

In Practice: \_\_\_\_\_

## Thinking Around the Box: Using Complementary Innovation for Designing Programs and Nurturing Community

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"Think outside the box!" We've all heard this rallying cry in discussions about innovation. It's a charge to break free and dare to be different. But this mindset isn't just about making change for the sake of it; it's about pushing boundaries, disrupting the norm, and moving toward bold new directions.

But what about those times when innovation doesn't require something revolutionary? Sometimes it's worth looking closely at what we already have in place—staying "inside the box," so to speak. Can we make refinements or improvements? Small, thoughtful changes to our existing processes can have a tremendous impact. This "inside the box" thinking emphasizes continuous improvement and efficiency, gently nudging the status quo rather than overturning it.

These oppositional approaches to innovation highlight a professional dilemma that we face: the push and pull between disruptive and incremental change. Should we introduce new services to meet evolving community needs, or do we expand and strengthen what we already offer? Balancing innovation and stewardship is an ongoing challenge. So, which path do we take? Big bold leaps? Or small, consistent steps? Perhaps there is a third way.

Imagine if, instead of limiting ourselves to thinking outside or inside the metaphorical box, we thought *around* it. This alternative, a blending of the two,

proposes an intriguing strategy. David Robertson, an innovation expert at MIT, introduces this concept in his book, *The Power of Little Ideas: A Low-Risk, High-Reward Approach to Innovation*. Robertson & Lineback (2017) suggest that a grouping of related services built around a central offering becomes increasingly appealing. He calls this method "complementary innovation," a combination of related activities that create a more cohesive, integrated, and useful customer experience.

In this essay I explore how libraries can apply this model to the area of program and service development. By adopting this *third way*, libraries can effectively coordinate, communicate, and promote their services. This method underscores the importance of service design, adding another valuable instrument to our professional toolkit. Let's consider how complementary innovation can transform our practices.

## Defining Complementary Innovation

Complementary innovation embraces a portfolio approach. Essentially, this model encourages us to connect the various tools, resources, and expertise we offer into thematic bundles. We can think of this as Lego pieces snapping together to form a cohesive structure.

Take data services as an example. Let's say that your core product is an institutional repository for researchers to deposit their datasets. This digital platform addresses demands placed on your users by some publishers and funding agencies, helping them meet compliance requirements. However, if we step back and consider the wider research lifecycle, we start identifying compatible service opportunities.

A researcher might need to develop a comprehensive data management and sharing plan as part of her grant application. While she may eventually require a repository to deposit her dataset, she likely has related needs involving code, protocols, models, multimedia, readme files, metadata, documentation, and supplemental materials. Additionally, while working with students in her lab, she might encounter other requirements such as virtual storage for a terabyte of licensed data, specific analysis or visualization tools, and considerations related to cybersecurity, export controls, or data privacy. Focusing solely on immediate compliance needs (a data plan and repository) limits our field of action. Complementary innovation encourages us to take a broader view of the larger ecosystem and assemble a range of tools, services, and expertise that could be helpful across the domain. A key question to keep in mind is: *what are all the things a researcher needs to make progress?* While most researchers might

not need all the tools all the time, a menu of options enables customization and integrates human expertise as part of the support provided.

*The Power of Little Ideas* and Robertson's related podcast, *Innovation Navigation*, outlines this approach in greater detail. Robertson offers many examples, and while his focus is largely on commercial enterprises, the model and mindset are applicable to libraries. Below are two case studies that help illustrate the complementary innovation concept.

#### *Case One: GoPro*

GoPro markets itself as an action-camera company, capturing images of people jumping out of airplanes or scaling mountains. Their durable cameras perform well in difficult conditions. However, as Robertson notes, while GoPro's hardware is robust, it wasn't the best on the market. Sony offered a higher-quality action camera in terms of technical specifications, including picture sharpness and resolution, image stabilization, and audio quality.

To be successful, GoPro had to be creative. Their strategy was to surround the camera with a wide range of specialized accessories: clips, mounts, tripods, cases, and more. They designed product lines for niche categories of their customers. If you're into surfing, they have everything you need to capture your ride. For scuba diving or snorkeling, they offer necessary accessories. Biking, hiking, snow sports – whatever the activity, GoPro designed utilities that empowered people to document their particular undertakings. It was this combination of hardware, software, and accessories, all integrating, that enabled GoPro to contend with Sony and deliver unique and valuable tools for adventure seekers and content creators at both the amateur and professional level.

Think about this product augmentation in terms of the data repository mentioned earlier. Considering the broader research data ecosystem opens up a host of related service possibilities: data licensing, data reuse, data lakes, data cleaning, data pipelines, data literacy, metadata management, metadata generation, data visualization, data anonymization, data compliance monitoring, data integration, and data archiving.

Using a complementary innovation mindset, we might consider how to package and present our various data services, not as isolated offerings but as part of an integrated service portfolio. Like GoPro, which created a cohesive ecosystem of cameras and accessories, we can combine all the various parts and pieces of our data services into a unified, comprehensive suite. This tactic makes the repository more appealing

because it becomes part of a seamless workflow for research, addressing a wide range of needs and enhancing the overall user experience.

Moreover, this model helps us identify opportunities to expand into new services (such as data lakes) or grow existing ones (like data literacies). By thinking in terms of a service portfolio, we can better support researchers throughout the entire research data lifecycle, from data creation to preservation and reuse. This expansive approach encourages us to continually refine and enhance our offerings, ensuring we meet evolving community needs and stay ahead of emerging trends in the research landscape.

#### *Case Two: Gatorade*

Another intriguing case study is found in the world of sports drinks. In the early 2000s, Gatorade released an explosion of flavors with fantastical names such as Red Tide Rush, Rain Berry, Frost Alpine Snow, and even an ESPN-flavored beverage. Their strategy at the time was based on quantity and variety, operating under the assumption that more products would lead to more sales. However, the opposite happened, and sales dropped significantly.

Gatorade needed a new direction and shifted to a complementary innovation model. They envisioned their drinks as “sports fuel,” which might sound like gimmicky marketing hype, but the concept is relatable to performance-driven athletes and even casual exercisers. Essentially, they asked themselves: *what propels athletic activities?* This question unlocked new directions and helped them clarify an effective strategy.

Similar to how we considered the project lifecycle and needs related to data and researchers, Gatorade considered the training and performance needs of athletes. This focus was key to their turnaround. They infused more science into their offerings by better understanding the range of vitamins and nutrients required before, during, and after competitions or training sessions and developed new product offerings accordingly. They surrounded their drinks with related items such as granola bars, protein powders, energy chews, and energy gels. The idea was that Gatorade is more than just a *thirst quencher*; it is part of a collection of supplements that can enhance performance. While the drinks (with fewer flavors) remained their core offering, they also provided additional products that athletes could use. It worked as evidenced by increased sales.

When I think about this case study, I think of libraries and workshops. It can be easy to assume that more workshops equals more engagement. When I was a liaison, I

developed many niche topics and experimented with novel ways to promote them. Yet attendance was also often small. Increasingly, many libraries are offering a dynamic and expansive range of workshops and training sessions. Is the attendance worth the effort? Is there a danger of staff burnout or workshop fatigue, similar to Gatorade's seemingly endless volume of new flavors?

It could be interesting to rethink teaching as a package of instructional sessions—a series and sequence of topics delivered to the people who need them at the time they require them and through different format options. A research library might easily offer 50 to 100 or more workshops in a semester or year, but what if, instead of trying to reach more and more people, we aimed to help a more targeted number and went deep into those experiences? Could focusing on depth over volume lead to more meaningful engagement and better outcomes? Instead of offering many different workshops to appeal to a broad audience, we could concentrate on creating in-depth, impactful sessions that truly resonate with participants who need the most help.

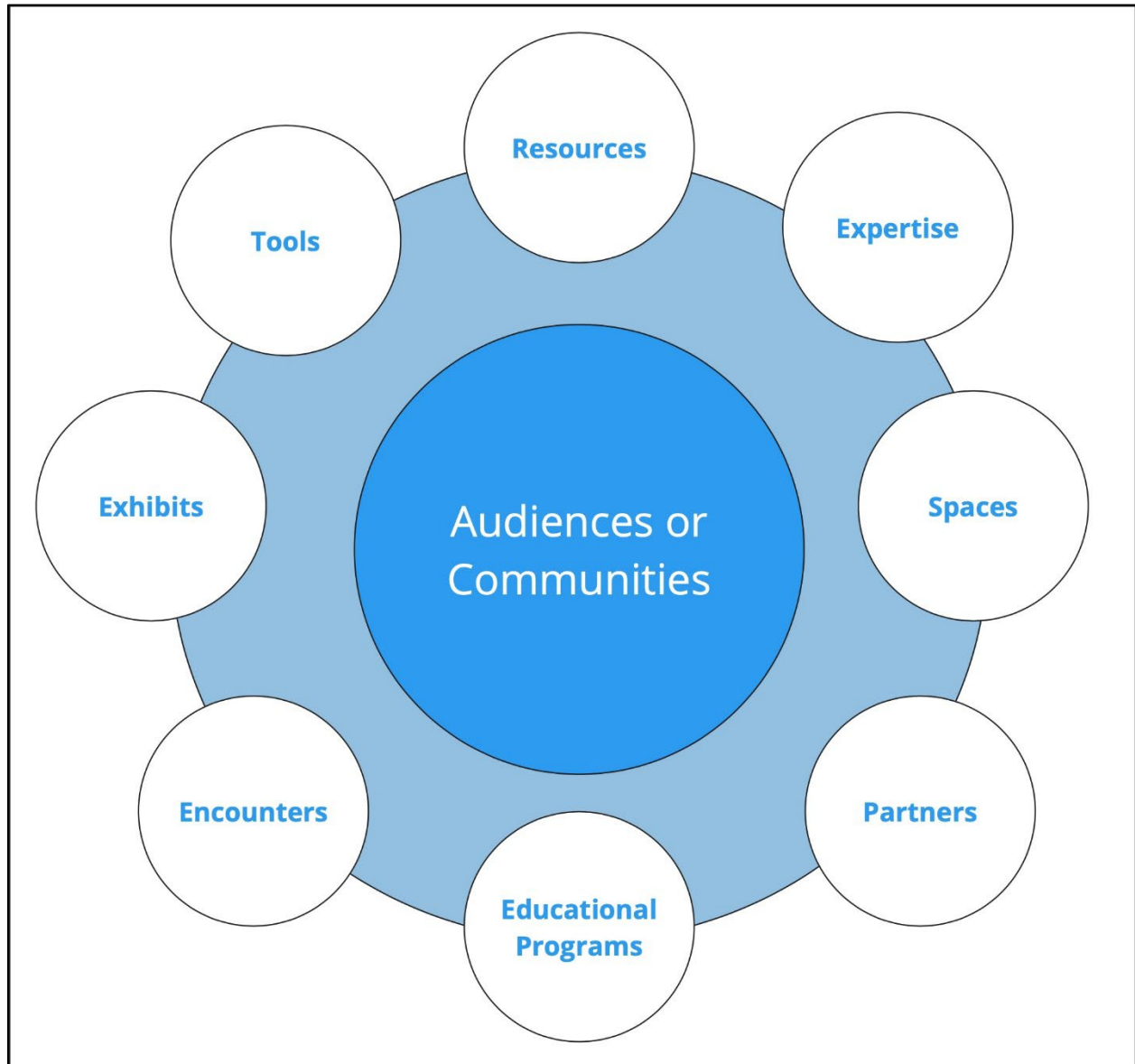
## Designing Ecosystems, Integrating Services

Essentially, a complementary innovation model proposes assembling and blending a grouping of services that match the needs of a particular user group. These services work together to collectively form something more useful or desirable. In a sense, the whole becomes greater than the sum of its parts. While the examples from the commercial sector highlight building around a key product, we can apply this to libraries and iterate on the concept. Rather than building around a specific product, I prefer to start with a specific user segment and build around their needs.

For example, just as researchers need comprehensive data services or athletes need tailored hydration solutions, we can map and assess the ecosystem in which our users operate and find opportunities to integrate our services and expertise or innovate new related offerings. Another way to think about this is: *what toolkit can we assemble for a particular user base within our community?* This thought exercise allows us to bring sharper precision and pinpoint valuable interaction points for meaningful impact and engagement.

I developed a variation of this model that I call the Integrated Program Development Map.

**Figure 1**  
*Integrated Program Development Map*



Here are the labels or categories that I use around the circle representing my chosen audience/user community:

**Resources:** the collections, content, and other materials that your library offers.

**Tools:** the hardware and software that your library provides.

**Expertise:** the wide range of expertise available, from reference assistance and data support to GIS and more.

**Partnerships:** relationships with other entities across campus to move goals and initiatives forward.

**Spaces:** collaborative areas, quiet areas, media labs, and also virtual spaces.

**Encounters:** lectures, hackathons, citizen science projects, and other interactive events.

**Educational Programs:** classes, workshops, training sessions, and boot camps.

**Exhibits:** displays, showcases, and demonstrations.

By mapping these categories around your targeted audience, you can develop a comprehensive service bundle that addresses their specific needs and enhances their experience with your library.

The goal is to create a suite of services that you can promote cohesively and effectively, and that will resonate with the targeted audience. This framework is more applicable than the common method of trying to be everything to everyone. Think of it as creating customized interfaces or entry points to the larger universe of what your library offers.

Begin by drawing a circle and placing your audience in the middle. Now, work your way around the circle filling in potential components for each of the labeled areas on Figure 1. If you're working with a team, this could be a brainstorming session where everyone places ideas on post-it notes for each of the sections around the diagram. I would frame this in two ways: *what are we currently doing, and what could we possibly add?*

A key next step is talking directly with representatives of that niche group to validate your thinking and add additional components you might be unaware of or have overlooked. By thinking across their needs and practices, users might spark ideas or memories of related activities or other potential desires. Ideally, you would incorporate some type of observational assessment too. For example, talking with

researchers about data and actually witnessing how they use and interact with it can provide insight into tacit behaviors and other valuable insights.

Let's apply this concept to undergraduate students working on course assignments. While that is a very broad user category, I'm using it to illustrate the utility of this mapping exercise. In practice, I would focus on a more specific group, such as STEM students, first-year students, first-generation students, international students, or seniors working on thesis or capstone projects. The more specific you can be, the more valuable this tool becomes in helping you design service bundles. I suggest conducting these maps for a handful of related audience niches to find clear overlaps and differences, identifying unique needs as well as those that transcend communities.

For undergraduates working on course assignments, a well-rounded service map can significantly enhance their academic experience. Start by considering the **Resources** they need, such as access to textbooks, academic journals, e-books, specialized databases, or films relevant to their courses. Next, outline the various **Tools** like laptops, tablets, and specialized software for writing, designing, or data analysis. Account for your **Expertise**, such as reference assistance, subject-specific tutoring, coding or statistical support, or citation management. Think of potential **Partnerships**, such as curriculum centers, writing centers, presentation specialists, as well as advising and tutoring offices. Reflect on **Spaces**, such as individual study carrels, group work areas, classrooms, commons, makerspaces, and multimedia production studios. Consider **Encounters** you can host, such as study breaks, mental health programs, or academic contests. Detail the range of **Educational Programs** you might offer, such as research boot camps, time management seminars, or data carpentry programs. Finally, think about how you might showcase student work through **Exhibits** that highlight exceptional projects and foster a sense of accomplishment and community.

Let's consider another audience: content creators or, perhaps more generally, people interested in audio and video production and editing. The library can become a hub of creativity and innovation in this domain. Start with **Resources** such as access to a vast library of audio and video clips, royalty-free music, and production manuals. Provide **Tools** like high-quality microphones, cameras, editing software, and green screens. Tap into the **Expertise** of staff skilled in sound engineering, video editing, and content creation. Form **Partnerships** with local media production firms, university marketing or media departments, and community radio stations to expand opportunities for hands-on learning and internships. Design **Spaces** like soundproof recording booths, video editing suites, and collaborative creative spaces. Facilitate **Encounters** such as media production hackathons, film festivals, and guest lectures

from industry professionals. Develop **Educational Programs**, including workshops on podcasting, video editing boot camps, and training sessions on using the latest production technology. Promote user-created content through **Exhibits** that feature student films, music, and other multimedia projects, fostering a community of creators.

Now we'll assess one final audience: researchers interested in open science practices. What would a comprehensive service bundle from a library perspective look like? Provide **Resources** such as open access journal agreements, preprint repositories, and databases of publicly available datasets. Equip them with **Tools** like data management utilities, protocol registration, and open researcher and contributor ID platforms. Utilize the **Expertise** of data librarians, open science advocates, and metadata specialists to assist researchers in making their work more accessible and reproducible. Form **Partnerships** with the university's office of research, funding agencies, publishers, and open science organizations to promote best practices and collaborative projects. Create **Spaces** that facilitate collaboration, such as data labs, virtual meeting rooms, innovation hubs, and co-working areas for interdisciplinary teams. Organize **Encounters** like open science symposiums, data sharing workshops, citizen science challenges, and hackathons focused on reproducible code. Offer **Educational Programs** on topics such as open data, ethical considerations in open research, and training in the use of open-source tools. Highlight pioneering projects through **Exhibits** that demonstrate the impact and potential of open research, inspiring others to adopt similar practices.

These examples illustrate how a library can thematically bundle its offerings to meet the diverse needs of different user groups. You likely have many more services and potential ideas for each of these areas, but these samples hopefully provide context and can stimulate your thinking. After your brainstorming sessions and further investigation, you might enter the information into spreadsheets to better organize and categorize your ideas. This will make it easier to see patterns and connections among your services, allowing you to develop cohesive, targeted programs.

The core intention here is to help you visualize what a comprehensive program could look like for niche groups of users. By mapping out these thematic areas, you can create tailored experiences that resonate deeply with each specific audience, ensuring that your library remains relevant and responsive to their unique needs. This model not only enhances the user experience but also fosters a stronger sense of community and engagement, as users feel that the library is attuned to their particular interests and challenges.

## Conclusion: Nurturing Community

After experimenting with this model for several years, I found it to be a very simple, pragmatic, and conversational framework for thinking about innovation, program building, and service design. Additionally, I uncovered a positively surprising side effect: it's profoundly powerful for community development as well.

While we all want to find ways to engage with our campus more effectively, I discovered that working with niche groups in this manner fosters an appetite and eagerness for connection. I've seen faculty bond at workshops and develop collaborative projects. I've observed students forming social relationships at research boot camps. Creatives have met in a library media studio and ended up producing music together.

Something profound happens beyond just providing people with resources, tools, and expertise. The true overarching value lies in connecting people with each other. The Integrated Program Development Map is more than a tool – it's an invitation to form a community of practice. As Wenger et al. (2002) described in the seminal book *Cultivating Communities of Practice*, this concept refers to a group of people united by a shared topic, passion, or concern, who continuously learn and improve together through regular interaction. The core goals and principles include fostering mutual engagement, cultivating joint activities, and developing a shared repertoire of resources, experiments, and strategies.

By facilitating and nurturing these types of gatherings, libraries can significantly enhance both the individual and collective experiences within their universities. This approach not only addresses immediate user needs but also builds strong, interconnected collectives, aligning with our broader mission of strategic, meaningful, and scalable engagement. Through this complimentary innovation inspired model, we can effectively design and implement programs that resonate deeply with diverse user groups.

This focus on building community by providing a social infrastructure around common assets such as spaces and tools is increasingly important in light of the loneliness epidemic, post-pandemic realities, and the increasing social insecurities people face, as highlighted in books like *Bowling Alone: The Collapse and Revival of American Community* by Robert Putnam (2000). Putnam's work illustrates how social engagement has eroded over the decades, leading to increased feelings of isolation and disconnection. Libraries, with their welcoming environments and diverse resources, are perfectly positioned to counteract this trend by offering spaces where people can come

together, collaborate, and form relationships. Publications including Jonathan Haidt's (2024) *The Anxious Generation* document the growing general anxiety and social isolation prevalent in our society. These issues can be somewhat alleviated by creating opportunities for human connections and flourishing. By doing so, libraries serve not only as centers of knowledge but also as vital hubs of social interaction and community enrichment.

Furthermore, in the book *Our Search for Belonging*, Howard Ross and JonRobert Tartaglione (2018) emphasize the fundamental human need for connection and the role of inclusive communities in fostering a sense of belonging. They argue that in a world that often feels divided, creating inclusive spaces where people can feel connected is more crucial than ever. Similarly, *Relationship-Rich Education: How Human Connections Drive Success in College* underscores the importance of personal relationships in driving student success. Authors Peter Felten and Leo Lambert (2020) assert that students who feel connected to their peers and mentors are more likely to thrive academically and personally. These insights reinforce the idea that our libraries can be more than just places for study and working on assignments; they can be engines for social engagement, cultural experiences, and community building. By intentionally designing programs and services that foster these outcomes, libraries can play a pivotal role in enhancing social development, self-efficacy, agency, expression, and other growth-mindset attributes.

Additionally, Frank Shushok (2008), in his article "Learning Friendship: The Indispensable Basis of a Good Society," discusses how fostering friendships and meaningful connections can significantly impact students' well-being and academic success. This aligns well with the role of libraries as catalysts, where fostering strong, supportive communities can have far-reaching benefits.

Innovation is more than just new technologies; it's also about designing powerful portfolios of services, cultivating social connections, and building a sense of belonging. Libraries have the unique potential to serve as campus conveners. By nurturing connections and developing meaningful relationships, libraries can help provide a sense of purpose and camaraderie. Complementary innovation offers a method and mindset to help enrich the lives of our users and also strengthen the social fabric of our institutions. Moreover, this model can be incredibly rewarding for our staff, who get to see firsthand the impact of their work on building and sustaining these vibrant networks. We need to recognize that our services and efforts can have a profound impact. By embracing complementary innovation for service design, we can expand our programs as generators of hope, connection, and personal growth, while fostering a more connected future for our communities.

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