

## Locating Value with Alignment Diagrams

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**KEYWORDS** *Alignment diagrams, business complexity, experience design, information architecture, journey map, mental model, service blueprint, service design, touchpoints, value-centered design*

**ABSTRACT** Theorists and practitioners in design and business management use diagrams to locate business value at the intersection of products or services and customer actions. Information Architecture (IA), User Experience Design (UXD), and Service Design (SD) all seek to shape, design, and integrate the user/customer point of view with the business offer. All these practices benefit from a variety of visualization techniques to represent systemic thinking. We propose the term “alignment diagrams” to describe the class of maps and diagrams that visualize touchpoints in a business process. Such diagrams are implicitly part of the current design practice. Thus our definition of alignment diagrams is less a proposition for a new visual technique than recognition of how various techniques can be seen in a new and constructive way. Alignment diagrams are constructed to reveal touchpoints and thereby contribute to the design and business process. They have two parts: one capturing customer behavior and the other capturing the offer or business process. The intersection or overlap of these two parts reveals touchpoints, or the specific interactions customers have while doing business with an organization. It is the system of visual alignment that distinguishes this type of diagram. By aligning the user’s experiences with the business offers the diagram identifies and highlights the intersections where value can be located.

### VISUALIZING VALUE

How do we locate business value when analyzing, planning, or modifying a complex system? Many theorists and practitioners in design and business management locate business value at the intersection of products or services and customer actions. These interactions are the places where the business and the customer meet: the touchpoints of a product or service offering. Planning, measuring, and improving these touchpoints are critical to the success of user-centered design. How do we find the places to focus our design thinking?

Information Architecture (IA), User Experience Design (UXD), and Service Design (SD) all seek to shape, design, and integrate the business offer with the customer point of view. All these practices benefit from a variety of visualization techniques to represent systemic thinking. Practitioners have a variety of names for the visualizations they produce, including such terms as: site maps, overview diagrams, swim lane diagrams, workflows, customer journeys, or service blueprints. The visualization, in turn, is the result of data gathering techniques, including: ethnographic observation, user interviews, card sorting, data mining. While design solutions are strongly influenced by this data, IA, UXD, and SD practitioners are primarily map makers, not statisticians. The data gathering helps to define the territory, but the data must be refined, compressed, and shaped to produce an actionable plan. The maps produced by IA, UXD, and SD analysts are a form of visual thinking meant to drive a design team’s understanding of the problem at hand. Referencing Alfred Korzybski’s famous premise “the map is not the territory,” we can say that these maps are not the data themselves. Rather they are visualizations of the salient points that emerge from the data. They are a selection meant to drive our design thinking.

### MAPPING VALUE-CENTERED DESIGN

Strategic and tactical projects within any organization often involve the resolution of business and customer perspectives. The business focuses on maximizing a target market’s profits and potential for growth. Customer-centered design focuses on maximizing the value of a product or service to the customer.

These do not have to be viewed as competing forces, as Jess McMullin points out in “Searching for the Center of Design.”<sup>1</sup> Instead of seeing the different points of view as one position trying to overwhelm or eliminate the other, we should seek to map them all and find their overlap. This overlap, he believes, is where value is created for both the business and for the customers. McMullin proposes what he calls “value-centered design,” an explicit focus on the intersection of business goals and user needs. He writes, “Value-centered design starts a story about an ideal interaction between an individual and an organization and the benefits each realizes from that interaction.”

One goal of value-centered design is reducing complexity on behalf of the customer. While this may appear to be entirely customer-centered, it proves to be beneficial for the business as well. James Womack and Daniel Jones use the term “lean consumption” to describe the positive

business returns and increase value creation for both sides of the equation.<sup>2</sup> They write:

*Companies may think that they save time and money by off-loading work to customers, making it the customer's problem to get the computer up and running, and wasting the customer's time. In fact, however, the opposite is true. By streamlining the systems for providing goods and services, and making it easier for customers to buy and use them, a growing number of companies are actually lowering costs while saving everyone's time. In the process, these businesses are learning more about their customers, strengthening consumer loyalty, and attracting new customers who defect from less user-friendly competitors.*

To visualize this the authors recommend creating a map of the steps customers go through to consume products and services. Mapping the steps in a production and consumption process is the best way to see opportunities for improvement. A map can reveal how broken processes waste providers' and consumers' time and money.

Womack and Jones' lean consumption map (FIGURE 1) is an example of visualizing value. It illustrates improvements to the car repair process from a case study for an automobile dealer group. The map organizes consumer and provider actions into horizontal groups of steps.

The vertical alignment of these groups allows us to see the consumer-provider touchpoints. The differences in time devoted to the steps are summarized as quantitative bars on the right. These are further aligned to illustrate how both provider and consumer benefit from the change in process.

**ALIGNMENT DIAGRAMS**

We propose the term "alignment diagrams" to describe the class of maps and diagrams that visualize touchpoints in a business process. Such diagrams are already part of the current design practice. Thus our definition of alignment diagrams is less a proposition for a new visual technique than recognition of how various techniques can be seen in a new and constructive way.

In the following discussion we define the characteristics of alignment diagrams by citing examples produced by IA, UXD, and SD practitioners. This discussion illustrates how alignment diagrams are constructed to reveal touchpoints and thereby contribute to the design and business process.

While they do not guarantee success, alignment diagrams do instill coherence supporting corporate thinking. At a minimum they start a conversation towards coherence, bringing actions, thoughts, and people together while fostering consensus. More importantly, they focus on creating value—for both the customer and the business.

Alignment diagrams aren't a single tool or deliverable with a normalized method for creating them, rather they

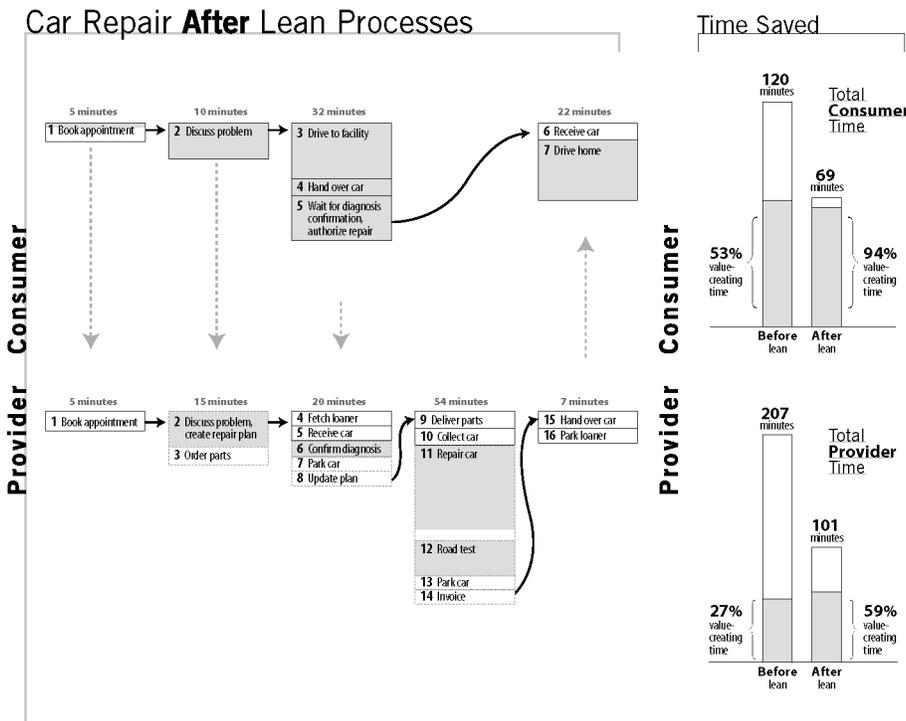


FIGURE 1:  
An example of a lean consumption map.

are a class of documents that share similar properties toward a similar purpose. They are diagnostic tools that seek to ease the pains of business complexity, demonstrate where value creation lies, and point to opportunities for operational efficiency and growth.

Alignment diagrams have two major parts. On one side they illustrate customer behavior, thoughts, and feelings, including such things as: tasks, steps in a process, goals, pain points, barriers to consumption, etcetera. On the other side alignment diagrams contain some description of a company's offerings and of their business process. This might include face-to-face contact with customers, as well as self-serve products and solutions. The areas where the two halves meet gives rise to touchpoints—the specific interactions customers have while doing business with an organization.

Alignment diagrams are not new. Practitioners in business strategy, service design, information architecture, and user experience design have been using them for decades. The lean consumption map in FIGURE 1 is an example of what we call an alignment diagram created to support a business strategy. We describe other examples in the following sections.

**SERVICE BLUEPRINTS**

Perhaps the earliest examples of alignment diagrams come from service design. In the early '80s, G. Lynn Shostak described what she called “service blueprints.” These diagrams detail activities a company takes to service customers. Additionally, they show the key actions customers take. Through this alignment in a visual map service designers can better see all the issues inherent in creating a service for customers. She writes:

*The root of most service problems is, in fact, lack of systematic design and control. The use of a blueprint can help a service developer not only to identify problems ahead of time but also to see the potential for new market opportunities....A blueprint encourages creativity, preemptive problem solving, and controlled implementation. It can reduce the potential for failure and enhance management's ability to think effectively about new services. The blueprint principle helps cut down the time and inefficiency of random service development and gives a higher level view of service management prerogatives.<sup>3</sup>*

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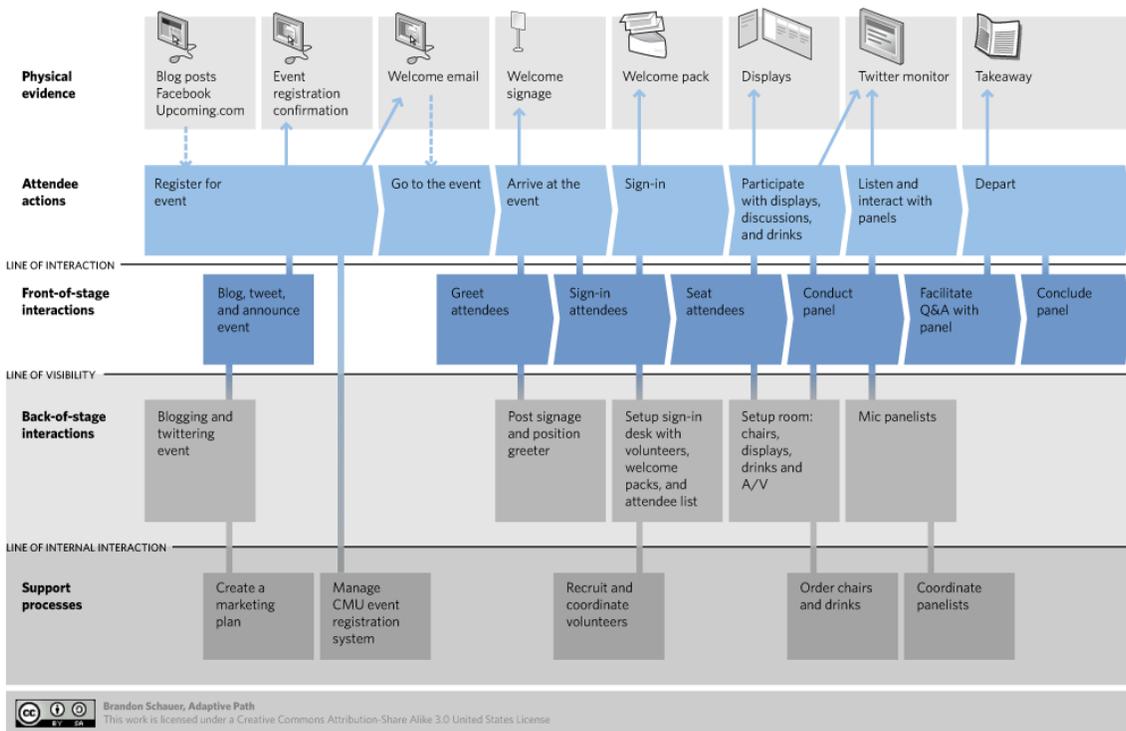


FIGURE 2: An example of a service blueprint for conference going.

FIGURE 2 shows a more recent example of a service blueprint created by Brandon Schauer (a business analyst with the user experience consulting firm Adaptive Path). In it we can again see an alignment of two fundamental types of information: the customer actions and steps are indicated in the top half and the business processes are shown in the lower half. In the middle Schauer points out a “line of interaction.” This represents the touchpoints between the customer and business, and where value for both can be found.

Such diagrams are important in service design because service interactions between customers and an organization are often not immediately observable. By mapping these interactions the service blueprint becomes a kind of paper prototype—allowing stakeholders to cognitively run through the phases and steps involved in the service provision, permitting both issues and opportunities to be identified.

**MENTAL MODEL DIAGRAMS**

The field of information architecture has picked up on another form of alignment diagram developed by Indi Young which she calls “mental model” diagrams. The approach of creating this specific type of alignment diagram is documented in detail in her book.<sup>4</sup> She writes, “A mental model helps you visualize how your business strategy looks compared to the existing user experience.”

The elements of a mental model diagram are simple to comprehend. A horizontal line divides the diagram into

two parts. The top arises from individual customer tasks, which are then grouped by similarity into what are called towers. The towers are in turn sectioned off into goal spaces.

The business activities and offerings then mirror the customer’s tasks and goals. Young calls this “support,” referring to all the ways a company supports the customer’s activities. This visual justification of concerns gives rise to opportunities, as the author describes:

*After you have aligned all the content, you will have a diagram that looks like a city skyline along a lakeshore, with a distorted reflection below it. You will want to sit down with all your project guides in another workshop to analyze the gaps you see in this reflection and see what opportunities are apparent.<sup>5</sup>*

FIGURE 3 shows a section of a longer of a mental model diagram. Although there is often a chronology implied in the diagram, mental models favor arrangement of customer behavior and business activity that is more hierarchical than linear. From this hierarchy, information architects can derive categories for an information space, such as website, service, or product—from the bottom up. To do this, cluster the goal spaces—or largest blocks in the diagram—into meaning categories. These can then serve as the basis for a main navigation of a website, for instance, for organizing documents or product concepts for cat owners, such as litter robots, slow mice, or butterfly aparies.

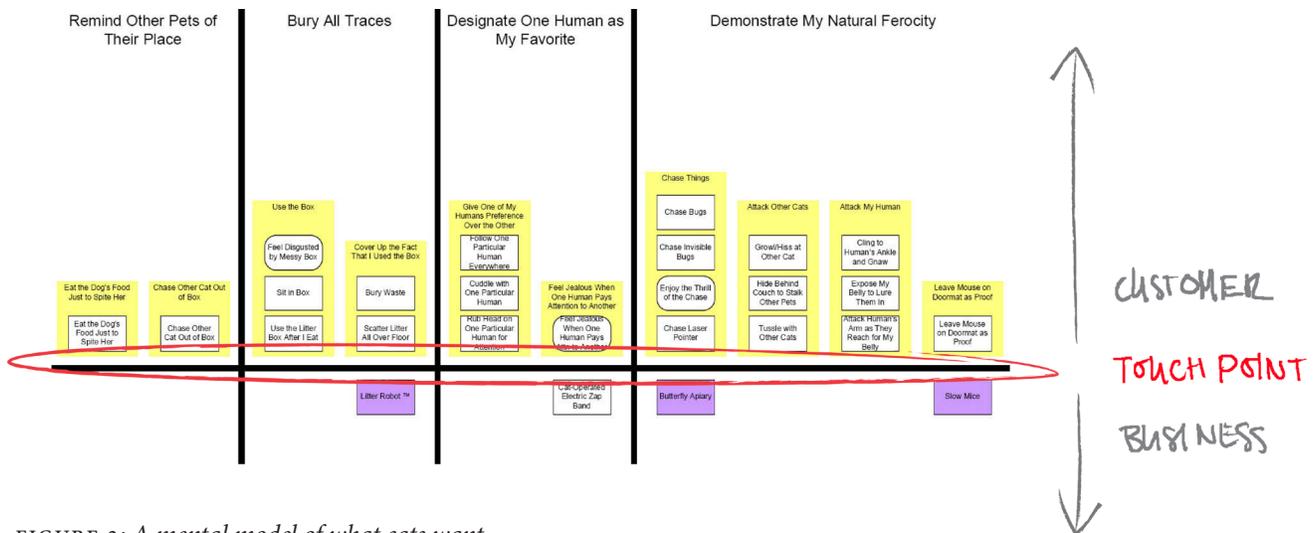


FIGURE 3: A mental model of what cats want.



The solution we came up with was an experience map—a diagram that combines a persona with an abstracted story about the gamer’s journey from researching games to purchasing, playing to sharing experiences about that game. The story includes the details on the different channels where gamers get their information along with supporting quotes from our research.<sup>8</sup>

The nForm diagram aligns touchpoints, distinguished by different channel types, along the horizontal axis representing the chronological purchase process. Type of user processing is expressed by differentiating the vectors that group and connect the points, thus adding another layer of information.

**DOUBLE ALIGNMENT**

Data visualization is the task of making two or more dimensions understandable. The more dimensions we

combine, the richer the potential informative reward, yet the more challenging the understandability; time over distance, type of product by cost displaying features, temperature and rainfall over time—each of these are familiar combinations. Showing restaurants by type of food, cost, location, and impact on your social life is more challenging.

Alignment diagrams can be used to show relationships between large parts of the information ecology. They can help the team understand how the service appears to the customer as well as the organizational issues that affect how a business service is shaped before it reaches the customer.

The proposed information architecture for INRS by Julia Moisand and Paul Kahn for Kahn+Associates is an example of an alignment diagram using an isometric projection.<sup>9</sup> The floor of the projection aligns the organization structure of the public website, the collections of data by media (the boxes), and the internal department structure (the colors). In this case the “customer” is on both sides

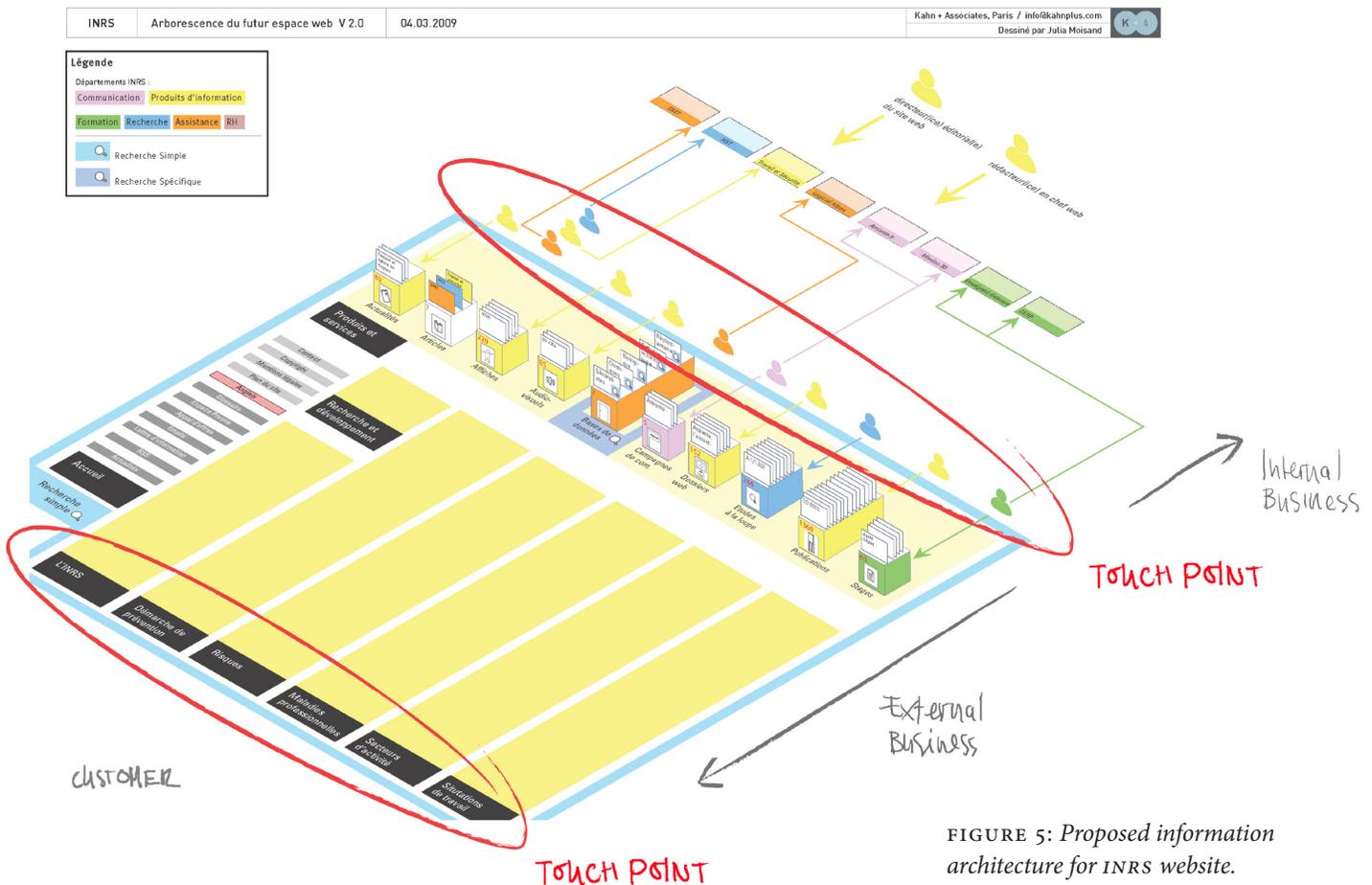


FIGURE 5: Proposed information architecture for INRS website.

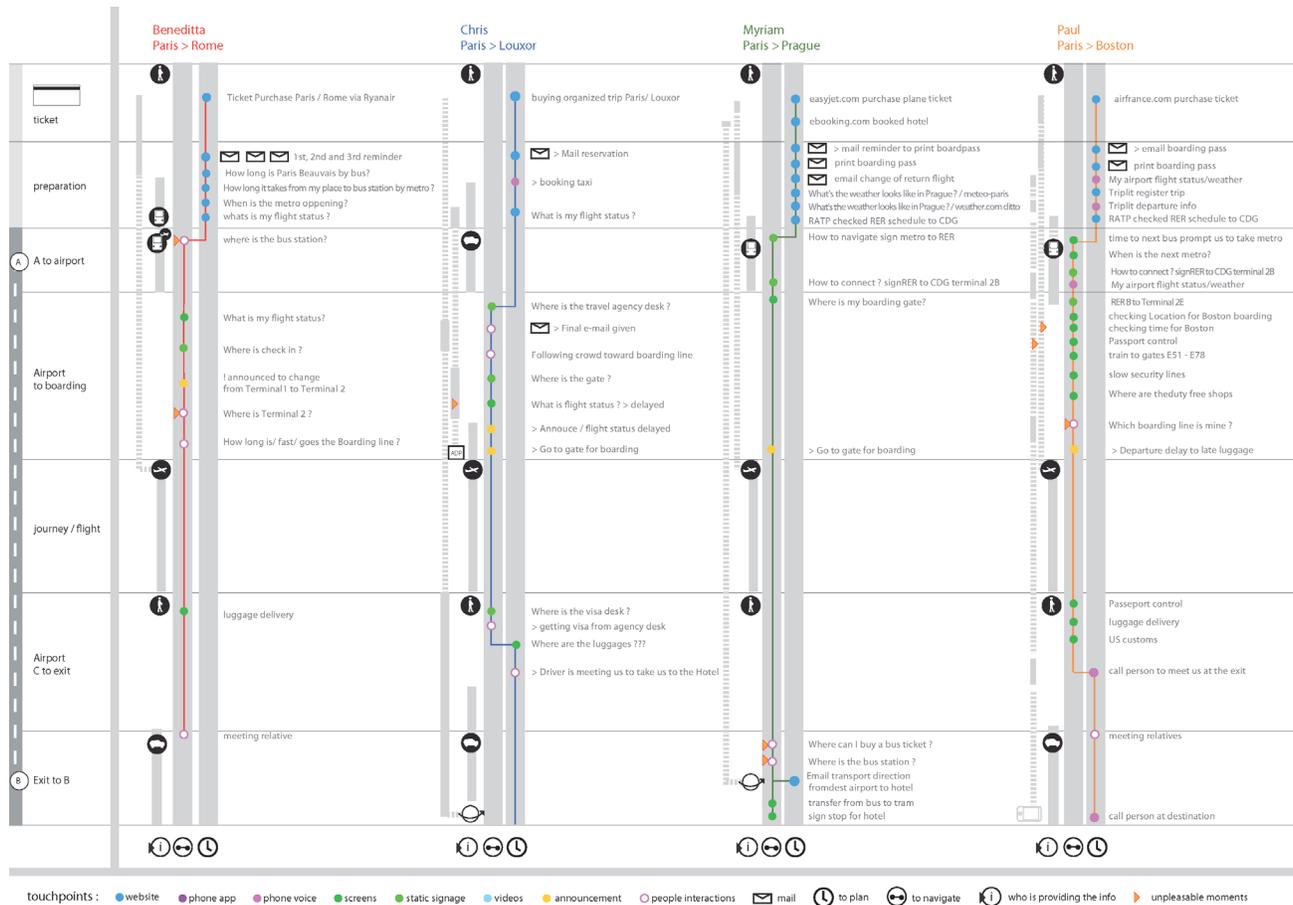


FIGURE 6: *Four travel experiences.*

of the “business.” We can see the back-office touchpoints where the inside customers, the people who serve as the “interface” between the department structure and the data collections, literally interface with the website. At the same time, on the lower left, we see the outside customer’s point of view, the set of high-level topics that the business presents to the users of the website.

In addition to showing customers on both sides of business we can align several customer experience sequences to show interactions at similar points in a journey or process.

FIGURE 6 is a map of four travel experiences recording the interactions between service providers and four different users on international trips by Christopher Talleg. The touchpoints of each journey are aligned in two dimensions. Each set of color-coded touch points are located vertically between the customer action on the right and the transportation service on the left. At the

same time the journeys are divided into seven stages, with the touch points aligned horizontally. By looking across the top of the diagram we can see the concentration of website, email, and phone application touchpoints in the early stages, followed by the increased reliance on signage, dynamic screens, and interaction with other people as the journeys continue.

As mentioned, alignment diagrams can become the field on which to play-out paper prototyping exercises. The visualization of one or more scenarios within the diagram is a way to discover and illustrate business value. Such illustrations are not limited to the alignment of business structure and customer actions in a single path. The pathways between the touchpoints may vary for different user types. We can create a grid of possible touchpoints aligned by common business features and user actions and then project a specific personae onto the grid.

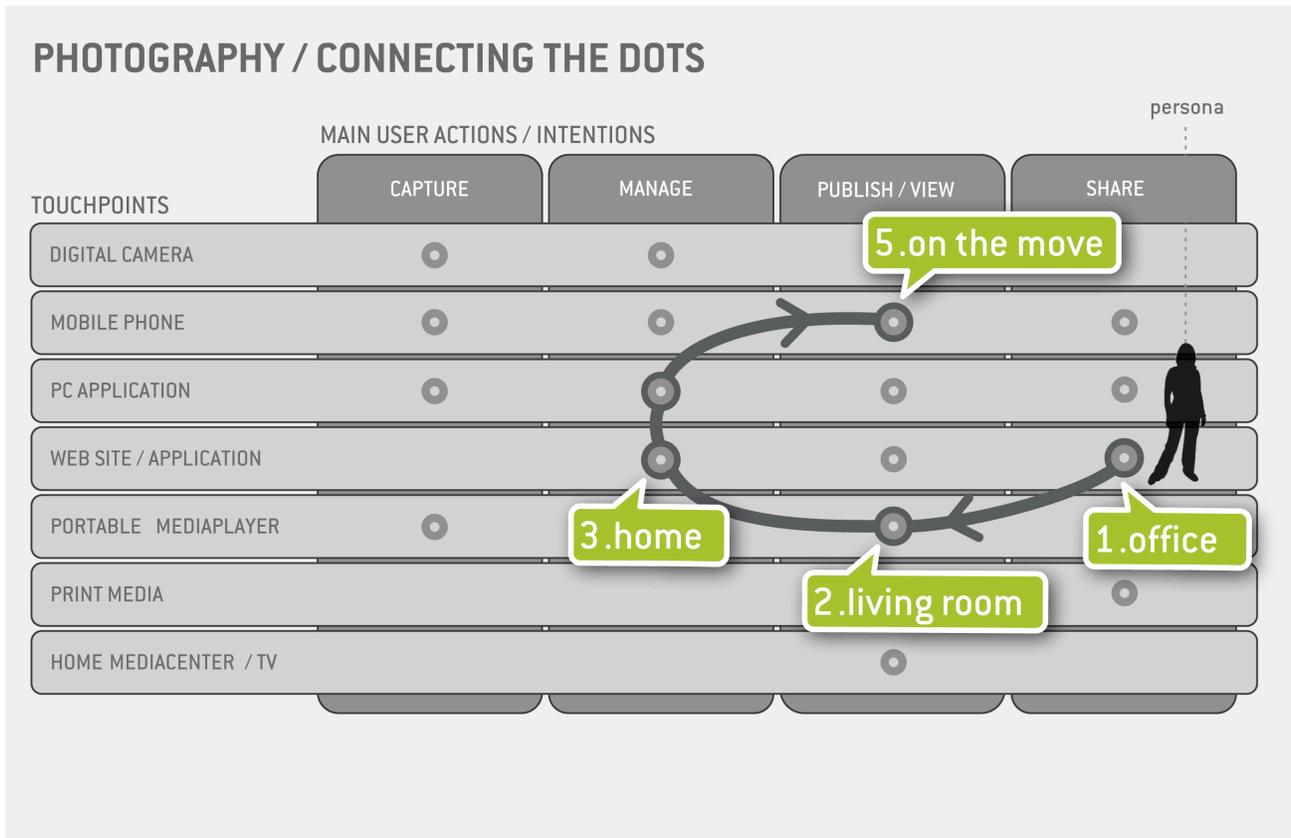


FIGURE 7: Photography customer journey matrix.

Gianluca Brugnoli’s “Photography Touchpoints Matrix,” is an excellent example of this approach. The diagram is exploring the way a user’s experience of photography moves across a set of channels. Brugnoli refers to this vertical list as devices and labels them “touchpoints.” Whatever name we apply, the list identifies a set of technologies that, as a result of the shift from analog to digital, became part of the photography business. This kind of broad alignment matrix helps the strategy team to identify possible new connections. In Brugnoli’s words:

*This graph describes a possible journey across the photography eco-system.*

*The first step is defining the different touchpoints that are part of the system (vertical axis) and the different actions that are supported by the system (horizontal axis). Not all the devices support all the functions, so the graph allows a quick visualization of what is possible in terms of interaction with the different touchpoints. After that, the introduction of personas drives the representation of several specific*

*journeys within the graph and the comprehension of the possible user scenarios.*

*The structure of the graph is really effective, for the immediacy that characterizes both its construction and reading. It could be enriched and improved in terms of visual representation, in order to make it more communicative and add other layers of information.<sup>10</sup>*

**BUSINESS COMPLEXITY**

In a recent IBM survey of over 1,500 global leaders, complexity was cited as the most significant issue facing managers and executives today.<sup>11</sup> The study points to a large-scale transition in business management: man-made systems have reached an unprecedented scale and level of interconnectedness.

This finding was confirmed by a recent Booz and Company study polling 1,800 executives. The study found executives unable to focus on business strategy because they are being pulled in too many directions.<sup>12</sup> Conflicting priorities, competing business units, and an inability

to find attractive markets are some of the top issues that contribute to this state.

Many companies can be said to lack “coherence.” Coherence in business strategy—or incoherence, as found in many organizations—is precisely the subject of *The Essential Advantage* by Paul Leinwand and Cesare Mainardi.<sup>13</sup> After years of research in corporate strategy, the authors conclude:

*To unlock the benefits of coherence, you need to take deliberate steps—to reconsider your current strategy, overcome the conventional separation between your outward-facing and inward-facing activities, and bring your organization into focus.*<sup>14</sup>

Alignment diagrams seek to do just that by coordinating the external markets with internal processes.

*As a coherent company, you manage your portfolio so that every offering is supported by your unique capabilities system and aligned with your way to play.*<sup>15</sup>

Here, the “way to play” refers to the approach a company chooses to create and capture value from customers.

All businesses struggle to gather and analyze actionable insights. Achieving coherence in rapidly changing markets requires building customer relationships and supporting customer needs while drawing benefits for the organization. Building this value is a creative process that combines analysis and imagination, best captured as visual synthesis. Engaging in the creation and exploration of alignment diagrams is an important tool for managing business complexity and approaching a strategic view of products, services, and enterprise ecosystems.

In her recent article about Consumer Insight Maps,<sup>16</sup> Kim Erwin writes about the value of designing a visual framework within which a business can capture a customer’s needs and experiences. She writes:

*Consumer Insight Maps are designed to take the complexity of consumers’ lives—the dense, messy, interconnected ambitions, activities, anxieties that thread throughout their days—and flatten them out so that we might examine them more systematically.*

The flattening process she describes is another good example of the alignment diagram principle. By aligning the user’s experiences with the business offers she can identify and highlight the intersections where value can be located. Visualizations offer the possibility of an im-

mediacy of comprehension and the ability to compress a wealth of information without losing the detail. Both these characteristics can offer insights into previously unnoticed value-creation opportunities. This discovery of value is also described by Young as a common response to her mental model diagrams from stakeholders:

*I have invited executives to presentations fifteen minutes earlier than other folks, so they can stand in front of the diagram on the wall and walk from the left to right, asking me questions as they go. As I answer their questions, I explain how it will be used to direct product design. This kind of walkthrough is quick, to the point, and stays in the context of “missed” and “future” opportunities that executives usually focus on. Many executives have told me that they’re never before seen all this information collected so succinctly in one place.*<sup>17</sup>

Our professional experience with alignment diagrams corroborates this reaction from managers and executives. While the unaided diagrams may not give an immediate solution, their presentation to the team often has an “ah-ha” effect. Alignment diagrams seek to pinpoint areas for improvement in both operational efficiency and customer experience, as well as expose opportunities for growth. This analysis must be followed by creativity in a number of other areas to realize the suggested improvements.

#### CROSSING BOUNDARIES

As we have shown, alignment diagrams have various forms, but their function is similar. The fields of IA, UXD, and SD have, respective to their unique characters, leveraged the alignment technique to consolidate and visualize a wealth of information that coordinates relative customer and business concerns. The overlapping functional similarity highlights the common objectives across these disciplines. We argue that there is more overlap in IA, UXD, and SD in the area of analysis and visualization than there are differences. The use of alignment diagrams as analytical tools illustrates the advantages to this common approach to problem solving.

Overlap in IA, UXD, and SD is also driven by growing pressure to create cross platform solutions. Products and services are more and more intertwined across media, companies, and market borders. An information architect or experience designer cannot solve problems by concentrating exclusively on the structure or interaction design of a single website. She must also consider the related experience customers have with mobile applications and

the service they get in face-to-face interaction. Interactive kiosks and online service, in combination with in-store displays and customer service staff, also change the nature of service design. The team must overcome the boundaries between these fields to gain a realistic understanding of business value.

Most importantly, alignment techniques let practitioners in each field use their expertise to help solve business problems. The alignment technique supports the increasing importance of design disciplines in business success. Alignment diagrams, then, can potentially help information architects, user experience professionals, and service designers have a greater impact on the direction of final business solutions. These professions already promote the range of skills necessary to create alignment diagrams as they possess the ability to:

- Conduct secondary and primary customer research
- Extract key insights from research
- Organize findings into a cohesive whole
- Visualize models of customer actions and business processes
- Communicate abstract concepts across teams
- Creatively address issues and problems and arrive at a holistic solution

Despite this range of capability, creative and design-related disciplines are often undervalued by businesses.<sup>18</sup> In many ways, the alignment technique commonly practiced in design-related fields represents a common ground between existing disciplinary boundaries. The visual deliverables we produce help to coordinate the design of: information systems, service offerings, and intended user experiences across products and platforms. These visualizations reveal value that can not only aid in the creation of products and services, but also improve changes in the business strategy as well.

## BIOGRAPHIES

*James Kalbach* is a User Experience Consultant with LexisNexis, a leading provider of legal and news information, where he develops interfaces for web-based search applications. He previously served as head of information architecture with Razorfish, Germany. He holds a degree in library and information science from Rutgers University, as well as a Master's degree in music theory and composition.

*Paul Kahn*, managing director of Kahn+Associates, is a leading international consultant, speaker and author on web site architecture and visualization. His activities in the United States included director of the Institute for Research in Information and Scholarship (IRIS) at Brown University, co-founder and president of Dynamic Diagrams and adjunct professor at the Rhode Island School of Design. He currently teaches in Mastère Multimédia programs in France, Switzerland and Finland.

## NOTES

**1** Jess McMullin, "Searching For The Center of Design," *Boxes and Arrows* (September 2003), [http://www.boxesandarrows.com/view/searching\\_for\\_the\\_center\\_of\\_design](http://www.boxesandarrows.com/view/searching_for_the_center_of_design).

**2** James Womack and Daniel Jones, "Lean Consumption," *Harvard Business Review* (March 2005).

**3** G. Lynn Shostak, "Designing Services That Deliver," *Harvard Business Review* (January 1984).

**4** Indi Young, *Mental Models* (Rosenfeld Media, 2009).

**5** *Ibid.*, 248.

**6** Bruce Tempkin, "Mapping the Customer Journey," *Forrester Report* (February 2010).

**7** Bruce Tempkin, "It's All About Your Customer's Journey," *Customer Experience Matters* (March 4, 2010), <http://experiencematters.wordpress.com/2010/03/04/its-all-about-your-customers-journey/>.

**8** Gene Smith, "Experience Maps: Understanding Cross-Channel Experiences For Gamers," *nForm Blog* (February 2010), <http://nform.com/blog/2010/02/experience-maps-cross-channel-experiences-deliverable-for-gamers>.

- 9** Paul Kahn and Julia Moisand. "Patterns that Connect: the Value of Mapping Complex Data Networks." *Information Design Journal* 17, no. 3 (2009).
- 10** Gianluca Brugnoli, "Photography Touchpoints Matrix," *Touchpoint Matrix, Service Design Tools*, <http://www.servicedesigntools.org/tools/108>.
- 11** IBM, "Capitalizing on Complexity," (2010), <http://www-935.ibm.com/services/us/ceo/ceostudy2010/>.
- 12** Booz & Co, "Executives Say They're Pulled in Too Many Directions and That Their Company's Capabilities Don't Support Their Strategy" (February 2011), <http://www.booz.com/global/home/press/article/49007867>.
- 13** Paul Leinwand and Cesare Mainardi, *The Essential Advantage* (Harvard Business Review Press, December, 2010), [www.theessentialadvantage.com](http://www.theessentialadvantage.com).
- 14** Ibid., 7.
- 15** Ibid., 15.
- 16** Kim Erwin, "Consumer Insight Maps: The Map as Story Platform in the Design Process," *The Parsons Journal for Information Mapping* 3, no. 1 (2011).
- 17** Young, *Mental Models*, 256.
- 18** Jennifer S. Mueller, Jack A. Goncalo, and Dishan Kamdar, "Recognizing creative leadership: Can creative idea expression negatively relate to perceptions of leadership potential?" *Journal of Experimental Social Psychology* (2011) (in press).