoring Partners & Leadership

The Center for Effective Organizations Marshall School of Business University of Southern California	Sue Mohrman, Senior Research Scientist smohrman@marshall.usc.edu Chris Worley, Senior Research Scientist cworley@marshall.usc.edu
The Center for Creative Leadership	Bill Pasmore, Senior Vice President CCL and Professor Teacher's College Columbia University pasmoreb@CCL.org
SPRING Network – A Silicon Valley Design Firm	Stu Winby, CEO SPRING Network stu.winby@spring-network.biz

INNOVATION RESOURCE CENTER for HUMAN RESOURCES

Our partner, IRC4HR®, has provided funding to help make the STARLab Alliance program and research possible. Innovation Resource Center for Human Resources (IRC4HR®) is a 501(c)(3) private research foundation that seeks to make organizations more competitive, productive, and effective through improved people management practices and to serve the mutually beneficial interests of organizations, workers, and society.

https://irc4hr.org/