The Experience Design Framework: Supporting Design Thinking in the Service Domain

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Abstract

This chapter describes an Experience Design Framework (EDF) created as an effective way to support service designers' thinking and decision-making processes; especially when research is limited due to a lack of resources or time. A framework offers the potential of giving practitioners a scalable means for structuring their work in the complex field of new service design without prescribing outcomes and process. This chapter explores the design and service domains describing methods of working, challenges and the potential efficacy of a framework.

The EDF consists of twelve frames that give multidimensional focus when a new service is required or an existing one needs to be redesigned. Eight of the frames relate to contextual issues pertinent to any design projects such as constraints, while three focus on key aspects of service design; Elements, Lifecycle and Value. Together these foci help thinking and account for a holistic set of perspectives essential to the service design domain in a commercial context .

The EDF has evolved over a number of years since a version was published in 2004 (Knight and Jefsioutine, 2004b). Since its conception EDF has been iterated in light of learnings from practical design work and developments in research and theory. These insights have helped develop the EDF from a conceptual model of the 'problem' space to a more practice-based tool. This chapter argues that design, in the context of new service development, should be based on framing as it is inherent to the creative process and is a useful strategy when working with 'wicked problems' associated with the service design space.

The Design Space

Designers' central role in conceiving innovations places them in an important position in the service domain: without them there would be nothing new or at least nothing new that

is defined and communicable to others. In envisioning new products and services, Lawson goes as far to state that designers are 'futurologists' in speculating about what could be. Buchanan (2006) on the other hand argues that practitioners frame and reframe problems which resonates with Donald Schön's notion of 'reflecting in action' (Schön, 1983, p. 54) where designing is considered as a learning process of doing and reflecting. Simon (2001) on the other hand suggests that design is about realising how things ought to be and also realising goals. Chapman (2005) meanwhile, argues that design is a utopian endeavour in conceiving something new and better.

Wicked Problems

Rittel and Webber (1973) coined the phrase 'wicked problems' to describe intractable issues that defy logical progression from problem to solution. The complexity of such problems means that:

"The problem is not understood until after the formulation of a solution" (Conkin, 2009).

Arguably all design disciplines deal with 'wicked problems' (Buchanan, 1992). Lawson (2009) and Cross (1982) draw on a number of empirical studies that further explicate the nature of design problems and solutions which can be summarised thus:

Design problems:

Cannot be comprehensively defined
Are open to interpretation
Are always part of a wider/narrower problem

Design solutions:

Are infinite
Never optimal
Are often holistic
Are parts of other problems

Lawson cites Schön's (1983) use of framing as a design activity that helps cope with difficulty and divergence in design thinking. Rather than a linear path the elements of creative problem solving are in a continual iterative loop. Lawson (ibid, p. 49) argues that the recursive activity of design encompasses four frames; consisting of the problem, analysis, synthesis, solution and evaluation. This construct is supported by Stempfle and Badke-Schaub (2002) whose empirical

study points to four analogous cognitive processes comprising of generation, exploration, comparison and selection. Taken together these findings suggest that practitioners are concurrently involved in different aspects of design thinking that consist of:

Analysis – focus on the problem, understanding the requirements, constraints and opportunities
Ideation – focus on solution, generating ideas and creativity
Assessment – focus on evaluation, rationalising and comparing and synthesising

Framing

While framing is arguably implicit to the way designers think it also aids understanding, communication and dialogue between stakeholders (Whyte, 2008). Without frames of reference shared understanding different perspectives and empathy with divergent views is difficult. If single frame creates a focal point and focus of attention on an individual element then a combination of frames provides a way of proceeding from a single viewpoint to holistic view.

Multiple frames have the potential to build upon layers of insight and thinking through problem to solution even if that journey is recursive. In some respects applying multiple frames is similar to lateral thinking (De Bono, 1995) that address problem-solving by changing perspectives rather than through a linear progression from beginning to end. The scope or boundaries of frames have a bearing on their efficacy. Too broad and they lose their facility to focus and too narrow and they fail to define a meaningful area of enquiry.

Constraints

As well as complexity designers face constraints. Lawson (ibid, p. 90) notes, however, that boundaries are both good and bad echoing Burns and Vicente's (2000) study findings that constraints are conceptual drivers in system design. Designing without boundaries is difficult as anything is possible and there are no fixed elements to work with, from or against. Too many constraints and the space for solutions is reduced.

Distributed design

Services are not only shaped by the thoughts and deeds of designers. While design advocates (e.g. Press and Cooper, 2003) often emphasise the agency of the individual 'creative' their real impact is often marginal compared to others including even retailer's influences (Molotch, 2003). Rasmussen (1992) suggests factors that are beyond the designers remit such as supply chain affect service definition and quality; a conclusion echoed by Raento (2004) who argues the

role of ‘non-designers’ in consumption is as important as the ‘creatives’. **Design is more accurately a distributed process involving many individuals and factors rather than the orchestrated outcome of a single discipline.**

Designing for others

A common finding in design studies is the difficulty of designing for someone else; which is almost always the case. Mankoff (2006) argues that designers either have an archetype of the user or they design or most often they design for themselves or people that match their own demographic. This is supported by research (Carmichael et al., 2005) and chimes with Mead’s notion (1934) of the Generalised Other; a construct that allows individuals to understand others by reducing the complexity of perceiving everyone as unique individuals. In other words people frame their view of the world and the people within it as a way of managing the multifarious nature of social reality.

While participatory and empathetic methods may help bridge the gap between practitioners and users this is not always possible due to time and cost restraints and in either case does not always provide the necessary information that is needed by designers (Visala, 1995) or of a quality that inspires optimal solutions (Bryne and Alexander, 2006). **Helping designers break from their own constructs and frame problems and solutions as others conceive and experience them may help them to understand their audience more and therefore design better services; with or without supporting research.**

Framing the solution

The creative process itself has been extensively researched (e.g. Press and Cooper, 2003) and findings provide evidence of commonality in approach and process across different disciplines (Eckert et. al., 2010). Lawson (ibid, p. 46) notes how ideas often progress from a ‘primary generator’ or central defining concept through to solution and that this fixation or ‘vision’ (Stolterman, 1992) can drive all that comes after for better or worse. Helping to get this early concept right and ensuring that alternatives are also considered is therefore critical to the quality of the end service.

Framing discourse and communication

Design is not just thinking or indeed pure creativity but also communication. A designer’s role in shaping services is important not just in helping to meet a need but also in communicating what it is or what it could be in whatever way is understandable to others.

Cross (ibid) notes that the externalisation of design ideas is usually via visual means and involves sketches and drawings. These visualisations manifest creative problem solving and enable reflection and refinement (Brown, 2003). Perhaps more importantly they also externalise ideas in a way that others can understand and so enable discourse and debate (Koskinen (2011, p. 125).

Visualisation can support and be the output of group brainstorms and 'crits'. While Callaghan (2009) notes that this type of activity is not always efficient, group working is a fundamental part of the service designer's function in any organisation given the multidisciplinary nature of the field. Debate is not only key to establishing consensus but echoes the reflective nature of design thinking which is supported by Stempfle and Badke-Schaub (2002) who position design as a dialogic process. The design dialogue is thus a cognitive and social one facilitated through the creation and discussions initiated from design roughs or 'scamps', diagrams and mock-ups that fill the walls and spaces of service design agencies (Kimbell, 2009a).

The Service Design Domain

The service design literature highlights the challenges of the field (Morreli, 2002) and its holistic nature (e.g. Cupchik and Hilscher, 2008). Services involve not just physical or tangible elements but human agents too where even non-verbal communication has an impact on quality (Gabbott, 2000). The literature also points to the experiential character of services and that they provide functional as well as emotional benefits (Voss et al., 2008). The interconnectedness of elements and the multimodal character of experiencing them might suggest the need for a new design discipline although arguably there may be more similarities than differences with other applications of design except perhaps deliverables. Blomkvist and Holmlid (2010) summarise Kimbell's work (2009a and 2009b) on service designers' work that comprises:

- Looking at services from both a holistic and detailed point of view.
- Considering both artefacts and experiences.
- Making services tangible and visible through visualisations.
- Assembling sets of relations (between artefacts, people and practices).
- Designing business models

Commonly cited outcomes of service design (Kimbell, 2009b) are 'Blueprints' Shostack (1982) and 'Prototypes' (Blomkvist and Holmlid, ibid). These two forms of representing services support communication between stakeholders and enable user research to be carried out; an

approach that can be traced back to the earlier tradition of Participatory Design (Ehn and Kyng, 1991). **While both blueprinting and prototyping services are integral to service design they are in themselves merely forms of documentation that manifest design thinking and understanding of the problem.**

The Service Design Research

Supporting research for service design is often ethnographic in style (Segelström et. al, 2009). Such an approach helps to understand context and draws on the traditions of ethnography and ethnomethodology (Garfinkel, 1967) in a design context (Heath and Luff, 2000). While such research methods have proven to be useful in generating domain knowledge integrating them within the design process is not without its problems (Knight and Jefsioutine, 2004b). Even without these challenges research in itself does not produce design; **Designers are conduits for transforming insight into tangible solutions and so have a critical role in manifesting understanding of the problem; however shallow or deep the supporting research.**

Design Frameworks

Design frameworks (Knight and Jefsioutine, 2004a) are a distinctive aspect of interaction design (e.g. Taylor et. al., 1997; Dix et. al., 2000; Brook and Oliver, 2003 and Fiore, 2003). They are a response to the multidisciplinary nature of the field and have been developed in response to a perceived lack of common understanding or shared reference among stakeholders including those within the service design (Sangiori, 2009) itself. Koskinen (ibid p. 119) argues that frameworks are often 'reflections that come after designs'.

While a number of design related frameworks already exist they tend to define discrete categories or layers that make up part of a whole; such as the elements of experience (e.g. Fiore, ibid). While effective in framing specific aspects of a phenomenon this singular approach is arguably less effective when a holistic understanding is needed such as in the service space. In this context knowing the components of experience is as important as knowing more practical constraints such as the budget available. In conclusion; services are characterised by their holism and thus need multiple frames of reference to account for a wide range of influencing factors.

Experience Design Framework

The framework is not dissimilar to the innovative approach of Miettinen and Koivisto (2009) and the process described by Morelli (2002). The framework provides a structured focus for creative problem solving by outlining the key factors that make up the problem and design space. These

factors cover more than just service elements and include important aspects such as risk as these need to be considered by designers too. The twelve frames as a whole comprise;

BOUNDARY FRAMES

1. Problems
2. Risks
3. Possibilities
4. Constraints
5. Requirements

DESIGN FRAMES

6. Elements
7. Value
8. Lifecycle
9. Solutions

QUALITY FRAMES

10. Impact
11. Evaluation
12. Rationale

These frames can be used at different points in the design process by focusing on critical issues to consider they are scalable and can be catalysts for supporting activities including:

Research scoping
Visioning and requirements gathering workshops
Ideation and concept development work including brainstorming – individually or in teams
Creative workshops and design ‘crits’
Detailed design work
Evaluation, rationale development and research scoping

The Elements Frame

Accounting for service elements is an essential part of conceiving and visualising services. A number of authors have suggested elemental frameworks including: Rothstein (2002) who describes a methodology organised around actors, activities, artefacts and atmosphere; as an

alternative, Ortony et. Al,. (1998, p. 63) present a cognitive model comprising 'events, agents and objects'. The EDF uses a similar categorisation in the Elements Frame (fig 1.) which can help practitioners identify the designable elements of the service.

The Lifecycle Frame

Service encounters can be episodic or occur over longer timespans. In either case the service experience has a temporal aspect (Kujala et al., 2011) even to the extent that touch-point preferences can change (Fenko, 2010). The EDF accounts for framing time in product and service engagement through the Lifecycle Frame (fig 2.). This enables designers to reflect on the phases of encounter and so at an early stage incorporate future needs in the service design.

The Value Frame

Service design theory has a focus on value exchange and specifically the notion that value is co-created (Sanders, 2005) and is context specific. That value is co-produced with and by the service user (Vargo and Lusch, 2004) positions service engagement as a social practice (Shove et, al. 2008) and is therefore a critical consideration in design (fig 3). This frame encourages practitioners to consider key transactions in the service encounter from a holistic perspective and is based on Rokeach' s set of human values (1973).

Conclusion

Supporting designers goes beyond providing research and prescribing methods of inquiry and visualisation as these are ultimately merely manifestations of design thinking. Framing is not only implicit to the way practitioners think but frames aid understanding, communication and dialogue between stakeholders in complex problem spaces. **While the service design literature highlights the complexity of the domain an agile and flexible design framework can help a designer's understanding of the problem and progress them toward good solutions.**

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