Love at First Encounter –
Start-Up of New Applications

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Abstract. Whereas most research on usability focuses on known applications we explore the first encounters. Starting up new applications expectancy, impression management, initial dialogues and acquaintance, and ritualizing operations have to be handled. We present the research approach and document short histories of learning and fascination. Focussing on business users of mobile services we conducted diary research and expert interviews, reviewed design guidelines, and conducted a pattern-driven and resource-oriented innovation workshop. We present insights and results from the synthesis of guidelines, and ideas translated into experience prototypes.

Keywords: Start-up, seven touchpoints, learnability, service innovation, creativity, diary research, experience design.

1 Introduction

Users encounter new products and services along seven touchpoints: They become aware of an opportunity, inform themselves about tradeoffs, buy what they choose (or buy into), start-up new devices, applications and services, and they use, change, and drop or renew them [11]. From usability testing we know the value of the first moments a user encounters a new artefact. Asking users to explore undirected and to report what comes up to their mind yields valuable insights into initial orientation and attention. Few companies like Apple manage to stretch the start-up phase up front into the first shows announcing new products. Microsoft's earcons design succeeded in making it a daily audition. Still, most companies and researchers neglect the first encounter as such.

The start-up phase is of crucial importance: Within this phase users decide whether they will accept a product, configure basic settings with lasting impact, and explore how to integrate it into their everyday practises.

Especially for business customers start-up may be a critical phase. While for consumer products we may assume that users have approached the product through the first three touchpoints and start-up with intrinsic motivation, business customers of mobile devices and applications may lack this motivation, if e.g. the IT-department selected the product.

2   Previous Works

Start-up takes relatively little time, but creates a lasting impression. Still, hardly any research on human-computer interaction addresses start-up as such. Related works deal with package design and unboxing experiences, intuitive usability implying hedonistic and pragmatic factors, and learnability. Literature on persuasive technology describes tools to increase users' interest in new applications.

According to Haramundanis [9] good learnability in information design can be accounted to content (memorability, logic, reconstructability, consistency of the material) and formal aspects (legibility, readability and usability)

Chak [4] describes the decision process as a transformation between four stages - browsers, evaluators, transactors and customers - providing guidelines for each stage, similar to the first 3 touchpoints, but gathering the last stages into one. Some of his findings for "Customers" could be applied to our researched situation - such as the provision of a channel for (negative) customer feedback, responding to customer problems on a personal level, keeping in touch. Both Cohen [5] and Chak [4] focus on the medium of web interfaces, whereas a telecommunication provider has a much broader set of channels to be used for interaction with the customer.

Fogg [7] identifies seven types of tools that can be addressed in technology to persuade to certain behaviour. Tunnelling technology provides users with a clear overview of the process and next steps: not having to think about what to do next helps to focus on content. Other tools include: customization, simplification, suggestion technology for opportune moments, self-monitoring surveillance by others, and reinforcing behaviour for conditioning. Fogg emphasizes the strong persuasive power of social interaction patterns being reproduced in HCI through simulation, as well as the power of knowing (or believing) to interact with real people. Although he applies these guidelines to digital interfaces, we believe these principles can be used in other communication channels. In different sources on persuasive design, the establishment of trust is regarded as a basis [7] – this we found strongly confirmed in our research.

Still, as most are general principles of usability, they do not differentiate between touchpoints or user characteristics. While learnability plays an essential role in start-up neither is fully implied in the other.

3   Research Design and Project Setup

We distinct 3 roles: users, IT Experts and Sponsors (Management). The Sponsor makes the decision for or against a purchase, based on conscious and unconscious reason and is very prone to persuasion [7]. His goal is to make the investment a success for the company.

Assisting him in implementation is either an internal or external IT Expert, who will set-up and support well-functioning of the product.

The user has to live with the product – but he determines how and if a product really will be used (or if, as with many devices, he will resort to a few known features and ignore the new or non-obvious ones) and turned into a successful tool for the company.

Marketing and sales of new products target the initial decision makers – the Sponsor and IT Experts. But how do we persuade the users? For them, the decision process
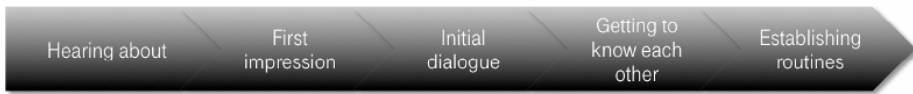
Fig. 1. Five sub-phases of the start-up experience with new products

has to be repeated – keeping in mind that they find other benefits in a product than Sponsor and IT Expert - in order to really make the product accepted.

For our research we were interested in two extreme user scenarios: "Innovative users" from innovation affine industries (e.g. Software Developer), and "Follower users" from more conservative service industries (e.g. Law Firm). How should each user group be addressed and may some things fit for all?

The product we focused on is an innovative communication tool for very small to medium sized companies. The product integrates fixed with mobile phones and PCs. It enables a new approach to a more efficient team-work with features like shared address book including availability overview of staff. In order to make this product a successful tool for the team and company, the behaviour of each individual user has to change: he has to adapt to the new environment, but this is driven by the benefits he sees for himself.

As a team-based application, the success of most features highly depends on the quick acceptance by a high number of users within the group. Looking at the product itself, we found that some features could provide initial benefits; others will show their value over time. Therefore we analyzed different types of features along a timeline of 5 five subsequent sub-phases.

- Hearing about: User hears about the potential availability, the upcoming introduction of a new business product in the company. Expectation management starts here. Since the user does not decide the purchase, a main challenge of the first touchpoints is winning his or her consent.
- First impression: During the first real encounter initial expectations are being fulfilled or frustrated, potentials for surprise, but also for lasting reluctance to use the application abound. As in "love at first sight" the first impression is a holistic experience – all senses, play a role with the packaged product.
- Initial Dialogue: Initial user tasks include powering, set-up, and installation. First impressions are confirmed or changed. Curiosity to explore may be fed by constructivist instructional design and guidance.
- Getting to know each other: users explore and customize the product or service. They learn how to navigate within and form a mental model of the application.
- Establishing routines: Within the first three months users cultivate their interaction and get used to automatically handling the system according to their needs. Within activity theory [10] this sub-phase indicates the transition from action to operation.

Our question is how to design a product for love at first sight. We try to consider the user experience of the start-up process to its full extend, regarding not only physical and digital design aspects of the product, but also other channels (such as communication guidelines, special training of staff, or additional channels of information such as mail). Therefore we set up a unique research design of five concurrent phases:

- Desk research for benchmark examples from neighbouring fields, derivation of guidelines and patterns for start-up.
- Expert interviews: Two experts from different but related fields (human resources and event management), have been interviewed.
- Field research: six users filled in user diaries for one week during their start-up phase with different akin devices.
- A design workshop targeting at conceptual ideas. A resource-oriented innovation method (systematic inventive thinking) has been applied and adapted.

Synthesis and design exploration: digging into details, specifying different ideas down into one conceptual design for the start-up process, including mock-ups and instructions for important items and aspects of that scenario.

4   Guidelines for Start-Up

In order to gain a basis for the ideation workshop and to inform design decisions, we reviewed existing literature, conducted two expert interviews, and a diary study. We summarize the insights from these studies into eleven guidelines.

Our desk research aimed at the collection of existing concepts, best practices and design patterns for start-up.

First impressions also have significant influence on decisions made in other areas like Marketing and Human Resource Management. Hence we identified start-up experts from these fields and conducted semi-structured interviews with them to learn from their experiences. The goal was to gain insights about how people experience start-up and how the experts are dealing with that situation.

Furthermore, we used a one-week diary study with 6 start-up users of mobile devices (MDAs, Blackberries), to gain qualitative information on how the start-up process is being experienced. The diary contained a set of questions targeting at experiences and actions during different stages of expectation, setup and the first days of usage. We gathered a number of citations and commons – e.g. the number of features used was in all cases shortly after receiving the device, and then later levelled off to a lower degree, instead of increasing constantly as we had previously suspected.

The essential guidelines we derived from these activities include the following:

- **Give users a reason to join:** When introducing a product, communicate clearly what it stands for, and what the users personal advantage, his value, will be when using it. This reason might differ from other Stakeholders' reasons. One simple sentence should be enough to get the idea across [1].

On Slide Rocket (www.sliderocket.com) the main message (Make great presentations) is supported not only by wording, but also by the visual language – simplicity of Layout and pictures subtly promise High tech presentations, a simple and attractive tool. Details and additional advantages are communicated when exploring deeper into the product – in subtext (create, manage and deliver presentations online) and links.

- **Tell engaging stories:** The consistent and well-orchestrated flow of experience – the "story" – inherent in the product should lead through all phases of the Start up Process (and all seven touchpoints). The chore of this story ideally relates to the
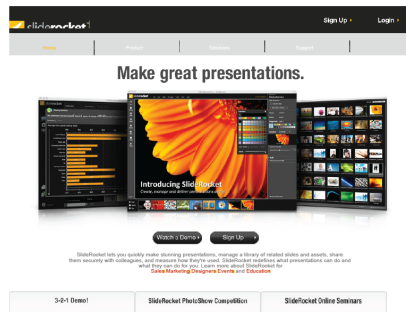
Fig. 2. Start page of Slide Rocket

Reason to join, providing additional information and building up excitement at opportune moments. Good stories are not only consistent and memorable (learnable), but also stir the users curiosity, making him explore further. Stories ABOUT a product can emphasize and add to the inherent narrative. We found in our desk research that successful stories are often told by people. On www.spotify.com, the story of music storage media is told in a cartoon with a human narrator.

- **Use the mystery box:** As in great stories, sometimes mystery is more important than knowledge – "holding back information intentionally is more engaging" [1]. Scarce bits of information spread about Apple products before the actual launch stir the excitement of their fans. To work this principle, some primary interest has to be present and addressed in the user. Mystery should be used with caution and mastery in order not to frustrate, irritate and drive potential users away.
- **Polaroids stick in your mind:** Users judge quickly with past experiences in mind. Addressing learned mental models can help understand a product, or mislead to wrong interpretation. For unknown products, affordances need to be designed to lead the user. Clues may point at new features. One participant of the diary research attributed known functionality to the central button of a new Blackberry, but it worked "like a joystick" – the initial judgement made the function harder to learn.
- **Find the low-hanging fruits - challenge, reward and grow:** The goal to be reached by using a new product should be worth the effort to the user. Easy initial goals reward with instant success and positive feedback, providing motivation. For new products, this may mean to advert and explain simple functions first, levelling up as expertise increases. This mechanism is often used in gaming. Current blockbuster games like Spore and Little Big Planet are making heavy use of this pattern to get people into the flow of the game. Lego manuals provide fast success first and then challenge the user to more difficult constructions based on the principles practiced earlier.
- **Lower the first hurdle:** Another way to make the goal worth the effort of getting to know a new product is to lower the first hurdle. A frictionless initial dialogue makes it much more rewarding to interact with a system as goals are reached faster. Principles of tunnelling and simplification [7] are often used in Setup wizards to guide people through the first steps.
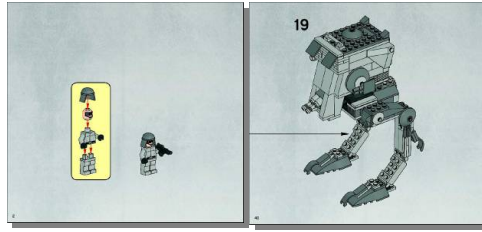
Fig. 3. Detail from a Lego instruction manual

- **Specify the effort and overall process:** Expectations can be managed by letting people know what they need to do first, how long the process will take and what next steps are, provides a clear picture of this first hurdle –. Status bars and progress meters are examples of how this can be visualized.
- **Don't leave users hanging:** When entering a new situation or starting a new application, users are easily irritated, and usually do not know their options and the capacities of the product [1]. Clear information on where to get help at any time during the start-up process is crucial. Some participants in the diary study were irritated when familiar sources of help were missing ("there was no manual!"), and not replaced by well-communicated alternatives.
- **Provide input hints and prompts as additional clues to inexperienced users.** On http://www.mixin.com/, an online shared calendar tool, the initial page is used to present the tool filled with sample content. This content itself thus explains the features. Users can try them one by one, in freely chosen order, matching their own needs. Above that, the sample content gives the pleasant impression of not starting with an empty page.
- **Accelerate initial connection making:** For any application addressing social network mechanisms, fast connection making provides perfect "low hanging fruits", as well as social recognition, one of the strongest persuasive powers [7]. Successful social network platforms help users build a network – inviting them after signing to search for their friends in the network. E.g. Facebook offers to send invitation mails to those of your friends who are not yet a part of the community, using a snowball effect for viral marketing.
- **Break the daily routines:** In the interviews, we found that special events make people more receptive. Training units or team building events serve as such occasions. An event may feel like a treat and users are not distracted by everyday business. Informal breaks can serve the same purpose. Some companies introduced competitions for who adapts to a new system fastest or best, addressing gaming mechanisms and providing the winner with an extra benefit. One participant of the diary study stated that she did not like to try her new device at work while her colleagues worked on "real projects". For the process of a good start-up, it is important to provide or use such an opportunity to focus on getting acquainted with a new product.
- **Make it Yours – Customizing:** Addressing individual needs and habits can greatly increase the efficiency of the start-up process for different users. As users customize and hack, they explore and make a product their own. Customization

features, adding pictures, personalized sounds or materials to a product increases identification and acceptance of a product.

• **Engage innovators as evangelists:** Other users are usually considered as most reliable when judging a product, and people usually trust those they know more than strangers. Within most companies, there are some early adapters who have more advanced knowledge and interest in telecommunication technology than others. They may be the administrators of IT systems or plain colleagues, are regarded as specialists and often the first asked when facing a problem. Once these users are convinced, they can serve as evangelists promoting a product. The experts we interviewed strongly resorted to such evangelist mechanisms. Companies like Adobe, Sun, Microsoft have professional evangelists, blogging and answering questions in user forums. Basecamp features customer videos giving advice on features (http://www.basecamphq.com). Empowering users to serve as evangelists in public or within their immediate environment provides them with information and arguments that make them look good. Many of these advanced users may take pride in their position.

5   Systematic Idea Generation

In order to generate impacting ideas to enhance the start-up experience we adopted the method of systematic inventive thinking [8; 2]. Starting with existing products and their characteristics it helps to generate ideas that can be easily produced and marketed with existing resources. This resource-oriented approach to innovation is supported by psychological research on "preinventive forms" [6] that may foster creative thinking more than targeting at a specific purpose. The thinking "inside the box" [8] approach applies a set of patterns. Patterns are not only used to categorize ideas – as Altshuller [2], originator of the approach, originally did in his analysis of patents – but also to generate new product ideas [3]. It deconstructs a product or service and its immediate environment into component elements in order to reassemble using e.g. five "patterns of innovation" [8].

In order to generate ideas for start-up, we worked with the patterns of multiplication – adding copies of components to achieve a qualitative change (the Gilette double-bladed razor is the classical example here), and task unification - assigning new tasks to elements that may then acquire the function of other elements (the suitcase with wheels absorbs a function of luggage carts), but adapted the method to our needs. While the theory of systematic inventive thinking opposes to customer centric methods of generating innovation we took existing design guidelines and insights from user diary research and the expert interviews in neighbouring fields as an input to direct the innovation process.

At first, we analyzed the values and benefits the start-up phase might provide to users. For instance, a user might want to maximise his benefit with little effort. We specified this value saying "I want to learn new things fast", and even further "I want an instant sense of achievement" and "I want to define myself, what to achieve" and so on. This line of values was labelled self-determination. In a second step we collected the essential product features and attributes our company owns to support the values – such as its sales department, employees, clients, online services, products

Fig. 4. "Team Screen" photo mock-up from Workshop session

with keyboards and screen. In a third step, we picked out several attributes one after another, applying one of the innovation patterns and asking, how it could be employed to achieve a certain value. For each idea we listed its benefits, challenges and alternatives. In this manner a total of 34 ideas was described and elaborated upon.

In order to prioritize the most promising ideas we voted for the most important values identified earlier. Insights like the need for user participation and open issues such as the assignment of responsibilities and roles involved in managing the start-up process emerged from the discussion and were also documented.

The ideas that have been valued the most we then assigned to the five subsequent sub-phases of start-up (the following are some examples):

- Hearing about: a client event where initial data is collected from the users to pre-configure the application.
- First impression: Use the packaging to communicate user values and benefits.
- Initial Dialogue: A "snowball activator" requires another participant to invite the user for an initial interaction in order to initiate the application.
- Getting to know each other: Additional gadgets may be used to provide an easy access to basic function, e.g. LED signals or an additional small desk screen to show the current state.
- Establishing routines: Different charging cables for usage at home or at work might automatically activate different usage profiles.

Other ideas like an online support tutorial could be used across several sub-phases.

In the final part of the project, the guidelines we derived from the literature review, diary research and expert interviews and the prioritized ideas from the workshop were used to synthesize results into design concepts supporting start-up as such and each of its sub-phases. For each we defined a set of aspects as illustrated by the sample idea "Team Screen".

- Slogan: Experience Team Spirit together!
- User-values: Proof of personal and team benefit, feedback for action, new experience, breaking routines, visualization of existing team structure
- Objective: To visualize team dynamics (e.g. how calls are forwarded) to everyone, Provide a channel to learn the effects of the product together
- Responsible: IT Administrator, Team Members

- Description: A large screen provides an overview map or list of all team members, showing individual status and reachability settings as well as connections between users. This visualization helps to understand the products features and effects. Introduced early in the start-up phase, this tool may help users understand the overall concept of the product, and see the application on their mobile devices as a miniature part of a whole.
- Challenges: Cost and feasibility, need of an additional tool, communicating to users that their privacy is not affected in a negative way
- Related start-up guidelines: Find the low-hanging fruits: Don't leave users hanging; accelerate initial connection-making; Breaking the daily routine; customization

Since feasibility still has to be evaluated from a business modelling and technological point of view, we cannot ensure that the solution will actually be implemented. But as we are working towards that goal it would provide a valuable case for real life evaluation once it is rolled out to the market.

6   Conclusions

Being a one-time experience evaluation of start-up experiences is a challenging task. Field trials and focus groups indicate insights. We hope that market success in comparison to benchmark products delivers an additional proof of concept and reason to believe in our value propositions. With initial experience prototypes we have five users experience initial start-up of our business application suite while thinking aloud, comparing with benchmark products, and discussing. From the products point of view users move along seven touchpoints, from the users' point of view these products embellish and ensemble their ordinary practises.

   The start-up process will differ with circumstances in each company, and is prone to technical and organisational malfunctioning – something is bound to go wrong. With this project, we provide a toolbox to overcome these initial problems for users. Then we will explore how to transfer these guidelines for other products and services.

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