With impressive results, Hewlett-Packard has exploited design thinking to support change, envision the future, enhance portfolio planning, and establish a more flexible organization.

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Design Thinking to Make Organization Change and Development More Responsive

by Steve Sato, Sam Lucente, Douglas Meyer, and Deborah Mrazek

Although organization change and development (OC&D) approaches can be powerful, success hinges on how well these approaches are tailored for given situations. All too often, change leaders and managers do not have a reliable means to monitor and adapt the approaches to new circumstances. At Hewlett-Packard (HP), we believe design thinking adds responsiveness and flexibility to OC&D approaches. Why? Over a span of three years, as big shifts at HP occurred—a new CEO, two major reorganizations, and a merger of HP and Compaq—the hybrid approach we championed benefited

from continued support, while other comparable change initiatives became irrelevant and ceased to be funded. More important, our efforts have resulted in new organizations that deliver business results.

In the corporate design department at HP, our objective has been to position experience design more strategically and to build commensurate capability. We've purposefully used HP's version of design thinking to position and build experience design capabilities across the company, select the right OC&D model for specific organization situations, and modify the OC&D approach to be successful

for each situation. This article will:

- Provide an overview of design thinking and the four OC&D models we used
- Show which attributes these models have that make them compatible with design thinking
- Explain how we used design thinking to adapt each of the OC&D models to be effective for four different situations in HP
- Give examples of how design thinking in conjunction with the OC&D approach was applied to different groups in the $20 billion imaging and printing business at HP

The story, which continues today, started with experience design carried out by dispersed, disconnected practitioners throughout HP, all of whom had informal roles and processes. Our contribution resulted in the development of formal organizations, with leaders, budgets, structures, roles, processes, and resources.

We'll begin by providing an overview of design thinking as practiced at HP.

Design Thinking: A structured, yet responsive and flexible, approach to creating value

Design thinking as practiced at HP is based on five components: *intent*, *principles*, *discoveries*, *frameworks*, and *solutions* (see Figure 1).

Intent occupies a central place: to tentatively define and size, but not over-constrain, the challenge to be addressed. For organization change and development, we typically include an initial stance on the:

- *Goal*: Specific new organization behaviors
- *Customer*: Internal stakeholders
- *Outcome*: Better business results
- *Metrics*: Desired organization behaviors, which should occur without prompting

Discoveries note "things as they are" and offer insights on why they are that way.

Frameworks are hypotheses about patterns and relationships among customer needs (why the outcome is desirable), capabilities (why it's feasible), and business requirements (why it's viable).

Principles are derived from converting frameworks into prescriptive guidelines or imperatives. Making *discoveries* and creating *frameworks* are crucial to ensuring that the *principles* are relevant to the current situation.

Solutions are ideas that best fulfill the principles, made tangible through prototypes so that they can be evaluated in the real world. The probability of good solutions is increased by being cognizant of the principles.

The circular arrow in Figure 1 implies an ideal sequence, but more often than not, the actual approach jumps among quadrants. The cycle can be done in solitaire (the "brilliant designer" archetype), although for complex challenges it's more effective if done in multidisciplinary teams. Prototypes are judged based on the solutions' value-in-use, which suggests alterations to frameworks and principles, or even to the intent. This approach provides flexibility to adjust for unrecognized, sometimes indefinable, factors that affect the value of the solution. The structured nature of design thinking creates flexibility in applying and modifying OC&D tactics to specific situations. In fact, design thinking embodies a set of
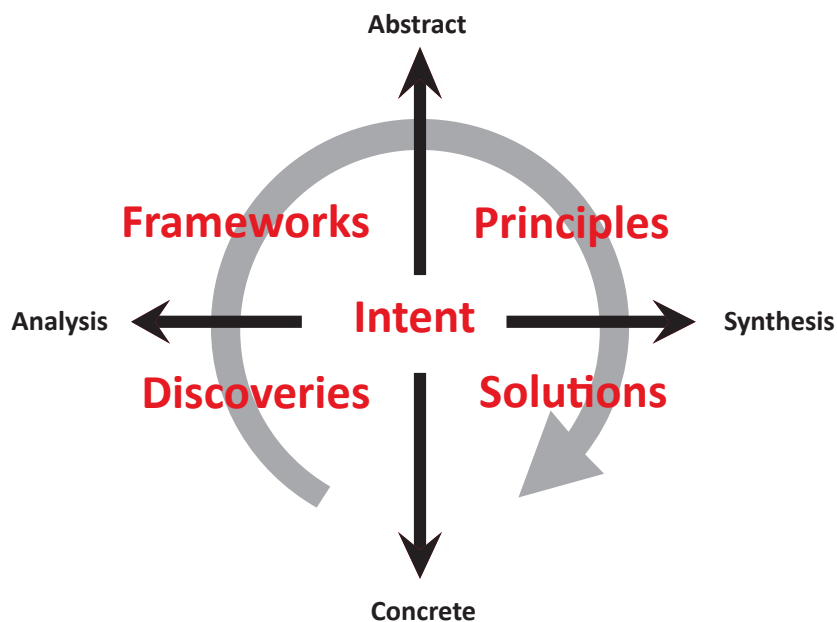

Figure 1. HP's design thinking model–a backdrop for organization change and development approaches.

attributes that augments conventional business thinking. For example:

It finds patterns and relationships in diverse variables. Design thinking relies on a bottoms-up approach, though not to the exclusion of top-down categorization or divide-and-conquer philosophies. Design thinking provides systematic ways to seek patterns and relationships in a broad number of diverse variables, including conflicting, ambiguous, or paradoxical data.

It creates principles or guidelines from patterns and relationships. The unique contribution of design thinking to business is to use the patterns and relationships found to generate a set of principles (guidelines, imperatives, and so forth) that increase the probability of success in addressing perplexing, complex, dynamic, ambiguous challenges. Technically speaking, it uses abductive reasoning to create heuristics.

It accommodates intuition and bias. A growing body of research written about by Damasio, Lehrer, Love,[1] and others suggests that decisions on complex matters are

primarily driven by emotion, not rationality. Intuition is informed by tacit knowledge and nonrational impressions that create bias and judgments. Design thinking helps decision-makers to integrate these factors into their decisions. In contrast to conventional business decision-making, factors in design thinking do not have to be defined, rationalized, or even articulated to be used. Design thinking structures intuitive decision-making, and then balances intuitive and analytical decisions.

It balances human-centeredness with company-centricity. Design thinking seeks to balance benefit to company with value to customers throughout the cycle, whether in balancing perspectives or in generating ideas.

It relies on actions reinforced with words. Design thinking gives priority to understanding actions and behaviors over verbal cues. Actions require an investment of energy, time, and resources, and are thus the result of trade-off decisions a person has made. In contrast, what people say often reflects abstract ideals and does not involve such decisions. Actions can lead to questions about why a person acted the way he or she did; this uncovers latent needs, relationships, and meanings.

It visualizes and prototypes. Visualization reveals relationships that are not accessible in verbal representations. Similarly, prototyping ideas make concepts concrete, so the concepts that embody the design principles can be shared and evaluated in real-world settings. What is learned from failures often hints at what will work.

It iterates systematically, and scales. Design thinking is scalable; it can be applied to messages, products, or strategies. It can be focused on a portion of a system simultaneously with the whole system. Iteratively developing, prototyping, and validating critical portions of a system can be more cost- and time-effective, and less risky, than doing an all-or-nothing, full-blown launch.

Now we'll provide you an overview of four popular OC&D models, their relationship to design thinking, and how we modified and applied each of them to four different groups and situations (Figure 2 on next page).

The Leading Change model: Gauging progress and setting goals

The questions we began with were these: Where do we start with a change initiative? Which groups should we be working with? How will we know if we have made progress?

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1. Antonio Damasio, *Descartes' Error: Emotion, Reason, and the Human Brain* (New York: Penguin Books, 1994); Jonah Lehrer, *How We Decide* (New York: Mariner Books, 2010); Terence Love, "Holistic Design" (the Linus Pauling Memorial Lecture, January 2009).

OC&D Approach:	Leading Change	Theory U	Rapid Results	Congruence Model
Intended Use:	*Orchestrate Change*	*See Emerging Future*	*Prototype New Way*	*Formalize New Way*
How design thinking and OC&D hybridized	Design thinking used to develop best tactic for situations to achieve Change Step objectives	Design thinking principles integrated with latter steps of Theory U.	Rapid Results used to grow new organization design thinking capability and to deliver business results	Use Design thinking to explore elements of Congruence Model and to co-create new organization.
Value of OC&D approach (in design thinking terms)	*Provides framework and suggests principles*	*Provides framework and suggests principles*	*Provides method and suggests framework*	*Provides framework and principles*
Sequence in design thinking cycle and terms	1. Customize principles 2. Ideate & deploy OC&D tactic (solution) 3. Make discoveries 4. Compare to Leading Change framework	1. Make discoveries 2. See patterns (frameworks) 3. Create principles 4. Ideate & deploy solutions	1. Customize & deploy rapid results (solution) 2. Make discoveries 3. See patterns (frameworks) 4. Derive OD principles	1. Make discoveries 2. Populate congruence framework 3. Revise OD principles 4. Co-Create OD models (solutions)

Figure 2. Why and how we integrated design thinking into popular, proven organization change and development approaches.

John Kotter's Leading Change model[2] (see Figure 3) describes eight milestones groups typically pass through to achieve lasting organization change. We used the discoveries portion of design thinking, as well as Kotter's model, as our framework to decide which groups within HP we needed to work with to assess their progress and to identify the next Kotter milestone we needed to work toward with each group. What we learned in the discoveries phase would help us to select and modify the appropriate OC&D approach to reach our goals.

Take, for example, Kotter's Step 5 (Empower others to act on the vision). The authors had learned that experience designers across HP were having difficulty positioning their contributions in a strategic way—one that would resonate with the executive stakeholders. To help them position their contributions in the context of HP's strategies, we developed a simple one-page business-case template that tied their contributions to the business strategy, as well as to the design groups' strategy. A series of short and sweet business cases positioned the teams more successfully, created line-of-sight to HP's strategies, and made design's wins visible to the stakeholders.

Theory U: Seeing a future in experience design

In early interviews with HP leadership on using experience design more strategically, the authors had found that some of them wanted to, in Kotter's words, "establish a sense of urgency" and "create a vision" around delivering better customer experiences. To help them do that, our

2. John P. Kotter, *Leading Change* (Boston: Harvard Business School Press, 1996).

1	**Establishing a sense of urgency**
2	**Forming a powerful guiding coalition**
3	**Creating a vision**
4	**Communicating the vision**
5	**Empowering others to act on the vision**
6	**Planning for and creating short-term wins**
7	**Consolidating improvements and producing still more change**
8	**Institutionalizing new approaches**

Figure 3. In John Kotter's change model, milestones aid in orchestrating change tactics and in developing organization systems.
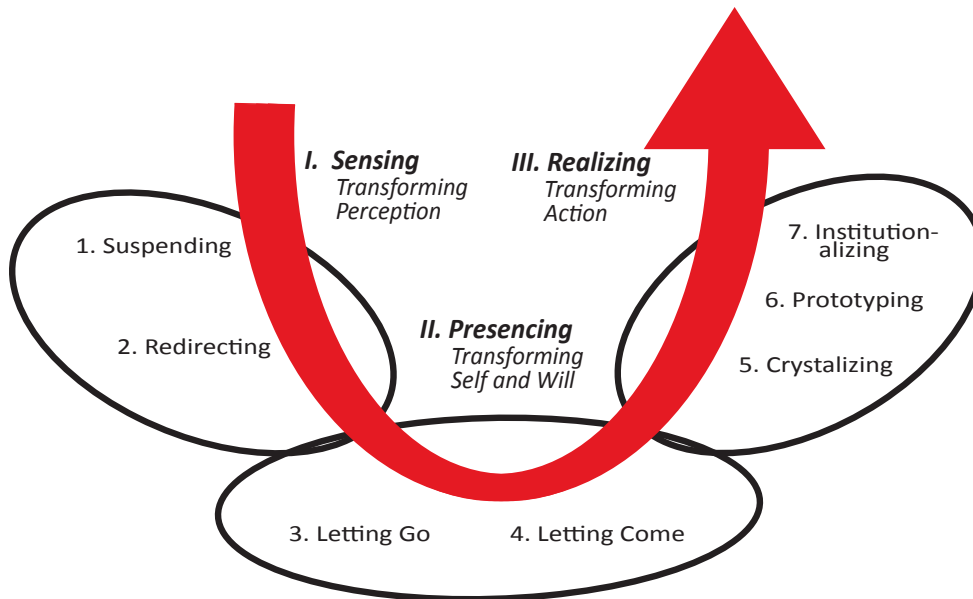
Figure 4. The Theory U model, associated with Peter Senge and colleagues, offers a process closely related to that of design thinking, with the intent of realizing an emerging future.

team decided to use the Theory U[3] approach (Figure 4) developed by Peter Senge, Otto Scharmer, and colleagues. Theory U creates an environment and guides individuals and groups on personal learning journeys to see their world as it is, to let go of old beliefs and thinking, to let new visions emerge, and then to prototype ways to achieve those visions.

With guidance through introspection and dialogue, participants see patterns, relationships, bias, and implicit principles—in other words, they see their old stories. Then they are encouraged to welcome intuition, as well as new patterns, relationships, and principles and replace the old stories with new ones. Interestingly, Theory U and design thinking share

the same sequence. In the version of design thinking we describe above, discoveries and frameworks are essentially about seeing old stories; principles and solutions are about creating new ones. The new stories eventually become old ones… and the cycle continues.

Although HP's digital printing business had experimented with customer-driven innovation, the organization was entrenched in a siloed, technology-driven approach. To establish an experience-driven design approach, the authors translated the Theory U concepts of widening the field of vision and seeing with new eyes into two programs aimed at digital printing business executives. In the first program, we guided executives in identifying experiences customers wanted HP to deliver that

aligned with the company's strategies and brand; this created a vision for the executives. The executives learned, as well, what their competitors were doing to deliver better experiences, thus establishing a sense of urgency for them. Next, we worked with the executives to identify and develop a list of companies that delivered superior experiences, the idea being that they could then visit with their peers at these other companies and learn how they used customer experiences to their competitive advantage. Both activities helped executives widen the field of vision and see with new eyes the value of experience-driven design.

The result was that the executive team sponsored a three-day customer experience immersion event for the entire digital photography organization. The event took as its central goal the idea of finding ways to deliver compelling digital photograph experiences to Mom—the target customer. The Mom Summit set in motion a series of rapid prototyping endeavors using an experience-driven approach to product development and solution portfolio planning.

Rapid Results: Prototyping new roles and processes

Next, we sought a way to prototype and validate new organization systems, much like the way designers develop a product. Robert Schaffer's

3. Peter Senge, et al., *Presence: Human Purpose and the Field of the Future* (New York: Broadway Business, 2005).

Rapid Results[4] approach (Figure 5) is a way to prototype new roles, processes, and policies while delivering urgently needed business results, and then to scale up capability and contribution in ensuing iterations. Each iteration takes no more than three months, and requires careful scoping of the project iteration to ensure the goals are achievable—but they must be accomplished using the new method. Furthermore, the project must measurably demonstrate the new capability's contribution to the business. This is a systematic, iterative approach that creates flexibility and adaptability in enacting

4. Robert Schaffer and Ron Ashkenas, *Rapid Results: How 100-Day Projects Build the Capacity for Large-Scale Change* (San Francisco: Jossey-Bass, 2005).

new organization behaviors. (Note that flexibility and adaptability, not to mention prototyping, are prime attributes of design thinking.) Rapid Results is action-oriented, so sponsors must move beyond agreement to commitment to follow through with their convictions, forcing fast failures if necessary (a good thing).

HP's retail printing business was seeing a trend toward decreased sales. Management realized that their traditional add features/reduce cost approach wasn't going to fully address this trend, and the work we had done with executives on the Mom Summit inspired willingness to try an experience-driven approach. We worked with one executive champion to employ a Rapid Results approach

to building capability by applying design thinking principles to portfolio planning for retail printers. First, we worked with the executive to put together a multidisciplinary team for the planning. We developed personas that the team used to view HP's offerings through the eyes of key customer segments (moms, for example). This ensured that the range of printer models would offer distinctive value from the perspective of specific customers. The insights gained helped to illuminate where HP needed to strategically offer printers to defend or advance competitive positions. Rather than just features and functions, the result was a product roadmap based on customer experiences with an agreed-to set of common signature experiences to be delivered across the entire portfolio. To make the product roadmap easier for product development teams to grasp and act on, we created archetype models that demonstrated the signature experiences and an HP design attitude language that teams could use to compare the gap they experienced between the existing and the new offerings. Executives reviewed the team's new approach, the archetypes, and the recommendations to make key investment decisions. We subsequently worked with selected product development teams, using
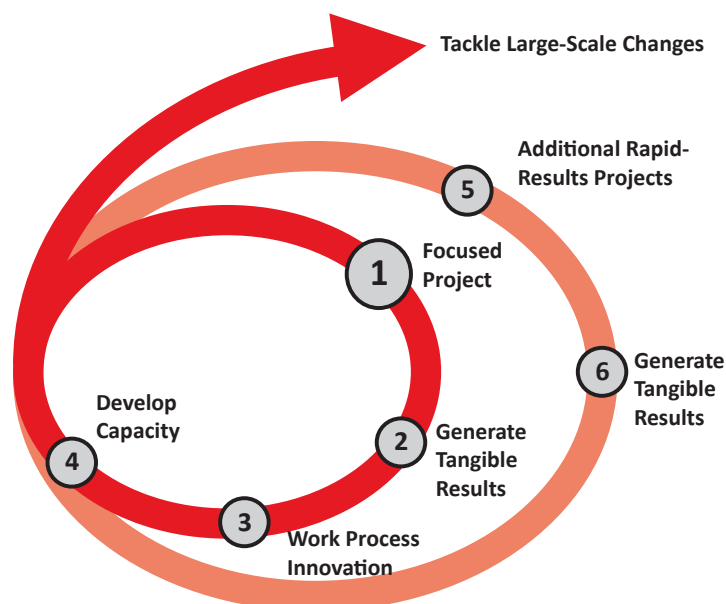
Figure 5. Robert Schaffer's Rapid Results approach aligns with the principles of prototyping and "doing-to-think" seen in design thinking.

Rapid Results to apply the same roles and process to define, develop, and refine signature experiences.

The Congruence Model: Formalizing the design function

To constructively discuss with executives which organization changes were needed and why, we felt we needed a general model of organizations. We chose Nadler and Tushman's Congruence Model[5] (Figure 6), which is based on the principle that an organization's performance is derived from four elements: *tasks*, *people*, *structure*, and *culture*, and the higher the congruence among these elements, the greater the organization's performance. To resolve incongruence, the Congruence Model offers a

5. David A. Nadler and Michael L. Tushman, *Competing by Design: The Power of Organizational Architecture* (New York: Oxford University Press, 1997).

systematic way to consider the root elements that drive organizational performance, and offers principles for designing more congruence into the organization.

Design thinking aids in revealing and understanding the human and informal elements of the Congruence Model. We could observe our organization's behaviors (discoveries, in our design thinking model), and then speculate on why those actions were taken. This would allow patterns (frameworks) to emerge in how HP balances its formal organization (structure, governance, and metrics) with the informal version (culture and capabilities). Then we could use the Congruence Model with leaders to visualize their organization and to redesign it to ensure more alignment among the four elements and

with other parts of the company. (The Congruence Model would also allow us to prototype or simulate new organization structures.)

Our first task was to ask the director of the new organization to describe how he would answer the questions: "Why are we?", "Who are we?", and "Where are we going?" His responses would reveal his beliefs and the organization design principles he was implicitly employing. We used those responses to compose an initial organization structure, to identify hiring criteria for key staff, and to set priorities for governance. Next, the director convened a meeting with his existing key staff to add the next layer to the who, why, and where questions ("Who does what, and how?"). The meeting rendered a provisional map of roles and responsibilities both
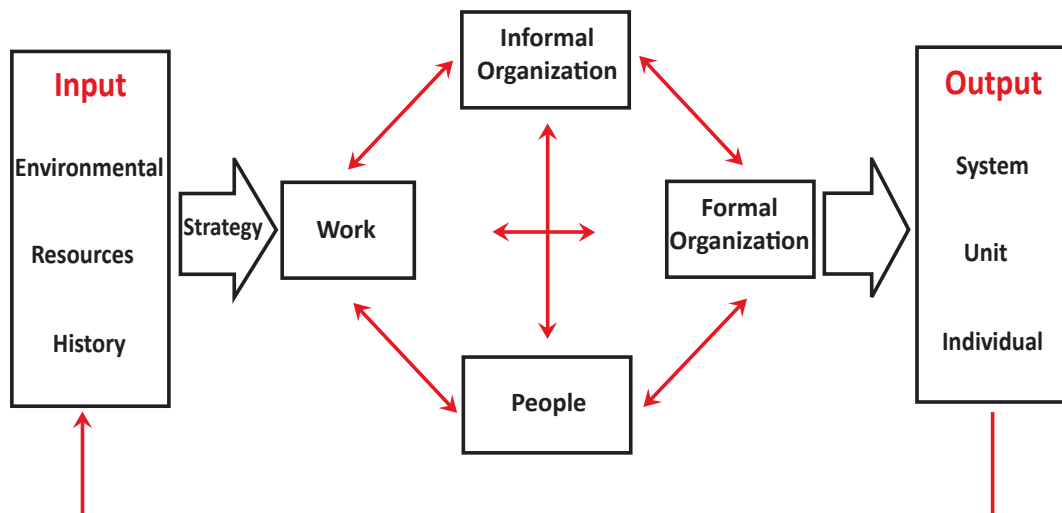

Figure 6. The Congruence Model suggested by David Nadler and Michael Tushman is a holistic framework for architecting high-performance organizational capability.

OC&D Approach:	Theory U	Rapid Results	Congruence	Leading Change
Attributes of Design Thinking:				
Finds patterns and relationships in diverse variables	Facilitates this attribute	Facilitates this attribute	Facilitates this attribute	Facilitates this attribute
Creates principles or guidelines from patterns and relationships	Facilitates this attribute	Side benefit of approach	Side benefit of model	Side benefit of model
Accommodates intuition and bias	Facilitates this attribute	Can accommodate	Can accommodate	Can accommodate
Relies on actions reinforced with words	Can accommodate	Requires actions	Can accommodate	Relies on observed actions
Balances human-centeredness with company-centricity	Can accommodate	Can accommodate	Inherent in model	Can accommodate
Visualizes, prototypes, and validates solutions, aka "do to think" or "play"	Visualize & prototype	Prototype & validate	Visualize	Visualize
Iterates systematically and scales	Can accommodate	Facilitates this attribute	Can accommodate	Can accommodate

Figure 7. The similarities we identified between design thinking and organization change and development (OC&D) approaches.

within the design organization and to align with key stakeholders, until more formal organization systems could be proposed, approved, and established. The information gathered also generated a much-needed identity for the team.

OC&D and the benefits of design thinking

To sum up:

- First, we used the design thinking cycle to regularly monitor organization changes (that is, to make discoveries). We took what we learned from that step to effectively position and build experience design capabilities (that is, revise frameworks, review principles, and refine our approach).

- Second, we carefully selected OC&D models that would work well with our design thinking approach. These would become part of our solutions and would work toward fulfilling our specific OC&D goals.
- Third, we used the information we gained from regularly monitoring organization changes to modify our OC&D approaches. In this way, we could continue to be successful and have as much impact as possible.

Figure 7 summarizes the synergies we found among attributes of design thinking and each OC&D model.

The approach we developed has been durable, and it has outlasted and outperformed other change initiatives.

There is, of course, much more we could explain about how we applied these hybridized approaches than we have space here to cover. We therefore welcome any further questions readers may have, and will be happy to answer them personally.

Suggested Reading

Mitchell, W. *Picture Theory: Essays on Verbal and Visual Representation* (Chicago: University of Chicago Press, 1995).

Hewlett-Packard Design Practice System, 2008 (select excerpts available from the authors). ■