Usability Engineering – an Emerging Opportunity for Indian IT

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ABSTRACT

India is acquiring an increasing importance in worldwide IT today and Usability Engineering, besides being a natural extension of that trend, is also enabling an expected move up the value chain.

The evolution needed by Indian Usability Engineering groups today is then in 3 broad capability areas:

- to define clear-cut ROI justifications upfront in proposing any Usability Engineering project

- to market their holistic processes and methodologies with conviction and minimize though not eliminate 'band-aided' projects and rudimentary usability facelifts

- to project their value with greater confidence and reflect it in figures

While it is important to work these into the development of a credible Usability Engineering organizational entity, some of the challenges are

- the absence of an established education and training infrastructure that will facilitate the growth of the industry. Individual organizational efforts today typically consume fledgling resources

- to resist the temptation to claim 'usability specialist' status in order to ride the usability wave for short term gains, at the cost of long term credibility

The need for maturity across the Indian Usability Engineering industry is real, its absence is natural. However, the attempts to achieve quality and credibility must be paramount, sincere and uncompromised.

General Terms
Management

Keywords
Value Chain, India, Strategic, Barriers, Team Building, Organizational models, Quality, Scalability, Maturity, Credibility

1. INTRODUCTION

India is becoming a hub of worldwide IT. Software development practices and deliveries are evolving as products and services increasingly continue to find their origin here. Related and unexpected opportunities are emerging for the Indian IT industry. Usability Engineering is one of them. Besides being a part of this upsurge in IT deliverables [1], Usability Engineering also enables an associated move up the value chain. The business realization is creating a need for Usability Engineering expertise. And it is natural to respond to this sudden demand for usability expertise with ill equipped resources and deliverables. An Indian brand will inevitably emerge as a result of this evolution. But the Indian Usability Engineering community needs to react in a manner befitting the establishment of a quality Indian brand. It is imperative that we respond creatively but maturely in order to leverage this global development and window of opportunity to our advantage. Along with this, we must develop a sound strategy leading us to a long term standing for Indian Usability Engineering. This paper attempts to examine the outward or customer facing and inward or team facing challenges in front of the Indian Usability industry today, in the establishment of a high value service within a software organization. It also puts forward some approaches the industry could take in delivering short term solutions without miscarrying the long term.

2. BARRIERS TO USABILITY ENGINEERING PRACTICE IN INDIA

As a consequence of the offshore software development evolution within India, there is a nascent opportunity to provide clients with Usability Engineering services. However, there are several barriers to getting there, some outward or customer facing barriers and some inward or team facing barriers, represented schematically in Figure 1.
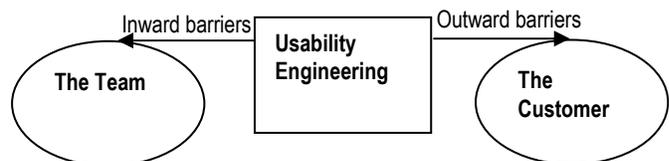

Figure 1. Barriers to Practicing Usability Engineering

Some Outward or Customer facing barriers are:

- It is difficult to demonstrate the value of usability

  Usability engineered systems do not have that visually apparent differentiator like product design or visual communication. Usability Engineering is that 'hidden' design that is often not visible but experienced upon interaction. As a result, it becomes difficult to justify. The established metrics for success in a software development effort, that 'it works' are also unsuitable for demonstrating the value of a usability engineering effort.

- Demonstrating ROI (Return On Investment) is hard for a new group with no track record

  While Usability Engineering has been using ROI calculations successfully in recent times to demonstrate value, a new team with no project track record finds it very difficult to do this.

- Practicing usability without ready access to users

  The basis of usability is user research and analysis, applied to design. In the offshore context, user contact is not just difficult to practice but also difficult to justify. In addition to justifying a usability-engineered model rather than the traditional SDLC model in the first place is itself a challenge. Trying to justify onsite presence and its associated costs is an even bigger challenge

- Breaking free of the "back-office" label and emerging to the "front office"

  This label applies not just to the nature of work in the complete lifecycle of a product but also to its timing (where to start usability intervention). It is not easy to break free from that position, not just towards user requirements definition, but also to the start of the product life cycle from where good usability usually happens.

- We have no history or credibility for usability work in India and need to establish it

  The emergence of Indian Product and Graphic Design which is the origin of most Indian usability professionals, into the global scene, is itself relatively recent. Establishing credibility in a heterogeneous discipline like usability that requires skills beyond Design, is therefore a far cry when compared for example, to a focused and homogeneous discipline like programming.

- The Usability hype is difficult to ignore

  User Experience in India has arrived [2]. It could take a while before the supply is big enough to meet industry needs [3]. India alone will need to train 400,000 usability professionals in the next six years to meet its own projection. [4]. Hence despite the barriers, usability enquiries create a natural temptation to respond with partial know how using sub standard deliverables for short term gains. It is difficult to turn away a job when it promises revenue potential.

- Underestimating the client's circumstances

  We (and especially our management) tend to underestimate our clients' needs and understanding of usability. We often assume that they might not see value in it and therefore undersell ourselves.

Some Inward or Team facing barriers are:

- The absence of an established education and training in the field

  Well prepared and ready usability professionals who are equipped for practical industry needs of today are unavailable. This turns team building into the greatest challenge.
  There has been much written about the dearth of design talent in India [3]. Product Design and Visual Communication are relatively established and mature disciplines and they also happen to be the primary source of usability professionals in India. Because of this, Usability Engineering inclusive of User Centered Design is sometimes viewed in the same vein as these two professions.
  Organizations are now looking for formal qualifications in one of these fields: psychology, industrial design and visual communication. Unfortunately, the programs of such disciplines do not adequately deal with subjects close to usability such as cognitive science or experimental psychology or Human Computer Interface (HCI) [5].
  Usability Engineering and Design are different in two distinct ways. One is that there are 3 broad stages to Usability Engineering as shown below. There are very detailed analysis and testing phases that sit on either side of the design phase and form the basis for the design, as represented in Figure 2.
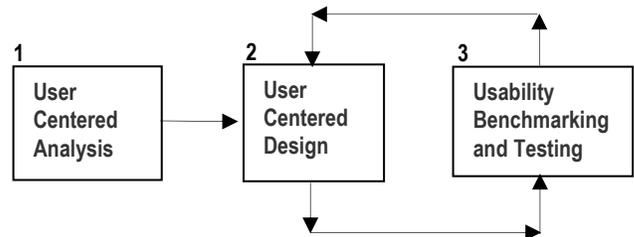

Figure 2. The Holistic Usability Engineering Process

Design education is rightfully focused on creative design, and not on the depths of analysis that a Human Factors Engineering program typically provides, that a Usability Engineer needs. Secondly, the visual gratification to which a designer is accustomed is often unavailable and lower priority in Usability Engineering.

- A Usability Engineering team is difficult to define

  Usability Engineering historically and by nature is a multidisciplinary entity. An infant group that also requires a mix of members from different disciplines is yet another trial. A Usability Engineering team requires a mix of marketing, software, visual design, psychology, experimentation and

analysis and communication skills. Fulfilling not just the right mix but also the right balance is an enormous challenge.

- Team compositions for the repertoire and varied types of services
  Usability Engineering typically offers multiple services of varying complexity and duration, utilizing one or more of the 3 phases shown above. Depending on the skills required from among those listed in the last paragraph, the right team composition for the right job is a veritable challenge.

- Placing the Usability team within an organization is a strategic challenge

  For the usability team to perform effectively and have "teeth", its placement within an organization is critical. The first instinct is to place it within the "technology" or "development" team. However, this can be disastrous, since it is very easy for the usability professional or team to lose user-focus and start focusing on technology.

  Adding to all these barriers is the prospect of investing in a long term vision that implies moving beyond the existing sphere of development and into the sphere of 'intangible' design. The possibility of shaking established credibility and comfort of relations with long standing customers is disconcerting. And the established development model which returns predictable short term success, when balanced against questionable usability engineering returns, makes it almost compelling to ignore the long term potential.
  However at the same time, usability is becoming known and recognized worldwide as a potential salvation as the industry grapples with the consequence of its complex software solutions.
  So we are at the transient phase where
    - we know that usability works in reducing complexity
    - we do not completely understand the breadth or depth that is required to establish a practice but
    - we recognize that this is a window of business opportunity that we must address
  Against the backdrop of these challenges, let us look at solutions that we can derive to tackle this unique situation.

3. ACCLIMATIZATION OF THE INDIAN USABILITY INDUSTRY

Based on the factors discussed above, the Indian Usability industry is faced with an upcoming acclimatization phase in these circumstances that is also a window of opportunity for it. We cannot expect the maturity of the US industry which has taken over 60 years to get where it is today. We must practice in our own set of circumstances and make it an off beat success within the off shore paradigm. Otherwise, we may miss out on this exciting new opportunity of establishing a strong and credible usability profession in India.

Our experiences have taught us that entrant Indian Usability Engineering groups today could strategically approach this

opportunity by following some guiding principles in the 2 broad areas, customer facing and team facing.

Some Outward or Customer facing building blocks would be:

- Define clear-cut ROI justifications upfront in proposing any Usability Engineering project

  First enlist all the bottom-line benefits of usability engineering. Then outline some detailed cases for ROI as the starting point in building a sale. Ensure that this pitch is very brief and crisp. Easily understandable business metrics to demonstrate value are even more critical in the Indian industry setting because price is already an important metric for the offshore model.

- Use ROIs of previously documented projects

  It is expected that most new teams will not have a portfolio. But ROIs are compelling in making the sale, hence it is prudent to use previously documented ROIs. Also undertake small projects or parts of a project, however small, to demonstrate capability. Couple together individual capabilities to demonstrate team capability. If need be, generate extrapolated ROIs, making assumptions to drive the point.

- Focus on efforts offering quick returns

  Use projects like heuristic reviews to quickly establish initial credibility. While being decoupled from the user is against the best judgment of a usability engineer, recognize and establish that a user exclusive usability improvement of say 30% versus a user inclusive usability improvement of say 60% still positively impacts the bottom-line.

- Make quality paramount. Establish an uncompromising excellence metric

  This is a seemingly intangible attribute that stands to impact not just the early success of the individual venture but the long term repute of the Indian Usability Engineering community at large. Quality in the interaction and deliverables, possibly even at the cost of forgoing a project is the right way. It is easy to lose sight of this in the midst of initial setup and should be watched carefully.

- Establish a sound methodology that holds up in different types of project settings

  The methodology will evolve over time. But it must start out as one that is holistic and generic to handle the range of usability engagements from the superficial screen designs up to complete life cycle usability projects. It must also be able to demonstrate its fit with established SDLC processes. In a new team, which is true of most Indian usability departments, absence of a solid project track record can be offset to some extent with a sound methodology.

- Market this methodology and holistic process with conviction

  This effort goes hand in hand with establishing it. While 'band-aided' projects and rudimentary usability definitions and facelifts are an inevitable part of 'growing up', make sure to always use the opportunity to keep sight of the holistic model which is the essence of true usability.

- Position usability engineering in its rightful place

Two alternate organizational models for offering Usability Engineering services in an offshore context are represented in Figure 3.

1. bundled with software development services as in model A or

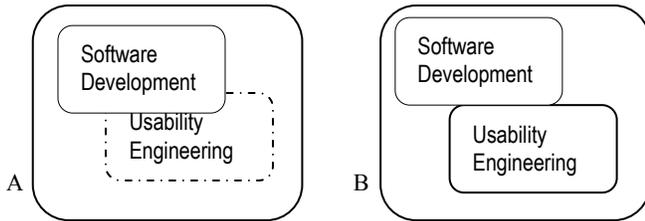2. as a separate and premium offering as in model B

Figure 3. Alternate Organizational Models

In model A, Usability Engineering is positioned as a part of the software development effort. The logic is that all software deliveries need to be made usable anyway. But because of the perceived value and cost saving positioning of development efforts, a back-office perception is created as a result, that would also impact its command on recommendations made. In model B, Usability Engineering is positioned as a separate entity, its value separated from the perceived value of the development effort. The logic is that Usability offers a different perspective than that of software development, is a different discipline and must be in its rightful place in proportion to the leverage it offers the end customer, often directly to the bottom-line. It must also reflect the value of the design AND analysis being offered. However, to establish confidence in the clients' mind we need to be confident of our capabilities. This placement is therefore possible if our offering is quality and covers the portfolio of services in the Usability Engineering Lifecycle. Underselling is not only a lost opportunity but also creates doubts about our capability.

With either model, we must capitalize on the proximity to and interaction with development.

A third model would be that of a consulting company where Usability is further distanced from development than the others.

The above discussion illustrates the effect of positioning Usability Engineering on its perceived image and value. It also implies that the extent of de-linking of usability from development is directly proportional to its perceived value.

Regardless of the model however, the critical factor is to recognize and project the value of Usability with conviction and in figures.

While each approach suits the philosophy of particular organizations, the choice of model must be strategic rather than incidental to associated functions of the company. It is important to note that the chosen model charts not just the long term professional identity of the department but also the long term view of the profession as a whole.

Now some Inward or Team facing building blocks would be:

- Appoint a lead with the breadth of the complete usability engineering process and the conviction

This would be a key person to position UE appropriately both within the organization as well as for the community at large.

- Accept the absence of trained manpower and affordable training programs

Recognizing that allied programs cannot fulfill the need for candidates who are ready for practice, every organization needs to assume and absorb some cost of training even though it consumes limited startup resources today. Some ways around this:

  o Explore unconventional methods of filling the widening gap in demand. For example, Psychology graduates form a significant proportion of the Human Factors Engineering community worldwide, yet in India they are relatively untapped.

  o Choose from the rich selection books on Usability to train aspiring Usability Engineers

  o Use live project based on the job training as much as possible over classroom training, orienting team members to quality benchmarks mentioned earlier at the same time.

- Strategically build the team

Initially focus on Human Factors skills if available else Product Design and Graphic Design skills only. These skills form a good starting point for the initiation of a heterogeneous team. Team up the two disciplines to achieve balance in the initial deliverables. Construct a team structure that permits an ongoing view and evolution of the team composition towards a balanced multidisciplinary one.

- Locate the team as a central resource

The team needs to be available to projects as needed in the capacity of individual/team consultants. This way, resources are optimized and more importantly, the team continues to simultaneously build and evolve their own core competence which is critical to such a research oriented discipline.

- Resist the temptation to prematurely position people as 'Usability Experts'

It takes years to become an expert in the field of Usability [6]. Despite the market demand vis a vis the natural lack of professional maturity, resist the urge to respond with remotely related partially developed skills in order to ride the usability wave. Claiming 'usability specialist' status for short term gains will happen at the cost of long term credibility.

- Create templates for the various elements of the practice for standardization and scalability

For example, designers need to be oriented in the analytical practices of UE. Develop templates to enable jump starting deploy-ability of recruits. Enabling rapid deployment is the only way to ensure scaling which ultimately will lead to whether or not the venture will experience long term success.

It is important also to recognize at the outset that these building blocks will take at least a year.

4. CONCLUSION

The need for maturity across the Indian Usability Engineering industry is real and its absence is natural. We are at a turning point in the 'coming of age' of the Indian Usability industry. Unless we take a long term strategic and uncompromising stand to building credibility of a quality usability team, we stand to lose out not just on this window of opportunity to move up the value chain but also compromise the long term reputation of the community as a whole.

In this paper, the challenges associated with marketing a usability engineering service from within a successful software organization and building a multidisciplinary team have been discussed. Strategic and practical approaches to working around these challenges within the limitations of existing circumstances, and making it workable have been proposed.

The criticality of always keeping sight of quality in delivering expertise and solutions as well as its impact on an 'Indian Usability Engineering brand' that will emerge has been emphasized. A centralized standard for Usability Engineering practice across the industry rather than individual organizational ones should be our goal.

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