Emergent Scoring of the Temporal Experience, an Investigation into Service Mapping

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Abstract

The design of services relies heavily on different mapping approaches to develop an overview of service architecture. Scholars largely agree that a key goal of service mapping should be the structuring of experience over time, yet the three most prevalent approaches to mapping service — customer journey maps, service blueprints, and system diagrams — fail to represent important aspects of the temporal experience. Current tools continue to center physical touchpoint attentions and struggle to depict more complex narratives of improvisatory customer/provider interactions. Notating the lived journey of temporally unfolding experience is not a simple task. Accomplishing this will require a recentering of kairotic time, a practice largely absent from our current discourse. In this paper, alternative approaches which represent time through the lens of the unfolding service experience are discussed, and early explorations in temporally aware service design mapping are presented.

Keywords: time, experience, embodiment, mapping

Introduction

As a rapidly maturing field of commercial practice and academic inquiry, service design is contributing significantly to the design discourse. Rethinking interaction and product design through the lens of service-dominant logic offers new perspectives on value-creation and social and economic exchange. Many service designers have discussed the nature of time as an essential aspect of service design. Time is noted as a critical element of the touchpoint (Halvorsrud et al., 2016), as the context within which actors interact (Vink et al., 2021), and as the medium for the act designing (Polaine et al., 2013). However, working directly with time as a medium is a difficult,
indirect, and tricky business, and is accomplished principally in service design through a variety of map-making tactics. In fact, the making of maps and diagrams of service experiences is as significant an aspect of service design practice as working with the materials and experiences of the service directly. A set of map-making tactics have emerged as the de rigueur of service design practices, offering a set of prescribed paths (with prescribed biases) that it is all too easy to follow.

In one of the seminal texts of service design — Stickdorn & Schneider’s (2012) *This is Service Design Thinking* — the authors encourage the designer to “Imagine a service as a movie.” (p 32) The movie analogy is certainly helpful as one attempts to envision the journey of a service, however there are two misleading assumptions implicit in the exercise. The first concerns the singular narrative of a movie with its predetermined end. A significant challenge for service designers is found in the ways that service clients and service providers co-create multiple narratives within the context of the service. Rather than one singular narrative, predetermined by a screenwriter, service interactions are emergent and can bend and twist into a vast array of endings. More like a “choose your own adventure” story than a blockbuster movie, service clients are writing new scripts every day as they push on, test, and perhaps deliberately misuse the systems that the service designer has arranged.

A second problematic assumption is found when they state, “Service design thinking uses this [movie] analogy to deconstruct service processes into single touchpoints and interactions. These, when combined, create service moments.” (Stickdorn & Schneider, 2012, p. 33) The most helpful part of the movie analogy is that it assumes service is unfolding, progressing forward, and active — living. However, once one deconstructs the service processes into single touchpoints and interactions, this aliveness becomes cauterized, stifling the emergent reality of interactive service.

The metaphor of the service as a dramatic production was critiqued by Polaine et al. (2013) debunking what they refer to as an “egocentric” casting of service designers as conductors or directors, but maintaining that the framing of performance provides some valuable contrasts to the typical role of the designer. Services have sets and staging, props, and people who act upon roles, motivations and goals. Polaine describes the limitations of this metaphor as having several aspects. Most significant of these is that service clients are not going to behave in ways that are scripted. When service workers engage with clients mediated by things, it is complex heterogeneity that is more the norm than the exception. While service providers have a set of tactics to draw from, collaborative goal-directed improvisation by provider and client is what more typically frames a successful service experience.
The practice of service design continues to rely heavily upon the concept of the touchpoint, although few papers or books offer an explicit definition. Simon Clatworthy defines the touchpoint simply: “Touch-points are the points of contact between a service provider and customers.” (Clatworthy, 2011, p. 13) Clatworthy gives various examples, among them: buildings, web sites, print-outs and self-service machines. Clatworthy also points to the time-based nature of service: “Each time a person relates to, or interacts with, a touch-point, they have a service-encounter.” In documentation of a service or in the prospective design of a service, these touchpoints are structured and materialized as service narratives. These narratives take several forms, most typical are customer journey maps and service blueprints, but are at other times structured as stories, webpages, videos, or more recently, immersive virtual reality experiences. In the current exploration, the writers would like to center both the service narrative and the concept of touchpoints in a discussion regarding emergent service.

The current state of service mapping

The design of services relies heavily on different mapping approaches to develop an overview of service architecture. The three most prevalent approaches — customer journey maps, service blueprints, and system diagrams — use different graphic approaches to make meaning. They each have different benefits and are appropriate to organize the conversation for different constituencies within an organization. Let’s consider each of these in turn.

Customer journey maps — Customer journey maps provide a framework for authoring a service, and this framework is espoused widely (Kimbell, 2015; Penin, 2018; Polaine et al., 2013; Stickdorn & Schneider, 2012). In practice, we use these maps to demonstrate two different scenarios. Current state journey maps depict the service as it exists in the present, detailing real-world observations that describe an aggregate of how observed customers experience the progression of the service. These maps have the advantage of describing services that have already happened and can lay out in some detail specific narratives that have been completed. Current state maps may show the one narrative a specific user traversed in the service journey or represent an amalgam of customer journeys represented as a single archetypal journey. Future state journey maps describe the aspirations of the service design team, depicting the service in its redesigned state. Here the designers are scripting future interactions, attempting to predict the envelope of action that may happen in the various service interactions. The challenge is greater here as many design moves are required to structure complex and overlapping interactions. A
single narrative mapping is likely insufficient. Both of these mapping approaches involve dividing the service up into a sequence of events through which a real or imagined customer passes during the experience of the service (Brown, 2009). In a service design, “the value of describing a customer journey is that it clarifies where the customer and the service or brand interact” (p. 100).

The typical customer journey map arranges events in columns while different aspects of the participant’s experience are shown in rows. Many customer journey maps group related columns into phases (not unlike phrases — key structures within music scores) while the participants’ emotions, actions, influences and potential points of intervention upon the participant are shown in rows (Stathoulis, 2021). Yet a key challenge of this graphic approach is highlighted by Følstad & Kvale: “a description and definition of customer journeys as a series of steps and/or touchpoints does not explicitly address a key characteristic of customer journeys: the strong link to customer experience” (2018, p. 16). This is notable in Figure 1 below. The prospective journey map from Adaptive Path displays the customer experience in a schematic way, at a high level of abstraction. Specifically, the pre-planning process is reduced to a cyclic graph of touchpoints that might be experienced iteratively, the phrase “Research destinations, routes and products”, and 7 brief bullet points describing possible thoughts and feelings. This approach offers only the barest sketch of “the experience” offering only a tenuous link to customer experience.
Following, Mad*Pow’s interactive customer journey map from 2018 (Figure 2) has a similarly terse and abstract presentation of the customer experience. Granted, these documents are not the only deliverables presented in a customer journey redesign project. One could argue that extracting these documents from the context of the design project is unfair to the designer. The documents alone might not communicate the richness of the experience design. They are, however, significant tools that design teams use when structuring and communicating the overview of service experiences with clients. We share these examples to illustrate Følstad & Kvale’s critique above, noting the ways in which the graphic tools shape both the designer’s and client’s attention toward instants in time (touchpoints) without capturing the richness of the customer experience.
Service blueprints — While customer journey maps vaguely emulate a music score, capable of displaying multiple overlapping interactions, including instants of confluence and divergence, service blueprints often adopt aspects of the visual language of a flowchart. Where customer journey maps show the service from a customer perspective, a service blueprint depicts the organizational perspective of the service. A service blueprint uses the framework of the customer journey to depict the relationship between all the different aspects in an organization that come together to deliver a service. According to Bitner et al. (2008), commonly depicted aspects of a service are: customer actions, onstage/visible contact employee actions, backstage/invisible contact employee actions, support processes, and physical evidence. Using the touchpoints of one scenario of the customer journey as the organizing “spine” of the service blueprint (Gibbons, 2020), these various elements are arranged visually in a way that depicts the relationship between the different aspects of the service. Typically, organizational touchpoints are divided into the frontstage — that which the customer sees, and the backstage — that which occurs out of sight of the customer to create the service experience. The service blueprint, understood as distinct from the customer journey, serves to develop the understanding and agreement within an organization where internal coordination is needed to produce the effect of a seamless service experience.
System maps — The system map depicts the relationship between the main service entities in an organization. While this may seem redundant to the service blueprint, the system map often depicts the service as a single encapsulated entity rather than the more customer-focused presentation of the blueprint. A system map largely ignores the specific sequencing of a service focusing upon the relational and material structures within an organization that are necessary to support the service. The system map can depict authority structures, political or organizational relations, financial relations, flows of supplies or other materials.

Limitations to current approaches

With regard to the organization of services, Lara Penin, following others (Akama & Prendiville, 2013; Bitner et al., 2008; Diana et al., 2009) identified time as the critical element of services stating, “…they need to pay particular attention to time, the fourth dimension. Time is essential in services because the perceived benefit of a given service for users may change as interactions and experiences unfold over time. From
the perspective of the service-providing organization, time is essential because of the different logistic flows that need to be coordinated” (Penin, 2018, p. 152). So where is the conversation now?

While these mapping approaches continue to create value in design practice, in the current critique we argue that each of these approaches are subject to an impoverished perspective towards time. Journey maps and service blueprints primarily focus on sequencing, whereas time, what many practitioners and theorists have identified as a, if not the key component of service design, is effectively absent. How can our service designs be more sensitive to and aware of the time envelopes we use to construct our services? In what ways might we build richer attentions for time into our mapping? How might one center the temporality of experience in the various tools used to speculate about and analyze service designs? Let's begin with a quick primer on time.

Aion—Chronos—Kairos

The ancient Greeks had three concepts for time. The first is exemplified in the Hellenistic deity Aion (Αἰών), associated with perpetual time, as in the ideas of ages, timelessness, or eternity. The second is Chronos (Χρόνος) and refers to clock time — measurable time, as in seconds, minutes, hours, years. The third is Kairos (καιρός) which instead of minutes, seeks to describe moments or more specifically, the opportune or ideal moment.

Where the long time of aion is central to all discussions surrounding Transition Design (Irwin, 2019; Irwin et al., 2020), Service Design exists somewhere between chronos and kairos. Clatworthy’s touchpoints, the “points of contact,” amount to instants in time, snapshots or freeze-frames of time, and can be recorded as timestamps on a chart of minutes and seconds — notable chronos attentions. When discussing touchpoints in service design practice, these ordered lists of contact instants are commonplace. Touchpoints summarize or reduce service experiences into clear linear points easily pinned to specific instants on the stopwatch.

At the same time, the human experience of any interaction cannot be contained into a pinned timestamp on a chart. All interactions take place “over” time not “at” an instant of time. Service interactions are more accurately described as gestures or arcs or phrases — moments rather than instants — and moments are the attentions of kairos. As participants in a service, we do not aspire to accomplish our objectives in sequence marked by the ticking clock, rather, we hope to interact in affective moments of participation — organic, natural, comfortable, (even beautiful) interactions that unfold in overlapping spans of time.
Touchpoint-centric journey maps or blueprints are extremely useful at presenting the logic of any proposed interaction. They can aid the designer in thinking through appropriate ordering of events, avoiding unnecessary confusion as one attempts to bring their clients from point A to B to C. When using the touchpoint list or map to describe an enacted design, the chronos attention is on display as one timestamps each freezeframe of time (1:07 Enters the store – 1:22 joins the queue – 1:24 pays for the latte – 1:29 receives the hot drink, etc). Chronos attention to time is very good at marking the order and logic and quantitative account of an event. However, this chronos bias is unable to account for the experience of the participant over time. Chronos has no care for lived, felt interactions, only the cold sterile accounting of minutes and seconds. Worded another way — chronos time offers no valuing of one instant of time over another. Every second is just another second, every minute the same as the last. The time keeper can tell you when the event hit (quantitative) but has no language or understanding of how the interaction progressed/evolved/unfolded or how one might qualitatively value one gesture over another or how these micro interactions are actually nested inside of a meta-interaction.

Figure 4. Simultaneous Cycle Motion Chart (Gilbreth & Gilbreth, 1917, p. 139)
In this manner, chronos, while being a useful accounting tool when analyzing events, is also terribly incomplete. If one’s map starts and ends with chronos-based descriptions, it is likely missing a critical attention toward the actual experience of the unfolding service.

**Anacrusis—Crusis—Metacrusis**

Each touchpoint on a service map marks an instant in time, a timestamp on a ticking clock. This instant is not measurable, that is, the actual instant has no time of its own, it is simply a *crusis*, a flash as the peak of an interaction. Rather than describing interactions as timeless instants, consider the benefits of acknowledging the full gesture of a given interaction. Baseball is not coached by only noting the instant the ball hits (or misses) the bat. There are years of instruction focused on the proper anacrusic gesture, that is, the ways that one prepares for and *leans-toward* the instant of contact. Likewise, we do not shut off our attention once the ball accomplishes its touchpoint of contact with the bat, rather, crowds are enraptured with the metacrusic gesture of the ball in flight, leaving the bat and completing the full arc by disappearing beyond the far wall in the classic home run.

At its root, all service is interaction. Service is not the technology or the script. It is not the flow chart or a collection of frozen moments. Service is the unfolding back and forth of shared experience. Compounding this, service is often significantly more complex than baseball in that there are regularly multiple, shared, and overlapping experiences occurring simultaneously and on various levels of scale. In baseball, there is one gesture happening at a time, moving from one state to another in a linear succession. Navigating many of our service prompts, however, is far more complex — with various stakeholders and multiple systems interacting in varying and overlapping levels of scale, varying and overlapping gestures, and varying and overlapping temporalities.

While this should read as obvious (the experience is not the touchpoint and not all service follows a single linear narrative), our service design mapping tools still reflect the early innovations described by Stickdorn & Schneider (2012). Noting the unfolding experience is not a simple task. Design practice has yet to develop tools

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1 Anacrusis, crusis, metacrusis (Jaques-Dalcroze & Rothwell, 1930) are terms borrowed from the music and somatics practice of Jaques-Dalcroze (1965-1950) used to describe the progression of the parts of any action. Crusis is the touchpoint, an instant on a trajectory. Anacrusis is the preparatory gesture, the *coming toward* the crusis. The metacrusis is the *falling-away-from* the instant of the crusis. Where crusis is a noted instant in time, anacrusis and metacrusis direct our attention to experience over time.

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Linköping University Electronic Press
that center unfolding kairotic time, in fact, this conversation is largely absent from our discourse. To address this, we might look to other fields for some inspiration.

**Three attentions to kairotic time**

Konstantin Stanislavsky (1863–1938) was a Russian actor, director, and founder of the Moscow Art Theatre. He is best known for developing the Stanislavsky method, a pedagogical tool for actors searching for naturalness in their performance. Of particular relevance to our discussion is Stanislavsky’s awareness of *beats* (or “bits”, Russian кусок) in the script. Rather than accepting punctuation as the overriding organizing tool for an actor’s spoken lines, Stanislavsky instructed his students to discover the motion of the words, noting how groups of words when spoken formed mini arcs of intention, or *beats*. These beats amount to mini events nested inside of larger beats and when understood can propel the action forward by acknowledging the inherent motion in the experience. The script is not a series of critical instants in time (touchpoints), it is an invitation to a series of moves, an array of connected gestures. The attention to *beats* reminds one of the anacrusic and metacrusic nature of all interactions. Acting for the stage is not a task of delivering a memorized script or hitting all of the dramatic touchpoints in the correct order. The goal, not unlike in the best examples of service, is to carry the audience along on a continuous ride. This continuous ride requires an attention to the accumulating, decrementing emotional trajectory between the cruses. Theater occurs between the touchpoints, and is not the touchpoints themselves.

Western art music traditions have for centuries used a system of musical notation which claims to foster the sharing and repeating of musical works by anyone literate in the notational system. These series of black dots and stems on 5 lines gives the studied musician a road-map or script for the selected work permitting anyone with the requisite knowledge to read the score and mount a performance; yet playing the exact notes on the page in the correct order does not guarantee a fully rewarding experience. The true mark separating the master performer from the novice is the ability to intuit what the musical score does not make explicit and then bring that enhanced attention to the performance.

Western music notation is a vast series of literal touchpoints. It shows the exact points when a performer is expected to *touch* their instrument to make certain notes sound. The keys on a piano or a clarinet, the fingerboard on a violin or cello, the valves on a trumpet all require literal touching at exact instants in time to make the instrument sound. The printed musical score is designed to instruct the musician on the exact times to enact these notes. While this system of musical notation is deeply entrenched in the conservatories and concert stages the world over, it is not without
critique. Making explicit only the touchpoints creates biases in music education and performance toward these distinct instances in time and away from the groupings, phrases, and gestures of mastery-level performance. Much of what counts as “artistry” in musical performance, is accomplished by attending to the un-notated white space between the black dots on the page rather than merely hitting the correct notes in the correct order.

In response to this notational touchpoint bias, there are many artists working to demonstrate the space between the notes, that is, the anacrusis and metacrusis gestures that surround the crusic instants of note hitting. Many of these graphical scores replace the notes, separated by white space, with arcs and lines and shading and squiggles, each implying trajectories rather than instants. None of these speculative systems have become mainstream, yet, they highlight the dilemma — lists of touchpoints are not the same thing as authentic experience. Music, like service, is experienced in arcs or gestures of motion. Those without the instinct or training to understand this, are apt to create shallow and disconnected music/interactions/services.

Figure 5. Student sketch of different crusic points of coffee pour-over service, Anqi Wan, 2017

These approaches are depicted clearly in the experimental graphical music score of Cornelius Cardew. In each of its 193 pages, the Cardew score employs a variety of...
visual depictions that the customer journey map lacks. Rather than a *touchpoint* approach that delineates specific notes of a specific length at a specific time, Cardew’s depiction is of the scope of the improvisatory space for performers. It shows the shape of the experience, displaying the ebb and flow of the experiential space in a way that is richer and more diverse than the rows and columns of sequentially ordered noteheads or blocks. Take, for example, the following excerpts:

![Figure 6. Treatise by Cornelius Cardew (1967, pp. 30–31)](image1)

![Figure 7. Treatise by Cornelius Cardew (1967, pp. 134–135)](image2)

These two excerpts contrast visually; for those familiar with the visual language of 2-dimensional compositional principles, we see in Figure 6, long lines that fuse together or split apart. In Fig 7 the principal graphic objects are circles with pieces missing. An interpretive approach that can read these properly, should yield two different sets of sounds that contrast aurally as the graphics contrast visually. Considering Figure 6 more specifically, we can see that the represented sequence begins with 5 continuous sounds, 4 of which then combine into one continuous
sound, while the 5th changes significantly at that same point in time. On the following page, note that the previously combined sound now again combines with the base sound to produce something a bit different than we have seen before on these pages. Figure 7 shows a point in time much later in the piece that is punctuated by an entirely different quality. This section begins with 3 clusters of activity. The first two being combinations of the activity that happens 5 times (with slight variations) on the subsequent page.

The point of this graphical example for service designers is not to engage directly with the experimental music notation paradigms of the late 1960s, but to explore what is a rigorous attempt to depict structured improvisation over time. How might we visually depict the envelope of improvisation available to service providers? How might a customer journey show visually multiple possibilities at various points? Through this score, Cardew organizes the activity of the performers through a systemic graphic depiction of the improvisational capacities of particular moments. More than a different approach to traditional music notation, Cardew is attempting to capture the poetics of the experience.

One of the most successful and recent examples demonstrating anacrusic and metacrusic gesture also happens to be one of the most playful. The Line Rider\(^2\) series (DoodleChaos, 2019) of animated stick figures set to music is a masterful demonstration of the gestures inherent in experience. When compared to Service Design Journey Maps (or to western music notation) the Line Rider videos each present the flip-side of experiential notation. Rather than valuing the distinct, list-like, instants in time, the series carries the attendee along on an actual ride — continuous, dynamic, shifting, mounting, decaying, etc. The ride is not without touchpoints. The cruces are noted throughout, yet they are decentered in the mapping project. In their place the animation pulls us along, reveling in the unfolding experience between these touchpoints.

Of extra significance to our discussion, the Line Rider animations also demonstrate complexity through various and overlapping trajectories — sometimes working in unison, and at other times, in counterpoint. Seen as a tool, Line Rider has found a way to demonstrate the unfolding motion of an experience and at the same time acknowledge the various trajectories present in the meta score.

In coursework led by the authors, students were asked to engage with alternative concepts of time, to note the embodied engagements in service and to test different

\(^2\) https://www.youtube.com/watch?v=fYVaHvHuARA
ways of depicting the time of a service graphically. In the following project examples, students explored different ways to represent the experience of kairotic time.

Figure 8. Nested arcs of experience, Lily Fulop, 2017

The student project shown in Figure 6 explored a service experience representing nested levels of felt time. Students completing this project were asked to consider which moments were most salient, and what moments were of secondary and tertiary relevance. Students then considered the full arcs of experience that created these various gestures and represent those time arcs in multiple levels of resolution. Two concurrent processes are represented, each with its own sets of cruses that are not necessarily congruent.
Figure 9. Concurrent cruses in a service experience, Anqi Wan, 2017

Figure 9 shows a choreographed service experience with a service-literate customer. While both schematic and abstract, this kind of representation depicts the service in a way that reveals the specific profile of the service as a simultaneous gestalt. Using a similar system of representation, one could see how these services can be differentiated. Here, the visual language used reveals the structural proportions of the service choreography.

Figure 10. Customer Journey Map, Shipra Shah, 2021

In a similar structure, Figure 10 depicts arcs of the experience, as well as cycles of experience, dips of low energy, phases through use of color, as well as significant crusic points. Contrasting the journey map in Fig 10 to the archetypal form in Fig 1, we can see that this revised form contains similar data, but is arguably more affective, as well as presenting a unique visual form that is unique to each service experience, allowing one to speak to the situated nature of each customer’s experience.
Discussion

We restate that there is great value in the current maps and blueprints the service design community continues to use. As any series of actions can be recorded as a list of touchpoints occurring at specific moments in time, these timestamps are useful to critique the logic of events and can serve as useful data when deciding on cost–benefit analysis, etc. However, “None of the existing tools really matches the need of representing what a service is into a synthetic and unique view (such as the sketch of any tangible products does)” (Diana et al., 2009, p. 9). Chronos attentions (or timekeeping) are not helpful as we turn our attention to the lived experience of the service consumer. Human experience is not felt in seconds/minutes/hours/etc. Neither is human experience felt simply through sequential touchpoint structures. The classic understanding of anacrusis–crisis–metacrisis from the work of Jaques-Dalcroze (1930) describes lived experience as either driving toward or away-from the instant of the crisis. If one is involved in any experience, there can be no true stillness. We pass through the events of our lives in kairotic gestures toward and away-from instants of significance. Stealing from this philosophy, we might then enhance our mapping tools and experiment with new notational systems to recenter the continuity of unfolding gestures of aspired-to service.

How can we re-envision our customer experience as always in motion, either toward or away-from the significant touchpoints? How might we flip the script and create journey maps that center the space between the touchpoints as more valuable than the touchpoints themselves?

How might we foster services that keep the customer engaged — realizing the motion toward and away-from the desired touchpoints? Where in our designs are clients feeling still? Or stuck? Or bound (rather than freely empowered to drive-toward the next crusis)?

How might we comment on the complexity of any service as unfolding and possessing overlapping trajectories? Rather than one single, ideal, restricted narrative, how might an understanding of beats, or a new graphical score, or even an evolving animation redirect our attention to the user-centered experience of navigating complex and overlapping systems?

In this paper we argue for an enhanced perspective when designing for and representing time in service practice. Instead of continuing to map our services using tools that center touchpoints and simple narratives, we suggest that there are opportunities to organize experience through the valuing of temporal gestures.
If we aim to give participants in a service an experience (Dewey, 1958), we should aim for this in the way we represent the service in our design planning and analysis. We designers are obviously working with more than touchpoints. There are sets of facilitative artifacts, scripts, sounds, and spaces within which service providers and service participants collaboratively improvise affective experiences. The mapping and journaling tools in current practice are highly effective at describing and analyzing the ordering and logic of our various interactions and initiatives, yet without noting the space between the beats/notes/cruses/touchpoints, and without recognizing the dynamic quality of these spaces (always aspiring to yearn toward or away-from the crux), our tools continue to devalue critical attentions. Of greatest concern for the practicing designer should be the biases our current tools create, amplifying distinct cruses of our events, while decidedly hiding, ignoring, or dismissing the actual experiencing of the experience.

References


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