

# The Art of Problem Discovery: Adaptive Thinking for Innovation and Growth

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## Prologue

*How can we make the floors cleaner?* That's the question that Proctor & Gamble asked its chemists.<sup>1</sup> Years of working on this problem, however, yielded no improved cleaning solution.

So Proctor & Gamble took a different approach and hired a design firm.<sup>2</sup> Rather than focusing on chemical improvements, the designers watched people clean. Observations uncovered the real problem: mops. People spent more time cleaning their mops than they did cleaning their floors. The mop was an ineffective tool for the task at hand.

This insight led to the development of the Swiffer—a billion-dollar product line for Proctor & Gamble. The lesson learned is that innovation isn't simply about asking the right questions; it's also involves framing questions differently. Our approach to problems is affected by the manner in which they are presented. To the chemist, a cleaner floor was a scientific problem, while to the designer it was a human problem.

It's vital that we are able to shift perspectives when we need to generate different types of results. If our thinking is too narrow then we may miss breakthroughs. How we formulate problems is just as important as how we solve them. In fact, our ability to discover and translate problems may well be the most significant step toward realizing innovation.

## Introduction

We're all problem solvers. Every day we deal with unexpected issues commanding our attention. We fix

things when they break and correct errors when we detect them. We answer tough questions and make difficult decisions.

This paper isn't about problem solving. Instead, I want to draw attention to how we think about problems: how we can discover and convert them into new strategic initiatives. Often we jump prematurely into *problem solving mode* before fully exploring the wide range of possibilities.<sup>3</sup> This oversight can ultimately generate solutions that are good enough, but not as good as they could be.

Just to be clear, the problems under consideration are not operational. While day-to-day matters such as facility breakdowns, difficult patrons, or server failures are vital concerns, my focus is on the impact of *systematic disruption*.<sup>4</sup> Higher education is being reshaped before our eyes. Many things we do today won't be necessary tomorrow. Likewise, there are many things that we're not doing that we'll need to learn. Library leaders taking a problem-oriented perspective will be well positioned to discover what's necessary and empower their institutions to evolve more effectively.

The frameworks and practices outlined here are intended to assist in identifying potential growth areas, which I refer to as the art of problem discovery. By seeking out the needs, problems, and aspirations within our communities, we can apply empathic measures toward success. Since each library is unique, I conceived this paper as a starting point to provide cognitive tools for addressing local situations.

## What Is A Problem?

The problem-solving literature offers many definitions, but for the purpose of this paper: problems are “questions raised for inquiry, consideration, or solution.”<sup>5</sup> Our pursuit is to seek better questions. Questions with impact. Questions that help us identify obstacles. Questions such as:

- *What three things do students struggle with the most?*
- *What challenges do researchers face when writing grants?*
- *What information would help academic deans make decisions?*

Problem discovery entails looking for ways around barriers. Good questions are our currency. They help us investigate the unknown and point us in new directions. But not all problems are equal. Some are presented to us, while others are discovered or created.<sup>6</sup> It's important that we know the difference so we can engage productively:

*Presented problems* tend to be ones that have been encountered before, such as the process of shifting print volumes from one floor to another. What information would you need to perform that task?

*Discovered problems* are self-initiated. Imagine that noisy groups start using your quiet reading room. Your colleagues may view them as a nuisance, but you ask: *why?* What environmental aspects promote collaboration as opposed to quiet concentration?

*Created problems* are ones we invent. Your team decides to explore developing a mobile app for the library. What functionality should it have? What should the user experience be like? The act of creating something new presents a series of questions that need to be examined.

Different problems require different actions. The way they are framed potentially limits or broadens our response. Problem discovery, more than anything else, is an attitude driven by curiosity and empathy: how can we learn more so that we can do more for our users? Problems are valuable in challenging us to confront *business-as-usual* thinking and to imagine what else is possible. In this sense, problems are a growth strategy.

## Problems as Products

Problem discovery encourages us to probe around the fringes rather than to stay confined within conventional limitations. During this stage of ideation we operate as designers visualizing numerous options. In this manner, problems become products waiting to be shaped. Some examples:

- A relationship with the prototyping lab
- An understanding of the practices of biology post-docs
- An online platform for library instruction

These objectives (a partnership, an assessment, and a website) represent things we can accomplish. Each of them includes a sequence of questions. *What mutual benefits could be derived from the lab? What are the outputs of biology researchers? What limitations of face-to-face instruction could be addressed online?*

By treating problems as products-in-development, we can apply various strategies to help determine the necessary tasks. Sometimes this effort is straightforward, and other times more complex. For instance, a relationship with a particular campus lab might begin with a tour in order to gauge service capabilities, whereas interviewing researchers about their needs would likely require a series of steps.

While having clear objectives helps to structure strategies, sometimes the outcome isn't well defined. For example, the Swiffer designers started out by watching people clean. They didn't begin with the goal of reinventing the mop; that insight had to be discovered.

Innovation thought leader Clayton Christensen encourages us to consider the *job-to-be-done* point of view.<sup>7</sup> Our services should revolve around enabling people to accomplish specific tasks. For example, biology post-docs might benefit from data management services—the *job* is to help them acquire a grant. An online instruction platform could provide students with basic research skills on-demand—the *job* is to help them write papers more efficiently.

Although many aspects influence the product development cycle, the key takeaway is acknowledging that there are some things that we just don't know. Accepting that, we design a learning process to fill those knowledge gaps.<sup>8</sup> The objective is to move our thinking from hunches toward more viable and actionable directions.

It is helpful to divide the product development process into three distinct stages.<sup>9</sup>

1. Incubation
2. Preparation
3. Production

Each stage requires a different attitude, perspective, skillset, and objective. Incubation defines the discovery period when different ideas are gathered and explored. During the preparation phase the most intriguing ideas are shaped into full concepts. Through greater structure and planning, we figure out what's needed to make it happen. The production phase transforms plans into reality. This is where the concept is put into practice and the idea is fully realized.

### Problem Designers

When Ron Hickman pitched the idea of a portable workbench, everyone turned him down. There wasn't a perceived need. So Hickman took his prototypes to trade fairs where the demand was overwhelming. Black & Decker eventually bought in and marketed the WorkMate consequently selling over 30 million benches to date.<sup>10</sup>

Not everyone can see problems. In fact, one of the biggest mistakes is to assume that problem solvers should also be seekers who find and frame new possibilities.<sup>11</sup> People focused on daily operations may be too entrenched to perceive or desire new directions.

Startup guru Eric Ries believes that organizations should employ two core teams: problem finders and problem solvers.<sup>12</sup> One group remains on the lookout for what's wrong or what's missing, and the other group is devoted to addressing the necessary changes. The skill, attitudes, and workflows vary greatly among these functions. An interface designer typically doesn't code the backend of a website. And an electrician usually won't design blueprints. A great problem solver isn't necessarily a great problem discoverer.

Economist William Easterly places this notion in context by suggesting that we need to function as *searchers* instead of as uninformed *planners*.<sup>13</sup> The planner presumes to know the best way to address problems, while the searcher admits that she doesn't know the answers in advance and therefore commits herself to pursuing solutions through trial and error.

Searchers focus on specific tasks and test the effectiveness of different approaches, making adjustments along the way. Alternately, planners adhere to fixed objectives and work to achieve the plan as it was prescribed.

Growth-oriented leaders have different objectives than leaders focused on sustaining traditional operations. They push out in new directions, not settling for a static sense of excellence. The innovative leader doesn't aspire to give users only they what, but aims to discover what they need and then designs solutions that will help advance those interests. The art of discovery is a continual search for the next step.

### Thinking Lenses

Astronomers use a technique known as *averted vision* for viewing faint objects.<sup>14</sup> Instead of observing something directly, they glance slightly to the side. This method enables them to see the item more completely.

The same technique can be applied to viewing problems. If we look at them head-on, they may appear too familiar or too foreign for us to fully comprehend. Instead, we need to gaze across the surrounding landscape.

As stated earlier, how we frame problems impacts the way that we think about solutions. To do this effectively we need to apply adaptive thinking—knowing when and how to use different models to accomplish different tasks. In libraries, we often praise critical thinking, yet this method is actually harmful to ideation. Rather than dissecting ideas through critical analysis we need to embrace the designer's mindset of crosspollination and synthesis.<sup>15</sup> Here are a few "thinking lenses" to expand our perspective.

### Systems Thinking<sup>16</sup>

A systems lens broadens our view. It propounds that all distinct components operate together to form a cohesive, interconnected whole. A commonly referenced example is an automobile, in which the brakes, tires, engine, steering wheel and so forth, work collectively to propel the vehicle. If one piece fails then it cannot function properly.

Libraries, too, function systematically. Information flows from selecting, purchasing, processing, and describing resources to providing access and instruction. Libraries are a conglomerate of utilities forming a united knowledge provisioning network.

In terms of problem discovery, systems thinking provides a powerful visioning tool. Library leaders can observe patterns across processes rather than getting mired in tiny details. From the systems vantage point they can detect issues, adjust procedures, or uncover previously unrealized opportunities.

**We apply systems thinking when we want to explore correlations.**

### *Design Thinking*<sup>17</sup>

This lens enables us to see through the eyes of our users. Similar to systems thinking, design thinking encourages us to examine the total experience beyond individual transactions. Visiting Starbucks is more than just getting coffee: it's a distinct encounter where the service is choreographed and a mood is calibrated.

Design thinking is rooted in empathy. By seeking to understand what people are trying to accomplish we become better positioned to help them succeed. This variant of human-centered design incorporates behaviors into the process. Minimizing users' frustrations or confusions amplifies the utility, and thereby the desirability of a product or service. The Swiffer team used design thinking to study *the cleaning experience* and then turned that insight into a better tool for the task.

This methodology emphasizes solutions-based thinking, beginning with an intended goal rather than a specific problem. *Cleaner floors. More grants. Better research papers.* This process differs from the classic scientific method, which defines the parameters of the problem and then tests the hypothesis. Design thinking starts with the desired outcome and then works backwards.

Amtrak offers a good case study.<sup>18</sup> The train line wanted to revamp the interior of their passenger cars to attract new customers. Their design firm, however, urged them to consider the totality of all customer touch points, from purchasing tickets to waiting in the station to boarding and disembarking. Fancier furniture alone wasn't enough; instead, Amtrak needed to reinvent the *train riding experience*.

**We apply design thinking when we want to build better experiences for our users.**

### *Integrative Thinking*<sup>19</sup>

This lens enables us to combine diverse ideas into a more cohesive concept. Integrative thinking aims to synthesize positive components, while minimizing negatives. The objective is to develop *togetherness* and to avoid wholly accepting one outcome at the expense of others.

Using a library example, maybe you have a traditional multi-desk model and are considering merging stations into a single service point. You might also

be exploring alternative options like roving assistance or kiosks. Each of these models has obvious pros and cons. Instead of selected one over the other, the integrative approach endeavors to combine them and offer a different resolution.

A benefit of this approach is that it shifts thinking away from positional battles toward developing shared interests.<sup>20</sup> Reaching a mutually desired outcome, *what's best for library users*, becomes the target, rather than satisfying personal preferences. The integrative framework prioritizes the most relevant aspects and separates the less critical ones. Attention focuses on challenging assumptions and measuring their validity. The objective here isn't to compromise, but rather to establish a foundation for a more robustly imagined model.<sup>21</sup>

**We apply integrative thinking when we want to merge several ideas into a new cohesive concept.**

### *Lateral Thinking*<sup>22</sup>

This lens empowers us to generate novel and unexpected ideas. Whereas traditional "vertical" thinking carries ideas forward through a predictable analytical process, lateral thinking challenges the status quo. It constitutes both a mindset and a series of techniques aimed at disrupting routine thinking by searching for different types of ideas, solutions, or problems.

Lateral thinking distances itself from critical thinking, which is arguably concerned with judging value and seeking errors. Contrarily, lateral thinking directs the movement of ideas in multiple directions.

A sampling of methods:

- *Alternatives*: imagine different ways of doing things. *What if there wasn't a reference desk?* The conversation isn't about "why we need a desk" but instead visualizes other service models that could emerge.
- *Whitespace*: focus on areas where no one else is looking. As you consider your surroundings stay alert things that are missing or previously unarticulated problems. Students studying at night don't want to lose their seat. What if the library café offered an occasional cart service bringing snacks to hungry patrons?
- *Challenges*: break from the limitations of current practices. This tool is designed to ask the question "why?" in a non-threatening man-

ner. Challenging existing values or operations, pushes us to consider new opportunities. *Why does microfilm need to be kept in the main library building?* By exploring this thread we may find that some materials could be moved elsewhere or we may consider initiating on-demand delivery.

**We apply lateral thinking when we want think creatively rather than critically.**

### ***Agile Thinking***<sup>23</sup>

An agile lens enables us to modify concepts while projects are in motion. As we learn more about what needs to be done or what else might be possible, we can adapt our initial plans. Agile derives from the software development industry and describes both a mindset and a method that encourages iterative development. Objectives and requirements are expected to evolve, enabling partners to contribute towards a better outcome.

A benefit to this type of thinking is that it minimizes reliance on assumptions and instead embraces a discovery-oriented position to quickly address needs or issues that surface. With everyone on the same page, it invites creativity and establishes a tone of always being on the lookout for appropriate changes.

**We apply agile thinking to projects that require constant change.**

### ***Computational Thinking***<sup>24</sup>

This lens enables us to analyze processes for unrealized opportunities. Computational thinking draws from computer science techniques that apply algorithmic methods to finding, defining, and solving problems. This mode is less concerned with generating solutions than with determining the sequence of steps necessary for a particular outcome.

Let's say that you want to add a new feature to your website. Computational thinking would be used to envision what needs to be coded line by line. This thinking style, however, extends beyond software development to diverse tasks like writing a policy, designing a new learning space, or launching a fundraising campaign. Each of these objectives requires a sequence of tasks to be performed in an optimal order—essentially, an algorithm.

Computational thinking helps us determine not only what information is necessary, but also that

which is missing. It encourages a *hacker mentality*, in creating new possibilities or reviewing existing processes for better efficiencies, anomalies, vulnerabilities, and other correlations. Examples might include examining interlibrary loan procedures or reviewing curricula for learning engagement opportunities.

**We apply computational thinking to develop better processes.**

### **Practices**

Meriwether Lewis and William Clark crossed the continent with commercial, military, and political goals in mind. Yet the overarching objective of their expedition was gleaning an accurate sense of the resources and character of the West—to acquire new knowledge.

To undertake their discovery-based mission they received training in geography, astronomy, ethnology, climatology, mineralogy, meteorology, botany, ornithology, and zoology prior to the trip.<sup>25</sup> Over the course of their journey they generated 140 maps and gathered scientific information on over 200 plants and animals.

The compelling aspect of Lewis and Clark is their preparation. How did they plan for the unknown? Traveling for two years across 7,000 miles of wilderness, they had to be agile thinkers, adapting to the environment they encountered.

Startup companies encounter a similar process. Taking an idea from concept to implementation and building a successful business is a challenging journey with unexpected pivots along the way. Entrepreneurs often refer to innovation as a *mindset not a toolset*.<sup>26</sup> While numerous techniques and methodologies can be applied to finding and solving problems or developing ideas, there's no magic bullet.

Designer, hacker, anthropologist, and product developer: our roles as leaders require us to wear multiple hats.<sup>27</sup> Different problems require different approaches, and we need to be able to adapt thinking styles accordingly. Problem discovery isn't a one-size-fits-all process. Our libraries have unique cultures and varying tolerances to change. Our institutions are all slightly different and therefore our efforts must be adjusted appropriately. Here is a collection of practices to inspire your thinking:

### ***Search For Better Questions***

Start by asking all the obvious questions.<sup>28</sup> Get the easy stuff out of the way in order to make room for

the more difficult or hidden possibilities. Once a concept has been defined you can push beyond what is predictable and into more imaginative directions.

Two of the most powerful questions a leader can ask are “Why?” and “What if?” *Why are we doing this? Why is this method effective? Why does this matter? What if we try something new? What if we changed the service model? What if we stopped doing this?*

To spark innovation we need to think differently. Asking thought-provoking questions can lead to novel concepts that push our creativity. It is vital that we can confidently free ourselves from conventional thinking and indulge divergent paths. Here are three frameworks we can use to ask better questions:<sup>29</sup>

- *Challenges*: How can we select only the resources that users need?
- *Provocation*: What if we only purchased digital content?
- *Achievement*: What steps do we need to take to become a user-centered library?

Simply asking the right questions doesn’t go far enough. Innovation-minded leaders should be conscious of developing a *questioning culture*—fostering an environment where questions are linked to growth rather than criticism.<sup>30</sup> Our intention should be to cultivate the *learner mindset*: optimistic, curious, and open to new possibilities. This mode contrasts with the *judger mindset*, defined as reactive, protective, and skeptical of change. Questions can be our greatest assets or the things holding us back. It’s the difference between “how can we do this?” and “why would we want to do that?”

Our quest should always be one for better questions—those that will enable us to gain a richer understanding, consider alternatives, or reach for new insights. The best questions add value and lead us in unexpected directions.

### **Change Your Thinking Cap**

Questions aren’t the only things that get us thinking differently; sometimes we have to challenge ourselves more deliberately. The benefit in this is that it enables us to appreciate a wider perspective. The *Six Thinking Hats* structure offers a guide for leading ideation sessions.<sup>31</sup> The framework isn’t scripted, but it establishes roles for more conscientious engagement.

- Blue Hat—the moderator who frames the process
- White Hat—the objective perspective, con-

cerned with facts and figures

- Red Hat—the emotional perspective
- Black Hat—the critical perspective
- Yellow Hat—the optimistic perspective
- Green Hat—the creative perspective

A great way to use this system is to assign participants a particular hat for a set period of time. For example, when a new idea is being discussed, everyone is encouraged to offer yellow-hat thinking as an effort to explore all the positive attributes. The moderator could then ask everyone to switch to green hats in order to talk about how the concept might take shape.

This tool is helpful for facilitation because it directs the conversation toward one aspect at a time, rather than going off on too many tangents. Moderators can also ask people to switch their thinking. Therefore, if a committee member is too emotionally invested or overly critical, he could be redirected from distracting a productive conversation. This ability to steer attention is a powerful practice for leaders. It enables you to keep people focused and establish a comprehensive view of the topic at hand.

### **Ethnography**

Ethnography and other sociological methods have become widespread in libraries, trending away from satisfaction surveys toward observational and behavior studies seeking to uncover unexpressed or unmet user needs.<sup>32</sup> While case studies and toolkits abound in the literature, I want to highlight two examples emphasizing discovery-orientation from my own experiences.

#### *Graduate Students at University of California, Santa Barbara*

Working with the Graduate Division and an anthropology PhD candidate, the UCSB Library formulated an ethnographic study about graduate students.<sup>33</sup> Our interest was to gain a broader understanding of the lifestyle, workflows, and workloads of graduate students as they progressed through their degree programs. While library usage and access to scholarly materials was included, our focus was much wider, exploring topics such as advising, peer mentoring, teaching, writing, and social adjustments. We were curious about barriers to completion, as well as aspects that accelerated or enhanced progress.

We interviewed and shadowed forty graduate students from a wide variety of disciplines. This methodology included one-on-one conversations in a set-

ting of the students' choosing (often campus cafes) as well as a tour and observation period in their primary workspaces. Our investigations led us to classrooms, computer labs, fabrication facilities, theater stages, music rehearsal studios, offices, and even a remote atoll in the South Pacific (via Skype).

While we learned a lot about the use and perception of the library and resources, the real value lay in understanding UCSB's graduate student culture. One unifying problem that we discovered was a lack of access to professional development materials: how to publish articles, present at a conference, and apply for grants. Coverage of these and similar topics varied among departments and advisors, and there was an assortment of related ephemera and workshops that were not available in a centralized location. We recognized a great opportunity for the library to display initiative and leadership by improving the graduate experience.

#### *Discovery Teams at Virginia Tech*

The Virginia Tech Libraries launched a discovery team program to investigate user preferences and behaviors.<sup>34</sup> Forty-eight people participated and were divided into small teams with themes, such as technology, media production, and group collaboration. Each team spent time interviewing and observing students matching criteria, selecting locations within the library, on campus, and around the Blacksburg community.

Insights were gathered, shared, and discussed with library employees and openly with campus partners. Much of this work laid a foundation for renovation planning and for considering on new services. The method proved effective for getting a larger number of people involved and engaging with users in a non-traditional context. It helped many of our librarians and staff to understand the desired changes that needed to be made.

Ethnography and related techniques can jumpstart your design thinking process. Like the Swiffer design team's observations of people cleaning, these types of interactions with students, faculty, and others help bolster our empathic insights and pinpoint areas of potential growth.

#### **Affinity Groups**

Focus groups are powerful discovery tools. Structured conversations with library users (or non-users) pro-

vide rich data. They can also help to unravel delicate or tricky instances of service failures, miscommunications, or other missed opportunities. When moderated effectively, focus groups are a valuable instrument for provoking new insights, validating perceptions, and exploring lateral thinking.<sup>35</sup>

Affinity groups are a useful focus group technique.<sup>36</sup> Participants are given a broad topic such as: *What does the ideal group collaboration environment look like? Describe the most challenging course you've ever taken. How does technology influence your life?* Using sticky notes, participants work on responses independently and are occasionally given prompts to ignite their thinking. The goal is to capture as many ideas as possible. The activity then shifts into a collaborative effort with participants combining all of their ideas and adding new ones as they sort them into similar categories. Finally, a follow-up conversation takes place about the concepts and their thinking throughout the process.

Focus groups might not always provide the answers we need for breakthrough ideas, but they can help us discover additional questions to explore using other methods.

#### **Curriculum 360**

Curriculum mapping isn't new to libraries. This technique has been used to reflect upon instructional practices and develop appropriate strategies.<sup>37</sup> By reviewing the sequence of course content, librarians can determine opportunities for introducing research skills and tools.

While much can be learned from piecing together documentation, including course catalogs, accreditation packets, past assignments, and syllabi, additional insights arise from capturing a 360-degree perspective. Through interviews and surveys of students, faculty, advisors, alumni, tutors, teaching assistants, lab assistants, and others, a more comprehensive picture comes into focus.<sup>38</sup>

Besides targeting specific courses in order to deliver customized instructional content, curriculum mapping can pinpoint other learning needs, such as visual, data, or media literacies. Librarians can identify capstones and group-intensive projects and offer specialized support. Additionally, engagement strategies could be developed for courses using particular pedagogies, such as service-learning or problem-based learning.

Curriculum mapping is a strategic discovery tool. When enhanced by 360-degree visualization practices, it taps into empathic design. This connection enables us to see what students are learning, how they feel about it, and how those feelings impact their progress.

### **Partnership Profiles & Audits**

Academic libraries work with many partners across their campuses. Collaboration includes areas of academic, research, cultural, and social engagement. Creating profiles for these diverse associates and performing regular informal reviews on their operations and aspirations can lead to new opportunities.

A key measure is determining the role that the library currently fills:

- Instruction (library as service provider)
- Data management planning (library as consultant)
- Campus events (library as sponsor)
- Media lab (library as landlord)
- Institutional repository (library as publisher)

Libraries are different things to different people. By understanding the functional purpose, or *the job-to-be-done*, we are better able to fulfill expectations. This audit also becomes a growth strategy for expanding and adopting new roles. Data management consulting could lead to grant partnership as well as hosting. A one-shot instruction session could lead to co-teaching a course. A campus event, like a Common Book program, might shift responsibilities to the library, evolving it from sponsor to steward.

This strategy calls for opportunistically observing and understanding the needs and objectives of campus affiliates. *How can we help advance their interests?* Take the campus Writing Center, for example: we want students to find good information and the Center wants them to apply it effectively. Devising a mutually beneficial collaboration may address both outcomes.

Developing profiles and conducting informal audits not only make libraries better partners, they also make them more empathic, responsive, and innovative.

### *IDEO's Discovery Process*

IDEO is a premier design and innovation consultancy firm. They have developed many products that we use every day. IDEO employs a variation of design

thinking that can be applied beyond the practices of business or product development. In fact, they created a toolkit specifically for educators, walking them through its innovation methodology.<sup>39</sup>

The process includes five phases: Discovery, Interpretation, Ideation, Experimentation, and Evolution. IDEO encourages human-centered, outcomes-based exploration. For example, *how do we help students thrive* is a different question from the metrics-based *how do we raise test scores*.

IDEO recommends starting out with broad questions posed as aspirational challenges. *How might learning spaces be better designed to meet students' needs? How do we create a 21<sup>st</sup> century learning experience at our school?* Their process then works toward achieving each goal.

While the full framework is beyond the scope of this paper, the *Toolkit* offers a practical guide for ideation and development. Whether you are considering something tactile such as a mobile app or a more process-oriented initiative like a new service model or better workflow, IDEO's methods can help you advance your needs.

### **Conclusion**

Many astronauts experience a phenomenon known as *the overview effect*, a cognitive shift in awareness while viewing Earth from orbit.<sup>40</sup> They report a profound sense of interconnectedness: seeing our planet as an ecosystem rather than just the place they live.

Pushing ourselves outside of traditional library boundaries can have a similar impact on our self-awareness. Our day-to-day activities magnify a sense of significance; yet, viewing campus activities more holistically conveys a deeper perspective. This empathic outlook can alter perceptions; students and faculty become more than gate counts, web analytics, reference questions, or user-name-and-passwords. They are people trying to solve problems.

The intention of this paper was to expand perspective. As leaders we need to be able to adapt our thinking appropriately. Approaching the same problems with the same toolset will never generate new results. Not only should we use different tools, but we must also employ different methods for finding, framing, and solving problems.

"Think outside the box" is a cliché that's tossed around a lot. But what we really mean is that we want to disrupt *business-as-usual*. This ambition requires a

different mode of thinking, and the best approach is cross-pollination.<sup>41</sup> We reach into cognitive toolboxes from other disciplines and apply their theories and frameworks to situations within our environment.<sup>42</sup>

As library leaders we need to be experimenters, designers, venture capitalists, product developers, and entrepreneurs always on the alert for growth and innovation. The way that we view ourselves is important because it influences our behaviors. It shapes the way we think and feel about change and the future. It determines the types of questions that we ask and the paths we follow to answer them.

Problem discovery, as outlined in these pages, isn't a precise checklist of techniques; it's an ethos and an attitude. By investing in other people's problems we can learn exactly what it is that they need to do, even if they don't know what that is yet. By casting out our empathic radar we can convert these insights into strategic initiatives.

The ability to learn, unlearn, and relearn is a vital attribute for the innovation seeker.<sup>43</sup> Taken further, the ability to conceptualize and then re-conceptualize ideas based on feedback, usage, observations, corrected assumptions, or shifting priorities is another essential characteristic. We need to constantly recalibrate our thinking while things are in motion. We need to be okay with the prospect of not knowing everything and embracing the opportunity to figure out the next steps. We must always be looking for Plan B or Option C.

Our intention should never be to give people what they *want*. Rather, through the art of problem discovery, we can design and develop the capacities, service models, and solutions necessary to deliver what people *need* in order to accomplish the outcomes they desire.

## Notes

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