

Usability Issues in Offshore Development: an Indian Perspective

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Introduction

The worldwide software industry is undergoing a metamorphosis because technology is becoming ubiquitous. Usability Engineering is experiencing increased visibility, accelerated growth and exciting innovation [1].

Two interesting phenomena of this global software industry are

- International (western) client companies involved in offshore development often acknowledge the need for usability representation in their products. However, they do not necessarily recognize the quality implications of executing usability in such a distributed setup where the human and the technology are physically, conceptually and methodologically separated.
- Indian software industry is starting to experience a natural progression up the value chain [2]. It is in a strong position to leverage the synergy of established credibility, strong customer relations and emerging domain expertise. Recognizing the need to support the ease-of-use requirements of their clients, the young usability community is responding to this need and trying to make a usability mark on the end deliverable.

Various approaches of building usability into software among overseas client companies range from quick-fix 'band-aiding' to holistic user-centered usability engineering, depending on business requirements, constraints and limitations. These may be fulfilled either through in house resources or sourced as a premium service from specialized user centered design firms locally, e.g. in the US.

In scenarios where software development goes global, two typical approaches in order to try creating a more user-friendly end-result are

- defining one time static user requirements upfront or
- 'layering on' usability to the completed or almost completed software

The first approach assumes that a user requirements document defined remotely upfront will ensure usability of the end result. The second assumes that a 'pretty cover', where the UI structure has already been defined early in the process, will also ensure usability.

Either of these approaches is contrary to the basic principles of developing a usable end product. Usability, like quality, has to be BUILT INTO the product and cannot be effectively 'added on' or 'filled in' later. The key objective should be to conceal the complexity of the technology from the end user. Successful companies will deliver a brand experience fashioned around intuitive human behavior rather than the ideals of a programmer [3]. In offshore development however, by definition, a considerable period of the usability lifecycle is in the hands of programmers.

As a result, usability engineering execution in an offshore setting has significant challenges. Against this backdrop, we will examine:

1. Usability issues among overseas client companies and their offshore Indian counterparts
2. The potential implications for global usability and
3. Recommendations for both onsite and offshore companies

Usability Issues in Offshore Development

Indian Usability Engineering is in its nascent stages. Awareness of the value of usability is a recent and evolving phenomenon. A large proportion of Indian usability practitioners are self taught, often professionally young design graduates with no formal training in Human Engineering [4]. At the same time, there is tremendous growth in depth projected for the Indian software industry. Global investment in offshore services will grow from

\$7 billion in 2003 to \$17 billion by 2008 and India is among the select group of countries poised to gain from this spurt in outsourcing [5]. The Indian IT software and services sector is on track to achieve its long-term target aspiration of US\$ 77 billion (excluding e-commerce transactions of \$10 billion). By 2008 the industry would employ 4 million people [6].

Such projections magnify the usability challenges manifold. And Indian companies must be able to service these challenges by using the product knowledge that already exists locally, building in the user knowledge into it and delivering higher value despite the limitations of track record and talent pool.

An informal investigation was conducted with Usability Engineering Team leads from among the few software companies practicing Usability Engineering in the Indian industry and one representative from academia. The limited numbers did not permit formalization but they did shed light on the issues.

The respondents expressed the following views from the offshore company perspective:

- It is common to operate as part of development teams, less as a standalone consulting service
- Some of the pitfalls in executing offshore usability are lack of user contact, untrained talent, long distance communication and disconnects in translating and incorporating UI specs into the software
- Some of the pitfalls experienced in managing offshore usability are difficulty in demonstrating value, perception of a 'back-office' image, indistinct positioning within the organization, lack of experience in packaging and marketing usability and managing the compelling usability hype
- If they cannot respond to this need for usability, then cost of rework, quality and reputation of the final deliverable and generally a lost opportunity are some of the downsides that Indian software companies experience
- The gap in trained talent must be addressed on a war footing through a combination of industry and institutional intervention.
- Indian industry must aggressively pursue the combined opportunity presented by increasing offshore projects along with increasing worldwide usability awareness. It will experience a move up the value chain if it can act on this opportunity
- An essential requirement within Indian industry is awareness building about usability and its value, more so because non-user centered processes successfully continue among rapidly growing organizations

They expressed the following views from the perspective of their overseas client companies:

- Client companies associate offshore development with cost savings and tend to expect usability engineering as a byproduct of development efforts. They are often unaware about and hence unwilling to recognize or invest in the specialized skills and perspectives needed to deliver usability.
- It is difficult for clients to entrust usability to their offshore development partners due to lack of awareness of their existence, being considered an unknown entity, lack of credentials in usability and the general perception of offshore work associated with low cost hence low value.
- Client companies also often incorrectly assume usability to be graphic design, web design, technical writing, and others. 'Usability' and 'usability specialist' being loosely defined terms in the Indian industry enhance this misconception.
- Not having usability reciprocated in their Indian counterpart development teams impacts the overseas client companies through misinterpretation of user requirements, ineffective implementation of user requirements and UI specifications, delay and cost of reworks and the quality of the final deliverable.

Different approaches are possible for the Indian community to move towards capability buildup [7]. Though India has a strong foundation in design education, usability engineering consists of both creative design and methodological practice as shown in Figure 1.

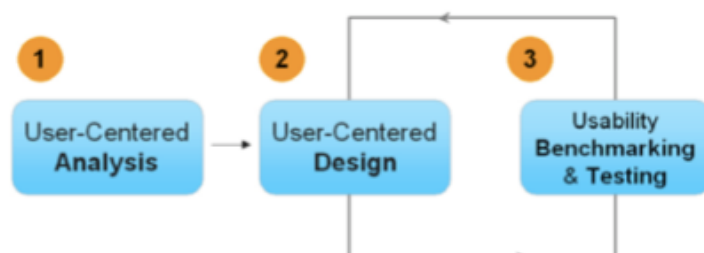


Figure 1: Holistic view of the Usability Engineering process

To achieve increased capability through education, an orientation in the methodological and analytical aspects of usability is much needed to enhance Indian design education.

Potential Implications for Global Usability Engineering

Recognizing that a user and usage inclusive holistic approach alone will result in usable products, an offshore setting where the design of the software and its user interface are naturally disconnected thus becomes a paradox situation. The model often followed in offshore development is usability requirements or a UI design transmitted remotely at project initiation without any further user related follow ups. This results in missed user expectations and rework.

The final user interface which evolves through numerous usability decisions that have to be taken during the SDLC therefore become developers' decisions. Implicitly or explicitly, these naturally become technology favored decisions and invariably impact the usability. We thus set ourselves up to create difficult to use software that evolves by throwing designs across the global wall, causing much frustration on both sides. And despite sincere usability efforts upfront on the client side, the product may not end up reflecting the envisioned usability. So we seem to be confronted with conflicting requirements of the need for holistic integrated design on the one hand and a divided practical development environment on the other. With a longer-range outlook of holistic software development, it is obvious that this fragmented approach adds costs for both the client as well as the offshore development companies.

Yet the realities are that the seat of knowledge about the product continues to rest in its development environment while the seat of knowledge about its user continues to rest in its client environment.

A simplistic view of the above discussion then suggests that either development goes to the user environment or ensuring usability needs to be represented in the development environment. But since off shoring is an established modus operandi in today's global software industry, the former is probably not practicable. Hence it is logical for the latter to gradually evolve. Though offshore usability is a complex and challenging issue, global work teams are here to stay. Therefore, in the interests of long term product quality, offshore usability needs to happen. We need to plan for its success and evolve how it happens despite the complexities.

Recommendations

The practical conclusions of the above scenarios are that introducing usability engineering activities into offshore development efforts is a critical imperative. Failure to do so will inevitably result in poor usability.

This situation must be addressed by both client and offshore development companies.

Client Companies must address the following:

- Incorporate Usability Engineering competence requirements in RFPs.
- Include evaluation of the usability capability of offshore vendors as a separate and discrete part of the evaluation process.
- Include in-house usability expertise representation if possible as part of offshore Project Management
- Be willing to value and pay for Usability Engineering expertise as part of the offshore development effort. If managed effectively, the ROI from this investment will be significant.
- Plan for the onsite presence of a Senior Usability Engineer from the offshore team during software requirements definition phase to represent the user-centered perspective. This is very different from a developer's system centered information gathering perspective that is routine today.
- Define and communicate usability guidelines and standards that are consistent with their user culture and common across their software portfolio.

Offshore Development Companies must address the following:

- Recognize Usability Engineering as a distinct competency. Acquire specialized staff and skills for it.
- Project usability engineering capabilities in early stage discussions with prospects. This will enhance the value proposition, be a significant differentiator and enhance the quality of end deliverables.

- Grow it into a separate and focused service line and consulting offering in its own right, in addition to significant value-addition to the core software development business. This can also serve to project a ‘high value’ image.
- Establish usability testing processes that ensure incorporation of cultural characteristics of key end user markets.
- Train sales staff to establish awareness, actively promote usability capabilities and introduce these concepts while marketing.

Thus a usability engineering focus on the development side to ensure or supplement it on the client side is advantageous to both onsite and offshore partners. The Usability Engineering Lifecycle model must therefore get enhanced for an offshore development context to broadly appear as follows:

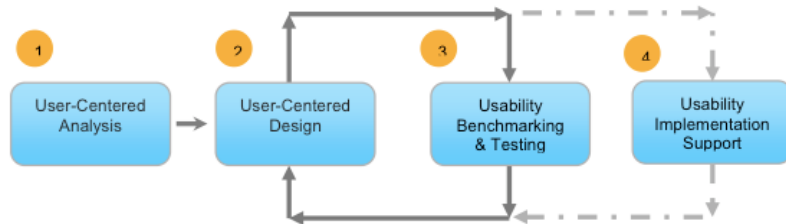


Figure 2: Holistic view of an Offshore Usability Engineering process

Offshore usability is an ongoing evolution today [8]. It needs to be addressed by the global usability community as a whole in the interests of the emerging global work culture.

Conclusion

Accomplishing ease of use in today’s offshore software development setting is not easy. By definition, the partitioning of user and product as in this model is contrary to principles of good usability. But global software development and the need for usability engineering are both here to stay. As we evolve through and mature these processes, we traverse through many non-classical usability approaches and end results, like ‘Layering on’ or ‘Throwing Designs over the wall’. These approaches pay lip service to but do not accomplish usability. Offshore development without a usability engineering component to it is fraught with problems in the future. Ongoing offshore usability intervention alongside development is key to deriving any overall Usability Engineering benefit. Recognizing this, both Indian companies as well as their overseas partner client companies need to strategically address the integration of usability into offshore development. They also need to appreciate that usability ultimately strongly impacts the quality of the end product. The ability to take control over the ‘humanization’ of technology is an important 21st century milestone for a customer service oriented organization.

References

- Remington, R.J. www.targetsoft-ware.com
 Atlas, Terry. *Bangalore’s Big Dreams*, USNews.com, 2005
 Brown Mary. *The New Brandscape: Six Future Trends Changing Marketing*, Marketing Profs.com (2005)
 Katre, Dinesh S. *HCI in India is catching up with On-Duty-Self-Learning HCI Practitioner*, HCI Inspirations, www.hceye.org, June 2005
 Rediff.com Business Report, *Offshore IT Services? It’s Advantage India!* (2004)
 Nasscom McKinsey Report, http://www.nasscom.org/artdisplay.asp?Art_id=1435 (2002)
 Iyengar, J. Usability Engineering—An Emerging Opportunity for Indian IT, *Easy6 Conference Proceedings, January 2006*
 Henry, Pradeep. *Advancing UCD While Facing Challenges Working from Offshore*, Interactions, 2003, <http://www.cognizant.com/services/advancedsolutions/usability/advancing-ucd.pdf>