

# Complementing Journey Maps with Situational Frames to Create Actionable Design Spaces.

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## Abstract

This paper introduces Situational Frames as a tool to bridge the gap between the big picture view that Journey Maps provide and the detailed information that is needed to design a system in terms of concrete information architecture, data models and interfaces. Modelling Situational Frames can also disclose opportunities for improvement of system design by identifying recurring actors and artefacts, as well as their interplay and transitions throughout the journey. How Situational Frames are created is shown with the example of a business trip, focusing on the initial phases of planning and booking.

## 1 Introduction

A Journey Map is an increasingly popular design tool to model the end-to-end experience of customers and end users. A Journey Map is a two dimensional table which represents horizontally the steps or phases of a customer journey, and vertically lists different aspects of the customer experience in each particular phase. Journeys Maps are used to extend the original design focus to pre- and post- phases to understand the end-to-end experience of a person along all steps in the journey. Journey Maps combine aspects of process models (the journey) and persona-centric empathy models (the user or customer) into one model. This hybrid view allows designers to analyze the journey from the point of view of the customer and their pain points and identify suboptimal experiences by looking across all touch points.

A classic example is the customer adoption journey which models the pre- and post-purchasing phase to streamline the end-to-end product experience and to provide appropriate support in all phases (Richardson, 2010). In more task-oriented journeys, the design focus is

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extended to pre- and post- user activities that frame the core use cases. This helps designers to consider the user's larger workflow and improve the task coverage of a product as well as supporting transitions between multiple actions as part of a larger workflow (Latzina & Beringer, 2012). It also improves the understanding of the larger socio-technical system in which a product is being used (Beringer & Latzina, 2015b), which may lead to the discovery of adjacent opportunities, for example converting indirect users into direct users.

Journey Mapping exercises are often part of design thinking workshops to bring stakeholders from multiple business areas on the same page and break organizational silos. Typically, each step of a journey is supported by different systems, each system designed with the focus on a single use case instead of considering the bigger picture. By mocking up all phases and supporting systems from the perspective of the customer or end user, the attendees see for the first time the interdependencies of their individual customer facing services. Therefore, user-centric journeys become an increasingly popular method to bring multiple stakeholders to agree on a big picture for any type of business process. These methods require contribution from teams of multiple lines of business.

Once Journey Maps are mocked up, participants begin to see breaks and inconsistencies and get inspired to think about how to streamline the journey optimize the experience of customers across multiple touchpoints and services. The best ideas are selected and detailed out in form of dedicated design ideation and prototyping sessions.

The caveat of directly jumping from Journey Maps to solution brainstorming is that the actual user needs and jobs-to-be-done within each of the journey phases are never captured in more detail. Journey Maps are an excellent heuristic tool that establishes the understanding of a larger context and facilitates to discover opportunities for improvement. However, when professional designers have to follow up on these design ideas, they typically restart with traditional user research and task modeling to inform their design with sufficient detail. The challenge to which this paper provides a contribution, is how to do a smooth transition from journey mapping to the recognition of details and fine-grained dependencies to inform interaction design.

## 2 Bridging the gap between Journey Maps and detailed requirements modelling

We suggest to fill the gap between the big picture described in a Journey Map and the level of information required to drive design of user interfaces and individual tools used within the journey. This is for two reasons: First, the information in Journey Maps is mostly high level, only listing names of involved personas and their core activities. Any further details on how those personas would interact and what tasks are being performed by whom is typically out of scope for a journey model. Second, an end-to-end journey model is perfect for understanding the big picture, but it is too big to serve as a design space. In general, multiple design teams follow up on different ideas generated during a journey mapping exercise. For example, one team might improve the global user profile to list orders and support cases together,

while another team might implement in-app advertising features to support personalized advertisements in the post-purchase phase. Although the same end user or customer is traversing the journey, there are many different steps and phases which each deserve their own design focus and solution. The design may improve by considering pre and post steps and discovering more use cases when thinking about additional stakeholders in a particular phase. However, the concrete design work must somehow be divided into sub-areas within the longer journey in order to be actionable. For example, the design of a hotel check-in self-service kiosk is a separate design space than designing the travel booking application, although they may both be part of the same journey.

With the concept of Situational Frames, we want to introduce a method to identify and focus on manageable sub-areas within a larger journey. A Situational Frame is a subset of a journey that describes the roles, tasks, and task objects for a coherent bundle of activities that hang together by a common work intent or goal (Beyer & Holtzblatt, 1997; Geis, Polkehn, Molich, & Kluge, 2016; Ulwick, 2005).

Similar to Journey Maps, a Situational Frame can be created by a small team as part of a Design Workshop. Team members perform a collaborative socio-technical walkthrough exercise (Herrmann, 2009) in which the team members brainstorm and capture in more detail who is doing what in relationship to a given task object or system. Situational Frames are captured in form of a graph that relates actors to activities which are applied to task objects. (Herrmann et al., 1999) introduced this SeeMe modelling notation as a method to externalize the conceptual model of domain experts and results in a holistic view on one situation. These representations do not require completeness of details (Goedicke & Herrmann, 2008) and can be easily shared and understood among other stakeholders (Herrmann, 2012; Johnson & Henderson, 2002).

Each Situational Frame is grounding the participants in a very tangible job-to-be-done goal along the larger journey, but at the same time reuses roles and core actions identified in the Journey Map. By analyzing multiple Situational Frames, the repeating actors, actions, task objects, and tools can be identified and linked to create a fabric of Situational Frames that can be used to traverse the journey end-to-end. Situational Frames are different from workflow models, since they do not focus on the sequences of tasks, but describe the entire socio-technical system and process needed to get a job done. A Situational Frame codifies all participants, their core activities, their interaction among each other, and their actions in relationship to task objects. This level of detail cannot be modeled in Journey Maps since they are too high level. In contrast, low level task models (cf. CTT (Paterno, 2012) or HAMSTERS (Martinie, Palanque, & Winckler, 2011)) are disconnected from the journey model and only focus on one single task. This leaves a gap when it comes to actual system design.

In the following chapters, we will use Business Travel as the use case to illustrate how Situational Frames can help to bridge between Journey Maps and more detailed requirements.

### 3 Journey Map of Business Travel

From the viewpoint of a traveler, a business trip includes several actors in various roles, mainly people within the company and service providers who are planning and providing resources such as ground transport, flights, hotels, etc. A business trip may include several steps and phases where the traveler interacts with a large socio-technical system consisting of people as well as hard- and software systems to plan and execute a trip. Identifying these touchpoints with other service providers and systems is already an important design task that helps to understand the crucial aspects of support.

The journey of a business trip starts with recognizing the need for the trip. This need could be the opportunity of attending a certain event or the necessity of visiting a customer in person. Realizing such a need initiates the planning of the trip, which may include:

- Selecting other colleagues who might want to join
- Identifying a person who will coordinate the whole trip
- Getting approval from managers who are in charge of approving the need, expenses etc. of the trip

The tasks to be carried out might be flexibly shared by those various people or roles. An office assistant might take on the role of the trip coordinator and collects needs and preferences from all travelers to prepare the booking of transportation and accommodation. Experienced travelers might want to make proposals for concrete bookings. Before booking takes place all travelers must agree on the trip plan and approval from the person owning the travel budget is needed. Getting quotations from service providers such as hotels and airlines is a pre-requisite to ask for approval. In order to decide between alternatives, participants must know the travel policies of the company.

Booking the services, which implements the trip specifications, is either done by the traveler or the office assistant via self-services or with the help of professional travel agents. This step is a complex decision making process, choosing between interdependent alternatives and considering different dimensions such as price, safety, duration of travel, or convenience.

Between booking and the actual usage of transportation services and accommodation is a phase of preparation where the traveler must decide what to bring on the trip. This requires anticipation of weather conditions and environmental aspects and dress codes for planned events.

Overall, the Journey Map for Business Travel (see Table 1) would include all phases of handling and performing a business trip: Planning, booking, preparing, departing, travelling, arriving, conducting planned activities, etc.

Journey mapping is not a strictly defined process, but a framework for understanding a service or series of interactions from a specific actor's point of view; like the traveler in our example. Thus, there is no single 'right' way to create a Journey Map within a workshop or series of workshops. Depending on the workshop's specific goal it must be decided which

dimensions (see table 1, 1<sup>st</sup> column) should be analyzed. Besides listing the jobs-to-be-done, participants, artifacts, and concrete activities, each phase of the Journey is with pain points potentially experienced by the journey participants.

Journey Maps are used as a foundational framework to seed ideas about how to streamline journeys or radically re-think the entire journey. Within a workshop, design ideas are prioritized and detailed out with low-fidelity prototypes. While this process is supporting fast forward mode and quick iterations on solutions, the actual underlying requirements are never codified beyond the high level Journey Map. For that reason, we suggest deepening the understanding of a Journey Map by means of Situational Frames that detail out selected situations within a journey.

	Planning	Booking	...
<b>Jobs-to-be-done</b>	<ul style="list-style-type: none"> <li>•create trip specification that meets demands of all travelers and is consistent with corporate policies</li> <li>•Pre-check availability and costs of resources</li> <li>•approve trip specification</li> </ul>	<ul style="list-style-type: none"> <li>•Book resources according to trip specification</li> <li>•Share with all participants the trip itinerary</li> </ul>	...
<b>Activities</b>	<ul style="list-style-type: none"> <li>•choose flight and accommodation</li> <li>•Find date with customer</li> <li>•Optionally aligning with colleagues</li> <li>•Get booking options</li> <li>•Get approval</li> </ul>	<ul style="list-style-type: none"> <li>•Book flight</li> <li>•Book hotel near target location</li> <li>•Align with colleagues</li> <li>•Clarify transportation to/from airport</li> </ul>	...
<b>Participants</b>	<ul style="list-style-type: none"> <li>•Traveler</li> <li>•(optional office Assistant)</li> <li>•Other party or event</li> <li>•Manager</li> <li>•Travel agency</li> </ul>	<ul style="list-style-type: none"> <li>•Office Assistant</li> <li>•Traveler</li> <li>•Travel &amp; hotel agent</li> <li>•Colleagues</li> <li>•Inviting party</li> </ul>	...
<b>Artifacts</b>	<ul style="list-style-type: none"> <li>•Trip specification</li> <li>•Trip constraints</li> <li>•Dates &amp; Locations</li> <li>•List of travelers</li> <li>•booking options</li> </ul>	<ul style="list-style-type: none"> <li>•Trip specifications</li> <li>•Booked services and resources</li> <li>•Itinerary</li> </ul>	...
<b>Pain Points</b>	<ul style="list-style-type: none"> <li>•Moving dates delay planning</li> <li>•Finding availability of all attendees</li> <li>•Getting a cost estimate before booking</li> <li>•Build case for business justification</li> <li>•Getting approval before prices change</li> </ul>	<ul style="list-style-type: none"> <li>•Travel agency doesn't tailor to personal preference</li> <li>•Corporate travel policies</li> <li>•How to know what is the best deal</li> <li>•Aligning with colleagues when availability for all is not yet confirmed</li> </ul>	...

Table 1: Excerpt from Journey Map 'Business Travel'

### 3.1 Dividing a Journey into Situational Frames

The purpose of a Situational Frame is to describe a selected job-to-be-done or task bundle within a journey in form of a model which details out who is doing what in a specific Situa-

tional Frame. This is similar to story boarding where a longer story is split into a series of sketches that illustrate major steps in a story. Situational Frames should be centered around very concrete goals and accomplishments that have to be fulfilled to move on to the next step or phase in a journey.

Figure 1 shows basic aspects of the Situational Frame of “Trip planning”.

The Situational Frame includes all core actors / roles (ellipses), main activities (curved rectangles) and objects / documents (rectangles) that are needed for the activity of trip planning. These basic elements are part of a modelling notation that has been introduced by SeeMe; see (Herrmann & others, 2006).

To facilitate the transition from journey mapping to Situational Frame modeling, Journey Maps should contain at minimum a list of roles and high level jobs-to-be-done for each phase to help teams to identify candidates for Situational Frames and serve as link between the Journey Map and the Situational Frames. After the teams agree on the candidates, break out teams may be formed to do situational framing in parallel by brainstorming more details about each Situational Frame and capturing results using the visual notation shown in figure 1.

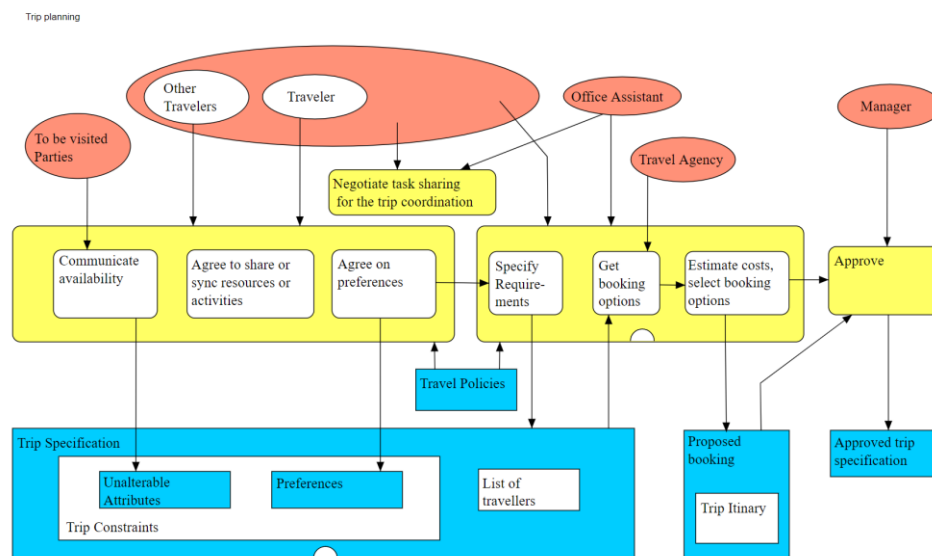


Figure 1: Situational Frame “Trip planning”  
(see: <https://goo.gl/Y2caeJ> freely available via SeeMe-Web Editor<sup>1</sup>)

<sup>1</sup> More information on [https://seeme.iaw.ruhr-uni-bochum.de/page\\_alt/](https://seeme.iaw.ruhr-uni-bochum.de/page_alt/)

The advantage of the SeeMe notation is that relations between the elements of the Situational Frame can be visually indicated on all kind of representational media (web browser, flip chart or whiteboard). Aspects can be related by grouping them or by using arrows. Grouping combines elements that share certain characteristics. For example, the activities “communicate availability”, “Agree to share ...” and “agree on preferences” share all the common goal of aligning on preferences and constraints among all travelers. Therefore, arrows point from the traveler to the curved rectangle that groups these three activities.

The notation used in situational framing does not require completeness. Additional actors, activities, and task objects can be added any time later. Unlike workflow diagrams which require clarification on what step comes after the other, situational frame diagrams codify the structural relationship between actors, activities, and task objects in a time-agnostic manner. This accelerates the team work as team members can focus on the ‘what has to be done’ instead of arguing about in what order things are done. It also simplifies the modeling of semi-structured collaborative activities where there is no fixed order and many actions are ad-hoc and in loops.

### 3.2 How to develop a series of Situational Frames

Figure 2 illustrates a possible workshop setup for the creation of a Journey Map, which is extended with the definition and modelling of Situational Frames. It starts based on a retrospective map, but features optional feedback loops to prospectively improve the journey.

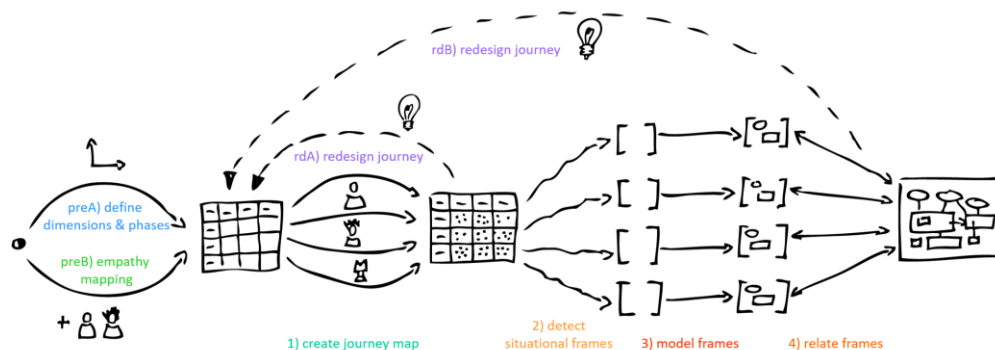


Figure 2: Process to complement Journey Maps with Situational Frames

As initial steps, the dimensions and phases that should be analyzed are defined [preA] and an empathy mapping exercise can be conducted to rapidly create one or multiple personas of interest [preB]. Using these personas, the Journey Map is detailed out by describing the dimensions for each phase from the point of the persona(s) [1]. The Journey Map typically reveals opportunities for improvement, which may be used to redesign the actor’s journey [rdA]. Instead of finishing the workshop at this point, the journey is split into multiple Situational Frames to dive into more deeply [2]. While some phases of the Journey Map may

correspond with a Situational Frame (e.g. Trip planning), other phases may consist of several frames (e.g. arriving = leaving the plane > claiming luggage and passing customs > calling and entering a cab). After deciding on suitable Situational Frames, they can be modelled in more detail by conducting a situational framing exercise [3]. As there are typically multiple situational frames to be detailed out, step 3 may be done by breakout groups which work in parallel. Those groups should walk through the various aspects of a situational frame and try to combine creative brainstorming with modelling to achieve a systematic documentation (Herrmann & Nolte, 2010). Afterwards, the groups present the documented results of the work on their specific frames and may add insights that originated from the more detailed analysis to the Journey Map [rdB]. In a final step, situational frames can be related to each other and consolidated views across the Situational Frames may be generated [4]. This step helps to identify recurring actors and artifacts along the journey. The resulting models feature codifiable actors, objects, and their interplay and are detailed enough to be the basis of designing and implementing the entire socio-technical system behind the journey.

Once a journey has been divided into a series of Situational Frames, the transitions and interplay between several frames can be analyzed. For example, “planning” produces a trip specification documenting the requirements and preferences regarding the trip. The booking phase is implementing a trip plan by booking resources and services that meet those requirements. The resulting sequence of booked services for one traveler is documented in form of an itinerary. Some roles which appear in one frame will also be active in other frames. A trip coordinator may be included in all situations throughout the trip to revise the trip plan in case of new requirements or non-available resources.

The different meanings of trip specification, trip plan, and itinerary are subtle but very tangible when focusing on Situational Frames individually. While a trip specification requires a highly collaborative decision making process, implementing the trip plan requires profound knowledge about available services and pricing conditions. The itinerary informs not only the traveler. For example, a limo service has interest to know the flight number to time the pick-up services with the actual arrival time. In case of unexpected changes, the remaining bookings together with the original or new trip specification determine what the next best alternative is. Such transformational relationships can be made explicit by introducing situational meaning to task objects and link related artifacts across Situational Frames. By modeling concrete situations, new requirements may surface that impact previous Situational Frames. For example, duty free shopping may be identified as one of the activities at the airport that needs to be planned with respect to time, list of items etc.

## 4 Discussion and conclusion

The example illustrates how Situational Frames can fill the gap between a macro view on the end-to-end journey of a customer on one side, and a detailed task analysis listing all the steps of a specific task on the other side. While journeys are sequential models, describing a set of phases with rich meta data, Situational Frames are structural models putting actors and operations into relationship with task objects and supporting systems. In this sense, Situational



Frames are not simply a drill down into a hierarchy of sequential steps, but they change the organizational principle to a structural view. This allows the designer to semantically zoom from a high-level sequence model into a more granular structural representation of each situation within that journey to understand who is doing what in relationship to work artefacts.

Using a non-sequential structural view for Situational Frames makes them more feel like a conceptual model of each situation than being a detailed workflow specification defining in what order actions will be done (Johnson & Henderson, 2002). This simplifies the modelling activity, since the model can incrementally grow with team members adding an additional node into the graph. It also increases the flexibility of the Situational Frame model to handle semi-structured collaboration patterns where there are several contributing roles but no fixed order of contribution (Herrmann & Loser, 1999).

The Situational Frame models is an explicit codification of semantic relationships that helps to generate a variety of lists across all Situational Frames that are informing the system design such as lists of all actions per role, a list of all use cases a task object has to support etc. This directly leads to functional requirements of what information to store with an object and what experiences to support to enable users to interact with it. Furthermore, Situational Frames facilitate the definition of a Jobs-to-be-Done analysis (Sáchová-kleisli & Walther, 2015). A jobs-to-be-done (JTBD) analysis lists all things people must do in a certain situation in order to achieve a goal independently of any system or design solution. This list of JTBD items is not much different from listing the individual Situational Frames and their content. That means we can generate an initial JTBD hierarchy as input for a more elaborated JTBD analysis which adds the user expectation and desired outcomes for each step in form of explicit statements (Sáchová-kleisli & Walther, 2015).

Since the same roles or task objects may be used in multiple Situational Frames, we have a formal description of the transition of roles and task objects between situations. This helps us to identify and describe the opportunities to re-use and transform task objects across multiple frames. For example, the design of task objects in earlier phases can consider anticipated use in later phases. Transitions in the meaning of a task object can also be formally described. For example, the same system object can be casted into different task objects with different meanings specific to the respective Situational Frame (Beringer & Latzina, 2015a).

Situational Frames not only help to divide a larger Journey Map into manageable design spaces, but they also help to codify requirements within the context of each design space, and provide the gluing from empathic insights at the Journey level down to an analytical JTBD analysis. This counter balances the tendency of design workshops to jump to design conclusions and communicate the UI sketches of cool ideas as the deliverable instead of codifying the requirements independent of the solution. By including Situational Framing as a socio-technical walkthrough technique in Design Thinking Workshops, more details about actionable design spaces are captured creating a first skeleton of a jobs-to-be-done analysis. This ensures that requirements are codified and can be used beyond a design thinking workshop to inform the detailed interaction design of systems supporting different roles in different situations along a journey.

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