

TransPlant: Helping Organizations to Make the Transition

When the CERT[®] Coordination Center at the SEI needed a plan for disseminating 50 Internet security practices, Julia Allen and her team relied on TransPlant. A facilitated planning process developed by the SEI for diffusing and adopting emerging software engineering technologies, TransPlant helps technology developers to take a practical approach to technology transition.

For many research and development organizations, technology transition—the process of creating or maturing a technology, introducing it to its intended adopters, and facilitating its acceptance and use—is a challenging and unpredictable activity. TransPlant solves this problem by enabling organizations to develop an actionable plan for improving a technology’s successful transition. It can be used by Department of Defense (DoD) researchers and developers, managers of advanced technology development (ATD) programs, managers of acquisition or operational programs, and commercial organizations planning the rollout of a technology to multiple organizations or units.

For Allen, TransPlant resulted in a transition strategy for deploying her team’s security practices and an array of useful materials for communicating that strategy to others. Allen notes how effective TransPlant was in jump-starting its transition efforts: “We derived benefit at every step of the TransPlant process in terms of creating artifacts, descriptions, and other products that we could immediately put to use,” says Allen, whose team piloted TransPlant from August 2000-July 2001. “This provided strong motivation and measurable value to continue. We did not need to wait until we had a completed plan to get ‘useful stuff.’”

This “useful stuff” is one of TransPlant’s most compelling advantages, says Eileen Forrester, team leader for TransPlant. Forrester, who has been evolving TransPlant since the late 1990s, believes technology transition can be an effective process if technologists, managers, and other professionals are taught the appropriate skills and given the right tools for thoughtful planning. “Those of us who work in technology transition can get up in the clouds, musing over academic theories that account for how transition happens. But I like to take academic theories and models and figure out how to make them pragmatic, so that hard-nosed, results-oriented engineers and their managers can see an improvement in the adoption of their technologies,” Forrester says.

TransPlant features a set of work products that comprise the transition plan for an organization’s particular technology, and a template with guidance on how to construct the plan from these work products. TransPlant can also show technology developers how to attract the right kind of adopters and collaborators for their technology, and overcome obstacles for getting their technology into use.

By incorporating elements of strategic planning, product management, marketing, and communication, TransPlant helps teams to create dynamic transition strategies through its seven process steps:

1. Define problem, solution, and scope for planning.
2. Decide on a transition strategy.
3. Characterize adopters.
4. Identify effective transition mechanisms.
5. Select and synthesize: refine scope and strategy, design interactions among adopters, refine whole product and set priorities for action.
6. Prepare to manage risk.
7. Document the plan.

The impetus for TransPlant, Forrester says, stems from some misconceptions in the software community about technology transition itself. Often, people in software-intensive organizations assume that technology transition will happen automatically if the team has built a good technology. “I call this the “better mousetrap” fallacy,” Forrester says. “Technologists tend to think that if they build a good thing, people will find their way to it and adopt it on their own, based on its inherent goodness...Wrong.” The value of the technology has never been a good predictor of adoption and use.

“Plus, engineers sometimes think transition is one of those things anyone could do if they thought about it for five minutes,” Forrester says. “Effective transition practices are built from solid principles and disciplines. On the other hand, some software practitioners take the opposite tack, and think transition is something mysterious and not amenable to planning and design. Transition can be managed, much as any software project, though it requires skills engineers may not have.”

TransPlant currently exists as a facilitated process, with Forrester or one of her team acting as coach. There are three ways to apply TransPlant: 1. as a hands-on series of facilitated working meetings, 2. as a three- to four-day workshop, and 3. as a “hands-off” process, in which the technology team receives primers and mentoring from the coach only as needed. In all three approaches, participants learn about the drivers in the TransPlant process, such as dimensions of transition strategy, understanding the characteristics of adopters and how to use them in a transition strategy, the design and use of a value network (the total set of stakeholders, collaborators, and adopters who contribute to effective transitions), types of transition mechanisms (products and interventions for making transition happen), and risks (and mitigations for these risks) to successful transition.

Yet another way to learn about the process is through a Trans-Plant tutorial, which helps organizations to apply the Trans-Plant process to their own technology transition efforts. This full-day tutorial offers information on the challenges and opportunities in effective technology transition, the concepts behind TransPlant, and gives the participants exercises that are smaller scale versions of the activities in TransPlant.

TransPlant has been applied by 10 teams within the SEI as well as one DoD Science and Technology (S&T) organization and a small commercial software start-up company. Forrester is developing ways to make TransPlant into a tool that organizations can apply themselves. Next steps for TransPlant will include applying the process in large commercial software settings and in acquisition programs. The TransPlant team will also be looking for transition partners. Please contact the SEI if your organization is interested in learning more about TransPlant.

For more information, contact—

Customer Relations

Phone

412-268-5800

Email

customer-relations@sei.cmu.edu

World Wide Web

<http://www.sei.cmu.edu/asta/>