Hacks for Cost-Justifying Usability: "Fear-Setting" vs. "Goal-Setting"

Maha Aly
TU Dortmund University/Hamm-Lippstadt University of Applied Sciences
Hamm, Germany
maha.aly@hshl.de

Christian Sturm
Hamm-Lippstadt University of Applied Sciences
Hamm, Germany
christian.sturm@hshl.de

ABSTRACT

This paper is designed to guide user-centered design professionals in running negotiations of usability cost justification with product owners. The paper introduces hacks that can be used by usability professionals to convince entrepreneurs or other decision makers to invest in usability improvements. The traditional cost-justifying usability approach focuses on emphasizing the potential profits that can be expected. This "goal-setting" approach, commonly represents a strong influence on the investment decision of young, nascent entrepreneurs. The new approach, which we are suggesting, is about avoiding losses and costs stemming from not taking any action. This is a "fear-setting" approach, which tends to influence the investment decisions of older and more experienced entrepreneurs. Usability professionals can thus identify and classify their audience regarding to age and years of experience in order to choose the most efficient mode of presenting justification of usability cost.

INTRODUCTION

It has always been a challenge to introduce the concept of product or system usability to business people, especially in startups or small/medium enterprises (SMEs) that have limited resources. As Bloom, Croft and Kieboom stated in 1997: *"Communicating the value of usability must happen across multiple levels of an organization, and requires speaking several "languages"."* [1].

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KEYWORDS

Cost-Justifying Usability; ROI; Cost of Inaction; Nascent Entrepreneurs; Investors; Experienced Entrepreneurs; Start-ups; Fear-setting; Loss; Pitch Hacks.

CCS Concepts

• **Social and professional topics~Project management techniques**

Introduction

Imagine you are in a meeting with representatives of a start-up or an SME, where a usability professional is giving a presentation to convince the decision makers (e.g. entrepreneurs, investors, or managers) to invest in improving the usability of their product. The language used by the usability professional to justify the required costs usually stresses cost-benefit calculations and return on investment (ROI). This invitation or goal-setting language is usually being spoken in a defensive mode [2]. However, following this traditional approach will not necessarily generate a return on such investment. It may not contribute to overcoming the challenge of achieving a buy-in of entrepreneurs who need to decide on investing in usability. In this context and in terms of applying the principles of a user-centred design approach, we suggest that usability professionals consider the audience to be the target user, so as to identify who is receiving this type of presentation. In order to speak the language of the decision makers and present in such a way that it is of use to the audience, the usability professional needs to divide the audience into groups (like user-groups in usability practices). The usability professional can then design the presentation according to the interests and the language of each group of the decision makers. This language could be: (1) the language of "invitation" represented in the "goal-setting" approach, addressing all types of profit and gains, or (2) the language of "intimidation" represented in "fear-setting" approach, addressing the fear of losses and avoiding the cost of inaction. This paper argues that the "fear-setting" approach might be more effective for some entrepreneurs; i.e. instead of focusing on earnings, focus on potential losses.

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TRADITIONAL METHODS OF COST-JUSTIFYING USABILITY

Investing in the usability improvement of a service or a product will return different types of profits [3]. Still, some entrepreneurs see this investment as an unnecessary overhead cost, and are reluctant to spend the required money. Even the emergence of the "lean startup" concept has not changed this situation significantly. The "lean startup" encourages entrepreneurs to conduct usability tests with (real) end users to get feedback early in the process in order to create the most efficient minimum viable product (MVP) [4]. Thus, we continue to encounter this challenge in the field of practice. Many entrepreneurs, business owners or investors have not yet fully realized the crucial importance of usability and user-centred design approaches and how those may increase their chances of success [5]. This constant need of convincing entrepreneurs or investors has become a burden for usability professionals, as they feel the strain of having to convince entrepreneurs of the returns resulting from investing in the usability practices. Pursuing predictable arguments, usability professionals continue emphasizing benefits and gains from this type of investment, using familiar or traditional cost-justifying usability calculations, e.g. cost-benefit analysis, mark table headings, time-to-market, payback period, present value of future cash flow, net present value (NVP), internal rate of return (IRR) and return on investment [2]. These factors are listed in addition to other "*broader usability benefits*" [6], such as, enhanced user experience as a competitive edge, boosted productivity, increased potential of bigger market share, self-advertising or positive word of mouth (WoM), fewer development iterations, less maintenance cost and lower training and support costs [6].

Obviously, those conventional calculations and benefits aim at achieving a positive mindset. In light of these gains, any entrepreneur will think of the financial goals, feel hopeful and dream about making money from the calculated savings and the promised revenues. This style of thinking is very teasing. It is all about "attaining goals", which relates to aspiration or hope, not about "avoidance", which relates to "fear"! Fear or intimidation stimulates "*aversive behaviors*" and drives people to take decisions, moving rapidly away from triggers of actual risks [7]. In the following section, the study we conducted shows that looking forward to profit and financial goals is not the only highly effective way to convince entrepreneurs to choose making a positive investment decision.

THE STUDY

We may wonder why sometimes the traditional approaches for justifying the costs of usability are not very effective. Why would any entrepreneur or other decision maker listen to a well-founded presentation about the gains of investing in usability without automatically arriving at a positive decision? Assuming that entrepreneurs would respond differently if they acknowledged the losses of taking no action, the main hypothesis is formulated as follows:

Hɱ: Losses resulting from inaction might influence an entrepreneur's investment decision more than notions of profit gained from taking a particular action.

Would entrepreneurs show more interest if they realized the amount of losses that could occur by neglecting the investment decision? To get a first indication, an online poll was sent to more than 70 entrepreneurs in 5 different countries.

The targeted entrepreneurs were all accessible entrepreneurs within the network of the authors. The poll was online for 2 weeks in March 2018 and received 47 answers. Participating entrepreneurs vary in their age and the length of their entrepreneurial experience. Their age ranges from the mid-20s to late 50s (the youngest is 26 and the oldest is 57 years old). Table 1 shows the countries where the participating entrepreneurs live and have established their businesses. Table 2 shows the gender distribution of the entrepreneurs who answered the poll. Overall, the group of accessible entrepreneurs in the network of the authors has more men than women. Around 15 women were contacted, but only 7 of those participated in the poll.

Table 1: Countries of residence of participating entrepreneurs

Country of Residence	*Number of Participants*
Egypt	29
Germany	12
Qatar	1
UAE	3
USA	2

Table 2: Gender distribution of participating

Gender	*Frequency*
Female	7
Male	40

A disclaimer in the poll clarified that the investment type would be used to 'improve the product usability' to make it easier for participants to understand the context. The poll asked entrepreneurs to consider which of the two options below would significantly influence their investment decision:

- Profit you may gain in case you take the investment decision.
- Losses or costs you may bear in case you do not take any decision.

Table 3: Online poll results divided by answers into 2 groups. Each group shows average age & average years of experience of participating entrepreneurs

Total Number of Poll Answers	*Number of Answers for "Profit"*	*Number of Answers for "Losses"*
47	33	14
Average Age of Participants Entrepreneurs	35.5	41.1
Average Years of Entrepreneurial Experience	4.2	8.7

Results are shown in Table 3 in 3 dimensions: (1) the total number of answers per selected option, (2) the average age of participants divided by their answer and finally (3) the average number of years of their entrepreneurial experience. According to the calculations in Table 3, the average age of experienced entrepreneurs is roughly 41 years old or older, with average number of years of entrepreneurial experience exceeding approximately 9 years. The average age of young entrepreneurs is around 36 years old or younger, with an average entrepreneurial experience of about 4 years or less.

The results are not statistically significant. They provide, however, a first direction for future studies. Tendencies noticed from the results are as follows:

- The younger and less experienced entrepreneurs are, the more they show a tendency to consider profit as the stronger influence on their investment decision.
- The older and more experienced entrepreneurs are, the more they show a tendency to consider losses and cost of inaction as the stronger influence on their investment decision.

The fact that the number of entrepreneurs choosing "profit" as an answer is almost double the number of those who chose "losses". However, this result was not unexpected. All the traditional cost-justifying approaches highlight financial goals, profits and gains. The deeper insights here are relevant for usability professionals to gauge the type of language they need to utilize in order to successfully convince entrepreneurs or decision makers. It is not always the language of invitation and pointing out financial goals that triumphs, but with older and more experienced entrepreneurs, the language of intimidation as well as considering the fear of losses and costs of inaction might prevail.

Obviously, there can be two or even more different groups composing the audience of a cost-justifying usability presentation. Nevertheless, the usability professionals can now better customize their presentation language in order to fit to the preferred tendency of each group. Speaking the language of "goal-setting" may fit younger, nascent entrepreneurs below 36 years old with less than or equal to 4 years of experience. However, speaking the language of "fear-setting" may be more successful with older entrepreneurs above 41years old with more than or equal to 9 years of entrepreneurial experience.

HACK METHOD: "FEAR-SETTING"

To understand how fear changes the behavior of individuals and in order to make the best use of the benefit of fear, it is necessary to identify how this works. Fear is the sum of all unconscious attempts to escape or avoid certain events causing pain, risk, loss or annoyance that threaten the safety or quality of life [7]. "*Aversive behavioral responses*" to intimidating triggers are created in the mind to enable individuals to deal with such fears [7, 8]. Fear is the feeling that generates the well-known reaction "fight or flight". Usually, fear is accompanied by physical symptoms that push individuals to act quickly, defending themselves against risks or escaping from danger [9].

change is difficult, but the more fear, the easier.

Loss is the most undesirable fear a business owner can feel. It triggers the feeling of failure, loss of love, and social desirability or loss of trust [10], something no one would like to experience. Addressing the missed opportunities, costs and losses of indecision, inaction, or procrastination can work as an intimidating stimuli that may push the experienced entrepreneur or investor to decide for early investment in usability. Fear-setting could work as a stronger driver or longer lasting motivator than goal-setting for an older, more experienced audience in the field of entrepreneurship and investment. Fear-setting could be an alternative method for usability professionals to incentivize decision makers into investing in usability without the frustrating need of defensively justifying its cost. This method can shift the position and the attitude of usability professionals to empower them and support their arguments.

How to Change Language: "Raising Sense of Urgency"

John Kotter [11], one of the "Leading Change" gurus has expressed that change is always a very challenging process that might fail, saying, "*most change initiatives backfire*". He has recommended what he calls "*raising the sense of urgency*" [11] as one of the initial steps essential to activate such a tough journey. He also explained that the biggest mistake possible on this journey of change was to "*not establishing a great enough sense of urgency"* [12].

Raising the sense of urgency is an interesting strategy that can be adopted to sound the alarms when presenting threatening numbers of losses and costs in case there is a serious problem with product usability. This is because raising the sense of urgency considers the following [12]:

- Identifying status-quo and upcoming crises.
- Exploring major possible opportunities in the market.
- Promising business numbers make it more difficult to convince the executive level to choose change. Yet, negative business numbers are considered a "*blessing*" [12], making it easier to trigger the need for change.

Creating the feeling of risk and the urgent need for change make entrepreneurs think of unpleasant financial consequences. Such thoughts are sufficient to create feelings of anxiety and fear of loss. This could entail losing their reputation, position or credibility [10]. When the urgency rate is high enough, decisions can be easily made to avert losses [12]. Hence, there is no further need to justify costs. One of the major benefits of adopting the strategy of raising the sense of urgency is that it encourages mature entrepreneurs to explore opportunities in the market that they have not been aware of before. This exploration can be an eye-opener for them, when they compare their performance with competitors.

For example, if a business offers a product or a service that suffers from usability issues, eventually another competitor will capitalize on this weakness and extend their own market share. Switching costs might be the first price the weaker business has to pay then. If the entrepreneur decides to improve the product and fix the usability issues quickly enough, the company might be saved.

Henceforth, when meeting with experienced entrepreneurs, the question should be: What could happen to the business if usability practices are not applied to a product suffering from usability issues? What will happen if entrepreneurs avoid such investment? What if no action is taken? Why not calculate the "cost of inaction"?

Calculate Fear: "The Cost of Inaction"

The cost of inaction can be defined as the consequences of doing nothing or not changing anything [13]. Inaction can be used in different contexts and various fields. Here, it is addressed from the perspective of business investment. Inaction is also the failure to respond to certain business needs considering all serious undesirable penalties affecting individuals, business entities, the economy and the society in general [14]. In his 2017 article, Hagan [15] has defined the cost of inaction or the cost of status-quo as "*the business and opportunity costs associated with organizations not deploying necessary technology, interventions and other business-innovation improvements to match the complexity of their business*" [15].

The cost of inaction can be determined by two main indicators: (1) recognizing the value at risk with a "no investment" option and (2) identifying future impacts of "no action" [16]. In addition, there are crucial numerical calculations that represent the costs of inaction in different forms, such as the "*Cost of Avoidance, Quality Cost, Frustration Cost, Switching Cost, Lost Opportunities and Missed Revenue Factors*" [17].

At this point, we are going to provide some references to calculate the 'cost of inaction'. Let us start with the switching cost. Here we need to consider which costs are faced by a user/customer who switches from the current service/product to another competitor. For example (1) the expense of purchasing the new service/product, (2) the value of lost time resulting from this change and other indications of hidden expected expenses. Usability professionals can rely on the work of O Shy [18] to calculate the switching costs. Another simple but helpful notion comes from the nature of the investment decision itself. Since the decision of investment in usability is an irreversible decision taken under uncertainty, then according to the field of economics, calculating the expected present value (EPV) can indicate the expected profit or cash flows of this decision [19]. By emphasizing the loss of the expected returns, the cost of inaction can be simply concluded here.

We recommend that usability professionals learn EPV calculations and be able to use them correctly in presentations. When calculating the EPV, we need to identify (1) the starting cost today, (2) the probability of profits and losses that may occur at each point of time and (3) finally the discount rate. The work of Svetlana Boyarchenko [19] shows these calculations in detail. For more intricate calculations, one should refer to Nancy Stokey, one of the most renowned economists, who published a book in 2009 titled "The Economics of Inaction: Stochastic Control Models with Fixed Costs". Here, she explains many models in details that can be used as a reference for such complex calculations [20].

People do not usually notice or consider the high costs of stagnation. However, the choice to avoid investment can be overcome when the entrepreneur eventually realizes the potential future regrets and the expensive price to be paid for continued avoidance [13].

When investors or entrepreneurs argue about usability investment costs, it is useful to counter this by using calculations associated with the cost of inaction. This may instill the fear of missing critical opportunities in the decision makers' minds. In addition to raising the sense of urgency, this also motivates entrepreneurs to think of different ways to invest in usability. This method emphasizes and magnifies the amount of financial losses and the missed opportunities entrepreneurs may encounter when they avoid investing in usability improvements.

Tap the "Untapped Opportunities"

The master key for entrepreneurship is identifying and capturing new opportunities [21]. Pushing entrepreneurs to the edge of the precipice to feel the emergency of potential losses by calculating the cost of inaction can force entrepreneurs to seek innovative solutions. Finding innovative solutions has always been the entrepreneurs' favourite game, "*problem solving*" [5]. It is also one of the major components of the entrepreneurial mindset to seize opportunities in uncertain environments, which is easy for experienced entrepreneurs [22, 23].

This is a golden moment for usability professionals. Once they understand the needs of their audience, assessing their age and depth of experience, usability professionals should start portraying usability investment as the main saviour for the product's usability problems. Setting up arguments in this context is done by referring to an important synthesis of the opportunities to be tapped timely. This synthesis is the mix of the "*broader usability benefits*" [6] mentioned above, and the numerical calculations of the cost of inaction [17]. The presentation given by usability professionals should also include a short view of the costs of usability activities such as interviews, user research studies, usability testing, etc. [3]. It will be even more convincing to compare the total cost of inaction with the total cost of usability activities. Most probably, the sum of all costs of inaction will be higher than the

cost of usability activities, which is the required investment.

Suggested Method for Not Justifying Usability in Steps

Based on our findings, we would like to introduce some guidelines that usability professionals can follow in cost-justifying usability presentations:

1. Recognize your audience of decision makers early on. Identify their ages and years of experience. Divide the groups in your mind to choose the right language "goal-setting" or "fear-setting", or the balanced mix of both languages. If the decision makers are older and more experienced, start with step 2.
2. Adopt an attitude of "raising the sense of urgency". Caution your audience, do not defend your ideas anymore.
3. Highlight product weaknesses and expected business threats due to usability issues (customer switching, revenue loss, deteriorated brand perception, etc…). Usability professionals can do that by conducting a quick SWOT analysis. Learn some business basics.
4. Merge step 2 and 3 with the calculations of "the cost of inaction" and let numbers talk.
5. Address the untapped opportunities. Present the following fusion as the missed opportunities that need to be captured quickly:
    - Show a list of the *"broader usability benefits"* such as, increasing market share, improving word of mouth and increasing brand presence in the media [6].
    - Compare the total cost of usability activities (total investment) with the total cost of inaction [3, 17].

DISCUSSION

We have already elaborated on some simple ways to calculate the cost of inaction. It would be easier to set a numerical example to allow usability professionals to get a feeling of what exactly to prepare for their presentations. However, the costs of inaction are often challenging to calculate and they differ from one case to the next. For example, there are different formulas to calculate the cost of avoidance. The variables of these formulas are different, not only from one company to the other, but also depending on the purpose of the calculation. Such formulas should be tailored according to the aim of using them. The same goes for the missed revenue factors, as there are multiple factors and equations to calculate according to what needs to be shown. There are different consulting companies specialized to do this type of work, however, a usability professional can always learn some fundamental of economics and use the easy calculations of the switching costs and the EPV. Another challenge to be considered is the difficulty of obtaining the data from the companies that pursue usability enhancements for such calculations.

We suggest that usability professionals learn how to do the necessary calculations themselves. This could open a door for new opportunities for usability professionals. They could create their consulting companies that focus on interdisciplinary sophisticated work between the fields of economics and user-centred design.

CONCLUSION

Based on our study as well as on literature, this paper argues that "fear-setting" can be more effective than "goal-setting" when usability professionals aim to convince more mature and experienced entrepreneurs or other decision makers to invest in usability enhancements. This unusual method is suggested to empower usability professionals and change their position from always having to justify the cost of their work to provoking decision makers to actively decide in favour of the necessary investment. This method can also be used with young entrepreneurs depending on their personalities, tendencies, business factors, (e.g. strong competition) and other psychological aspects such as adopted mental strategies. The psychological aspects have not been tested in this study, but we can see a promising future work on this topic.

The new method is about intimidation not invitation. This can be executed through (1) identifying the age and the experience level of decision makers, (2) displaying the anticipated costs, losses and missed opportunities when usability investment is avoided, (3) portraying the benefits of usability improvements and (4) comparing inaction costs with usability enhancement costs. We would recommend for usability professionals to measure the age and the experience depth of the audience that make the investment decision to judge which mode is more powerful in forming their decision in terms of investing in usability enhancements: "goal-setting" or "fear-setting".

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