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# Mapping Experiences

A COMPLETE GUIDE TO CREATING VALUE THROUGH JOURNEYS, BLUEPRINTS & DIAGRAMS



Jim Kalbach

## Praise for *Mapping Experiences*

*Mapping Experiences will help both designers and consumers of design services understand how to visualize experiences and the system ecology in which products and services exist with the all-important customer. His approach to the subject is both broad and deep. The analytical and practical/practice chapters speak directly to the current interest in visual artifacts associated with strategy and service design.*

—Paul Kahn  
Experience Design Director, Mad\*Pow  
Author of *Mapping Websites*

*As designers grapple with ever more complex services and systems, the need to visually map them is paramount. There are hundreds of different ways of mapping and diagramming experiences and they are locked away in hundreds of different books and academic papers. Jim Kalbach has pulled them all together in an excellent book that should be on the desk of everyone involved in UX, service design and business.*

—Andy Polaine  
Design Director, Fjord

*Adopting an outside-in perspective, developing empathy with the people you support, and creating visualizations of these perspectives is the power-trio for the future of your organization. The trio allows you to support people, internally and externally, in a more nuanced, coordinated manner. It also enables you to see new paths ahead, so that you can branch away from your competition. Jim's book is an excellent explanation of this trio, and includes a collection of tools that you can put to immediate use.*

—Indi Young  
Research consultant and empathy coach  
[indiyoung.com](http://indiyoung.com)

*With Mapping Experiences, Jim Kalbach has done a terrific service for anyone tackling complex, systemic design challenges.*

*He not only documents the best approaches to experience mapping, but also pushes the topic forward, by sharing his insights and hard-won experience about this rich, still-evolving area of design practice. Mapping Experiences will be an essential guide for many years to come.*

—Andrew Hinton  
Author of Understanding Context

*We live in an age where images are more powerful than words.*

*Everyone working in the areas of customer experience and strategy will benefit from learning how to express ideas visually, and Mapping Experiences is a great place to start.*

—Victor Lombardi  
Author of Why We Fail: Learning from Experience Design Failures

*This book offers the right approach to using maps as a tool in experience design and execution, and that is, there is no one-size-fits-all. Instead of offering just one idea around how to best align your teams around the idea of better experiences, Kalbach offers several tips, tricks, and processes to actually get things done. This is the down-to-earth manual that's been missing. Readers will find the right way for their unique challenges, not one unique process to try to make fit for their situation. Everyone can benefit from reading this book!*

—Jeannie Walters  
CEO and Chief Customer Experience Investigator of 360Connext,  
writer, and speaker

*Our experiences interacting with faceless companies often make us ill. Mapping Experiences, wielded properly, might actually do something to eliminate the all-too-typical shoulder shrugging and buck passing we face—and help designers and decision-makers*

*alike become customer experience heroes.*

—Lou Rosenfeld

Publisher, Rosenfeld Media

Co-author of Information Architecture for the Web and Beyond

*Kalbach gives clarity to the growing number of customer-focused visualization—and provides readers with practical guidance for creating their own.*

—Kerry Bodine

Coauthor of Outside In: The Power of Putting Customers at the Center of Your Business

*Thoughtful. Rigorous. Clear. Jim Kalbach's Mapping Experiences literally creates a new cartography for organizations and innovators to successfully navigate design processes. His essential themes of "designing to align" and "aligning to design" address the key issues I see in enterprises seeking to better organize around UX.*

—Michael Schrage

Research fellow at MIT Sloan School's Initiative on The Digital Economy

Author of Who Do You Want Your Customers to Become?

# Customer Journey Maps

## IN THIS CHAPTER

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Background to customer journey maps

Decision-making

Conversion funnel

Elements of customer journey maps

Case study: Meridian Health

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The exact origin of the term *customer journey map* (CJM) is unclear. The basic idea of looking across touchpoints seems to have its roots in Jan Carlzon's concept of moments of truth. (See Chapter 2 for more on moments of truth.) Carlzon advocated an ecological view of the customer experience, but he never explicitly talked about a map of the customer journey as such.

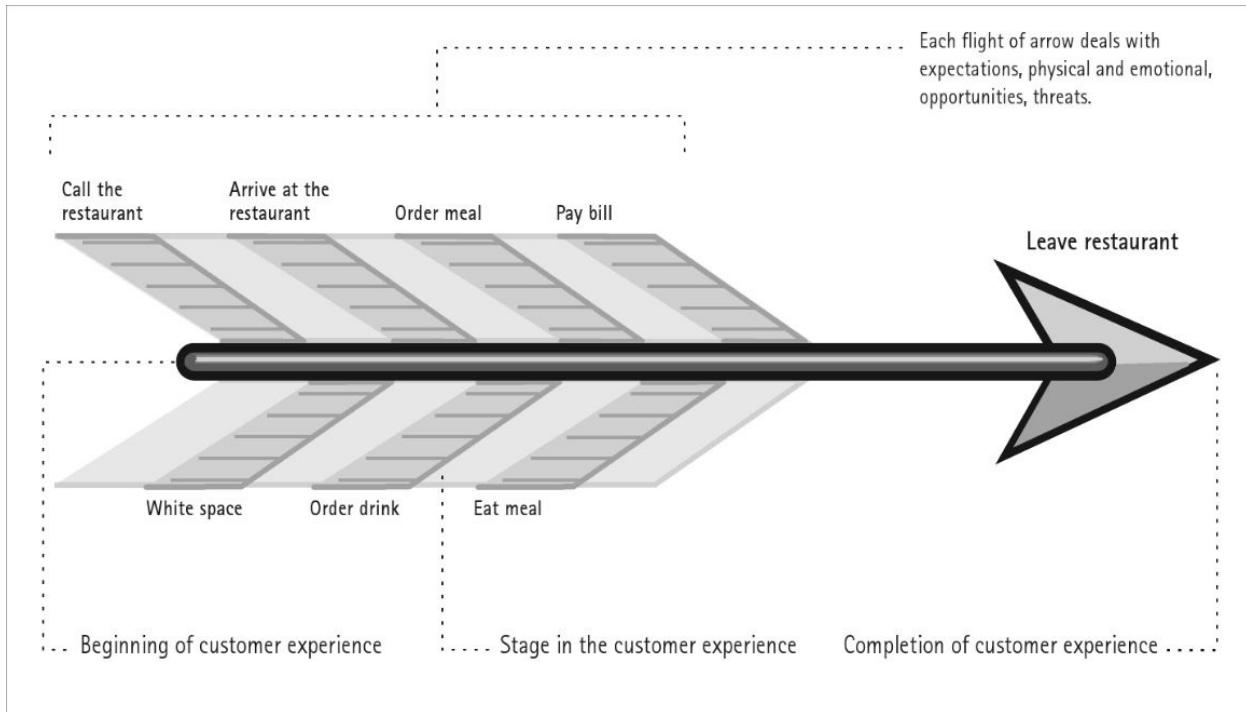
It wasn't until the field of customer experience management came into focus just before the turn of the century that journey mapping emerged. For instance, in a seminal article appearing in *Marketing Management* in 1994, authors Lewis Carbone and Stephan Haeckel speak of an *experience blueprint*, which they define as "a pictorial representation of the experience clues to be engineered, along with specification that describes them and their individual functions."

In 2002, customer experience expert Colin Shaw introduced the concept of what he calls *moment mapping*—recalling Carlzon. The resulting diagram (Figure 10-1) uses an arrow to map the phases of the customer experience.

From this, analysis opportunities for creating a positive customer experience can be derived, shown in Figure 10-2.

As a type of diagram, CJMs are derived from service blueprinting. For

sure, the two types of diagrams are similar, particularly in structure (i.e., chronological). But there are also differences in point of view, scope, focus, and use.



**FIGURE 10-1.** Colin Shaw's description of the elements of a moment map resembles contemporary CJMs.

Step	Booking	White space	Travel	Arrive at car park	Enter restaurant	Place order
Expectation	I'll get through quickly and they'll have availability	Nothing is going to happen until I get to the restaurant on the night	I am not going to be offered any form of directions	The parking will be easy	I will be greeted with a smile and they will be friendly—take me to my table	There will be sufficient choice—it will be presented in a friendly way
Threat	They are fully booked	Nothing does happen—lost opportunity	Customer doesn't know where it is	There are no parking spaces when customer arrives	Customer is ignored because all the staff are busy	There is nothing on the menu that the customer likes—restaurant runs out of an advertised choice
Opportunity to exceed physical expectations	Wow—when I made the booking they realised I had been before and what I had eaten!	Wow—I have just received a letter confirming my reservation together with a copy of the menu	Wow—the restaurant has sent me a map!	Wow—they have reserved me a space!	Wow—they were waiting to greet us as we walked through the door!	Wow—waiter gives you his personal recommendation about what is good
Opportunity to exceed emotional expectations	They recognise you and can remember when I dined last time	The letter is personalised to me and suggests some dishes I may like. This makes me happy	I'm reading the menu; it sounds great!	There is a sign outside the restaurant saying welcome to me!	We are greeted like long lost family	They remember what I had last time which shows they care
Emotion evoked	Surprise, anticipation	Surprise and anticipation	They care	I'm special	I'm with my friends	They care

**FIGURE 10-2.** A moment map table from Colin Shaw and John Ivens's book *Building Great Customer Experiences* (2002) includes emotional aspects of a customer journey.

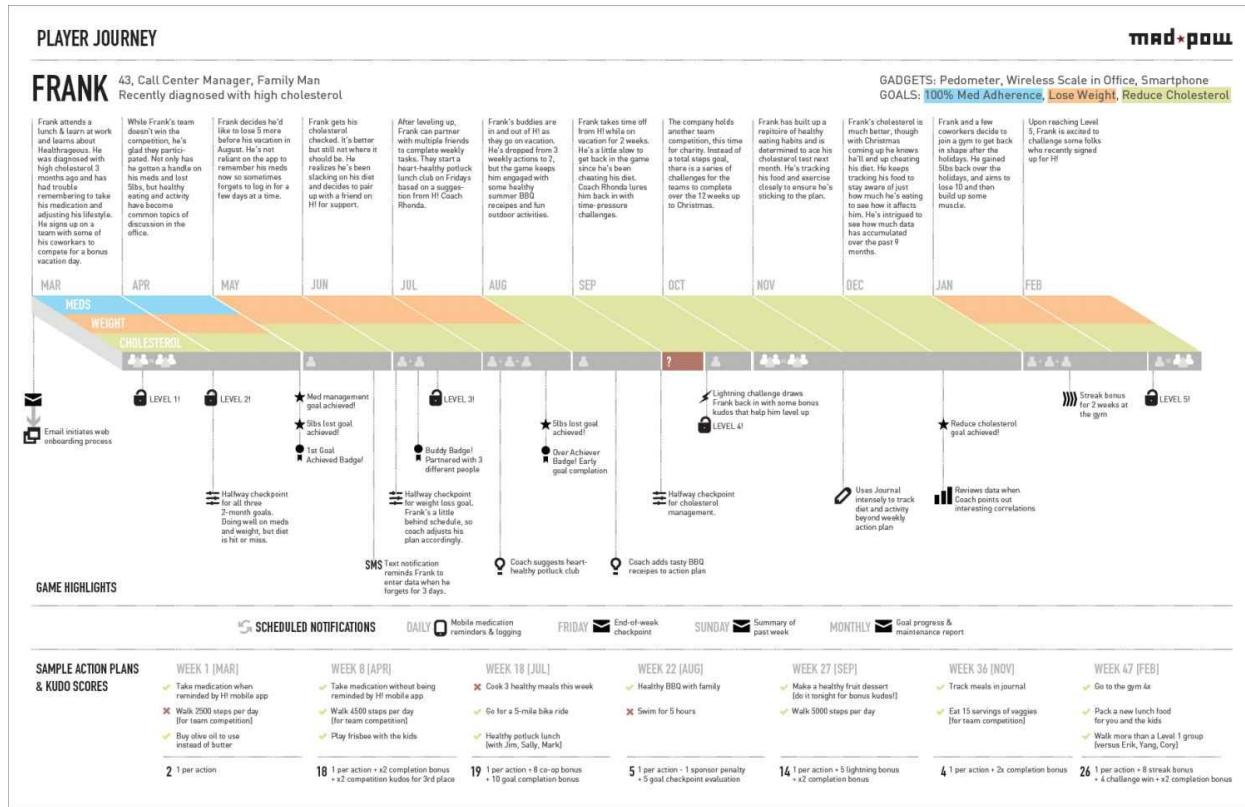
The contemporary style of CJMs seems to have come about in the mid-2000s. Bruce Temkin, a leading customer experience expert, is one of the early advocates for CJMs and greatly promoted their use in the USA. In a Forrester report entitled “Mapping the Customer Journey,” Temkin defines CJMs as “documents that visually illustrate customers’ processes, needs, and perceptions throughout their relationships with a company.”

Temkin points to the significance of CJMs in his later blog post “It’s All About Your Customer’s Journey”:

*Companies need to use tools and processes that reinforce an understanding of actual customer needs. One of the key tools in this area is something called a customer journey map...Used appropriately, these maps can shift a company’s perspective from inside-out to outside-in.*

Figure 10-3 shows an example of a CJM created by Jamie Thomson of

Mad\*Pow. It visualizes a year of engagement in a high-level way that helped the product team see how game mechanics and coaching communications could work together. The aim was to support and nudge the player along a path toward his health goals.



**FIGURE 10-3.** Customer journey map showing a one-year journey of a person playing a health behavior change game (created by Jamie Thomson).

Figure 10-4 shows another example, in this case for a broadband provider. This CJM was created by Effective UI, a leading digital experience consultancy. It includes a very prominent emotional curve in the center. This clearly suggests that many factors come into play, chief among these the emotional experience.

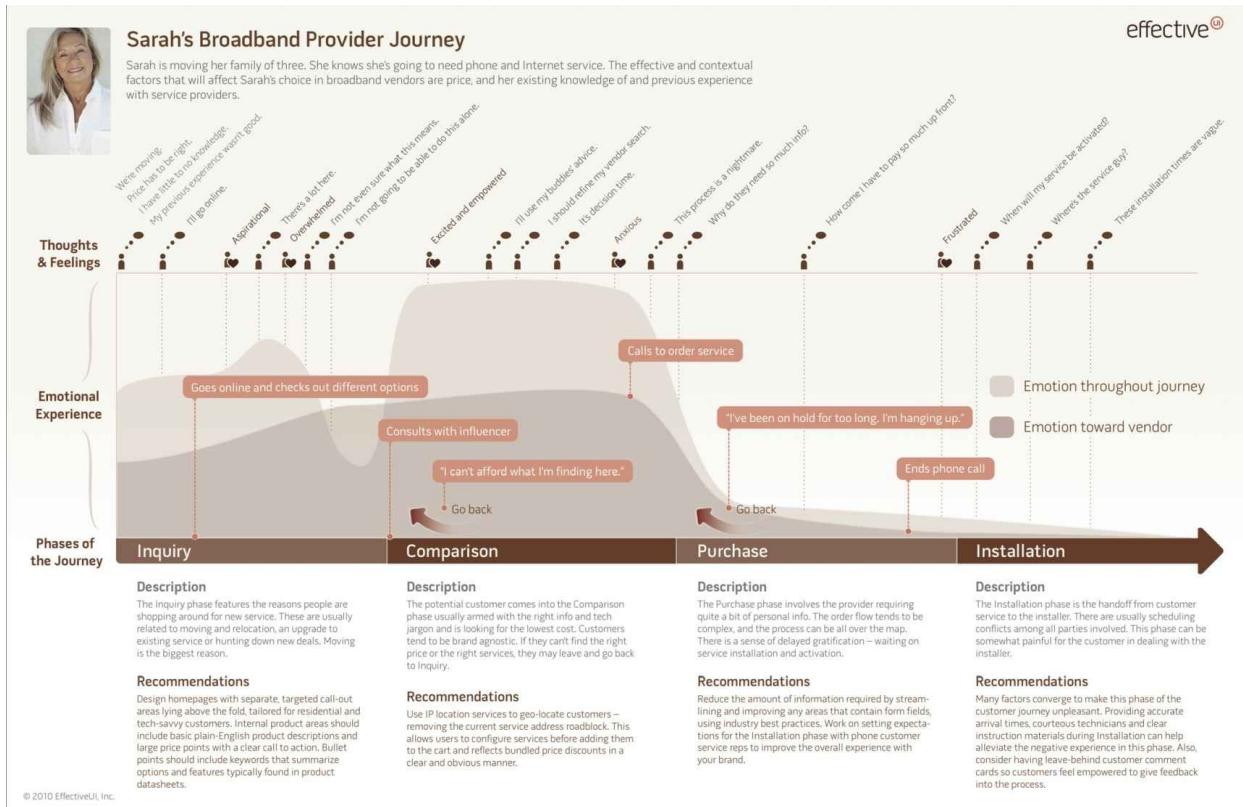
CJMs typically focus on the relationship of an individual as a customer of an organization. Frequently, they highlight some decision-making process. In Figure 10-4, the “Purchase” phase highlights the decision to buy.

But CJMs are versatile and have a range of uses. They are often used to better understand customer loyalty and how to improve existing customers’ experiences. They help answer such questions as: How can an organization better engage customers? How can it provide value that keeps them coming back? How can it make services more relevant?

Creating great experiences is not about individual touchpoint optimization but rather how touchpoints come together into a unified whole. CJMs are a strategic tool to visualize touchpoints to manage them more effectively.

The *customer journey canvas* (Figure 10-5) is a variation of a CJM that is particularly good for getting input from the entire team. The open canvas arrangement invites others to contribute. The customer journey canvas was created by service design experts Marc Stickdorn and Jakob Schneider for their influential book *This Is Service Design Thinking*. The canvas-style template allows teams to audit their customer's journey together.

The basic format of the customer journey canvas reveals both frontstage and backstage components to the service experience. It aligns such things as pre-service actions of the provider to customer expectations, as well as how the provider will manage customer relationships over time after a service encounter.



**FIGURE 10-4.** This example of a CJM for a broadband provider, created by Effective UI, focuses on emotional aspects of a journey.



**FIGURE 10-5.** The customer journey canvas created by Marc Stickdorn and Jakob Schneider is a variation of the typical CJM.

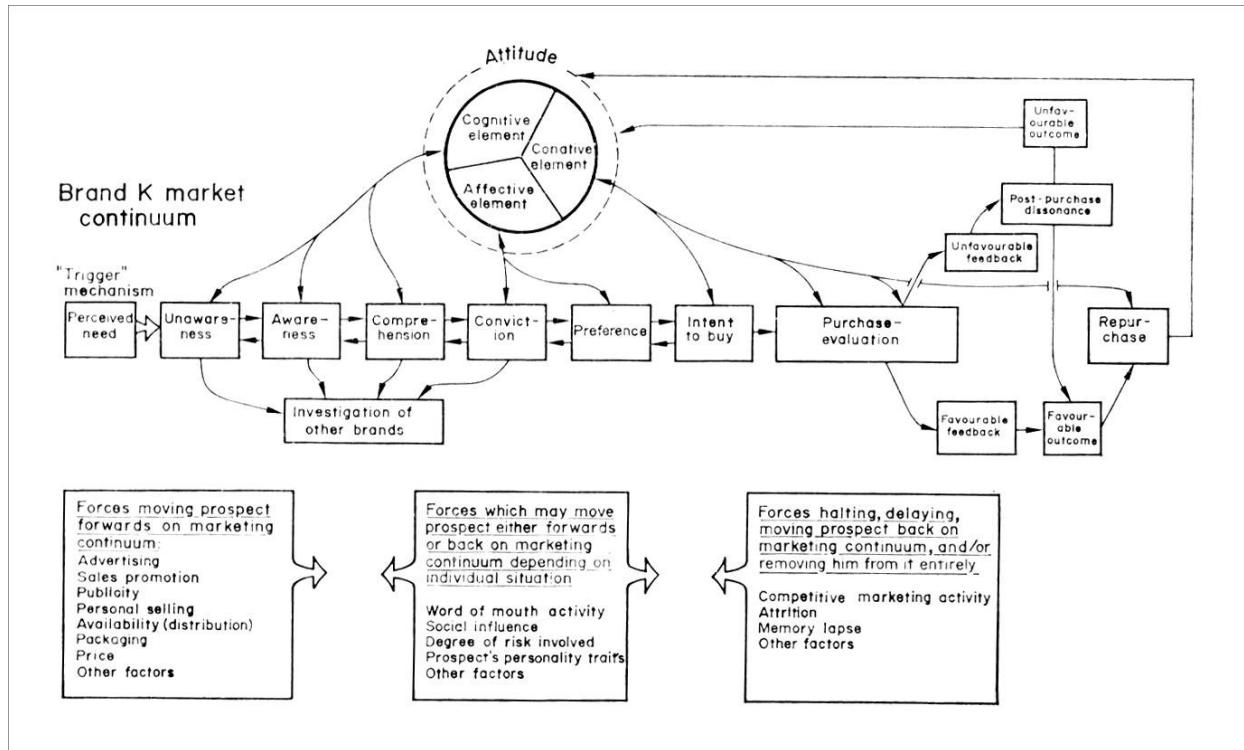
## Customer Lifecycle Maps

Some practitioners also make a distinction between CJMs and customer lifecycle maps.\* The latter are broader yet and deal with the lifetime relationship between a customer and an organization. Customer lifecycles typically include slightly more abstract phases that reflect an overall relationship rather than a specific journey.

The history of customer lifecycle planning can be traced back to the early 1960s. For instance, Russell Colley developed a framework for evaluating advertising success in a book titled *Defining Advertising Goals for Measured Advertising Results*. The technique is referred to as DAGMAR for short. This model had several phases of interaction, from awareness to action. In 1961, Robert Lavidge and Gary Steiner offered a similar model.<sup>†</sup>

From these models and others formed during the 1960s, John Jenkins

developed one of the earliest comprehensive lifecycle diagrams in his 1972 book *Marketing and Customer Behaviour*. Figure 10-6 shows his original model, which he calls the market continuum model.

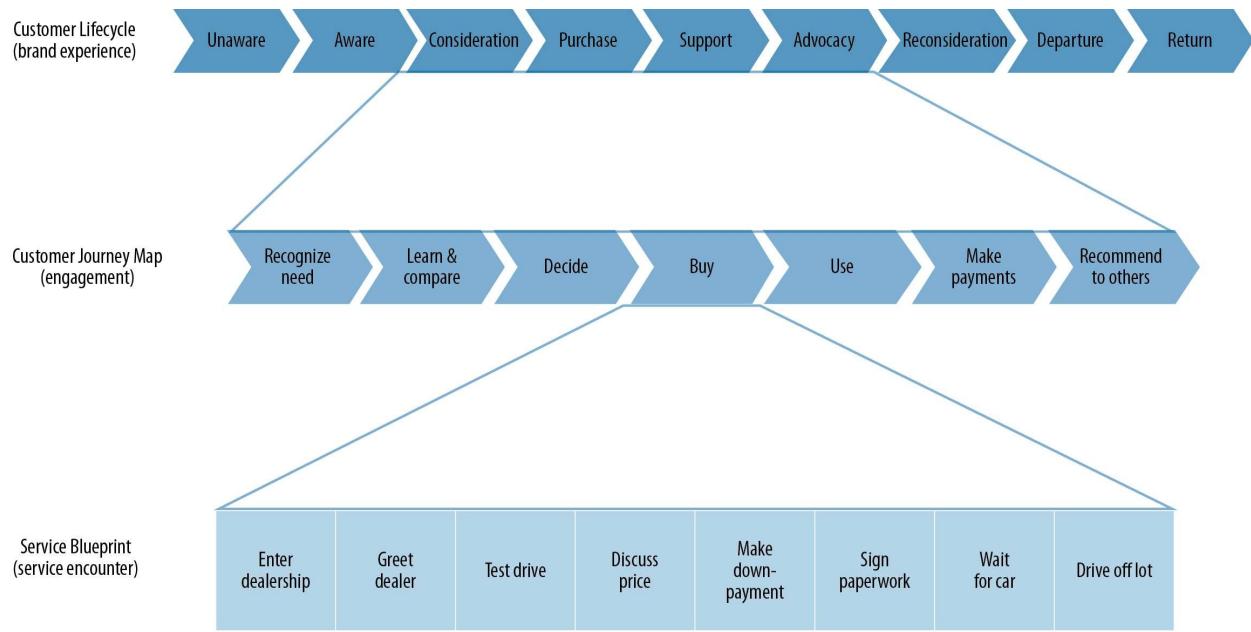


**FIGURE 10-6.** John Jenkins's model of the customer lifecycle (1972) represents perhaps the earliest example of a journey map.

From this perspective, a customer lifecycle map is about overall brand loyalty and the emotional connection to an organization as a whole, not just a product or service. CJMs are more about a particular type of engagement within that lifecycle, and example service blueprints historically center on specific types of service encounters. Figure 10-7 illustrates the approximate relationship of these three views: customer lifecycles, CJMs, and service blueprints—in this case, for the experience of buying and owning a car.

These distinctions are broad generalizations and not absolutes. The relationship between these approaches is not strictly hierarchical. What's more, in the field, these terms are used interchangeably. Many people refer to customer lifecycles as CJMs, and holistic service blueprints may

show the end-to-end experience. In any case, don't get hung up on labels: focus instead on telling the story of value creation.



**FIGURE 10-7.** Customer lifecycles look at the overall relationship to a brand. Customer journey maps look at a particular type of engagement. Service blueprints typically analyze specific types of service encounters.

## Related Models

Outside of commercial settings, Everett Rogers uncovered the complexity of adoption of new products. In his landmark book *Diffusion of Innovations*, Rogers outlines his *innovation-decision process* based on decades of research (Figure 10-8).



**FIGURE 10-8.** The innovation-decision process, first described by Everett Rogers.

Though dating back to the 1960s, this process resembles typical phases of modern CJMs. In fact, John Jenkins cites Rogers's model as a direct influence on the early map shown in Figure 10-6.

The attitude of the individual during the *persuasion* phase, in particular, is critical. Rogers was able to narrow down predictors of decision-making in this phase to a set of five basic principles. These are the questions decision makers ultimately ask before adopting a new product or service:

- Relative advantage. Is it better than existing alternatives?
- Compatibility. Is it appropriate? Does it fit into my beliefs and values?
- Complexity. Is it easy to comprehend and use?
- Trialability. Can it be tested without penalty?
- Observability. Can it be observed and understood?

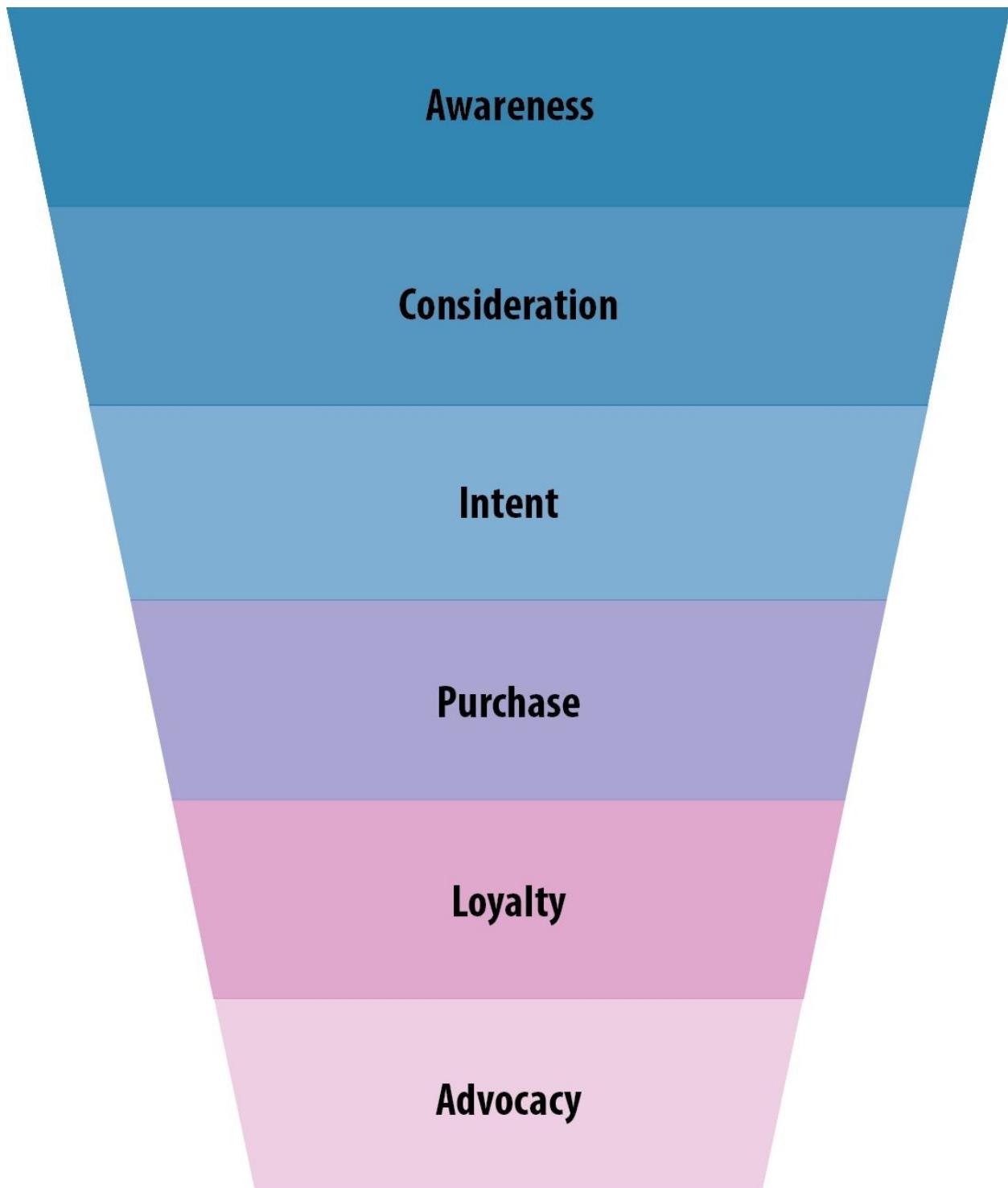
If most are answered affirmatively, the chance of adoption is higher. In other words, these are the key factors that influence the decision-making process.

Keep in mind that these are *perceived* characteristics. That is, the perception of value is in the mind of the customer, not an absolute property of a product or service. Similarly, CJMs seek to understand how

an offering is actually perceived by customers, from their vantage point.

## The Conversion Funnel

The decision to make a purchase is typically seen as a funnel (Figure 10-9). The exact phases or steps along the way can vary, depending on how the funnel is conceived.



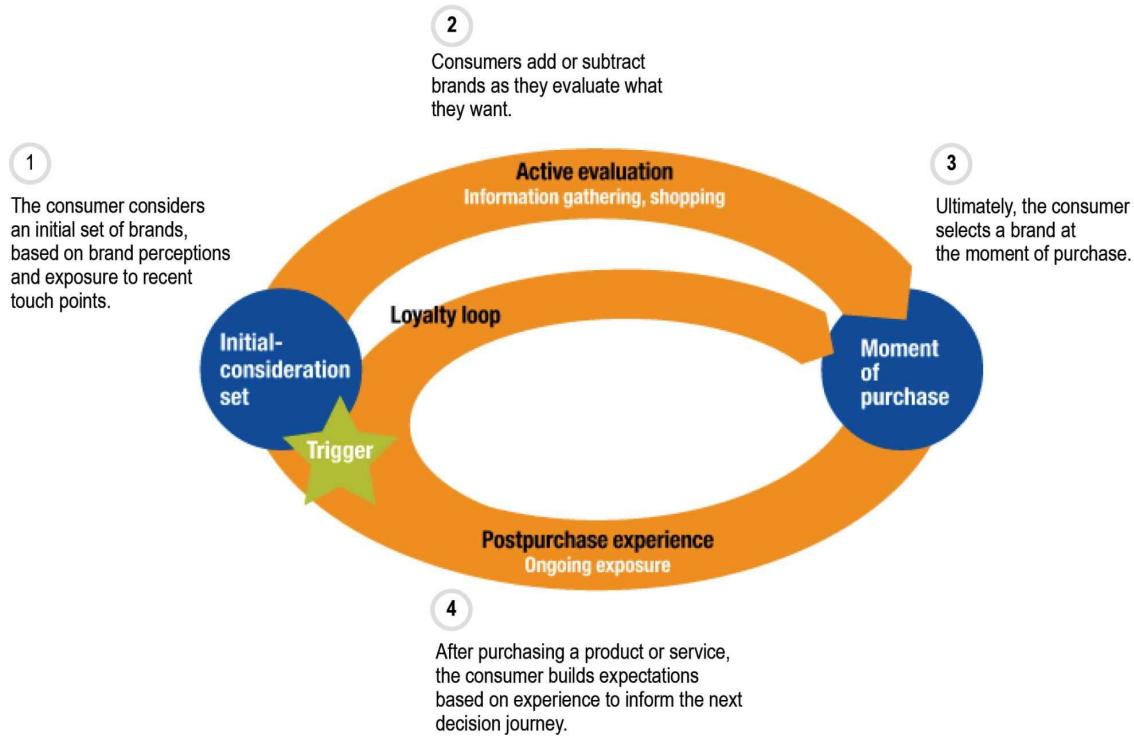
**FIGURE 10-9.** Typical marketing funnel showing progression through the customer journey.

The metaphor suggests that people enter into a wide opening and get

funneled into making a purchase. But at various points, there are decisions to leave the process, thereby reducing the number of people that continue all the way to conversion.

Market researchers at McKinsey and Company suggest a new model, which they call the *consumer decision journey*.<sup>‡</sup> They believe consumers are increasingly changing the way they research and buy products and services. They do much more upfront research and comparison than ever before, particularly online. (See the sidebar, “Zero Moment of Truth” in Chapter 2 for more on these shifts.)

Figure 10-10 reflects their updated decision-making model.



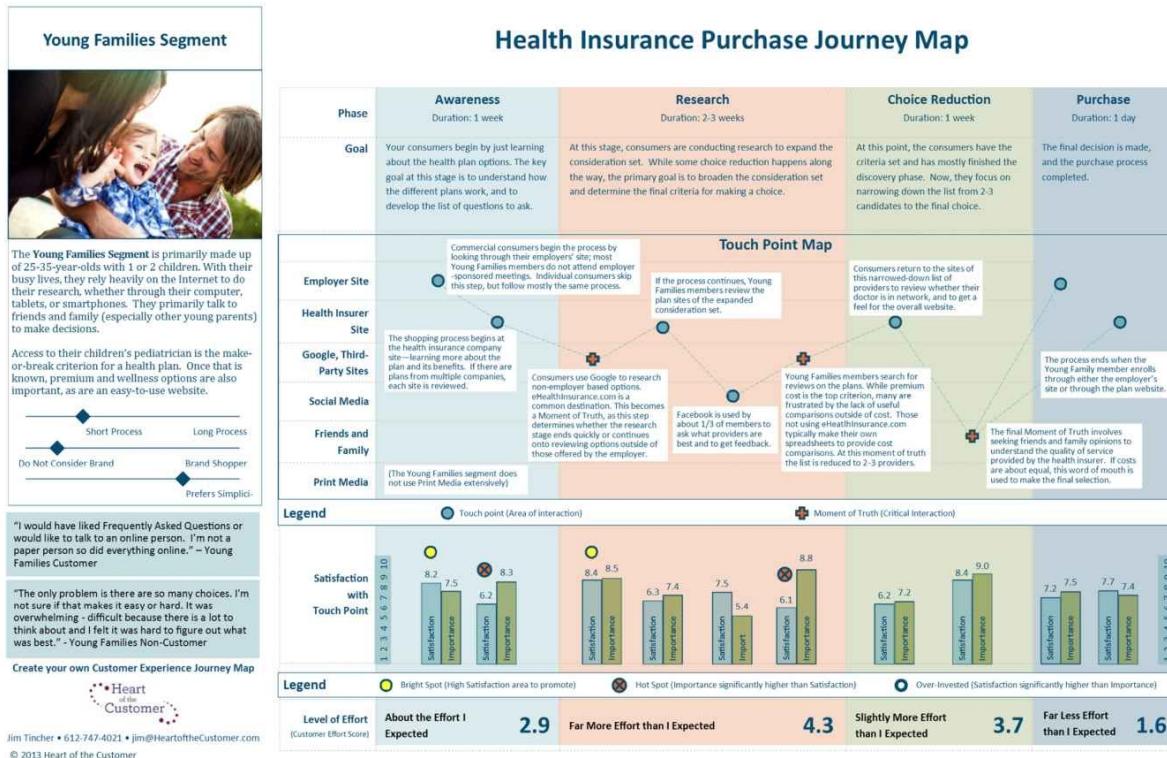
**FIGURE 10-10.** The consumer decision journey, as visualized by consultants at McKinsey, changes the basic notion of a funnel.

The circular arrangement of this model reflects a need to reevaluate how consumers go through their decision-making process. In this age of empowered consumers, the process is more circular. One person's experiences after purchase become the next person's evaluation criteria. With this model, there is no more "top of the funnel" where consumers enter en masse.

## Elements of CJMs

CJMs aren't mere inventories of touchpoints. They include deeper insight into the motivations and attitudes of customers. What makes them purchase? What keeps them satisfied? These are the types of questions a CJM needs to address.

Consider the elements and structure of the map in Figure 10-11. Each touchpoint is clearly indicated in the middle across different channels. Below those are actual satisfaction scores from quantitative sources.



**FIGURE 10-11.** A CJM for purchasing health insurance, created by Jim Tincher at Heart of the Customer, shows the typical elements.

CJMs are decidedly less formulaic than service blueprints. They can include a number of different elements and information types, such as pain points, moments of truth, brand perception, and more. The creator of a CJM should include aspects appropriate to an organization's needs. Some typical elements of CJMs include actions, goals, emotions, pain points, moments of truth, touchpoints, satisfaction, and opportunities.

Table 10-1 summarizes the main aspects that define customer journey maps using the framework outlined in Chapter 2.

<b>Point of view</b>	Individual as a consumer
<b>Structure</b>	Chronological
<b>Scope</b>	End-to-end experience, from recognizing a need to ending the relationship Often centered on a single person's journey, but can also show a holistic, aggregate map across personas and touchpoints.

<b>Focus</b>	Focus primarily on the consumer experience, with very little on backstage processes
<b>Uses</b>	Used for touchpoint analysis and optimization Strategic planning for customer experience management, marketing, and branding initiatives
<b>Strengths</b>	Simple to understand Widespread use Suitable for co-creation with teams and stakeholders
<b>Weaknesses</b>	Typically view individuals as consumers Often leave out internal processes and actors

**TABLE 10-1.** Defining aspects of customer journey maps

## Further Reading

David Court et al. "The Consumer Decision Journey," *McKinsey Quarterly* (Jun 2009)

*Consultants at McKinsey did extensive research around the world to arrive at a new model for consumer purchasing decisions. This supersedes the traditional funnel model, with a circular model of decision making. See also an in-depth article by McKinsey principal David Edelman: "Branding in the Digital Age: You're Spending Your Money in All the Wrong Places," Harvard Business Review (Dec 2010).*

Joel Flom. "The Value of Customer Journey Maps: A UX Designer's Personal Journey," *UX Matters* (Sept 2011)

*This is a good case study around the use of customer journey maps at Boeing, including a good illustration of a map with an interesting layout and form. Look at this article if you need some arguments for convincing others. The author was first skeptical of their use, but concludes: "By producing journey maps that illustrate an optimal customer experience, we enable stakeholders and executives to identify, prioritize, and maintain focus on the changes that matter."*

Megan Grocki, "How to Create a Customer Journey Map" *UX Mastery* (Sep 2014)

*This is a short but very informative article on the overall process of journey mapping. Grocki breaks it down into nine steps. This article includes a short video explaining the approach very well.*

Tim Ogilvie and Jeanne Liedtka. "Journey Mapping," Chapter 4 in *Designing for Growth* (Columbia Business School Publishing, 2011)

*This book is fundamentally about design thinking and its relevance to business. The authors outline an end-to-end process for customer-centered design with many methods, the first of which is customer journey mapping. Chapter 4 deals exclusively with mapping and includes a step-by-step methods of creating them.*

Arne van Oosteroom. “**Mapping Out Customer Experience Excellence: 10 Steps to Customer Journey Mapping,**” MyCustomer.com (2010)

*Van Oosteroom is a leading service design expert in Europe and well versed in customer journey mapping. This is a short article that makes some important points about CJMs, including how they build empathy, understanding, and trust within teams. There is a quick guide to creating a CJM at the end of the article.*

Everett Rogers. *Diffusion of Innovations*, 5th ed. (Free House, 2003)

*Considered the bible of innovation adoption, this lengthy book is based on decades of research in a variety of fields. Though the book first appeared in 1962, the 5th edition was written in 2003 and includes a section on the Internet. Still, the principles and discussions in this landmark book are wholly relevant to discussions of decision-making processes and innovation adoption today. Rogers is perhaps better known for his model of innovation adopter types, including coining terms such as “early adopters.”*

Adam Richardson. “**Using Customer Journey Maps to Improve Customer Experience,**” Harvard Business Blog (Nov 2010) and “**Touchpoints Bring the Customer Experience to Life,**” Harvard Business Blog (Dec 2010).

*This pair of articles from expert Adam Richardson of frog design covers some basics of CJMs. The second one dives deeper into touchpoint analysis and provides some good tips and examples of what to look for and map. The important thing about these articles is that they appear in a leading business venue. Pointing to these can help get the attention of stakeholders at different levels.*

Bruce Temkin. “**Mapping the Customer Journey,**” Forrester Reports (Feb 2010)

*Bruce Temkin was an early advocate of customer journey maps and did a great deal to increase their use and profile. Writing for Forrester, he produced several key reports on the topic that were influential. This report is one of his first with Forrester; see other writings from Temkin on the subject.*

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\* See, for example, Lavrans Løvlie. “Customer Journeys and Customer Lifecycles,” *Customer Blah* (Dec 2013).

† Robert Lavidge and Gary Steiner. “A Model for Predictive Measurements of Advertising Effectiveness,” *Journal of Marketing* 25/4 (1961).

‡ See David Court et al. “The Consumer Decision Journey,” *McKinsey Quarterly* (Jun 2009) and David C. Edelman. “Branding in the Digital Age: You’re Spending Your Money in All the Wrong Places,” *Harvard Business Review* (Dec 2010).

# Customer Journey Mapping in Practice

by Jim Tincher, Mapper-In-Chief, Heart of the Customer

Seeking to identify specific ways to boost loyalty and referrals among its radiology patients, Meridian Health reached out to the customer journey map experts at Heart of the Customer (HotC).

HotC's Mapper-in-Chief, Jim Tincher, and his team worked with Meridian's Vice President of Marketing, Chrisie Scott, and Director of Experience Marketing, Tria Deibert, to identify several key customer segments (personas) to focus on in creating their customer journey maps, to shed light on the differing needs of each type of patient, and to explore what they were thinking and feeling during each step of their healthcare experience.

They began with a hypothesis based on input from internal staff: that scheduling difficulties were the primary source of customer frustration. But as is often the case in journey mapping, it soon became apparent that the touchpoints employees believed to be problematic were not actually causing friction for customers.

Data gathered from dozens of patients through journaling exercises and more than half a dozen focus groups during the early stages of the mapping process revealed that patients found Meridian's scheduling and registration procedures to be straightforward and smooth, with particularly high marks given to their caring and competent staff. Patients were also quite satisfied with other touchpoints that were identified during the mapping process, including the actual treatment they received.

At the same time, highlighted moments of truth revealed an issue that did need to be addressed: many patients didn't know what to expect at different stages of their journey, and weren't initially offered guidance to navigate from step to step.

Focusing on two of the journey maps HotC created for Meridian—those representing patients on either end of the experience spectrum

—illustrates the unique value of customer journey mapping.

On one end, there's Seen-it-all Stanley (Figure 10-12), a heavy healthcare user whose familiarity with "the system" tempers both his expectations and his anxiety level. He knows to leave a little extra time for parking, he can relax and enjoy watching TV in the waiting room until he's called in, and he knows when he can expect his test results.

Minor inconveniences or delays don't faze Stanley because he knows he's in good hands. Meridian has already earned his loyalty, and needs only to maintain the high level of service it already provides in order to keep it.

On the other end of the spectrum is Newbie Natalie (Figure 10-13), who is "learning the ropes" as she navigates Meridian's radiology services for the first time. Understandably, Newbie Natalie is more nervous, which magnifies the negative impact of friction during any touchpoint in her journey.

Parking difficulties get Natalie's visit off to a bad start, and not knowing when to expect her test results unnecessarily adds to her already elevated anxiety level. As a result, even though she is satisfied with the treatment she receives, and even though those kinds of problems are unlikely to recur on subsequent visits, they negatively impact her overall experience.

That finding was key to determining where to focus future customer engagement efforts, because Natalie won't be a Newbie for long. If her first experience is peppered with uncertainty and inconvenience, regardless of how minor, she will have little incentive to choose Meridian next time around.

So therein lay Meridian's greatest opportunity: meet Natalie's needs today, so that she can transition into a loyal, satisfied Seen-it-all Stanley tomorrow.

With that information and completed customer journey maps in hand, HotC moved on to the action component of the customer journey mapping process by leading workshops to brainstorm and prioritize ways to improve Newbie Natalie's experience.

Once it was determined that better communication was key, Meridian was able to devise ways to provide clearer, more specific guidance for each step of her journey. In doing so, Meridian keeps her anxiety to a minimum, helps her avoid unnecessary inconvenience, and provides the information that allows her to frame realistic expectations.

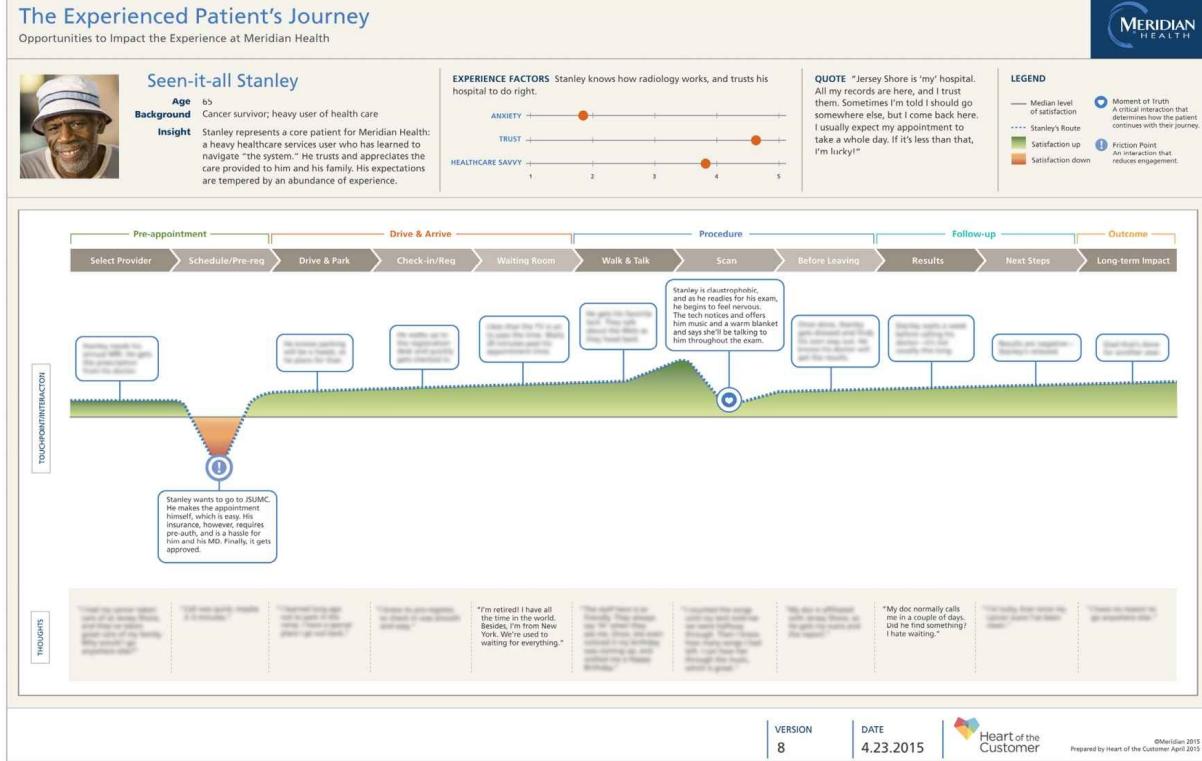
Had Meridian not engaged HotC to create customer journey maps and instead—per staffers’ initial perceptions of what the priority should be—focused on “improving” their scheduling and registration processes, not only would their efforts have been fruitless, they might even have decreased customer satisfaction by tampering with a system with which patients were happy. Instead, customer journey mapping illuminated simple, effective steps Meridian could take to turn anxious new patients into loyal and satisfied healthcare users.

## About the Contributor

Heart of the Customer Mapper-in-Chief Jim Tincher sees the world in a special way: through the eyes of customers.

With a lifelong passion for customer experience, Jim founded HotC to help companies of all sizes increase customer engagement. Before launching the company, Jim led customer engagement initiatives at Best Buy and UnitedHealth Group. In the process, he became an expert in using Voice of the Customer research to identify unmet needs, develop new products, and improve customer service. His *HotC Journey Maps* are a powerful tool designed with one simple goal: customer loyalty.

Jim’s fascination with customer experience also led him to become a *Certified Customer Experience Professional*. He is also an active member of the *Customer Experience Professionals Association (CXPA)*, serving as one of their CX Experts and providing advice to members worldwide.



**FIGURE 10-12.** Customer journey map for Seen-it-all Stanley, created by Heart of the Customer for Meridian (journey map design by Design Ahead).

## The New Patient's Journey

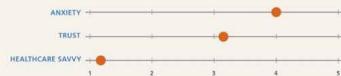
Opportunities to Impact the Experience at Meridian Health



**Newbie Natalie**

**Age:** 34  
**Background:** This is Natalie's first time for an MRI, so she's a bit anxious about it.  
**Insight:** Natalie's doctor's office printed out some WebMD pages about MRIs to help her understand what to expect.

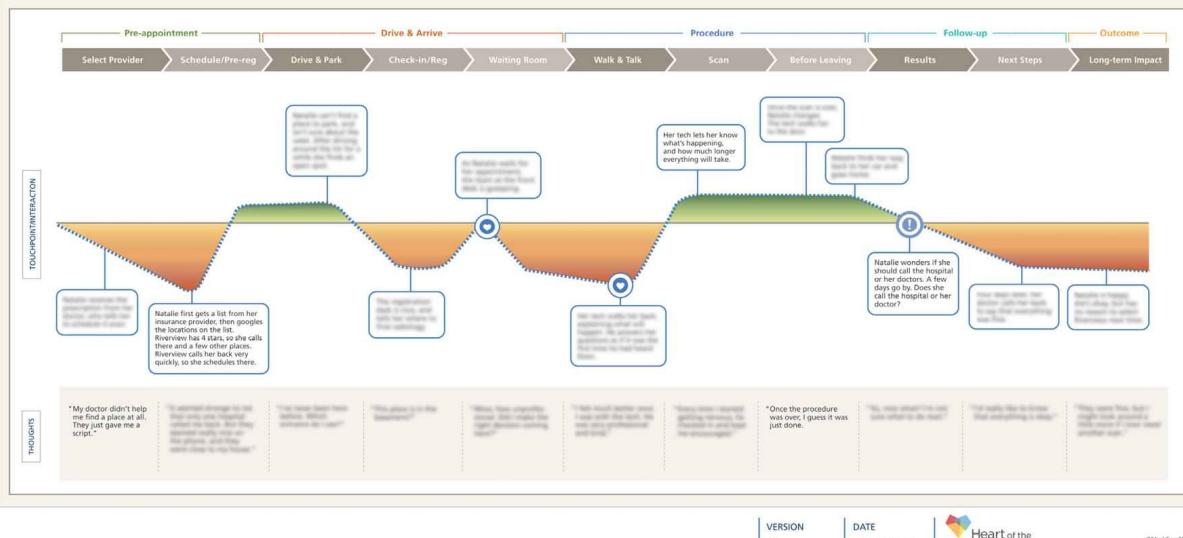
**EXPERIENCE FACTORS** Natalie has little healthcare experience overall, including advanced imaging, so she's anxious.



**QUOTE** "I wish they'd have helped me a bit more with where to go, and with what to expect. I was surprised how much I had to figure out on my own."

**LEGEND**

- Median level of satisfaction
- Natalie's Route
- ↑ Satisfaction up
- ↓ Satisfaction down
- ⌚ Moment of Truth: A critical interaction that determines how the patient continues with their journey.
- ⓘ Friction Point: An interaction that reduces engagement.



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Heart of the Customer  
Prepared by Heart of the Customer April 2015

**FIGURE 10-13.** Customer journey map for Newbie Natalie, created by Heart of the Customer for Meridian (journey map design by Design Ahead).

## Diagram and Image Credits

Figures 10-1 and 10-2: Moment map diagram and table from Colin Shaw and John Ivens. *Building Great Customer Experiences* (Palgrave Macmillan, 2002)

Figure 10-3: Customer journey map created by Jamie Thomson (Mad\*Pow), originally appearing in Megan Grocki, “How to Create a Customer Journey Map” *UX Mastery* (Sep 2014), used by permission.

Figure 10-4: An example of a CJM for a broadband provider, created by Effective UI, used with permission

Figure 10-5: The customer journey canvas created by Mark Stickdorn and Jakob Schneider, from *This Is Service Design Thinking*, CC BY-SA 3.0

Figure 10-6: Model of the customer lifecycle by John Jenkins from his book *Marketing and Customer Behaviour* (Pergamon Press, 1972)

Figure 10-10: David Court et al. “The Consumer Decision Journey,” *McKinsey Quarterly* (Jun 2009)

Figure 10-11: CJM by Jim Tincher, used with permission.  
<http://www.heartofthecustomer.com/customer-experience-journey-map-the-top-10-requirements/>

Figure 10-12: Map created by Jim Tincher, Heart of the Customer, designed by Design Ahead (<http://www.designahead.com>), used by permission from HotC and Meridian

## CHAPTER 11

# Experience Maps

## IN THIS CHAPTER

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Overview of experience mapping

Related models: job maps and workflow diagrams

Elements of an experience map

Case study: Workflow Diagrams at LexisNexis

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As the Internet continues to grow and evolve, service ecosystems become more complex. Products are connected. The idea of a standalone offering is already something of the past. Building the proverbial better mousetrap does not necessarily win anymore.

Instead, thinking in terms of ecosystems is the new competitive advantage. Steve Denning, a popular business writer with *Forbes* magazine, puts it this way.

*Even better products can disappear with alarming rapidity. By contrast, ecosystems that delight customers are difficult to build, but once built, are difficult to compete against.\**

Successful organizations will be determined by how well their services fit with each other and, more importantly, how well they fit into people's lives.

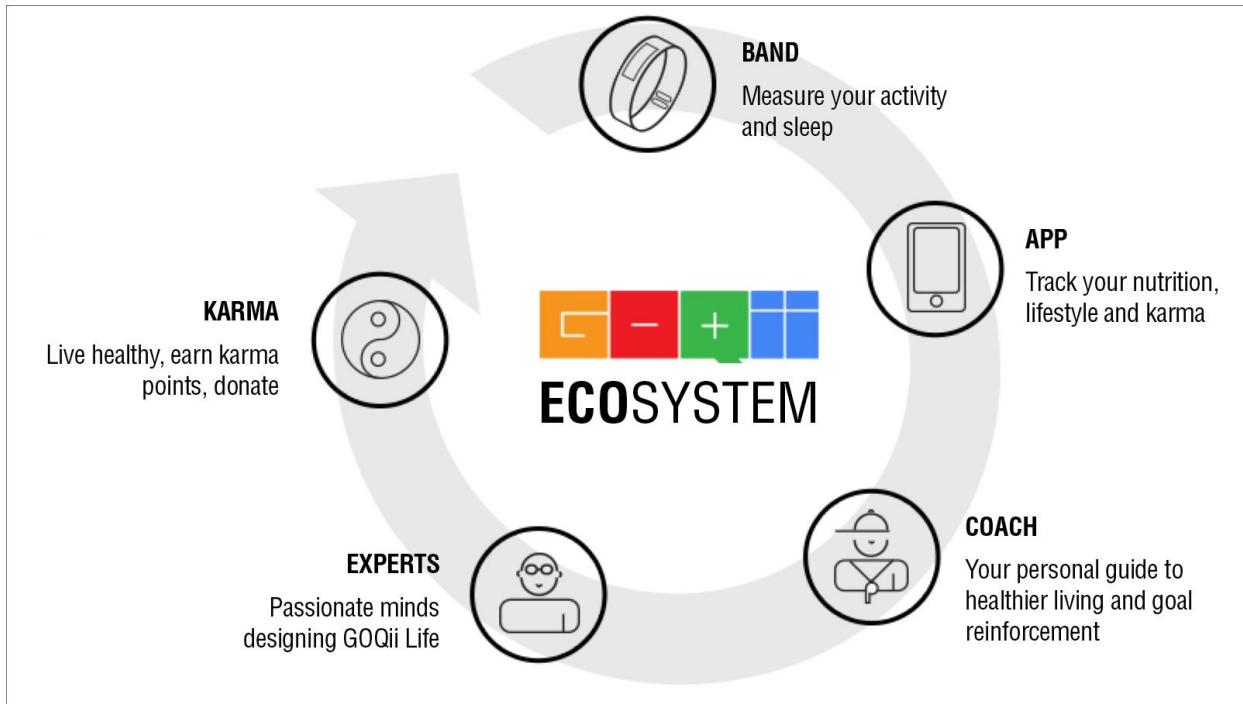
Ecosystem design doesn't apply only to large organizations. GOQii, for example, is a small company that makes a wearable fitness band. But unlike other bands, this one is connected to a trainer, who provides personalized health feedback. Meeting daily goals set by the trainer earns Karma points, which users can then donate to good causes.

By connecting activities around the field of fitness, GOQii created an ecosystem of experiences. This is an implicit part of the GOQii value proposition, reflected in their customer-facing diagrams, as seen in

## Figure 11-1.

Systems are now multifaceted and bring complexity with them. Hugh Dubberly, renowned designer and business consultant, believes models are an antidote. In an interview, Dubberly states:<sup>†</sup>

*We need models for planning systems, for thinking about the elements and the rules together, for thinking about how systems integrate with other systems embedded in systems of yet more systems. We need models not just of what appears on computer screens, not just of pathways, not just of interactions. We now also need models of goals and contexts. We need models of abstract ideas.*



**FIGURE 11-1.** The GOQii.com ecosystem includes a fitness band, an app, coaches and experts, and donations of Karma points earned.

Alignment diagrams represent these types of models. Experience maps, in particular—the topic of this chapter—look at the broader context of human activity, beyond the offerings of just one organization. They show the connections between people, places, and things, and they aid in the design of ecosystems.

## Maps of Experiences

By some definitions and uses, *experience maps* overlap completely with *customer journey maps*. For sure, the two terms are used interchangeably in practice. You may even find a mashup of terminology as well, with phrases such as “customer experience maps” and “experience journeys.” Don’t worry about the semantic differences of these labels. Instead, focus on the story you need to tell in your organization.

That said, there are general differences between experience maps and customer journey maps we can point to. Customer journey maps tend to view the individual as a consumer of the products and services. As the name implies, they are about the relationship of an individual as a *customer* of a specific service.

Experience maps, on the other hand, typically focus on a general human activity within a given domain. The company or organization may not even be explicitly stated, or there may be many organizations involved.

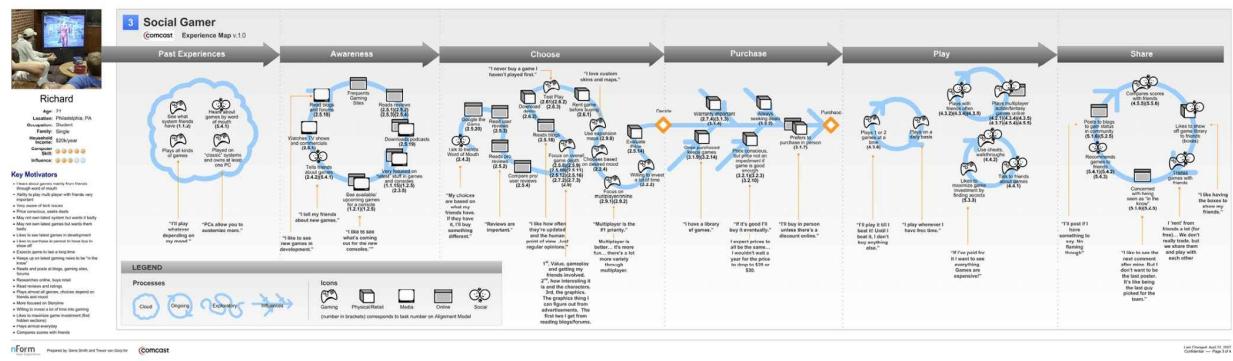
From this standpoint, experience maps separate experiences from solutions. They help shift an organization’s collective thought from features or internal processes toward the desired outcomes people seek.

---

*Successful organizations will be determined by how well their services fit with each other and, more importantly, how well they fit into people’s lives.*

---

One of the earliest examples of an experience map comes from Gene Smith and Trevor von Gorp of nForm, a leading experience design agency in Canada. Figure 11-2 shows their map for a video game enthusiast.



**FIGURE 11-2.** This experience map for social gamers shows a clear chronology from left to right.

Although this map includes a purchase phase, that is not the focus of the diagram. Smith describes how their motivation was to understand the context of gaming in greater depth in his blog post entitled “Experience Maps: Understanding Cross-Channel Experiences for Gamers.” He writes:

*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.*

Experience maps fundamentally recognize that people interact with many products and services from a multitude of providers in many situations. These experiences shape their behaviors and their relationship with any one organization. Examining this broader context will become increasingly crucial as products and service become connected with each other.

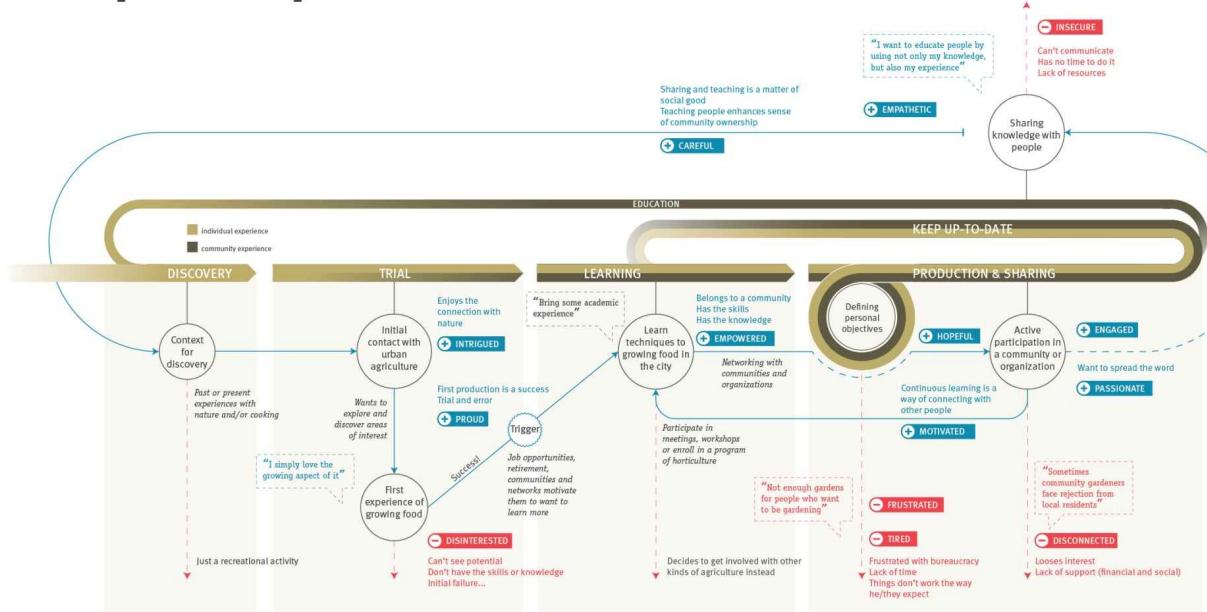
Consider the map shown in Figure 11-3, created by Diego S. Bernardo, a design strategist in Pittsburgh, Pennsylvania. His aim was to illustrate the ups and downs of growing food in the city. Negative experiences (in red) indicate reasons why someone might stop the activity. Dropout points are indicated with red lines pointing down.

The positive experiences (in blue) show the feelings on growing food in

the city. This diagram reminds us to look not only for pain points, struggles, and fears in an experience, but also aspects that motivate and encourage. The loops in the diagram indicate positive feedback loops and increased engagement throughout the experience.

# GROWING FOOD IN THE CITY

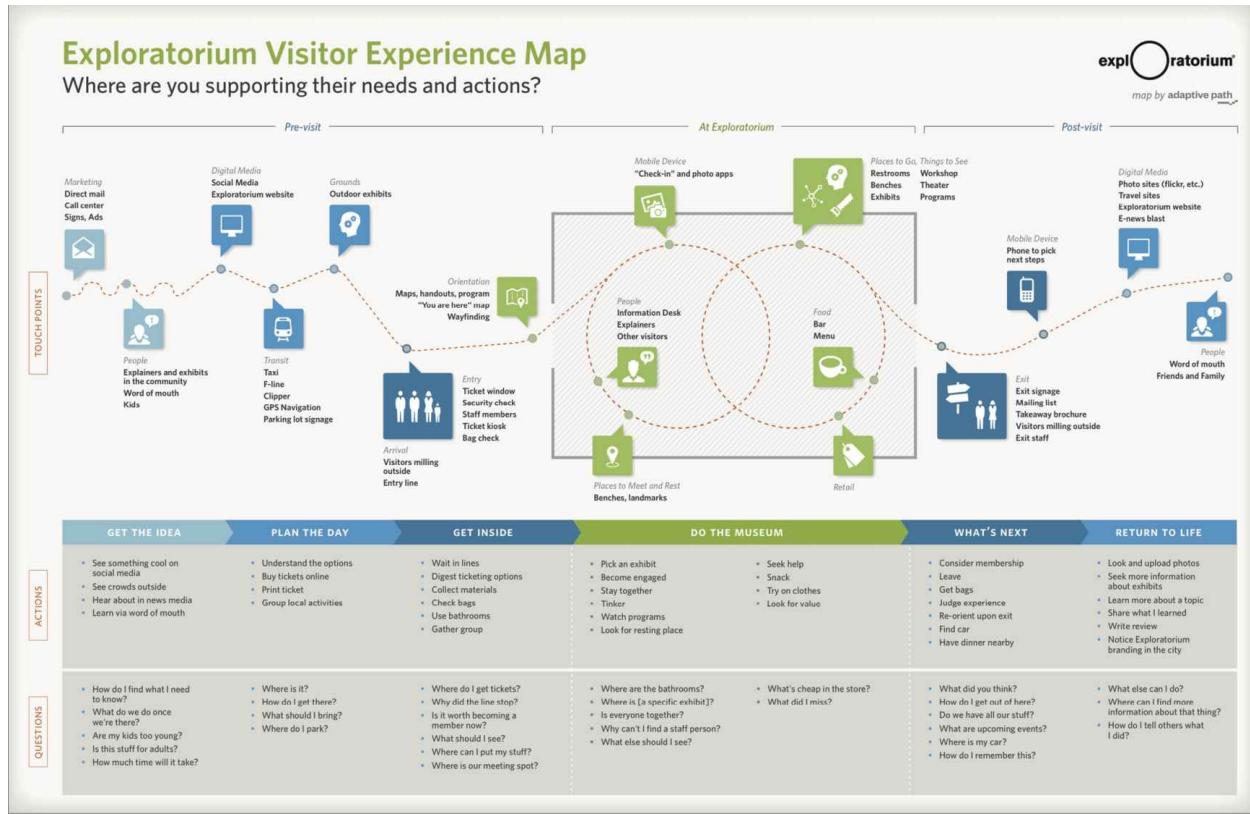
User experience map



**FIGURE 11-3.** An experience map for growing food in Chicago focuses on positive and negative factors.

Notice also that no organization is explicitly named in this diagram. Still, providers of related services or city officials could use this map to help understand and plan better food growing programs.

Figure 11-4 shows another example of an experience map—in this case, visiting a museum called the Exploratorium—created by Brandon Schauer and designers at Adaptive Path. There is no purchase decision in this diagram. Rather, it seeks to illustrate the actions and thoughts of museum goers, both inside and outside of the museum. For instance, touchpoints at the top of the diagram include things like “Taxis” and “GPS.”



**FIGURE 11-4.** Visitors' experiences visiting the Exploratorium captured in a single overview.

More importantly, working through the diagramming process had a positive impact on the Exploratorium team. In a blog post, Schauer indicates the effect of the mapping effort:

*What we found impressive was how quickly this diverse group aligned by using the maps on a small set of opportunities that could yield the most impact on the visitor experience. †*

With maps as a centerpiece for the conversation, the team was able to find consensus and alignment.

## Related Models

Experience maps are concerned with how the provider's offering fits into a person's experience, not the other way around. They provide a view of a given domain from the user's point of view.

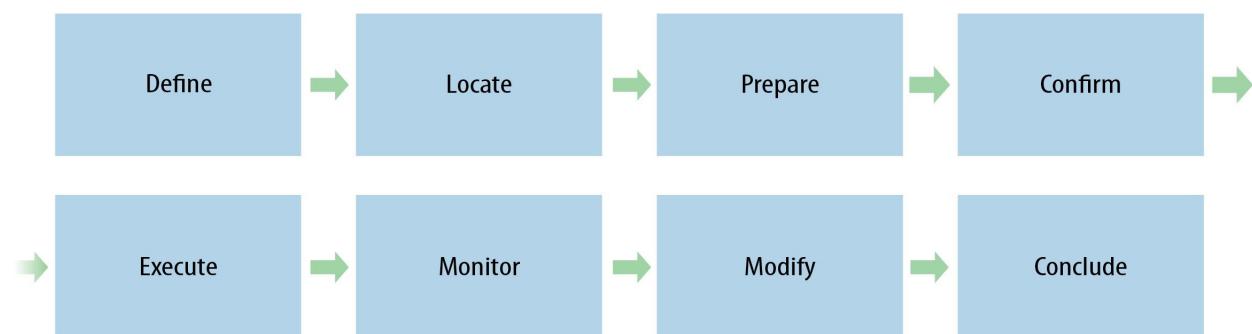
Related types of diagrams also take this perspective, including jobs maps and workflow diagrams.

## Jobs Maps

The concept of *jobs to be done*, briefly outlined in Chapter 2, provides a rich basis for understanding human behavior and motivations. From this perspective, people are seen as goal-driven individuals seeking to achieve some desired outcome. Supporting those outcomes is ultimately the value that organizations create.

Tony Ulwick has done some of the most advanced work in applying “jobs to be done” theory in practice. His company, Strategyn, bases its consulting offering on jobs to be done. Together with his colleague Lance Bettencourt, Ulwick proposes a model for understanding jobs to be done as a sequence of steps. They call these *job maps*.<sup>§</sup>

All jobs are processes that have a universal structure, the authors believe. Figure 11-5 shows the steps in the normalized process they propose.



**FIGURE 11-5.** The job map, as proposed by Bettencourt and Ulwick, has eight phases.

The goal of creating a job map is to uncover what a person is trying to get done and to examine specific points in the flow by breaking them down. According to Ulwick and Bettencourt, the universal steps in completing a job are:

- .. *Define*: This step includes determining objectives and planning the approach to getting the job done.
- .. *Locate*: Before beginning, people must locate inputs, gather items, and find information needed to do the job.
- i. *Prepare*: In this step, people set up the environment and organize materials.
- i. *Confirm*: Here, individuals make sure the materials and the environment are properly prepared.
- i. *Execute*: In this step, individuals perform the job as planned. From their perspective this is the most critical step in the job map.
- i. *Monitor*: People evaluate success of the job as it is being executed.
- ' *Modify*: Modifications, alterations, and iterations may be necessary to complete a job.
- i. *Conclude*: This step refers to all of the actions taken to complete and wrap up the job.

The divisions of this sequence, however, may not be how a person experiences the world. Instead, a job map is a model that helps us understand human activity with a consistent framework. You may find yourself modifying this framework in practice to fit your situation.

With a job map in hand, organizations can better create products and services that people actually need. Bettencourt and Ulwick urge teams to use job maps collaboratively to identify opportunities:

*With a job map in hand, you can begin to look systematically for opportunities to create value...A great way to begin is to consider the biggest drawbacks of current solutions at each step in the map —in particular, drawbacks related to speed of execution,*

*variability, and the quality of output. To increase the effectiveness of this approach, invite a diverse team of experts—marketing, design, engineering, and even some lead customers—to participate in this discussion.*

Innovation opportunities can come at any step in the job map. Consider these examples:

- Weight Watchers streamlines the “Define” stage with a system that does not require calorie counting.
- To gather items during the “Locate” step while moving house, U-Haul provides customers with kits that include different types of boxes needed.
- Nike helps joggers evaluate success of the job in the “Monitor” step with a sensor in the running shoe that provides feedback about time, distance, pace, and calories burned via a connection to an iPod.
- Browser-based SaaS software updates automatically so users don’t have to install new versions, thereby reducing complexity in the “Modify” step.

Note that job maps are typically narrower in scope than experience maps. As a result, the two can work hand-in-hand. You can use an experience map to show the high-level view of an ecosystem, and drill down on specific areas with job maps to detail specific steps.

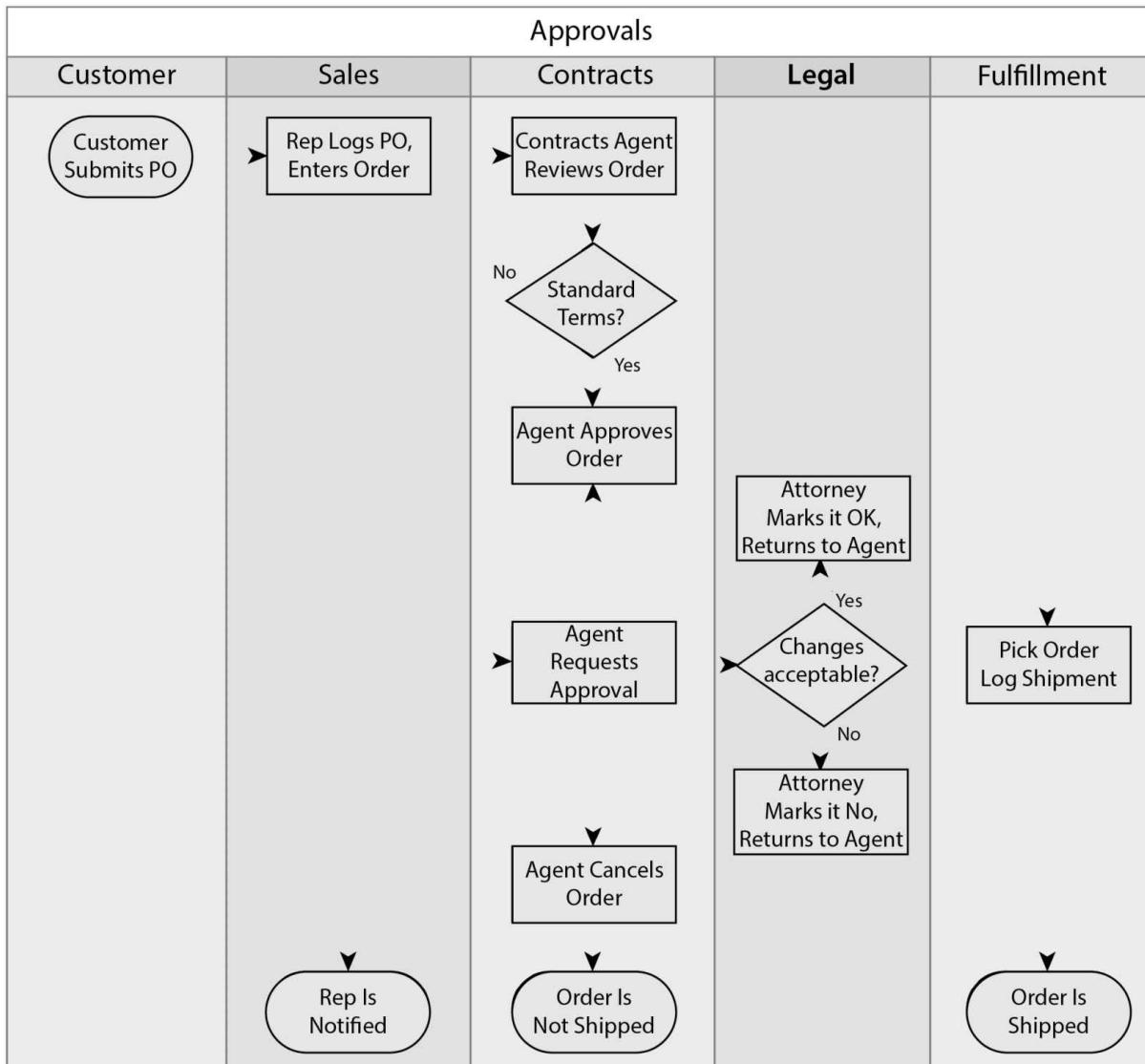
## Workflow Diagrams

Related to experience maps and job maps, workflow diagrams break down the steps taken to achieve a goal. These diagrams focus on how a sequence of tasks fits together, often between multiple actors. They are more akin to a service blueprint.

A swim lane diagram is a specific type of document that is widely used to show workflow. Typically these diagrams show the steps of an interaction between a user and different parts of a system in a very mechanical way. The columns or rows of the diagram—depending on its orientation—

make up the “swim lanes.” This aids in seeing different actors and components in an interaction.

Figure 11-6 shows a typical swim lane diagram with parallel actions with a system—in this case, for the workflow of placing a purchase order with a sales agent.



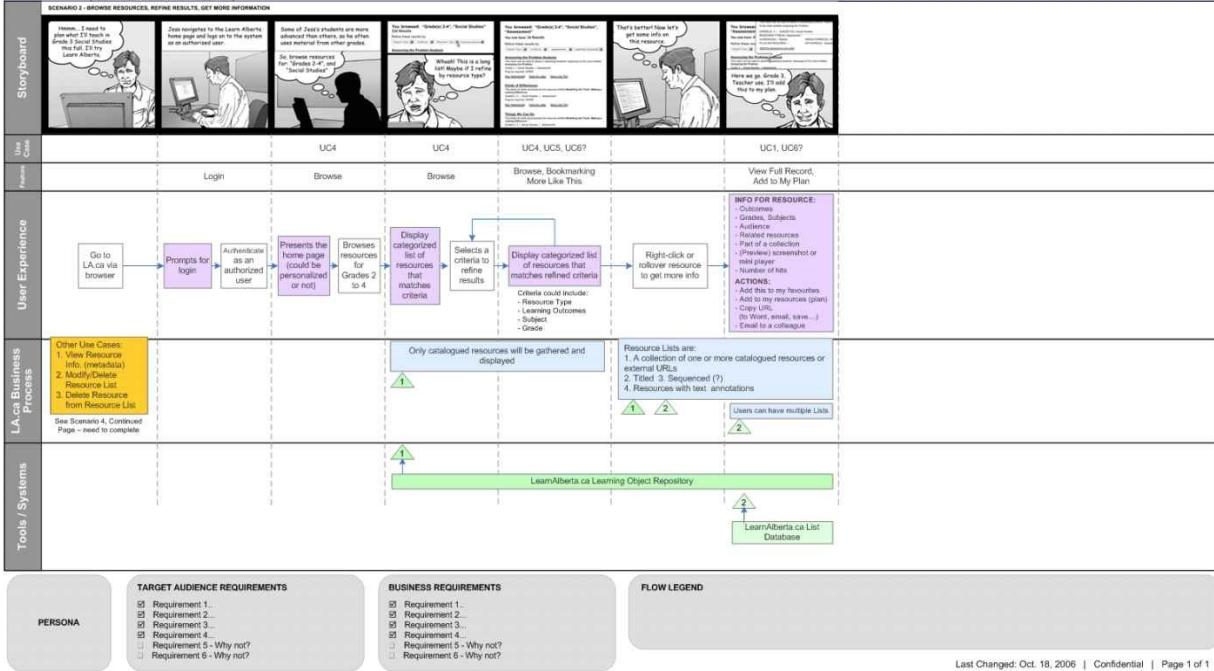
**FIGURE 11-6.** An example of a typical swim lane diagram separates activities into discrete columns.

It's clear that this diagram does not explicitly include contextual information or details about customer emotions. Instead, swim lane diagrams focus on the flow of tasks, materials, and information chronologically. Often, a workflow diagram may accompany an experience map to show detailed interactions of a specific phase within a broader context.

Swim lane diagrams can be expanded to include information about an individual's experience. Figure 11-7 shows an example diagram created

by Yvonne Shek of nForm that includes a graphic storyboard and details about the person involved in the interaction.

This approach extends the swim lane technique by adding experiential context.

**Scenario 2 - Browse Resources/Refine Results/Get More Information****Summary:** Tech-savvy teacher wants to do long term planning for Grade 3, Social Studies**Description:** Start at LA.ca to see what is available. End Point is a list of resources that are connected to Grade 3 Social Studies, that has been identified and marked for future use – that support a long term plan.  
(See more on PowerPoint version.)

**FIGURE 11-7.** Swim lane diagrams can be expanded to be rich in context of the user experience.

## Elements of Experience Maps

The elements of experience maps are very similar to a customer journey map. But experience maps tend to be even more freeform, with facets of information included or not depending on the story being told. Conventions are emerging, however. Typical elements of experience maps include some or all of the following:

- Phases of behavior
- Actions and steps taken
- Jobs to be done, goals, or needs
- Thoughts and questions
- Emotions and state of mind
- Pain points
- Physical artifacts and devices
- Opportunities

Experience maps tend to break away from a focus on the purchasing decision—a key distinguishing factor to customer journey maps. Although a purchase may be part of the experience, the focus on the map is not necessarily making a decision.

Table 11-1 summarizes the main aspects that define experience maps using the framework outlined in Chapter 2.

<b>Perspective</b>	Individual as goal-driven, operating within a broad system or domain and interacting potentially many services.
<b>Organization</b>	Chronological.
<b>Scope</b>	Holistic process of a defined experience, from end-to-end, including actions, thoughts, and feelings. May be limited to a single individual or aggregate behavior across actors.
<b>Focus</b>	Focus primarily on the human experience, with often little or no explicit backstage processes.

<b>Uses</b>	Used for analysis of ecosystem relationships and the design of solutions. Inform strategic planning and innovation.
<b>Strengths</b>	Offer a fresh, outward perspective that helps build empathy. Provide insight beyond the relationship with a single organization or brand.
<b>Weaknesses</b>	Can be viewed as too abstract by some stakeholders. Detailed diagrams can lead to overanalysis and “mapping overload.”

**TABLE 11-1.** Defining aspects of experience maps

## Further Reading

“Adaptive Path’s Guide to Experience Mapping” (2013),  
<http://mappingexperiences.com>

*The folks at Adaptive Path put together an excellent guide on experience mapping. This is a short, free PDF that covers the process from beginning to end. It is a great resource for people new to the technique or those who just need a solid overview.*

Lance Bettencourt and Anthony W. Ulwick. “The Customer-Centered Innovation Map,” *Harvard Business Review* (May 2008)

*Bettencourt and Ulwick deepen techniques involving jobs to be done with a practical way of mapping out jobs. It's a simple and efficient system for use in innovation efforts. They conclude: “When companies understand that customers hire products, services, software, and ideas to get jobs done, they can dissect those jobs to discover the innovation opportunities that are the key to growth.”*

Chris Risdon. “The Anatomy of an Experience Map,” *Adaptive Path Blog* (Nov 2011)

*This excellent article breaks down the technique of experience mapping into its constituent components. Chris Risdon is a leader in experience mapping and has done some of the most extensive work outlining methods for the technique.*

Gene Smith. “Experience Maps: Understanding Cross-Channel Experiences for Gamers,” *nForm Blog* (February 2010)

*This is a short blog post by Gene Smith, who graciously shares several experience maps. These are some of the first examples in the category and have served as a model for subsequent experience mapping.*

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\* See the full article at: Steve Denning. “Why Building a Better Mousetrap Doesn’t Work Anymore,” *Forbes* (Feb 2014).

† From an interview with Hugh Dubberly conducted by David Brown. See “Hugh Dubberly. Supermodeler.” *GAIN : AIGA Journal of Design for the Network Economy* (2000).

‡ Brandon Schauer. "Exploratorium: Mapping the Experience of Experiments," *Adaptive Path Blog* (Apr 2013), <http://adaptivepath.org/ideas/exploratorium-mapping-the-experience-of-experiments>.

§ Lance Bettencourt and Anthony Ulwick. “The Customer-Centered Innovation Map,” *Harvard Business Review* (May 2008).

# Workflow Diagrams at LexisNexis

by Jim Kalbach

LexisNexis is a worldwide provider of legal and professional information. While employed there, I led an effort to map the workflow of lawyers in four international markets—France, Australia and New Zealand, Germany, and Austria.

To secure funding I pitched the idea to senior leaders, who agreed to support the research. We decided to start with mid-sized law firms in France as the pilot project. After that, I mapped the workflow of barristers in Australia and New Zealand, and then of lawyers in small firms in Germany and in Austria.

The approach in each country was to follow the lifecycle of a client matter from the perspective of the lawyer. We wanted to understand the complex series of actions lawyers take to complete a client matter, from beginning to end. This was strategically relevant for the business at the time.

## Investigation

In each country, I first collected existing research and looked for patterns. For instance, in France some recent segmentation work had recently been completed. From this, I was able to get an initial understanding of the market and the types of law firms that existed.

I also spoke with internal stakeholders in each country. This helped build an initial picture of an approximate lawyer's workflow, which in turn guided subsequent research.

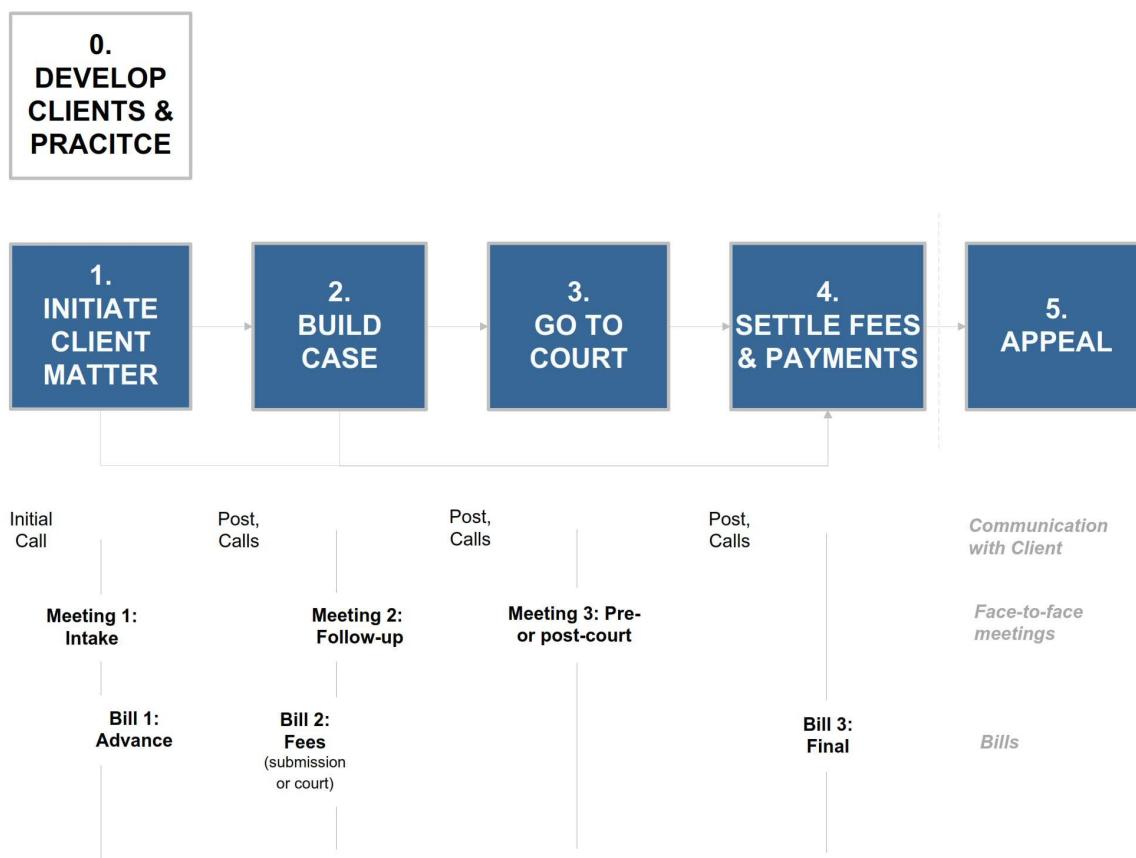
Of course, there was significant field contact with actual customers. We conducted between 10 and 20 on-site interviews in each country. The audio of each session was recorded and transcribed, so the full text was available for analysis. Photographs provided additional context.

## Illustration

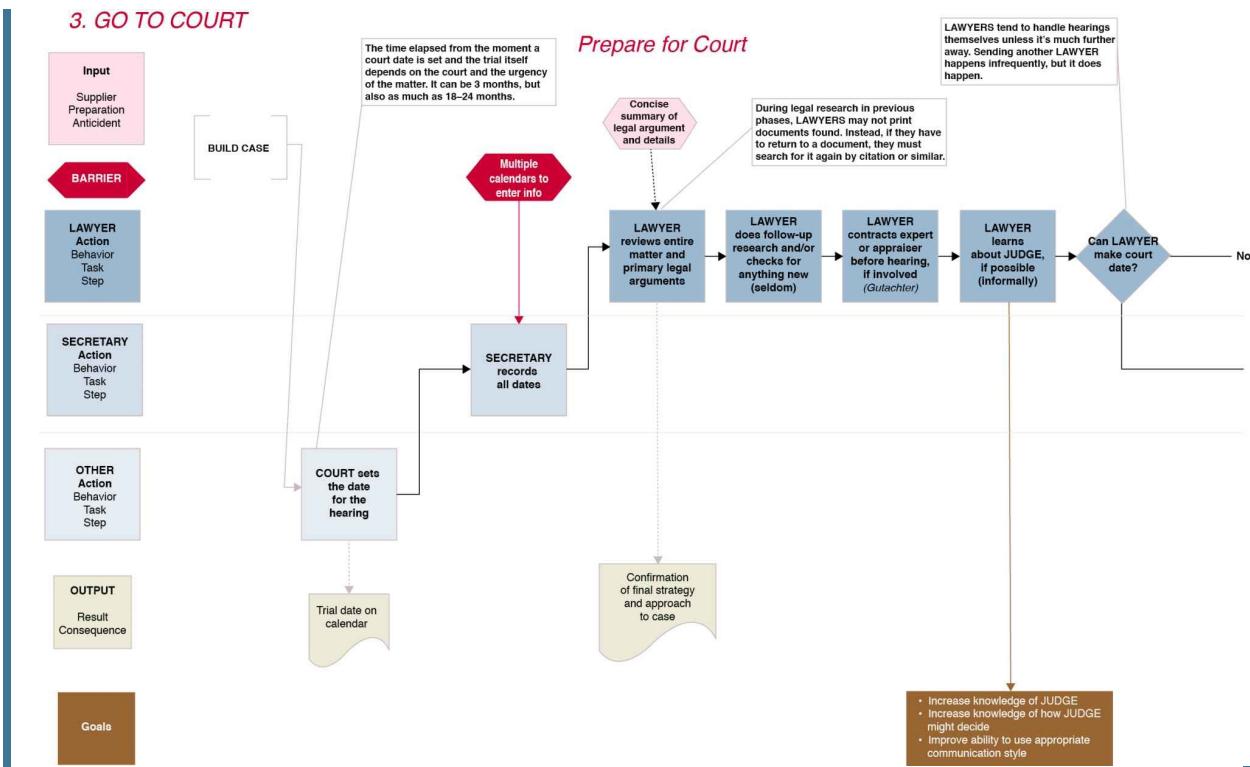
After investigation, I then created workflow diagrams from all of the data collected—both internal and external. I kept the orientation of the diagrams horizontal so they could be viewed at eye level during the workshops. When printed, each workflow diagram was 10–15 feet long.

First, I modeled a high-level map of phases of a client matter. This was similar, but not exactly the same, in each country. As an example, Figure 11-8 shows a simplified version of the main phases for legal cases in Germany.

The diagrams included three different types of actors simultaneously: lawyers, secretaries, and all other actors in the workflow. As a result, they consisted of many rows of information, seen labeled on the left side of Figure 11-9.



**FIGURE 11-8.** The top-level phases for a lawyer's workflow with a client matter in Germany reflects an end-to-end experience.



**FIGURE 11-9.** One page from a 20-page workflow diagram illustrates a detailed experience.

Pain points and goals are also included, as well as notes on state of mind and emotion. Personas, typical workweek charts, and org charts accompanied the diagrams for a complete description of the lawyer's experience.

## Alignment

A highlight of each effort was the alignment workshop. In each country, this allowed stakeholders to understand the workflows and arrive at their own conclusions about the experience. These were day-long sessions with three sections:

- *Understanding the lawyer's experience:* Each breakout group focused on a section of the workflow and read through all of the steps. Through dot voting, the teams were tasked with identifying critical moments. Where are the stakes highest? What moments are emotionally charged for users? Figure 11-10 reflects a

diagram from this step during a workshop in France.



**FIGURE 11-10.** The workshop teams engaged with the workflow diagrams to identify pain points, moments of truth, and business opportunities, among other things.

- *Brainstorming:* After understanding the experience and where the biggest pain points were, the groups came up with new ways to support customers in their work. Figure 11-11 shows brainstorming in a group of people with mixed roles during a workshop in France.



**FIGURE 11-11.** Brainstorming during an alignment workshop involved stakeholders across functions and departments.

- *Group presentations:* Each team selected their leading ideas from the brainstorming session and described them in greater detail, including sketches of the proposed solutions. These were then presented to everyone else in the workshop for feedback and questions.

After the workflow mapping projects were completed in the different countries, we presented the workflow diagrams at the yearly senior staff meeting. Upper managers from all international business units flew to Montreux for a series of meetings across three days.

I helped facilitate further workflow alignment exercises, which culminated in a mock trial. Leaders volunteered to play different roles in a fake court case.

## Outcomes

Internally, the alignment exercises helped gain empathy for our customers and build a common understanding of their work. For instance, in Australia, one stakeholder commented: “These workflow diagrams should be used to onboard new employees.” He felt they were foundational in understanding our customers.

Since the diagrams for each country followed a similar format, we could compare the practice of law in different markets to see where the differences lie.

Concrete offerings also emerged. For example, we launched a new format for easily scannable legal news. This came out of a realization that lawyers spend a significant amount of time waiting at court and could use that time to keep up on news.

In another market, we launched a new solution targeting legal assistants—a previously unaddressed market segment. The workflow exercises informed this new offering.

Overall, the workflow mapping efforts in each country provided a deep view into the daily experience of lawyers. To this day, the work is considered a key resource for customer understanding within the company.

## Diagram and Image Credits

Figure 11-2: Experience map created by Gene Smith and Trevor von Gorp of nForm, taken from “Experience Maps: Understanding Cross-Channel Experiences for Gamers,” *nForm Blog* (Feb 2010), used with permission

Figure 11-3: Experience map created by Diego S. Bernardo ([www.diegobernardo.com](http://www.diegobernardo.com)), taken from his blog post “Agitation and elation [in the user experience]” (<http://diegobernardo.com/2013/01/05/agitation-elation-in-the-user-experience/>) used with permission

Figure 11-4: Experience map for the Exploratorium from a case study by Brandon Schauer: "Exploratorium: Mapping the Experience of Experiments," *Adaptive Path Blog* (Apr 2013), <http://adaptivepath.org/ideas/exploratorium-mapping-the-experience-of-experiments>, used with permission

Figure 11-6: Swim lane diagram from Wikipedia, public domain

Figure 11-7: Swim lane diagram with storyboard by Yvonne Shek of nForm, used with permission

Figures 11-8 through 11-11: Diagrams and photos by Jim Kalbach, used with permission from LexisNexis

## CHAPTER 12

# Mental Model Diagrams

## IN THIS CHAPTER

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Background and overview of mental models

Rapid mental model diagrams

Deriving structure

Elements of Mental Model Diagrams

Case study: Forward-Thinking Insurance Company

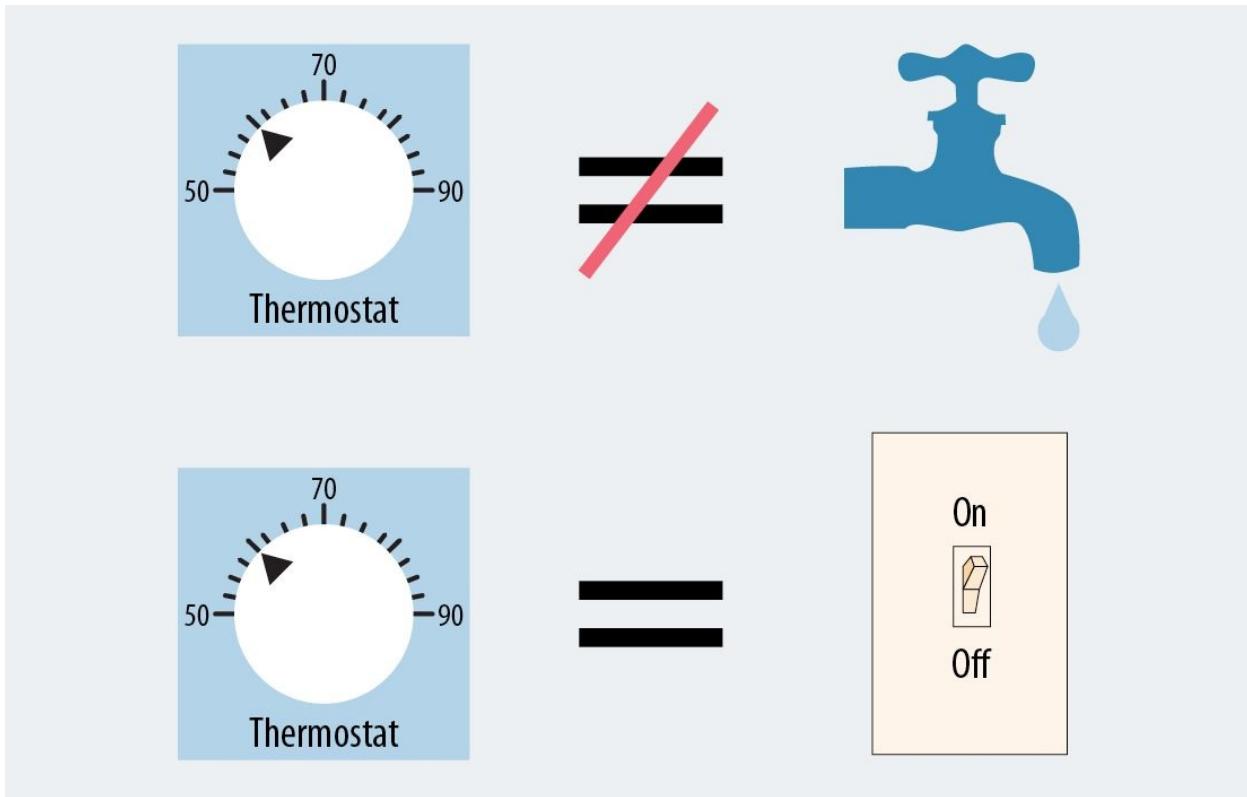
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The term *mental model* has its roots in psychology. It refers to someone's thought process about how the world works—their frame of reality.

Mental models allow us to predict how things work. They are cognitive constructs built on beliefs, assumptions, and past experiences. But a person's mental model is a *perception* of how a system functions, not necessarily how it actually may work.

For instance, say you come into your house on a cold day. To get warmed up quickly, you turn the thermostat way up. Your assumption is that the higher thermostat setting, the more heat will come out.

But a thermostat does not work like a faucet valve. It's more like a switch: the heat goes on or off depending on set temperature (see Figure 12-1). In this scenario, you'd have a wrong mental model of how the system actually works. The room won't get warmer faster. Instead, the heater will simply stay on longer to reach a higher temperature.

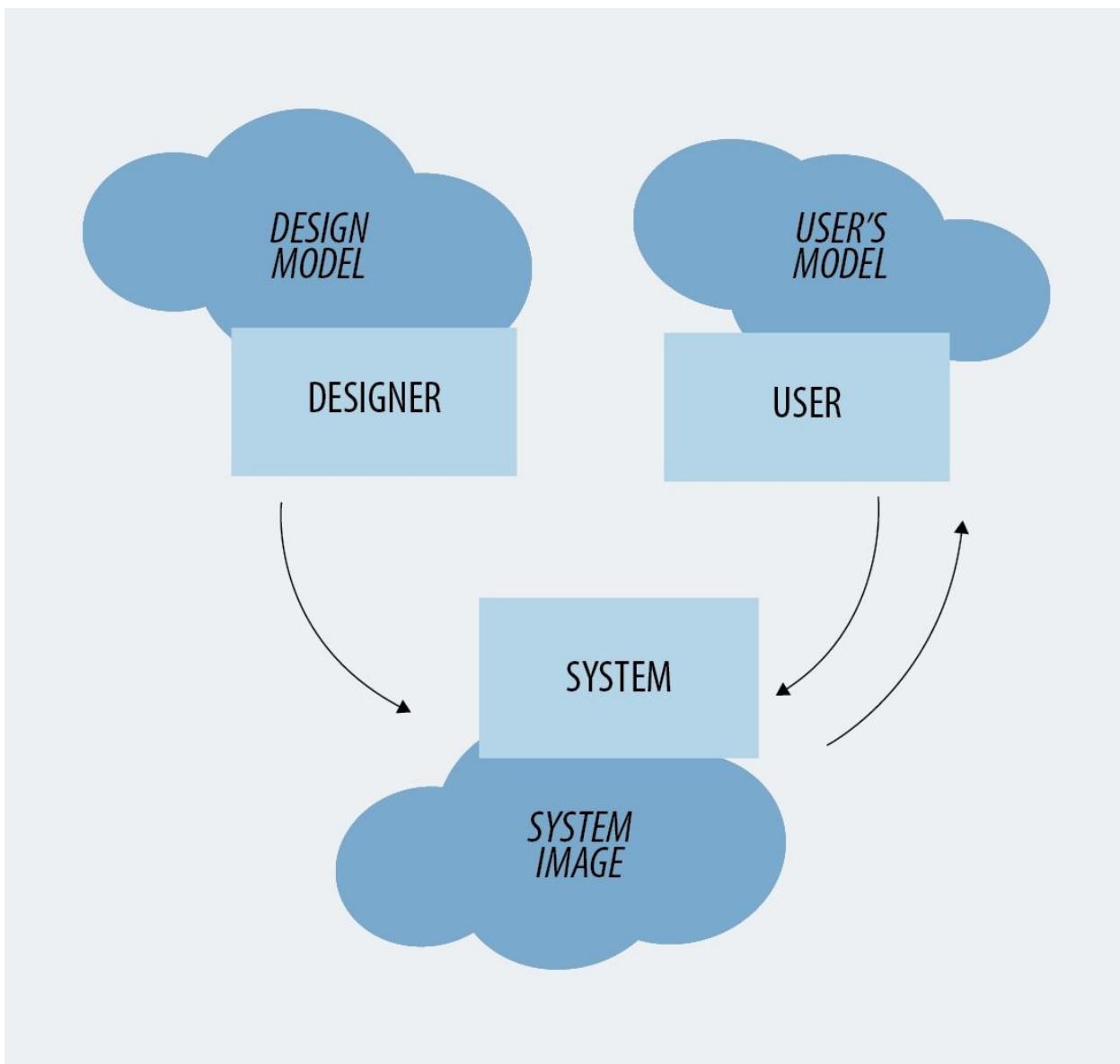


**FIGURE 12-1.** Thermostats are more like switches, not faucets.

The lesson for providers of products or services is profound: your understanding of the systems you create differs from the user's understanding. You have far more knowledge about how the system actually works than others do.

The difference in mental models is a key point Don Norman makes in his landmark book *The Design of Everyday Things* (1988). Figure 12-2 shows his now-iconic graphic of three different models at play: the model the designer has of the system, the actual system model, and the mental model the user has of the system.

The goal of design is to understand the mental model of the people you are designing for. To do this, you need a feedback loop, indicated by the two arrows on the right side of Figure 12-2. It requires the ability to put your own perspective to the side and to view the system as a user might. In a word, designing requires empathy.



**FIGURE 12-2.** Don Norman’s well-known diagram illustrates that the designer’s model is not the same as user’s mental model.

The diagrams explored in this book help you understand the feedback loop between the user and the system. But there is something broader. The mental model the user has of the system is framed by that system. If you explore the mental model of a person, rather than a user, who is trying to achieve a purpose, then you can break out of the system frame. You can discover aspects of how a person thinks that have nothing to do with the system, but everything to do with that person accomplishes

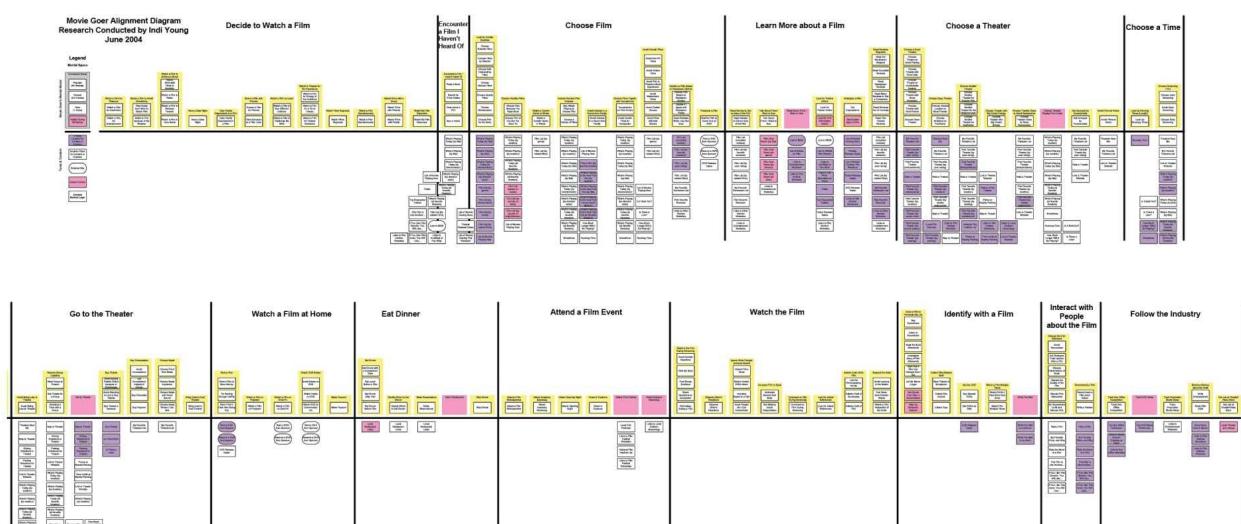
their intent.

Mapping is a key way to understand mental models and make them visible to your organization. In practice, mapping experiences is effectively mapping someone's mental model. The approach discussed in this chapter focuses on a specific technique developed by Indi Young simply called *mental models diagrams*.

# Mental Model Diagrams

In 2008 Indi Young published a formal method for visualizing mental models in her book of the same title. Figure 12-3 shows an early example of a mental model used in the book. This instance examines “movie going.”

Mental model diagrams are typically very long documents and can extend 10–15 feet across a wall when printed. The diagram in Figure 12-3 has been broken into two parts to fit on the page.



**FIGURE 12-3.** An example of a mental model diagram shows the overall experience of movie going.

The top half of the diagram describes the mental model patterns across a set of people. There are three basic levels of information in this portion of the diagram (Figure 12-4):

## Boxes

These are the basic building blocks, shown as small squares. The boxes contain a person’s thoughts, reactions, and guiding principles. (Originally, Young refers to these as “tasks” but has since moved away from that language to avoid confusion with physical actions only.)

## Towers

Boxes form groups based on affinity, called towers. These are the areas with colored backgrounds on a diagram.

### *Mental spaces*

Towers, in turn, form affinity clusters called mental spaces. The mental spaces are labeled above towers, between the dark vertical lines.

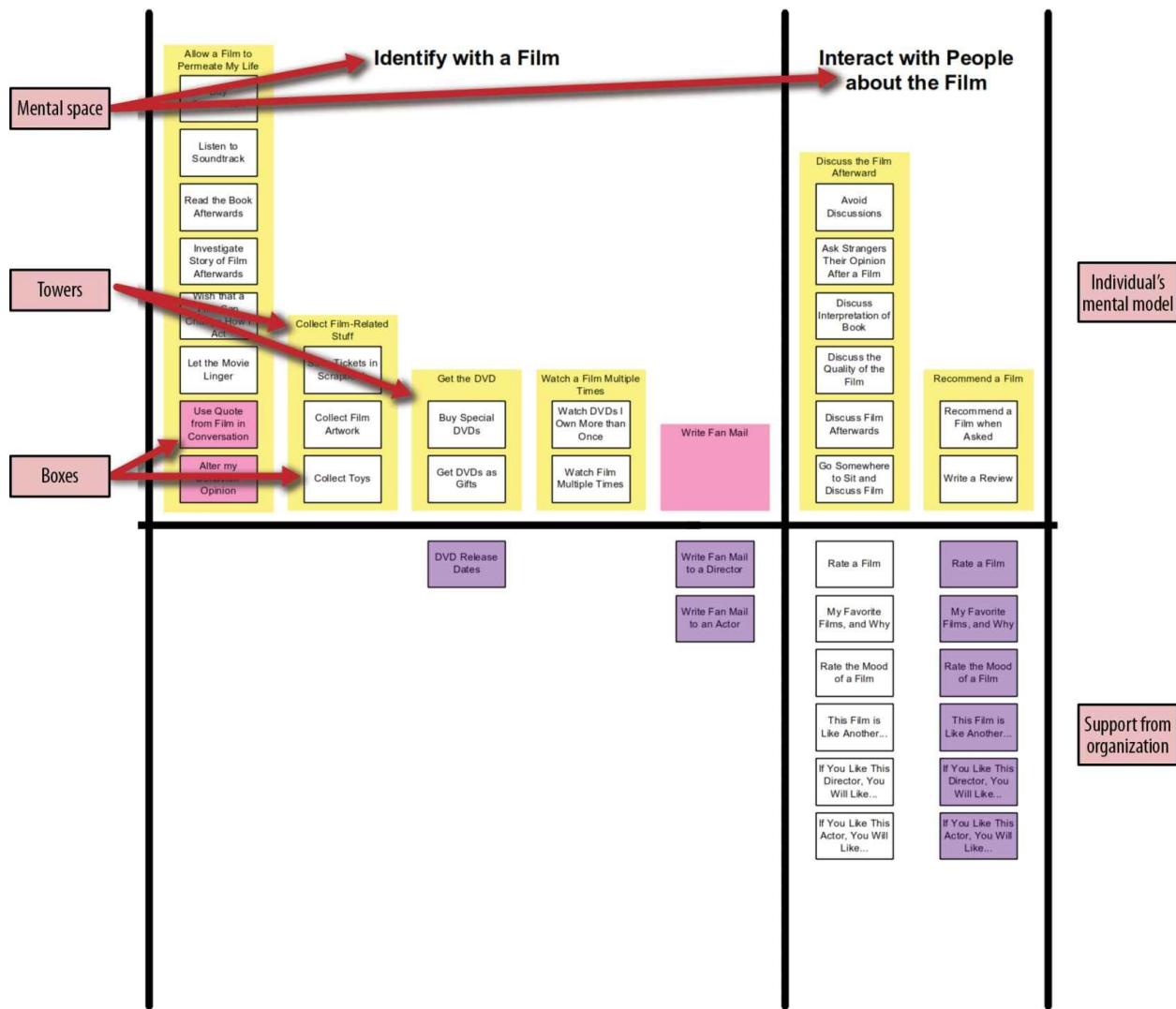
A dark line in the center separates the mental model from “support”—all of the products and services that address the thought process within a tower. From this arrangement, we see the basic principles of alignment at work.

Overall, this approach of describing mental models focuses on people, not tools. For instance, instead of writing “Filter image colors in Photoshop,” focus on the root task and record “Alter image colors” or perhaps, “Improve image color.”

The diagrams also don’t reflect personal preference or opinion. Instead, strive to focus on what goes through a person’s mind—their internal voice—and capture that in the diagram.

As a result, of all the diagrams covered in this book, the top half of mental model diagrams are the most person-focused in nature. This provides an advantage in flexibility: they can be applied to any domain or situation. Mental model diagrams also enjoy longevity: once completed, a mental model will change only slowly, often remaining relevant for years.

However, mental model diagrams may also overwhelm others with detail. I have seen business leaders ask for a simpler model. But that detail is also a strength for those looking to deeply understand people’s state of mind.



**FIGURE 12-4.** The three basic elements in a mental model diagram are boxes, towers, and mental spaces.

## Combing the Transcripts

The process for creating mental model diagrams is similar to the steps outlined in Chapters 4–7 of this book. One main difference is the normalization of research findings into standard format. This normalization makes the process of finding affinities between items much easier.

You begin analysis by combing interview transcripts for relevant information. The time spent combing gives the research a much stronger

understanding of what each participant meant as they repeat and re-explain their thinking to others. This process stands at the heart of the mental model technique. Every element on the diagram follows a similar format:

- . Start with a verb, to focus on the thinking, rather than the goal.
- . Use the first person to put the researcher in the participant's shoes.
- . Add one idea per box, for simplicity and clarity.

Each element comes from the thinking you hear from participants. If you record the listening session and get a transcript, you can draw each element from the transcript as a quote. To make it easier to find affinities between the elements, write a summary of each quote using this form:

*[I (optional)] [verb] [noun] [qualifiers]*

This strict uniformity allows for the arrangement of elements hierarchically: boxes are grouped into towers, towers are grouped into mental spaces. The process begins with distilling elements from the transcripts. The aim is to get the essence of people's mental models into the prescribed format.

Formatting tasks takes practice. It's not merely a process of copying phrases from the raw texts gathered during research. To illustrate, Table 12-1 shows some hypothetical quotes about drinking coffee. On the right are example summaries in the prescribed format you might derive from this data.

DIRECT QUOTE FROM RESEARCH	SUMMARIES
"When I get up, my body is just saying 'get some coffee!' It's like I can't function without it. So the first thing I do pretty much every morning is make coffee—it's almost automatic. I think I can almost do that in my sleep. I'll then enjoy a cup with breakfast or while reading the newspaper."	Feel nonfunctional until I get coffee
	Feel compelled to make coffee in the morning

	Enjoy a cup of coffee in the morning
“My wife and I both really like drinking coffee in the morning. It’s a good way to wake up—it gets you going. Actually, I don’t quite feel right until I’ve had my first cup.”	Enjoy a cup of coffee in the morning
	Crave coffee in the morning
	Feel not-quite-right until after my first cup of coffee

**TABLE 12-1.** Example of summaries (right) in a normalized format derived from raw research texts (left).

## Rapid Mental Model Method



Creating a mental model diagram can take a lot of effort. Formal projects with 20–30 participants take weeks or months to complete. It’s a valuable upfront investment, but some organizations don’t want to take the time.

After *Mental Models* was published, Young developed a method for creating diagrams quickly—within days. She describes this approach in a post entitled “Lightning Quick Method.” It centers on a single workshop with stakeholders.

Here is a summary of Young’s rapid approach to gathering data and finding affinities:

### 1. *Solicit stories in advance*

Collect short stories about a particular topic from your target audience a week in advance. This can be done through email, short listening sessions, as well as via social media and other online sources. The

stories are accounts of how people reason their way toward a purpose captured on 1-2 pages. If you need to, rewrite these stories using the first person so all of the texts have a similar perspective.

## 2. *Comb and summarize*

Read through the stories aloud in the workshop. With either large sticky notes or in a shared document, different team members record summaries as you read. Within a few hours, you should be able to produce 100 discrete summaries.

## 3. *Group by patterns*

Once the summaries begin to accumulate, start grouping them by the intent of the storywriter. Many of these first groups will change as you add summaries. As you get further, you can begin to organize the towers into mental spaces. You should be able to create a provisional structure within an afternoon.

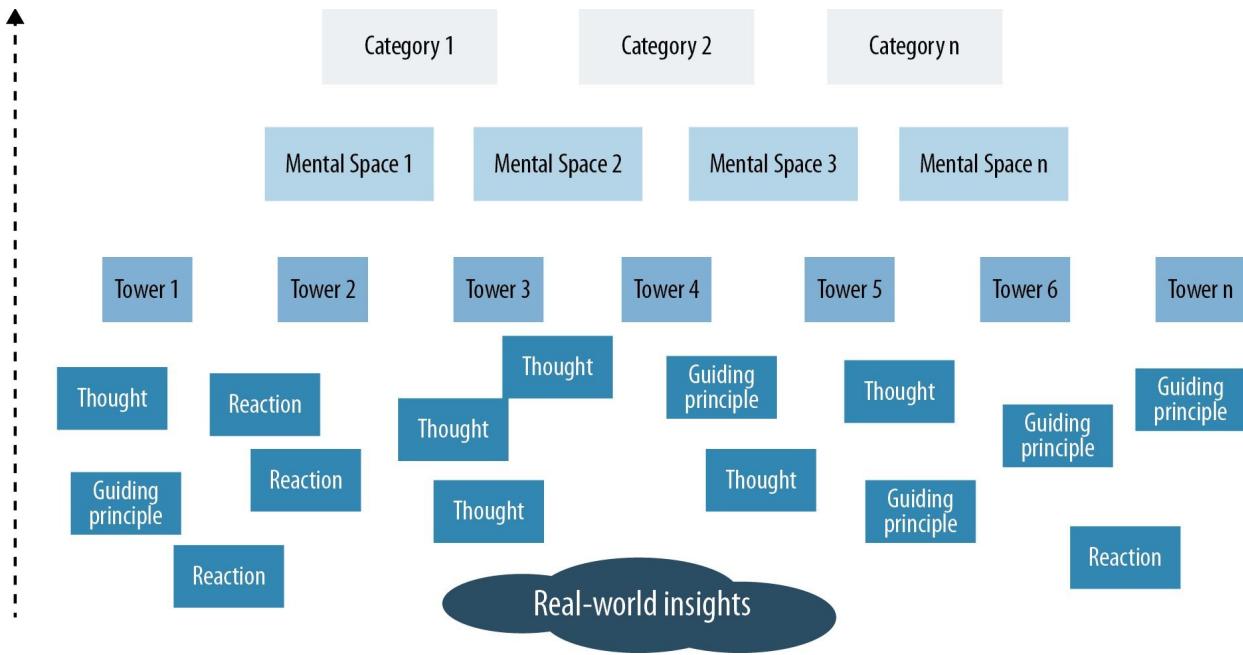
## 4. *Brainstorm*

Use the remainder of the workshop to brainstorm solutions. Where are the gaps between how people are reasoning and how your organization supports that reasoning? What opportunities do you see?

The rapid method is ideal for teams that need to act on results quickly. The result is a first-generation diagram that reflects what you have collected at this point. It may need further validation. But since people's stories are collected up front, this diagram is nonetheless grounded in reality.

# From Construct to Structure

The hierarchical nature of mental model diagrams makes them particularly relevant for the practice of information architecture. The process can be described as *grounded*: a bottom-up approach starting with summaries of how people describe their reasoning, reactions, and guiding principles as they accomplish a purpose larger than your offering. Then, it's a matter of successively grouping information into higher-level categories (Figure 12-5).



**FIGURE 12-5.** Deriving structure from mental model diagrams is a bottom-up process grounded in a real-world insights.

The result is a categorization that matches the actual mental model of the people you serve and reflects vocabulary that people have used in interviews. App and web designers, for example, can then use this scheme as the basis for navigation. This greatly improves usability of the navigation and ensures its longevity as well.

Young describes the process of deriving structure and mapping it to navigation in detail. Figure 12-6 is an example of the process outlined in her book. It shows how mental spaces can be grouped into categories that then serve as the main navigation for a website.



**FIGURE 12-6.** Cluster mental spaces to come up with top-level categories that can be used for website navigation, for instance.

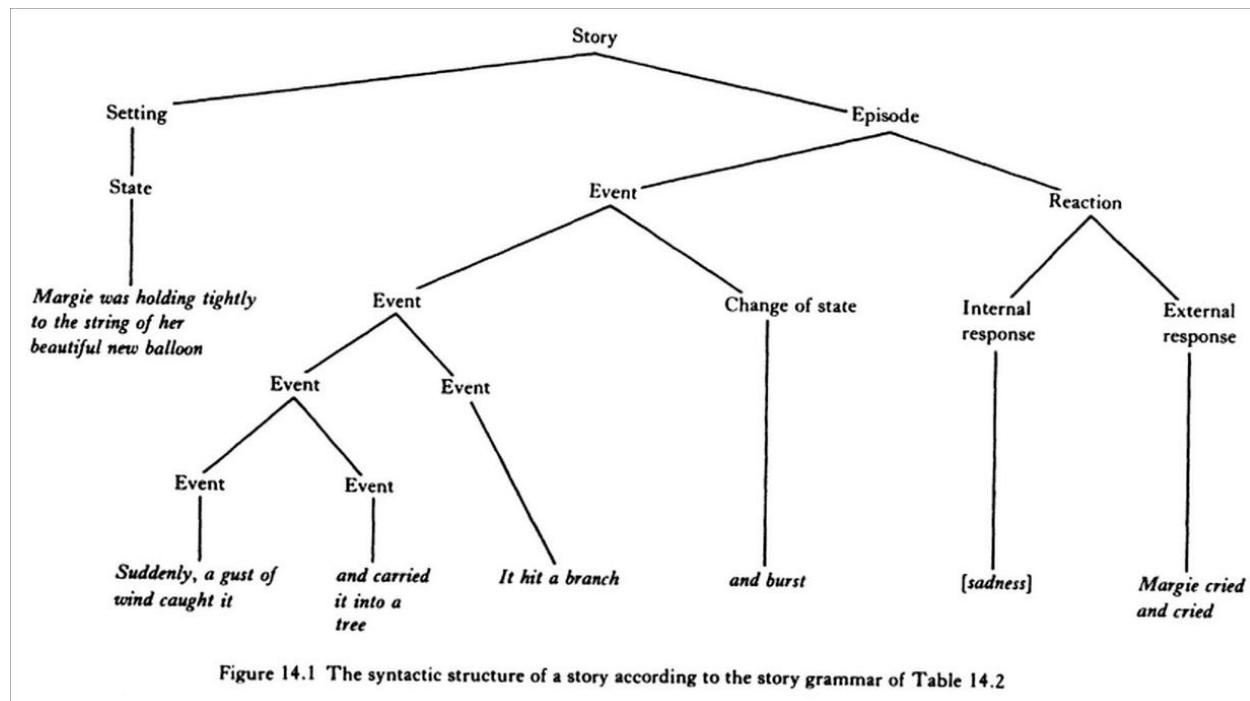
## Related Approaches

The origins of investigation into mental models goes back to the work of Kenneth Craik in his 1943 book *The Nature of Explanation*. He offers a concise, simple-to-understand definition of mental models:

*The mind constructs small-scale models of reality to anticipate events, to reason, and to underlie explanation.*

Later, Philip Johnson-Laird did some of the most significant research on the subject, resulting in a full-length book entitled *Mental Models* (1983). Early attempts at representing mental models visually reflect a hierarchical arrangement of information.

For instance, Johnson-Laird's approach looked at how a meaningful story builds up across events and episodes. His was grounded in textual analysis, which he then visualized (Figure 12-7).

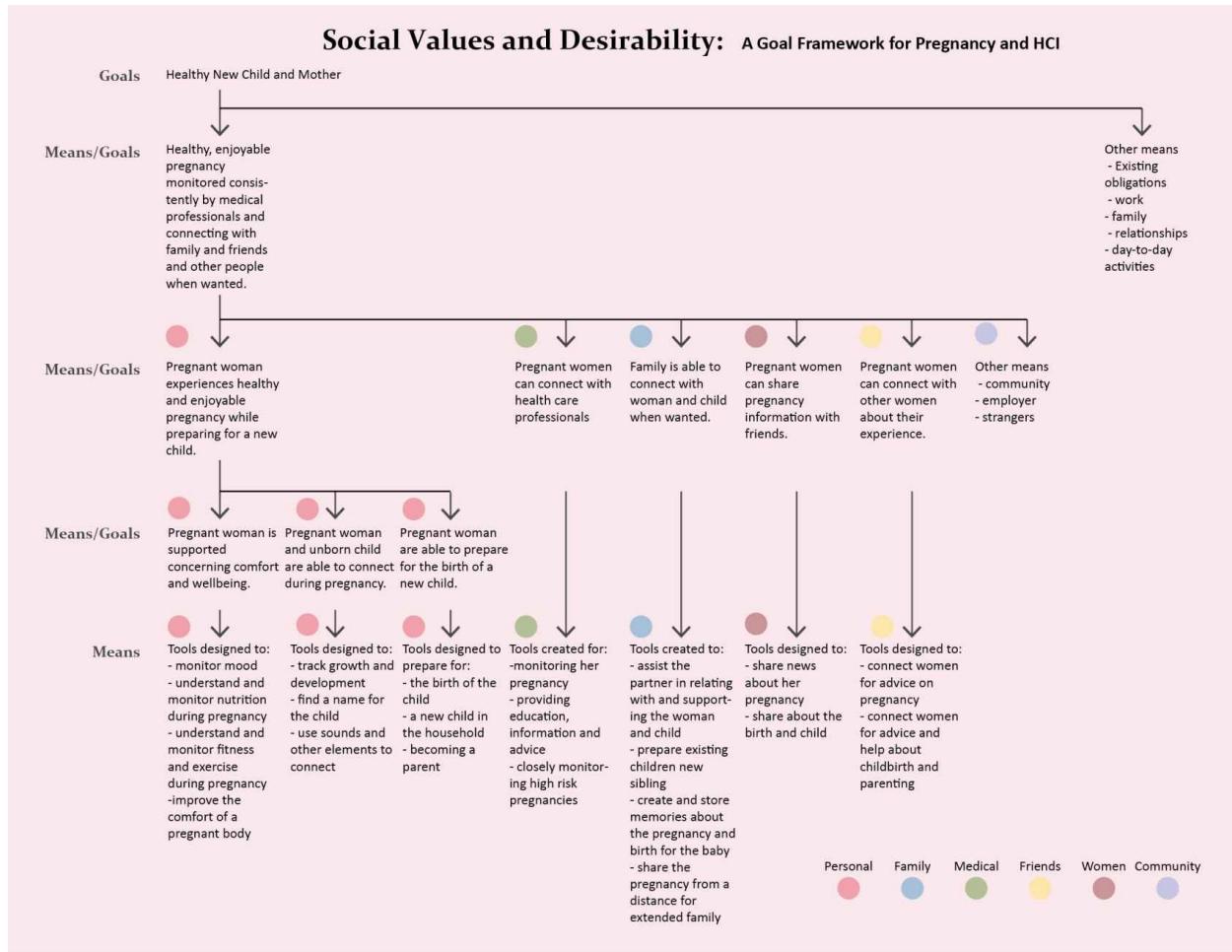


**FIGURE 12-7.** An example of a diagram by Philip Johnson-Laird reflects the hierarchical nature of mental model analysis.

Broadly speaking, this represents the technique of *laddering*: showing

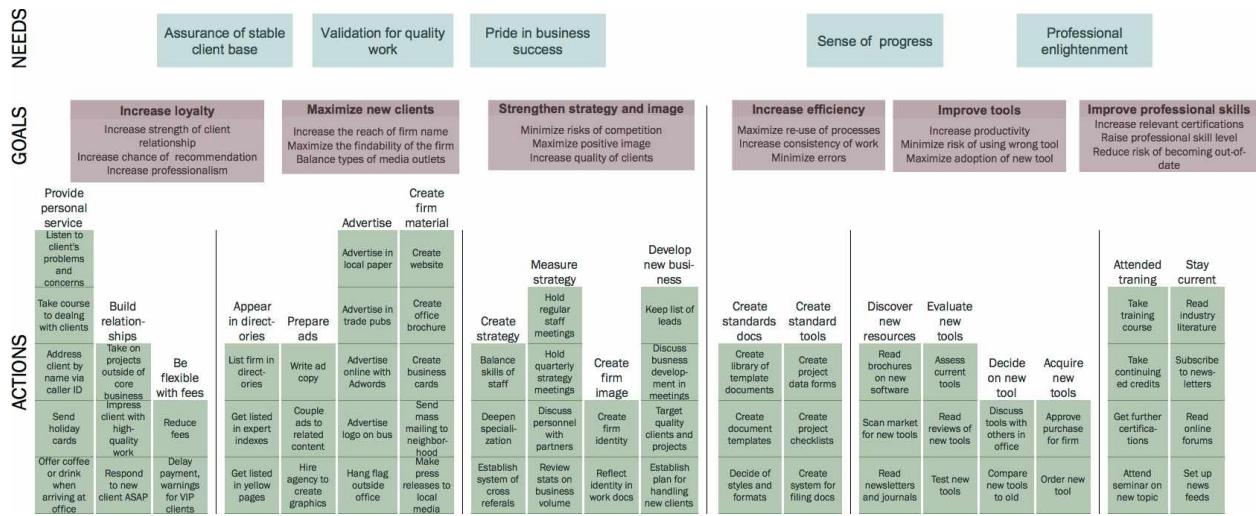
layers of causality from granular evidence to high-level conclusions. Mental model diagrams are also based on a type of laddering.

Consider the laddering in the goals-means framework, shown in Figure 12-8. This shows a hierarchy of goals and means for pregnancy, created by designer Beth Kyle. At the top is primary goal of having a healthy child and mother. The means of achieving that are listed on the next level. The process iterates until specific solutions and features are determined at the lowest level.



**FIGURE 12-8.** A goals-means framework connects solutions with underlying goals.

In another example, Figure 12-9 shows the new business activities of an architectural firm. This is a diagram I created on a previous project, modified to conceal both the firm and my client.



**FIGURE 12-9.** A hierarchical map reflects the business development activities for an architecture firm.

Because new business activities can happen in any order, using a hierarchical representation made sense in this case. It allowed me to show relationships between actions without putting them on a timeline. Through laddering, higher-level goals and needs can then be identified.

## Elements of Mental Model Diagrams

Of the types presented in Part 3 of this book, mental model diagrams represent an archetype for hierarchical illustrations. Indi Young's seminal book, *Mental Models*, provides a step-by-step guide to creating these diagrams, as well as ways to use them in practice.

Broadly speaking, mental model diagrams reflect the concept of laddering—a grounded, bottom-up approach to creating models of human experiences based on observations.

Table 12-2 summarizes the main aspects that define mental model diagrams using the framework outlined in Chapter 2.

<b>Point of view</b>	Thoughts, emotions, and guiding principles that go through a person's mind in a given context as they achieve a purpose
<b>Structure</b>	Hierarchical
<b>Scope</b>	Very broad and inclusive of multiple perspectives across individuals
<b>Focus</b>	Behavior, reasoning, beliefs, and philosophies of individuals The support organizations offer
<b>Uses</b>	To develop empathy by understanding what goes through people's minds To find opportunities for innovation based on deep understanding of human behavior To derive navigation and high-level information architecture To guide the flow of your offering so that it supports the thinking captured in the diagram
<b>Strengths</b>	Normalized formats provide consistent results Deep insight into human thinking with respect to the scope of the purpose the person is trying to achieve
<b>Weaknesses</b>	Final diagrams can be overwhelming in detail Lack of chronological flow

**TABLE 12-2.** Defining aspects of mental model diagrams

## Further Reading

Thomas Reynolds and Jonathan Gutman. "Laddering theory, Method, Analysis, and Interpretation," *Journal of Advertising Research* (1988)

*This is an older article from two of the primary originators of the laddering approach, based on Gutman's means-end approach outlined a few years earlier. This is a detailed description of the technique with many examples. In general, laddering grounds conclusions you make in evidence.*

Indi Young. *Mental Models* (Rosenfeld Media, 2008)

*Indi pioneered a specific technique for illustrating mental models in the early 2000s. This is a meticulously detailed book with step-by-step instructions. This book is essential for anyone interested in completing a mental model diagramming project.*

Indi Young. "Try the 'Lightning Quick' Mental Model Method," Indi Young blog (March 2010)

*In this blog post, Young describes a modified process to creating and using mental model diagrams that can be done in a matter of days. It offers a quick alternative to the full-blown method outlined in her book.*

# A Forward-Thinking Insurance Company: Mental Model

By Indi Young

This particular case study represents a common scenario where a product or service already exists, and the organization is seeking a way to make incremental improvements.

The example organization is an insurance company.\* The company offers auto insurance and home insurance. There is a group within the company, separate from any of these businesses, tasked with strategic direction and new products. The group has existed for two years, created by a few of the executives in response to discussions in the boardroom about competition and innovation. The executives wanted to experiment with something beyond traditional industrial methods. Recently, this group has conducted a few person-focused studies, one of which was about what goes through people's minds during and immediately after an auto accident. Because of what they discovered, the group suspects there might be something related to learn from thinking patterns during near-misses.

They want to conduct another study as a twin to the accident study, so they have a stronger foundation from which to create their potential ideas for new directions. The group hopes to use the discoveries to guide the way they provide services to the individuals they insure.

The scope of their subsequent study is: "*What was on your mind during and after a memorable near-miss accident?*" This scope is not restricted by type or location of the incident. The team will hear stories from people who have nearly had accidents in the kitchen or on the road, by themselves or in a crowd, where someone is at fault or no one is at fault. Because this is person-focused research, the accident does not have to relate to the product—auto insurance—that the company provides. The team is after the styles of thinking and manners of decision making during a near-miss, whether or not

it has to do with autos. The patterns of thinking can then be used as a framework for new ideas about auto insurance.

### Near-Miss Accidents

The team began by conducting listening sessions with 24 people. They began each session with the question, "*What was on your mind during and after a memorable near-miss accident?*" Then they let the participant take the conversation wherever, within that scope.

Here is the first part of one of the stories. The Listener digs into various things that were mentioned so that she can better understand the reasoning and reactions that went through the participant's mind at the time.

#### 17: Bracket Fell Off the Work Truck—Transcript

*Listener:* I'm looking for stories that will help me understand what goes through people's minds in near-accidents or injuries. Do you have any near-accidents or near-injuries that you remember?

*Speaker:* I guess this counts as a near-accident, because it was an actual accident, but it could have been much worse. So I think it counts as both. It wasn't recent—it must have been when my daughter was 4 or 5. These don't have to be car things, right?

*Listener:* Right.

*Speaker:* This is one of those things when you're driving on the freeway, and you're going 65 miles per hour. I was right behind a fencing company truck. An aluminum bracket tumbled off the little storage cabinet above the truck. I wasn't even that close behind it—just a normal distance. I was driving my Honda Odyssey, and the bracket struck the windshield right in front of my face. Instant spider web! It was one of those things that happens in a flash. I had all this adrenaline. So, I'm going to pull up to this other car and tell them to pull over. So I get in the other lane and I pull up next to them. I look over and it is four men, and three of them are asleep! I've got to stop them to get their insurance. I was gesticulating at them. There was another some sort of a service car, or some sort of county-related government car. I tried to flag them down, and they just looked

confused. Finally I drove home and looked at it. Boy, am I glad for tempered glass. If this had happened 50 years ago, I would be dead. And my daughter was in the car seat in the back going, "What's going on, mom?"

*Listener:* Wow! Yes, thank goodness for tempered glass. That's so scary to think about! You said the word "adrenaline." What do you mean?

*Speaker:* That's the part where you kind of panic a little bit. Everything's happening fast but sort of slow at the same time. Your heart's beating fast, and you're not quite sure what the right thing to do is, but you have to do *something*. You have a smidgeon of common sense to not veer off the road. But this sort of thing has never happened before, so some of the adrenaline is from being in unfamiliar water. I wasn't sure what to do next. Maybe I should get the name of the company. I tried to get the license plate. I remember looking them up on the Internet when I got home. I was thinking, "*Can I just call them and tell them, 'you guys did this to my car.'*" I was upset.

*Listener:* You were upset?

*Speaker:* It's a good \$500 when something happens to your car! But the adrenaline was also knowing it could have been worse. You just get scared. Everything on that truck should have been packed up and strapped down. This stuff happens all the time, though, which is what's scary. In a perfect world, nothing would ever happen like this. So it was adrenaline to do something: fight or flee. Or a little of both. [laughs]

*Listener:* You say you looked them up on the Internet when you got home?

*Speaker:* I looked them up to make sure it was a company. I thought about calling them, but what would I have said? How can I prove that anything happened? It happened on a freeway going 65 miles per hour. There were no witnesses. All I have is a car that needs a new windshield and is undrivable. I decided I guess there's nothing I can do about this, except chalk it up to one of life's experiences. Try to

learn from it. Never drive behind a work truck like that. Tell my teenagers never to drive behind a truck. There are all sorts of scary scenarios; you can drive yourself crazy with it. When my husband got home he said I got lucky. He said, "That was in a really bad spot. You could have really gotten hurt."

*Listener:* What was going through your mind when he told you that?

*Speaker:* That I completely agree, "Yeah, you're right." "Oh yeah, it wasn't just my imagination." It was a validation. I am as lucky as I think I am.

## Writing Summaries

After collecting stories, the team sat down to go over the details in the written transcripts. Making sense of what a person said from the transcript provided them double the depth of understanding rather than simply listening. It involved corralling messy, meandering dialog, picking out certain quotes to put with other parts of this person's dialog, and forging a better idea of what he really meant to convey. This work allowed the team to absorb participants' thoughts, reactions, and philosophies. The team developed deep cognitive empathy with the participants.

Here are some example quotes the team worked through. They strung together several quotes from one transcript that represented the same concept, jotted down whether it was reasoning/thinking, a reaction, or a guiding principle, tried out a few verbs that could possibly star as the first scintillating word of the summary, then wrote the summary for that concept.

Maybe I should get the name of the company. ... get the license plate. ... if that happened to someone else, and they were telling me about it, I'd ask, "Who did it?" ... to get information about them ... I remember looking them up on the Internet when I got home. ... I looked them up to make sure it was a company.

(thinking)

*Verbs:* Get, Find, Look, Identify ...

*Summary:* Identify who made this accident happen, by the name of the company or the license place, because I want to know who did it.

Finally I drove home ... I decided I guess there's nothing I can do about this, except chalk it up to one of life's experiences.

(thinking)

*Verbs:* Drive, Decide, Think, Chalk, Realize, Conclude ...

*Summary:* Decide to drive home because there was nothing I could do

## Finding Patterns

After summarizing all the concepts in all 24 transcripts, the team looked for patterns across the summaries. As patterns started to form, they found surprises, as well as things they expected. Both the surprises and the nonsurprises became extremely useful later for reframing their thinking.

When the team was finished, they went through all the piles a second time to see if the piles themselves formed into bigger groups. Here is a list of all the piles they labeled (the indented a, b, c level) and the groups that formed based on these piles (the 1, 2, 3 level).

### Patterns Found in Transcript Summaries for Near-Miss Accidents

1. Recognize I am in a dangerous situation
  1. Feel shocked to suddenly be in a situation that could be dangerous
  2. Feel terrified that I'm about to have an accident (or get hurt)
  3. Figure out if this is a dangerous situation
2. Get safe again

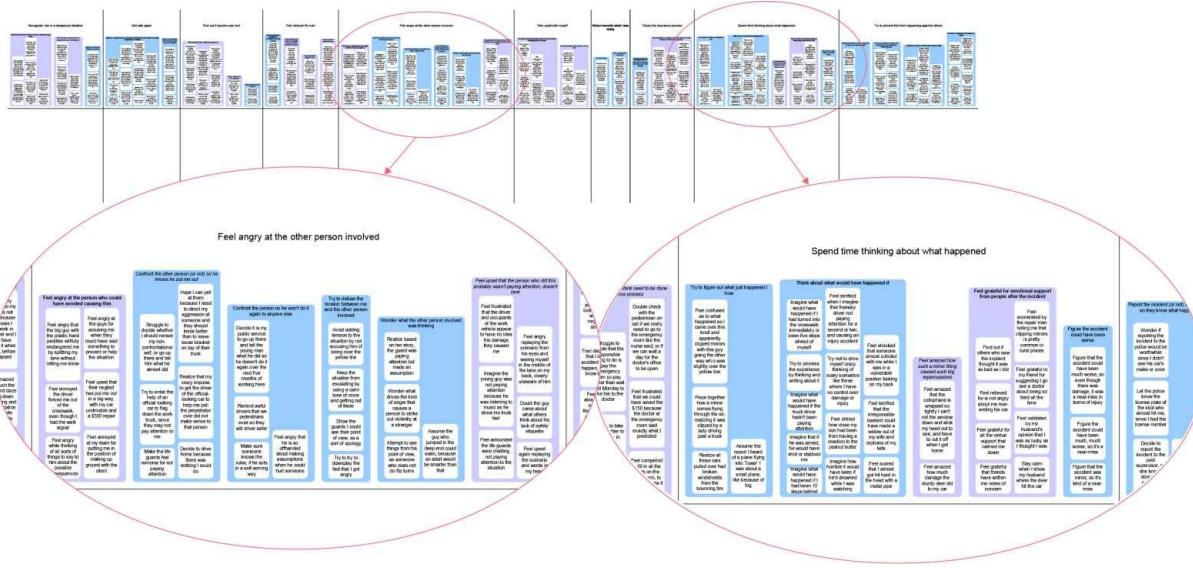
1. Behave in a smart way so I can get out of this dangerous situation safely, despite the adrenaline
2. Reach out mentally to others for help to get out of the situation
3. Find out if anyone was hurt
  1. Worry I might have hurt someone
  2. Feel relieved I was/others were not hurt
  3. Reassure people I am not hurt
4. Feel relieved it's over
  1. Feel grateful to the person who helped me get out of the dangerous situation
  2. Feel relieved the danger is over
  3. Spend some time getting the adrenaline out of my system
  4. Feel surprised I reacted this way
5. Feel angry at the other person involved.
  1. Feel angry at the person who could have avoided causing this
  2. Confront the other person (or not) so he knows he put me out
  3. Confront the person so he won't do it again to anyone else
  4. Try to defuse the tension between me and the other person involved
  5. Wonder what the other person involved was thinking
  6. Feel upset that the person who did this probably wasn't paying attention, doesn't care
6. Feel upset with myself

1. Feel upset with myself about my role in the incident (being partially to blame)
2. Feel embarrassed at my reaction, lack of skill
7. Return home/to what I was doing
  1. Carry on with what I was doing (or not)
  2. Get back home
8. Follow the insurance process
  1. Exchange insurance information with the other person because there was some minor damage
  2. Feel compelled to do things I don't think need to be done because of the insurance process
9. Spend time thinking about what happened
  1. Try to figure out what just happened/how
  2. Think about what would have happened if
  3. Feel amazed how such a minor thing caused such big repercussions
  4. Feel grateful for emotional support from people after the incident
  5. Figure the accident could have been worse, which qualifies it as a near-miss
10. Try to prevent this from happening again/to others
  1. Report the incident (or not) to authorities so they know what happened
  2. Convince someone in charge to do something to prevent this from happening again

3. Change my actions so this doesn't happen again
  4. Prevent an accident by following safe habit

# The Mental Model Diagram

The labels from the piles the team put together are the titles of the towers in the mental model diagram. The boxes within each tower are each of the summaries, themselves. The affinity groups that formed are the mental spaces for the diagram (Figure 12-10).



**FIGURE 12-10.** The top portion of a mental diagram generated from primary research.

# Zero In on Current Business Goals

There are quite a few patterns the team found in the summaries. Their next step was to bring attention to some of the behaviors related to priorities articulated in this year's business goals. These are the business goals:

- Increase membership—attract more insurance customers (a perennial goal)
  - Reduce claims (a perennial goal)

- Leverage the company's social capital (has been a goal for four years)
- Offer more services via mobile apps, phone or tablet—to help people “on the scene” (has been a goal for the past two years)
- Increase employee pride in what the company does (new this year)

With these organization-wide goals in mind, the team went through the list of patterns and chose those of interest. These are patterns that the team thinks might be able to affect some of the goals.

### **Patterns that seem associated with yearly goals**

- Reassure people I am not hurt
- Confront the person so he won't do it again to anyone else
- Try to defuse the tension between me and the other person involved
- Feel upset with myself about my role in the incident (being partially to blame)
- Feel embarrassed at my reaction, lack of skill
- Spend some time getting the adrenaline out of my system
- Report the incident (or not) to authorities so they know what happened
- Convince someone in charge to do something to prevent this from happening again
- Change my actions so this doesn't happen again
- Feel compelled to do things I don't think need to be done because of the insurance process
- Prevent an accident by following safe habits
- Figure the accident could have been worse, which qualifies it as a

near-miss

## Get Started Inspiring Ideas

Finally, during some working sessions with key stakeholders, the team used these patterns to touch off some ideation. Using the actual stories they heard in the listening sessions, the team helped the group cycle through extensions that might end in various ways for the organization. They guided the working session so that the ideas were not limited to an existing product or a service.

Here are a few of the ideas the group came up with, along with notes about feasibility and questions to further explore before deciding whether to pursue an idea.

*Idea:* Warn Others of This Hazard or Error

*Pattern:* Some customers want to report the incident so that authorities know what happened, so they are aware of a hazard or of the process not working right.

*Idea:* Choose a few details to describe the hazard or error. If these details don't cover it, type in a description. We'll get the information to people who can warn others.

*Goals Met:*

*Reduce Future Claims:* Getting the message out to the channels that customers already use, such as traffic reports or Google maps, will help them become aware of a road hazard. They can drive a safer route.

*Build Social Capital:* If we can get the message out that the customers are supplying these valuable hazard reports, and we're getting it to the right people, that would certainly build our reputation.

*Increase Membership:* Customers will feel satisfaction helping others avoid what they experienced. They may pass the word to others.

*Idea:* Claim-Lite

*Pattern:* Several of the near-misses are actually minor accidents.

People are thinking “it could have been so much worse.” The subsequent interaction with the insurance process become too entangling, when people think of their incident as a near-miss.

*Idea:* Create a new kind of claim for when the people involved consider it minor, and they don’t want the process to become too involved.

*Goals Met:*

*Increase Membership:* If it is a positive experience, customers will talk about this kind of claim. After the new process seems to be working and stable, we can use it in our marketing.

*Reduce Future Claims:* This should actually read, “reduce claims,” since we’ll replace a certain percentage of claims with the “lite” version.

This insurance company example demonstrates the way person-focused research can reframe the way an internal group approaches improvements to their offerings and to their internal processes. Not every idea should be pursued. The team will want to test them. Some of the ideas will wait until later; others will never see any more attention. It’s even possible that none of the ideas from an interval make sense for the organization. Try not to become too attached. What’s key is to use your empathic understanding of people that the idea supports to clearly judge whether to invest more resources in it, or let it wither. Successful organizations know the difference.

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\* Because it's difficult to get legal permission to use genuine studies and transcripts, the insurance company case study is fake. The 24 participant stories that were collected are true, but the ideas that emerged from the findings are invented from a foundation of two decades' experience.

## Diagram and Image Credits

Figure 12-2: Diagram by Don Norman from his book *The Design of Everyday Things* (1988)

Figure 12-3: Diagram by Indi Young from her book *Mental Models* (Rosenfeld Media 2008), used with permission

Figure 12-6: Image from Indi Young's book *Mental Models* (Rosenfeld Media, 2008), used with permission

Figure 12-7: Diagram by Philip Johnson-Laird from his book *Mental Models* (Harvard Business Press, 1983)

Figure 12-8: Goals-means framework by Beth Kyle from "With Child: Personal Informative and Pregnancy."

[http://www.bethkyle.com/EKyle\\_Workbook3\\_Final.pdf](http://www.bethkyle.com/EKyle_Workbook3_Final.pdf)

Figure 12-9: Diagram by Jim Kalbach

Figure 12-10: Diagram by Indi Young, used with permission